



***SUBMISSION TO THE INDEPENDENT SCIENTIFIC
PANEL INQUIRY INTO HYDRAULIC FRACTURE
STIMULATION IN WESTERN AUSTRALIA 2017***

19 MARCH 2018

TABLE OF CONTENTS

1.	ABOUT THE ENVIRONMENTAL DEFENDER’S OFFICE WA (Inc)	4
2.	GLOSSARY	5
3.	INTRODUCTION AND KEY THEMES	7
4.	EXECUTIVE SUMMARY OF RECOMMENDATIONS	13
5.	BACKGROUND TO FRACKING IN WA	18
6.	IMPACTS ASSOCIATED WITH FRACKING	21
6.1	Air Impacts	21
6.1.1	Air pollution	21
6.1.2	Greenhouse Gas Pollution	21
6.2	Water Impacts	22
6.2.1	Quality – pollution and emissions to water	22
6.2.2	Quantity – availability for community and environmental uses	23
6.3	Impacts to Land	24
6.3.1	Terrestrial Environment	24
6.3.2	Biodiversity	24
6.4	Aboriginal Heritage Impacts	25
6.5	OTHER Community Impacts	25
7.	REGULATORY MECHANISMS TO MITIGATE OR MINIMISE RISKS FROM FRACKING	27
7.1	Regulatory Regime – PAGER Act	27
7.1.1	Agencies	27
7.1.2	Legislation	27
7.3	Regulatory Regime - Issues and Recommendations	36
7.3.1	Regulatory capture	36
7.3.2	Regulatory standards	36
7.3.3	Inadequate public participation and transparency	42
7.3.4	Failure to address environmental impacts	44
7.5	ENVIRONMENTAL PROTECTION ACT 1986 (WA)	50
7.5.1	Overview of the EP Act	50
7.5.2	EP Act - Part IV – Environmental Impact Assessment Process	50
7.5.3	Part IV - Regulatory Issues and Recommendations	52
7.5.4	Part V - Regulatory Regime, Issues and Recommendations	61
7.6	Water	66
7.6.1	Allocation	66

7.6.2	Quality.....	67
7.6.3	Exemption from Commonwealth ‘Water Trigger’	67
7.8	Contaminated Sites Act 2004.....	69
APPENDIX 1 – ENVIRONMENT PLAN REQUIREMENTS.....		71
APPENDIX 2 – EP ACT – PART IV – SUMMARY OF EIA PROCESS		72

1. ABOUT THE ENVIRONMENTAL DEFENDER'S OFFICE WA (Inc)

The Environmental Defender's Office WA (Inc) is a not-for-profit, non-government, community legal centre specialising in public interest environmental law. We empower the community to protect the environment through law.

We provide community groups and individuals with:

- Free or low-cost legal advice and representation;
- Assistance in promoting law reform; and
- Community legal education.

We are experienced in advising members of the community on the regulation of fracking and other development that has a significant impact on the environment.

For more information, please visit our website at <http://www.edowa.org.au>.

Submitted to:

The Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia

By email: info@frackinginquiry.wa.gov.au

For any questions related to this submission, please contact:

Declan Doherty, Principal Solicitor, EDOWA

[REDACTED]

[REDACTED]

2. GLOSSARY

ALARP – means as low as reasonably practicable.

Contaminated Sites Act – means *Contaminated Sites Act 2004 (WA)*

DMA – means decision-making authority

DMIRS – means the Department of Mines, Industry Regulation and Safety

DPLH – means the Department of Planning, Lands and Heritage

DWER – means the Department of Water and Environment Regulation

EDOWA – means the Environmental Defender’s Office WA (Inc)

EIA – means environmental impact assessment

EP Act – means the *Environmental Protection Act 1986 (WA)*

EP Guidelines – means the *Guideline for the Developmental of Petroleum and Geothermal Environment Plans in Western Australia*

EP Regulations – means the *Environmental Protection Regulations 1987 (WA)*

EPA – means the Environmental Protection Authority

EPBC Act – means the *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*

ERF – means Emissions Reduction Fund

ESD – means ecologically sustainable development

FMP – means Field Management Plan

Fracking – means hydraulic fracture stimulation

Fracking Inquiry – means Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia 2017

Government – means WA State Government

HRC – means the Human Rights Council

Minister – means the Environment Minister

NDCs - means nationally determined contributions

NT Fracking Inquiry – means the Scientific Inquiry into Hydraulic Fracturing in the Northern Territory

PAGER Act – means the *Petroleum and Geothermal Energy Resources Act 1967 (WA)*

PAGER Administration Regulations – means *the Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2015* (WA)

PAGER Environment Regulations – means the *Petroleum and Geothermal Energy Resources (Environment) Regulations 2012* (WA)

PAGER Safety Regulations – means the *Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2015* (WA)

PDWSAs – means proclaimed public drinking water source areas

WMP – means Well Management Plan

3. INTRODUCTION AND KEY THEMES

Background to Fracking Inquiry

On 5 September 2017, the Western Australian (WA) State Government (**Government**) announced a permanent ban on fracking in the Perth Metropolitan, Peel and South-West regions of WA, and a moratorium for the rest of the State until 20 June 2020.¹

The Government also formed an independent scientific panel (**the Panel**) to inquire into the effects of the fracking process on the WA environment through the Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia 2017 (**Fracking Inquiry**).² The Fracking Inquiry's Terms of Reference state the Inquiry will "undertake an assessment and report on the potential impacts arising from the implementation of hydraulic fracture stimulation (fracking) on the onshore environment of Western Australia, outside of the Perth metropolitan, Peel and South-West regions".³ Specifically, the Inquiry will:

1. Identify environmental, health, agricultural, heritage and community impacts associated with the process of hydraulic fracture stimulation in Western Australia, noting that impacts may vary in accordance with the location of the activity;
2. Use credible scientific and historical evidence to assess the level of risk associated with identified impacts;
3. Describe regulatory mechanisms that may be employed to mitigate or minimise risks to an acceptable level, where appropriate;
4. Recommend a scientific approach to regulating hydraulic fracture stimulation; and
5. Hold community meetings in Perth, and the Midwest and Kimberley regions.⁴

Context and overview of EDOWA's submission

EDOWA is making this submission from the perspective of a community legal centre with over 20 years' experience in matters of public interest environmental law and the regulation of the resources sector.

While we do not purport to possess technical or scientific expertise in relation to fracking, we do recognise that there is a significant body of scientific literature highlighting the risks and impacts of fracking on the environment, human health, communities and Aboriginal heritage that needs to be taken into account in the legal and regulatory process. Members of the community also regularly raise with us their concerns with the fracking process and what it may mean should the moratorium be lifted.

Therefore, this submission focuses on the third aspect of the terms of reference (regulatory mechanisms that may be employed to mitigate or minimise the risks of fracking) and highlights issues regarding the adequacy of WA's current regulatory regime that would apply to for fracking activities should the moratorium be lifted.

¹ *State Government halts fracking in the exploration and production of WA's onshore gas* (5 September 2017) Government of Western Australia Department of Mines, Industry Regulation and Safety <<http://dmp.wa.gov.au/News/State-Government-halts-fracking-22745.aspx>>.

² *Scientific Inquiry into Hydraulic Fracture Stimulation in Western Australia: Background and Issues Paper* (3 November 2017) Fracking Inquiry WA, 1 <<https://frackinginquiry.wa.gov.au/sites/default/files/Scientific%20Inquiry%20into%20Hydraulic%20Fracture%20Stimulation%20in%20WA%20-%20Background%20Paper%20-%203%20November%202017.pdf>> ('*Background and Issues paper*').

³ *Terms of Reference*, Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia 2017 <<https://frackinginquiry.wa.gov.au/terms-reference>>.

⁴ *Ibid.*

Our submission draws on a range of scientific literature and credible secondary sources referring to scientific material that is referenced throughout this submission. The purpose of doing so is to recognise the risks of fracking and the need for those risks to be managed through the strongest regulation possible, building on the successes and failures of other domestic and international jurisdictions and applying fundamental environmental principles such as the precautionary principle.

Our submission highlights the deficiencies in the current PAGER Act (and associated regulations) regime as it would apply to the assessment and regulation of fracking. In our view, significant changes are required to bring the PAGER Act regime up to contemporary environmental and regulatory standards. In addition to this we highlight the importance of the EP Act being applied consistently to all fracking activities (rather than having “exemptions” apply to certain provisions, or a deferral of assessment to other regulators). We emphasise the importance of applying the principles of ESD contained within the EP Act,⁵ including the precautionary principle, the principle of intergenerational equity and the principle of the conservation of biological diversity and ecological integrity, to the regulation of fracking activities in WA and its inherent risks.

Precautionary Principle

As stated above, we are not scientific experts. However we have read a large range of scientific material in preparing this submission and in previously advising clients in respect of fracking. What is clear to us is that there is a substantial amount of scientific uncertainty as to the environmental impacts from fracking and whether it can be regulated appropriately.

Environmental law recognises and deals with uncertainty through the precautionary principle. In the WA EP Act, it is one of the key principles of that Act:

1. *The precautionary principle*

Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, decisions should be guided by —

- (a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and
- (b) an assessment of the risk-weighted consequences of various options.

⁵ *Environmental Protection Act 1986 (WA)*, s 4A(‘EP Act’).

In other words, the precautionary principle provides that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.⁶

For the precautionary principle to apply, there must be a threat of serious or irreversible damage and a lack of scientific certainty as to how the threat can be managed. We outline numerous threats from fracking below. We also outline how it is presently uncertain in the WA regulatory regime how these threats can or will be managed (particularly in the PAGER Act and its interaction with the EP Act).

Professor Alan Randall, advocates for the application of a “slow down and learn” precautionary approach to the risk management of coal seam gas (CSG) operations⁷ given they “raise important issues of human and ecosystem health and compatibility with agriculture, rural communities and the environment”.⁸ Specifically he states that:

“faced with a novel intervention that presents extraordinary risk, uncertainty and/or gross ignorance about future consequences, intuition suggests that we can stay the course and attend later to harmful outcomes in the cases where they occur, or we can try to get ahead of the game by taking precautions before the full potential for harm has been characterised”.⁹

The development of a fracking industry in WA would be a “novel intervention”. In our view, given that the significant risks of fracking could lead to long term intergenerational impacts, a precautionary approach would dictate at least extending the moratorium until improvements can be made to the PAGER Act and EP Act. The precautionary approach in this case also mandates a shift away from a “regulatory efficiency” approach in the implementation of these Acts, to one where clear and transparent limits and environmental outcomes are set to protect environmental and human receptors.

Recommendation: The moratorium on fracking in those parts of WA where the ban is not in place should remain in place indefinitely, or otherwise until the regulatory gaps identified in this submission are dealt with by legislation.

Throughout this submission we make numerous recommendations for regulatory reform in the event that the moratorium is lifted. However, this should not be taken to mean that we support the lifting of the moratorium. Rather, we consider that the WA government should be reducing its reliance on greenhouse gas emitting industries and instead supporting investment in renewable energy.

But, in our view the moratorium should remain until, at the very least, the issues raised in this submission are addressed.

PAGER Act – Objects

Related to our comments above about the precautionary principle, we consider that the PAGER Act should also be amended in a way that prioritises ecologically sustainable development (ESD) as its primary aim. The

⁶ Jacqueline Peel, *The Precautionary Principle in Practice* (Federation Press, 2005).

⁷ Alan Randall, ‘Coal seam gas –Toward a risk management framework for a novel intervention’ (2012) 29 *Environment and Planning Law Journal* 152, 157.

⁸ Ibid 152.

⁹ Ibid 157.

aim of ESD is to achieve a level of development that meets the needs of the present without compromising the ability of future generations to meet their own needs.¹⁰

The principles that comprise ESD are set out as objects in the EP Act¹¹ and the PAGER Environment Regulations. While they are set out in the EP Act, they should also be set out and required to be given effect to in the PAGER Act given that decisions under that Act impact the environment and presently are not always regulated under the EP Act, as outlined below.

Recommendation: The principles of ecologically sustainable development, as set out as objects in the EP Act and the PAGER Environment Regulations, should be included as objects of the PAGER Act itself.

The principles of ESD then need to be consistently and rigorously applied to all decisions in respect of fracking.

Importance of public participation and transparency

Throughout our submission we also highlight the importance of transparency and public participation in the decision making process, and where this is currently lacking within the PAGER Act regime.

An important component of democratic engagement in environmental decision making are the rights provided to the community to participate in decision making about development and environmental matters relevant to them. There are various forms that this decision making can take, whether at the formative or implementation stages¹². The need for public participation in decision making is a crucial part of the development process, that has also been recognised in international law¹³.

As highlighted in more detail below, the PAGER Act and related regulations as they would be applied to fracking severely limit the extent to which the community can participate in the regulatory process or even understand the impacts that a particular fracking proponent might be having on their land. Much of this is left to industry self-regulation and the discretion of the proponent to be transparent with the community.

The protection of the environment is something that benefits the public¹⁴. According to Lindsay and Jurieth:

“environmental democracy requires just access to, and protection of, the ecosystems upon which communities depend for survival and vitality. Biodiversity, air, water and food, protection against climate change, protection of land, and the ecosystem services that nature provides are essential for current and future generations to enjoy and exercise fully their democratic rights. Environmental democracy also requires access to lawful means for participating effectively in political, social and economic opportunities, including environmental decision-making. Democratic processes seek to

¹⁰ See World Commission on Environment and Development, *Our Common Future* (1987), at 43

¹¹ See EP Act s4A. These include: the precautionary principle; the principle of intergenerational equity; the principle of the conservation of biological diversity and ecological integrity; principles relating to improved valuation, pricing and incentive mechanisms; and the principle of waste minimisation

¹² Australian Panel of Experts on Environmental Law, *Democracy and the Environment*, (Technical Paper 8, 2017), p16

¹³ Convention on the Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (Aarhus Convention), Principle 10 Rio Declaration.

¹⁴ *Sinclair v Mining Warden at Maryborough* (1975) 132 CLR 473, 477-82 (Barwick CJ). See also generally Chris McGrath, “Flying Foxes, Dams and Whales: Using Federal Environmental Laws in the Public Interest” (2008) 25 *Environmental and Planning Law Journal* 324.

optimise transparency, integrity and accountability, and encourage innovation and learning-by-doing.”¹⁵

According to the Australian Panel of Experts on Environmental Law:

“Democratic engagement in environmental governance is essential to achieving a healthy flourishing environment which can support both nature, and the health and wellbeing of society. Environmental democracy requires the active engagement of an informed citizenry with the process of government, but it also includes participation in the governance of environmental commons – the ‘common wealth’ of the Earth, including air, biodiversity, water, ecosystems, and the human cultures and norms that depend on them.”¹⁶

Unfortunately the PAGER Act and related regulations provide too many hurdles in the way of communities trying to understand and participate in the PAGER Act assessment, approvals and compliance processes. It is even difficult for communities to be made aware of what has been authorised and how proponents are performing against those authorisations. While the EP Act Part IV and V processes provide for some level of public participation through the EIA and licence assessment processes, going by the approach that appears to have been taken with three fracking exploration proposals to date, we are concerned that regulatory agencies may take the view that many EP Act processes and protections can be “dealt with” through the PAGER Act or will simply not apply. These concerns are outlined below, along with proposals for reform.

As a minimum, we recommend that, in addition to the EP Act consultation processes, the PAGER Act needs to be amended to recognise the need for informed decision making of proposals under that Act. These recommendations are as follows:

Recommendation: The PAGER Act should be amended to recognise the need for informed decision making of proposals under that Act. There must be a mandatory requirement for informed and meaningful community participation in each stage of decision-making that impacts on the environment and the health and well-being of the community. Sufficient time must be provided in the Act to provide for active and considered participation from local communities to provide for acceptable outcomes (which includes recognition that some proposals will not be acceptable).

Recommendation: The PAGER Act should be amended to include specific requirements for consultation with Traditional Custodians, particularly where fracking is proposed on their land or if it is likely to impact cultural heritage, to ensure that fracking does not proceed without their free prior and informed consent.

Recommendation: All information relating to environmental assessment, decision-making and performance under the PAGER Act should be made publicly available. Statistics on compliance and enforcement should be published regularly in a form that is accessible and easily understood by the public. Proponents should be required to publish environmental audits and compliance reviews, as in other resources and environment legislation.

¹⁵ Lindsay B and Jaireth H: “Australian environmental democracy and the rule of law – thoughts from APEEL”; *Australian Environment Review*; Vol 31, No 7, October 2016, p245.

¹⁶ Australian Panel of Experts on Environmental Law, *Democracy and the Environment*, (Technical Paper 8, 2017), p3

Recommendation: The community should be given a right to appeal decisions made under the PAGER Act to an independent person or tribunal. This includes decisions made to approve fracking proposals and the contents of those approvals (including environment plans), as well as a right to remedy or restrain a breach of the Act.

4. EXECUTIVE SUMMARY OF RECOMMENDATIONS

1. **Recommendation:** The moratorium on fracking in those parts of WA where a ban is not in place should remain in place indefinitely, or at least until all regulatory gaps and recommendations identified in this submission are dealt with by legislation.

GENERAL

2. **Recommendation:** the responsibility for regulating the environmental impacts of fracking should reside with an environmental regulator under the EP Act. This would include decision-making involvement in the grant of tenure, the assessment process, the setting of the environmental conditions on any proposals, and enforcement for any non-compliance.
3. **Recommendation:** a transition away from risk-based regulation and ALARP, especially as it is applied to fracking activities, and replaced with clear and measurable outcomes that must be met by proponents for any fracking proposal, irrespective of cost.
4. **Recommendation:** science-based environmental standards should be prescribed as conditions on all PAGER Act tenure or as a clear and enforceable limit in an EP.
5. **Recommendation:** similar to other jurisdictions, a “fit and proper person” requirement should be introduced for the purposes of assessing applications for tenure.
6. **Recommendation:** the PAGER Act should be amended to limit the number of extensions available for tenure, similar to that introduced for the *Mining Act 1978* (WA) or at least continual assessment of the suitability of the activity, rather than a presumption that tenure will be automatically extended. This should be coupled with a more prescriptive framework for evaluating applications for extensions based on environmental performance and impact. For example, clear and measurable criteria of environmental impact that must not be exceeded as a precondition to extension of tenure.
7. **Recommendation:** a precautionary approach should be adopted to clear exclusion zones should be provided for within regulations for areas in which there is scientific uncertainty or especially sensitive environs.
8. **Recommendation:** the PAGER Act be amended as follows:
 - a. inclusion of an objects clause (similar to that in the PAGER Environment Regulations or EP Act) that gives priority to the principles of ESD, coupled with a legislative requirement that the Minister have regard to those objects in deciding whether to approve an application for tenure; and
 - b. provide for the publication of clear policy/guidelines as to Ministerial decision-making for PAGER Act tenure applications;

- c. require the Minister or his / her delegate to publish written reasons for decisions on tenure applications.
- 9. **Recommendation:** the PAGER Environment Regulations should require that regular environmental audits be performed by an independent third party, at the cost of the proponent.
- 10. **Recommendation:** the PAGER Environment Regulations should include a requirement that proponents comply with specific scientific standards for the frequency and detail of monitoring required.
- 11. **Recommendation:** the EPA should assess all fracking proposals under Part IV of the EP Act.
- 12. **Recommendation:** detailed consideration of cumulative impacts of fracking proposals should be required during EIA under Part IV of the EP Act.
- 13. **Recommendation:** all fracking activities, irrespective of production or design capacity (including exploration), should be listed as 'prescribed premises' and subject to the assessment, public comment and licensing requirements of Part V of the EP Act.

TRANSPARENCY AND ACCOUNTABILITY

- 14. **Recommendation:** the PAGER Act should be amended to require informed and meaningful community participation in each stage of decision-making that impacts on the environment and the health and well-being of the community. Sufficient time must be provided in the Act to provide for active and considered participation from local communities to provide for acceptable outcomes (which includes contemplation that some proposals will not be acceptable).
- 15. **Recommendation:** all information relating to environmental assessment, decision-making and performance under the PAGER Act should be made publicly available. For example, the Minister and other decision makers should be required to publish reasons for all decisions (including tenure and approval of management plans), and how the decision has had regard to the principles of ESD. Further, statistics on compliance and enforcement should be published regularly in a form that is easily understood by the public.
- 16. **Recommendation:** the community should be given a right to appeal decisions made under the PAGER Act to an independent body. This includes decisions made to approve fracking proposals and the contents of those approvals (including environment plans), as well as a right to remedy restrain a breach of the Act.
- 17. **Recommendation:** include a requirement in the PAGER Act for proponents to publish the full EP (with provision for redaction of trade secrets or truly sensitive data and personal information).
- 18. **Recommendation:** establish a public register under the PAGER Act of reported environmental impacts and regulatory contraventions. Proponents should also be required to publish results of environmental audits and compliance reviews undertaken pursuant to commitments made in EPs.
- 19. **Recommendation:** The PAGER Act or regulations should be amended to:
 - require public consultation to be undertaken and detailed in the application; and

- provide for the publication of notice of an application and a window for objections to be lodged and heard.

20. Recommendation: provision in Regulations or at least in policy/guidelines as to the parties that must be consulted and details of what this consultation must entail (e.g. timeframes, two-way communication, community committees).

GENERAL ENVIRONMENTAL IMPACTS

21. Recommendation: include a requirement in the PAGER Environment Regulations that baseline information on noise, air and water quality, as well as flora and fauna to be included in the EP and that the proponent regularly report its impacts against this baseline.

22. Recommendation: include a requirement in the PAGER Environment Regulations to comply with specific scientific standards for the frequency and detail of monitoring required.

23. Recommendation: the PAGER Act should be amended to require proponents to notify the Minister of particular environmental impacts and provide for an offence for non-compliance. These could be modelled on the current requirement to report discharges of waste under the EP Act or the proposed amendments to the Mining Act that contemplates reporting of incidents.

24. Recommendation: the PAGER Act should be amended to provide for clear and transparent standards for areas of scientific and environmental concern to be imposed as conditions on all fracking tenure.

25. Recommendation: the PAGER Environment Regulations should require regular environmental audits to be performed on fracking projects by an independent third party, at the cost of the proponent.

26. Recommendation: the PAGER Act should be amended to require independent regulator inspections on the basis of particular scientific environmental standards/limits.

27. Recommendation: A security bond and rehabilitation levy system should be implemented to ensure that landowners and the community surrounding a fracking proposal are not left with the costs of remediating a site particularly in circumstances where the fracking proponent is not able to be made responsible for remediation under the *Contaminated Sites Act*. An appropriate mechanism to mitigate the financial and environmental risks of fracking proposals would be to require the two-part security regime outlined below.

1. An upfront **security bond**. This should be assessed by an independent body on basis of the proposed activity's scale, impact, risk, sensitivity of environs and environmental past performance. The would be payable by the proponent at the application stage. It should comprise of:
 - one payment to ensure compliance with legislative obligations (i.e. monitoring, reporting, environmental compliance), which can be returned on expiration of tenure; and
 - one payment to secure rehabilitation expenses as assessed, which can be returned after site is deemed fully remediated.

