

**Submission
No 18**

**INQUIRY INTO THE IMPLEMENTATION OF THE
RECOMMENDATIONS CONTAINED IN THE NSW CHIEF
SCIENTIST'S INDEPENDENT REVIEW OF COAL SEAM
GAS ACTIVITIES IN NEW SOUTH WALES**

Organisation: Santos Limited
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Santos welcomes the opportunity to provide a submission to the inquiry into the implementation of the recommendations contained in the NSW Chief Scientist's Independent Review of Coal Seam Gas Activities in New South Wales.

This inquiry is a further opportunity to provide confidence to the community that the rigorous regulatory regime in place in NSW will ensure coal seam gas development occurs safely and sustainably.

Santos notes and supports the submission made by the Australian Petroleum Production and Exploration Association (APPEA) to this inquiry.

Background

A proudly Australian company, Santos is a leading supplier of natural gas, a fuel for the future providing cleaner energy to improve the lives of people in Australia and Asia.

Santos aims to be Australia's leading domestic gas supplier and a leading Asia-Pacific LNG supplier.

For 65 years, Santos has been working in partnership with local communities, providing jobs and business opportunities, safely and sustainably developing Australia's natural gas resources to power Australian industry.

Santos is seeking approval to develop the Narrabri Gas Project, which has the potential to supply enough natural gas to meet up to half of NSW's natural gas demand.

In NSW more than one million family homes, ~33,000 businesses and ~300,000 jobs rely on natural gas as a source of energy. With the commercial and industrial sector currently making up around 48 percent of total gas consumption in NSW, reliable and competitively priced natural gas is essential for a strong NSW economy.

Santos has committed that 100 per cent of Narrabri gas will be sold into the domestic market. Because Narrabri is much closer to NSW markets than supplies of natural gas in Queensland, South Australia, Victoria or from overseas – and through the lower cost innovations Santos has made in developing coal seam gas in Queensland – Narrabri gas will be cheaper for NSW customers than alternative sources.

Santos shares the concerns of the broader community that it is vitally important that the environment and water resources are protected and the community benefits from the development of natural gas in NSW. Santos is committed to operating in a safe and sustainable way.

NSW has very strong environmental regulation in place providing confidence that the Narrabri Gas Project can be developed safely and sustainably. The Chief Scientist's Independent Review into Coal Seam Gas Activities in NSW and subsequent implementation of the NSW Gas Plan have ensured the regulatory and compliance regimes in place in NSW are among the most rigorous in the world.

Establishment of a Community Benefits Fund and our commitment to provide 100 per cent of Narrabri gas to the domestic market will also ensure both the local and broader NSW community benefit from the project.

The Narrabri Gas Project will deliver up to \$1.2 billion in royalties directly to the NSW budget to help fund essential government services like health, transport and education. The Community Benefits Fund will receive up to \$120 million to invest in local community programs and ensure any impacts from the project are appropriately addressed.

Responses to the terms of reference of this inquiry follow.

(a) the status of the implementation of the recommendations

See Table 1 attached.

(b) the effectiveness of the implementation of the recommendations and whether or not there are gaps in implementation

The final report from the Chief Scientist's Independent Review into Coal Seam Gas Activities was released in September 2014.

In October 2015, the NSW government released a report detailing progress on implementation of the recommendations from the Chief Scientist's report¹. At that time, seven of the sixteen recommendations had been implemented and with a further three on track for implementation by mid-2016.

Substantial progress has been made in implementing the Chief Scientist's report since the release of the 2015 report. Only two recommendations remain to be implemented: recommendation two relating to insurance and recommendation nine relating to cost recovery from the industry.

Santos' position in relation to the status and effectiveness of the implementation of each of the recommendations is provided in Table 1.

