

# Hydraulic Fracturing in the Northern Territory

## Government Responses to Recommendations from the Final Report

*The Government supports all the recommendations of the inquiry. Those recommendation that are “supported in-principle” require further analysis and/or consultation to determine how to implement them. The implementation plan to be released in July 2018 will clearly show how these recommendation will be implemented*

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
<b>Chapter 5 – Shale Gas Extraction and Development</b>			
5.1	<p>That prior to the grant of any further exploration approvals, the Government mandates an enforceable code of practice setting out minimum requirements for the decommissioning of any onshore shale gas wells in the NT. The development of this code must draw on world-leading practice. It must be sufficiently flexible to accommodate improved decommissioning technologies. The code must include a requirement that:</p> <ul style="list-style-type: none"><li>• wells undergo pressure and cement integrity tests as part of the decommissioning process, with any identified defects to be repaired prior to abandoning the well; and</li><li>• cement plugs be placed to isolate critical formations and that testing must be conducted to confirm that the plugs have been properly set in the well.</li></ul>	Supported	N/A
5.2	<p>That the Government:</p> <ul style="list-style-type: none"><li>• implements a mandatory program for regular monitoring by gas companies of decommissioned onshore shale gas wells (including exploration wells), with the results from the monitoring to be publicly reported in real-time. If the performance of a decommissioned well is determined to be acceptable to the regulator then the gas company may apply for relinquishment of the well to the Government; and</li><li>• implements a program for the ongoing monitoring of all orphan wells.</li></ul>	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
5.3	<p>That prior to the grant of any further exploration approvals, in consultation with industry and other stakeholders, the Government develops an enforceable code of practice setting out the minimum requirements that must be met to ensure the integrity of onshore shale gas wells in the NT. This code must require that:</p> <ul style="list-style-type: none"> <li>• all onshore shale gas wells (including exploration wells constructed for the purposes of production testing) be constructed to at least a Category 9 standard (unless it can be demonstrated by performance modelling/assessment that an alternative design would give at least an equivalent level of protection), with cementing extending up to at least the shallowest problematic hydrocarbon-bearing, organic carbon rich or saline aquifer zone;</li> <li>• all wells be fully tested for integrity before and after hydraulic fracturing and that the results be independently certified, with the immediate remediation of identified issues being required;</li> <li>• an ongoing program of integrity testing be established for each well during its operational life. For example, every two years initially for a period of 10 years and then at five-yearly intervals thereafter to ensure that if any issues develop, they are detected early and remediated; and</li> <li>• the results of all well integrity testing programs and any remedial actions undertaken be published as soon as they are available.</li> </ul>	Supported	N/A
5.4	<p>That prior to the grant of any further exploration approvals, gas companies be required to develop and implement a well integrity management system (WIMS) for each well complying with ISO 16530-1:2017.</p> <p>That prior to the grant of any further exploration approvals, each well must have an approved well management plan in place that contains, at a minimum, the following elements:</p> <ul style="list-style-type: none"> <li>• consideration of well integrity management across the well life cycle;</li> </ul>	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	<ul style="list-style-type: none"> <li>• a well integrity risk management process that documents how well integrity hazards are identified and risks assessed;</li> <li>• a well barrier plan containing well barrier performance standards, with specific reference to protection measures for beneficial use aquifers;</li> <li>• a process for periodically verifying well barrier integrity through the operational life of the well and immediately prior to abandonment, and a system for reporting to the regulator the findings from integrity assessments;</li> <li>• characterisation data for aquifers, saline water zones, and gas bearing zones in the formations intersected during drilling; and</li> <li>• monitoring methods to be used to detect migration of methane along the outside of the casing.</li> </ul>		
5.5	<p>That prior to the grant of any further exploration approvals, in consultation with the gas industry and the community, the Government develops a wastewater management framework for any onshore shale gas industry. Consideration must be given to the likely volumes and nature of wastewaters that will be produced by the industry during the exploration and production phases.</p> <p>That the framework for managing wastewater includes an auditable chain of custody system for the transport of wastewater (including by pipelines) that enables source-to-delivery tracking of wastewater.</p> <p>That the absence of any treatment and disposal facilities in the NT for wastewater and brines produced by the gas industry be addressed as a matter of priority.</p>	Supported	N/A
5.6	<p>That in consultation with the gas industry and the community, specific guidance be implemented by the Government, drawing on protocols and procedures developed in other jurisdictions, for the</p>	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	characterisation, segregation, potential reuse and management of solid wastes produced by any onshore shale gas industry.		
5.7	That to minimise the risk of occurrence of seismic events during hydraulic fracturing operations, a traffic light system for measured seismic intensity, similar to that in the UK, be implemented.	Supported	N/A
<b>Chapter 7 – Water</b>			
7.1	That the <i>Water Act</i> be amended prior to the grant of any further exploration approvals to require gas companies to obtain water extraction licences under that Act.	Supported	N/A
7.2	That the Government introduces a charge on water for all onshore shale gas activities.	Supported in-principle	<p>This recommendation requires further analysis and/or consultation to determine how to implement. The implementation plan to be released in July 2018 will clearly show how this recommendation will be implemented.</p> <p>No industry is currently charged for water in the Northern Territory. Additional analysis and consultation is required for Government to evaluate options, and fully understand how water allocations, licencing,</p>

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
			consumption and use may be affected by introducing a charge for water.