2. A non-refundable **levy** for long-term management of abandoned sites. This could take the form of annual contributions based on scale and level of disturbance, similar to the Mining Rehabilitation Fund.

LAND IMPACTS

28. Recommendation: The exemptions available for fracking exploration from the requirement to obtain a vegetation clearing permit under the Clearing Regulations should be removed. The only exemptions that should apply should be for clearing that is undertaken pursuant to an authorisation under the EP Act that has assessed and conditioned that clearing, such a licence granted under Part V of the EP Act, or following EIA and authorisation under Part IV of the EP Act.

WATER IMPACTS

29. Recommendation: implementation of mandatory and legally enforceable codes of practice relating to well construction and integrity, chemicals and leaks, conduct of fracking activities, monitoring and standards for water, emissions and other environmental impacts, and site decommissioning and rehabilitation.

30. Recommendation: Development of consistent, robust Guidelines and standards for the assessment of water quality and groundwater protection in WA, to guide and inform EIA of fracking proposals under Part IV of the EP Act.

31. Recommendation: Fracking activities should not be allowed unless and until the proposed reforms to water resource legislation are implemented, to adequately regulate water allocation and quality in WA to a modern standard.

32. Recommendation: Expansion of the Commonwealth ‘water trigger’ to include shale and tight gas fracking activities.

33. Recommendation: All fracking sites should be explicitly required to be reported as at least a “suspected” contaminated site under the *Contaminated Sites Act*.

CLIMATE CHANGE IMPACTS

34. Recommendation: Updating and strengthening of the EPA’s current climate policy and guidelines, to be guided by environmental science and not the policies of the Australian Commonwealth or State governments.

35. Recommendation: Fracking activities should not be authorised unless or until effective EPA and Government climate change policies are developed and fracking proposals are subject to full EIA under Part IV of the EP Act that takes into account and regulates all greenhouse gas emissions arising from fracking proposals.

36. Recommendation: Emissions limits should be set and a policy developed that contemplates offsetting, monitoring and reporting of GHG emissions by fracking activities, with such requirements to be imposed on environmental approvals and as a legally binding requirement in an EP.

INDIGENOUS

- 37. Recommendation:** The PAGER Act should be amended to include specific requirements for consultation with Traditional Custodians, particularly where fracking is proposed on their land or if it is likely to impact cultural heritage, to ensure that fracking does not proceed without free, prior and informed consent.

OFFENCES AND PENALTIES

- 38. Recommendation:** Inclusion of specific environmental offences in the PAGER Act and regulations relating to the various risks associated with fracking as outlined in this submission. Further, the PAGER Act should be amended to allow higher penalties to be imposed in the Regulations.
- 39. Recommendation:** The PAGER Act or alternatively the regulations should be amended to provide for a presumption of liability for any pollution and contamination in the proximity of fracking activities. The onus on proving that the pollution or contamination was not caused by the company would shift to that company.
- 40. Recommendation:** An important part of this change would be to make the offence provisions more sensitive to the circumstances and degree of contravention (for example, if it results in serious environmental harm or from an intentional act). The EP Act system of “tiers” for penalties, and higher penalties for bodies corporate, is an example of a more effective framework that could be used to provide a disincentive for environmentally harmful practices in fracking activities.
- 41. Recommendation:** The PAGER Act should be amended to enable directors and those officers concerned in the management of a company undertaking a fracking proposal to be prosecuted and held responsible should the company commit an offence under the Act. These penalties could be modelled on the EP Act provisions or other modern legislation.

5. BACKGROUND TO FRACKING IN WA

Government and industry position

The Government has recently stated that “oil and gas projects help drive our economy, generating jobs in the industry and revenue with flow-on effects to the rest of the economy”.¹⁷ DMIRS also states in its Policy Statement on Hydraulic Fracking that “Western Australia’s Canning and Perth Basins have been identified as being potentially prospective for shale and tight gas” and that WA has been estimated to hold “shale gas resources of approximately 34,000 billion cubic metres (Gm3), or 1200 trillion cubic feet (Tcf)”.¹⁸

Numerous tight gasfields have also been discovered in the Canning and Perth Basins but to our knowledge such resources have not yet been estimated as a whole due to the difficulty in defining tight gas locations.¹⁹

The Australian Petroleum Production and Exploration Association (**APPEA**), which describes itself as the peak national body representing Australia’s oil and gas exploration and production industry,²⁰ has also stated that “[f]racking for natural gas is safe. Any risks can be managed with good regulation and industry best practice”.²¹ While it does not explain what “good regulation” or “industry best practice” actually means in terms of enforceable regulation, APPEA has also stated that “[s]hale gas has the potential to become an important new energy source for WA, providing jobs and investment in regional communities and a new source of revenue for the State” and that “[i]f the Government was to impose a permanent ban the impact on future gas supply could be significant”.²²

APPEA and the Government place importance on economic benefits associated with the fracking industry, and the “strategic importance” of gas. However, we are also aware of substantial evidence highlighting the risks fracking activities pose to the natural environment, health, communities and Aboriginal heritage.

Resources such as water, air, biodiversity, Aboriginal heritage and public health are equally of strategic importance to the State, with the environment requiring strong protection for the benefit of current and future generations. Therefore, before the WA government considers lifting the moratorium on fracking activities, it must ensure that the principles of ecologically sustainable development (**ESD**), including the precautionary principle and the principle of intergenerational equity, will be applied to fracking activities in practice (under both the PAGER Act and EP Act) to ensure their risks are effectively assessed and managed through strong, prescriptive regulation.

Regulatory approach

DMIRS and the WA Government state that they employ a “whole of Government approach” based on “risk-based regulation”²³ to the regulation of fracking activities.

¹⁷ ‘WA implements LNG taskforce’ *Gas Today* (online) 15 March 2018 <http://gastoday.com.au/news/wa_implements_lng_taskforce/104299>.

¹⁸ *The State Government has stopped the use of hydraulic fracture stimulation (fracking) for onshore petroleum exploration or development in Western Australia* (July 2017) Government of Western Australia, Department of Mines, Industry Regulation and Safety <http://dmp.wa.gov.au/Documents/Petroleum/PET-HydraulicFracture_PolicyStatement.pdf>.

¹⁹ *Ibid.*

²⁰ *About APPEA*, APPEA <<https://www.appea.com.au/about-appea/>>.

²¹ *WA doesn’t need another fracking inquiry* (18 September 2017) APPEA <<https://www.appea.com.au/2017/09/wa-doesnt-need-another-fracking-inquiry/>>.

²² Kieran Murphy, ‘WA gas report warns of declining exploration’ (media release, 14 December 2014) <https://www.appea.com.au/media_release/wa-gas-report-warns-of-declining-exploration/>.

²³ *Scientific Inquiry into Hydraulic Fracture Stimulation in Western Australia: The Regulatory Environment* Fracking Inquiry WA, 1 <https://frackinginquiry.wa.gov.au/sites/default/files/3_regulatory_environment.pdf> (*‘Regulatory Environment paper’*).

The Fracking Inquiry's *Regulatory Environment* paper provides a useful starting point in outlining the current regulatory framework that would govern fracking for unconventional gas in WA should the moratorium be lifted. It outlines numerous pieces of legislation, regulations and State Government agencies regulating different aspects of the fracking process.

The paper highlights the following pieces of legislation relevant to fracking:

- *Petroleum and Geothermal Energy Resources Act 1967 (WA) (PAGER Act)*
- *Petroleum and Geothermal Energy Resources (Hydraulic Fracturing) Regulations 2017*, encompassing:
 - *Petroleum and Geothermal Energy Resources (Environment) Regulations 2012*
 - *Petroleum (Submerged Lands) (Environment) Regulations 2012*
 - *Petroleum Pipelines (Environment) Regulations 2012*
 - *Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2015*
 - *Petroleum (Submerged Lands) (Resource Management and Administration) Regulations 2015*
 - *Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2012*
- *Environmental Protection Act 1986 (WA) (EP Act)*
- *Environmental Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)*
- *Rights in Water and Irrigation Act 1914 (RIWI Act)*
- *Conservation and Land Management Act 1984 (CALM Act)*
- *Wildlife Conservation Act 1950*
- *Biodiversity Conservation Act 2016*
- *Aboriginal Heritage Act 1972 (AH Act)*
- *Health Act 1911*

While this appears to be an extensive list, as is detailed below in this submission, it is not the volume of legislation that may be applicable to fracking activities that is important, but rather the environmental and other regulatory standards it sets; the degree to which it is applied and enforced; the degree of influence that regulatory agencies charged with protecting the environment, Aboriginal heritage sites, and public health may have in the process (eg are they just advisory or regulatory?), and the rights the legislation affords to the community to participate in the approvals and enforcement process.

Therefore, this submission will:

- outline the relevant regulatory regime in further detail below;
- comment on how this regime ought to apply to fracking should the moratorium be lifted; and
- detail how the legislation and its application could be improved to mitigate or minimise the risks associated with fracking.

Based on the material produced by WA Government agencies, we are concerned with the apparent presumption that the Department of Mines, Industry Regulation and Safety (**DMIRS**) is the “lead agency” in the regulation of fracking activities through the PAGER Act, the purpose of which is to relate to the “exploration for, and the exploitation of, petroleum resources, geothermal energy resources and certain other resources”.

DMIRS has stated it has a focus on “further streamlin[ing] approval and compliance processes”²⁴ and is responsible for “ensuring continued investment in the resources industry”²⁵ and “look[ing] after the interests of industry”.²⁶

While we do not suggest that DMIRS has no concern or role to play in, protecting the environment, this does not appear to be this agency’s current primary focus. If DMIRS continues to take the lead agency role in the assessment of fracking activities, we are concerned that environmental and social factors, which should be comprehensively assessed through processes established in environmental legislation and by regulators with experience and focus on these areas, will be given a secondary focus. The assessment of environmental and social factors in fracking proposals should not be overlooked or marginalised as a result of the application of ‘exemptions’ and ‘regulatory efficiency’.

Experience to date in WA

To date, three fracking exploration proposals have been referred to the EPA, all of which have not been subject to an environmental impact assessment by the EPA under Part IV of the EP Act.²⁷ The extent to which these exploration proposals would be subject to EP Act licensing, native vegetation clearing controls and pollution offences is also unclear. As seen below, we suggest that the approach from regulators to date is that these proposals are not subject to any of the aforementioned controls.

Without changes to the current legislative regime and rigorous implementation of that regime, there is a risk that the primary regulation of fracking activities will be limited to DMIRS pursuant to the PAGER Act and related regulations, with minimal direct oversight by regulators responsible for key environmental legislation, particularly the EP Act.

²⁴ *Annual Report > 2016-17* (2017) Government of Western Australia, Department of Mines and Petroleum <<http://www.dmp.wa.gov.au/AnnualReport2017/>>, 39.

²⁵ *Ibid* 28.

²⁶ *Divisions*, Government of Western Australia, Department of Mines, Industry Regulation and Safety <<http://www.dmp.wa.gov.au/About-Us-Careers/Divisions-1425.aspx>>.

²⁷ See: *Proposal Search*, Environmental Protection Authority <http://www.epa.wa.gov.au/proposal-search?search_api_views_fulltext=fracture>. These include the West Erregulla 2 Exploration Well, Laurel Formation Tight Gas Pilot Exploration Program and Drover -01 Exploration Well.

6. IMPACTS ASSOCIATED WITH FRACKING

While it is the role of the Panel to assess and report on the potential impacts arising from fracking based on credible scientific and historical evidence related to risks of fracking, and their potential mitigation through appropriate regulation,²⁸ the Fracking Inquiry's *Background and Issues* paper recognises that there are numerous potential risks associated with fracking. These include impacts to air, water, land and the social surrounds of people. In this section we summarise the potential risks and impacts from fracking in both the Background and Issues paper as well as other published literature for the purposes of providing context to our comments on the regulatory regime.

6.1 AIR IMPACTS

6.1.1 Air pollution

According to the *Background and Issues* paper produced for the Inquiry, “air pollutants could be released during hydraulic fracturing and associated activities” which “could result from the release of gases from the wells into the air, or fumes from drilling equipment and road traffic”.²⁹ This pollution “could impact the health of people and plants and animals”.³⁰

Other authors have highlighted that pollution of the atmosphere is a by-product of fracking activities,³¹ which “emit hazardous air pollutants including—but not limited to—BTEX compounds (benzene, toluene, ethylbenzene, and xylene), formaldehyde, hydrogen sulfide, acrylonitrile, methylene chloride, sulfuric oxide, nitrogen oxides (NOx), volatile organic compounds (VOCs), trimethylbenzenes, aliphatic hydrocarbons, diesel PM, and radon gas (McKenzie et al. 2012; Pétron et al. 2012; Roy et al. 2013)”.³²

6.1.2 Greenhouse Gas Pollution

It is accepted that a significant amount of greenhouse gases could be released during hydraulic fracturing and associated activities.³³ Published materials highlight the risk that fracking activities will lead to large deliberate, uncontrolled and fugitive emissions of methane, and therefore have the capacity to contribute to climate change.³⁴ Methane is a powerful greenhouse gas which is approximately 34 times as potent as a climate change-fueling greenhouse gas than carbon dioxide over a span of 100 years and 86 times more potent over 20 years.³⁵

²⁸ *Independent Scientific Inquiry into Hydraulic Fracture Stimulation in Western Australia 2017*, Independent Scientific Inquiry into Hydraulic Fracture Stimulation in Western Australia 2017 <<https://frackinginquiry.wa.gov.au/>>.

²⁹ *Background and Issues paper*, 15.

³⁰ *Ibid.*

³¹

Mark Broomfield, ‘Support to the identification of potential risks for the environment and human health arising from hydrocarbons operations involving hydraulic fracturing in Europe’ (Report No AEA/R/ED57281, AEA Technology, 10 August 2012) <<http://ec.europa.eu/environment/integration/energy/pdf/fracking%20study.pdf>>.

³² Seth B.C. Shonkoff, Jake Hays and Madelon L. Finkel, ‘Environmental Public Health Dimensions of Shale and Tight Gas Development’ (2014) 122(8) *Environmental Health Perspectives* 787, 789 <<https://ehp.niehs.nih.gov/wp-content/uploads/122/8/ehp.1307866.pdf>>.

³³ *Background and Issues paper*, 15.

³⁴ Lock The Gate Alliance, *Submission to the NT Inquiry into Hydraulic Fracturing and Associated Activities* (April 2017) Fracking Inquiry NT <<https://frackinginquiry.nt.gov.au/?a=424035>>.

³⁵ Bobby Magill, ‘Thousands of fracking wells in Pennsylvania ‘may be leaking methane’, *The Guardian* (online) 20 June 2014 <<https://www.theguardian.com/environment/2014/jun/20/fracking-wells-pennsylvania-leaking-methane>>.

According to Climate Analytics' recent report into the implications of natural gas extraction in WA:

*'In addition to environmental impacts associated with fracking, these resources contain much more energy and carbon than conventional resources and using them would entail large carbon emissions. Additionally, because shale gas and other unconventional resources are so much more difficult to extract, they also have a substantially higher risk of leakage and losses of methane – a powerful greenhouse gas released during the extraction process.'*³⁶

This report found that the carbon emissions and footprint from the exploitation of Western Australia's unconventional gas resources would be three times more than Australia's allowable emissions pursuant to the Paris Agreement.³⁷ Further, the potential extent of carbon emissions released during fracking activities is supported by a submission to the Scientific Inquiry into Hydraulic Fracturing in the Northern Territory (**NT Fracking Inquiry**) which states "the development of a hydraulic fracturing industry for shale gas in the NT would create carbon emissions far greater than those being contemplated by any other project in Australia, for example from the Adani coal mine in Queensland"³⁸ and "would push the world well into catastrophic warming territory".³⁹

6.2 WATER IMPACTS

6.2.1 Quality – pollution and emissions to water

Fracking activities risk impacting the quality of groundwater sources, such as drinking water wells and aquifers, and surface water sources such as rivers, lakes and wetlands.⁴⁰

The *Background and Issues* paper expressly states that groundwater quality impacts could result from:

- leakage of wells due to a failure in well integrity, or degradation over the life of the well;
- spillage of chemicals, flowback water or brines produced from water treatment;
- on-site spills resulting from the overtopping of water storage tanks due to extreme weather events;
- spills from the transportation of chemicals;
- induced connectivity between hydraulically fractured shale and aquifers; or
- reinjection of treated water.⁴¹

Further, surface water quality impacts could result from:

- spillage of chemicals, flowback water or brines produced from water treatment;
 - on-site spills resulting from the overtopping of water storage tanks due to extreme weather events;
- or

³⁶ Bill Hare et al, 'Western Australia's Gas Gamble: Implications of exploiting Canning Basin and other unconventional gas resources for achieving climate targets' (report, Climate Analytics, March 2018) 1 <<http://climateanalytics.org/files/climateanalytics-report-westernaustraliasgasmble-2018.pdf>>.

³⁷ Ibid 3.

³⁸ Helen Davidson, 'Emissions from NT's McArthur Basin would dwarf those from Adani coalmine', *The Guardian* (online) 2 August 2017 <<https://www.theguardian.com/environment/2017/aug/02/emissions-from-nts-mcarthur-basin-would-dwarf-those-from-adani-coalmine>>.

³⁹ Ian Dunlop, *Submission to Scientific Inquiry into Hydraulic Fracturing in the Northern Territory* (2 February 2018) Fracking Inquiry NT, 8 <<https://frackinginquiry.nt.gov.au/?a=484988>>.

⁴⁰ *Background and Issues paper*, 16.

⁴¹ Ibid.

- spills from the transportation of chemicals.

The paper states this could also impact the health of people and terrestrial and aquatic plants and animals.⁴²

This is supported by other published literature. For example, the European Commission's 2012 report into the risks that accompany shale gas fracking states that there is an overall high risk of groundwater and surface water contamination from fracking activities⁴³ and the toxic chemicals (including methane) involved in the fracking process. Further, in the United States, numerous studies have found increased levels of methane in water sources near fracking activities.⁴⁴ In Australia, during the exploration phase of coal seam gas development in NSW, there have been a number of recorded contamination events.⁴⁵

The potential of ground and surface water contamination from spills and well failure, in particular, has been the subject of extensive debate. Schlumberger, one of the world's largest companies specialising in fracking, has stated that approximately 5% of wells leak immediately, 50% leak after 15 years, and 60% leak after 30 years.⁴⁶ Contamination of surface water sources can also occur through accidental spills as a result of flooding, leakage, tears in the lining or overflow from exposed open-air, plastic-lined settlement ponds in which fracking wastewater is generally kept.⁴⁷ Numerous spills have already occurred in Australian CSG operations.⁴⁸

6.2.2 Quantity – availability for community and environmental uses

The impact of fracking activities on the quantity left for the community and environmental uses, as a result of the volumes required for fracking processes is highlighted by the *Background and Issues* paper.⁴⁹

Unconventional gas fracking is a highly water-intensive process, with each individual shale gas frack requiring between 9 million and 29 million litres of water.⁵⁰ Given the scarcity of water in many areas of Australia, this is likely to put pressure on vital water sources for agriculture, people and the environment.⁵¹ Without active and careful management, over allocation of WA's aquifers could therefore result in serious decreases to the

⁴² Ibid.

⁴³ Mark Broomfield, 'Support to the identification of potential risks for the environment and human health arising from hydrocarbons operations involving hydraulic fracturing in Europe' (Report No AEA/R/ED57281, AEA Technology, 10 August 2012) <<http://ec.europa.eu/environment/integration/energy/pdf/fracking%20study.pdf>>.

⁴⁴ Osborn SG et al, 'Methane contamination of drinking water accompanying gas-well drilling and hydraulic fracturing' (2011) 108 (20) *Proceedings of the National Academy of Sciences USA*, 8172-8176; Jackson RB et al, 'Increased stray gas abundance in a subset of drinking water wells near Marcellus shale gas extraction' al. (2013) 110(28) *Proceedings of the National Academy of Sciences USA*, 11250-11255.

⁴⁵ GHD, 'Narrabri Gas Project Preliminary Environmental Assessment' (Report, Santos NSW (Eastern) Pty Ltd, March 2014) <<https://narrabrigasproject.com.au/uploads/2015/06/Narrabri-Gas-Project-request-for-DGRs1.pdf>>.

⁴⁶ An industry paper in Oilfield Review 2003, published by Schlumberger C Brufatto, 'From mud to cement - Building gas wells' (2003) *Oilfield Review* 15(3) <http://www.slb.com/resources/publications/industry_articles/oilfield_review/2003/or2003aut06_building_gas_wells.aspx>.

⁴⁷ ⁴⁸ GHD, 'Narrabri Gas Project Preliminary Environmental Assessment' (Report, Santos NSW (Eastern) Pty Ltd, March 2014) <<https://narrabrigasproject.com.au/uploads/2015/06/Narrabri-Gas-Project-request-for-DGRs1.pdf>>..

⁵⁰ Ruth Wood et al, 'Shale Gas : a provisional assessment of climate change and environmental impacts' (Research report, Tyndall Center for Climate Change Research, January 2011)

<www.karooplaces.com/wpcontent/uploads/2011/06/coop_shale_gas_report_final_200111.pdf>.

⁵¹ M.L Finkel and J. Hays, 'The implications of unconventional drilling for natural gas: a global public health concern' (2013) 127 *Public Health* 889.

availability of the water supply⁵² and put WA's vital water resources at risk of depletion without suitable controls.

As stated in Matthew Collof's Expert Report, "Ecosystem function, Ecology, Groundwater dependent ecosystems, water resource development and use, climate change", attached to the Environmental Defenders Office NT's Submission to the Independent Scientific Inquiry into Hydraulic Fracturing:

'In arid and semi-arid regions, access to sufficient water for fracking could add to existing competition for current and future water resources from environmental, urban, pastoral and agricultural uses...

*Extraction of groundwater for fracking may draw down aquifers so that springs that feed freshwater refugia no longer flow... The volume of water extracted from an aquifer that will cause a spring to dry may be relatively small, depending on the volume of the aquifer, its recharge characteristics and the location of the spring in relation to the aquifer. Given that recharge and discharge rates from such systems are very poorly known, there is a risk that extraction of groundwater for fracking could cause groundwater-dependent aquatic refugia to dry permanently or for periods considerably longer than hitherto.'*⁵³

6.3 IMPACTS TO LAND

6.3.1 Terrestrial Environment

The potential impact of fracking activities on soil quality as a result of spillage of chemicals and flowback water during fracking is noted by the *Background and Issues Paper*, which could indirectly impact the health of people, plants and animals.⁵⁴

Collof also states that "accidental spills or illegal discharge of produced water carries the risk that salts and toxic contaminants will infiltrate soil and groundwater causing adverse effects on soil and plant communities".⁵⁵

6.3.2 Biodiversity

The *Background and Issues* paper also acknowledges that fracking activities could impact biodiversity through habitat loss or fragmentation from clearing for drill pads, roads and pipelines; increased noise and light from operations; or the spread of weeds and pests.⁵⁶

⁵² Ruth Wood et al, 'Shale Gas : a provisional assessment of climate change and environmental impacts' (Research report, Tyndall Center for Climate Change Research, January 2011) <www.karooplaces.com/wpcontent/uploads/2011/06/coop_shale_gas_report_final_200111.pdf>.

