

Impact case study (REF3)

Institution: University of Aberdeen		
Unit of Assessment: 18 (Law)		
Title of case study: Regulation of Environmental Protection in Unconventional Gas Extraction		
Period when the underpinning research was undertaken: 2016-2018		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Tina Hunter	Professor	01/2015-08/2020
Period when the claimed impact occurred: 2016-2019		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact (indicative maximum 100 words)		
<p>Oil and gas extraction has a broad range of environmental implications. Research led by Professor Tina Hunter of the Centre for Energy Law prompted: 1) a major review of regulatory practice and informed new regulatory guidelines in Western Australia and 2) helped to inform a major campaign led by a prominent NGO to address environmental protection in the context of offshore drilling in the Great Australian Bight. Hunter's research has underpinned the introduction of enforceable measures to ensure best practice, increase transparency and strengthen environmental protection as well as enhancing land access rights for indigenous communities and landholders.</p>		
2. Underpinning research (indicative maximum 500 words)		
<p>The extraction of oil and gas (whether offshore or onshore, from conventional or unconventional reservoirs) has implications for the environment, including, as appropriate, the risk of well failure, impact on land and marine habitats, impacts on water availability, and surface water quality degradation from waste fluid disposal. Regulation of environmental factors associated with extraction processes is therefore paramount to minimise the potential damage to ecosystems and the access rights of other users. In Australia, Professor Tina Hunter has provided expertise to regulators in order to strengthen environmental protection in the context of both onshore and offshore hydrocarbon activities.</p> <p>Hunter, a specialist in Energy and Petroleum Law, was between 2015 and 2020 Director of the Centre for Energy Law (AUCEL) at the University of Aberdeen, one of the largest teams of energy faculty in Europe. Hunter specialises in the areas of upstream offshore petroleum law, extractive industries law and shale gas law. Her expertise has been sought worldwide by regulatory authorities, industry groups and non-governmental organisations to provide analysis of petroleum laws and draft legislation, and to advise on technical, policy and governance issues. Hunter is co-lead of the Scientific Regulation of Energy Installations in the Arctic (SciBAR) network, a programme led by Nottingham Trent University.</p>		
Onshore gas extraction: Western Australia (WA)		
<p>Onshore unconventional gas exploration and extraction operations create economic opportunities and regulatory challenges. While they contribute to domestic energy security, economic growth and the balance of payments, they threaten agricultural livelihoods and future food security through the risk of contamination of soils and water sources [3]. In Australia, while legislation exists for the exploration for and production of petroleum at Commonwealth and State/territory level, this is premised on conventional reservoirs and includes no specific provision for shale gas, despite the fact that the latter involves different techniques and a much greater intensity of infrastructure [5]. This omission, therefore, has implications both for activities conducted under state-awarded shale gas licenses and for titleholders and landholders when negotiating for compensation and</p>		

land access rights [4].

The WA regulatory framework is an integrated system, under the auspices of the WA Department of Mines and Petroleum (WADMP), which is designed to provide operators with certainty and predictability, and assurance to the community. In addition to legally enforceable acts and regulations, it is constituted by a number of guidelines, including assessment criteria for the award of petroleum exploration and drilling permits. The aim is to ensure that the conduct of petroleum activity is consistent with the principles of ecologically sustainable development and with an environmental plan that demonstrates that environmental impacts and risks associated with the activity will be reduced to a level that is as low as reasonably practicable. Such impact and risk reduction requires plans to contain appropriate environmental performance objectives, standards and measurement criteria.

Unlike other Australian jurisdictions, there is no separate environmental protection legislation in the Northern Territory (NT), which is a source of concern for many in the community. Provisions within the Petroleum Act 1984 regulate protection of the environment during onshore petroleum activities. Environmental assessments and the preparation of an environmental management plan are undertaken pursuant to the Environmental Assessment Act (EAA). Where a petroleum activity could have significant effects on the environment (as stipulated in a memorandum of agreement between the Northern Territory Department of Mines and Energy and the Northern Territory Department of Environment Protection), the EAA sets out the procedures to be followed. The Department of Mines and Energy refers the proposed activity via a notice of intent to the Department of Environment Protection, which subsequently assesses the proposal and issues a public environment report and environmental impact assessment if requested by Department of Mines and Energy.