7.3	That the Australian Government amends the EPBC Act to apply the 'water trigger' to onshore shale gas development.	Supported	N/A
7.4	That the Government develops specific guidelines for human health and environmental risk assessments for all onshore shale gas developments consistent with the National Chemicals Risk Assessment framework, including the national guidance manual for human and environmental risk assessment for chemicals associated with CSG extraction.	Supported	N/A
7.5	That before any further production approvals are granted, a regional water assessment be conducted as part of a SREBA for any prospective shale gas basin, commencing with the Beetaloo Sub-basin. The regional assessment should focus on surface and groundwater quality and quantity (recharge and flow), characterisation of surface and groundwater-dependent ecosystems, and the development of a regional groundwater model to assess the effects of proposed water extraction of the onshore shale gas industry on the dynamics and yield of the regional aquifer system.	Supported	N/A
7.6	That prior to the grant of any further exploration approvals, the use of all surface water resources for any onshore shale gas activity in the NT be prohibited.	Supported	N/A
7.7	That in relation to the Beetaloo Sub-basin: <ul style="list-style-type: none"> <li>the Daly-Roper WCD be extended south to include all of the Beetaloo Sub-basin;</li> <li>that WAPs be developed for each of the northern and southern regions of the Beetaloo Sub-basin;</li> </ul>	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	<ul style="list-style-type: none"> <li>the new northern Sub-basin WAP provides for a water allocation rule that restricts the consumptive use to less than that which can be sustainably extracted without having adverse impacts on other users and the environment; and</li> <li>the southern Sub-basin WAP prohibits water extraction for any onshore shale gas production until the nature and extent of the groundwater resource and recharge rates in that area are quantified.</li> </ul> <p>In relation to other shale gas basins with similar or greater rainfall than the Beetaloo Sub-basin, WCDs be declared and WAPs be developed to specify sustainable groundwater extraction rates for shale gas production activities that will not have adverse impacts on existing users and the environment.</p> <p>That in relation to other potential shale gas basins in semi-arid and arid regions, all groundwater extraction for any shale gas production activities be prohibited until there is sufficient information to demonstrate that it will have no adverse impacts on existing users and the environment.</p>		
7.8	<p>That the following measures be mandated to ensure that any onshore shale gas development does not cause unacceptable local drawdown of aquifers:</p> <ul style="list-style-type: none"> <li>that prior to the grant of any further exploration approvals, the extraction of water from water bores to supply water for hydraulic fracturing be prohibited within at least 1 km of existing or proposed groundwater bores (that are used for domestic or stock use) unless hydrogeological investigations and groundwater modelling, including the SREBA, indicate that a different distance is appropriate, or if the landholder agrees to a variation of this distance;</li> <li>that relevant WAPs include provisions that adequately control both the rate and volume of water extraction by the gas companies;</li> </ul>	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	<ul style="list-style-type: none"><li>• that gas companies be required, at their expense, to monitor drawdown in local water supply bores; and</li><li>• that gas companies be required to immediately 'make good' and rectify any problems if the drawdown is found to be excessive.</li></ul>		
7.9	That prior to the grant of any further exploration approvals, the reinjection of wastewater into deep aquifers and conventional reservoirs and the reinjection of treated or untreated wastewaters (including brines) into aquifers be prohibited, unless full scientific investigations determine that all risks associated with these practices can be mitigated.	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
7.10	<p>That prior to the grant of any further exploration approvals, the following information about hydraulic fracturing fluids must, as a matter of law, be reported and publicly disclosed before any exploration activities and production activities are carried out:</p> <ul style="list-style-type: none"> <li>• the identities, volumes and concentrations of chemicals (including environmentally relevant chemical species present as contaminants in the bulk chemicals) to be used;</li> <li>• the purpose of the chemicals;</li> <li>• how and where the chemicals will be managed and transported on-site, including how spills will be prevented, and if spills do occur, how they will be remediated and managed; and</li> <li>• the laws that apply to the management of the chemicals and how they are enforced.</li> </ul> <p>That the following information about flowback and produced water must be reported and publicly disclosed online as soon as it becomes available:</p> <ul style="list-style-type: none"> <li>• the identity and concentrations of chemicals and NORMs found in that water;</li> <li>• how and where the chemicals and NORMs will be managed, transported and treated, including how spills will be prevented, and if spills occur, how they will be remediated and managed; and</li> <li>• the laws that apply to the management of the chemicals and NORMs and how they are enforced.</li> </ul>	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
7.11	<p>That prior to the grant of any further exploration approvals, in order to minimise the risk of groundwater contamination from leaky gas wells:</p> <ul style="list-style-type: none"> <li>• all wells subject to hydraulic fracturing must be constructed to at least Category 9 (or equivalent) and tested to ensure well integrity before and after hydraulic fracturing, with the integrity test results certified by the regulator and publicly disclosed online;</li> <li>• a minimum offset distance of at least 1 km between water supply bores and well pads must be adopted unless site-specific information of the kind described in Recommendation 7.8 is available to the contrary;</li> <li>• where a well is hydraulically fractured, monitoring of groundwater be undertaken around each well pad to detect any groundwater contamination using multilevel observation bores to ensure full coverage of the horizon, of any aquifer(s) containing water of sufficient quality to be of value for environmental or consumptive use;</li> <li>• all existing well pads are to be equipped with multilevel observation bores (as above);</li> <li>• as a minimum, electrical conductivity data from each level of the monitor bore array should be measured and results electronically transmitted from the well pad site to the regulator as soon as they are available. The utility of continuous monitoring for other parameters should be reviewed every five years or as soon as advances in monitoring technology become commercially available; and</li> <li>• other water quality indicators, as determined by the regulator, should be measured quarterly, with the results publicly disclosed online as soon as reasonably practical from the date of sampling. This monitoring regime should continue for three years and be reviewed for suitability by the regulator.</li> </ul>	Supported	N/A
