



Environmental
Defenders Office

**Submission Regarding the Draft Petroleum Legislation
Amendment Bill (B) 2023**

14 April 2023

About Environmental Defenders Office

The Environmental Defenders Office (**EDO**) is a community legal centre specialising in public interest environmental law. We help people who want to protect the environment through law. Our reputation is built on:

Successful environmental outcomes using the law. With over 30 years' experience in environmental law, EDO has a proven track record in achieving positive environmental outcomes for the community.

Broad environmental expertise. EDO is the acknowledged expert when it comes to the law and how it applies to the environment. We help the community to solve environmental issues by providing legal and scientific advice, community legal education and proposals for better laws.

Independent and accessible services. As a non-government and not-for-profit legal centre, our services are provided without fear or favour. Anyone can contact us to get free initial legal advice about an environmental problem, with many of our services targeted at rural and regional communities.

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Acknowledgment of Country

Environmental Defenders Office recognises the Traditional Owners and Custodians of the land, seas and rivers of Australia. We pay our respects to Aboriginal and Torres Strait Islander Elders past, present and emerging, and aspire to learn from traditional knowledges and customs so that, together, we can protect our environment and cultural heritage through law.

Submitted to:

Hon. Bill Johnston
Minister for Mines and Petroleum

By email: GSRS.Consultation@dmirs.wa.gov.au

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Background

The Draft Petroleum Legislation Amendment Bill (B) 2023 (**PLA Bill**) was released for consultation in January 2023. The PLA Bill proposes amendments to the *Petroleum and Geothermal Energy Resources Act 1967* (WA) (**PGER Act**), *Petroleum Pipelines Act 1969* (WA) (**PP Act**) and *Petroleum (Submerged Lands) Act 1982* (WA) (**PSL Act**) (collectively “**Petroleum Acts**”), to develop the legislative framework for the transport and geological storage of greenhouse gases in Western Australia. The text of the PLA Bill has not been released to the public, but marked-up copies of the Petroleum Acts indicating the amendments proposed by the PLA Bill have been provided instead. These comments are based on those marked-up copies of the Petroleum Acts.

The Environmental Defenders Office (**EDO**) welcomes the opportunity to provide comments on the PLA Bill. We commend the proposed amendment of the Petroleum Acts to provide greater clarity on requirements for transport and storage of greenhouse gases. However, the legislative framework proposed in the PLA Bill falls short with regards to liability, penalties, review of decisions made under the Petroleum Acts, and public participation, among other shortcomings. Accordingly, we offer the following comments and recommendations for amendment.

EDO’s submission on the PLA Bill is couched in the context of its Roadmap for Climate Reform,¹ which recommends reform of Australian climate law to address the climate crisis and provide clarity and certainty for all stakeholders. We advocate for law reform that is science-aligned, prudent, and sufficiently ambitious to meet the scale of the climate crisis.

This submission has been prepared with expert input from the EDO Science and Expert Advisory team.

Summary of recommendations

RECOMMENDATION 1: The PLA Bill must proceed from a science-based position, being that petroleum activities are to be phased out, and no new petroleum fields will be developed. The legislation must not promote or encourage the use of CCS to sustain the fossil fuel industry.

RECOMMENDATION 2: The PLA Bill should not allow recovery of petroleum incidental to greenhouse gas (**GHG**)-related exploration, drilling, and injection, even for appraisal purposes.

RECOMMENDATION 3: The PLA Bill should ensure liability remains with the titleholder or project proponent, rather than providing for adoption of liability by the state. If, which EDO recommends against, the government persists with a scheme whereby the state adopts liability for CCS projects, the proposed closure assurance period should be extended to 100 years.

RECOMMENDATION 4: The security required with a site closing certificate should explicitly cover costs of long-term monitoring post-closure and provide for any necessary remediation. Estimates of security should be reviewed by regulators or an independent third-party to ensure their adequacy.

¹ Environmental Defenders Office, *A Roadmap for Climate Reform* (2022) <<https://www.edo.org.au/publication/a-roadmap-for-climate-reform/>>.

RECOMMENDATION 5: The PLA Bill should adopt trailing liability provisions modelled after the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth):

- (1) The Minister may, by written notice given to a person referred to in subsection (2A), direct the person to do one or more of the following things within the period specified in the notice:
- (a) to remove, or cause to be removed, from the vacated area all property (the **relevant property**) brought into that area by any person engaged or concerned in the operations authorised by the title;
 - (b) to make arrangements that are satisfactory to the responsible Commonwealth Minister in relation to the relevant property;
 - (c) to plug or close off, to the satisfaction of the responsible Commonwealth Minister, all wells made in the vacated area by any person engaged or concerned in the operations authorised by the title;
 - (d) to provide, to the satisfaction of the responsible Commonwealth Minister, for the conservation and protection of the natural resources in the vacated area;
 - (e) to make good, to the satisfaction of the responsible Commonwealth Minister, any damage to the seabed or subsoil in the vacated area caused by any person engaged or concerned in the operations authorised by the title;
- so long as the direction is given for a purpose that relates to:
- (f) resource management; or
 - (g) resource security; or
 - (h) decommissioning.
- (2A) The persons are:
- (a) if the title ceased to be in force in part:
 - (i) the registered holder of the title; or
 - (ii) a related body corporate of the registered holder of the title; or
 - (b) if the title ceased to be in force in whole or in part:
 - (i) any former registered holder of the title; or
 - (ii) a person who was a related body corporate of any former registered holder of the title at the time the title was in force; or
 - (iii) a person to whom a determination under subsection (2B) applies.
- 2B) The Minister may make a written determination that this subsection applies to a person if, having regard to the following matters, the responsible Commonwealth Minister is satisfied on reasonable grounds that it is appropriate to do so:
- (a) whether the person is capable of significantly benefiting financially, or has significantly benefited financially, from the operations authorised by the title;
 - (b) whether the person is, or has been at any time, in a position to influence the way in which, or the extent to which, a person is complying, or has complied, with the person's obligations under this Act;
 - (c) whether the person acts or acted jointly with the registered holder, or a former holder, of the title in relation to the operations authorised by the title.

RECOMMENDATION 6: All of the proposed penalty provisions should be increased by at least a factor of 10, to reflect the potentially catastrophic consequences of the prohibited activities. The current penalties in the PP Act related to leaks and improper pipeline operation or routing should also be increased.

RECOMMENDATION 7: The PLA Bill should require the Minister to provide public notice of any applications made under the Petroleum Acts related to GHG exploration, transport, and storage, institute a 60-day comment period for each application, and take into account and respond to all public comments submitted in determining whether to grant such applications. The Minister should be required to take public comment into consideration when making any decision in respect to an application.

RECOMMENDATION 8: The PLA Bill should provide for merits review of authorisations granted under the Petroleum Acts.

RECOMMENDATION 9: The PLA Bill should amend the Petroleum Acts to allow third party enforcement, modelled on s 9.45 of the *Environmental Planning and Assessment Act 1979* (NSW):

- (1) Any person may bring proceedings in the Court for an order to remedy or restrain a breach of this Act, whether or not any right of that person has been or may be infringed by or as a consequence of that breach.
- (2) Proceedings under this section may be brought by a person on his or her own behalf or on behalf of himself and on behalf of other persons (with their consent), or a body corporate or unincorporated (with the consent of its committee or other controlling or governing body), having like or common interests in those proceedings.
- (3) Any person on whose behalf proceedings are brought is entitled to contribute to or provide for the payment of legal costs and expenses incurred by the person bringing the proceedings.

RECOMMENDATION 10: Alternatively, the PLA Bill should provide expanded standing for enforcement of the Petroleum Acts, modelled on sections 475 and 487 of the EPBC Act:

A person has standing to bring a proceeding to Court for an order to remedy or restrain a breach of this Act if:

- (a) the person is an Australian citizen or ordinarily resident in Western Australia;

and

- (b) at any time in the two years immediately before the breach, the person engaged in a series of activities in Western Australia for protection or conservation of, or research into, the environment.

RECOMMENDATION 11: The Minister should not be granted discretion to overlook non-compliance with approval conditions and/or the Petroleum Acts in determining whether to grant additional authorisations or renewals. Alternatively, if the PLA Bill maintains such an exception, there must at the very least be regulations setting out what “special circumstances” might entail; providing the opportunity for public comment before any the discretion to overlook non-compliance is exercised; and requiring the Minister to give reasons for their decision.

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I. The starting point for any statutory amendments must be that Western Australia must phase out fossil fuel production to ensure a safe climate.

A. The urgency of the climate crisis requires the phasing out of fossil fuel extraction.

At the outset, we remind the government of Western Australia that it is a component of the Earth System.² It is an institution of the anthroposphere with the ability to affect future outcomes.³ The decisions the government makes today will affect the level of risk that the environment and people of WA face in the future. The time has come for the Department of Mines, Industry Regulation and Safety (**DMIRS**) and the Minister for Petroleum and Energy (**Minister**) to stop recommending and approving petroleum activities that will fuel the climate crisis. The Minister and DMIRS must accept that the decisions they make under the Petroleum Acts have real and direct consequences for the people of Western Australia and the global climate.

It is a moral imperative that decision-makers at all levels of government apply the law in ways that will ensure the safety and survival of the people and ecosystems affected by those decisions. Indeed, this is the very obligation imposed on the Western Australian Environmental Protection Authority (**EPA**) by s 4A of the *Environmental Protection Act 1986* (WA) (**EP Act**). Any amendments to the Petroleum Acts must be made with acknowledgement that the continued approval of new petroleum activities is no less than a matter of life and death for the ecosystems and people of WA.⁴

As courts in Australia have already concluded, in considering the potential impacts of climate change upon future generations in Australia:

It is difficult to characterise in a single phrase the devastation that the plausible evidence presented in this proceeding [about the impacts of climate change] forecasts for the Children. As Australian adults know their country, Australia will be lost and the World as we know it gone as well. The physical environment will be harsher, far more extreme and devastatingly brutal when angry. As for the human experience – quality of life, opportunities to partake in nature’s treasures, the capacity to grow and prosper – all will be greatly diminished. Lives will be cut short. Trauma will be far more common and good health harder to hold and maintain. None of this will be the fault of nature itself. It will largely be inflicted by the inaction of this generation of adults, in what might fairly be described as the greatest inter-generational injustice ever inflicted by one generation of humans upon the next.⁵

² Will Steffen et al, ‘The emergence and evolution of Earth System Science’ (2020) *Nature Reviews: Earth and Environment* 1:54-63.