⁵³ See Attachment E: Expert Report, Ecosystem function, Ecology, Groundwater dependent ecosystems, water resource development and use, climate change - Matthew Collof in EDONT Submission to the Independent Scientific Inquiry into Hydraulic Fracturing (30 April 2017) EDONT, 7 <<https://frackinginquiry.nt.gov.au/?a=423995>>.

⁵⁴ *Background and Issues paper*, 15.

⁵⁵ See Attachment E: Expert Report, Ecosystem function, Ecology, Groundwater dependent ecosystems, water resource development and use, climate change - Matthew Collof in EDONT Submission to the Independent Scientific Inquiry into Hydraulic Fracturing (30 April 2017) EDONT, 5 <<https://frackinginquiry.nt.gov.au/?a=423995>>.

⁵⁶ *Background and Issues paper*, 15.

In relation to CSG, which has been stated to involve some fracking during extraction,⁵⁷ ecological experts in Australia have identified that the considerable surface footprint of its infrastructure represents a serious threat to biodiversity fragmentation through direct clearing of bushland, loss of native vegetation, fragmentation of important remnant vegetation, spread of invasive species and increased fire risk.⁵⁸ For example, Randall states:

*'CSG is a spatially dispersed industry with a much greater footprint on land and environment than the more modest surface area devoted to well-heads would suggest. Its potential impacts – including massive demands for water, contaminated waste water, disruption of aquifers, disturbance and contamination of geosystems, atmospheric pollution, degradation of landscape aesthetics, and stress on infrastructure and sense of community – raise important issues of human and ecosystem health and compatibility with agriculture, rural communities and the environment. Regulation and management of these impacts is a major concern, and the substantial uncertainty attached to some of them raises explicit issues of risk management.'*⁵⁹

6.4 ABORIGINAL HERITAGE IMPACTS

The *Background and Issues* paper states that “hydraulic fracturing and its associated activities could impact Aboriginal heritage through the alteration or degradation of the environment” as a result of “damage to sites of cultural significance; or loss of bush tucker or medicine”.⁶⁰

The NT Inquiry Issues Paper also notes that Aboriginal people constitute the majority of the population of areas considered to be suitable for fracking activities.⁶¹ Given the amount of land clearing required for fracking activities and their potential risks to surface water sources, archaeological and ethnographic sites of significance are at risk of being detrimentally impacted.

6.5 OTHER COMMUNITY IMPACTS

Due to the limited rights afforded under the PAGER Act (discussed in further detail below), fracking activities can significantly impact landholders, Native Title holders and Traditional Custodians.

Further, the United Nations Human Rights Council (HRC) has recognised that “environmental damage can have negative implications, both direct and indirect, for the effective enjoyment of human rights”.⁶² Regarding fracking activities in particular, a report submitted to the HRC in 2011 argued that the environmental damage caused by hydraulic fracturing for natural gas poses ‘a new threat to human rights’.⁶³

⁵⁷ Alan Randall, ‘Coal seam gas –Toward a risk management framework for a novel intervention’ (2012) 29 *Environment and Planning Law Journal* 152, 157.

⁵⁸ John Williams, Tim Stubbs and Ann Milligan, ‘An analysis of coal seam gas production and natural resource management in Australia’ (Report, John Williams Scientific Services Pty Ltd, 2012) <http://www.aie.org.au/AIE/Documents/Oil_Gas_121114.pdf>.

⁵⁹ Alan Randall, ‘Coal seam gas –Toward a risk management framework for a novel intervention’ (2012) 29 *Environment and Planning Law Journal* 152, 157.

⁶⁰ *Background and Issues paper*, 17.

⁶¹ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory, *Background and Issues Paper* (20 February 2017) Fracking Inquiry NT, 20.

⁶² Document A/HRC/RES/16/11, Resolution adopted by the Human Rights Council: Human Rights and the environment, distributed 12th April 2011. See also New Frontiers in Environmental Constitutionalism 16.

⁶³ Document A/HRC/18/NGO/91, Written statement submitted by UNANIMA International, a nongovernmental organization in special consultative status: ‘Hydraulic fracturing for natural gas: A new threat to human rights’, distributed 19th September 2011.

Fracking activities can present risks to humans which may result in contraventions of human rights contained in treaties Australia has ratified which include the seven main international human rights Conventions.⁶⁴

In addition, a Chief Medical Officer of Health in Canada has recognised other possible adverse impacts to mental health and community wellbeing that could result from a feeling of lack of control over fracking activities in local communities.⁶⁵

⁶⁴ Australian Panel of Experts on Environmental Law, Democracy and the Environment (Technical Paper No 8, APEEL, 2017) 11 <https://static1.squarespace.com/static/56401dfde4b090fd5510d622/t/58e6018e6a496356f02631c0/1491468697413/APEEL_democracy_and_environment.pdf>.

⁶⁵ 'Chief Medical Officer of Health's Recommendations Concerning Shale Gas Development in New Brunswick' (Research Report, Office of the Chief Medical Officer of Health New Brunswick Department of Health, September 2012) <www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/HealthyEnvironments/Recommendations_ShaleGasDevelopment.pdf>.

7. REGULATORY MECHANISMS TO MITIGATE OR MINIMISE RISKS FROM FRACKING

7.1 REGULATORY REGIME – PAGER ACT

7.1.1 Agencies

As stated above, the current Government’s position is that DMIRS is the “lead agency”⁶⁶ responsible for regulating, assessing and approving fracking activities. It does this pursuant to the WA “Petroleum Acts” (PAGER Act, *Petroleum (Submerged Lands) Act 1982* (WA) and *Petroleum Pipelines Act 1969* (WA)).

This “whole of government” regulatory approach is said to involve numerous other agencies and authorities such as the EPA,⁶⁷ DWER and Department of Planning, Lands and Heritage (formerly Department of Aboriginal Affairs).⁶⁸

Before any exploration or production activities can commence, a company must apply for, and be granted, relevant titles (including an exploration permit and production licence) in respect of the land.⁶⁹ Following the grant of a title, and depending on the nature of the activity, further approvals from the Minister, DMIRS and other government agencies may be required before the commencement of activities. These processes are discussed further below.

7.1.2 Legislation

The “long title” of the PAGER Act is:

“An Act relating to the exploration for, and the exploitation of, petroleum resources, geothermal energy resources, and certain other resources, within certain lands of the State...”

The PAGER Act, in contrast to most modern legislation, does not have an “objects” provision, which contrasts with its subsidiary legislation (discussed further below). In this context, the long title provides some guidance as to the scope of the legislation,⁷⁰ which indicates that its primary concern is to facilitate and encourage the development of petroleum and geothermal resources.

The PAGER Act provides the framework for proponents to obtain title and carry out petroleum and geothermal extractive activities. Relevantly, three pieces of subsidiary legislation sit under the PAGER Act:

⁶⁶ Government of Western Australia, ‘Background and Issues Paper’ (3 November 2017), 12 <https://frackinginquiry.wa.gov.au/sites/default/files/Scientific%20Inquiry%20into%20Hydraulic%20Fracture%20Stimulation%20in%20WA%20-%20Background%20Paper%20-%203%20November%202017.pdf> (**Background and Issues Paper**). See also WA Department of Mines, Industry Regulation and Safety, ‘Lead Agency Framework’ <http://www.dmp.wa.gov.au/Investors/Lead-Agency-Framework-1495.aspx>.

⁶⁷ See especially, ‘Memorandum of Understanding for Collaborative Arrangements between the Office of The Environmental Protection Authority and The Department of Mines and Petroleum’ (February 2016) <http://www.dmp.wa.gov.au/Documents/Environment/ENV-MEB-016.pdf> (**MOU**).

⁶⁸ WA Government, ‘Guide to the Regulatory Framework for Shale and Tight Gas in Western Australia: A While-of-Government Approach’ (2015), 14 http://www.dmp.wa.gov.au/Documents/Petroleum/WEB_Shale_and_Tight_Gas_Framework.pdf.

⁶⁹ WA Department of Mines, Industry Regulation and Safety, ‘Regulating Oil and Gas’ <http://www.dmp.wa.gov.au/Petroleum/Regulating-oil-and-gas-19960.aspx>.

⁷⁰ *Clunies-Ross v Commonwealth* (1984) 155 CLR 193, 199, *ctg Birch v Allen* (1942) CLR 621, 625-626.

- the *Petroleum and Geothermal Energy Resources Regulations 1987* (WA) (**PAGER Regulations**);
- the *Petroleum and Geothermal Energy Resources (Environment) Regulations 2012* (WA) (**PAGER Environment Regulations**);
- the *Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2015* (WA) (**PAGER Administration Regulations**); and
- the *Petroleum and Geothermal Energy Resources (Management of Safety) Regulations 2012* (WA) (**PAGER Safety Regulations**).

Application

For the first level of tenure, a petroleum or geothermal exploration permit, proponents are required to lodge an application in respect of specific “blocks”.⁷¹ The application must include:⁷²

- proposals for work and expenditure;
- technical qualifications of the proponent and its employees;
- technical advice available to the proponent; and
- financial resources available to the proponent.

Grant of tenure

On receipt of an application, the Minister is empowered to approve or refuse to grant tenure.⁷³ There are no constraints upon this power. There is no requirement for consultation or public comment.

The Minister may impose any conditions on an exploration permit as he/she thinks fit.⁷⁴ Some examples of conditions are set out in the Act, including work required to be carried out and expenditure,⁷⁵ but these are not mandatory. None of the example conditions refer to environmental management or outcomes. In fact, there is little mention of the environment in the PAGER Act. Rather, environmental management is relegated to subsidiary legislation (discussed further below).

Tenure rights

An exploration permit authorises the proponent to explore for, and recover for proof-of-concept purposes, geothermal energy resources, and to carry on any operations and works as necessary for those purposes.⁷⁶

Access

The PAGER Act provides extensive authority for proponents to access land.

The rights conferred by PAGER Act tenure are exercisable on any land within the area of the permit, reservation, lease or licence.⁷⁷ While the Minister’s consent is required for particular reserves, other access can only be denied if the land is:⁷⁸

- private land under 2km²;
- used as a cemetery or burial place; or

⁷¹ PAGER Act, ss 29-31.

⁷² PAGER Act s 31(1)(d).

⁷³ PAGER Act s 32(1).

⁷⁴ PAGER Act s 43(1).

⁷⁵ PAGER Act s 43(2).

⁷⁶ PAGER Act s 38(2).

⁷⁷ PAGER Act, s 15.

⁷⁸ PAGER Act, s 16.

- less than 150m from a cemetery, burial place, reservoir or any “substantial improvement”.

“Private land” is defined to include freehold title, leases and land held under the *Land Administration Act 1997* (WA), but expressly excludes pastoral leases, timber leases and leases for the use and benefit of Aboriginal persons.⁷⁹ “Reservoir” is defined as any natural or artificial accumulation of water.⁸⁰ There is no definition of “substantial improvement”, and the Minister is deemed the “sole judge” of this.⁸¹

While proponents are liable to compensate owners of private land for loss and damage (including depreciation in value) caused by the operations,⁸² this compensation is limited to deprivation of possession of the land, damage to the land and improvements, and severance of the land (i.e. rights of way).⁸³ If agreement cannot be reached within 3 months of a notice of intention to commence operations being provided,⁸⁴ then compensation may be fixed by the Magistrates Court.⁸⁵ No provision is provided for legal assistance to landholders who may have to negotiate a compensation agreement, and if agreement cannot be reached, to participate in the Magistrate’s Court process.

Term

A permit has an initial term of 6 years.⁸⁶ A proponent can apply for renewal anytime until 3 months before their permit expiration date.⁸⁷ The Minister is in fact *required* to renew the permit if the proponent has complied with conditions and legislation,⁸⁸ and even still empowered to renew otherwise, if satisfied special circumstances justify a renewal.⁸⁹ Renewals have a term of 5 years.⁹⁰ There is no limit on the amount of renewals that can be obtained. The only limitations on renewals are a surrender of part of the tenure area each time.⁹¹

Further tenure

A proponent that holds an exploration licence has easy access to more senior tenure if required. A production licence gives the proponent authority to recover petroleum or geothermal energy in the area.⁹² Proponents can apply to the Minister⁹³ by lodging an application and proposals for work and expenditure,⁹⁴ at which point the Minister is required to grant the production licence if satisfied the area contains petroleum or geothermal energy resources.⁹⁵ The Minister is empowered to place any conditions he/she thinks fit on the production licence.⁹⁶

A proponent with a geothermal energy production licence is required to submit a “geothermal energy recovery development plan” (**GERDP**) to the Minister for approval.⁹⁷ There is no provision for the Minister’s considerations in deciding whether to approve a GERDP. The content of the GERDP is not specified in

⁷⁹ PAGER Act, s 5.

⁸⁰ PAGER Act, s 16(2)(a).

⁸¹ PAGER Act, s 16(2)(b).

⁸² PAGER Act, s 18-19.

⁸³ PAGER Act, s 17(2).

⁸⁴ PAGER Regulations, r 2.

⁸⁵ PAGER Act, s 17(4).

⁸⁶ PAGER Act s 39(1)(a).

⁸⁷ PAGER Act s 40.

⁸⁸ PAGER Act s 42(1)(a).

⁸⁹ PAGER Act s 42(b).

⁹⁰ PAGER Act s 39(1)(b).

⁹¹ PAGER Act s 41.

⁹² PAGER Act, s 62.

⁹³ PAGER Act, s 50.

⁹⁴ PAGER Act, s 51(1).

⁹⁵ PAGER Act, s 53.

⁹⁶ PAGER Act, s 66(1).

⁹⁷ PAGER Act, s 62A.

legislation, but is left to the PAGER Administration Regulations.⁹⁸ It primarily relates to the project's operations in recovering resources, but also touches on some environmental elements such as:

- possible effects on nearby aquifers and the proponent's management of these, including baseline monitoring proposals;⁹⁹
- arrangements for management of waste;¹⁰⁰ and
- plans for decommissioning and rehabilitation.¹⁰¹

For any production licence granted after 29 October 2010, the term is indefinite.¹⁰² For licences granted before that date, the term is 21 years,¹⁰³ with a further renewal term of 21 years¹⁰⁴ followed by a second renewal of indefinite term.¹⁰⁵

The PAGER Act also makes provision for a retention lease,¹⁰⁶ for circumstances in which recovering the resource is not considered commercially viable at the time, but likely to become so within 15 years.¹⁰⁷ During the 5 year term of a retention lease,¹⁰⁸ the proponent has the same rights as conferred by an exploration permit.¹⁰⁹

Other requirements

Environment Plan

While not part of obtaining tenure, the PAGER Environment Regulations would require an "environment plan" (EP) prior to any fracking activities occurring.¹¹⁰ An EP is required for "all stages" of the activity from construction to rehabilitation.¹¹¹

An EP must include particular information, including:¹¹²

- details of the activity/operations, applicable requirements and an evaluation of its environmental impacts and risks, including classification of "reportable incidents" (i.e. those with moderate environmental impact or higher);
- the proponent's corporate environmental policy, environmental performance objectives/standards, measurement criteria for these and monitoring/reporting arrangements;
- a report on consultation in relation to developing the EP; and
- an implementation strategy that covers ongoing consultation and measures to ensure compliance with environmental performance objectives/standards, as well as a fracking-specific requirement for disclosure of all chemicals that may be used.

⁹⁸ PAGER Administration Regulations, Sch 4 via r 63.

⁹⁹ PAGER Administration Regulations, Sch 4, Item 8.

¹⁰⁰ PAGER Administration Regulations, Sch 4, Item 13.

¹⁰¹ PAGER Administration Regulations, Sch 4, Item 14.

¹⁰² PAGER Act, s 63(2), via *Petroleum and Energy Legislation Amendment Act 2010* (WA), s 41(3).

¹⁰³ PAGER Act, s 63(1)(a).

¹⁰⁴ PAGER Act, s 63(1)(b).

¹⁰⁵ PAGER Act, s 63(1)(c).

¹⁰⁶ PAGER Act, s 48A.

¹⁰⁷ PAGER Act, ss 48B(1)(c)(ii) (for petroleum), 48B(2A)(c)(ii) (for geothermal).

¹⁰⁸ PAGER Act, s 48D.

¹⁰⁹ PAGER Act, s 48C.

¹¹⁰ PAGER Environment Regulations, r 6.

¹¹¹ EP Guidelines, 7.

¹¹² PAGER Environment Regulations, rr 14-17.

Once a proponent prepares an EP complying with these requirements, there is a strong presumption from the language of regulations that those operations will be approved. The Minister is in fact *required* to approve an EP if ‘reasonably satisfied’ that it:¹¹³

- is appropriate for the nature and scale of the activity;
- demonstrates that the environmental impacts and risks of the activity will continuously be reduced to *as low as is reasonably practicable*, and will be of an acceptable level;
- provides for appropriate environmental performance objectives, environmental performance standards and measurement criteria;
- includes an appropriate implementation strategy and monitoring, recording and reporting arrangements;
- demonstrates that there has been an appropriate level of consultation with relevant authorities and interested persons and organisations; and
- complies with the requirement to include prescribed information outlined above.

Even if the Minister is not reasonably satisfied of the above, he/she is still required to give the proponent ‘a reasonable opportunity’ to resubmit a modified EP.¹¹⁴ It is only after this that the Minister is able to refuse to approve the EP.¹¹⁵

Summary

Once an EP is approved, the proponent is required to submit a “summary” to the Minister for public disclosure.¹¹⁶ The summary is required to include:¹¹⁷

- the operator’s contact details;
- locations of the activity;
- a *general description* of the existing environment that may be affected; and
- a *summary of details* for any facility, operational details and timetables, environmental impacts and risks, implementation strategy and consultation.

There is no definition of “summary” or level of detail required for the information in the summary. The PAGER Act regime does not require publication of the full EP, although DMIRS states that proponents can consent to the use of the full EP as the public disclosure document.¹¹⁸

Field Management Plan

A Field Management Plan (**FMP**) is required to be approved by the Minister before petroleum activities can commence.¹¹⁹ The FMP is to demonstrate how the field will be managed in accordance with sound engineering standards and consistently with “good oil field practice”¹²⁰ (discussed further below). Activities conducted in the area must comply with its requirements.¹²¹ The FMP is classified as “excluded

¹¹³ PAGER Environment Regulations r 11(1).

¹¹⁴ PAGER Environment Regulations r 11(2).

¹¹⁵ PAGER Environment Regulations r 11(3).

¹¹⁶ PAGER Environment Regulations r 11(7).

¹¹⁷ PAGER Environment Regulations r 11(8).

¹¹⁸ EP Guidelines, 46.

¹¹⁹ PAGER Administration Regulations r 41.

¹²⁰ PAGER Administration Regulations, r 47.

¹²¹ PAGER Administration Regulations r 42.

information”,¹²² meaning it is considered “permanently confidential information”¹²³ that is prevented from being publicly disclosed.¹²⁴

Well Management Plan

An approved Well Management Plan (**WMP**) must also be in place before any well activity is commenced.¹²⁵ Activities conducted in the area must comply with its requirements.¹²⁶ According to the DMIRS “Explorers Guide”, the objective of the WMP is “to ensure the well is designed and managed in accordance with sound engineering principles and industry best practice, including identification of risks”.¹²⁷ There is no definition or guide in this document as to what “sound engineering principles” means. The WMP is also classified as “excluded information”.¹²⁸

Safety Management System

A Safety Management System is also required to be prepared, approved by the Minister and complied with in relation to any fracking.¹²⁹ This contains details of how the operator will comply with its occupational health and safety obligations.¹³⁰ It is beyond the scope of this submission to comment further on matters of safety management.

Information

Under the PAGER Act, the proponent is required to keep particular documents and records¹³¹ and make them available to the Minister or an inspector.¹³² However again there is no provision for public access to this information. In fact, the Minister is prohibited from publishing information or even making information available to any person other than Government Ministers.¹³³ There is no qualification that this confidential information be commercially sensitive. Rather, it applies to all “documentary information”,¹³⁴ being information contained in an “applicable document”,¹³⁵ which is in turn defined as an application, accompanying documents and any report or other document relating to PAGER Act tenure.¹³⁶ The prohibition also extends to mining samples.¹³⁷

Management

Monitoring

The PAGER Environment Regulations also establish particular environmental monitoring requirements. Every 3 months, the proponent must report, relevantly, all the activity’s emissions and discharges to any land, air,

¹²² PAGER Administration Regulations, r 82(3)(j).

¹²³ PAGER Administration Regulations, r 83(2)

¹²⁴ PAGER Administration Regulations, r 91(1).

¹²⁵ PAGER Administration Regulations, r 10(1).

¹²⁶ PAGER Administration Regulations, r 11(1).

¹²⁷ WA Department of Mines and Petroleum, ‘Western Australia’s Petroleum and Geothermal Explorer’s Guide’ (September 2014), 107 <http://www.dmp.wa.gov.au/Documents/Petroleum/PD-RES-PUB-100D.pdf>; WA Department of Mines, Industry Regulation and Safety, ‘Drilling a Well’ <http://www.dmp.wa.gov.au/Petroleum/Drilling-a-well-8626.aspx>. See also PAGER Administration Regulations, r 16 and Sch 1, Item 4.

¹²⁸ PAGER Administration Regulations, r 82(3)(l).

¹²⁹ PAGER Safety Regulations, rr 5, 7.

¹³⁰ PAGER Safety Regulations, r 10.

¹³¹ See, eg, PAGER Environment Regulations, r 31.

¹³² PAGER Environment Regulations r 32.

¹³³ PAGER Act s 150B.

¹³⁴ PAGER Act, s 150B.

¹³⁵ PAGER Act, s 150A.

¹³⁶ PAGER Act, s 150A.

¹³⁷ PAGER Act s 150C.

groundwater, sub-surface or inland waters environment.¹³⁸ The report is provided to the Minister within 15 days after the end of the 3 month period.¹³⁹ There is no obligation on the proponent to make these records available to anyone other than the Minister, regulatory inspectors or their agents.¹⁴⁰

Inspection

Inspectors from the Department may conduct environmental compliance inspections at any stage of the activity.¹⁴¹ However, this is limited to “reasonable times” and there are no stipulated circumstances or events in which an inspection would be mandatory.

The Minister and inspectors can require any person they believe capable of giving information on petroleum/geothermal operations to provide that information.¹⁴²

Compliance and enforcement

Offences

The PAGER Act provides that it is an offence to explore for petroleum or geothermal energy resources without the required exploration permit or drilling reservation,¹⁴³ and a corresponding offence for recovery operations without a production licence.¹⁴⁴ It is also an offence to inject petroleum into a natural underground reservoir without Ministerial consent.¹⁴⁵ There are prohibitions on entering land without the owner’s consent,¹⁴⁶ although it does not appear to carry a penalty. There are very few other offence provisions directly in the PAGER Act.¹⁴⁷

There are no offences in the PAGER Act related directly to environmental impacts.