7.12	That prior to the grant of any further exploration approvals, to reduce the risk of contamination of surface aquifers from on-site spills of wastewater:	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	<ul style="list-style-type: none"> <li>the EMP for each well pad must include an enforceable wastewater management plan and spill management plan;</li> <li>enclosed tanks must be used to hold all wastewater; and</li> <li>the well pad site must be bunded to prevent any runoff of wastewater, and be treated (for example, with a geomembrane or clay liner) to prevent the infiltration of wastewater spills into underlying soil.</li> </ul>		
7.13	Upon a gas company undertaking any exploration activity or production activity, monitoring of the groundwater must be implemented around each well pad to detect any groundwater contamination, adopting the monitoring outlined in Recommendation 7.11. If contamination is detected, remediation must commence immediately.	Supported	N/A
7.14	That the Government, having regard to the measures detailed in Recommendation 5.5, undertakes a review to determine whether: <ul style="list-style-type: none"> <li>restrictions need to be placed on the transport of hydraulic fracturing chemicals and wastewater during the wet season, particularly on unsealed roads, to avoid the risk of spills; and</li> <li>rail transport of some or all of the hydraulic fracturing chemicals and other consumables required, be used to avoid the risk of spills.</li> </ul>	Supported	N/A
7.15	That gas companies must submit details of the locations of all faults that could compromise well integrity. The occurrence of any faults must be addressed in the well design plan submitted to the regulator for approval. The details of all faults and the well design plans must be publicly disclosed online as soon as they are available.	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
7.16	That appropriate modelling of the local and regional groundwater system must be undertaken before any production approvals are granted to ensure that there are no unacceptable impacts on groundwater quality and quantity. This modelling should be undertaken as part of a SREBA.	Supported	N/A
7.17	That prior to the grant of any further exploration approvals, the discharge of any onshore shale gas hydraulic fracturing wastewater (treated or untreated) to either drainage lines, waterways, temporary stream systems or waterholes be prohibited.	Supported	N/A
7.18	That to minimise the adverse impacts of any onshore shale gas infrastructure (roads and pipelines) on the flow and quality of surface waters, the Government must ensure that: <ul style="list-style-type: none"> <li>• landscape or regional impacts are considered in the design and planning phase of development to avoid unforeseen consequences arising from the incremental (piecemeal) rollout of linear infrastructure; and</li> <li>• roads and pipeline corridors must be constructed to: <ul style="list-style-type: none"> <li>○ minimise the interference with wet season surface water flow paths;</li> <li>○ minimise erosion of exposed (road) surfaces and drains;</li> <li>○ ensure fauna passage at all stream crossings; and</li> <li>○ comply with relevant guidelines such as the International Erosion Control Association Best Practice for Erosion and Sediment Control and the Australian Pipeline Industry Association Code of Environmental Practice 2009.</li> </ul> </li> </ul>	Supported	N/A
7.19	That the SREBA undertaken for the Beetaloo Sub-basin must take into account groundwater-dependent ecosystems in the Roper River region, including identification and characterisation of aquatic ecosystems, and provide measures to ensure the protection of these ecosystems.	Supported	N/A
7.20	That the Beetaloo Sub-basin SREBA must identify and characterise all subterranean aquatic ecosystems, with particular emphasis on the Roper River region.	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
Chapter 8 - Land			
8.1	<p>That:</p> <ul style="list-style-type: none"> <li>• strategic regional terrestrial biodiversity assessments be conducted as part of a SREBA prior to the granting of any further production approvals;</li> <li>• any onshore shale gas development be excluded from areas considered to be of high conservation value; and</li> <li>• the results of the SREBA must inform any decision to release land for exploration permits as specified in Recommendation 14.2 and, upon completion, must be considered by the decision-maker in the granting of any future exploration approvals.</li> </ul>	Supported	N/A
8.2	<p>That a baseline weed assessment be conducted over all areas that will be accessed by a gas company on an exploration permit prior to any exploration activities being carried out on that area and that ongoing weed monitoring be undertaken to inform any weed management measures necessary to ensure no incursions or spread of weeds.</p>	Supported	N/A
8.3	<p>That, at all times, gas companies must have a dedicated weeds officer for each gasfield who is responsible for weed management and whose role includes:</p> <ul style="list-style-type: none"> <li>• training all field workers in the identification of weeds, especially gamba and grader grass, and to establish an effective reporting system for any suspected weed incursions;</li> <li>• designing and implementing effective weed surveillance; and</li> <li>• ensuring prompt and effective management of any weed incursions in consultation with affected landholders.</li> </ul>	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	<p>That the gas industry funds a dedicated officer responsible for weed management associated with any onshore shale gas development. This officer is to be located in the Government's Weed Management Branch in a regional centre. The officer will be responsible for:</p> <ul style="list-style-type: none"> <li>• coordinating regional weed baseline assessments and subsequent weed surveillance; and</li> <li>• overseeing strategic and effective management of any weed incursions by gas companies.</li> </ul>		
8.4	<p>That gas companies must be required to have an approved weed management plan for any area the subject of an exploration permit prior to any part of that area being accessed for the carrying out of any exploration activities. The WMP must be consistent with all relevant statutory obligations and relevant threat abatement plans established under the EPBC Act.</p>	Supported	N/A
