

The Narrabri Gas Project Environmental Impact Statement

The Santos Narrabri Gas Project's Environmental Impact Statement has concluded that the Project can proceed safely with minimal and manageable risk to the environment.

Australian energy company Santos is seeking approval to develop a project based on the natural gas resources contained in coal seams near Narrabri.

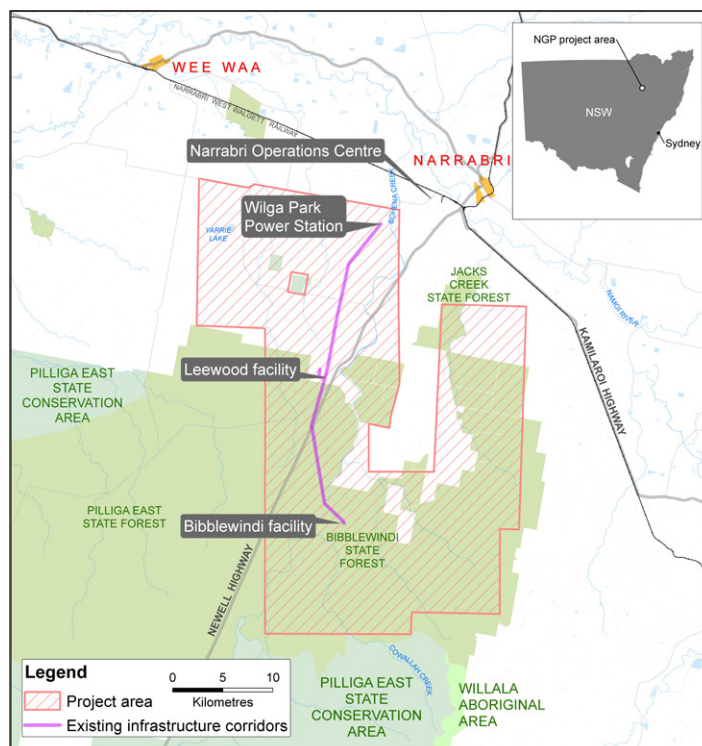
In NSW, more than one million homes, 33,000 businesses and about 300,000 jobs rely on an affordable supply of natural gas. The proposed Narrabri Gas Project could supply up to half of NSW's gas needs and deliver significant economic benefits.

Santos will make the gas available to NSW via a pipeline linking into the existing Moomba to Sydney Pipeline. The pipeline will be constructed by APA Group and subject to a separate approval.

As part of the regulatory approval process for the Project, Santos has submitted a Development Application, including the Environmental Impact Statement (EIS), to the NSW and Commonwealth Governments for their review and assessment.

The EIS is a comprehensive document required to identify and address potential impacts of the Project. It includes extensive studies, with modelling and data on areas including water, flora, fauna, soil, noise, air quality, cultural heritage and social impacts. It also incorporates the findings of thorough community and stakeholder consultation.

This information will be used to prepare detailed management and mitigation plans for the Project, allowing Santos to develop much needed natural gas for NSW safely and sustainably.



Map of the Narrabri Gas Project area

Key findings of the EIS:

- + Water available to farmers and the community will be unaffected
- + Drilling will be carried out safely using the NSW Well Integrity Code of Practice which has been reviewed by the NSW Chief Scientist and Engineer
- + Significant impacts on threatened and endangered flora and fauna will be avoided
- + Aboriginal cultural heritage sites will be protected
- + The Project will coexist with current land uses including agriculture and forestry
- + Substantial economic benefits to the local area including 1,300 jobs during construction and 200 ongoing jobs
- + A regional benefit fund of up to \$120 million will support local community programs, and royalties of around \$1.2 billion will be generated for NSW

Project area overview

Santos is seeking approval to drill up to 850 wells on 425 sites in the Project area in and around the Pilliga.

The Project area:

- + Is mostly (around 60%) on state land in a section of the Pilliga set aside by the NSW Government for uses including logging and extractive industries
- + Does not include National Parks or Nature Reserves
- + Does not contain strategic agriculture land as mapped by the NSW Government. Santos will only drill on private land when the landholder agrees to host our activities
- + Is covered by the Gomeroi People's Native Title Claim. Santos is working towards an agreement with the registered claimants
- + Will have operational facilities located on about 1000 hectares or around 1% of the 95,000 hectare Project area

In 2014 the NSW Chief Scientist and Engineer concluded that, with appropriate safeguards and controls, natural gas from coal seams can be safely extracted. The regulations covering natural gas extraction in NSW are among the most stringent in the world and Santos adopts the highest industry standards to ensure work does not have an adverse impact on the environment.