Rather than being situated in the Act, some offences are found in the PAGER Environment Regulations. These offences relate mostly to not having an EP¹⁴⁸ or complying with its terms¹⁴⁹ (rather than imposing environmental standards). The only specific environmental offences are for:

- discharging/injecting produced formation water exceeding particular limits of petroleum concentration into the sea or wells;¹⁵⁰ and
- applying chemical dispersant, without Ministerial consent, to an oil spill resulting from an activity.¹⁵¹

Self-reporting

Fracking operators would be required to notify the Minister of any “reportable incident”.¹⁵² This is defined as being either an incident classified by the proponent as such in the EP, or actually/potentially causing adverse environmental impact that is classified by the proponent at least “moderate” under the EP.¹⁵³

¹³⁸ PAGER Environment Regulations r 34. See also EP Guidelines, 42.

¹³⁹ PAGER Environment Regulations r 34(9).

¹⁴⁰ PAGER Environment Regulations, r 32(3)-(4).

¹⁴¹ PAGER Act, s 119.

¹⁴² PAGER Act, s 109(1).

¹⁴³ PAGER Act s 29.

¹⁴⁴ PAGER Act, s 49.

¹⁴⁵ PAGER Act, s 67.

¹⁴⁶ PAGER Act, s 16. See also PAGER Act, s 20.

¹⁴⁷ Further offences not relevant to this submission: PAGER Act ss 78(1c)-(2) (failing to provide information regarding transfers/dealings, or providing false information), 79 (failing to produce documents relevant to a transfer/dealing to the Minister), 95 (non-compliance with Ministerial directions), 111 (failing to produce documents relating to petroleum/geothermal operations per Minister’s request), 119(3) (obstructing an inspector).

¹⁴⁸ See, eg, PAGER Environment Regulations, rr 6-8.

¹⁴⁹ PAGER Environment Regulations, r 7(1).

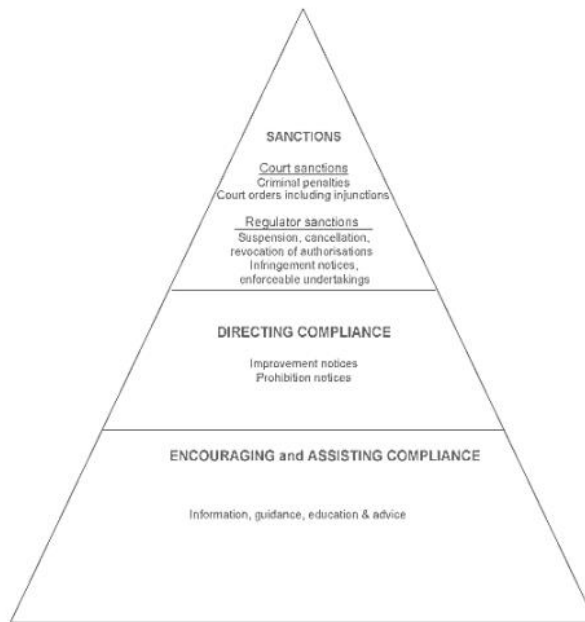
¹⁵⁰ PAGER Environment Regulations, r 33.

¹⁵¹ PAGER Environment Regulations, r 35.

Policy

The PAGER Act framework is administered with a policy of “risk-based” enforcement.

DMIRS’ 2015 Enforcement Policy sets out “factors” by which enforcement action is determined.¹⁵⁴ These broadly cover “public concern” and “serious harm” but do not specifically identify environmental impact or outcome as a trigger necessitating enforcement action.¹⁵⁵ The regulator’s main approach (see graphic below) is to “encourage and assist” proponents with compliance followed by issuing regulatory notices.¹⁵⁶



Penalties

Most penalties are contained in the PAGER Environment Regulations. The maximum penalty is limited to \$10,000,¹⁵⁷ as fixed by the PAGER Act.¹⁵⁸

Rehabilitation

Under the PAGER Act and its subsidiary legislation, there is no provision for a security, bond or levy system to cover rehabilitation. Any requirements in relation to rehabilitation of fracking sites are only found in the regulator’s *Guideline for the Development of Petroleum and Geothermal Environment Plans in Western Australia (EP Guidelines)*.¹⁵⁹

If the moratorium were lifted today, there would be no requirements on fracking proponents within the PAGER Act or associated regulations to remediate environmental impacts. Rather this is left to the general “ALARP” principle of project management. Alternatively if a fracking proposal was assessed by the EPA

¹⁵² PAGER Environment Regulations r 28(1).

¹⁵³ PAGER Environment Regulations r 4.

¹⁵⁴ WA Department of Mines and Petroleum, ‘Enforcement Policy’ (June 2015), 3-4 http://www.dmp.wa.gov.au/Documents/Wardens-Court/Enforcement_Policy_June_2015.pdf.

¹⁵⁵ WA Department of Mines and Petroleum, ‘Enforcement Policy’ (June 2015), 4 http://www.dmp.wa.gov.au/Documents/Wardens-Court/Enforcement_Policy_June_2015.pdf.

¹⁵⁶ WA Department of Mines and Petroleum, ‘Enforcement Policy’ (June 2015), 5 (Figure 1) http://www.dmp.wa.gov.au/Documents/Wardens-Court/Enforcement_Policy_June_2015.pdf.

¹⁵⁷ See, eg, PAGER Environment Regulations, r 6.

¹⁵⁸ PAGER Act, s 153(3)(a).

¹⁵⁹ See, eg, EP Guidelines, 15, 39.

pursuant to Part IV of the EP Act (see below), then if implementation of that proposal was authorised, there would be an opportunity to impose conditions on that proposal requiring remediation and rehabilitation of the site (including a process for responsible well abandonment), as well as monitoring compliance with those requirements.¹⁶⁰ However, given that Part IV of the EP Act is a discretionary process, in our view rehabilitation requirements should also be specifically provided for under the PAGER Act regime so that in situations where there is no Part IV assessment, then rehabilitation is always covered.

In our view rehabilitation and the integrity of wells post abandonment must remain the responsibility of the proponent at all times. An appropriate bonding system also needs to be established to ensure that any wells that cause pollution or impacts to the environment can be rectified. A fund, that industry contributes to, should also be established to protect the state from any ongoing liability not covered by the bond system.

¹⁶⁰ EP Act, s [section re imposition of conditions in Part IV. And Also reference monitoring of conditions by Minister

7.3 REGULATORY REGIME - ISSUES AND RECOMMENDATIONS

7.3.1 Regulatory capture

It is problematic that DMIRS has responsibilities as “watchdog” (i.e. charged with being the “lead agency” to assess, approve and enforce compliance with the PAGER Act, associated regulations and tenure) while at the same time being required to promote the fracking industry.

It is also notable that the long title of the PAGER Act concentrates on the exploration and exploitation of the resource, but there is nothing in the Act that deals with the protection of the environment or ecologically sustainable development.

The WA framework makes DMIRS the lead regulator,¹⁶¹ implicitly structuring the regulatory regime to focus on industry and development. In comparison, in other jurisdictions such as NSW, the EPA is designated as the lead regulator,¹⁶² having responsibility of the management of the potential environmental impacts of fracking.

DMIRS states that it ‘works with other government agencies to ensure workers, the community and the environment are protected’.¹⁶³ But DMIRS is also required to support and promote the industry and investment. The stated mission of the Department is to:

‘[c]ontribute to making Western Australia the destination of choice for responsible resource exploration and development’ (DMP Strategic Plan)’.

A brochure published by the regulator asserts that:

‘[t]here is no evidence to date that fracture stimulation in Western Australia has led to significant environmental harm’¹⁶⁴.

While we do not criticise the professionalism and expertise of staff within DMIRS, we strongly submit that it is not appropriate for one agency to have the responsibility for both promoting an industry and pursuing its development and expansion, while at the same time being the “lead agency” charged with its regulation.

Any regulatory regime for fracking in WA should ensure that regulation and promotion responsibilities are clearly separated to ensure integrity and public confidence in the system.

Recommendation: the responsibility for regulating the environmental impacts of fracking should reside with an environmental regulator under the EP Act. This would include decision-making involvement in the grant of tenure, the assessment process, the setting of the environmental conditions on any proposals, and enforcement for any non-compliance.

7.3.2 Regulatory standards

DMIRS operates pursuant to a “risk-based regulatory approach”, which involves setting environmental objectives for activities carried out under the PAGER Act.¹⁶⁵ While incentives and performance-based

¹⁶¹ MOU, 3.

¹⁶² NSW Government, ‘NSW Gas Plan’ (November 2014), 11
https://www.resourcesandenergy.nsw.gov.au/__data/assets/pdf_file/0005/534830/NSW-Gas-Plan.pdf.

¹⁶³ MOU, 3.

¹⁶⁴ WA Department of Mines and Petroleum, ‘The Facts About Natural Gas and Fracture Stimulation in Western Australia’ (March 2017), 1, 9
http://www.dmp.wa.gov.au/Documents/Petroleum/The_Facts_about_Fracking_Brochure.pdf.

¹⁶⁵ WA Department of Mines and Petroleum, ‘Environmental Regulatory Strategy’ (November 2014), 3
<http://www.dmp.wa.gov.au/Documents/Environment/ENV-ADMIN-050.pdf>.

regulation can be effective in some settings, in our view within the fracking context the regulatory regime must be outcomes based, and set baseline standards and levels of impact that cannot be exceeded.¹⁶⁶

The current system of licensing projects and applying risk management strategies to their operation means the regulator shares some portion of liability with proponents.¹⁶⁷ Some have criticised decisions about risk regulation as being ‘essentially political in nature and ... are not only based on hard quantifiable facts, but also on many judgmental factors.’¹⁶⁸ Under such a system, in deciding whether to allow an activity and the conditions on which it is allowed, the regulator (and therefore the community) is accepting the risks of that activity, and also the legacy if something goes wrong. Without minimum measurable standards for the conduct and impact of the activity, which can be publicly monitored and are actively enforced on the proponent, the system does not protect the community from the financial, environmental and social impacts that may occur.

Therefore, any regulatory regime for fracking in WA must include minimum standards to ensure potential impacts are prevented, irrespective of risk and cost, rather than relying on proponents to reassure the community that they will manage risks that could eventually leave a legacy for the community.

Other jurisdictions impose such clear requirements. Examples include:

- the NSW Codes of Practice¹⁶⁹ for fracking activities, chemicals and water/aquifers,¹⁷⁰ and for well integrity;¹⁷¹ and
- the Queensland Codes of Practice¹⁷² for leak detection and reporting¹⁷³ and for well construction and abandonment.¹⁷⁴

It may also be useful to note the currently underway Scientific Inquiry into Hydraulic Fracturing in the Northern Territory (**NT Inquiry**) has developed its own recommended code of practice for monitoring methane from fracking activities, based on its review of existing Codes and submissions.¹⁷⁵ There are also clear recommendations in its Draft Report for the contents of a well integrity code of practice.¹⁷⁶

Without standards *defining* an acceptable level, there cannot be effective management of environmental impacts to acceptable levels. Leaving this important baseline to vague objectives that are open to interpretation is, in our view, not an appropriate way to manage the impacts of fracking.

¹⁶⁶ See, eg, Australian Panel of Experts on Environmental Law, ‘Environmental Governance’ (Technical Paper 2, April 2017), 23; Tania Murray, Edward Andre and Krishna Prasad, ‘Holding Fracking Operations to Account for Environmental Contamination in Risk-Based Regulatory Regimes’ (2016) 33 *Environmental and Planning Law Journal* 222, 233-234. See also Parliament of WA, Standing Committee on Environment and Public Affairs, ‘Report 42: Implications for Western Australia of Hydraulic Fracturing for Unconventional Gas’ (November 2015), 137.

¹⁶⁷ See, eg, Ben Ale, ‘Tolerable or Acceptable: A Comparison of Risk Regulation in the United Kingdom and in the Netherlands’ (2005) 25(2) *Risk Analysis* 231, 233.

¹⁶⁸ Ben Ale, ‘Tolerable or Acceptable: A Comparison of Risk Regulation in the United Kingdom and in the Netherlands’ (2005) 25(2) *Risk Analysis* 231, 240.

¹⁶⁹ Enforceable as conditions under the *Petroleum (Onshore) Act 1991* (NSW), Sch 1B, cl 6(1).

¹⁷⁰ NSW Government, ‘Code of Practice for Coal Seam Gas Fracture Stimulation’ (September 2012) https://www.resourcesandenergy.nsw.gov.au/__data/assets/pdf_file/0018/516114/Code-of-Practice-for-Coal-Seam-Gas-Fracture-Stimulation.pdf.

¹⁷¹ NSW Government, ‘Code of Practice for Coal Seam Gas Well Integrity’ (September 2012) https://www.resourcesandenergy.nsw.gov.au/__data/assets/pdf_file/0006/516174/Code-of-Practice-for-Coal-Seam-Gas-Well-Integrity.PDF.

¹⁷² Enforceable under the *Petroleum and Gas (Production and Safety) Regulation 2004* (Qld), Sch 1, Pt 1, Items 2-3 (via r 7).

¹⁷³ Queensland Government, ‘Code of Practice for Leak Management, Detection and Reporting for Petroleum Production Facilities’ (Version 3, 1 July 2017) https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0009/1258038/code-of-practice-leak-management.pdf.

¹⁷⁴ Queensland Government, ‘Code of Practice for the Construction and Abandonment of Coal Seam Gas Wells and Associated Bores in Queensland’ (19 May 2017) https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0011/119666/code-of-practice-csg-wells-and-bores.pdf; Queensland Government, ‘Code of Practice for the Construction and Abandonment of Petroleum Wells and Associated Bores in Queensland’ (3 March 2016) https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0011/350399/code-practice-petroleum-wells-bores.pdf.

¹⁷⁵ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory, ‘Draft Final Report’ (December 2017), 206-208 <https://frackinginquiry.nt.gov.au/inquiry-reports/?a=465896>.

¹⁷⁶ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory, ‘Draft Final Report’ (December 2017), 57-58 <https://frackinginquiry.nt.gov.au/inquiry-reports/?a=465896>.

Recommendation: implementation of mandatory and legally enforceable codes of practice relating to well construction and integrity, chemicals and leaks, conduct of fracking activities, monitoring and standards for water, emissions and other environmental impacts, and site decommissioning and rehabilitation.

ALARP

The main objective used throughout the PAGER Act regime is that of keeping impacts “as low as reasonably practicable” (**ALARP**).¹⁷⁷ In our submission, the use of ALARP as a regulatory tool should be used with caution. In many circumstances it enables industry to establish its own standards with the primary driver being economics rather than environmental outcomes, acceptable or otherwise. The objective is uncertain in practice and risks favouring proponents’ convenience over the environment and community.

In our submission, the meaning and application of the ALARP principle is vague, and its definition varying even within the DMIRS’ own resources. Its industry-facing *Guidelines to the PAGER Resource Management and Administration Regulations* state that ‘ALARP defines the point where the investment costs required to further reduce the risks of an activity become disproportionate to the benefit gained, and may not be practically feasible or economically viable.’¹⁷⁸

This economic emphasis contrasts with DMIRS’ EP Guidelines, which provide that ALARP is:

*‘the point where the cost involved in further reducing the environmental impacts and risks of the activity would be highly disproportionate to the environmental benefit gained.’*¹⁷⁹

It is unclear from published materials which application of ALARP is used in the regulator’s and Minister’s determinations under the PAGER Act. In our view, without a consistent and transparent standard applied to fracking activities, the potential environmental impacts cannot be appropriately managed. The PAGER Act must provide for clear, measurable and prescriptive minimum standards with which any fracking activities would have to comply.

In some other jurisdictions’ contexts, the concept is “as low as reasonably *allowable*” (ALARA).¹⁸⁰ This shifts the focus from the proponent’s commercial expediency to the regulator’s safety and environmental standards.

We understand that in the NT, impacts must be both ALARP and acceptable before an EP is approved¹⁸¹ – a limitation on the Ministerial power to approve proposals.

As outlined above, in WA’s PAGER Act regime, if the Minister is reasonably satisfied that a proposal’s environmental impact is acceptable then he/she is *required* to approve it, reframing this standard as an entitling provision rather than a minimum requirement. In our submission, any regulatory regime for fracking (or any other industry) in WA must include the requirement that environmental impacts are at least acceptable (with clear outcomes established), beyond the vague and economically-focused “ALARP” concept.

¹⁷⁷ See, eg, PAGER Environment Regulations, rr 3(b)(i), 11(1)(b), 15(3)(a).

¹⁷⁸ WA Department of Mines and Petroleum, ‘Guidelines to Petroleum and Geothermal Energy Resources (Resource Management and Administration) Regulations 2015 and Petroleum (Submerged Lands) (Resource Management and Administration) Regulations 2015’ (September 2016), 8 <http://www.dmp.wa.gov.au/Documents/Petroleum/PD-SBD-ADM-180D.pdf>.

¹⁷⁹ EP Guidelines, 5.

¹⁸⁰ See discussion in Ben Ale, ‘Tolerable or Acceptable: A Comparison of Risk Regulation in the United Kingdom and in the Netherlands’ (2005) 25(2) *Risk Analysis* 231.

¹⁸¹ NT Department of Primary Industry and Resources, ‘Explanatory Guide to the Petroleum (Environment) Regulations’ (1 December 2017), 7-8 https://nt.gov.au/__data/assets/pdf_file/0005/295907/em-petroleum-environment-regulations.pdf.

Recommendation: a move away from risk-based regulation and ALARP, especially as it is applied to fracking activities, and replaced with clear and measurable outcomes that must be met.

Addressing environmental impacts

Relationship between the PAGER Act and EP Act

For the reasons set out below, we consider that the environmental impact assessment, licensing, native vegetation clearing and pollution control provisions in the EP Act should apply to all fracking activities.

Part V of the EP Act contains environmental offences (discussed further below), but also provides for a defence where the offending conduct occurred in accordance with an EP Act licence (or similar approval).¹⁸² There is another relevant defence, specifically to the offence of causing serious or material environmental harm,¹⁸³ where the offending conduct is *an act authorised under another written law*.¹⁸⁴

We understand that the Department of Environmental Regulation (now DWER) has stated in correspondence with the Conservation Council of Western Australia that while the “authorisation” defence¹⁸⁵ requires an EP Act approval, the “authorised act” defence¹⁸⁶ would encompass carrying out petroleum activities in accordance with an approved EP under the PAGER Act regime (governed by DMIRS).

In our view, this is problematic and not acceptable from an environmental regulation perspective, as the EP is an inherently flexible instrument which is open to variation by DMIRS and the proponent in its content and scope. It is also an instrument that does not involve the stringent environmental impact assessment processes and protections contained within the EP Act regime.

From the outset of the PAGER Act (i.e. the long title) it is clear that this aspect of the regulatory framework does not make environmental protection a primary concern. As identified above, the PAGER Act does not contain any specific environmental requirements. There are some potentially relevant provisions relating to activities being carried out in a “proper and workmanlike manner and in accordance with good oil field practice”.¹⁸⁷ “Good oil-field practice” is defined as “all those things that are generally accepted as good and safe in the carrying on of [petroleum exploration]”.¹⁸⁸ We respectfully submit that this vague, out-dated, and industry-oriented concept is entirely unacceptable as a mechanism for ensuring that best environmental practices are used in fracking activities. It is broad, vague, lacking in detail and unable to be measured or enforced. Further, given the significant variation in oil-field practices globally, lacks any type of certainty.

The lack of environmental provisions in the PAGER Act, coupled with its apparent exemption from the EP Act (as we demonstrate below), means that environmental protection is largely relegated to an industry controlled, flexible environment plan.

Inadequacy of the environment plan tool

We are concerned with the EP being the main regulatory tool under the PAGER Act.

Firstly, it prevents a coherent, consistent and transparent approach where each proponent is subject to the same environmental standards. With each EP prepared by different proponents and submitted and

¹⁸² *Environmental Protection Act WA* (1986) s 74A.

¹⁸³ *Environmental Protection Act WA* (1986) s 50A-50B.

¹⁸⁴ *Environmental Protection Act WA* (1986) s 74B (emphasis added).

¹⁸⁵ *Environmental Protection Act WA* (1986) s 74A.

¹⁸⁶ *Environmental Protection Act WA* (1986) s 74B.

¹⁸⁷ PAGER Act, s 91(1).

¹⁸⁸ PAGER Act, s 5(1) “good oil-field practice”.

considered separately by the Minister, and not made available for public review in any form beyond the summary, there is potential for significant variability in the regulation of individual projects. If there were universally applicable environmental standards in the legislation, the regulatory framework would be simpler to administer and more consistent across the board in ensuring that the environment is protected.

The enforceability of EPs is also unclear, with no statutory offences for failure to meet the proponent's chosen objectives and standards. The only applicable penalty is in subsidiary legislation, for carrying out an activity in a way "contrary to" the EP.¹⁸⁹ While management plans have their place within environmental regulation, with individual activities subject to potentially different requirements, enforcement is likely to be less consistent and more disjointed than it would be with measurable prescriptive environmental standards set out in regulations. Further, without publication of the full requirements of an EP, the public is unable to determine the extent to which proponents are being regulated and complying with acceptable environmental standards.

Recommendation: science-based environmental standards should be prescribed as conditions on all PAGER Act tenure or as a clear and enforceable limit in an EP.

Finally, the ad hoc EP regulatory framework risks cumulative impacts and the wider implications of fracking not being considered. With more prescriptive environmental regulation under the PAGER Act, cumulative impacts would be able to be addressed more appropriately.

Lack of prescriptive standards and limits

Tenure

Rather than ensuring protection of the environment and community, the primary focus of the PAGER Act regulatory framework appears to facilitate the proponent at almost every stage. Application and grant is a simple and administrative process. Once a permit is granted, the proponent has easy access to continued and increased tenure through the extension provisions outlined above.

While an application for tenure must cover the technical and financial capacity of the proponent, there is no inclusion of environmental record.

Under other regimes, the Minister is required to be satisfied that an applicant is a 'fit and proper' person to hold a permit before granting one,¹⁹⁰ which requires consideration of the proponent's history of environmental compliance. The test is also a draft recommendation in the NT Inquiry, which further recommends that the Minister's reasons for this determination be published.¹⁹¹ This enables transparent and thorough consideration of environmental risks before any fracking activities commence, incentivises long-term environmental compliance, and minimises the risk of proponents with a poor track record of environmental management having unfettered access to fracking tenure. It is an important part of upholding the integrity of the regulatory regime and social licence to operate.

Recommendations:

- a "fit and proper person" requirement on approval of applications for tenure;

¹⁸⁹ PAGER Environment Regulations r 7(1).

¹⁹⁰ See, eg, *Mineral Resources (Sustainable Development) Act 1990* (Vic) s 15(6)(a); *Petroleum (Onshore) Act 1991* (NSW) s 24A. See also *Environment Protection and Biodiversity Conservation Act 1999* (Cth) s 136(4) (where environmental history is a permissible consideration).

¹⁹¹ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory, 'Draft Final Report' (December 2017), 360 <https://frackinginquiry.nt.gov.au/inquiry-reports/?a=465896>.

- measurable criteria for environmental impact that must be met as a precondition to extension of tenure.

The open-ended regulation of tenure by indefinite extensions is another instance of a lax framework without robust environmental protection mechanisms. Any regulatory regime for fracking (or other industry which poses an environmental risk) in WA should not include a presumption of extended terms for tenure without for evaluating the proponents' environmental performance and a reassessment of environmental risks throughout this term (for example, cumulative impacts).