8.5	<p>That gas companies be required to comply with any statutory regional fire management plan within their area of exploration and/or production activity. The fire management plan must:</p> <ul style="list-style-type: none"> <li>• address the impacts that any onshore shale gas industry will have on fire regimes in the NT and identify how those impacts will be managed;</li> <li>• establish robust monitoring programs for assessing seasonal conditions and fuel loads;</li> <li>• require that annual fire mapping be undertaken to monitor any increase in fire frequency due to any onshore shale gas development;</li> <li>• require that all existing baseline data for at least the decade prior to commencement of any exploration activity be collated and published;</li> <li>• implement management actions, such as prescribed fuel reduction burns at strategic locations, if fire frequency is shown to have increased due to onshore shale gas activity; and</li> <li>• facilitate support for local volunteer fire brigades to increase regional capacity for fire management.</li> </ul>	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
8.6	That as part of a SREBA, a study be undertaken to determine if any threatened species are likely to be affected by the cumulative effects of vegetation and habitat loss, and if so, that there be ongoing monitoring of the populations of these species. If monitoring reveals a decline in populations (compared with pre-development baselines), management plans aimed at mitigating these declines must be developed and implemented.	Supported	N/A
8.7	That the area of vegetation cleared for infrastructure development (well pads, roads and pipeline corridors) be minimised through the efficient design of flowlines and access roads, and where possible, the co-location of shared infrastructure by gas companies.	Supported	N/A
8.8	That well pads and pipeline corridors be progressively rehabilitated, with native vegetation re-established such that the corridors become ecologically integrated into the surrounding landscape.	Supported	N/A
8.9	That to compensate for any local vegetation, habitat and biodiversity loss, the Government develops and implements an environmental offset policy to ensure that, where environmental impacts and risks are unable to be avoided or adequately mitigated, they are offset. That the Government considers the funding of local Aboriginal land ranger programs to undertake land conservation activities as an appropriate offset.	Supported	N/A
8.10	That gas companies be required to identify critical habitats during corridor construction and select an appropriate mechanism to avoid any impact on them.	Supported	N/A
8.11	That clearing for corridors, well pads and other operational areas be kept to a minimum, that pipelines and other linear infrastructure be buried (except for necessary inspection points), and that all disturbed ground be revegetated.	Supported	N/A
8.12	That directional drilling under stream crossings be used in preference to trenching unless geomorphic and hydrological investigations confirm that trenching will have no adverse impact on water flow patterns and waterhole water retention timing.	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
8.13	That roads and pipeline surface water flow paths minimise erosion of all exposed surfaces and drains.	Supported	N/A
8.14	That all corridors be constructed to minimise the interference with wet season stream crossings and comply with relevant guidelines, such as the International Erosion Control Association Best Practice for Erosion and Sediment Control and the Australian Pipeline Industry Association Code of Environmental Practice 2009.	Supported	N/A
8.15	That to minimise the impact of any onshore shale gas industry on landscape amenity, gas companies must demonstrate that they have minimised the surface footprint of development to ALARP, including that: <ul style="list-style-type: none"> <li>• well pads are spaced a minimum of 2 km apart; and</li> <li>• the long-term infrastructure within any development area (exploration or production) has little to no visibility from any major public roads.</li> </ul>	Supported	N/A
8.16	That the Government assesses the impact that any heavy-vehicle traffic associated with any onshore shale gas industry will have on the NT's transport system and develops a management plan to mitigate such impacts. Consideration must be given to: <ul style="list-style-type: none"> <li>• forecast traffic volume and roads used;</li> <li>• the feasibility of using the existing Adelaide to Darwin railway line (or some other railway network) to reduce heavy-vehicle road use; and</li> <li>• road upgrades.</li> </ul>	Supported	N/A
<b>Chapter 9 – Greenhouse Gas Emissions</b>			
9.1	That to reduce the risk of upstream methane emissions from any onshore shale gas wells, the Government implement the US EPA New Source Performance Standards of 2012 and 2016.	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
9.2	That prior to the grant of any further exploration approvals, a code of practice be developed and implemented for the ongoing monitoring, detection and reporting of methane emissions from any onshore shale gasfields and wells.	Supported	N/A
9.3	That baseline monitoring of methane concentrations be undertaken for at least six months prior to the grant of any further exploration approvals. In areas where hydraulic fracturing has already occurred, the baseline monitoring should be undertaken at least a year prior to the grant of any production approvals.	Supported	N/A
9.4	That baseline and ongoing monitoring be the responsibility of the regulator and funded by the gas industry.	Supported	N/A
9.5	That all monitoring results must be made publically available online on a continuous basis in real time.	Supported	N/A
9.6	That once emission concentration limits are exceeded, as soon as reasonably practicable the regulator must be notified, an investigation must be undertaken by the gas company to identify the source or sources of the emissions, and make-good provisions be carried out by the gas industry.	Supported	N/A
9.7	That the action framework outlined in Table 9.10 be implemented to lower fugitive methane emissions.	Supported	N/A
9.8	That the NT and Australian governments seek to ensure that there is no net increase in the life cycle GHG emissions emitted in Australia from any onshore shale gas produced in the NT.	Supported	N/A
<b>Chapter 10 – Public Health</b>			
10.1	That formal site or regional-specific HHRA reports be prepared and approved by the regulator prior to the grant of any production approvals. Such HHRA reports must address the potential human exposures and health risks associated with the exploration for, and the production of, any	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	shale gas development, off-site transport, and the decommissioning of wells, as recommended in NCRA guidance. The HHRA reports must include risk estimate assessments for exposure pathways that are deemed to be incomplete.		