Minimising the Project's impact

A key benefit of natural gas development is the small environmental footprint and the ability to be flexible when locating infrastructure.

The detailed information gathered through the EIS development has given Santos a comprehensive understanding of the Project area.

This knowledge will feed into a Field Development Protocol which will determine where infrastructure is placed throughout the life of the Project. This will allow sensitive areas to be identified and processes and procedures put in place to ensure the Project is developed safely and the impact of work is kept to a minimum.

Ecology

Santos has access to an extensive range of data with more than 13,000 hours of on-ground ecological surveys carried out over several years in conjunction with environmental experts. This has been used to produce detailed mapping of the Project area to identify flora and fauna habitats and sensitive ecological areas.

Thorough analysis of this information determined that, by implementing mitigation and avoidance measures including the Field Development Protocol, the Project will not have a significant impact on flora, fauna or the ecology of the area.

Mitigation measures contained in the EIS include:

- + Using existing access tracks and corridors to reduce clearing when practical
- + Well pads will be appropriately spaced to minimise impacts on the environment
- + Weed control and pest management measures
- + Implementing land conservation programs to offset impacts
- + Staged rehabilitation of sites as work progresses
- + Major gas and water processing facilities located on previously cleared private land to minimise disturbance in the Pilliga

Water

In order to extract natural gas, water pressure must first be reduced in the coal seams deep below the ground.

A Groundwater Impact Assessment (GIA) was developed for the EIS to determine what impact the Project would have on local water. The GIA found the Project would have a negligible impact on existing water users; less than seasonal fluctuations.

The GIA incorporated the findings of a regional groundwater model developed by specialist groundwater scientists. The model simulated water flow and pressures and considered data from more than 100 locations in the Narrabri region.

The model was peer-reviewed by the CSIRO and described as "state of the art".

Santos has an extensive groundwater monitoring network in place with data accessible to the community via an online water portal. This monitoring network will allow the community to be confident Santos is working within the conditions of the Project's approval.

Water and the Narrabri Gas Project

- + The water extracted is not the water accessed by local agricultural or community bores and is not from the Great Artesian Basin. It comes from coal seams much deeper underground (500-1200 metres) and is salty
- + Geologically, the rock formations in this area isolate those coal seams from the water used by farmers and the community
- + The Government assesses water sources and then sets sustainable extraction limits. The Project is projected to extract an average of 1.5 gigalitres of water per year. This equates to about 1% of the sustainable extraction limit of the water source targeted
- + All of the water extracted will be licensed by the Government, as is the case for any other user
- + The water extracted will be desalinated so the majority can be reused for purposes like irrigation
- + The salt remaining after the treatment process will be disposed of in accordance with environmental regulations



The Community

We pride ourselves on the relationships we build with the local communities that host our activities.

The Project will create up to 1,300 jobs during construction and 200 ongoing positions. Local contractors and suppliers will be used where possible, delivering local economic benefits.

A regional benefit fund of up to \$120 million will ensure that the broader Narrabri Shire community benefits from the Project.

Local landholders who choose to host Santos' activities will benefit from a compensation scheme, and a farm management plan will be agreed to ensure they are comfortable with all aspects of the work on their land.

Wells will only be drilled on private land with the agreement of the landholder – a commitment reinforced by Santos' signing of the 'Agreed Principles of Land Access' with a number of key rural stakeholders.

There are already a number of strict Government regulations in place to minimise the impact of natural gas development on communities; including air quality standards, noise limits and buffer zones around sensitive areas. Santos will work within these regulations.

As part of the EIS process for the Project, Santos conducted a wide range of technical studies to assess potential impacts on the local community. Discussions were also held with a broad range of local stakeholders including the Narrabri Shire Council, NSW Farmers and Local Aboriginal Land Councils.

The EIS found that with mitigation measures in place the Project can proceed without adversely impacting the local community.

Findings include:

- + No health impacts from the Project
- + Noise levels can be managed through the implementation of a Noise Management Plan
- + Ongoing air monitoring and dust control measures will ensure air quality standards are met
- + Recreational activities at Yarrie Lake will not be impacted
- + Operations will not impact the Siding Spring Observatory
- + The historic cultural landscape will be preserved
- + Visual impacts will be small as most infrastructure will be screened by vegetation or will blend into the landscape

Checks and balances

Throughout the life of the Project, Santos will monitor work to ensure it meets environmental standards and impacts are identified and managed.