Recommendation: a limitation on the number of extensions available for PAGER Act tenure, similar to that introduced for the *Mining Act 1978* (WA)¹⁹² or at least continual assessment of the suitability of the activity. This should be coupled with a more prescriptive framework for evaluating applications for extensions based on environmental performance.

Exclusion zones

Proponents can obtain fracking tenure in any area of the State in which general petroleum and geothermal energy exploration is not restricted. Given the scientific risks surrounding the environmental impacts of fracking, and the potential for high-magnitude risks, this is not an appropriate regulatory setting.

Exclusion zones are an important part of minimising risk for especially sensitive environments. Many other regimes automatically exclude certain areas from possible tenure, where any risk is deemed unacceptable – for example, threatened ecological communities, sites of cultural heritage, public drinking water sources and residential or agricultural infrastructure.

Without protection or exclusion zones, unknown environmental impacts may eventuate before they are even identified as risks, leading to possibly serious and irreversible damage.¹⁹³ The precautionary principle dictates that, in any areas in which environmental risk cannot be reliably measured, the action of imposing exclusion zones until scientific understanding improves should not be postponed. Prevention is better than cure.

Recommendation: legislated exclusion zones for areas in which there is scientific uncertainty or especially sensitive environs.

Chemicals

Some jurisdictions prohibit the use of BTEX chemicals and provide penalties for contravention. These prescriptive provisions are effective ways to not just “minimise” the impacts of fracking, but prevent unacceptable and potentially irreversible environmental damage from occurring. The 2014 WA Inquiry report found that the use of some chemicals poses unacceptable and unnecessary risk to environment and human health, and recommended a ban on the use of these chemicals during fracking.¹⁹⁴ This recommendation has not been implemented. Many other jurisdictions have imposed a fracking-specific ban on BTEX chemicals, including Queensland,¹⁹⁵ Victoria,¹⁹⁶ NSW,¹⁹⁷ and the NT.¹⁹⁸ Any regulatory regime for

¹⁹² *Mining Act 1978* (WA), s 61(2) as amended by *Mining Act Amendment Act 2004* (WA), s 14.

¹⁹³ See, eg, Alan Randall, ‘Coal Seam Gas – Toward a Risk Management Framework for a Novel Intervention’ (2012) 29 *Environmental and Planning Law Journal* 152, 157.

¹⁹⁴ WA Inquiry, 110.

¹⁹⁵ *Environmental Protection Act 1994* (Qld) s 206.

¹⁹⁶ *Geothermal Energy Resources Act 2005* (Vic) s 63B, as inserted by the *Resources Legislation Amendment (BTEX Prohibition and Other Matters) Act 2014* (Vic) s 3.

¹⁹⁷ Policy Number TI-O-120, ‘Ban on use of BTEX compounds in CSG activities’, NSW Trade and Investment (2012) via *Petroleum (Onshore) Act 1991* (NSW).

¹⁹⁸ NT Government, ‘Onshore Oil and Gas Guiding Principles’ (2015), 5, 17 <http://newsroom.nt.gov.au/api/attachment/byld/7170>.

fracking in WA should include this best practice offence for using such chemicals, as an important part of managing risks to environment and community health.

7.3.3 Inadequate public participation and transparency

Surveys by the regulator have shown that up to 26% of Western Australians ‘strongly object’ to fracking.¹⁹⁹ On a national scale, 70% of those surveyed opposed fracking.²⁰⁰ In this context, the PAGER Act regime makes inadequate provision for transparency and public participation in the decision-making and management around fracking activities.

Ministerial discretion

The Minister’s powers to approve or refuse an application are not expressed as being subject to any constraints such as mandatory considerations or standards. This contrasts with other jurisdictions that require consideration of, for example, an objects clause that covers well-established principles such as ecologically sustainable development.²⁰¹ Once a proponent has complied with the administrative requirements of the application, the Minister has complete discretion as to whether the application is approved. There are no applicable guidelines or policy documents on how the Minister’s discretion will be exercised in relation to approving onshore gas developments such as fracking.²⁰²

Recommendation:

- inclusion of an objects clause in the PAGER Act (similar to that in the PAGER Environment Regulations²⁰³ or EP Act²⁰⁴) coupled with a legislative requirement that the Minister have regard to those objects in deciding whether to approve an application for tenure; and
- publication of clear policy/guidelines as to Ministerial decision-making for PAGER Act tenure applications;
- publication by the Minister of written reasons for decisions on tenure applications.

The Minister’s discretion as to conditions on permits is similarly open-ended. The potential for inconsistency between tenure conditions again militates against a holistic regulatory approach that can address the cumulative impacts of fracking activities.

Recommendation: the PAGER Act provide for clear and transparent standards for areas of scientific and environmental concern to be imposed as conditions on all fracking tenure.

Transparency

Throughout the PAGER Act regime there is a lack of transparency which in turn undermines public trust and accountability that is important in environment and resource development decisions.²⁰⁵ From the outset, the

¹⁹⁹ WA Department of Mines and Petroleum, ‘Survey: Community Attitudes Towards Shale and Tight Gas’ (June 2014), 2 <http://www.dmp.wa.gov.au/Documents/Petroleum/PD-SBD-NST-100D.pdf>.

²⁰⁰ Australian National University, Centre for Public Awareness of Science ‘The Australian Beliefs and Attitudes Towards Science Survey’ (August 2017), 8 <http://www.science.gov.au/community/Documents/REPORT-SCAPA172001-CPAS-poll.pdf>.

²⁰¹ See, eg, *Natural Resources Management Act 2004* (SA), s 8.

²⁰² Cf, eg, Australian Government Department of Industry, Innovation and Science, ‘Offshore Petroleum Exploration Guide: Word-Bid’ (1 June 2015) http://www.nopta.gov.au/_documents/guidelines/Offshore-Petroleum-Exploration-Guideline-Work-bid.pdf.

²⁰³ PAGER Environment Regulations, r 3.

²⁰⁴ EP Act, s 4A.

²⁰⁵ Australian Panel of Experts on Environmental Law, ‘Democracy and the Environment’ (Technical Paper 8, April 2017), 16 https://static1.squarespace.com/static/56401dfde4b090fd5510d622/t/58e6018e6a496356f02631c0/1491468697413/APEEL_democracy_and_environment.pdf.

applications process is private, with direct prohibitions on publishing certain information. There is no opportunity for the public to comment on an application for tenure, or any provision for objections to be made on public interest grounds at this important formative stage.²⁰⁶ This contrasts with other jurisdictions,²⁰⁷ and other resource legislation in WA (which allows public interest objections to be made).²⁰⁸

Recommendation: legislative provisions that:

- require public consultation to be undertaken and detailed in the application; and
- provide for the publication of notice of an application and a window for objections to be lodged and heard.

In our view there is a lack of transparency in the EP framework that is not appropriate for modern regulation. The undefined level of detail required in the published EP summary could produce inconsistent levels of transparency across operations, and leaves open the possibility of very low provision of information that is of high importance to the community. Leaving this element of transparency to proponent and Department policy is not a robust regulatory approach. Other jurisdictions provide for publication of the full EP.²⁰⁹

The regulator has identified that the WA community has a strong desire for increased information about fracking.²¹⁰ Without transparency as to the details of the activity and the conditions placed upon it, the main regulatory tool for managing environmental impacts is not available for purposes of social licence, political accountability or public participation in enforcement.²¹¹

Recommendation: legislative requirement for proponents to publish the full EP (with provision for redaction of trade secrets or truly sensitive data and personal information).

A lack of transparency is also evident in the “reportable incident” and compliance framework. A lack of transparency around environmental impacts and other regulatory contraventions is not appropriate for regulating the impacts of fracking. Any regulatory framework must provide for accountability to the community by making this information public, or risk undermining effectiveness of and public confidence in the regime. There are numerous examples of reporting of incidents²¹² and public reporting of environmental performance and compliance under approvals²¹³. The publication of this information would also further incentivise compliance by proponents.

Recommendation: establish a public register under the PAGER Act of reported environmental impacts and regulatory contraventions. Proponents should also be required to publish results of environmental audits undertaken pursuant to commitments made in EPs.

²⁰⁶ Australian Panel of Experts on Environmental Law, ‘Democracy and the Environment’ (Technical Paper 8, April 2017), 18 https://static1.squarespace.com/static/56401dfde4b090fd5510d622/t/58e6018e6a496356f02631c0/1491468697413/APEEL_democracy_and_environment.pdf.

²⁰⁷ See, eg, *Petroleum Act 1984* (NT) s 19(1).

²⁰⁸ See, eg, *Mining Act 1978* (WA), s 59(1) and s111A.

²⁰⁹ See, eg, *Petroleum (Environment) Regulations 2016* (NT), r 24.

²¹⁰ WA Department of Mines and Petroleum, ‘Survey: Community Attitudes Towards Shale and Tight Gas’ (June 2014), 1 <http://www.dmp.wa.gov.au/Documents/Petroleum/PD-SBD-NST-100D.pdf>.

²¹¹ See, eg, Australian Panel of Experts on Environmental Law, ‘Democracy and the Environment’ (Technical Paper 8, April 2017), 14-16 https://static1.squarespace.com/static/56401dfde4b090fd5510d622/t/58e6018e6a496356f02631c0/1491468697413/APEEL_democracy_and_environment.pdf.

²¹² EG: EP Act, s72

²¹³ Eg: Under EP Act Part V licences there is a requirement for an Annual Audit Compliance Report, which is published on the DWER website. See for example: https://www.der.wa.gov.au/images/documents/our-work/aacr/Reports/L4432_1989_14_1Jul16-30Jun17.pdf. There is also a requirement for compliance reporting under Part IV “Ministerial Statements” and for data to be made public. Eg see conditions 3 and 4 of the attached: <http://www.epa.wa.gov.au/sites/default/files/1MINSTAT/Statement%201072.pdf>

Consultation

The Minister cannot approve an environment plan unless reasonably satisfied that the proponent demonstrates that there has been an “appropriate” level of consultation with relevant authorities and interested persons/organisations.²¹⁴ It should be noted that “relevant” and “interested” are not defined, (in contrast to other jurisdictions (e.g. NT Regs cl 7(3))) and nor is “appropriate”, making the content of this obligation on the proponent and Minister uncertain. Without adequate provision for community consultation, the fracking industry cannot obtain valid social licence for their operations.

Recommendation: provision in Regulations or at least in policy/guidelines as to the parties that must be consulted and details of what this consultation must entail (e.g. timeframes, two-way communication, community committees)

7.3.4 Failure to address environmental impacts

Compliance

Monitoring

The PAGER Act regime does not provide for sufficient monitoring of environmental impacts and compliance of fracking activities.

There are no regulatory requirements that we can see that provide for the collection of baseline data against which impacts could be measured. Baseline setting is the foundation for both identifying risks and monitoring impacts of fracking activities on the environment.²¹⁵ Without comprehensive data at the outset of operations, impacts cannot be properly measured.²¹⁶ The best practice is for an independent third party to undertake baseline testing, against which further monitoring by the proponent and third party inspections can be compared. This is reflected in the regulator’s EP Guidelines.²¹⁷ However, the importance of this regulatory tool necessitates a more formal requirement for baseline information.

Recommendation: requirement in the PAGER Environment Regulations that baseline information on noise, air and water quality, as well as flora and fauna to be included in the EP and that the proponent regularly report its impacts against this baseline.

The implementation strategy is also required to provide for accurate and auditable monitoring of emissions and discharges,²¹⁸ but the level of detail is again left to the EP Guidelines.²¹⁹ Such an important element of managing environmental impacts must be given more force.

Recommendation: requirement in the PAGER Environment Regulations to comply with specific scientific standards for the frequency and detail of monitoring required.

²¹⁴ PAGER Environment Regulations r 11(1)(f).

²¹⁵ See, eg, Australian Panel of Experts on Environmental Law, ‘The Foundations of Environmental Law’ (Technical Paper 1, April 2017), 41 https://static1.squarespace.com/static/56401dfde4b090fd5510d622/t/58e6018e6a496356f02631c0/1491468697413/APEEL_democracy_and_environment.pdf.

²¹⁶ See especially Parliament of WA, Standing Committee on Environment and Public Affairs, ‘Report 42: Implications for Western Australia of Hydraulic Fracturing for Unconventional Gas’ (November 2015), 176.

²¹⁷ WA Department of Mines and Petroleum, ‘Guideline for the Development of Petroleum and Geothermal Environment Plans in Western Australia’ (November 2016), 17 <http://www.dmp.wa.gov.au/Documents/Environment/ENV-PEB-177.pdf>.

²¹⁸ PAGER Environment Regulations r 15(7)(a).

²¹⁹ WA Department of Mines and Petroleum, ‘Guideline for the Development of Petroleum and Geothermal Environment Plans in Western Australia’ (November 2016), 34-35 <http://www.dmp.wa.gov.au/Documents/Environment/ENV-PEB-177.pdf>.

Checks

Any regulatory framework for fracking in WA should include a system for assuring compliance. The PAGER Act does not appear to provide for such a system, and relies heavily on proponents without compliance checks through inspections or audits.

There is significant regulatory reliance on proponents to self-report issues such as environmental impacts through the EP's "reportable incident" provisions. Relying on proponents to report their own contraventions is not an appropriate regulatory setting for fracking activities, without significant checks or consequences for failure to report and the publication of such reports (see above). It is especially problematic that the content of the reporting obligation is only contained in the EP and thus open to inconsistency between projects. Coupled with the increased inspection and audit requirements and transparency recommended below, any regulatory framework for fracking in WA must also ensure that any environmental impacts or similar issues are reported to the regulator and public as soon as possible.

Recommendation: legislative requirement in the PAGER Act that proponents notify the Minister of particular environmental impacts and provide for an offence for non-compliance. These could be modelled on the current requirement to report discharges of waste under the EP Act²²⁰ or the proposed amendments to the Mining Act.²²¹

While the EP's implementation strategy is required to make provision for audits of environmental performance,²²² there are no stipulations for the type or extent of auditing. The EP Guidelines state that audits can be undertaken internally, and at a frequency set by the proponent.²²³ This fails to guarantee the integrity of the compliance framework, again relying on proponents rather than establishing a robust precautionary framework that could prevent the potential environmental impacts of fracking.

Recommendation: requirement in the PAGER Environment Regulations that regular environmental audits be performed by an independent third party, at the cost of the proponent.

As outlined above, the PAGER Act provides for inspection powers but not obligations. In the case of fracking, mandatory inspection would be an important compliance check when, for example, projected emissions or environmental impacts are at a certain level.

Recommendation: provision in the PAGER Act requiring inspections on the basis of particular scientific environmental standards/limits.

It should also be noted that any information provided by way of inspections is not admissible in court proceedings,²²⁴ which could have significant flow-on effects for non-compliance prosecutions.

Enforcement

Regulator's enforcement policy

The regulator's current "risk-based" enforcement policy is not appropriate for managing the impacts of fracking. Risk-based enforcement dictates that effort and public resources expended should be

²²⁰ EP Act, s 72.

²²¹ Mining Act Amendment and Validation Bill 2015 (WA), ss 46 (proposing to insert a new s 103AZA), 52(g) (proposing to insert a new s 162(2)(a)-(b)).

²²² PAGER Environment Regulations r 15(6).

²²³ WA Department of Mines and Petroleum, 'Guideline for the Development of Petroleum and Geothermal Environment Plans in Western Australia' (November 2016), 35 <http://www.dmp.wa.gov.au/Documents/Environment/ENV-PEB-177.pdf>.

²²⁴ PAGER Act s 109(3).

proportionate to the likelihood and magnitude of risk.²²⁵ This approach neglects the precautionary principle, which would tend towards only allowing risky activities as sufficient knowledge and experience develops, with prescriptive performance criteria and periodic evaluation and adjustments to ensure environmental impacts do not eventuate.²²⁶

Not only is risk-based enforcement not appropriate for preventing possible environmental damage, there is a lack of standardised objective criteria or minimum standards, and a preference for diplomatic rather than tough enforcement.²²⁷

In the fracking context of scientific uncertainty and potentially significant and irreversible environmental impacts, a more precautionary, scientific approach is necessary, which sets out minimum benchmarks for any activities and provides for robust enforcement for any environmental damage.

It should also be noted that there are no apparent prosecutions for PAGER Act offences relating to the environment to date. Given the evident instances of environmental harm and similar contraventions,²²⁸ this may be attributable to the regulator's enforcement policy, as well as the current formulation of offence provisions (further discussed below).

Rehabilitation

The impacts of fracking must be managed on an ongoing basis, throughout the life cycle of the project. In the current PAGER Act regime there are no provisions that would require fracking proponents to continuously remediate environmental impacts. Instead, this is left to the general "ALARP" principle of project management (as discussed above). The current regulatory regime's lack of provision for bonds and rehabilitation creates significant administrative, financial and environmental problems in the long term.

Bonds and levies

Security bonds and levies ensure that the regulator has sufficient resources to remediate the environmental impacts of fracking without passing on these costs to taxpayers. In accordance with the polluter pays principle, proponents that stand to benefit financially from fracking activities should also bear the costs of their environmental impacts.²²⁹

The security measure involves proponents being required to lodge a financial bond with government, to guarantee compliance with obligations (i.e. licence conditions, legislative requirements) and/or to cover the expenses of rehabilitation. The levy measure involves a regular payment by proponents into a consolidated government fund for the purposes of rehabilitating sites or remediating environmental damage.

Risks

As outlined above, there is no provision for rehabilitation requirements in the PAGER Act, rather these are left to the EP Guidelines. The EP Guidelines include detailed descriptions of what rehabilitation and

²²⁵ See, eg, Ben Ale, 'Tolerable or Acceptable: A Comparison of Risk Regulation in the United Kingdom and in the Netherlands' (2005) 25(2) *Risk Analysis* 231, 232.

²²⁶ Tania Murray, Edward Andre and Krishna Prasad, 'Holding Fracking Operations to Account for Environmental Contamination in Risk-Based Regulatory Regimes' (2016) 33 *Environmental and Planning Law Journal* 222, 230-231.

²²⁷ See especially WA Department of Mines and Petroleum, 'Enforcement Policy' (June 2015), 5 http://www.dmp.wa.gov.au/Documents/Wardens-Court/Enforcement_Policy_June_2015.pdf.

²²⁸ See, eg, Bryan Whan, 'Information Summary on Unconventional Gas Development for WA Scientific Inquiry' (Lock the Gate, 2018).

²²⁹ See, eg, *Environmental Protection Act 1986* (WA), s 4A, Item 4(2).

decommissioning *should* be planned.²³⁰ However, this document lacks the enforceability of legislation, which should be accorded to an element as important as rehabilitation.

The recommendation in the 2014 Inquiry for a PAGER Act rehabilitation fund²³¹ has not been implemented. This is a serious deficiency in the regulatory framework and presents an indefinite financial risk for the State and taxpayers in relation to the uncertain possible impacts of fracking activities and abandoned wells on the environment.

In addition to this risk, and increasing it, is the poor record in Australia of underestimating funds required to remediate damage and rehabilitate the environment after impact of extractive activities. In 2012, a report by the WA Auditor-General identified that the existing mining securities system at that time would only cover 25% of total mine closure/rehabilitation costs.²³² There were similar findings by NSW Auditor-General in 2017 that their State's regime was unlikely to cover rehabilitation costs (and also had several deficiencies such as failure to discharge closure processes, underestimation of rehab costs, outdated tools, etc.).²³³ In Queensland, their deficient securities system cost the State \$73 million.²³⁴

Further increasing the risk is the uncertain future of the fossil fuel energy sector. It is particularly important to require bonds up front to cover the remediation costs, to ensure that in circumstances where companies are no longer around to pay for rehabilitation in the future the State and community are not left with the clean-up costs. One instance in Queensland of this occurring was a site operated by a company that became insolvent, with an estimated rehabilitation cost of \$80 million but a security held of only \$3.6 million.²³⁵

Recommendation: an appropriate mechanism to mitigate the financial and environmental risks of a deficient rehabilitation system would be to require the two-part security regime outlined below.

3. An upfront **security bond**. This should be assessed by an independent body on basis of the proposed activity's scale, impact, risk, sensitivity of environs and environmental past performance. The bond would be payable by the proponent at the application stage. It should comprise of:
 - one payment to ensure compliance with legislative obligations (i.e. monitoring, reporting, environmental compliance), which can be returned on expiration of tenure; and
 - one payment to secure rehabilitation expenses as assessed, which can be returned after site is deemed fully remediated.
4. A non-refundable **levy** for long-term management of abandoned sites. This could take the form of annual contributions based on scale and level of disturbance, similar to the Mining Rehabilitation Fund.²³⁶

It should also be noted here that there can be a lot of movement and dealings between companies with respect to tenure and operations.²³⁷ In this context, any regulatory regime will require certainty of financial responsibility for rehabilitation, which may need more legislative treatment²³⁸ as well as a bonds system.

²³⁰ See, eg, EP Guidelines, 14-15,

²³¹ Inquiry report, 155.

²³² WA Auditor-General, 'Ensuring Compliance with Conditions on Mining' (Report 8, September 2011), 32 https://audit.wa.gov.au/wp-content/uploads/2013/05/report2011_08.pdf.

²³³ NSW Audit Office, 'Mining Rehabilitation Security Deposits' (Performance Audit Report, 11 May 2017), 3

https://www.audit.nsw.gov.au/ArticleDocuments/993/01_Mining_Rehabilitation_Security_Deposits_Final_Report.pdf.aspx.

²³⁴ Queensland Treasury Corporation, 'Review of Queensland's Financial Assurance Framework' (Version for Public Consultation, April 2017), 59 <https://s3.treasury.qld.gov.au/files/review-of-queenslands-financial-assurance-framework.pdf>.

²³⁵ Queensland Treasury Corporation, 'Review of Queensland's Financial Assurance Framework' (Version for Public Consultation, April 2017), 1 <https://s3.treasury.qld.gov.au/files/review-of-queenslands-financial-assurance-framework.pdf>.

²³⁶ *Mining Rehabilitation Fund Act 2012* (WA).

Disincentives

Offences

As stated above, the PAGER Act regime provides minimal consequences relating to environmental harm. Offences are not set according to impact nor sensitive to the degree of contravention.²³⁹ This is particularly problematic in the risky context of fracking where significant environmental damage could occur.

Other jurisdictions provide for specific offences that recognise the risky nature of fracking activities. An example of this is the Northern Territory where there is express provision in regulations that fracking must be approved by the Minister before taking place.²⁴⁰

Recommendation:

Inclusion of environmental offences in the PAGER Act and regulations relating to each of the impacts from fracking outlined above.

Liability presumption

Many jurisdictions impose a presumption of liability on proponents in the case of pollution near a fracking site.²⁴¹ By this device, operators conducting fracking activities would bear the burden of proof to show that, for example, nearby water contamination was not caused by fracking. This ensures proponents use only best practices and maintain robust monitoring and compliance systems. In this area of scientific uncertainty, a prescriptive regulatory tool such as this provision is an important mechanism for incentivising best practices and ensuring environmental impacts are avoided or at least any contravention is held accountable.²⁴² The reversed onus of proof is one of the draft recommendations of the current NT Inquiry.²⁴³

Recommendation: legislative provision for a presumption of liability for pollution and contamination in the proximity of fracking activities, or at least an offence of strict liability.