10.2	That in consultation with the gas industry, landholders, Land Councils, local government and local communities, the Government mandates an appropriate setback distance from all gas well heads, pipelines and gas processing facilities to a habitable dwelling (including all buildings or premises where people reside or work, schools and associated playgrounds, permanent sporting facilities and hospitals or other community medical facilities) in order to minimise risks identified in HHRA reports, including potential pathways for waterborne and airborne contaminants. Such setback distances should not be less than 2 km and should apply to all exploration and production activities.	Supported	N/A
<b>Chapter 11 – Aboriginal people and their culture</b>			
11.1	That gas companies be required to obtain an Authority Certificate prior to the grant of any exploration and production approvals.	Supported	N/A
11.2	That AAPA: <ul style="list-style-type: none"> <li>• be provided with a copy of any application to conduct hydraulic fracturing for onshore shale gas under petroleum environment legislation at an early stage of the assessment and approval process;</li> <li>• be given an adequate opportunity to explain the application to custodians; and</li> <li>• be given an adequate opportunity to comment on the application and have those comments considered by the decision-maker.</li> </ul>	Supported	N/A
11.3	That the <i>Sacred Sites Act</i> be amended to protect all sub-surface features of a sacred site.	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
11.4	That gas companies be required to provide a statement to native title holders containing information of the kind required under section 41(6) of the <i>Land Rights Act</i> for the purposes of negotiating an onshore shale gas exploration agreement under the future act provisions of the <i>Native Title Act</i> .	Supported	N/A
11.5	That interpreters be used at all consultations with Aboriginal people for whom English is a second language. Interpreters must be appropriately supported to ensure that they understand the subject matter of the consultation.	Supported	N/A
11.6	That in collaboration with the Government, Land Councils and AAPA, an independent, third-party designs and implements an information program to ensure that reliable, accessible, trusted and accurate information about any onshore shale gas industry is effectively communicated to all Aboriginal people who will be affected by any onshore shale gas industry. That the program be funded by the gas industry.	Supported	N/A
11.7	That Land Councils, traditional Aboriginal owners and gas companies consider making all, or if this is not appropriate, part of petroleum exploration agreements publicly available.	Supported	N/A
11.8	That a comprehensive assessment of the cultural impacts of any onshore shale gas industry must be completed prior to the grant of any production approvals. The cultural assessment must: <ul style="list-style-type: none"> <li>• be designed in consultation with Land Councils and AAPA;</li> <li>• engage traditional Aboriginal owners, native title holders and the affected Aboriginal communities, and be conducted in accordance with world-leading practice; and</li> <li>• be resourced by the gas industry.</li> </ul>	Supported	N/A

## Chapter 12 – Social impacts

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
12.1	That a strategic SIA, separate from an EIS, must be conducted for any onshore shale gas development prior to any production approvals being granted.	Supported	N/A
12.2	That the strategic SIA be funded by the gas industry.	Supported	N/A
12.3	That the strategic SIA must be conducted comprehensively and in such a manner that it will anticipate any expected impacts on infrastructure and services and to mitigate potential negative impacts.	Supported	N/A
12.4	That early engagement and communication of the findings of the strategic SIA be systematically undertaken with all potentially affected communities, all levels of government and potentially affected stakeholders, including Land Councils, to ensure that unintended consequences are limited, and that shared understanding of roles and responsibilities, including financial responsibilities, can be developed.	Supported	N/A
12.5	That ongoing monitoring and measurement of social and cumulative impacts be undertaken, with the results being made publicly available online as soon as they are available.	Supported	N/A
12.6	That a strategic SIA be conducted as part of any SREBA to obtain essential baseline data.	Supported	N/A
12.7	That in order to operationalise an SIA framework in the NT, the Government must: <ul style="list-style-type: none"> <li>• give the regulator power to request information from, and to facilitate the collaboration between, individual gas companies, government agencies (including local government), Land Councils, communities and potentially affected landholders;</li> <li>• establish a long-term participatory regional monitoring framework, overseen by the regulator, with secure funding from the gas industry and able to endure multiple election cycles; and</li> <li>• establish periodic and standardised reporting to communities on the social, cultural, economic and environmental performance of the industry through either the regulator or a</li> </ul>	Supported	N/A

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Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	specialised research institution. This includes information from the monitoring of key indicators, and an industry-wide complaints and escalation process.		
12.8	That as part of any strategic SIA and prior to any significant increase in traffic as a result of any onshore shale gas industry, consultation must be undertaken on road use and related infrastructure requirements that results in road upgrades and work schedules to the appropriate Austroad standards and commensurate with the anticipated vehicle type required for any onshore shale gas industry.	Supported	N/A
12.9	That gas companies provide the necessary funds to ensure the ongoing maintenance requirements for road infrastructure are met for the life of any onshore shale gas project. These should be based on the individual gas company's percentage of tonnage hauled along the roads.	Supported in-principle	<p>This recommendation requires further analysis and/or consultation to determine how to implement. The implementation plan to be released in July 2018 will clearly show how this recommendation will be implemented.</p> <p>The intent of this recommendation is to ensure gas companies contribute to the cost of shared infrastructure that they use.</p> <p>There is a variety of ways to achieve this, and each require further investigation to determine the approach best suited to Northern</p>

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
			Territory circumstances. This will be done during implementation planning.