³ *Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors* (No 6) [2022] QLC 21 [595]-[596] (“The Earth System is defined as the suite of interlinked physical, chemical, biological and human processes that cycle (transport and transform) materials and energy in complex, dynamic ways within the system. ... Using the Earth System, the Court is part of the anthroposphere as an institution within a decision making framework that can determine whether or not an activity that will emit GHGs can proceed.”).

⁴ See, for example: Lucas R. Vargas Zeppetello, Adrian E Raftery and David s Battisti, ‘Probabilistic projections of increased heat stress driven by climate change’ (2022) *Commun Earth Environ* 3, 183.

⁵ *Sharma v Minister for Environment* [2021] FCA 560 [293], finding not overturned on appeal.

In *Sharma v Minister for the Environment* [2021] FCA 560 (*Sharma*), the court relevantly made the following findings (which were not disturbed on appeal in *Minister for the Environment v Sharma* [2022] FCFCFA 35):

- a. If the global average surface temperature increases beyond 2°C, there is a risk, moving from very small (at about 2°C) to very substantial (at about 3°C), that Earth’s natural systems will propel global surface temperatures into an irreversible 4°C trajectory, resulting in global average surface temperature reaching about 4°C above the pre- industrial level by about 2100.⁶ That is, given the gravity of our current circumstances and the potentially catastrophic outcomes, the scale at which emissions reductions (or increases) are material is much lower.
- b. The risk of harm from climatic hazards brought about by increased global average surface temperatures is on a continuum in which both the degree of risk and magnitude of the potential harm will increase exponentially if the Earth moves beyond a global average surface temperature of 2°C, towards 3°C and then to 4°C above the pre-industrial level.⁷
- c. Exceeding the carbon budget for 2°C or even 1.5°C will lead to severe, irreversible, and potentially cascading climate change harm.⁸

Furthermore:

- a. The United Nations Secretary-General has warned that “[i]nvesting in new fossil fuel infrastructure is moral and economic madness.”⁹
- b. The IPCC has recently made clear that emissions from existing fossil fuel infrastructure will push the world beyond 1.5°C of warming, and that “[g]lobal warming is more likely than not to reach 1.5°C between 2021 and 2040 even under the very low GHG emission scenarios.”¹⁰ “Pathways consistent with 1.5°C and 2°C carbon budgets imply rapid, deep, and in most cases immediate GHG emission reductions in all sectors (high confidence).”¹¹
- c. WA ecosystems “are already at critical thresholds and further warming will result in damage and loss that is irreversible.”¹²
- d. The International Energy Agency has concluded that the scientifically credible pathway to limiting warming to 1.5°C – the goal of the Paris Agreement – requires that no new gas and oil fields be approved for development after 2021.¹³

⁶ Ibid [74].

⁷ Ibid [75].

⁸ Ibid [88].

⁹ UN Secretary-General Antonio Guterres, ‘Secretary-General Warns of Climate Emergency, Calling Intergovernmental Panel’s Report ‘a File of Shame’, While Saying Leaders ‘Are Lying’, Fuelling Flames’ (Media Release SG/SM/21228, 4 April 2022) <<https://press.un.org/en/2022/sgsm21228.doc.htm>>.

¹⁰ Hoesung Lee et al., *Synthesis Report of the IPCC Sixth Assessment Report (AR6)* (2023) 56 (Figure 3.5) <https://report.ipcc.ch/ar6syр/pdf/IPCC_AR6_SYR_LongerReport.pdf>.

¹¹ Ibid 46.

¹² Ibid 3.

¹³ International Energy Agency, ‘Net Zero by 2050: A Roadmap for the Global Energy Sector – Summary for Policymakers’ (May 2021) 11 <https://iea.blob.core.windows.net/assets/7ebafc81-74ed-412b-9c60-5cc32c8396e4/NetZeroby2050-ARoadmapfortheGlobalEnergySector-SummaryforPolicyMakers_CORR.pdf>.

Yet in direct contrast to the above conclusions, the PLA Bill and Petroleum Acts are countenanced not only upon continued production from existing petroleum projects, but assume future approval and implementation of new petroleum projects.

The urgency of the climate crisis now dictates that governments move beyond a “polluter pays” philosophy that completely ignores the magnitude of harm caused by continued production of fossil fuels. The only approach to petroleum pollution that is consistent with science is to move rapidly to phase out petroleum activities (other than decommissioning and rehabilitation) in Western Australia. To pretend, or allow otherwise, is contrary to scientific consensus, and the moral obligation owed by this generation to future generations. The legislation should not promote or encourage the use of CCS in order to sustain the life of the fossil fuel industry.

B. Carbon capture and storage is not an effective or environmentally sound solution for timely reductions in greenhouse gas emissions.

While the EDO supports strengthened regulation of technologies such as CCS, the underlying goals of any regulation should be assessing, preventing, and monitoring potential environmental impacts, ensuring royalties to the state, and measuring, monitoring, and reporting on the effectiveness of CCS across its entire lifecycle, from capture, through to transport and long-term storage, rather than enabling industry. The risk and impact assessments that form the basis of the approvals and regulations proposed will include multiple decision points for which the technical information and understanding necessary to ensure environmental impacts are avoided are lacking. Therefore, appropriate mitigating conditions may also not be properly identified or proposed.¹⁴

As it stands and for the foreseeable future, CCS does not offer a solution to the enormous contributions of the fossil fuel industry to climate change. First, CCS comes with its own environmental concerns:

- a. Pre- or post-combustion capture of carbon dioxide (**CO₂**) requires significant energy use.¹⁵ Post-combustion capture associated with energy production presents particular difficulties with efficiency and contaminants.¹⁶

¹⁴ See, e.g., Joris Koornneef et al., ‘The environmental impact and risk assessment of CO₂ capture, transport and storage: An evaluation of the knowledge base’ (2012) *Progress in Energy and Combustion Science* (abstract) <<https://www.sciencedirect.com/science/article/abs/pii/S0360128511000402>>.

¹⁵ Leigh Collins, ‘The amount of energy required by direct air carbon capture proves it is an exercise in futility’, *Recharge* (online, 14 September 2021) <<https://www.rechargenews.com/energy-transition/the-amount-of-energy-required-by-direct-air-carbon-capture-proves-it-is-an-exercise-in-futility/2-1-1067588>>; see also IPCC, *Climate Change 2022: Mitigation of Climate Change, Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (2022) 642 <https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf> (“Additionally, the energy penalty increases the fuel requirement for electricity generation by 13–44%, leading to further cost increases (Table 6.3).”) (hereinafter “IPCC AR6 WGIII Report”).

¹⁶ Leigh Collins, ‘The amount of energy required by direct air carbon capture proves it is an exercise in futility’; see also IPCC AR6 WGIII Report 642; see also Roger Sathre et al., *The role of Life Cycle Assessment in identifying and reducing environmental impacts of CCS* (April 2011) <<https://escholarship.org/uc/item/2bv98328>>.

- b. CCS systems are also water-intensive because water is needed during the cooling process at the power-plant level and as part of the carbon capture process.¹⁷ Consequently, broad adoption of CCS “could strongly affect [] local and global water resources” where they compete with municipal and industrial uses, irrigated agriculture, and agro-ecosystems.¹⁸ This is of particular concern in Western Australia, given that climate change driven by fossil fuel combustion means that the state is already and will continue to be impacted by more frequent dry seasons.¹⁹
- c. Transport of captured CO₂ presents significant risks associated with pipeline failure which increase with the distance of travel required.²⁰ Large-scale implementation of CCS would require “a massive buildout of pipelines and associated infrastructure” on top of the existing oil and gas pipeline network, which would have enormous environmental impacts and endanger the communities through which the pipelines would run.²¹
- d. Injection and storage in reservoirs create risks of reservoir failure and potential for contamination, including of drinking water.²² Proposed s 74HB of the PSL Act and proposed s 69HB of the PGER Act identify five types of “serious situations,” any of which could result from an unlawful injection:
 - (a) a greenhouse gas substance that has been injected into the identified GHG storage formation has leaked or will leak; or

¹⁷ Lorenzo Rosa et al., ‘The Water Footprint of Carbon Capture and Storage Technologies’ (2021) *Renewable and Sustainable Energy Reviews* 3; see also IPCC AR6 WGIII Report (n 15) 643 (“CCS requires considerable increases in some resources and chemicals, most notably water. Power plants with CCS could shut down periodically due to water scarcity. In several cases, water withdrawals for CCS are 25–200% higher than plants without CCS (Rosa et al. 2020b; Yang et al. 2020) due to energy penalty and cooling duty. The increase is slightly lower for non-absorption technologies. In regions prone to water scarcity such as the Southwestern USA or Southeast Asia, this may limit deployment and result in power plant shutdowns during the summer months (Liu et al. 2019b; Wang et al. 2019c).”).

¹⁸ Lorenzo Rosa et al. (n 17) 15, 17.

¹⁹ Western Australia Department of Primary Industries and Regional Development, ‘Dry Seasons and Drought’, *Agriculture and Food* (Web Page), <<https://www.agric.wa.gov.au/climate-land-water/climate-weather/dry-seasons-and-drought>>.

²⁰ A. Brown et al., ‘IMPACTS: Framework for Risk Assessment of CO₂ Transport and Storage Infrastructure’ (2017) 114 *Energy Procedia* 6501, 6503. See also, Dr. S Jansto, *Risks and Potential Impacts from Carbon Steel Pipelines in Louisiana Transporting and Processing Variable Produced Gases such as Carbon Dioxide (CO₂), Hydrogen (H₂), Methane (CH₄)* (Oct. 9, 2022), <https://healthygulf.org/wp-content/uploads/2022/10/CCS-and-Pipeline-Final-Report_Jansto_October-9th-1.pdf>.

