

# Geological and Bioregional Assessments

## Stage 3 Workshops - Consultation Summary

### Purpose

The objective of the stage 3 workshops was to engage early with state/Territory and Commonwealth regulators and industry representatives, to gain an understanding of the processes involved in the development and assessment of applications associated with unconventional gas developments. Early engagement with these key users will allow the GBA Program to better understand how the final products might be used and therefore tailor content and presentation to support seamless integration of the GBA methodologies and results into users' standard workflows.

### Preamble

The \$35.4 million Geological and Bioregional Assessment (GBA) Program is assessing the potential environmental impacts of shale and tight gas development to inform regulatory frameworks and appropriate management approaches. The geological and environmental knowledge, data and tools produced by the GBA Program will assist governments, industry, landowners and the community by informing decision making and enabling the coordinated management of potential impacts.

A series of independent scientific studies in three geological basins – the Cooper Basin in Queensland and South Australia, the Isa Superbasin in Queensland and the Beetaloo Sub-basin in Northern Territory – are being conducted by CSIRO and Geoscience Australia, supported by the Bureau of Meteorology and managed by the Department Agriculture, Water and the Environment. These scientific studies aim to provide baseline information that:



Stage 1 - identifies and evaluates areas of high potential for shale and tight gas for future development and any potential connections with water resources



Stage 2 - collates and summarises key information about geological structure, groundwater movement through geological layers, surface water systems and ecological systems



Stage 3 - evaluates possible ways that unconventional gas resource development might impact the things we value, such, as groundwater, protected species, as well as culturally and ecologically important matters

The stage 2 geological and environmental baseline assessments for the three geological basins are now complete. These assessments integrate data, knowledge and conceptual models that are the building blocks for impact analysis and management.

The Stage 3 impact analysis reports will be developed for the Cooper Basin and the Beetaloo sub-basin. These reports will test key questions relating to the management, mitigation and monitoring of potential impacts from shale and tight gas developments, and hopefully lead to improvements in regulatory efficiency through a shared understanding of the how to manage potential impacts.

## **About this report**

This report summarises the findings from five workshops held to achieve the stated purpose. The five workshops were held with the environmental and water regulators in the Beetaloo and Cooper GBA regions (Northern Territory, Queensland, South Australia and the Commonwealth) and the unconventional gas industry.

## **Summary of overall results**

The stage 3 workshops provided valuable insight into the use cases for the stage 3 products. Commonwealth and State regulator feedback highlighted that the assessment process is proponent driven and includes the supporting evidence/information required to assess the application. This places the GBA products in a position to function as an independent comparison for proponent information or be used by proponents more proactively in preparing documentation.

Key findings from the workshops include:

- For the products to be most relevant and useful, they need to be designed for industry use in their development application documentation.
- The products will provide regulators and industry a single source of baseline information in the three regions.
- The GBA Program provides government and industry with a consistent framework and language which aids describing the potential impacts of unconventional gas development.
- The fieldwork component helps fill knowledge gaps and provides an evidence base to support the scientific underpinnings of each assessment.
- Clear descriptions of hazards and identification of important areas within the GBA regions will assist industry to focus some of their consultants' efforts.

## **Findings from the individual workshops**

Feedback from each of the workshops is summarised in the following table. The GBA Program thanks each of the attendees for their time and contributions.

Entity	NT regulators	Qld regulators	SA regulators	C'wealth regulators	Industry
<p><b>Their process</b></p>	<p>Currently, exploration activities are managed under individual Environment Management Plans (EMPs). The stage at which an Environmental Impact Statement (EIS) might be required (appraisal &gt; production) is uncertain, as is whether a strategic approach (across multiple proposed developments) would be used at the NT or Commonwealth level.</p> <p>NTG are undertaking reform of their environmental legislation, which comes into effect in 2020.</p> <p>Production cannot commence without completion of a Strategic Regional Environmental Baseline Assessment (SREBA).</p>	<p>The assessment and approval process is applicant driven.</p> <p>In most cases, the EIS submitted for approval must provide all information requirements to meet both state and Commonwealth requirements.</p> <p>There is usually a high degree of uncertainty with large-scale unconventional gas developments as to what activities will occur and the actual location they will be carried out – this uncertainty is managed through conditions e.g. maximum disturbance limits.</p> <p>Generally, there is not enough information publicly available for proponents to do cumulative impact assessments, so the responsibility is placed upon Department of Environment and Science (DES).</p>	<p>Water take from petroleum and gas activities is licensed – 95% of current take is from oil; not really an issue for shale. The Minister is allocated a license for the entire industry take and determines its distribution.</p> <p>A new Water Allocation Plan is out to public consultation until March 2020, then will need to be passed through the Landscape Board, with Minister's approval expected this year. Under the new WAP the licensed volume won't be restricted, however it will be managed by drawdown limits and predicted impacts to GDEs (springs).</p>	<p>If a proposed project is likely to have a significant impact on a matter of national environmental significance (MNES) it will need formal assessment under the EPBC Act.</p> <p>To assist regulation officers in reaching a timely decision, it is important that the proponent provides the right level of supporting documentation with their referral. This documentation must provide evidence that builds a clear picture of all potential impacts from the project/action on MNES as well as proposed mitigation measures to reduce adverse impacts.</p> <p>In the event additional information is required to make an informed decision, statutory timeframes may be halted until the additional information is received.</p>	<p>Once awarded an exploration tenure, the holder has no legal rights to produce the resource and can only collect data. This phase is time bound, and the tenure is still subject to be taken back by Government.</p> <p>A range of factors play into site selection / infrastructure layouts for production: geology, land access, cultural sites, access to infrastructure, environmental features.</p>