12.10	That road use agreements between gas companies and local NT road authorities be mandated to include safety considerations and to ensure monitoring for compliance and reporting requirements.	Supported	N/A
12.11	That gas companies be required to work closely with all levels of government, Land Councils and local communities early in any onshore shale gas development project to quantify the potential impacts on health and educational services and ensure steps to mitigate adverse impacts are implemented.	Supported	N/A
12.12	That any strategic SIA anticipate the long-term impacts and requirements for housing (not just through the construction phase) to adequately mitigate the risk of inflated real estate prices and shortages within a community.	Supported	N/A
12.13	That in consultation with all local community stakeholders, Land Councils, local government and the Government, gas companies be required to provide accommodation, whether temporary or permanent, which must be completed prior to the granting of any production approvals.	Supported	N/A
12.14	That to the extent practicable, gas companies be required to source goods, services and workers from local communities. This must include the development of training programs for Aboriginal and other local workers to develop the necessary skills and expertise to maximise opportunities for local employment in any onshore shale gas industry.	Supported	N/A
12.15	That gas companies work proactively with local businesses, local government, Government, Land Councils and communities to ensure that local businesses are able and adequately skilled to compete for contracts, and to assist local businesses to be ready to participate in any economic opportunities that may emerge.	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
12.16	That gas companies must establish a relationship with communities to determine how to best facilitate community cohesion on an individual and collective level. This should be done in consultation with all landholders, Land Councils and local government, to ensure that the needs of all stakeholders are accommodated.	Supported	N/A
12.17	That a representative community advisory group be established to act as a conduit for ongoing monitoring of community cohesion.	Supported	N/A
12.18	That gas companies must develop and implement a social impact management plan for communities, detailing how they will optimise the relationship with a community prior to the grant of any production approvals. This plan should be developed in consultation with all landholders, Land Councils and local government to ensure that it meets community needs. The regulator must consent to the plan prior to the grant of any production approvals.	Supported	N/A
12.19	That gas companies be required to develop a social impact management plan that outlines how they intend to develop, obtain and maintain their SLO within communities. This must be developed in conjunction with any SIA, and should be implemented prior to the grant of any further production approvals, to ensure that any potential changes can be identified in advance to allow communities time to adapt and prepare for the changes.	Supported	N/A
12.20	That as part of the SREBA for the Beetaloo Sub-basin, a strategic SIA be conducted to obtain essential baseline data prior to the granting of any further production approvals.	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
<b>Chapter 13 – Economic impacts</b>			
13.1	That in developing its budget, the Government must have regard to the source of royalty revenue and must ensure that regions that are the source of taxation revenue benefit from any onshore shale gas extraction activity that has occurred in their region. That the Government works with local government, stakeholders, Land Councils, and local communities in the design and implementation of all such programs.	Supported	N/A
13.2	That the Government works with stakeholders and gas companies to ensure that there is early knowledge of the labour and skills required for all phases of any onshore shale gas development in order to maximise local employment.	Supported	N/A
13.3	That the Government works with gas companies, training providers, local workers, job seekers, Land Councils and local Aboriginal corporations and communities to maximise opportunities for local people to obtain employment during all phases of any onshore shale gas development.	Supported	N/A
13.4	That the Government ensures that training providers and gas companies collaborate so that skill requirements are clearly understood by training providers, and that trainees acquire appropriate skills.	Supported	N/A
13.5	That the Government works with gas companies, training providers, Land Councils, local government, and local communities in the setting of local employment targets, including local employment targets for Aboriginal people.	Supported	N/A
13.6	That the Government works with gas companies and local suppliers to ensure that there is early knowledge of local supply and service opportunities for all phases of any onshore shale gas development.	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
13.7	That the Government works with gas companies and local suppliers (regional and Territory wide) to identify immediate supply opportunities and to facilitate future potential supply opportunities. This should be done in consultation with the ICN-NT and the Chamber of Commerce.	Supported	N/A
13.8	That the Government works with gas companies, Land Councils, local Aboriginal corporations, Aboriginal communities, and businesses to identify local supply and service opportunities to keep sustainable economic benefits on country.	Supported	N/A
13.9	That the Government assists regional businesses to obtain quality assurance certification and to partner with larger suppliers to encourage greater local supply, employment and knowledge transfer.	Supported	N/A
13.10	That the Government works with gas companies, Land Councils, local governments, local suppliers and businesses to devise and implement local procurement targets.	Supported	N/A
13.11	That the Government works with gas companies, peak bodies of affected industries, and affected stakeholders to identify and resolve all potentially negative economic impacts of any onshore shale gas development on other industries.	Supported	N/A
13.12	That the Government works with all levels of government, (including the Australian Government), peak organisations, communities and gas companies to identify and manage infrastructure risks, including identifying and implementing options to fund any new infrastructure or upgrade existing infrastructure.	Supported	N/A
<b>Chapter 14 – Regulatory Reform</b>			
14.1	That prior to the granting of any further production approvals, the Government designs and implements a full cost-recovery system for the regulation of any onshore shale gas industry.	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
14.2	<p>That the Minister must immediately notify the public of any proposed land release for any onshore shale gas exploration.</p> <p>That the Minister must consult with the public and stakeholders and consider any comments received in relation to any proposed land release.</p> <p>That the Minister be required to take into account the following matters when deciding whether or not to release land for exploration:</p> <ul style="list-style-type: none"> <li>• the prospectivity of the land for petroleum;</li> <li>• the possibility of co-existence between the onshore gas industry and any existing or proposed industries in the area; and</li> <li>• whether the land is an area of intensive agriculture, high ecological value, high scenic value, culturally significant or strategic significance.</li> </ul> <p>That the Minister publish a statement of reasons why the land has been released and why coexistence is deemed to be possible.</p>	Supported	N/A
14.3	That Government not approve any application for an exploration permit in relation to areas that are not prospective for onshore shale gas or where co-existence is not possible. Priority must be given to the areas identified in Recommendation 14.4.	Supported	N/A