(c) whether any other inquiry findings or other major reports relating to unconventional gas in Australia or the east coast gas market published since the release of the Chief Scientist's report are relevant to the suitability or effectiveness of the Chief Scientist's recommendations

Inquiries into unconventional gas

Santos is aware of two further inquiries into onshore gas development in Australia since the release of the Chief Scientist's report in 2014:

- + The independent Scientific Inquiry into Hydraulic Fracturing of Onshore Unconventional Reservoirs in the Northern Territory led by Justice Pepper and published in March 2018 (the Pepper Inquiry)

¹https://www.resourcesandgeoscience.nsw.gov.au/_data/assets/pdf_file/0003/581601/FINAL-Implementing-the-Chief-Scientist-and-Engineers-Independent-Review-of-Coal-Seam-Gas-Activities-in-NSW.pdf

- + The Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia handed its Report to the Western Australian Government on 12 September 2018 (WA Inquiry).

Both these inquiries related specifically to the practice of hydraulic stimulation of wells and concluded that the risk to people and the environment from this practice can be appropriately managed.

Regardless, there are currently no licences or permits in NSW that authorise hydraulic stimulation and Santos is not aware of any licence or permit applications under consideration by the regulator. The geology within the Narrabri Gas Project area means that hydraulic stimulation is not required to extract the natural gas within the coal seams. The state significant development application and the associated Environmental Impact Statement does not seek approval to conduct hydraulic stimulation.

There have now been more than 15 inquiries relating to onshore gas development in Australia. Each inquiry has concluded coal seam gas development can occur safely and sustainably with appropriate controls in place. In addition, since the release of the Chief Scientist's report, Santos has continued developing its coal seam gas fields in Queensland, drilling an additional 769 wells between January 2015 and June 2019 while protecting water resources and maintaining the environmental values of the regions in which we operate.

The performance of Queensland's large scale coal seam gas field development which dates back to 2011 is testament to how coal seam gas can contribute to state and regional economies and communities, and at the same time protect the environment and water resources.

East coast domestic market

Analysis prepared by federal government agencies the Australian Energy Market Operator (AEMO) and the Australian Competition and Consumer Commission (ACCC) since release of the Chief Scientist's report demonstrates the east coast domestic gas market has seen a tightening of supply and increased pressure on prices in recent years.

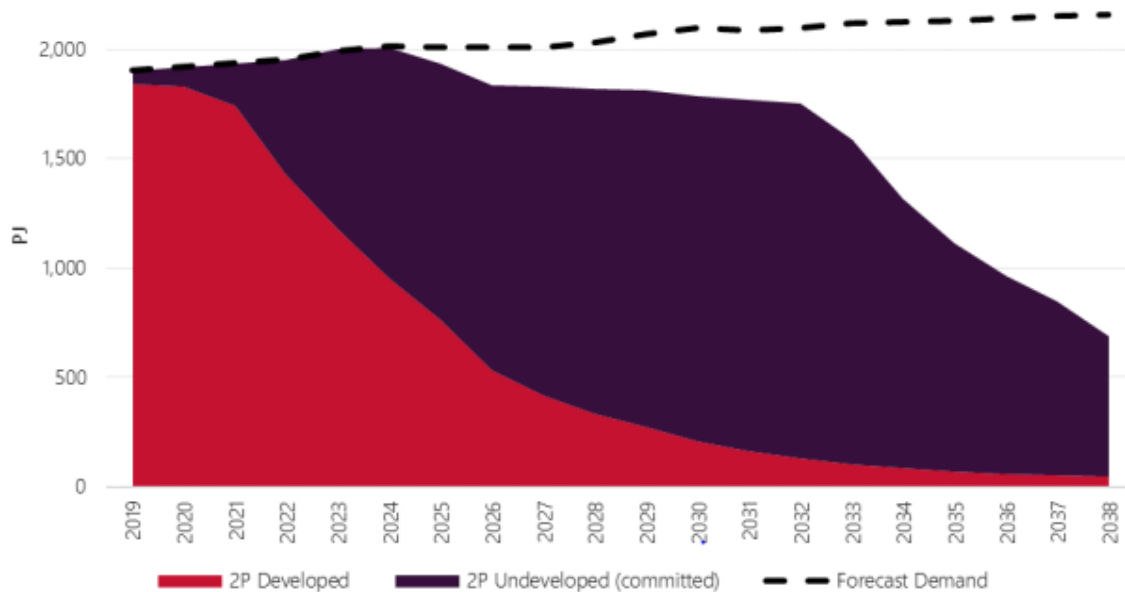
New sources of supply are required in the medium term to ensure ongoing reliable gas supply in NSW. These new sources of supply will also be critical to supporting the families, businesses and jobs that rely on a safe and secure supply of natural gas.