²¹ Center for International Environmental Law, ‘Carbon Capture and Storage (CCS): Frequently Asked Questions’ (Blog Post), <<https://www.ciel.org/carbon-capture-and-storage-ccs-frequently-asked-questions/>> (“CO₂ in high concentrations can be hazardous to human health, building out a national CO₂ pipeline network raises safety issues which may affect nearby communities and may hinder CCS deployment.”); see also Congressional Research Service, *Carbon Dioxide Pipelines: Safety Issues* (2022) <<https://crsreports.congress.gov/product/pdf/IN/IN11944>>.

²² See., e.g. The Royal Society, *Locked Away: Geological Carbon Storage Policy Briefing* (2022) 12, <https://royalsociety.org/-/media/policy/projects/geological-carbon-storage/Geological-Carbon-Storage_briefing.pdf> (“The overlying geological strata should be effectively impermeable to CO₂ to prevent it rising through the subsurface and either flowing into potable aquifers or returning to the surface.”); see also Minh Hà Dương and David W Keith, ‘Carbon storage: The economic efficiency of storing CO₂ in leaky reservoirs’ (2003) 5 *Clean Technologies and Environmental Policy* 181, 182.

- (b) a greenhouse gas substance has leaked or will leak in the course of being injected into the identified GHG storage formation; or
- (c) a greenhouse gas substance that has been injected into the identified GHG storage formation has behaved or will behave otherwise than as predicted in Part A of an approved site plan for the formation; or
- (d) the injection of a greenhouse gas substance into, or the storage of a greenhouse gas substance in, the identified GHG storage formation has had or will have a significant adverse impact on the geotechnical integrity of the whole or a part of a geological formation or geological structure; or
- (e) the identified GHG storage formation is not suitable for the permanent storage of a greenhouse gas substance as set out in an approved site plan for the formation.

The potential impacts of a “serious situation” are significant. GHG leaks can lead to contamination of important aquifers as CO₂ migrates through fractured or ineffective caprock, along fault lines, or through porous geological strata.²³ Chronic leakage of CO₂ has significant climate impacts and can result in vast shortfalls in storage rates, such as the experience of the Gorgon LNG project. Gorgon’s CO₂ storage shortfall is expected to cost Chevron between \$150 million to \$276 million to offset. In the context of Gorgon LNG, the PLA Bill currently imposes a \$20,000 fine to prevent the climate impacts of a situation Chevron is willing and able to pay millions to rectify.

In addition, the industrial processes which produce the CO₂ that CCS projects are designed to capture and store also produce conventional pollutants that are harmful to surrounding communities, including particulate matter, sulphur dioxide, oxides of nitrogen, formaldehyde, benzene, and hydrogen sulphide.²⁴

Second, CCS is not currently effective in reducing greenhouse gas emissions and it is unclear whether it will ever be effective, at least in the timescales in which it would be needed, as it is unscalable at the rate and extent needed to see a rapid reduction in emissions.²⁵

²³ Jinfeng Ma et al., ‘Carbon Capture and Storage: History and the Road Ahead’ (2022) *Engineering* 14, 33-43, 39; see also IPCC, *Carbon Dioxide Capture and Storage* (2005), <https://www.ipcc.ch/site/assets/uploads/2018/03/srccs_wholereport-1.pdf>.

²⁴ Terry L. Jones, ‘LNG Export Terminals Pose a Growing and Invisible Threat: Air Pollution’, *Louisiana Illuminator* (6 Feb. 2023) <https://lailluminator.com/2023/02/06/lng-export-terminals-pose-a-growing-and-invisible-threat-air-pollution/>.

²⁵ N. Mac Dowell et al., ‘The role of CO₂ capture and utilization in mitigating climate change’ (2017), 7 *Nature Climate Change* 243 <**Error! Hyperlink reference not valid.** <https://www.nature.com/articles/nclimate3231>> (“Given that CCS is expected to account for the mitigation of approximately 14–20% of total anthropogenic CO₂ emissions, in 2050 the CCS industry will need to be larger by a factor of 2–4 in volume terms than the current global oil industry. In other words, we have 35 years to deploy an industry that is substantially larger than one which has been developed over approximately the last century . . .”); see also The Royal Society (n 22) 4 (“Global rates of CCS deployment are significantly below those anticipated to be needed to limit global warming to 1.5°C or 2°C, with the present global storage infrastructure only accommodating 40 MtCO₂/yr. It has been estimated that there is likely to be a need for 7 – 8 GtCO₂/yr of storage by 2050, and a cumulative storage of approximately 350 – 1200 GtCO₂ by 2100, to keep temperatures below the 1.5°C rise threshold. With typical CO₂ injection wells having injectivity of about 1 – 2 MtCO₂/year, this will require the global development of many thousands of CO₂ injection wells by 2050.”).

Moreover, CCS projects have to date been uneconomical.²⁶ The unproven scalability of CCS technologies and their prohibitive costs mean they cannot be relied upon to play any significant role in the rapid reduction of global emissions necessary to limit warming to 1.5°C. Despite the existence of the technology for decades and billions of dollars in government subsidies to date, deployment of CCS at scale still faces insurmountable challenges of feasibility, effectiveness, and expense.²⁷

According to a report by the Center for International Environmental Law, the “28 CCS facilities currently operating globally have a capacity to capture only 0.1 percent of fossil fuel emissions, or 37 megatons of CO₂ annually.”²⁸ According to a 2022 Royal Society report, CCS storage infrastructure currently only accommodates 40 MtCO₂/yr, whereas 7,000 to 8,000 Mt CO₂/yr must be stored by 2050 to limit global warming to 1.5°C.²⁹

The Gorgon LNG project, the world’s largest CCS project, operated by Chevron on Barrow Island in Western Australia, is an instructive example of both disappointing sequestration rates and low sequestration of total GHGs. The CCS component is intended to reduce scope 1 CO₂ emissions from the Gorgon LNG project by around 40% over the life of the system.³⁰ However, the amount sequestered will be less than 6% of the total emissions (including scope 3), even with perfect implementation.³¹ Since its delayed implementation, three and a half years after the start of LNG production, the project missed its target by more than 50%, a shortfall of 5.23 million tonnes of CO₂, due to unforeseen engineering

²⁶ Adam Dorr and Tony Seba, *The Great Stranding: How Inaccurate Mainstream LCOE Estimates are Creating a Trillion-Dollar Bubble in Conventional Energy Assets* (2021) 7, 23 <<https://static1.squarespace.com/static/585c3439be65942f022bbf9b/t/604a545fe0dbf3775ee6329b/1615484151178/Rethinking-Energy-LCOE.pdf>> (“Coal and gas power plants with integrated carbon capture and storage (CCS) are doubly mispriced (overvalued)”). See also, Ranajit Sahu, *Comments on Potential Impacts of Proposed New Coal Generation under the South Africa 2019 Integrated Resource Plan* (July 2021) 18 <**Error! Hyperlink reference not valid.**<https://cer.org.za/wp-content/uploads/2021/08/SAHU-SA-2019-IRP-2021-07-6jl-clean-final.docx.pdf>>; see also IPCC AR6 WG III Report 642 (“CO₂ capture costs present a key challenge... The capital cost of a coal or gas electricity generation facility with CCS is almost double one without CCS.”).

²⁷ Center for International Environmental Law, *Confronting the Myth of Carbon-Free Fossil Fuels: Why Carbon Capture is not a Climate Solution* (Jul. 2021) 2 <<https://www.ciel.org/wp-content/uploads/2021/07/Confronting-the-Myth-of-Carbon-Free-Fossil-Fuels.pdf>>.

²⁸ Ibid.

²⁹ The Royal Society (n 22) 4.

³⁰ Chevron, *Gorgon Gas Development and Jansz Feed Gas Pipeline Five-year Environmental Performance Report 2015–2020* (October 2020) 4 <<https://australia.chevron.com/-/media/australia/our-businesses/documents/gorgon-and-jansz-feed-gas-pipeline-5-year-environmental-performance-report-2015-2020.pdf>>.

³¹ Chevron, *Gorgon Gas Treatment Plant Greenhouse Gas Management Plan* (17 Aug. 2022) <**Error! Hyperlink reference not valid.**<https://australia.chevron.com/-/media/australia/our-businesses/documents/gorgon-gas-treatment-plant-greenhouse-gas-management-plan.pdf>>. Chevron estimates emissions as follows: Scope 1 (the project): 9.4 MTCO₂e per year (page 14); Scope 2: none (page 8); Scope 3: 49.8MTCO₂e per year (page 45). With 3.4 MTCO₂e per year sequestered as projected (page 14), less than 6% of total (Scope 1, 2 and 3) emissions (49.8+9.4= 59.2 MTCO₂e) from the project would be sequestered, even with perfect implementation.

challenges.³² In 2021-22, only 1.65 MTCO₂e was sequestered. At that rate, less than 3% of the project's total GHGs would be sequestered.³³

Third, CCS technologies are not designed to capture and store methane, a much more potent greenhouse gas emitted from oil and gas operations. Methane removal from the air presents technical challenges because “methane is 200 times less abundant in the atmosphere than CO₂,” and “[c]apturing methane would require processing a lot of air, which would require an unfeasibly large amount of energy.”³⁴ Even if methane could be effectively captured from stationary sources, CCS would still have no effect on mitigating methane emissions from mobile LNG carriers, including as “fugitives (unintentional leaks, typically from seals or equipment connections) and venting emissions (intentional emissions via dedicated outlets to atmosphere) from the onboard LNG and vapor handling plant.”³⁵

C. Expanding CCS puts Western Australia's net zero target at risk.

The Western Australian government aims to achieve net zero by 2050, for which it has committed to introducing climate change legislation to provide a framework for emissions reductions.³⁶ Since fugitive emissions from storage of fossil fuels, including from the Gorgon Project,³⁷ are captured in Australia's National GHG Inventory,³⁸ such emissions from ongoing and new petroleum projects will make it more difficult for Australia and Western Australia to meet their emissions targets. It is unclear how the state

³² Institute for Energy Economics and Financial Analysis, *The Carbon Capture Crux: Lessons Learned* (Sept. 2022) 30 <<https://ieefa.org/media/3007/download?attachment>>; see also Chevron, *Gorgon Gas Development and Jansz Feed Gas Pipeline Environmental Performance Report 2022* (4 November 2022) 45 <<https://australia.chevron.com/-/media/australia/our-businesses/documents/gorgon-gas-development-and-jansz-feed-gas-pipeline-environmental-performance-report-2022.pdf>>; see also Peter Milne, ‘Gas Giant’s \$3.2b Effort to Bury Carbon Pollution is Failing’, *The Sydney Morning Herald* (13 November 2022) <<https://www.smh.com.au/business/companies/gas-giant-s-3-2b-effort-to-bury-carbon-pollution-is-failing-20221113-p5bxtw.html>>.