This includes monitoring of water, air quality and emissions, noise, traffic and other social impacts.

In addition, if approved, the NSW and Commonwealth Governments are likely to apply their own strict conditions that will be monitored within a stringent framework by Government regulatory officers.

Stakeholder engagement conducted as part of the EIS

4000+ visitors to Santos' shopfronts in Narrabri and Gunnedah

Consultation with 3000+ stakeholders

300+ site visits for community groups

Participation in more than 100 community events

Project website and Facebook page set up

Monthly meetings of the Community Consultation Committee, a body comprising representatives of key local stakeholder, government and industry groups

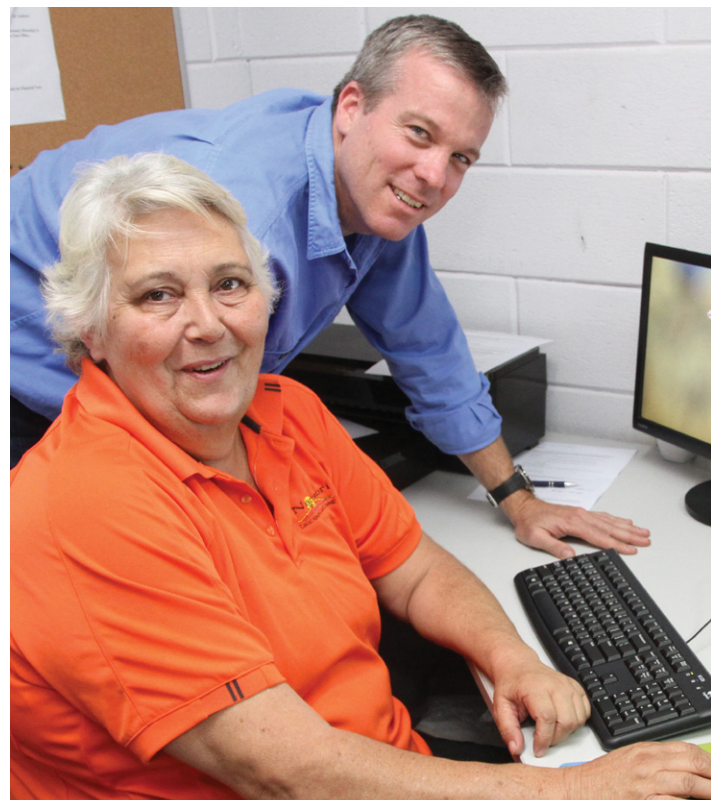
Aboriginal Cultural Heritage

As part of the EIS process, Santos commissioned a study of all Aboriginal cultural heritage information in the region.

This included historical studies, oral histories and consultation with more than 550 Aboriginal knowledge holders. This resulted in the production of the most comprehensive and accurate Aboriginal cultural data set in the region. Santos has given this information to the Narrabri Local Aboriginal Land Council to hold and manage.