AEMO's 2019 annual Gas Statement of Opportunities (GSOO)² shows the gas supply-demand balance in the east coast gas market remains tight although supply from existing and committed gas developments is forecast to be sufficient to meet demand until 2023. Nevertheless, even in the short-term, declining production in Victoria will reduce volumes of surplus gas that can be exported to NSW and increase the reliance of NSW on gas supplies from Queensland and South Australia.

From 2024 onwards, AEMO forecasts potential supply gaps unless additional reserves and resources, or alternative infrastructure, are developed in the southern states. The following chart shows the extent of the supply shortfall should only existing and committed gas developments proceed.

² <https://www.aemo.com.au/Gas/National-planning-and-forecasting/Gas-Statement-of-Opportunities>

Figure 2 Projected eastern and south-eastern Australia gas production (export LNG and domestic), 2019-38; supply from existing projects and committed developments



The ACCC also conducts inquiries into the supply of and demand for wholesale gas in Australia. Reports published since 2017 and as recently as August 2019 have recognised the need for additional sources of gas supply to ensure adequate supply and put downward pressure on prices.

Speaking at the 2019 APPEA Oil and Gas conference in May 2019, Rod Sims, Chair of the ACCC, said “the best way to avoid potential looming shortages flagged by AEMO is to bring on additional supply by accelerating investment in gas exploration and development”. In its most recent report, the ACCC also noted that it has long advocated for an increase in supply and diversity of suppliers, particularly in the southern states.³

Based on the analysis detailed above there remains a strong case that development of the Narrabri Gas Project would be good for the east coast gas market – increasing supply and putting downward pressure on gas prices. The quality of the resource, its proximity to sources of demand and its position as the only current potential source of local supply in NSW, make the Narrabri Gas Project important for NSW and the broader east coast domestic gas market.

(d) any other related matters.

East coast gas prices

The only sustainable, long-term solution to east coast gas is bringing on new sources of gas supply to provide more competition and put downward pressure on prices. Importantly, Santos has committed to making 100 percent of Narrabri gas available to the domestic market and would be willing to accept a condition of approval to that effect.

In its 2019 report, the ACCC noted that “ultimately, more low-cost supply is needed in the southern states to put downward pressure on gas prices”. The ACCC has stated that gas

³ <https://www.accc.gov.au/system/files/Gas%20inquiry%20July%202019%20interim%20report.pdf>

customers in southern markets pay \$2 to \$4 per gigajoule more than they would if gas was developed locally and didn't need to be transported from Queensland or South Australia.

Since submission of the Narrabri Gas Project, LNG import terminals have been proposed including for Port Kembla in NSW.

While import terminals may add supply to the market, imported gas will not be cheaper than gas developed within NSW. This is confirmed by the 2019 GSOO report which stated, "continued interest in LNG import terminals, particularly in Victoria, New South Wales, and South Australia, would be expected to help relieve pressure on meeting southern gas demand during peak periods and assist in reducing pipeline constraints, but may do little to ease gas pricing pressures".

Finally, potential customers are very interested in sourcing gas from Narrabri because they recognise the advantages of having a reliable and competitively-priced source of gas in NSW. As well as reducing transport costs, Santos will bring to Narrabri its experience in Queensland where we have reduced connected well costs by 84 per cent since 2015. Keeping the cost of supply down will in turn keep gas prices down.

Santos has signed non-binding memoranda of understanding with Brickworks and Weston Energy for the supply of Narrabri gas to commercial and industrial customers across NSW. Further, Santos has entered into a memorandum of understanding and subsequent heads of agreement with Perdaman, a fertiliser producer looking to locate a new plant in Narrabri should the Narrabri Gas Project be approved.