³³ Given sequestration in 2021-2022 was only 1.65MT, at that rate, less than 3% of the total emissions of the project (Scope 1, 2 and 3 projections from August 2022 report, see n 30 above) would be sequestered. For the 2021-22 injection total, see Chevron (n 32) 45.

³⁴ Camille Bond, ‘Why Capturing Methane Is So Difficult’, *E&E News* (17 January 2023) <<https://www.scientificamerican.com/article/why-capturing-methane-is-so-difficult/#:~:text=But%20methane%20is%20200%20times,unfeasibly%20large%20amount%20of%20energy>>.

³⁵ Paul Balcombe, Dalia A. Heggo, and Matthew Harrison, ‘Total Methane and CO₂ Emissions from Liquefied Natural Gas Carrier Ships: The First Primary Measurements’ (14 June 2022), 56(13) *Environmental Science & Technology* 9632-9640 <<https://pubs.acs.org/doi/10.1021/acs.est.2c01383?ref=pdf>>.

³⁶ Government of Western Australia, ‘McGowan Government to Introduce Climate Change Legislation’, *Media Statements* (24 January 2023) <<https://www.mediastatements.wa.gov.au/Pages/McGowan/2023/01/McGowan-Government-to-introduce-climate-change-legislation.aspx#:~:text=The%20McGowan%20Government%20will%20introduce,below%202020%20levels%20by%202030>>.

³⁷ Tom Swann, The Australian Institute, *Gorgon-tuan Problem* (Nov. 2018) 2 <<https://australiainstitute.org.au/wp-content/uploads/2020/12/P635-Gorgon-tuan-Problem-Web.pdf>>; Senate Environment and Communications Committee, ‘Question on Notice 162’ (2018) <<https://www.aph.gov.au/api/qon/downloadestimatesquestions/EstimatesQuestion-Committeeld8-EstimatesRoundld3-PortfolioId10-QuestionNumber162>>.

³⁸ Australian Government, Department of Climate Change, Energy, the Environment and Water, *Quarterly Update of Australia's National Greenhouse Gas Inventory: September 2022* (Sept. 2022) 16, <**Error! Hyperlink reference not valid.**<https://www.dcceew.gov.au/sites/default/files/documents/nggi-quarterly-update-sept-2022.pdf>>.

will meet its targets if there is failure of or leakage from additional CCS projects in the state; or how the state could afford to mitigate leakage or other failures to meet its targets. Proposing a statutory scheme for an ineffective and uneconomical industry that would entrench fossil fuel production is inconsistent with the state’s commitment to avoiding and reducing greenhouse gas emissions.

RECOMMENDATION: The PLA Bill must proceed from a science-based position, being that petroleum activities are to be phased out, and no new petroleum fields will be developed. The legislation must not promote or encourage the use of CCS to sustain the fossil fuel industry.

II. The PLA Bill should be amended to prohibit GHG-related licensees from recovering petroleum.

The PLA Bill proposes to allow GHG-related licensees to recover petroleum for purposes of appraisal. The PLA Bill should be amended to prohibit such recovery because it would otherwise encourage the use of CCS to sustain the life of the fossil fuel industry.

The PLA Bill proposes to introduce amendments to the PGER Act and PSL Act that would permit the holder of GHG-related authorisations to “recover petroleum” in the relevant GHG licensing area to appraise a discovery of petroleum that was made as an “incidental consequence” of the authorised GHG exploration, drilling, or injection.³⁹ All these sections require written consent from the Minister prior to recovering any petroleum and include the caveat that “the petroleum does not become the property” of the GHG drilling reservation holder or permittee.

While seemingly limited on its face, given that the project proponent can only recover petroleum “for the sole purpose of appraising a discovery of petroleum,” the objective of such a recovery is typically petroleum production, which would otherwise require an entity to obtain a petroleum exploration permit and production licence under the PGER Act or PSL Act. As such, the PLA Bill appears to provide a loophole for GHG permit holders to engage in steps towards petroleum exploration and production without applying for and obtaining a petroleum exploration licence or a production licence. To the extent the goal of allowing incidental appraisal is to increase knowledge of petroleum reserves in the state to expand production, such a goal is inconsistent with the phase out of fossil fuel production required to meet Western Australia’s net zero goal, and to limit global warming to the temperature goals set out in the Paris Agreement.

RECOMMENDATION: The PLA Bill should not allow recovery of petroleum incidental to GHG-related activities, even for appraisal purposes.

III. The PLA Bill’s inadequate liability provisions put government and taxpayers at risk.

The PLA Bill does not adequately protect the public from shouldering the financial burdens associated with CCS projects. Western Australia’s experience with Chevron’s Gorgon CCS project should be heeded as a cautionary tale. The state government assumed liability for the project, and the federal government agreed to indemnify the state for 80% of the liability. This indemnification requirement has appeared in

³⁹ See proposed ss 38A(1)(g), 43DAA(1)(g), 48CAA(1)(g), and 62(3)(i) of the PGER Act, and proposed ss 28A(1)(g), 38CAA(1)(g), and 52(2)(i) of the PSL Act.

every federal budget as an unquantifiable contingent liability for at least the past decade.⁴⁰ With increasing efforts to hold greenhouse gas polluters liable for their emissions, such a requirement presents a substantial risk to both the state and federal governments.⁴¹ With the state and federal governments being liable for indemnifying the Gorgon joint venture partners against third party claims relating to stored CO₂ following closure of the carbon sequestration project, it is possible such liability would include the cost of halting them, which could be an indeterminately expensive effort. Allocating the responsibility of mitigating emissions to the project proponent would allow the government to achieve its climate goals and protect the public from liability. Three key issues with the proposed liability provisions are set out below.

A. The point in time at which the government may adopt liability for a CCS project is too soon.

The proposed closure assurance period begins on the day the “Minister is satisfied that operations for the injection of a greenhouse gas substance into the formation ceased ... (the **cessation day**)” and ends at least 15 years after the issue of the site closing certificate (the **decision day**) when the Minister is satisfied the GHGs will behave as predicted, there is no significant risk of “significant adverse impact” to the geological formation integrity, the environment, and human health or safety, and “there have not been any operations for the injection of a greenhouse gas substance into the formation.”⁴²

While appreciating that a 15-year closure assurance period is adopted from the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) (**OPGGGS Act**), with which the state seeks consistency, the proposed minimum length of the closure assurance period is out of line with the risk profile of CCS projects. Injection of CO₂ into subterranean storage (geosequestration) comes with a risk that the greenhouse gas is not contained and can escape to the atmosphere, defeating the goal of carbon capture and storage at the final step. The greatest risk of escape is during the initial injection phase.⁴³ Contributing factors can include failed well integrity, pressurisation during injection fracturing caprock, or increasing fault permeability.⁴⁴ Once injected into the storage medium (e.g., depleted oil and gas

⁴⁰ See, eg, Commonwealth of Australia, *Budget Strategy and Outlook: Budget Paper No. 1* (25 Oct. 2022) 259, <**Error! Hyperlink reference not valid.**https://budget.gov.au/2022-23-october/content/bp1/download/bp1_2022-23.pdf>.

⁴¹ See, eg, *County of Santa Cruz v. Chevron Corp.*, 17CV03242 (The City and County of Santa Cruz filed a lawsuit seeking compensatory damages, among other remedies, against 29 fossil fuel companies, alleging that their greenhouse gas pollution caused injuries to the City and County), *County of San Mateo v. Chevron Corp.*, 17CIV03222 (San Mateo County, Marin County, and the City of Imperial Beach filed separate lawsuits against fossil fuel companies seeking compensatory damages for climate impacts to their infrastructure, beaches, schools, and communities, among other remedies); *Pabai Pabai and Guy Paul Kabai v. Commonwealth of Australia*, VID622/2021 (First Nations’ leaders from the Gudamalulgal nation of the Torres Strait Islands filed suit against the Australian Commonwealth government seeking to establish a duty of care to take reasonable steps to protect Torres Strait Islanders).

⁴² *PGER Act* proposed s 69HX(1)(v).

⁴³ Heleen de Coninck and Sally M. Benson, ‘Carbon Dioxide Capture and Storage: Issues and Prospects’ (2014), 39 *Annual Review of Environment and Resources* 243-270, 255.

⁴⁴ IPCC, *Carbon Dioxide Capture and Storage*; see also Steven T. Anderson, ‘Risk, Liability, and Economic Issues with Long-Term CO₂ Storage—A Review’, 26 *Natural Resources Research* 89-112 <<https://link.springer.com/article/10.1007/s11053-016-9303-6>>.

reservoirs, saline aquifers, coal beds, deep-sea sediments⁴⁵) and retained, the security of containment improves as the retention mechanism shifts from physical obstruction (structural trapping) through capillary and solubility trapping to chemical bonding (i.e., mineralisation).⁴⁶ However, this process is only complete in decades to centuries, so the risk profile of injection only improves very gradually.