Penalties

In our view, the comparatively low penalties provided for in the PAGER Act regime are inappropriate for managing the environmental impacts of fracking. Under the PAGER Act the highest maximum penalty is \$50,000 and/or 5 years imprisonment.²⁴⁴ Under its subsidiary legislation the highest maximum penalty is only \$10,000.²⁴⁵ This is in stark contrast to other Australian jurisdictions. For example, in Queensland non-compliance with their EP equivalent carries a maximum penalty of \$567,675;²⁴⁶ in the NT their current fracking inquiry has published draft recommendations criticising the insufficiency of their corresponding

²³⁷ NT Department of Mines and Energy, 'Submission to the Australian Senate Select Committee on Unconventional Gas Mining' (Submission 37), 8-9 <https://www.aph.gov.au/DocumentStore.ashx?id=50851d2c-29f7-430d-8671-7ac8b104c578&subId=409231>.

²³⁸ See provisions in PAGER Act governing transfers and dealings: ss 72-79.

²³⁹ Cf, eg, the "serious" and "material" environmental harm distinction in the *Environmental Protection Act 1986* (WA) ss 50A-50B.

²⁴⁰ Petroleum (Environment) Regulations (NT), r 5(2)(g).

²⁴¹ See, eg, *Oil and Gas Act 2012*, s 208 (58 Pa Cons Stat Sec. 601.208); *Unconventional Gas Regulations 2016*, cl 51 (25 Pa. Code §78a.51.). See generally The Wilderness Society et al, 'Submission on DMP Fracking Regulations' (30 May 2014), Appendix A [http://www.parliament.wa.gov.au/Parliament/commit.nsf/\(Evidence+Lookup+by+Com+ID\)/C1EBD390179721E548257C4000105852/\\$file/ev.fra.140530.sub.110.001.conservaion+council+of+western+australia.pdf](http://www.parliament.wa.gov.au/Parliament/commit.nsf/(Evidence+Lookup+by+Com+ID)/C1EBD390179721E548257C4000105852/$file/ev.fra.140530.sub.110.001.conservaion+council+of+western+australia.pdf).

²⁴² See, eg, Tania Murray, Edward Andre and Krishna Prasad, 'Holding Fracking Operations to Account for Environmental Contamination in Risk-Based Regulatory Regimes' (2016) 33 *Environmental and Planning Law Journal* 222, 231.

²⁴³ NT Inquiry, 383.

²⁴⁴ PAGER Act, ss 29, 49. Note: there are penalties of \$110,000 located in the OHS section of the PAGER Act (Pt IIIA and Sch 1).

²⁴⁵ See, eg, PAGER Environment Regulations, rr 6-8. See also PAGER Act, s 153(3)(a).

²⁴⁶ *Environmental Protection Act 1994* (Qld), ss 430, 437.

penalty being \$30,800.²⁴⁷ The 2014 WA Inquiry also criticised the current penalties and recommended an increase.²⁴⁸ The extent of penalties must also be viewed with the financial capacity of fracking proponents, which are known to spend hundreds of millions on exploration and development in a single State.²⁴⁹ Clearly the penalties in WA's current regulatory regime are not considered sufficient to disincentivise environmentally harmful practices in fracking.

One way of explaining this is through the "Golden Rules", a set of international standards for gas development activities.²⁵⁰ Compliance with the Golden Rules is estimated to present a 7% costs increase.²⁵¹ Financial consequences for non-compliance that are greater than this amount is required to offset this, in a simple cost/benefit conception.²⁵²

The penalties in the PAGER Act regime do not recognise or measure the gravity of possible environmental impacts (i.e. the magnitude of risk). Fracking advocates have long maintained that the likelihood of these risks is low, so they should not be opposed to high penalties in the apparently unlikely event that they do occur. Having high penalties for environmental impacts would be an effective way to hold proponents to their word about best practices being sufficient to prevent damage to the environment.

Recommendation: the offence provisions do not appear to have any particular need to be in Regulations, so to appropriately manage the impacts of fracking it would be more effective to situate these provisions into PAGER Act, so they can be increased. Alternatively, the PAGER Act should be amended to allow higher penalties to be imposed by the Regulations.

Recommendation: An important part of this change would be to make the offence provisions more sensitive to the circumstances and degree of contravention (for example, if it results in serious environmental harm or from an intentional act). The EP Act system²⁵³ of "tiers" for penalties, and higher penalties for bodies corporate, is an example of a more effective framework that could be used to disincentivise environmentally harmful practices in fracking activities.

Recommendation: Include penalties for breaches of the Act by directors and those officers concerned in the management of a company undertaking a fracking proposal. These penalties could be modelled on the EP Act.²⁵⁴

²⁴⁷ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory, 'Draft Final Report' (December 2017), 384

<https://frackinginquiry.nt.gov.au/inquiry-reports/?a=465896>, ctg Petroleum (Environment) Regulations 2016 (NT), r 30.

²⁴⁸ Parliament of WA, Standing Committee on Environment and Public Affairs, 'Report 42: Implications for Western Australia of Hydraulic Fracturing for Unconventional Gas' (November 2015), 40.

²⁴⁹ See, eg, Santos Ltd, 'Submission #168 to the Scientific Inquiry into Hydraulic Fracturing in the Northern Territory – Part 2' (April 2017), 119 <https://frackinginquiry.nt.gov.au/?a=425529>.

²⁵⁰ International Energy Agency, 'Golden Rules for a Golden Age of Gas' (World Energy Outlook Special Report on Unconventional Gas, France, 12 November 2012) http://www.worldenergyoutlook.org/media/weowebiste/2012/goldenrules/WEO2012_GoldenRulesReport.pdf.

²⁵¹ International Energy Agency, 'Golden Rules for a Golden Age of Gas' (World Energy Outlook Special Report on Unconventional Gas, France, 12 November 2012), 56 http://www.worldenergyoutlook.org/media/weowebiste/2012/goldenrules/WEO2012_GoldenRulesReport.pdf.

²⁵² See, eg, Meiyu Guo, Yuan Xu and Yonquin David Chen, 'Catching Environmental Noncompliance in Shale Gas Development in China and the United States' (2017) 121 *Resources, Conservation and Recycling* 73, 74.

²⁵³ EP Act, Sch 1. See also EP Act, s 3(1).

²⁵⁴ EP Act, s118

7.5 ENVIRONMENTAL PROTECTION ACT 1986 (WA)

7.5.1 Overview of the EP Act

In a “lead agency” system, which is purportedly led by the PAGER Act, there is a risk that important provisions in the EP Act and related regulations will be sidelined in name of “regulatory efficiency”.

The EP Act provides for an EPA, for the prevention, control and abatement of pollution and environmental harm, for the conservation, preservation, protection, enhancement and management of the environment and for matters incidental to or connected with the foregoing.²⁵⁵ The object of the EP Act is to protect the environment of the State, having regard to the following principles:²⁵⁶

1. The precautionary principle;
2. The principle of intergenerational equity;
3. The principle of the conservation of biological diversity and ecological integrity;
4. Principles relating to improved valuation, pricing and incentive mechanisms;
5. The principle of waste minimisation.

It is a well-accepted rule of statutory interpretation that in interpreting legislation, effect must be given to the purpose or object underlying the legislation.²⁵⁷

Importantly, the EP Act provides that when a provision of that Act or an approved policy is inconsistent with a provision contained in another written law, the provisions of the EP Act or approved policy prevail.²⁵⁸

The following parts of the EP Act are covered in this submission, which we consider are particularly relevant to the regulation of fracking:

1. Part IV, Division 1 and 2 – environmental impact assessment and implementation of proposals;
2. Part V, Division 2 – Clearing of native vegetation; and
3. Part V, Division 3 – Regulation of ‘prescribed premises’ through works approvals and licensing.

7.5.2 EP Act - Part IV – Environmental Impact Assessment Process

Part IV of the EP Act provides for, among other things, the EIA by the EPA of proposals which are likely, if implemented, to have a significant effect on the environment (**significant proposals**).²⁵⁹

The EPA is an independent statutory body established under the EP Act, whose role is to protect the environment and prevent, control and abate pollution and environmental harm.²⁶⁰

A proposal is defined as:

²⁵⁵ EP Act, long title.

²⁵⁶ We have only set out the headings of each of these principles here, but will deal with some of them in more detail in other parts of this submission.

²⁵⁷ *Interpretation Act 1984* (WA), s 18

²⁵⁸ EP Act, s 5

²⁵⁹ *Ibid* s 37B.

²⁶⁰ *Ibid* s 15.

*‘a project, plan, programme, policy, undertaking or development or change in land use, or amendment of any of the foregoing’.*²⁶¹

Part IV of the EP Act (and related “Administrative Procedures”) sets out how the EPA is to conduct EIAs of significant proposals, and then how a decision is made by the Environment Minister (**Minister**) and other decision making authorities as to whether or not the proposal can be implemented. An EIA involves:

*‘the production of an environmental impact statement, or similar, which is used to inform decision-makers and, usually, the general public, about the predicted [environmental] outcomes of a proposal and what will be done to manage environmental effects.’*²⁶²

In summary, the EPA conducts a detailed assessment of the proposal focussing only on environmental grounds and makes a recommendation to the Minister who makes the final decision on whether the proposal can be implemented (and if so, what conditions should apply). In assessing proposals, the EPA is informed and guided by numerous EPA policies and guidelines outlined below.

There are numerous steps involved in the EIA of significant proposals in WA, which are outlined in Appendix 2.

It is important to note that a Memorandum of Understanding (MoU) exists between DMIRS and the EPA,²⁶³ which outlines the principles that will foster a strong partnership and collaborative working arrangements between the Parties, including those that support efficient and effective EIA processes, implementation of roles, and development of environmental policy.²⁶⁴ Specifically, the MoU requires DMIRS and the EPA to liaise with each other at pre-referral stages in cases where listed consultation criteria are triggered and/or where there is potential for significant environmental impacts.²⁶⁵ Where a proposal is likely to have a significant impact on the environment and requires formal EIA, the EPA will provide confirmation to DMIRS that formal referral is required.

Advantages of Part IV EIA process

The advantages of the EIA process under Part IV of the EP Act are numerous. It is a process that constitutes a holistic assessment of all aspects of a proposal which is overseen by one independent expert authority, the EPA, which draws on expertise from other government agencies where necessary. The process under Part IV applies numerous safeguards to significant proposals. These include:

- the prohibition on implementation of the proposal until completion of the EIA process and publication of a statement under section 45(5)(b) of the EP Act;²⁶⁶
- the prohibition on other decision makers from making decisions (for example, granting permits or licences) that could have the effect of causing or allowing the proposal to be implemented until an authority under section 45(7) is served on them;

²⁶¹ Ibid s 3.

²⁶² Gerry Bates, *Environmental Law in Australia* (LexisNexis Butterworths, 7th ed, 2010) 300.

²⁶³ *Environment regulations for petroleum*, Government of Western Australia, Department of Mines, Industry Regulation and Safety <<http://www.dmp.wa.gov.au/Petroleum/Environment-regulations-for-20109.aspx>>.

²⁶⁴ *Memorandum of Understanding for Collaborative Arrangements between The Office of the Environmental Protection Authority and the Department of Mines and Petroleum*, EPA, 2 <http://www.epa.wa.gov.au/sites/default/files/Publications/OEPA-DMP-MOU-100216_0.pdf>.

²⁶⁵ Ibid Schedule 2.

²⁶⁶ EP Act, s 41A.

- increased transparency and ability for public participation through the EIA process;
- there is no right of appeal against an EPA decision not to assess a proposal if the EPA recommends that the proposal be dealt with under Part V (s100(1)(a)). In our submission this is not desirable from a public participation point of view.
- conditions and procedures imposed under Part IV are Ministerial Conditions and have Ministerial oversight, and provide more certainty in terms of environmental protection (eg require Minister to approval changes following assessment under section 46).
- prohibiting the implementation of proposals until completion of the EIA process, providing for Ministerial oversight through the imposition of Ministerial conditions for environmental protection, and increasing transparency and the ability for public participation.

It is for these reasons, and the reasons outlined further below that in our view the EPA, implementing Part IV of the EP Act, is the appropriate “lead agency” and as such should undertake EIA of all fracking proposals in WA.

7.5.3 Part IV - Regulatory Issues and Recommendations

Deferral to other agencies

As mentioned above, while there have been three exploration fracking proposals referred to the EPA²⁶⁷ none of these have been assessed by the EPA. This is within the context of numerous public submissions being made, with the Drover-01 Exploration Well receiving 242 public comments calling for EPA assessment.²⁶⁸ In relation to the three referred fracking proposals, the EPA has decided that it would not assess any on the basis that the proposals were not so significant as to warrant formal assessment. Regarding the most recent proposal, the West Erregulla 2 Exploration Well, the EPA stated that its impacts on Hydrological Processes and Terrestrial Environmental Quality “can be managed and mitigated to meet the EPA’s objectives under the requirements of the Petroleum and Geothermal Energy Resources Act 1967 and the Regulations”.²⁶⁹ In relation to the remaining proposals, the Laurel Formation Tight Gas Pilot Exploration Program and the Drover-01 Exploration Well, the EPA stated that:

*‘any potential impacts can be evaluated, regulated and mitigated by the Department of Mines and Petroleum and the Department of Water’.*²⁷⁰

We respectfully submit that deferring the assessment of the environmental impacts of fracking proposals to multiple other regulators is not acceptable, and that a precautionary approach should be applied and adopted by the EPA in this regard. The agenda of regulatory efficiency has resulted in the systematic deferral of responsibility by the EPA for assessment and/or management of particular environmental factors by narrowing the scope of EIAs, or by avoiding the EIA of projects altogether.

²⁶⁷ See: *Proposal Search*, Environmental Protection Authority <http://www.epa.wa.gov.au/proposal-search?search_api_views_fulltext=fracture>. These include the West Erregulla 2 Exploration Well, Laurel Formation Tight Gas Pilot Exploration Program and Drover -01 Exploration Well.

²⁶⁸ *Notice under Section 39A(3) Environmental Protection Act 1986* (18 November 2013) EPA, 1 <http://www.epa.wa.gov.au/sites/default/files/public-advice/13-320316%20Drover-01%20Exploration%20Well%20Public%20Advice%20-181113.pdf>.

²⁶⁹ *S38 Referrals, S 16 and/or S46 Advice: West Erregulla 2 Exploration Well* (14 January 2015) Office of the Environmental Protection Authority <http://www.epa.wa.gov.au/sites/default/files/Extract_of_determination/CMS14353%20-%20CD%20-%20190115.pdf>.

²⁷⁰ *S38 Referrals, S 16 and/or S46 Advice: Laurel Formation Tight Gas Pilot Exploration Program* (8 January 2014) Office of the Environmental Protection Authority <http://www.epa.wa.gov.au/sites/default/files/Extract_of_determination/13-404315%20-%20CD%20-%20130114.pdf>; *S38 Referrals, S 16 and/or S46 Advice: Drover-01 Exploration Well* (14 November 2013) Office of the Environmental Protection Authority <http://www.epa.wa.gov.au/sites/default/files/Extract_of_determination/13-320316%20-%20CD%20-%20181113_0.pdf>.

In our submission, the theoretical ability of other government agencies or regulators to manage or assess the environmental impacts of proposals should not be used as a reason by the EPA to decide not to assess a proposal, or to reduce the scope of assessment. The regulatory processes of other agencies or regulators often do not involve the same degree of public transparency or Ministerial oversight; they often lack statutory powers of environmental protection; and their environmental standards are often unclear or are lower than the standards that would be applied by the EPA.

Not only does this practice of deferral rely on other agencies to ensure the protection of the environment where they have no adequate mandate, powers, resources, or scope to do so, it also means that the Minister for the Environment's ability to directly monitor or investigate environmental compliance or environmental outcomes is significantly curtailed,²⁷¹ and that the transparency and community engagement involved in the EIA process is removed.

The fact that other regulators lack possession of data on environmental outcomes means it is impossible for the EPA to set adequate and evidence-based standards for allowable environmental impacts, and makes it impossible for the community to hold governments or proponents accountable, particularly where the transparency of regulatory outcomes in non-environmental agencies is often seriously lacking.

We do not believe that the extent to which an activity is regulated by another government agency (which exists for a purpose other than environmental protection) should be a relevant consideration in deciding whether EIA should occur. This is especially accurate when the efficacy of other agency regulatory regimes has not even been measured, let alone confirmed, in their ability to reduce environmental harm.

With respect, we believe the EPA's practice of deferral to other regulators for environmental regulation is not appropriate.

Given the significant impacts fracking activities may have on the environment, we strongly recommend and encourage the EPA to adopt a precautionary approach and favour conducting EIAs of all fracking activities under Part IV of the EP Act rather than deferring to other agencies such as DMIRS to take the "lead" role in the assessment of fracking proposals.

Recommendation: All fracking proposals should be subject to an EIA under Part IV of the EP Act.

Cumulative Impacts

While the EPA may consider that the environmental impacts of individual fracking proposals or wells may not meet the 'significance' test to warrant full EIA, the cumulative impacts of a combination of fracking activities in a particular region (for example, in terms of their greenhouse gas emissions and pollution, impacts to biodiversity and the like (all outlined above)) could be "potentially enormous"²⁷² and should be considered by the EPA when deciding whether or not to assess a fracking proposal, whether it be for exploration or full production.

In our view, WA's current regulatory regime is inadequate to address the potential cumulative impacts of fracking. In particular the PAGER Act and related regulations contain no provisions or requirements for the assessment of cumulative impacts. While the EP Act could be strengthened, at least under Part IV of the EP

²⁷¹ For example, see EP Act, ss 46 – 48.

²⁷² See *EDONT Submission to the Independent Scientific Inquiry into Hydraulic Fracturing* (30 April 2017), EDONT, Attachment D: Expert Report, Linear Infrastructure Impacts -Renata Bali, 16.

Act or the associated Administrative Procedures, the EPA has the ability to consider cumulative impacts when undertaking an assessment. For example, the EPA's Statement of Environmental Principles, Factors and Objectives state that the EPA 'may' have regard to the 'cumulative impact with other projects' in considering the significance of a particular proposal.

There is a risk that by not considering the impact of fracking proposals from a cumulative perspective, but rather on a case-by-case basis, the full impact of fracking in a particular region will not be known for some time, and without sufficient management and oversight. We have made this point above about the tyranny of small decisions.

No reference of cumulative impacts is made in the EPA's recent assessment of the West Erregulla 2 Exploration Well. While cumulative impacts were mentioned in the EPA's previous assessments of the Laurel Formation Tight Gas Pilot Exploration Program and the Drover- 01 Exploration Well, they did not appear to be considered in any detail, with the EPA stating in relation to considering impacts of future production and wider implications:

"the EPA is obliged to consider a proposal as referred" ...[a]ny future proposal for a production operation would be considered on its individual merits and any environmental assessment undertaken by the EPA would consider the environmental acceptability of the proposal".²⁷³

In our view, the cumulative impacts of fracking activities should be considered by the EPA when deciding whether or not to assess a proposal and also throughout the assessment process.

Recommendation: Detailed consideration of cumulative impacts of fracking proposals should be required during EIA under Part IV of the EP Act.

EPA Guidelines and Policy

As mentioned above, during EIA of proposals the EPA is informed and guided by numerous EPA policies and guidelines including its *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016*, *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual*, Statement of Environmental Principles, Factors and Objectives and its Environmental Factor Guidelines for Sea, Land, Water, Air and People.²⁷⁴

We comment on the following EPA Guidelines and policies as they should apply to the assessment of fracking proposals.

Water Guidelines

WA's current regulatory approach for the regulation of water quality and protection is inadequate due to the lack of consistent regulatory standards for the assessment of water quality or groundwater protection. Further, in practice we have seen in a number of assessments the EPA seeking advice from DWER on the likely impacts on groundwater quality and availability of water for use by proponents. DWER's advice

²⁷³ Notice under Section 39A(3) Environment Protection Act 1986 (13 January 2014) EPA, 5 <<http://www.epa.wa.gov.au/sites/default/files/public-advice/13-404315%20s38%20Laurel%20public%20advice%20130114.pdf>>; Notice under Section 39A(3) Environment Protection Act 1986 (18 November 2013) EPA, 7 <<http://www.epa.wa.gov.au/sites/default/files/public-advice/13-320316%20Drover-01%20Exploration%20Well%20Public%20Advice%20-181113.pdf>>.

²⁷⁴ Guidelines and Procedures, EPA <<http://www.epa.wa.gov.au/guidelines-and-procedures>>.

appears to then form the basis of the EPA's EIA decision or recommendations. This is concerning given the lack of consistent legislative or policy standards to guide DWER's advice.

Where they are gazetted, PDWSAs provide a level of protection by informing a rigorous approach to risk assessment linked to specific numerical water quality values. For example, as stated in the *Regulatory Environment* paper:

"[d]rinking Water Source Protection Plans have been developed by DWER to identify and manage potential risks to water quality and public health in PDWSAs".²⁷⁵

DMIRS has also stated that PDWSAs are "subject to their own government agency assessment and approvals processes that reflect the Australian Drinking Water Guidelines".²⁷⁶

Despite this, we understand that the majority of areas proposed for fracking activities are located outside of PDWSAs, yet groundwater is still required as drinking water for pastoralists, farmers, traditional owners, communities and stock watering. The water quality protections and standards applied by the DWER to these areas appear to be highly variable and unenforceable. Further, the location of many (if not the majority) of abstraction points or natural expressions of groundwater used for drinking in these areas (bores, wells, waterholes) are not known to regulators, making it difficult or impossible for them to properly provide for the protection of these resources when making regulatory decisions.

While the Australian Government states that the Guidelines for Groundwater Quality Protection in Australia 2013 are designed to provide a "consistent, high level approach to groundwater quality protection across Australia",²⁷⁷ they provide almost complete discretion for state regulators in setting numerical standards for permissible water quality impacts.

As stated in the Guidelines,

*.There are currently no specified water quality guideline values for protection of cultural and spiritual or industrial water use Environmental Value categories...*²⁷⁸

*"There are currently no water quality guidelines for Groundwater Dependent Ecosystems (GDEs) 'that rely on the subsurface presence of groundwater' (i.e. vegetation)".*²⁷⁹

*"Even where generic guideline values are available in NWQMS documents, water quality objectives may be locally defined to consider water quality issues specific to the groundwater system in question. This enables existing water quality, community values, potential and future uses to be considered within water quality objectives".*²⁸⁰

The Guidelines provide that groundwater protection standards for areas outside of drinking water protection zones are to be determined by local regulators taking into account a range of factors as they see fit, including existing and future potential uses of the water resources, as well as other matters such as economic considerations.

²⁷⁵ *Regulatory Environment paper*, 11.

²⁷⁶ Department of Mines and Petroleum, Government of Western Australia, 'Guide to the Regulatory Framework for Shale and Tight Gas in Western Australia: A Whole of Government Approach' (Report, Government of Western Australia, 2015) 34, <http://www.dmp.wa.gov.au/Documents/Petroleum/WEB_Shale_and_Tight_Gas_Framework.pdf>.