Table 1 – Status and effectiveness of Chief Scientist’s Recommendations

No.	Recommendation	Status
Intent, communication, transparency and fairness		
1	Government statement on establishing world-class regime for coal seam gas extraction	<p>Complete – The NSW Gas Plan was released on 13 November 2014.¹ It is a clear statement of the government’s intent to establish a framework to deliver world’s best practice regulation of the gas industry.</p> <p>Implementation of the plan has also addressed the specific factors noted in the recommendation:</p> <ul style="list-style-type: none"> + The Environment Protection Agency’s Compliance Policy² provides a rigorous approach to compliance and enforcement. + The ‘Guideline for community consultation requirements for exploration’³ published in 2016 sets clear, enforceable expectations for industry to work closely and continuously with the community about its exploration activities. Santos has also signed the Agreed Principles of Land Access⁴ which are based on the values of respect, integrity and trust. Other signatories to the agreed principles are the AGL Energy, Cotton Australia, Country Women’s Association, Dairy Connect, NSW Farmers Association and NSW Irrigators Council.

¹ http://www.resourcesandenergy.nsw.gov.au/_data/assets/pdf_file/0005/534830/NSW-Gas-Plan.pdf

² <https://www.epa.nsw.gov.au/publications/legislation/epa-compliance-policy-130251>

³ https://www.resourcesandgeoscience.nsw.gov.au/_data/assets/pdf_file/0004/476239/Guideline-for-community-consultation-requirements-for-exploration.pdf

⁴ <https://narrabrigasproject.com.au/uploads/2014/08/Agreed-principles-of-land-access.pdf>

		<ul style="list-style-type: none"> + The Petroleum (Onshore) Act 1991 has been amended to streamline titles administration and ensure rigorous compliance and enforcement processes are in place. + The Independent Pricing and Regulatory Tribunal (IPART) completed a review of landholder compensation for gas exploration and production in 2015. Santos implements a compensation framework consistent with the recommendations of this review and publishes details of our approach online.⁵
2	Clear and open communication on coal seam gas matters	<p>Complete – The NSW Gas Plan demonstrates the government’s commitment to clear and open communication on matters related to coal seam gas development.</p> <p>The regulatory framework in place ensures all approvals relating to coal seam gas activities are easily accessible online and relevant management plans are also available.</p> <p>Community consultation is required for any significant new approval application.</p> <p>The government has also taken steps to improve the availability of environmental data. In 2017, a portal for Sharing and Enabling Environmental Data (SEED) was established as a central repository for environmental data. It is accessible by the public and includes NSW government data covering land, air and water. The SEED portal will grow over time as more environmental data becomes available.</p> <p>In line with regulatory requirements, Santos also publishes all water monitoring data online each quarter. This ensures transparency around one of the issues of most interest to the public.</p>
3	Practical measures to provide protection and benefits to affected communities	<p>Complete – Amendments to the Petroleum (Onshore) Act 1991 implemented after the 2015 Waker Review into Land Access Arbitration⁶ require proponents to</p>

⁵ https://narrabrigasproject.com.au/uploads/2018/02/Fact_sheet-Working_with_landholders_web.pdf

⁶ https://www.resourcesandgeoscience.nsw.gov.au/_data/assets/pdf_file/0018/527112/Brett-Walker-Examination-of-the-Land-Access-Arbitration-Framework.pdf