14.4	<p>That prior to the grant of any further exploration approvals, the following areas must be declared reserved blocks under section 9 of the <i>Petroleum Act</i>, each with an appropriate buffer zone:</p> <ul style="list-style-type: none"> <li>• areas of high tourism value;</li> <li>• towns and residential areas (including areas that have assets of strategic importance to nearby residential areas);</li> <li>• national parks;</li> </ul>	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	<ul style="list-style-type: none"> <li>• conservation reserves;</li> <li>• areas of high ecological value;</li> <li>• areas of cultural significance; and</li> <li>• Indigenous Protected Areas.</li> </ul>		
14.5	That the Government immediately considers and implements mechanisms to retrospectively apply Recommendation 14.4 to granted exploration permits.	Supported	N/A
14.6	<p>That a statutory land access agreement be required by legislation.</p> <p>That prior to undertaking any onshore shale gas activity on a Pastoral Lease (including but not limited to any exploration or production activity), a land access agreement must be negotiated and signed by the Pastoral Lessee and the gas company.</p> <p>That breach of the land access agreement be a breach of the relevant exploration or production approval giving rise to the onshore shale gas activity being carried out on the land.</p>	Supported	N/A
14.7	That in addition to any terms negotiated between the pastoralist and the gas company, the statutory land access agreement must contain the above standard minimum protections for pastoralists.	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
14.8	<p>That prior to the grant of any further exploration permits or production approvals, the Government enacts a minimum mandatory compensation scheme payable to Pastoral Lessees for all onshore shale gas production on their Pastoral Lease. Compensation should be calculated by reference to the impact that the development will have on the Pastoral Lease and the Pastoral Lessee, for example, the number of wells drilled, the value of the land (both before and after), and the area of land cleared and rendered unavailable for pastoral activities.</p>	Supported in-principle	<p>This recommendation requires further analysis and/or consultation to determine how to implement. The implementation plan to be released in July 2018 will clearly show how this recommendation will be implemented.</p> <p>The intent of this recommendation is to ensure pastoralists have access to appropriate compensation for all onshore shale gas activities on their landholding.</p> <p>There is a variety of ways to define and achieve this, and they require further investigation to determine the approach best suited to Northern Territory circumstances.</p> <p>Both industry sectors need to be consulted on this recommendation.</p>

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
14.9	That the Government considers whether a royalty payment scheme should be implemented to compensate Pastoral Lessees prior to any further production approvals being granted.	Supported	N/A
14.10	That any person may lodge an objection to the proposed grant of an exploration permit within a prescribed time limit. That all objections received by the Minister must be published online. That the Minister must, in determining whether to grant or refuse the application, take into account any objection received.	Supported	N/A
14.11	That the <i>Petroleum Act</i> be amended to make the principles of ESD a mandatory relevant consideration for any decision made under that Act in relation to any onshore shale gas industry. That the principles of ESD must be taken into account and applied by a decision-maker in respect of all decisions concerning any onshore shale gas industry.	Supported	N/A
14.12	That the Minister must not grant any further exploration permits unless satisfied that the applicant (including any related entity) is a fit and proper person, taking into account, among other things, the applicant's environmental history and history of compliance with the <i>Petroleum Act</i> and any other relevant legislation both domestically and overseas. That failure to disclose a matter upon request relevant to the determination of whether an applicant is a fit and proper person will result in civil and/or criminal sanctions under the <i>Petroleum Act</i> . That the Minister's reasons for determining whether or not the applicant is a fit and proper person be published online.	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
14.13	<p>That prior to the grant of any further production approvals, the Government develops and implements a financial assurance framework for the onshore shale gas industry that:</p> <ul style="list-style-type: none"> <li>• is transparent and is developed in consultation with the community and key stakeholders;</li> <li>• clarifies the activities that require a bond or security to be in place and describe how the amount of the bond or security is calculated; and</li> <li>• requires the public disclosure of all financial assurances and the calculation methodology.</li> </ul>	Supported	N/A
14.14	That prior to the grant of any further production approvals, the Government imposes a non-refundable levy for the long-term monitoring, management and remediation of abandoned onshore shale gas wells in the NT.	Supported	N/A
14.15	<p>That prior to the grant of any further exploration approvals, all draft EMPs for hydraulic fracturing must be published in print and online and available for public comment prior to Ministerial approval</p> <p>That all comments made on draft EMPs must be published online.</p> <p>That the Minister must take into account comments received during the public consultation period when assessing a draft EMP.</p>	Supported	N/A
14.16	That prior to the grant of any further exploration approvals, all notices and reports of environmental incidents, including reports about reportable incidents under the <i>Petroleum (Environment) Regulations</i> , must be published immediately upon notification in print and online.	Supported	N/A
14.17	That prior to the grant of any further production approvals, the Schedule be repealed and replaced with legislation to regulate land clearing, seismic surveys, well construction, drilling, hydraulic fracturing, and well decommissioning and abandonment.	Supported	N/A
14.18	That prior to the grant of any further exploration approvals, the Government develops and implements enforceable codes of practice with minimum prescriptive standards and requirements	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	in relation to all exploration and production activities, including but not limited to, land clearing, seismic surveys, well construction, drilling, hydraulic fracturing and decommissioning and abandonment.		
14.19	<p>That prior to granting any further exploration approvals, cl 3(2)(b) of Sch 1 of the <i>Petroleum (Environment) Regulations</i> be amended to read as follows:</p> <p><i>“3(2)(b) [delete ‘as far as practicable’] any cumulative effects of those impacts and risks when considered both together and in conjunction with other events, activities or industries, including any other petroleum activities and extractive industries, that have occurred or that may occur in or near the location of the activity or in or near the region, area or play where the regulated activity is located”.</i></p>	Supported in-principle	<p>This recommendation requires further analysis and/or consultation to determine how to implement. The implementation plan to be released in July 2018 will clearly show how this recommendation will be implemented.</p> <p>The intent of this recommendation is to require an approval authority to evaluate the potential cumulative impact of petroleum and other activities.</p> <p>Further investigation is required to test any unintended consequences of the specific wording.</p>