The closure assurance period is also inconsistent with expectations of industry for the lifetime of carbon sequestration projects. For example, because “[c]arbon stored ... can be released back into the atmosphere by man-made or natural events, thereby reversing the environmental benefit of the sequestration project,” Australia’s Emissions Reduction Fund requires area-based carbon sequestration projects to have a permanence period of 25 or 100 years.⁴⁷

If, which EDO recommends against, government persists with providing for transfer of liability to the state, and thereby to taxpayers, the closure assurance period should last *at a minimum* 100 years. This is consistent with the longer permanence period required by the Emissions Reduction Fund, more consistent with the *Greenhouse Gas Geological Sequestration Act 2008* (Vic) (which does not provide for assumption of liability for CCS projects by the state) and is consistent with the assurance period for CCS projects in California.⁴⁸

B. The security amount associated with a site closing certificate must cover expenses through site decommissioning and remediation.

Proposed s 69HP in the PGER Act requires that “an application for a site closing certificate must ... set out an estimate of the total costs and expenses of carrying out the program,” and “[t]he amount of the security is to equal the estimate.” To the extent the security is intended to protect the public, the “total costs and expense of carrying out the program” should include the costs of monitoring in perpetuity after the closure assurance period expires and any potentially necessary remedial actions. To ensure the estimated costs and expenses are adequate, the legislation should provide for government or independent third-party review of the estimate.

C. The PLA Bill should impose trailing liability obligations consistent with the OPGGS Act.

Proposed s 69HZ of the PGER Act would impose long-term liability on the state of Western Australia where a site closing certificate is in force and the registered holder of a GHG injection licence ceases to exist such that “damages are irrecoverable.” Proposed s 74HZ of the PSL Act reflects the same. Proposed s 69HY of the PGER Act and proposed s 74HY of the PSL Act would also require the government to indemnify “an existing person who is or has been the registered holder of the licence” for liabilities “attributable to an act done or omitted to be done in the carrying out of operations authorised by the licence in relation to the formation” that are incurred or accrued after the closure assurance period expires. These provisions are problematic for several reasons.

⁴⁵ Cheng Cao et al., ‘A Review of CO₂ Storage in View of Safety and Cost-effectiveness’, 13(3) *Energies* 600 <<https://www.mdpi.com/1996-1073/13/3/600>>.

⁴⁶ Heleen de Coninck and Sally M. Benson (n 43).

⁴⁷ Australian Government, Clean Energy Regulator, ‘Permanence Obligations’, *Emissions Reduction Fund* (11 Sept. 2020) <<https://www.cleanenergyregulator.gov.au/ERF/Choosing-a-project-type/Opportunities-for-the-land-sector/Permanence-obligations>>.

⁴⁸ California Health & Safety Code s 39741.5; California Public Resources Code s 71464.

Through the state indemnification provisions, the PLA Bill explicitly places the burden on Western Australian taxpayers in the event of liability attributable to an act done or omitted to be done in the carrying out of operations authorised by GHG injection licence where the registered licence holder ceases to exist and as incurred or accrued after the closure assurance period ends.

Moreover, the PLA Bill does not address liability issues in the context of a licensee ceasing to exist *prior* to closure. Although applicable during the lifetime of the CCS project, the requirement to maintain insurance against “expenses ... with respect to the clean-up or other remedying of the effects of the escape of petroleum or greenhouse gas substances” under s 37A of the PP Act is imposed at the discretion of the Minister and does not explicitly preclude state indemnification of costs where the insurance holder ceases to exist.

Rather than assume the risk of indeterminate liability, to protect Western Australian taxpayers and the state budget, the PLA Bill should ensure consistency with the federal legislation on which it is modelled, and adopt the comprehensive trailing liability provisions recently inserted into the OPGGS Act to allow NOPSEMA to direct former holders of GHG licences, permits, leases and authorisations to take necessary remedial actions.⁴⁹ EDO recommends that the PLA Bill include similar provisions in the Petroleum Acts.⁵⁰

In the context of the PLA Bill, the Minister should have the authority to issue remedial directions to former holders of permits, leases, licences, and authorities; persons related to the body corporate of any former holders of permits, leases, licences and authorities; persons capable of or who have significantly financially benefited from operations authorised by the title; and any person who was at any time in a position to influence the way in which a person complied with their obligations under the Petroleum Acts, if the licence holder ceases to exist or liabilities accrue after the closure assurance period expires.⁵¹ Similarly, amended s 37A of the PP Act should incorporate trailing liability to address the situation where the insurance holder ceases to exist and cannot cover the costs of clean-up or remediation after the escape of GHGs. Given that the project proponent would be able to transfer site closure certificates under proposed s 69HT of the PGER Act and proposed s 74HT of the PSL Act, it is important that government has the ability to recover expenses for the cost of monitoring specified in the pre-certificate notice as provided for in proposed s 69HW of the PGER Act and proposed s 74HW of the PSL Act,⁵² including from the former certificate-holder, persons related to the former body corporate certificate-holder; and those who have been in a position to influence compliance with the Petroleum Acts or significantly financially benefit from the activities that are the subject of the certificate.

⁴⁹ *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) (**OPGGS Act**) ss 594A-595.

⁵⁰ Other jurisdictions have also adopted trailing liability schemes in environmental statutes. The U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) allows EPA to recover clean-up costs from current owners/operators, past owners/operators at the time the pollution occurred, persons who arranged for the disposal of a hazardous substance at a site, and persons who transported a hazardous substance to the site. See 42 USC §9607(a). Similarly, the United Kingdom’s Environmental Protection Act holds those who caused or knowingly permitted contamination liable for remediation, but, if such person cannot be found, owners and/or occupiers of land regardless of knowledge of the contamination can be held liable instead. See *Environmental Protection Act 1990* (UK) s 78F.

⁵¹ See *OPGGS Act* s 595.

⁵² Proposed s 69HW of the *PGER Act* allows the state to recover “reasonable costs or expenses in carrying out the program specified in the pre-certificate notice for the site closing certificate,” which includes costs of “monitoring the behaviour of a greenhouse gas substance stored in the identified GHG storage formation concerned.” *PGER Act* s 69HP(1)(a).

Experience in Australia and other jurisdictions of petroleum producers avoiding decommissioning and rehabilitation liabilities through bankruptcy or sale of assets to an impecunious entity demonstrates the absolute necessity of requiring financial assurances for site decommissioning and remediation, whether or not the original project proponent can finance them. The burden to taxpayers of decommissioning and rehabilitation, or by extension in this context, remedial action to prevent leakage, can be extensive.

For example, after announcing its intention to cease production from the Northern Endeavour Floating Production Storage and Offtake facility and decommission the Laminaria-Corralina oil fields in 2015, Woodside Energy Ltd instead entered into a sale agreement by which both the facility and fields were ultimately transferred to a sole-director company incorporated a month before the sale agreement was entered.⁵³ After three years of concerns about its safety and environmental performance,⁵⁴ this new entity went into liquidation and the federal government was faced with more than \$300 million in decommissioning and remediation costs.⁵⁵ The government consequently introduced levies on offshore oil and gas production to recover the costs,⁵⁶ and the subsequent inquiry into the collapse recommended regulators ensure titleholders provide financial surety for their decommissioning liabilities in a form available to the government in case of a titleholder going into liquidation.⁵⁷

Similarly, in the U.S., coal companies have managed to escape some or all their clean-up costs after bankruptcy. For example, in 2016, Wyoming regulators and Arch Coal reached a settlement in bankruptcy court, earmarking only \$112 million to cover the company's self-bond⁵⁸ liabilities of over \$670 million.⁵⁹ To avoid their clean-up responsibilities, coal companies have also resorted to transferring old coal mines to smaller companies without adequate assets to cover clean-up.⁶⁰ No-one is left to complete remediation if the new owners go bankrupt—except taxpayers.⁶¹

RECOMMENDATION: The PLA Bill should ensure liability remains with the titleholder or project proponent, rather than providing for adoption of liability by the state. If, which EDO recommends against, the government persists with a scheme whereby the state may adopt

⁵³ Steve Walker, 'Review of the Circumstances that Led to the Administration of the Northern Oil and Gas Australia (NOGA) Group of Companies' (Commonwealth of Australia, June 2020) 4-5 <<https://www.industry.gov.au/sites/default/files/2020-08/review-of-circumstances-that-led-to-the-administration-of-noga-executive-summary-and-recommendations.pdf>>.

⁵⁴ Ibid.

⁵⁵ Peter Milne, 'Bill to decommission failed Timor Sea oil vessel tops \$600 million', *Sydney Morning Herald* (Sydney, 4 April 2022) <<https://www.smh.com.au/business/the-economy/bill-to-decommission-failed-timor-sea-oil-vessel-tops-600m-20220403-p5aaf2.html>>.

⁵⁶ *Offshore Petroleum (Laminaria and Corallina Decommissioning Cost Recovery Levy) Act 2022* (Cth).

⁵⁷ Walker (n 53) 9.

⁵⁸ "Self-bonds" allow companies to operate without posting any surety or collateral to cover reclamation efforts in the event they become insolvent. Jayni Foley Hein et al., 'Self-Bonding in an Era of Coal Bankruptcy', *Institute for Policy Integrity* (3 August 2016) <<https://policyintegrity.org/publications/detail/self-bonding-report>>.

⁵⁹ Patrick Rucker, 'Struggling Coal Companies Must Face Their Cleanup Costs', *Reuters* (23 February 2016) <<https://www.reuters.com/article/usa-coal-bonding/struggling-coal-companies-must-face-their-cleanup-costs-u-s-official-idUSL2N1621LN>>.

⁶⁰ 'Coal Producers Legally Must Restore Damaged Land, but Some are Dodging Obligations', *Morning Edition* (NPR, 17 October 2022) <<https://www.npr.org/2022/10/17/1129402179/coal-producers-legally-must-restore-damaged-land-but-some-are-dodging-obligation>>.