In her 2016 analysis, Hunter demonstrated that the environmental plans for NT were legally unenforceable insofar as the current legislation, the Environmental Protection and Biodiversity Conservation Act 1994, contained no criminal sanction for breach [1]. This meant that the Environmental Protection Authority (EPA) was unable to prosecute breaches of the statute in the NT; rather it was only enforceable as a recommendation that could then be over-ridden by the responsible Environment Minister. The NT government, conscious of the continued weak environmental protection accorded under existing legislation, was prompted by Hunter's findings to draft environmental regulations in accordance with the guidelines used by WADMP. In early 2016, the Government of Australia commissioned Hunter to conduct an independent assessment of shale gas regulatory practice in Australian states and territories to ensure they complied with the principles of best practice regulation. Hunter's assessment was published in the *Houston Journal of International Law* in May 2016, 'The Development of Shale Gas and Coal Bed Methane in Australia: Best Practice for International Jurisdictions?' [1]

Hunter's research [2] identified a number of additional regulatory gaps and lapses including:

- property rights of landholders in Western Australia were not upheld or were compromised, and the use of negotiation to protect such rights was not always adequate
- there remained inadequate regulation of hydraulic fracturing for shale gas extraction

Following these findings, the WADMP established the Western Australian Land Access Working Group to make recommendations on land access matters. Hunter was a member of this group. Her role was to review existing provisions in Western Australian mining and petroleum legislation in relation to land access arrangements for private land, and to compare these arrangements with other jurisdictions including all Australian states and territories, New Zealand, the UK and Canada. Hunter's report was published in 2017 [2] and included template compensation agreements for land access.

Offshore gas extraction: The Great Australian Bight

In Australia, the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has, since 2012, regulated all offshore petroleum facilities. In 2016, Norway's Statoil

ASA (now known as Equinor) committed to continuing with a deep-water offshore exploration program for the Stromolo-1 prospect in the Great Australian Bight (GAB) after it was vacated by BP. The plans had been protested by thirteen local councils, the commercial fishing industry, environmental activists and the tourism industry.

In late 2018, Greenpeace obtained a leaked internal draft report from Equinor suggesting the worst-case scenario for an oil spill in the Bight could be catastrophic and dwarf the 2010 Macondo oil spill in the Gulf of Mexico. The draft report showed that (depending on weather and tides) a spill could stretch as far around the coastline as Esperance in Western Australia, and reach South Australia, Tasmania and New South Wales. Given her expertise, Greenpeace approached Hunter and requested that she prepare an assessment of the plans [6].

Equinor's original environmental plan (EP), which was rejected by NOPSEMA due to 'gaps', was released for public consultation in early 2019. Hunter's report on the EP, published in 2019, described the company's lack of response measures as 'exceptional in terms of the risk of drilling accident occurring' and outlined major shortcomings within the company's environmental plan. This included the identification of environmental risks, which necessitated analysis of the identification and evaluation of platform safety (both worker safety and process safety) as well as an analysis of the Well Operations Management Plan. Hunter clarified that a critical question facing NOPSEMA in its assessment of Equinor's EP would be the important elements of the environment, including remoteness, inaccessibility, underdeveloped infrastructure, oceanic conditions and the limited supply within the area of alternative drilling facilities in the event of critical failure, which presented a heightened risk profile in the context of offshore petroleum drilling in the GAB.