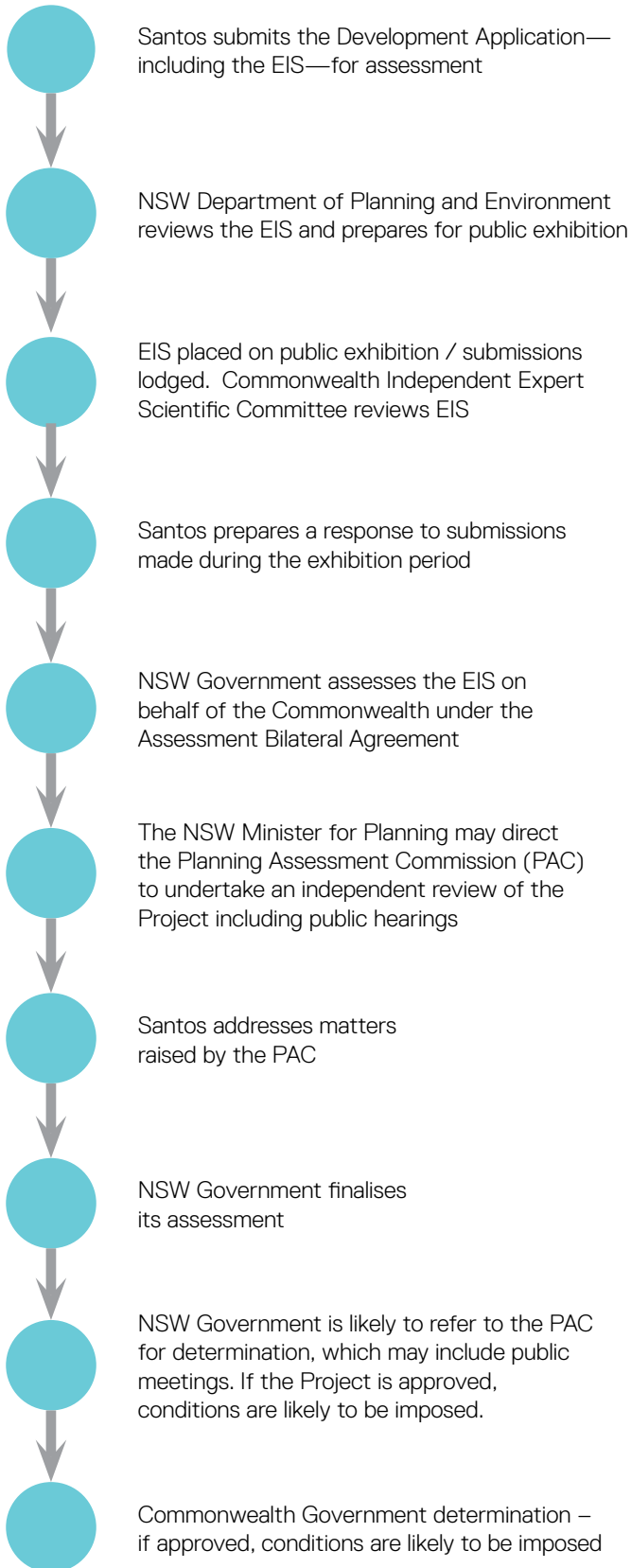
Through this process 90 sites of cultural significance were identified in the Project area. Santos has committed to avoid these sites and undertake further surveys with the Aboriginal community before any new work takes place.

A Cultural Heritage Management Plan has also been developed which details the measures which will be taken to avoid or mitigate any impacts. Santos will work with the Aboriginal community to conserve cultural heritage values in the region.



Santos has handed over all cultural heritage data compiled during the EIS to the Narrabri LALC. Pictured Narrabri LALC CEO Lynn Trindall and Santos' Joshua Gilroy.

The assessment process



Where to from here

The Development Application—including the EIS—will be assessed by the NSW Government on behalf of the Commonwealth to ensure the Project will meet high environmental standards and that potential risks have been identified and mitigation strategies developed.

The EIS will be referred to a number of key government agencies for their review and be made publicly available.

The Government will invite public submissions as part of the assessment process. Santos will prepare a response to the issues raised in these submissions. These responses will be submitted to the Government for their consideration in assessing the Project.

The Project is then expected to be referred to the independent NSW Planning Assessment Commission for determination, which typically includes an additional public consultation process.

Broad community consultation will continue throughout the assessment process and over the life of the Project.

If the Project is approved, it will be subject to a number of conditions as well as oversight by various NSW Government agencies including the Environment Protection Authority.

The Project will be developed and operated in accordance with these approval conditions, the mitigation measures outlined in the EIS and the NSW Government's strict regulatory guidelines for the extraction of natural gas, which are among the most stringent in the world.

Where to see the EIS

Santos Shopfront 125 Maitland Street, Narrabri

Narrabri Shire Council 46–48 Maitland Street, Narrabri

Narrabri Shire libraries Narrabri, Wee Waa and Boggabri

Nature Conservation Council 338 Pitt Street, Sydney

Department of Planning & Environment 320 Pitt Street, Sydney

Online www.narrabrigasproject.com.au
www.majorprojects.planning.nsw.gov.au

How to have your say

The public submission period will be advertised by the Department of Planning and Environment.

Submissions must be made in writing by mail or via the NSW Department of Planning and Environment website.

Mail

Executive Director Resource Assessments & Business Systems
Department of Planning and Environment
Application number SSD 14_6456
GPO Box 39
Sydney NSW 2001

Online

www.majorprojects.planning.nsw.gov.au

About Santos

An Australian energy pioneer since 1954, Santos is one of Australia's largest domestic gas producers with a long history of safe, responsible operations.

For more information

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