⁶¹ Ibid.

liability for CCS projects, the proposed closure assurance period should be extended to 100 years.

RECOMMENDATION: The security required with a site closing certificate should explicitly cover costs of long-term monitoring post-closure and provide for any necessary remediation. Estimates of security should be reviewed by regulators or an independent third-party to ensure their adequacy.

RECOMMENDATION: The PLA Bill should adopt trailing liability provisions modelled after the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth):

The Minister may, by written notice given to a person referred to in subsection (2A), direct the person to do one or more of the following things within the period specified in the notice:

- (a) to remove, or cause to be removed, from the vacated area all property (the **relevant property**) brought into that area by any person engaged or concerned in the operations authorised by the title;
- (b) to make arrangements that are satisfactory to the responsible Commonwealth Minister in relation to the relevant property;
- (c) to plug or close off, to the satisfaction of the responsible Commonwealth Minister, all wells made in the vacated area by any person engaged or concerned in the operations authorised by the title;
- (d) to provide, to the satisfaction of the responsible Commonwealth Minister, for the conservation and protection of the natural resources in the vacated area;
- (e) to make good, to the satisfaction of the responsible Commonwealth Minister, any damage to the seabed or subsoil in the vacated area caused by any person engaged or concerned in the operations authorised by the title;
so long as the direction is given for a purpose that relates to:
 - (f) resource management; or
 - (g) resource security; or
 - (h) decommissioning.

(2A) The persons are:

- (a) if the title ceased to be in force in part:
 - (i) the registered holder of the title; or
 - (ii) a related body corporate of the registered holder of the title; or
- (b) if the title ceased to be in force in whole or in part:
 - (i) any former registered holder of the title; or
 - (ii) a person who was a related body corporate of any former registered holder of the title at the time the title was in force; or
 - (iii) a person to whom a determination under subsection (2B) applies.

2B) The Minister may make a written determination that this subsection applies to a person if, having regard to the following matters, the responsible Commonwealth Minister is satisfied on reasonable grounds that it is appropriate to do so:

- (a) whether the person is capable of significantly benefiting financially, or has significantly benefited financially, from the operations authorised by the title;

- (b) whether the person is, or has been at any time, in a position to influence the way in which, or the extent to which, a person is complying, or has complied, with the person’s obligations under this Act;
- (c) whether the person acts or acted jointly with the registered holder, or a former holder, of the title in relation to the operations authorised by the title.

IV. Penalty provisions must reflect the serious consequences of offences and should be modernised.

A. Penalties related to unlawful injections of GHGs and “serious situations” are inadequate.

The penalties in the Petroleum Acts must be increased commensurate to the gravity of environmental impacts and made consistent across the Acts. As proposed, the penalty provisions in the PLA Bill fuel a “pay to pollute” scheme, where the minimal financial consequence of a statutory violation may be considered by operators a reasonable commercial trade-off for engaging in the prohibited activity. This undermines the purposed environmental protective purpose of the PLA Bill.

The PLA Bill proposes the following new penalties across the PGER Act and PSL Act.

Proposed Section	Violation	Penalty
PGER Act s 29(1)	Exploration of petroleum in the State in violation of petroleum exploration permit, petroleum drilling reservation, or the PGER.	Imprisonment for 5 years or a fine of \$50,000.
PGER Act s 29(3) PSL Act, s 19(2) <i>(PSL Act does not include GHG drilling reservation and applies to exploration in the adjacent area)</i>	Exploring for a potential GHG storage formation or injection site in the State in violation of a GHG exploration permit, GHG drilling reservation, or the respective Act.	Imprisonment for 5 years or a fine of \$50,000.
PGER Act s 44(2) PSL Act, 34(2) <i>(PSL Act does not include petroleum</i>	Failure to properly notify the minister of petroleum discovered in a petroleum permit area or a petroleum drilling reservation area or a potential GHG storage formation or injection site discovered in a GHG permit area or GHG drilling reservation area.	Fine of \$10,000.

<i>discovered in a petroleum drilling reservation area)</i>		
PGER Act s 44(4) PSL Act, s 34(4) <i>(PSL Act only references the GHG permit area and petroleum permit area)</i>	Failure to properly notify the minister of petroleum discovered in a geothermal permit area, geothermal drilling reservation area, GHG permit area or GHG drilling reservation area, or potential GHG storage formation or potential GHG injection site discovered in a petroleum permit area, petroleum drilling reservation area, geothermal permit area or geothermal drilling reservation area.	Fine of \$10,000.
PGER Act s 48J(2) PSL Act, s 38J(2)	Failure to properly notify the minister of petroleum discovered in a petroleum lease area or a potential GHG storage formation or injection site discovered in a GHG lease area.	Fine of \$10,000.
PGER Act s 48J(4) PSL Act, s 38J(4) <i>(PSL Act does not include geothermal lease area)</i>	Failure to properly notify the minister of petroleum discovered in a geothermal lease area or GHG lease area or a potential GHG storage formation or injection site discovered in a petroleum lease area or geothermal lease area.	Fine of \$10,000.
PGER Act s 49A PSL Act, s 39A	GHG injection operations in the State conducted in violation of a GHG injection licence or the Act (PGER). GHG injection operations in the adjacent area conducted in violation of a GHG injection licence or the Act (PSL Act).	Imprisonment for 5 years <u>or</u> a fine of \$50,000 (PGER) Imprisonment for 5 years <u>and</u> a fine of \$50,000 (PSL Act)
PGER Act ss 69HC and 69HD PSL Act, ss 74HC and 74HD	Failure of GHG licensees to comply with requirements in relation to reporting of serious situations and complying with ministerial directions.	Fine of \$10,000 for failing to report and another \$10,000 for failing to comply with ministerial directions.
PGER Act s 69HF PSL Act, s 74HF	Failure to apply for a site closing certificate after GHG injection activities have ceased.	Fine of \$10,000.

PGER Act s 69HG PSL Act, s 74HG	Failure to comply with the minister’s direction to apply for a GHG site closing certificate based on a ground for cancelling the GHG licence.	Fine of \$10,000.
PGER Act s 69HH PSL Act, s 74HH	Failure to comply with the minister’s direction to apply for a GHG site closing certificate where the GHG injection licence is tied to a petroleum retention lease or petroleum production licence and the lease or licence ceases to be in force.	Fine of \$10,000.
PSL Act s 150	The penalty for late payment of royalties is “calculated at the rate of one-third of 1% per day on the amount of royalty from time to time remaining unpaid, to be computed from the time when the royalty became payable until it is paid” (PSL Act, s 150(1)). If a fee is not paid, an additional amount is payable based on a rate of one-third of 1% per day on the amount of the fee from time to time remaining unpaid, to be computed from the time when the fee became payable until it is paid” (PSL Act s150(1A)).	

The PLA Bill does not propose any new penalties in the PP Act, but existing penalties are similarly inadequate.

Section	Violation	Penalty
37	Waste or escape of any substance from a pipeline.	Fine of \$10,000.
25(2)	Failure to comply with the Minister’s direction to change the route or position of a licensee’s pipeline.	A fine of \$50,000 or imprisonment for 5 years, or both.
36A	Failure to operate a pipeline in a proper and workmanlike manner.	Fine of \$10,000.
38(b)	Failing to maintain a pipeline in good condition and repair.	Fine of \$10,000.
40	Failure to construct pipeline in a manner that does not affect or impede reasonable use of those waters and take reasonable steps to avoid pollution of such waters.	Fine of \$10,000.

These penalties are grossly inadequate and unlikely to provide an effective deterrent, especially in light of the significant earnings made by industry players most likely to take advantage of CCS. For example, Chevron reported full-year 2022 earnings of \$35.5 billion,⁶² and Woodside Energy reported annual net profit after tax of \$6.5 billion.⁶³ The penalties are also inconsistent with those imposed for damaging or

⁶² Chevron, ‘Chevron Announces Fourth Quarter Results’ (Press Release, 27 January 2023) <<https://www.chevron.com/-/media/chevron/stories/documents/4Q22-earnings-press-release.pdf>>.
⁶³ Woodside Energy, *Annual Report 2022* (27 February 2023) 5 <[https://www.woodside.com/docs/default-source/investor-documents/major-reports-\(static-pdfs\)/2022-annual-report/annual-report-2022.pdf?sfvrsn=52bf2032_7](https://www.woodside.com/docs/default-source/investor-documents/major-reports-(static-pdfs)/2022-annual-report/annual-report-2022.pdf?sfvrsn=52bf2032_7)>.

interfering with pipelines or petroleum or GHG operations, punishable by imprisonment of up to 10 years (PP Act s 65; PSL Act s 124B).

Further, such low penalties are disproportionate to the environmental impacts described in Section I.B that they are meant to disincentivise.

Not only are the penalties inconsequential, but they differ across the Petroleum Acts for similar violations in important instances. For example, as noted above, proposed s 49A of the PGER Act would punish unlawful GHG injections by “imprisonment for 5 years **or** a fine of \$50,000.” By contrast, proposed s 39A of the PSL Act provides that GHG injection operations in an adjacent area without a licence or in contravention of the Act would be punishable by “imprisonment of 5 years **and** a fine of \$50,000.” GHG operations necessarily include those in an adjacent area.

A similar discrepancy exists with regards to unlawful petroleum exploration. The amended s 29(1) in the PGER Act sets a penalty of imprisonment for 5 years or a fine of \$50,000 for petroleum exploration that is not in accordance with a petroleum exploration permit or drilling reservation or the Act, removing the option to issue both penalties. Section 19 in the PSL Act was not similarly amended and still allows punishment of petroleum exploration in an adjacent area in contravention of a permit or the Act with *both* imprisonment of 5 years and a \$50,000 fine.

There should not be these kinds of inconsistencies in penalties associated with what are essentially the same unlawful conduct across the Petroleum Acts because penalties should be fixed according to gravity of impact.