3. References to the research (indicative maximum of six references)

- [1] **Hunter, Tina** 'The Development of Shale Gas and Coal Bed Methane in Australia: Best Practice for International Jurisdictions?' (2016) 38 (1) *Houston Journal of International Law*, p.367-424
- [2] **Hunter, Tina** 'Land access for private land for mineral and petroleum activities. A review of existing provisions in Australian states/territories and selected overseas jurisdictions' (2017), <https://bit.ly/3cMiKP7>
- [3] **Hunter, Tina** 'Regulating the Disposal of Produced Waters in Unconventional Oil and Gas Activities in Australia: regulation and governance' in McKay, Gunn, Statton and Buono *Regulating Water Security in Unconventional Gas and Oil* (Springer, 2019), p.243-266
- [4] Madeline Taylor and **Hunter, Tina**, *Agricultural Land Use and Natural Gas Conflicts: A Socio-legal perspective* (Routledge, 2018).
- [5] **Hunter, Tina** 'Shale Gas Law and Regulation in Australia' (Chapter 11) in Hunter, Tina (ed) *Handbook of Shale Gas Law and Policy* (Intersentia, 2016), p.341-369.
- [6] **Hunter, Tina** Offshore petroleum drilling and risk. A study of proposed deep-sea exploration drilling in Commonwealth Regulated Waters of the Great Australian Bight (report prepared for Greenpeace Australia, available on <https://apo.org.au/node/258836>)

4. Details of the impact (indicative maximum 750 words)

Promoting transparency in stakeholder consultation by informing the regulatory process

Hunter's work with the Australian Government has been instrumental in highlighting important regulatory failures and providing independent monitoring of the Petroleum Environmental Regulations, particularly in relation to the negotiation of compensation and land access in shale gas operations. Her work has also helped hold regulators to account, in the case of the Great Australian Bight.

In 2016, Hunter identified considerable gaps in the current Environmental Assessment and Water Acts with regard to unconventional gas activities, including an inability to minimize their impact on

landholders and the environment. Prompted by Hunter's recommendations [1], the Chief Minister of the Northern Territory, the Hon Michael Gunner MLA, announced both a moratorium on hydraulic fracturing of onshore unconventional shale reservoirs in the NT and the appointment of an independent scientific panel to assess the potential impacts and risks associated with the activity. This Scientific Inquiry, chaired by the Hon. Justice Rachel Pepper, Judge of the Land Environment Court of New South Wales, undertook extensive consultation with community and environmental groups, land councils, government agencies and industry [S3]. Hunter's recommendations were adopted, and were implemented within the final regulations prepared by the Department of Primary Industry, Science, Energy and Resources [S3].

Hunter's research was key to identifying the Western Australia Department of Mines and Petroleum (WADMP) as an essential component in the development of an effective Environmental Management Plan (EMP) system. This would in turn function as a measure to manage environmental impact, thereby establishing a series of new regulatory standards for shale gas exploration and extraction in Western Australia. In March 2016, David Tollner, Minister for Mines and Energy, released a public statement regarding plans to establish an operating environment for the onshore gas industry characterised by global best practice: *"The draft regulations will not only take into account the recommendations by [...] industry expert Dr Tina Hunter they also incorporate lessons learned from onshore oil and gas development in North America and best practice regulation in South Australia and Western Australia."* [S4]

The new Petroleum (Environment) Regulations were approved by Executive Council and signed by the Administrator in June 2016. The Mines and Energy Minister stated: *"The Regulations embrace the principles of Ecologically Sustainable Development and focus on minimising environmental impacts to as low as reasonably practicable"*. [S4] In her report, Dr Hunter stated that "good oilfield practice" was incompatible with the standard of "as low as reasonably practicable" included in the draft Regulations as: *"good oilfield practice" means all those practices and procedures that are generally accepted as good and safe in the carrying on of that exploration or those operations, as the case be; whereas "as low as reasonably practicable" is a mechanism which actively seeks to reduce risk.*' The concept of "good oilfield practice" was removed as an approval criterion as the Government deemed the other requirements (that environmental impacts and environmental risks be reduced to a level "as low as reasonably practicable" and "acceptable", and that consideration be given to the principles of ESD) superior as approval criteria. [S5]

Hunter's report [1] led to reform of the land access template in Western Australia and the undertaking of a regulatory assessment of the Northern Territory regulatory framework for shale gas extraction. The ensuing recommendations were incorporated into the Explanatory Guide to the Petroleum Environment Regulations (updated in 2017), which *"gratefully acknowledg[ed] the support and guidance received from Dr Tina Hunter"*. [S6] Key differences between the draft and final versions of the regulations include [S5]:

- In the draft Regulations, the Environmental Management Plan (EMP) was (amongst other things) to contain information necessary to demonstrate that the regulated activity will be carried out in a manner consistent with the principles of ecologically sustainable development (ESD) and the Minister was to apply those principles when considering whether an EMP meets the approval criterion.
- An amendment was made to require instead that the Minister take into account the principles of ESD when making a decision about an EMP. In its response to Dr Hunter's independent assessment, the Government states that this amendment, along with the stakeholder engagement amendments outlined above, is to ensure a strong connection between the principles of ESD and the stakeholder engagement process.

Hunter's recommendations have ensured that regulations now aim towards transparency and stakeholder engagement [S3; Pepper report, p374] and apply to any petroleum activity that has an environmental impact: *"the model is consistent with Dr Hunter's view that environmental management should be the responsibility of an entity other than the person responsible for*

resource management” [S3; Pepper report, p.432].

Encouraging transparency in environmental impact assessments

In 2019, despite the shortcomings identified by Hunter in her report (published by the Analysis and Policy Observatory, APO in April, 2019, <https://apo.org.au/organisation/57380?page=1>), Equinor refused to consider 97% of the responses to the plan (more than 31,000 were received) and formally submitted its EP to the regulator. Greenpeace’s senior campaigner, referring to Hunter’s findings, stated that: *“When a leading international industry expert sounds the alarm on the project based purely on risk and response factors and our sub-standard regulatory system then politicians should pay close attention.”* [S7]

Given the grave concerns regarding the company’s plans and risk factors outlined by Hunter, Greenpeace Australia convened an expert group in collaboration with the Sydney Environment Institute (University of Sydney) to hold the regulator, NOPSEMA, to account and to highlight the remaining flaws in Equinor’s proposal. The expert group submitted a report to NOPSEMA [S8], highlighting the risks of the proposal, and an open letter to the Minister for the Environment [S9], calling for the Chief Scientists’ Audit Report on Equinor’s Environmental Plan to be made publicly available. The group’s report outlined its concerns with Equinor’s approach, which failed to demonstrate comprehensively how it would mitigate impacts on endangered species found within its well area or how drilling would indirectly and directly affect the capacity of listed threatened species to restore their populations, as required under the Commonwealth Environment Act.

In February 2020, Equinor withdrew from approved plans to drill for oil in the Great Australian Bight. The CEO of Greenpeace APAC stated, *“This is an incredible win for people power and nature – after years of relentless campaigning by coastal communities, Indigenous traditional owners, surfers, the seafood industry, tourism operators and other local businesses”* [S10]. Later, in October, 2020, a film was made about the efforts to protect the Bight, titled ‘Crude Expectations’, in which Hunter was interviewed about her role in the process [S10].

5. Sources to corroborate the impact (indicative maximum of 10 references)

- [S1] Scientific Inquiry into Hydraulic Fracturing in the Northern Territory, summary of the final report (2018) <https://frackinginquiry.nt.gov.au/inquiry-reports?a=494327>
- [S2] Online article (www.australianmining.com) <https://www.australianmining.com.au/news/wa-dmp-recognised-as-one-of-worlds-best-resources-regulators-2/>
- [S3] Pepper report p. 374, 375 & 432
- [S4] NT Government Newsroom: article March, 2016 and June, 2016
- [S5] News Article Australia: New Petroleum (Environment) Regulations commence in the NT (August, 2016), <https://www.mondaq.com/australia/Environment/514402/New-Petroleum-Environment-Regulations-commence-in-the-NT>
- [S6] Explanatory guide to the Petroleum (Environment) Regulations, 1 Dec 2017
- [S7] SBS News release, Greenpeace statement, April 2019, <https://www.sbs.com.au/news/bight-oil-drilling-plan-too-risky-expert>
- [S8] Report to NOPSEMA
- [S9] Open letter to the Minister for the Environment
- [S10] Greenpeace statement, <https://bit.ly/2OYrhWC>; ‘Crude Expectations’ film website, <https://www.crudeexpectations.com/>