		<p>negotiate a land access arrangement with landholders at both exploration and production stages. Compensation is a mandatory component of the negotiation.</p> <p>As noted at point 1, the Independent Pricing and Regulatory Tribunal (IPART) completed a review of landholder compensation for gas exploration and production in 2015. Santos implements a compensation framework consistent with the recommendations of this review and publishes details of our approach online.</p> <p>Santos has built positive relationships with the landholders who host our activities on their land and we currently have 20 land access agreements in place. Negotiation of these agreements is simplified by adopting a consistent and transparent approach to compensation.</p> <p>Beyond our landholders, Santos currently operates a community investment program supporting initiatives that enhance the lives of those who live in the region. Should the Narrabri Gas Project be approved, Santos will contribute up to \$120 million to a Community Benefits Fund over the life of the project.</p>
4	Full cost recovery	<p>In progress – Santos supports implementation of a cost recovery framework for the regulation of the coal seam gas industry. We understand the Department of Planning, Industry and Environment (DPIE) is currently leading work to address this recommendation.</p>
<p>Legislative and regulatory reform and appropriate financial arrangements</p>		
5	Designated areas for coal seam gas activities	<p>Complete – Significant legislative change has occurred since 2015 to limit the areas in which coal seam gas activities can be undertaken. This included:</p> <ul style="list-style-type: none"> + Establishing coal seam gas exclusion zones, extinguishing exploration applications and modifying existing Petroleum Exploration Licences (PEL) to remove areas of National Park.

		<ul style="list-style-type: none"> + Implementation of a buy-back scheme resulting in the voluntary surrender of 16 PELs. + Creation of a 2km buffer around 'rural village' land and a prohibition of coal seam gas activities on critical industry cluster land covering equine and viticulture industries. <p>These measures ensure that NSW can establish a world leading industry that is safe and sustainable.</p>
6	Move to a single Act for onshore subsurface resources	<p>Complete – Amendments to the <i>Mining Act 1992</i> and the <i>Petroleum (Onshore) Act 1991</i> in 2015 harmonised title administration across minerals and petroleum.</p> <p>Further opportunities to harmonise legislation may exist. Any further amendments should be identified in consultation with industry and the community.</p>
7	Separate allocation of rights to resources from regulatory activities	<p>Complete – Responsibility for the allocation of rights to resources lies with the Department of Planning Industry and Environment.</p> <p>To address this recommendation, the EPA commenced as lead regulator for compliance and enforcement of all conditions relating to gas development (with exception of work health and safety) on 1 July 2015.</p>
8	Move towards target and outcome focused regulatory regime	<p>Complete – In response to this recommendation, the NSW government reviewed all codes of practice and conditions used to regulate the onshore petroleum industry. A series of reforms followed including the introduction of codes of practice for environmental management, produced water, rehabilitation, drilling and community consultation.</p> <p>Minimum standards and a Merit Assessment Procedure have also been introduced, to strengthen the allocation of rights to resources by the state.</p>
9	Examine potential for three-layered policy of security deposits, enhanced insurance	<p>Ongoing – Santos supports the implementation of this recommendation to provide the community confidence that Narrabri can be developed safely and without harm to</p>

coverage, and an environmental rehabilitation fund

water or the environment. We understand the NSW Environment Protection Authority is leading work to complete implementation of this recommendation.

Santos is committed to minimising any impacts to the environment from our activities and has a long history of operating our assets safely and sustainably.

In the event of an unforeseen impact to the environment, Santos would be responsible for remediation activities, including to the extent such an event may impact landholders and their activities.

Very importantly, in addition to the insurance held by Santos, the NSW government also holds a bank guarantee to cover any remediation in the extremely unlikely event that Santos or our insurers fail to meet our responsibilities. The bank guarantee amount is determined by the State to be sufficient to cover all and any remediation that could be required.

The combination of Santos' safe operating practices, insurance policies held by Santos and the bank guarantee lodged with the NSW government provides certainty that any environmental risks are appropriately managed now and into the future.

Managing risk by harnessing data and expertise

10	Whole of environment data repository	<p>Complete – As noted in response to recommendation two, the government established a portal for Sharing and Enabling Environmental Data (SEED) as a central repository for environmental data in 2017. It is accessible by the public and includes NSW government data covering land, air and water. The SEED portal will grow over time as more environmental data becomes available.</p> <p>SEED can be found online at: https://www.seed.nsw.gov.au</p>
11	Centralised Risk Management and Prediction Tool for extractive industries in NSW	<p>Complete – As reported in the government's 2015 report on implementation of the Chief Scientist's recommendations, a number of risk management and prediction</p>