B. Penalty unit approach would allow penalties to be easily updated.

A preferable mechanism for avoiding a decrease in the real value of penalty provisions would be to amend the Petroleum Acts to introduce a penalty unit system. Penalty unit systems are used in other offence regimes in Western Australia,⁶⁴ and are widely used across Australia for environmentally protective purposes in the context of regulating petroleum production.⁶⁵ A penalty unit scheme allows for all penalties to be swiftly and easily updated, ensuring the legislation to which the scheme applies remains effective and current while minimising the work required.

RECOMMENDATION: All of the proposed penalty provisions should be increased by at least a factor of 10, to reflect the potentially catastrophic consequences of the prohibited activities. The current penalties in the PP Act identified above related to leaks and improper pipeline operation or routing should also be increased.

V. The PLA Bill must ensure public participation throughout the permitting process.

A. Public participation in decision-making processes supports transparency, accountability, and trust in decisions.

Public participation is essential to ensure transparency of government decision-making, aid accountability, and support public trust in the institutions of government. The Petroleum Acts should adopt the kinds of rights to participate in decision-making as those enshrined in

⁶⁴ See, for example: *Road Traffic (Authorisation to Drive) Act 2008* (WA); *Road Traffic Act 1974* (WA); *Road Traffic (Vehicles) Act 2012* (WA); *Road Traffic Code 2000* (WA).

⁶⁵ See, for example: *OPGGS Act*, which refers to penalty units set under the *Crimes Act 1914* (Cth); *Petroleum Act 1984* (NT); *Petroleum Act 1923* (Qld); *Petroleum (Onshore) Act 1991* (NSW).

environmental protection legislation, such as the EP Act. In considering reforms to the Petroleum Acts to modernise the manner in which the right or licence to undertake activities is granted, opportunities for public notice of applications and participation in the decision-making process should be included.

Genuine public participation is a process, not a single event, and it should begin as early as possible in the formulation of the proposal at issue.⁶⁶ Engaging in consultation early requires decision-makers to refrain from taking any formal, irreversible decisions prior to the commencement of consultation, such as making large investments in the direction of one option or committing to a certain outcome, including those agreed with another arm of government.⁶⁷ Consultation also requires decision-makers to seek meaningful input at key points throughout the lifecycle of the decision-making process, and potentially after a decision has been made and is being implemented.⁶⁸

B. The PLA Bill should be amended to require public notice and comment opportunities throughout the permitting process.

To ensure adequate public participation, the PLA Bill must ensure that any relevant provisions in the Petroleum Acts and their enabling regulations that provide for the grant of a GHG or petroleum authorisation include public notice and comment opportunities. These provisions include ss 32, 37, 37B, 42, 43C, 48B, 48BC, 48CB, 48CD, 48G, 54, 60, 61A, 65, 69E, and 69HQ in the PGER Act, ss 22, 27, 27A, 32, 38B, 38BC, 38CB, 38CD, 38G, 44, 50, 51A, 55, 60E, and 65 in the PSL Act, and ss 9 and 10 in the PP Act.

The public comment process should involve all interested and affected parties (IAPs), remain open for long enough to allow IAPs to comprehensively review relevant materials and engage with technical documents, and require the decision-maker to take into account and respond to submitted comments. To this end, the Petroleum Acts and any enabling regulations must provide at least 60 days for public comment, clearly explain how submissions can be made, identify appropriate ways to notify stakeholders, and require publication of all materials necessary for IAPs to understand the proposed project's impacts, among other details. To ensure that such comments are given appropriate consideration, the Minister should be required to take public comments into consideration when making any decisions in respect of an application.

C. The PLA Bill should provide for merits review of authorisations granted under the Petroleum Acts.

In addition to third party enforcement rights, the Petroleum Acts should provide for rights of interested and affected parties to seek merits review of authorisations granted under the Acts. Merits review is essential to ensuring that each decision made is correct and appropriate. It also has a “broader, longer-

⁶⁶ UN Human Rights Council, *Free, prior and informed consent: a human rights-based approach – Study of the Expert Mechanism on the Rights of Indigenous Peoples*, UN Doc A/HRC/39/62 (10 August 2018) para 21.

⁶⁷ Office of the UN High Commissioner for Human Rights, *Guidelines for States on the effective implementation of the right to participate in public affairs* (20 July 2018) para 70
<https://www.ohchr.org/sites/default/files/Documents/Issues/PublicAffairs/GuidelinesRightParticipatePublicAffairs_web.pdf>.

⁶⁸ See *Free, prior and informed consent*, UN Doc A/HRC/39/62 (n 66) para 15.

term objective of improving the quality and consistency of the decisions of primary decision makers and ensures that the openness and accountability of decisions made by government are enhanced.”⁶⁹

Merits review rights are available in other statutory regimes governing titles and land use. The EPBC Act, for example, allows merits review in relation to the grant of certain permits.⁷⁰ Victoria’s *Planning and Environment Act 1987* likewise provides merits review – s 82(1) states that “[a]n objector may apply to the Tribunal for review of a decision of the responsible authority to grant a permit.”⁷¹ The *Water Management Act 2000* (NSW) lists various decisions made by the minister which can be appealed to the Land and Environment Court, including grants of access licences and designated approvals, provided the appellant objected to the grant of such approvals before appealing.⁷² Part VII of Western Australia’s own *Environmental Protection Act 1986* also provides for appeal to the Minister for the Environment, by any aggrieved person, of a wide range of decisions made under that Act.

The PLA Bill should grant the right to bring a merits review action broadly to all aggrieved persons. Every decision to grant or refuse an authorisation under the Petroleum Acts should be subject to merits review. In addition, a merits review application should suspend all activities to be taken under the authorisation while such an application is pending.

RECOMMENDATION: The PLA Bill should require the Minister to provide public notice of any applications made under the Petroleum Acts related to petroleum exploration and production, as well as GHG exploration, transport, and storage, institute a 60-day comment period for each application, and take into account and respond to all public comments submitted in determining whether to grant such applications. The Minister should be required to take public comment into consideration when making any decision in respect of an application.

RECOMMENDATION: The PLA Bill should provide for merits review of authorisations granted under the Petroleum Acts.

VI. Third party enforcement rights would assist with DMIRS’ regulatory burden and ensure accountability.

The current system of enforcement under Petroleum Acts precludes third parties from initiating proceedings for breach of the provisions of Acts, despite many offences concerning injury to the environment and natural resources of WA, which are public assets. This option should be available where community groups and members of the public are prepared to undertake enforcement proceedings in the public interest where proponents have breached the Petroleum Acts or associated

⁶⁹ Kristen Connell, *Merits review critical to accountable government decision making* (16 December 2022) <https://www.lawcouncil.asn.au/media/media-releases/merits-review-critical-to-accountable-government-decision-making?utm_source=miragenews&utm_medium=miragenews&utm_campaign=news>.

⁷⁰ Independent Review of the EPBC Act, *Decision Making* (20 November 2019) <<https://epbcactreview.environment.gov.au/resources/decision-making#:~:text=Merits%20review,-The%20Administrative%20Appeals&text=permits%20for%20activities%20affecting%20listed,would%20contravene%20a%20conservation%20order>>.

⁷¹ *Planning and Environment Act 1987* (VIC) s 82(1).

⁷² *Water Management Act 2000* (NSW) s 368.

regulations, and authorities responsible for compliance and enforcement, such as DMIRS, fail or refuse to act.⁷³

The *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) and environmental protection legislation in New South Wales, Victoria, and South Australia contain provisions that provide for third party enforcement with either open or expanded standing for particular proceedings. In EDO's view, there are many benefits associated with the inclusion of a third-party enforcement provision in the Petroleum Acts to provide an avenue for private parties to commence court proceedings for breaches. These include:

- **Sharing the regulatory burden:** removing the burden on the Minister and DMIRS to bring enforcement action;
- **Public participation and access to justice:** providing a pathway for the public to access justice and ensure statutory and regulatory compliance;
- **Accountability:** ensuring that regulators and decision-makers discharge their functions according to legislative requirements, as well as holding them accountable. In addition, providing an important safeguard in the event that a regulator or decision-making authority fails to act; and
- **Transparency:** ensuring actions and decisions of regulators, decision-making authorities and proponents are transparent.

EDO recommends that provisions providing for third party enforcement should be included in the PLA Bill. In particular, provisions should be included that enable eligible third parties to trigger investigations by regulators into compliance with conditions on titles, licences, permits, authorisations and approved environment plans; and investigations into the commission of offences under the Petroleum Acts; and to commence enforcement action for violations and inaction on the part of the Minister or DMIRS.

Such a provision would also provide the public with the opportunity to pursue court proceedings for a breach of the Petroleum Acts, such as for pollution or environmental harm offences.

We note that existing procedural safeguards, including for striking out claims, as well as the inherent expenses and costs of litigation, are sufficient to avoid any misplaced concerns that such an amendment

⁷³ International law supports the obligation of Western Australia to provide effective remedies in environmental matters. For example, the United Nations Environment Programme's guidelines on implementation of Principle 10 of the Rio Declaration on Environment and Development note that states should "ensure that the members of the public concerned have access to a court of law or other independent and impartial body or administrative procedures to challenge any decision, act or omission by public authorities or private actors that affects the environment or allegedly violates the substantive or procedural legal norms of the State related to the environment" and "provide broad interpretation of standing in proceedings concerned with environmental matters with a view to achieving effective access to justice." United Nations Environment Programme, *Guidelines for the Development of National Legislation on Access to Information, Public Participation and Access to Justice in Environmental Matters* (Report, 26 Feb. 2010) Guidelines 17-18
<<https://wedocs.unep.org/bitstream/handle/20.500.11822/11182/Guidelines%20for%20the%20Development%20of%20National%20Legislation%20on%20Access%20to%20information%2c%20Public%20Participation%20and%20Access%20to%20Justice%20in%20Environmental%20Matters.pdf?sequence=1&isAllowed=y>>.

would “open the floodgates” to third party enforcement efforts. The experience with third party enforcement under the EPBC Act and similar state legislation has proven such concerns unfounded.