14.20	That the Minister must be satisfied that an applicant is a fit and proper person to hold a production licence, taking into account, among other things, the applicant’s environmental history and history	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	<p>of compliance with the <i>Petroleum Act</i> and any other relevant legislation both domestically and overseas.</p> <p>That failure to disclose a matter relevant to the determination of whether an applicant is a fit and proper person upon request will result in civil and/or criminal sanctions under the <i>Petroleum Act</i>.</p> <p>That the Minister's reasons for determining whether or not the applicant is a fit and proper person be published online.</p>		
14.21	That as part of the environmental assessment and approval process for all exploration and production approvals, the Minister be required to consider the cumulative impacts of any proposed onshore shale gas activity.	Supported	N/A
14.22	That prior to the granting of any further production approvals, the Government considers developing and implementing regional or area-based assessment for the regulation of any onshore shale gas industry in the NT.	Supported	N/A
14.23	That prior to the grant of any further exploration approvals, the <i>Petroleum Act</i> and <i>Petroleum (Environment) Regulations</i> be amended to allow open standing to challenge administrative decisions made under these enactments.	Supported	N/A
14.24	<p>That prior to the granting of any further production approvals, merits review be available in relation to decisions under the <i>Petroleum Act</i> and <i>Petroleum (Environment) Regulations</i> including, but not limited to, decisions made in relation to the granting of all EMPs.</p> <p>That, at a minimum, the following third parties have standing to seek merits review:</p> <ul style="list-style-type: none"> <li>• proponents (that is, gas companies) seeking a permit, approval, application, licence or permission to engage in onshore shale gas activity;</li> <li>• persons who are directly or indirectly affected by the decision;</li> <li>• members of an organised environmental, community or industry group;</li> </ul>	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
	<ul style="list-style-type: none"> <li>• Aboriginal Land Councils;</li> <li>• Registered Native Title Prescribed Body Corporate and registered claimants under the <i>Native Title Act</i>;</li> <li>• local government bodies; and</li> <li>• persons who have made a genuine and valid objection during any assessment or approval process.</li> </ul> <p>That an independent body, such as NTCAT, be given jurisdiction to hear merits review proceedings in relation to any onshore shale gas industry.</p>		
14.25	<p>That prior to any further production approvals being granted, where litigation is brought genuinely in the public interest, costs rules be amended to allow NT courts to not make an order for the payment of costs against an unsuccessful public interest litigant.</p>	Supported in-principle	<p>This recommendation requires further analysis and/or consultation to determine how to implement. The implementation plan to be released in July 2018 will clearly show how this recommendation will be implemented.</p> <p>The intent of this recommendation is to ensure the potential cost of litigation is not a barrier to parties who genuinely believe they are acting in the public interest</p>

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
			when seeking to appeal a decision.
14.26	That prior to the grant of any further exploration approvals, the Government develops and implements a robust and transparent compliance and monitoring strategy, having regard to the principles set out in the ANAO Administering Regulation: Achieving the right balance guide, and the policy in SA.	Supported	N/A
14.27	That prior to the grant of any production approvals, the Government enacts whistleblower protections in respect of any onshore shale gas industry.  That prior to any further exploration approvals being granted, a hotline be established permitting anonymous reporting about any onshore shale gas industry non-compliance. That all such reports be immediately investigated.	Supported	N/A
14.28	That prior to the grant of any further production approvals, the Government considers developing and implementing a tiered regulatory model such as the one in SA, whereby gas companies with a demonstrated record of good governance and compliance require a lower level of monitoring, with a corresponding reduction in regulatory fees.	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
14.29	That prior the grant of any further production approvals, the Government enacts a broader range of powers to sanction, including but not limited to: <ul style="list-style-type: none"> <li>• remediation and rehabilitation orders;</li> <li>• revocation, suspension or variation orders;</li> <li>• enforceable undertakings;</li> <li>• injunctions (mandatory and prohibitory); and</li> <li>• civil penalties.</li> </ul>	Supported	N/A
14.30	That prior to the grant of any further production approvals, the Government enacts provisions establishing a chain of responsibility for gas companies and related parties to ensure compliance with environmental obligations.	Supported	N/A
14.31	That prior to the grant of any further production approvals, the Government allows civil enforcement proceedings to be instituted to enforce potential or actual non-compliance with any legislation governing any onshore shale gas industry.	Supported	N/A
14.32	That prior to the grant of any further production approvals, the Government enacts provisions that reverse the onus of proof or create rebuttable presumptions for pollution and environmental harm offences for all onshore shale gas activities.	Supported	N/A
14.33	That prior to the grant of any further production approvals, criminal penalties for environmental harm under the <i>Petroleum Act</i> and <i>Petroleum (Environment) Regulations</i> be reviewed and increased in line with world-leading practice.	Supported	N/A
14.34	That prior to the grant of any further exploration approvals, in order to ensure independence and accountability, there must be a clear separation between the agency with responsibility for regulating the environmental impacts and risks associated with any onshore shale gas industry and the agency responsible for promoting that industry.	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
14.35	That prior to the granting of any further production approvals, the Government considers establishing a one-stop-shop single, separate and independent shale gas regulator to regulate all aspects of any onshore shale gas industry in the NT (with the exception of the grant of exploration permits and the grant of water approvals).	Supported	N/A
<b>Chapter 15 – Strategic Regional Environmental and Baseline Assessment</b>			
15.1	That a strategic regional environmental and baseline assessment (SREBA) be undertaken prior to the granting of any further production approvals.	Supported	N/A
15.2	That the regulator oversees the auditing and the data-collection processes and provides a central repository for all data informing any SREBA.	Supported	N/A
15.3	That a SREBA: <ul style="list-style-type: none"> <li>• should be completed within five years from the first grant of exploration approvals; and</li> <li>• must be completed prior to the grant of any production approvals.</li> </ul>	Supported	N/A
<b>Chapter 16 – Implementation</b>			
16.1	That the Government implements all of the recommendations in this Report.	Supported	N/A
16.2	That an implementation framework including details of who, when and how each of the recommendations will be implemented, be completed within three months from any lifting of the moratorium.	Supported	N/A
16.3	That a centralised, well-resourced, experienced and skilled Implementation Unit be established immediately within the Department of Chief Minister to coordinate the development of the implementation framework.	Supported	N/A

# Hydraulic Fracturing in the Northern Territory

Rec #	Final Recommendation	Government response	Justification for supported in-principle response
16.4	That a Community and Onshore Shale Gas Industry and Business Reference Group be established to provide feedback to Government on the development of an implementation framework, and its subsequent execution, if the Government lifts the moratorium.	Supported	N/A