		<p>tools are being used by government agencies. These tools are used to assess proposals, analyse risk and inform compliance activities.</p> <p>In addition, the government has developed and released risk-based codes of practice and risk-based licencing and planning assessment processes.</p>
<p>12</p>	<p>Standing expert advisory body on CSG</p>	<p>Complete – This recommendation has been achieved by using the expertise of the existing Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) and contributing \$1.5 million in funding to the Gas Industry Social and Environmental Research Alliance (GISERA).</p> <p>The IESC is a statutory committee of leading scientists that independently advises government regulators on the impacts that coal seam gas development may have on Australia’s waters resources.</p> <p>GISERA is a collaboration between CSIRO, Commonwealth and state government and industry. Through GISERA, CSIRO conducts scientific research focusing on social and environmental topic including: groundwater and surface water, biodiversity, land management, the marine environment, human health and socio-economic impacts.</p> <p>The governance structure of GISERA is designed to ensure research outputs are independent and scientifically rigorous. Research conducted relevant to NSW is overseen by the NSW Regional Research Advisory Committee. This committee consists of 45% community, 11% industry, 22% CSIRO and 22% Government stakeholders.</p>
<p>13</p>	<p>Five step process for water monitoring and verification</p>	<p>Complete – Potential impacts to groundwater resources from exploration and production projects are comprehensively assessed through the existing Review of Environmental Factors and Environment Impact Statement processes. Assessments</p>

include potential groundwater impacts, an analysis of baseline data and a proposed water monitoring framework including triggers and response.

The IESC review the assessment and independently advise the state and Commonwealth governments. The Narrabri Gas Project has also been independently examined by GISERA and through the Commonwealth Bioregional Assessment Program.

Water monitoring data is published by Santos and is available to the government for publication in the SEED portal. The government’s groundwater monitoring framework has also been expanded in recent years.

Training and certification

14	Ongoing mandatory training and certification requirements for personnel in operational roles	<p>Complete – A number of additional measures have been taken to ensure personnel are able to safely and responsibly undertake activities:</p> <ul style="list-style-type: none"> + Requirements for safety critical petroleum roles can be prescribed through the <i>Work Health and Safety (Mines and Petroleum Sites) Regulation</i> + A Competency Guideline for petroleum drilling and well servicing was published in 2015 and describes recommended minimum qualifications and competencies. + Licence conditions may also specify the qualifications and/or experience required to undertake certain tasks such as water monitoring.
15	Plan to manage legacy matters associated with CSG including abandoned wells	<p>Complete – To address existing legacy issues, the Legacy Mines Program⁷ was expanded to include legacy petroleum wells in 2014.</p> <p>Looking ahead, the current regulatory regime and compliance program will effectively manage any risk of future legacy issues.</p>

⁷ <https://www.resourcesandgeoscience.nsw.gov.au/landholders-and-community/minerals-and-coal/legacy-mines-program>

		<p>Wells that have reached the end of their functional life must be plugged and decommissioned in accordance with the NSW Code of Practice for Coal Seam Gas – Well Integrity⁸ with records for each well provided to the NSW Government.</p> <p>Final rehabilitation will take place and sites will be relinquished, in accordance with all regulatory requirements including the provision of final rehabilitation and relinquishment reports to the regulator. Relinquishment must be approved by the regulator before the security deposit relating to the infrastructure can be released.</p> <p>In addition to meeting all regulatory requirements, Santos will engage an independent scientific body such as the CSIRO to conduct a study into the integrity of decommissioned wells across its operations, including in Queensland. This study will provide a baseline assessment of the long-term integrity of decommissioned coal seam gas wells. The study will reviewed and updated throughout development and decommissioning of the Narrabri Gas Project to ensure any residual risks are appropriately managed.</p>
16	Consider whether there needs to be alignment of legislation for extraction of methane from coal and gas production	Complete – Santos understands the government has considered the need for further alignment of legislation and no changes are currently proposed.

⁸ https://www.resourcesandenergy.nsw.gov.au/_data/assets/pdf_file/0006/516174/Code-of-Practice-for-Coal-Seam-Gas-Well-Integrity.PDF