RECOMMENDATION: The PLA Bill should amend the Petroleum Acts to allow third party enforcement, modelled on s 9.45 of the *Environmental Planning and Assessment Act 1979* (NSW):

(1) Any person may bring proceedings in the Court for an order to remedy or restrain a breach of this Act, whether or not any right of that person has been or may be infringed by or as a consequence of that breach.

(2) Proceedings under this section may be brought by a person on his or her own behalf or on behalf of himself and on behalf of other persons (with their consent), or a body corporate or unincorporated (with the consent of its committee or other controlling or governing body), having like or common interests in those proceedings.

(3) Any person on whose behalf proceedings are brought is entitled to contribute to or provide for the payment of legal costs and expenses incurred by the person bringing the proceedings.

RECOMMENDATION: Alternatively, the PLA Bill should provide expanded standing for enforcement of the Petroleum Acts, modelled on sections 475 and 487 of the EPBC Act:

(3) A person has standing to bring a proceeding to Court for an order to remedy or restrain a breach of this Act if:

(a) the person is an Australian citizen or ordinarily resident in Western Australia;

and

(b) at any time in the two years immediately before the breach, the person engaged in a series of activities in Western Australia for protection or conservation of, or research into, the environment.

VII. The PLA Bill must be accompanied by implementing regulations.

The application requirements for authorisations in the Petroleum Acts are not comprehensive enough to ensure that the lifecycle impacts of CCS projects will be adequately evaluated and managed. The government must issue regulations to address the lack of detailed instructions in the overarching statutes on application requirements as “necessary” to managing GHG operations under the Petroleum Acts.⁷⁴

⁷⁴ Section 152 of the *PSL Act* notes that the Governor can make regulations that are “necessary or convenient to be prescribed for carrying out or giving effect to this Act.” Section 153 of the *PGER Act* states the same. The PLA Bill adds “GHG operations” to the matters for which regulations can be issued. *PGER Act* s 153(2)(ba); *PSL Act*, s 152(2)(ba). Amended ss 152(2)(f) and (g) of the *PSL Act* and amended ss 153(2)(f) and (fa) of the *PGER Act* also permit the Governor to issue regulations on “the prevention of the escape, of ... greenhouse gas substances” and “the clean-up or other remedying of the effects of the escape of ... greenhouse gas substances.” Amended s 152(2)(h) of the *PSL Act* and amended s 153(2)(g) of the *PGER Act* provide for regulations on prevention of

Proposed s 51 of the PGER Act and proposed s 41 of the PSL Act list the requirements for GHG injection licence applications. These applications

(c) shall be accompanied by **particulars of the proposals of the applicant for work and expenditure** in respect of the area comprised in the blocks specified in the application; and

(ca) must, in the case of an application for the grant of a GHG injection licence, **specify the source, volume and composition of the greenhouse gas substance to be injected and stored**; and

(d) may set out any other matters that the applicant wishes the Minister to consider.⁷⁵

This section provides very limited guidance on what the “particulars of the proposals” entail and, without more detailed implementing regulations, affords the Minister excessive discretion in approving applications. Regulations would ensure that any approvals are predicated on complete information about the project’s risks. To that end, they should clearly and comprehensively instruct applicants on what they need to submit in relation to the different phases of the CCS project – that is, capture, transport, injection, storage, and closure. For example, the regulations should specify safety distances from CO₂ pipelines and standards for pipeline construction.⁷⁶ With respect to leakage from storage and after closure, the regulations should state that applicants must identify primary and secondary reservoir entrapments for CO₂, evaluate the potential for events that can trigger natural releases of CO₂, such as magmatic fluid or seismic activity, assess the potential for CO₂ migration along unsealed fault and fracture zones, and evaluate the potential for active and abandoned wells at storage sites to transport CO₂ to the surface.⁷⁷ Moreover, applicants should be required to disclose if they plan to use the captured carbon for enhanced hydrocarbon recovery.

Moreover, proposed s 64 of the PSL Act lists the application requirements for a pipeline licence, but they are focused on logistical details, such as the design and route of the pipeline and accompanying infrastructure. Applicants are not explicitly required to provide information related to, for example, how environmental risks will be systematically evaluated or identify feasible control measures to eliminate or at least minimise the likelihood or impacts of accident events. Instead, it would seem these key details would only be disclosed if the applicant considers them among “other matters that the applicant wishes the Minister to consider.”⁷⁸ Such crucial information about a CCS project should be explicitly required through regulation rather than left as a voluntary part of the application.

The mass poisoning of residents in Satartia, Mississippi after a CO₂ high-pressure pipeline rupture in 2020 demonstrates why Western Australia needs comprehensive regulations around transporting CO₂.

damage to GHG storage formations or injection sites. Section 67 of the *PP Act* provides that the Governor can make regulations for “the construction, maintenance and operation of pipelines” and “the escape of substances from a pipeline.”

⁷⁵ *PGER Act* s 51 (emphasis added).

⁷⁶ See, e.g., Joris Koornneef et al. (n 14).

⁷⁷ J. L Lewicki et al., *Natural and Industrial Analogues for Release of CO₂ from Storage Reservoirs: Identification of Features, Events, and Processes and Lessons Learned* (February 2006), available at <**Error! Hyperlink reference not valid.**<https://www.osti.gov/servlets/purl/891824>>.

⁷⁸ *PSL Act* s 64(6).

Hundreds of residents were evacuated, and 46 people were hospitalised.⁷⁹ Neither the pipeline operator nor hospital staff were prepared to effectively manage the impacts of a CO₂ pipeline rupture.⁸⁰ The rupture itself released 31,407 barrels of CO₂, and reconnecting the damaged pipeline section led to the release of another 41,000 barrels.⁸¹ The dangers of transporting CO₂ through pipeline networks stem from the “intense pressures” and “extremely low temperatures” involved in shipping CO₂, according to the Center for International Environmental Law and the Environmental Working Group.⁸² These conditions mean “explosive decompression of a CO₂ pipeline releases more gas, more quickly, than an equivalent explosion in a gas pipeline,” and “even a modest rupture can spread freezing CO₂ over a wide area within seconds.”⁸³ The condensed CO₂ can also become corrosive to steel in the pipelines when impurities such as hydrogen sulphide, nitrogen dioxide, or even variations of water, are present.⁸⁴

The Petroleum Pipelines (Management of Safety of Pipeline Operations) Regulations 2010 were repealed last March, and the Petroleum (Submerged Lands) (Pipelines) Regulations 2022 do not currently address GHG emissions. To avoid a Satartia incident in Western Australia, regulations must be issued pursuant to amended s 152 of the PSL Act and amended s 153 of the PGER Act that ensure pipelines transporting CO₂ can withstand the high pressure, low temperatures, and potential corrosiveness to which they will be subjected and that pipeline operators have plans in place for ruptures.

VIII. The Minister should not be permitted to approve or renew authorisations where the proponent has demonstrated previous non-compliance with the Petroleum Acts.

The PLA Bill would permit the Minister to grant authorisations and renewals under “special circumstances” even where the applicant has not complied with the Petroleum Acts. For example, proposed s 64P(2)(b) of the PSL Act seems to give the Minister the ability to grant a pipeline licence even if the applicant has not complied with GHG injection license conditions and/or the Act or regulations where the Minister considers “special circumstances” exist.⁸⁵ Similarly, proposed s 64G of the PSL Act gives the Minister the ability to grant a pipeline licence to a petroleum licensee “in relation to the construction, in the adjacent area, of a petroleum pipeline for the conveyance of petroleum recovered in the petroleum area,” even where the licensee has not complied with conditions in the petroleum production licence or the Act or regulations. Proposed s 64I provides the same exception for an application for a pipeline licence by a petroleum licensee in relation to construction of a greenhouse gas pipeline in the adjacent area for conveyance of GHGs within a petroleum licence area or conveyance of

⁷⁹ Dan Zegart, ‘The Gassing of Satartia’, *Huffpost* (26 Aug. 2021), <**Error! Hyperlink reference not valid.**https://www.huffpost.com/entry/gassing-satartia-mississippi-co2-pipeline_n_60ddea9fe4b0ddef8b0ddc8f>.

⁸⁰ *Ibid.*

⁸¹ *Ibid.*

⁸² Dana Drugmand and Caroll Muffett, ‘Confronting the Myth of Carbon-Free Fossil Fuels: Why Carbon Capture is not a Climate Solution’ (22 Apr. 2021) <<https://www.ewg.org/news-insights/news/confronting-myth-carbon-free-fossil-fuels-why-carbon-capture-not-climate>>.

⁸³ *Ibid.*

⁸⁴ Dr. Steven Jansto, *Risks and Potential Impacts from Carbon Steel Pipelines in Louisiana Transporting and Processing Variable Produced Gases such as Carbon Dioxide (CO₂), Hydrogen (H₂), Methane (CH₄)*.

⁸⁵ Section 64P relates to applications by parties who are not the GHG licensees for construction of a greenhouse gas pipeline under s 64D(1)(a) and (b).

GHGs from outside the petroleum licence area to inside the area. Proposed s 48G of the PGER Act allows the Minister to grant a renewal of a GHG retention lease under “special circumstances” that justify overlooking non-compliance with lease conditions. Other provisions granting the Minister discretion to overlook non-compliance include PGER Act ss 42(1)(b)(ii) and 65(2)(b), PSL Act s 32(1)(b), proposed s 38G(1B)(b) and (2)(c), s 55(2)(b), proposed s 64J(3)(b), proposed s 64N(2)(b), and proposed s 64O(2)(b), and PP Act s 23(3).

RECOMMENDATION: The Minister should not be granted discretion to overlook non-compliance with approval conditions and/or the Petroleum Acts in determining whether to grant additional authorisations or renewals. Alternatively, if the PLA Bill maintains such an exception, there must at the very least be regulations setting out what “special circumstances” might entail; providing the opportunity for public comment before any the discretion to overlook non-compliance is exercised; and requiring the Minister to give reasons for their decision.