²⁷⁷ Australian Government, *National Water Quality Management Strategy: Guidelines for Groundwater Quality Protection in Australia* (2013) Department of Agriculture and Water Resources, 9 <<http://www.agriculture.gov.au/SiteCollectionDocuments/water/nwqms-groundwater-quality-protection-guidelines.pdf>>.

²⁷⁸ *Ibid* 24.

²⁷⁹ *Ibid* 4.2.4, 39.

²⁸⁰ *Ibid* 39.

In practice this means that there are no consistent groundwater quality protection standards across WA, which risks an outcome whereby different regulators take different approaches which can also vary over time.

Further, the most frequent way the Guidelines have been implemented and standards set in WA by regulators (especially for extractive industries under the Petroleum and Mining legislation) have been to apply ALARP as the guiding principle. As we state elsewhere, this principle bears no relationship whatsoever to the maintenance of ecological processes or protection of human health, instead being a construct of what is possible to achieve within a certain budget volunteered by a proponent.

Recommendation: Development of consistent, robust Guidelines and standards for the assessment of water quality and groundwater protection in WA, to guide and inform EIA of fracking proposals under Part IV of the EP Act.

Air Quality -Greenhouse Gas Emissions

Greenhouse gas emissions are currently included in the EPA's "Air Quality" Environmental Factor Guideline, as a consideration the EPA may decide to assess during the EIA process if they are deemed to be significant.²⁸¹ Given fracking activities could lead to large deliberate, uncontrolled and fugitive emissions of methane and contribute to climate change,²⁸² greenhouse gas emissions, including downstream greenhouse gas emissions (scope 3 and 4), and the cumulative impacts of emissions from all State fracking proposals, should be considered by the EPA in EIA of all fracking proposals.

The Australia Institute has demonstrated that emissions from unconventional gas have been significantly underestimated in Australia.²⁸³ The Melbourne Energy Institute also concluded that Australia may be underestimating the fugitive methane emissions from unconventional gas as a result of no regulations existing in Australia directly limiting methane emissions from oil and gas production.²⁸⁴ While methane emissions are required to be reported under the National Greenhouse and Energy Reporting Scheme (NGERS), these emissions do not include estimates of 'migratory' methane emissions.²⁸⁵

Despite this, EPA's Air Quality Guideline states that the EPA:

*'may decide to assess greenhouse gas emissions within the EIA process if a proposal's expected total greenhouse gas emissions are deemed to be significant'.*²⁸⁶

This is defined as "proposals that have the potential to significantly increase the State's greenhouse gas emissions, which totalled 83.4 Mt of CO₂-e in 2013-14".²⁸⁷ Accordingly, the EPA currently makes no specific

²⁸¹ *Environmental Factor Guideline Air Quality* (December 2016) EPA, 3

<http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Guideline-Air-Quality-131216_2.pdf>.

²⁸² Lock The Gate Alliance, *Submission to the NT Inquiry into Hydraulic Fracturing and Associated Activities* (April 2017) Fracking Inquiry NT <<https://frackinginquiry.nt.gov.au/?a=424035>>.

²⁸³ Rod Campbell, Bill Browne and Hannah Aulby, The Australia Institute, *Scientific Inquiry into Hydraulic Fracturing in the Northern Territory Submission* (April 2017) Fracking Inquiry NT <<http://www.tai.org.au/sites/default/files/P393%20NT%20fracking%20inq%20submission%20FINAL.PDF>>.

²⁸⁴ Dimitri Lafleur et al, 'A review of current and future methane emissions from Australian unconventional oil and gas production' (Research Report, Melbourne Energy Institute, October 2016) 9 <http://energy.unimelb.edu.au/__data/assets/pdf_file/0019/2136223/MEI-Review-of-Methane-Emissions-26-October-2016.pdf>.

²⁸⁵ Dimitri Lafleur and Mike Sandiford, 'The risk of migratory methane emissions resulting from the development of coal seam gas in QLD' (Research report, Melbourne Energy Institute, April 2017) <http://www.tai.org.au/sites/default/files/Migratory_emissions_20170417-LowerRes.pdf>.

²⁸⁶ *Environmental Factor Guideline Air Quality* (December 2016) EPA, 3

<http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Guideline-Air-Quality-131216_2.pdf>.

²⁸⁷ Ibid 3.

commitment to consider and assess the greenhouse gas emissions of fracking or any other significant proposal in WA.

Further, in assessing the emissions, the Air Quality Guidelines state that the EPA may require information estimating the expected Scope 1 (direct) and Scope 2 (energy indirect) greenhouse gas emissions, making no reference to Scope 3 (indirect emissions other than Scope 2 emissions that are generated in the wider economy)²⁸⁸ and Scope 4 emissions. Emissions arising from the development of WA's fossil fuel resources harm the environment of Western Australia by contributing to global climate change wherever the combustion is located. Given the environmental impacts of Scope 3 and 4 emissions are felt within WA and the resource is extracted from WA, consideration of downstream emissions should be explicitly referred to in the Air Quality Guideline.

While the greenhouse gas emissions of an individual fracking proposal may be deemed to be insignificant, if the cumulative emissions of multiple fracking projects are considered, their emissions will likely be considered significant.

Recommendation: Greenhouse gas emissions from fracking proposals, including Scope 3 and 4 emissions, should be assessed by the EPA during the Part IV EIA process.

EPA Climate Policy

The EPA's policy approach to climate change, which informs its EIA under Part IV, also requires urgent review.

The EPA states in its Annual Report 2016-2017 that its response to greenhouse gases and advice and recommendations on climate change are "nested... within the Commonwealth and State Government climate policy framework".²⁸⁹ Due to its role as an independent statutory body established under the EP Act to protect WA's environment, the EPA is constrained to focus only on the environmental impacts, not economic impacts, of proposals. Despite this, by deferring to Australian Government climate policy in providing advice on climate change impacts, which are weak or absent and are dominated by economic considerations and financial interests, we respectfully submit that the EPA is taking into account irrelevant factors in its EIA process.

Similarly, the EPA's current ALARP and 'best practice' approach in climate policy is inappropriate and inconsistent with the EP Act provisions governing EIA.²⁹⁰ As stated in the EPA's Statement of Environmental Principles, Factors and Objectives, the EIA process is underpinned by environmental principles such as the precautionary principle; principle of intergenerational equity; principle of conservation of biological diversity and ecological integrity; principles relating to improved valuation, pricing and incentive mechanisms; and the principle of waste minimisation, environmental factors including sea; land; water; air and people, and associated environmental objectives.²⁹¹ Principles such as ALARP and 'best practice' are social and economic

²⁸⁸ *Greenhouse Gases and energy* (21 November 2016) Australian Government, Clean Energy Regulator, National Greenhouse Energy Reporting <<http://www.cleanenergyregulator.gov.au/NGER/About-the-National-Greenhouse-and-Energy-Reporting-scheme/Greenhouse-gases-and-energy>>.

²⁸⁹ Dr Tom Hatton, *Annual Report 2016-17* (2 October 2017) Environmental Protection Authority, 38

<http://www.epa.wa.gov.au/sites/default/files/Annual_reports/EPA%20Annual%20Report%202016-2017.pdf>.

²⁹⁰ "The EPA will now carry out an inquiry into the existing air quality condition placed on the project to ensure it is in line with contemporary best practice." See: Taylor Neale, 'EPA to review Wheatstone emissions', *Business News* (online) 22 January 2018

<<https://www.businessnews.com.au/article/EPA-to-review-Wheatstone-emissions>>.

²⁹¹ *Statement of Environmental Principles, Factors and Objectives* (December 2016) EPA, Government of Western Australia

<http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Statement%20of%20Environmental%20Principles%2C%20factors%20and%20objectives_Dec16_1.pdf>.

constructs which implicitly take account of economic factors, and bear no particular relationship to environmental science or outcomes, acceptable or otherwise.

We understand that the EPA considers that such principles flow from the principle of waste minimisation provided in the EP Act, however, in our view this principle should not override other considerations or be treated as the dominant consideration.

The EPA must therefore develop climate change policy that reflects climate science, not the cost or practicability of proposals. The EPA policy should require 100% offsetting of residual emissions. It is for the Minister to decide if such recommendations are not to be imposed or implemented due to economic and other considerations following advice from the EPA.

Recommendation: Updating and strengthening of the EPA's current climate policy and guidelines, to be guided by environmental science and not the policies of the Australian Commonwealth or State governments.

WA State Government Climate policy

The current WA Government climate policy *Adapting to our changing climate* was written in October 2012 when the Australian Government position on climate change differed significantly. It is now out of date and in need of reform. *Adapting to our changing climate* states that the WA Government's role is to take "complementary action" which assists the national mitigation effort.²⁹²

In light of the large greenhouse gas emissions associated with fracking activities and their contribution to climate change,²⁹³ the current regulation of greenhouse gas emissions in WA is inadequate and incompatible with Australia's international obligations under the Paris Agreement and principles under the EP Act such as the precautionary principle and principle of intergenerational equity. Australia is a signatory to the Paris Agreement which recently entered into force in November 2016 and aims to strengthen the global response to the climate change threat by keeping a global temperature rise this century well below 2° Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5° Celsius.²⁹⁴ To achieve these aims, the Paris Agreement obliges all Parties to put forward their best efforts to effectively implement the Agreement through preparing, communicating and maintaining "nationally determined contributions" (NDCs), which are regularly strengthened, and to pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions.²⁹⁵

The Australian Government states on its website in relation to the Paris Agreement that "Australia is committed to taking strong domestic and international action on climate change" and that it is "implementing national policies to reduce emissions and adapt to the impacts of climate change in the context of coordinated global action".²⁹⁶ Despite this commitment to reducing Australia's greenhouse gas emissions, the WA Government is considering increasing our emissions by allowing new unconventional gas

²⁹² 2017 Review of Climate Change Policies (December 2017) Australian Government, Department of Environment and Energy <<http://www.environment.gov.au/system/files/resources/18690271-59ac-43c8-ae1-92d930141f54/files/2017-review-of-climate-change-policies.pdf>>.

²⁹³ Lock The Gate Alliance, *Submission to the NT Inquiry into Hydraulic Fracturing and Associated Activities* (April 2017) Fracking Inquiry NT <<https://frackinginquiry.nt.gov.au/?a=424035>>.

²⁹⁴ *The Paris Agreement*, United Nations Climate Change <http://unfccc.int/paris_agreement/items/9485.php>.

²⁹⁵ Paris Agreement, art 4(2).

²⁹⁶ *Adapting to our changing climate* (October 2012) Western Australian Government, Department of Environmental Regulation, 4 <<https://www.der.wa.gov.au/images/documents/your-environment/climate-change/adapting-to-our-changing-climate-october-2012.pdf>>.

fracking developments. Published materials state that the domestic carbon footprint from WA's current unconventional gas resources is already about three times what Australia is allowed to emit in order to comply with our obligations under the international Paris Agreement.²⁹⁷ Allowing fracking activities would therefore clearly undermine and contradict the goals of the Paris Agreement and the transition to a low-carbon future.

The Commonwealth Government's national policy on, and regulation of, climate change is non-existent and weak, with its ERF safeguard mechanism offering many exemptions and not requiring any reduction of business as usual.²⁹⁸ Further, the Melbourne Energy Institute concluded that Australia may be dramatically under-estimating the fugitive methane emissions.²⁹⁹ Due to the WA Government's climate policy being required to complement national climate policy,³⁰⁰ it is also inadequate and places no limits on the release of methane or requires the measurement/reporting of greenhouse gas emissions by fracking proponents.

Australia's national climate change regime fails to measure and regulate greenhouse gas emissions. As acknowledged by the EPA in its 2016-2017 Annual Report, the Australian Government's Emissions Reduction Fund (ERF) safeguard mechanism, which is designed to ensure emissions reductions are not offset by significant increases in emissions elsewhere in the economy, offers many exemptions and does not require any reduction of business as usual.³⁰¹ The International Energy Agency has also described the ERF as "being ineffective at restricting Australia's carbon emissions for both power and industrial sectors", with the power sector "not being subject to any effective cost for its emissions" and emissions from the industrial or non-power sector not being affected because of high allowable emissions limits.³⁰²

The Melbourne Energy Institute has concluded that Australia may be dramatically under-estimating the fugitive methane emissions from unconventional gas activities by largely ignoring migratory methane emissions.³⁰³ The Institute states that Australia's methane-emission reporting methodologies (the National Greenhouse Gas Inventory) "reports methane emissions based on default emission factors" rather than direct measurement.³⁰⁴

The Commonwealth Scheme is also targeted at the Eastern Seaboard electricity sector, in particular coal-powered facilities, which are not prevalent in WA.

As a result of these developments, the Commonwealth Government has left greenhouse gas emissions effectively unregulated in WA.

²⁹⁷ Bill Hare et al, 'Western Australia's Gas Gamble: Implications of exploiting Canning Basin and other unconventional gas resources for achieving climate targets' (report, Climate Analytics, March 2018) 3 <<http://climateanalytics.org/files/climateanalytics-report-westernaustraliasgasmble-2018.pdf>>.

²⁹⁸ Dr Tom Hatton, *Annual Report 2016-17* (2 October 2017) Environmental Protection Authority, 39 <http://www.epa.wa.gov.au/sites/default/files/Annual_reports/EPA%20Annual%20Report%202016-2017.pdf>.

²⁹⁹ Dimitri Lafleur and Mike Sandiford, 'The risk of migratory methane emissions resulting from the development of coal seam gas in QLD' (Research report, Melbourne Energy Institute, April 2017) 28 <http://www.tai.org.au/sites/default/files/Migratory_emissions_20170417-LowerRes.pdf>. http://www.tai.org.au/sites/default/files/Migratory_emissions_20170417-LowerRes.pdf

³⁰⁰ 2017 Review of Climate Change Policies (December 2017) Australian Government, Department of Environment and Energy <<http://www.environment.gov.au/system/files/resources/18690271-59ac-43c8-ae1-92d930141f54/files/2017-review-of-climate-change-policies.pdf>>.

³⁰¹ Dr Tom Hatton, *Annual Report 2016-17* (2 October 2017) Environmental Protection Authority, 39 <http://www.epa.wa.gov.au/sites/default/files/Annual_reports/EPA%20Annual%20Report%202016-2017.pdf>.

³⁰² Peter Milne, 'WA's big polluters revealed', *The West Australian* (online) 26 February 2018, 49 <<https://thewest.com.au/business/clean-energy-regulator-reveals-was-big-polluters-ng-b88750980z>> .

³⁰³ Dimitri Lafleur and Mike Sandiford, 'The risk of migratory methane emissions resulting from the development of coal seam gas in QLD' (Research report, Melbourne Energy Institute, April 2017), 28 <http://www.tai.org.au/sites/default/files/Migratory_emissions_20170417-LowerRes.pdf>.

³⁰⁴ Dimitri Lafleur et al, 'A review of current and future methane emissions from Australian unconventional oil and gas production' (Research Report, Melbourne Energy Institute, October 2016) 7 <http://energy.unimelb.edu.au/_data/assets/pdf_file/0019/2136223/MEI-Review-of-Methane-Emissions-26-October-2016.pdf>.

WA State Government policy places no limits on the release of methane or requires the offsetting, measurement or reporting of greenhouse gas emissions by fracking proponents. Accordingly, a robust WA State Government climate change policy is critical to ensure the adequate regulation of fracking activities in Western Australia.

It is therefore inappropriate and premature to allow the development of fracking proposals, which will have significant greenhouse gas emissions, unless and until an adequate State climate change regulatory regime is established or unless a robust policy applies to the assessment and regulation of greenhouse gas emissions for the purposes of Part IV EIA.

Recommendation: Fracking activities should not be allowed unless or until an effective State climate change regulatory regime is developed and fracking proposals are subject to full EIA under Part IV of the EP Act that takes into account greenhouse gas emissions from such proposals.

Recommendation: Updating and strengthening of WA Government climate policy.

Recommendation: Development of regulatory mechanisms which set emissions limits and require offsetting, monitoring and reporting of GHG emissions by fracking activities and the use of best practice technologies.

Social Surroundings and Health Guidelines

The EPA's "Social Surroundings" Environmental Factor Guideline communicates how the factor *Social Surroundings* is considered by the EPA in the EIA process.³⁰⁵ The social surroundings included in this Guideline are Aboriginal heritage and culture, natural and historical heritage, amenity and economic. According to this Guideline, for social surroundings to be considered in EIA "there must be a clear link between a proposal or scheme's impact on the physical or biological surroundings and the subsequent impact on a person's aesthetic, cultural, economic or social surroundings" and the effect must be significant.³⁰⁶

a. Community Health And Wellbeing

Another reason for the EPA to conduct EIA of all fracking proposals under Part IV of the EP Act is that it enables there to be an assessment of the likely impacts to people in the area of that proposal.

The EPA's Social Surroundings Guidelines state that "[f]or the purpose of EIA, amenity values include both visual amenity, and the ability for people to live and recreate within their surroundings without any unreasonable interference with their health, welfare, convenience and comfort"³⁰⁷ from issues such as noise, odour and dust.

The "Human health" Environmental Factor Guideline: also seeks to protect human health from significant harm, stating that the EPA takes a "holistic approach to human health to which EIA of significant proposals and schemes can contribute by ensuring that human health is not materially affected by development activity".³⁰⁸ The Human Health Guideline states that "consideration of possible impacts to human health is largely confined to EIA of harmful emissions to air and harmful discharges to soil, inland waters and marine

³⁰⁵ *Environmental Factor Guideline Social Surroundings* (December 2016) EPA

<http://epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Guideline-Social-Surroundings-131216_2.pdf>.

³⁰⁶ Ibid 1.

³⁰⁷ Ibid 3.

³⁰⁸ *Environmental Factor Guideline Human Health* (December 2016) EPA, 1

<http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Guideline-Human-Health-131216_2.pdf>.

waters, that is through impacts to the physical environment”,³⁰⁹ which are dealt with in the Air Quality Terrestrial Environmental Quality, Inland Water Environmental Quality and Marine Environmental Quality Guidelines.

b. Aboriginal Heritage

The Social Surroundings Guideline also enables there to be an assessment of the impacts to Aboriginal heritage values in the area. In relation to Aboriginal heritage, the Social Surroundings Guidelines state that “[t]he Aboriginal Heritage Act 1972 provides for the preservation of Aboriginal heritage sites”³¹⁰ and that the EP Act can complement the AH Act in some circumstances, such as in cases where actual physical protection of the environment is required to protect sites of heritage significance.³¹¹ Further, the Guidelines provide that matters of Aboriginal cultural associations, including traditional Aboriginal customs such as traditional hunting and gathering activities for native fauna and flora as bush tucker, directly linked to the physical or biological aspects of the environment, may also be considered significant.³¹²

In our view, this is important given flaws with the current *Aboriginal Heritage Act 1972* (WA), which the Aboriginal Affairs Minister has recently recognised as not meeting the contemporary needs of Aboriginal people and does little to protect our unique heritage.³¹³ We also welcome the proposed review of the Aboriginal Heritage Act, and consider reform to this Act is long overdue.

7.5.4 Part V - Regulatory Regime, Issues and Recommendations

Part V of the EP Act, which is overseen by DWER, relevantly provides for the following:

- Clearing of native vegetation;
- Regulation of “prescribed premises” through works approvals and licences; and
- Pollution and environmental harm offences.

Division 2 - Clearing of native vegetation

Overview of regulatory regime

Part V of the EP Act provides that it is an offence for a person to cause or allow the clearing of native vegetation unless that clearing is undertaken pursuant to a clearing permit or a specific exemption applies.³¹⁴

Schedule 6 to the EP Act lists applicable exemptions to the requirement to obtain a clearing permit, which include an exemption where clearing is done in accordance with a works approval or licence.³¹⁵ An exemption also applies if the project has been subject to EIA and authorisation under Part IV of the EP Act.³¹⁶

³⁰⁹ Ibid 1.

³¹⁰ Ibid 2.

³¹¹ Ibid.

³¹² Ibid.

³¹³ <https://www.mediastatements.wa.gov.au/Pages/McGowan/2018/03/Aboriginal-heritage-legislation-to-be-reviewed.aspx>

³¹⁴ EP Act, s 51C.

³¹⁵ Ibid Sch 6, 2(c)(ii) (iii).

³¹⁶ Ibid Sch 6, 2(a)

Other exemptions from the requirement to obtain a clearing permit are set out in a table in the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations)*, if not in an “environmentally sensitive area”.³¹⁷ Two exemptions relevant to fracking are:

Item 20 – “Low impact or other mineral or petroleum activities”

This includes clearing:

“that is, or is the result of carrying out, a low impact or other petroleum activity”.³¹⁸

Activities that are considered “low impact mineral or petroleum activities” include:

- activities involving “no ground disturbance and little or no vegetation damage”;
- driving vehicles or mechanised equipment through vegetation, not along existing tracks;
- clearing for camp sites.³¹⁹

Clearing of up to 10ha per financial year can be undertaken pursuant to this exemption. It is unclear what is meant by “little or no vegetation damage”.

Item 24 – Clearing under a Petroleum Act

This includes clearing that is the result of carrying out exploration under an authority under the PAGER Act, the *Petroleum Pipelines Act 1969* or the *Petroleum (Submerged Lands) Act 1982*.³²⁰

Consistent with the above, the EPA stated in its public advice regarding the Drover-01 Exploration Well that no clearing permit was required for this proposal because:

“onshore petroleum exploration proposals are exempt from the requirement to obtain a vegetation clearing permit under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (regulation 5, item 24) unless in a listed Environmentally Sensitive Area”.³²¹

Regulatory Issues and Recommendations

Therefore any exploration authority granted by DMIRS is likely to provide an exemption to the requirement to obtain a clearing permit under the EP Act and certain other “low impact” activities are not required to obtain a permit. This will mean that the following important controls and safeguards under the EP Act will not apply:

- consideration of the clearing principles in assessing the proposed clearing before it is permitted;³²²
- imposition of specific conditions regulating the clearing of vegetation to prevent, control, abate, mitigate, rehabilitate or offset the loss of the vegetation cleared³²³;
- imposition of specific conditions requiring the proponent to report on clearing undertaken each year;
- offence provisions and other management provisions will not apply in the event of a failure by the proponent to comply with conditions of the permit;³²⁴

³¹⁷ Ibid ss 51C and 51B; and *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* r 5 (‘Clearing Regulations’).

³¹⁸ Ibid r 5.

³¹⁹ Ibid cl 2.

³²⁰ Ibid r 5.

³²¹ *Notice under Section 39A(3) Environment Protection Act 1986* (18 November 2013) EPA, 7 <<http://www.epa.wa.gov.au/sites/default/files/public-advice/13-320316%20Drover-01%20Exploration%20Well%20Public%20Advice%20-181113.pdf>>.

³²² EP Act, Sch 5.

³²³ Ibid s 51H.

³²⁴ Ibid ss 51J; 51S and 70.