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<p><b>Value of GBAS</b></p>	<p>The GBA methodology will provide a useful tool for Industry to use when developing their EMPs.</p> <p>It may also provide an independent verification of work undertaken by industry.</p>	<p>Queensland regulators stated that a positive outcome from the GBA program would be for the regulation community and Industry alike to have the same understanding of potential environmental impacts from proposed projects.</p> <p>Basin or regional understanding would be most useful to DES as it would help with cumulative assessments and provide a broader context. It is up to the proponents to provide site specific analysis tied to their tenements.</p> <p>Department of Natural resources, Mines and Energy (DNRME) might use the GBAs in identifying values as part of consultation following EOIs on new tenure releases.</p>	<p>The community at large needs to have confidence that the GBA research and analysis systematically identified all the potential risks, hazards, causal pathways, and, associated mitigation and management measures.</p> <p>Meanwhile, the SA regulator interest (and perhaps also industry) would be in the core data rather than the overall reports.</p>	<p>Ongoing access to good quality and scientifically robust baseline data.</p> <p>Technical advice on no-go zones for explorations and production activities.</p> <p>Assist in understanding the potential significance and scale of impacts.</p> <p>Suggest potential best practice mitigation measures for identified risks, not just what they are but how they could be carried out and measured.</p>	<p>Identification up front of <b>the actual risks</b> to help ensure that they collect the right data to inform the assessment process (i.e. no wasted effort on risks that don't actually exist).</p> <p>The Stage 2 work could assist with initial site selections within the tenure, as it integrates data, knowledge and conceptual models.</p> <p>Access to regional/sub-regional actual baseline datasets</p> <p>Regulatory maturity and reduced duplication between State and Federal Governments.</p>

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<p><b>What to include / how to present GBAs</b></p>	<p>Any document should be 50 - 100 pages max</p> <p>Format the report by potential impacts, mitigation strategies and monitoring rather than by assets</p> <p>Weigh each of the identified risks</p> <p>Include possible no-go zones (for exploration and production requirements) and their map extent</p> <p>Methods and underpinning data would be useful as a minimum, esp. if explaining any differences with the approach taken by the SREBA</p>	<p>DES would like to see the GBA baseline data and analysis presented through an interactive interface by tenure holdings, primarily focusing on:</p> <ul style="list-style-type: none"> <li>• What needs to be protected</li> <li>• Individual habitat area requirements</li> <li>• No-go zones for explorations and production activities</li> <li>• Potential impacts from production activities</li> <li>• Mitigation strategies</li> </ul>	<p>It will be important to adoption of a common language particularly when describing environment assets and potential impacts. The GBA products need to include glossaries to ensure language is clearly defined eg. what is deep to an ecologist is not deep to a geologist.</p> <p>It will also be important to be clear in reporting: Rule in potential impacts (discuss relevant controls) or rule them out (community confidence).</p>	<p>Report cards by MNES for different species or protected matters found in the three GBA study areas eg. their population and distribution numbers, habitat needs, movements and feeding habits.</p> <p>The new GBA survey data and results to be loaded into the Departments Species Profile and Threats (SPRAT) database</p> <p>A summary of what protected matters are likely to be found in each of the three GBA study areas and whether they are protected under Commonwealth and or State Legislation.</p>	<p>Ensure the data collected by the GBA program will support the SREBA and will comply with regulatory requirements (e.g. survey guidelines).</p> <p>Focus on actual, rather than modelled, data.</p> <p>Contextualise all qualitative baseline data to ensure it is correctly understood by all stakeholders.</p> <p>Target products to the requirements of the regulators for a given region.</p> <p>Use legislation/policy as baseline controls, and recognise existing practices (e.g.</p>

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	Interactive package / tool would be useful in ongoing regulation.				disturbance along existing access tracks).
<b>Other comments</b>	Department of Environment and Natural Resources would like the opportunity to work with CSIRO modellers to gain a better understanding of the methodology applied to recharge estimates for the Cambrian Limestone Aquifer. Collaboration through this work would ensure the same water balance estimates are applied in baseline analysis by both state and Federal governments.	DNRME water planners also see particular value in the Cooper field investigations to inform their work.		The Commonwealth regulators expressed that they would like industry to adopt the use of GBA products as early as possible.  It will be important to clearly articulate the limitations of the information contained in the GBA to ensure that it is used appropriately when informing ecological assessments etc.	