- publication of clearing permit applications and the ability of the public to comment on such applications³²⁵; and appeal decisions relating to clearing permits to the Minister.³²⁶

In addition to this the cumulative impact of so called “low impact” or “minor” clearing from multiple exploration sites will not be assessed, monitored and actively regulated because there is no requirement to report clearing undertaken pursuant to an exemption, and as set out above, much of the information from operations undertaken by the petroleum industry under the PAGER Act is treated as confidential and not required to be made public under the PAGER Act regime. This includes information that by any test could not be seen to be confidential, such as environmental data.

Recommendation: The exemptions available for fracking exploration under the Clearing Regulations should be removed. The only exemptions that should apply should be for clearing that is undertaken pursuant to an authorisation under the EP Act that has assessed and conditioned that clearing, such a licence granted under Part V of the EP Act, or following EIA and authorisation under Part IV of the EP Act.

Division 3 - Regulation of ‘prescribed premises’

Regulatory Regime

Part V of the EP Act requires an occupier of “prescribed premises” to obtain a works approval (before premises are constructed) and a licence (to operate premises) to manage their impact on the environment. Failure to obtain a works approval or licence is an offence.³²⁷ “Prescribed premises” are categories of premises which are listed in Schedule 1 of the *Environmental Protection Regulations 1987 (WA) (EP Regulations)*. They are by their nature the types of premises that may cause pollution, unreasonable emissions or pose some other environmental risk. DWER is the responsible agency for managing Part V of the EP Act. According to DWER, works approvals and licences are granted under Part V to ensure that potentially polluting and environmentally harmful activities carried out on prescribed premises do not cause emissions or discharges that produce unacceptable risks to public health and/or the environment.³²⁸

The purpose of Part V licences and works approvals is to regulate and control any emissions such as noise, odour, electromagnetic radiation and discharge of waste into the environment from a prescribed premises through the assessment of that activity and conditions imposed on an approval should DWER consider those impacts to be manageable.

The public is provided with an opportunity to be informed of, and comment on applications for works approvals and licences.³²⁹

While a decision to grant a works approval or licence cannot be appealed by the public, the conditions of those approvals can be appealed to the Minister.³³⁰

³²⁵ *Clearing permit applications for public comment* (19 March 2018) Government of Western Australia, Department of Water and Environmental Regulation <<https://www.der.wa.gov.au/our-work/clearing-permits/clearing-permit-applications>>.

³²⁶ EP Act, s 101A.

³²⁷ Ibid ss 52 and 56.

³²⁸ *Guidance Statement – Regulatory Principles Environment Protection Act 1986, Part V; Effective and efficient regulation* (July 2015) Department of Water and Environment Regulation, 1 <https://www.der.wa.gov.au/images/documents/our-work/regulatory-principles/Guidance_Statement_Regulatory_Principles.pdf>.

³²⁹ EP Act, ss 54(2) and (2a); 57(2)(b) and (2a); and *Guidance Statement – Regulatory Principles Environment Protection Act 1986, Part V; Effective and efficient regulation* (July 2015) Department of Water and Environment Regulation, 1 <https://www.der.wa.gov.au/images/documents/our-work/regulatory-principles/Guidance_Statement_Regulatory_Principles.pdf>.

Regulatory Issues and Recommendations

As noted above, EP Act licences and works approvals are only required for “prescribed premises”. These premises are listed in Schedule 1 to the Regulations. In our view, it is not clear that all fracking proposals in WA would be subject to the protections provided by the licensing and works approvals provisions for the following reasons. The only relevant “prescribed premises” category that may apply to fracking that we are able to identify are Category 10 and 11 (our emphasis underlined):

Category number	Description of category	Production or design capacity
10	Oil or gas <u>production from wells</u> : premises, whether on land or offshore, on which crude oil, natural gas or condensate is extracted from below the surface of the land or the seabed, as the case requires, and is treated or separated to produce stabilized crude oil, purified natural gas or liquefied hydrocarbon gases.	5000 tonnes or more per year
11	Oil or gas <u>production</u> (other): premises (other than premises within category 10) on which the commercial production of oil or gas occurs (including the reforming of hydrocarbon gas).	5000 tonnes or more per year

Therefore fracking activities would need to fit the above definition to be required to have a licence and works approval. The issues that we identify include:

- The requirement for a works approval and licence clearly seems to be limited to production, and not exploration;
- It is unclear whether the 5000 tonne threshold for requiring a works approval and licence is per well, or an operation more generally.

We have seen a copy of correspondence in 2014 from the then Department of Environmental Regulation (now DWER) in relation to a gas fracking exploration well. In that correspondence the Department stated that the proposal “does not fall within the categories of prescribed premises set out in the *Environmental Protection Regulations 1987* (WA)”.³³¹

In that correspondence the Department also indicated that a possible legal defence against charges of pollution under section 74B of the EP Act “is likely to encompass the carrying out of petroleum activities in accordance with the requirements of an approved environment plan under the PAGER (Environment) Regulations”.³³² That is, in the Department’s view fracking proponents cannot be prosecuted for pollution if a fracking licence issued by the DMIRS authorises their activities. Accordingly, fracking proponents could avoid being held accountable or penalised for causing pollution in circumstances where the only approval that is in place is an EP. We consider this to be a serious, and an area for urgent reform.

³³⁰ EP Act, s 102.

³³¹ Letter from the Department of Environment Regulation to Conservation Council of Western Australia, 25 August 2014, 2.

³³² Letter from the Department of Environment Regulation to Conservation Council of Western Australia, 25 August 2014, 2.

We also note that that particular proposal did not require assessment by the EPA under Part IV of the EP Act, which means that none of the direct controls under the EP Act (EIA, licensing, pollution offences) would apply to that exploration programme.

Therefore if that exploration programme is anything to go by, it appears that numerous fracking activities will not fall within the categories of 'prescribed premises' or be subject to the licensing requirements and offences for pollution and environmental harm under Part V.

Recommendation: All fracking activities, irrespective of production or design capacity (including exploration), should be listed as 'prescribed premises' and subject to the licensing requirements of Part V of the EP Act.

7.6 WATER

The *Regulatory Environment* paper states that a “whole of Government approach” is applied to the “management of petroleum activities occurring in, or likely to impact on, water resources”.³³³ According to this paper, the DWER is responsible for regulating and managing access to water resources, through the issuing of licences to extract water and the protection of drinking water sources. Where water from a proclaimed groundwater or surface water area will be used in fracking activities, the proponent must obtain a water well construction licence and a licence to take water from the DWER under the *Rights in Water and Irrigation Act 1914*.³³⁴ The DWER is also stated to be responsible for providing advice where fracking proposals may pose significant risks to water resources or are located in proclaimed public drinking water source areas (PDWSAs), and identifying, proclaiming and managing PDWSAs to protect drinking water quality.³³⁵

Despite this, in our view WA’s current legislative framework applying to water use, allocation and quality is inadequate. As stated by DWER, the regulation of water resources in WA is currently managed under six separate pieces of legislation,³³⁶ including the *RIWI Act*.³³⁷ The WA Government is currently working on reforming the regulatory regime applying to water resources, which includes attempts to consolidate the six existing Acts into one modernised *Water Resources Management Act*.³³⁸

EDOWA supports these reforms to consolidate existing legislation. Several regulatory mechanisms should be included in this legislation to regulate quantity of water to ensure it is fairly distributed between water users and the environment, flexible entitlements and consideration and management of other uses.

Further, as mentioned above, no consistent regulatory standards exist for the assessment of water quality or groundwater protection in WA.

7.6.1 Allocation

Section 5C of the *RIWI Act* provides that a person must not take water from any watercourse, wetland or underground water source; or cause or permit any of those things to be done, except under and in accordance with a right conferred or a licence granted by the Minister under Schedule 1. Schedule 1, clause 7 provides that the grant or refusal of an application for a licence and the terms, conditions and restrictions included in the licence are at the discretion of the Minister.³³⁹

Section 26D of the *RIWI Act* provides that applications can be made to the Minister for licences to commence and construct artesian or non-artesian wells, or for the enlargement, deepening or altering of an existing well. The Minister may issue a licence subject to such terms, limitations and conditions as the

³³³ *Regulatory Environment paper*, 10.

³³⁴ *Ibid.*

³³⁵ *Ibid.*

³³⁶ *Water Resources management legislation*, Government of Western Australia, Department of Water and Environmental Regulation <<http://www.water.wa.gov.au/legislation/current-legislation/water-resources-management-legislation>>.

³³⁷ *Ibid.*

³³⁸ *Ibid.*

³³⁹ *Rights in Water and Irrigation Act 1914* (WA).

Minister thinks fit; require such alterations to be made in, or in connection with, the work or the plans and specifications as the Minister thinks fit; or refuse the licence.³⁴⁰

While the *Regulatory Environment* paper states that “[n]ew licences will only be issued where the water allocation limit has not been reached, thereby protecting existing users and the environment”, in practice rights to access and use groundwater in WA are allocated on a ‘first come, first served’ basis, and to our knowledge there being no current provision for statutory water allocation plans to be implemented. As a consequence, many groundwater areas have no strategic management framework or objectives to guide allocation decisions, regional groundwater studies are often not undertaken before allocation decisions are made, sustainable yields are not well understood, and planning for future water resource demands is not a feature of allocation decisions.

Water allocation plans under the *RIWI Act* are not statutory documents, but are the DWER’s statement of how they will support licence assessment and how much water will be sustainably allocated in a proclaimed area. Fixed allocation plans under the *RIWI Act* are also an issue in areas with high interannual variability in hydrology, as a permanent allocation is typically required for an economically viable business.³⁴¹

7.6.2 Quality

The regulatory regime applicable to the protection of groundwater water quality in WA is in our view inadequate for the maintenance of environmental values and the protection of human health. There is no reference to water quality or its protection in the *RIWI Act*, with such protections instead being given effect through a multitude of different legislative and regulatory instruments, administered by a number of different agencies.

This includes consideration of the Guidelines for Groundwater Quality Protection in Australia and other water guidelines, which are deficient for the reasons detailed above in 7.1. While the *Regulatory Environment* paper states that Drinking Water Source Protection Plans have been developed by DWER to identify and manage the potential risks to water quality and public health in PDWSAs, the protection of water quality in areas outside PDWSAs is highly variable and unenforceable. Accordingly, there are no consistent groundwater quality protection standards across WA and no single agency or regulator is responsible for the setting and enforcing of groundwater quality standards or protections in WA.

Recommendation: Fracking activities should not be allowed unless and until reforms to water resource legislation are implemented, which adequately regulate water allocation and quality in WA.

7.6.3 Exemption from Commonwealth ‘Water Trigger’

Section 24D of the EPBC Act establishes a ‘water trigger’ requiring Commonwealth assessment and approval of coal seam gas and large coal mining development proposals which will, or are likely to, have significant impacts on water resources.

³⁴⁰ Ibid s 26D.

³⁴¹ Ryan Vogwill, ‘Water Resources of the Mardoowarra (Fitzroy River) Catchment’ (Report, The Wilderness Society, December 2015).

This 'trigger' is limited in its application to coal seam gas developments or large coal mining developments, however, and does not apply to other forms of unconventional gas such as shale and tight gas fracking activities.

Recommendation: Expansion of the Commonwealth 'water trigger' to include shale and tight gas fracking activities.

7.8 CONTAMINATED SITES ACT 2004

The *Contaminated Sites Act 2004* (**Contaminated Sites Act**) was introduced to identify, record, manage and clean up contamination.³⁴² ‘Contamination’ in relation to land, water or a site, is defined as:

*‘having a substance present in or on that land, water or site at above background concentrations that presents, or has the potential to present, a risk of harm to human health, the environment or any environmental value’.*³⁴³

Part 2 of the *Contaminated Sites Act* requires the reporting of known, or suspected, contaminated sites to the CEO. ‘Site’ is defined as meaning “an area of land and includes — (a) underground water under that land; and (b) surface water on that land”.³⁴⁴

In accordance with section 11,³⁴⁵ if a person knows, or suspects, a site is contaminated, he/she may report to the CEO. Certain persons have a duty to report a site, however, which include an owner or occupier of the site and a person who knows, or suspects, that he or she has caused, or contributed to, the contamination.³⁴⁶

While it appears that fracking proponents would be required to report fracking sites to the CEO where they suspect they have caused, or contributed to, any contamination, given the contamination risks to groundwater, surface water and land (soil) associated with fracking activities, the reporting of all fracking sites should be explicitly required by the *Contaminated Sites Act*.

Further consideration should also be given as to whether the regulatory mechanisms that regulate contamination under the *Contaminated Sites Act* can adequately manage contamination caused by fracking activities. For example, under the CS Act only those sites classified as “contaminated – remediation required” are required to be cleaned up. Whether or not a site is required to be remediated is left to the discretion of DWER, with no third party appeal rights.

In certain circumstances, landowners can be left with the responsibility and cost of cleaning up a site. For example, if they have changed the use to which their land is following the cessation of the contaminating activity on their land³⁴⁷. Landowners could also be responsible in circumstances where the company that caused the contamination can no longer be identified or found, or be made to assume responsible for the remediation, or if they have become insolvent.³⁴⁸

Recommendation: Reporting of fracking sites should be explicitly required by the *Contaminated Sites Act*.

Recommendation: The security bond and levy system recommended above should be implemented to ensure that landowners and the community surrounding a fracking proposal are not left with the costs of

³⁴² *Assessing and classifying contaminated sites*, Government of Western Australia, Department of Water and Environmental Regulation <<https://www.der.wa.gov.au/your-environment/contaminated-sites/276-assessing-and-classifying-contaminated-sites>>.

³⁴³ *Contaminated Sites Act 2003*, s 4.

³⁴⁴ *Ibid* s 3.

³⁴⁵ *Ibid*.

³⁴⁶ *Ibid* s 11 (4).

³⁴⁷ *Ibid*, s 26

³⁴⁸ *Ibid*, s 27

remediating a site in circumstances where the fracking proponent is not able to be made responsible for remediation under the *Contaminated Sites Act*.

APPENDIX 1 – ENVIRONMENT PLAN REQUIREMENTS

- Details of the activity including location, facility, operations, timetables that relate to assessment of environmental impacts and risks.³⁴⁹
- Details of the existing environment, and its values and sensitivities.³⁵⁰
- Details and evaluation of environmental impacts and risks of all aspects of the activity, also describing the process and terms used for that evaluation.³⁵¹
- Environmental performance objectives for minimising environmental impacts and risks.³⁵²
- Environmental performance standards set by the proponent for their personnel and equipment in relation to meeting their environmental performance objectives.³⁵³
- Measurement criteria for determining whether those objectives and standards have been met and compliance with the implementation strategy (see below).³⁵⁴
- A description of the requirements applicable or relevant to the environmental management of the activity, including legislation, treaties and codes of practice.³⁵⁵
- Arrangements for monitoring/recording information sufficient for the Minister to determine whether the proponent's environmental objectives and standards have been met and compliance with the implementation strategy, and reporting at least once a year.³⁵⁶
- A statement of the proponent's corporate environmental policy.³⁵⁷
- A report on all consultations with relevant authorities and interested persons/organisations in the course of developing the plan.³⁵⁸
- A list of all incidents classified as "reportable" for the activity,³⁵⁹ being all those incidents that could arise and have potential to cause an environmental impact classified as moderate or higher.³⁶⁰
- An implementation strategy with:
 - measures to ensure the above objectives and standards are met and environmental impacts are continuously reduced to ALARP, including accurate and auditable monitoring of emissions and discharges and an oil spill contingency plan;³⁶¹
 - appropriate consultation with relevant authorities and interested persons/organisations;³⁶² and
 - specifically for fracking, details of chemicals/substances that may be in any treatment fluids used or introduced into subsurface formations.³⁶³

³⁴⁹ PAGER Environment Regulations r 14(1).

³⁵⁰ PAGER Environment Regulations r 14(2).

³⁵¹ PAGER Environment Regulations r 14(3)-(4).

³⁵² PAGER Environment Regulations r 14(5)(a).

³⁵³ PAGER Environment Regulations r 14(5)(b).

³⁵⁴ PAGER Environment Regulations r 14(5)(c).

³⁵⁵ PAGER Environment Regulations r 14(6).

³⁵⁶ PAGER Environment Regulations r 16.

³⁵⁷ PAGER Environment Regulations r 17(1)(a).

³⁵⁸ PAGER Environment Regulations r 17(1)(b).

³⁵⁹ PAGER Environment Regulations r 17(1)(c).

³⁶⁰ PAGER Environment Regulations r 17(2).

³⁶¹ PAGER Environment Regulations r 15.

³⁶² PAGER Environment Regulations r 15(11).

³⁶³ PAGER Environment Regulations r 15(9).

APPENDIX 2 – EP ACT – PART IV – SUMMARY OF EIA PROCESS

Step 1 - Referral

For the present purposes, the main entry point to having a proposal assessed is to make a referral to the EPA. A referral can be made in writing by any of the following:

- any person (i.e. the project proponent, or a member of the public);³⁶⁴
- a decision-making authority (**DMA**) (i.e. another Minister or another government department (for example, DMIRS or DWER));³⁶⁵ or
- the Minister for Environment.³⁶⁶

A proposal can only be referred to the EPA once.³⁶⁷

While a member of the public may choose to refer a significant proposal to the EPA, as soon as a DMA has notice of a proposal that appears to it to be a significant proposal, it is required to refer the proposal to the EPA.³⁶⁸

For example, if in processing an approval DMIRS or DWER formed a view that a fracking proposal (for either exploration or production) would be likely to have a significant impact on the environment but had not otherwise been referred to the EPA by the proponent of the fracking proposal, then it would be required to refer the project to the EPA.

As stated above, a Memorandum of Understanding (MoU) between DMIRS and the EPA,³⁶⁹ which requires DMIRS and the EPA to liaise with each other at pre-referral stages in cases where listed consultation criteria are triggered and/or where there is potential for significant environmental impacts.³⁷⁰ Where a proposal is likely to have a significant impact on the environment and requires formal EIA, the EPA will provide confirmation to DMIRS that formal referral is required.

Alternatively, if it appears there is public concern for a proposal, referrals can be made by the Minister for Environment.³⁷¹

Step 2 - EPA decision whether to assess proposal

Following referral (Step 1), the EPA has 28 days to decide whether or not to assess the proposal (on the basis of whether it will have a significant impact on the environment) and give the person who referred the

³⁶⁴ Ibid s 38(1).

³⁶⁵ Ibid s 38(5); *ibid* s 3 'decision-making authority' 'means a public authority empowered by or under a written law or any agreement to which the State is a party which is ratified or approved by an Act to make a decision in respect of any proposal and, in Division 2 of Part IV, includes, in relation to a particular proposal, any Minister prescribed for the purposes of this definition as being the Minister responsible for that proposal'.

³⁶⁶ Ibid s 38(4).

³⁶⁷ Ibid s38(5j)

³⁶⁸ *Environmental Protection Act 1986* (WA) s 38(5).

³⁶⁹ *Environment regulations for petroleum*, Government of Western Australia, Department of Miens, Industry Regulation and Safety

<<http://www.dmp.wa.gov.au/Petroleum/Environment-regulations-for-20109.aspx>>.

³⁷⁰ *Ibid* Schedule 2.

³⁷¹ Ibid s 38(4).

proposal written notice of its decision.³⁷² Prior to making this decision, the EPA will publish information about a proposal that has been referred to it for public comment for a period of 7 days.³⁷³

According to the EPA's "Part IV Procedures Manual", the EPA uses the information obtained from public comments to gauge the level of public interest about the likely effect of the proposal, if implemented, on the environment.³⁷⁴

If the EPA decides not to assess the proposal under Part IV of the EP Act then the process under Part IV of the EP Act stops (unless there are appeals – see below). Where the EPA considers that it is not necessary to assess a proposal, it may still give advice and make recommendations on the environmental aspects of the proposal.³⁷⁵ This has already occurred in relation to the three existing fracking exploration proposals referred to the EPA in WA.³⁷⁶ This lack of EPA assessment of fracking activities in WA is a concern given the adverse environmental risks associated with fracking activities.

However, even if the proposal is not assessed under Part IV, the fracking proponent is still likely to require need other approvals or consents from other DMAs. For example, below we discuss EP Act Part V approvals (works approval and licence and clearing permit from DWER).

Step 3 – Assessment process - if EPA decides to assess proposal

If the EPA decides to assess a proposal it sets a "level of assessment" and will set out the key environmental factors relevant to the proposal that need to be assessed. The main difference between different "levels of assessment" is whether or not the proposal requires public review.³⁷⁷

Either the proponent or EPA will then prepare an Environmental Review Document (**ERD**) or other similar document based on a scoping document,³⁷⁸ which sets out:

- (a) 'evidence of the application of the mitigation hierarchy to
 - avoid impacts;
 - minimise impacts (where avoidance is not possible); and
 - rehabilitate impacts; and
- (b) if the proponent's view is that a significant residual impact may remain after applying the first three steps of the mitigation hierarchy—
 - evidence of consultation on offsets with relevant stakeholders
 - identification of offsets, if appropriate.³⁷⁹

At this stage the EPA may require Environmental Management Plans from the proponent to demonstrate that management measures will reduce environmental impact.³⁸⁰ Following this, the EPA may call for agency review (by DMAs) of various materials, especially where information is contradictory.³⁸¹

³⁷² Ibid s 39A(3).

³⁷³ *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016*, clause 2.2.1

³⁷⁴ EPA – *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2016*, section 2.2.1

³⁷⁵ Ibid s 39A(7).

³⁷⁶ *Proposal Search*, Environmental Protection Authority <http://www.epa.wa.gov.au/proposal-search?search_api_views_fulltext=fracture>.

³⁷⁷ Ibid s 40.

³⁷⁸ Ibid ss 40(2)(b) and 40(4).

³⁷⁹ *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016* cl 3.1.2.

³⁸⁰ Ibid.

³⁸¹ Ibid cl 3.1.2.

Finally, there will be a time set for public review and comment of the ERD.³⁸²

After all submissions have been collected, the EPA will assess the proposal based on the ERD, public submissions and other material information (such as the Environmental Management Plans).³⁸³ It would also require the proponent to respond to those submissions.

Step 4 - Conclusion of assessment – EPA Report to Minister

At the conclusion of its assessment, the EPA then prepares a report to the Minister setting out its findings and recommendations in respect of the proposal (**EPA Report**).³⁸⁴ The EPA Report is also made publicly available.

The EPA Report will set out:

- (a) what the EPA considers to be the key environmental factors identified in the assessment,³⁸⁵; and
- (b) the EPA's recommendations as to whether or not the proposal may be implemented and, if it recommends implementation be allowed, the conditions that should be imposed.³⁸⁶

Subject to any appeals (see below) the Minister is then required to consider the EPA Report, consult with other DMAs (including other Ministers), and make a decision as to whether or not to allow the proposal to be implemented and if so the conditions to which it will be subject. That is, it is the Minister along with other DMAs that makes the final approval decision following EPA assessment, not the EPA³⁸⁷.

³⁸² Ibid cl 3.1.3.

³⁸³ Ibid cl 3.1.4.

³⁸⁴ *Environmental Protection Act 1986* (WA) s 44.

³⁸⁵ Ibid s 44(2)(a).

³⁸⁶ Ibid s 44(2)(b).

³⁸⁷ Ibid s 45