

# Barossa Development

## Development Drilling & Completions

### Overview

Barossa is an offshore natural gas development located approximately 300 kilometres north-west of Darwin. The development is required to backfill gas supply to the existing Darwin LNG (DLNG) facility at Wickham Point. The targeted ready-for-start-up date is Q4 2024 with first gas production targeted for the first half of 2025.

The development is being progressed by joint venturers Santos Offshore Pty Ltd (Operator) and SK E&S Australia Pty Ltd. The development area is located in Commonwealth waters with initial development occurring within permit NT/L1, known as the Barossa Field. The development area also includes permit NT/RL6 (the Caldita Field) to the south.

The initial development involves producing the Barossa Field through subsea wells and a network of subsea flowlines and marine risers to a Floating, Production, Storage and Offtake (FPSO) vessel. Processing would then occur on the FPSO to separate the natural gas and condensate.

The condensate would be transferred from the FPSO to specialised offtake tankers for export. The resulting natural gas would be sent to Darwin via a new 260-km gas export pipeline connected to the existing Bayu-Undan to Darwin gas export pipeline.

The Barossa Development Offshore Project Proposal was accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in March 2018. Santos is seeking to commence development drilling of the Barossa subsea wells in mid-2022. In order to conduct the development drilling, Santos requires an NOPSEMA-accepted Environment Plan (EP) prepared in accordance with the Commonwealth *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*.

As a relevant and potentially affected stakeholder, Santos is seeking your feedback on the proposed development drilling activity. Please advise if you have any objections, claims or information requests about the proposed activity. Santos will endeavour to address all stakeholder feedback prior to the EP being submitted for assessment.

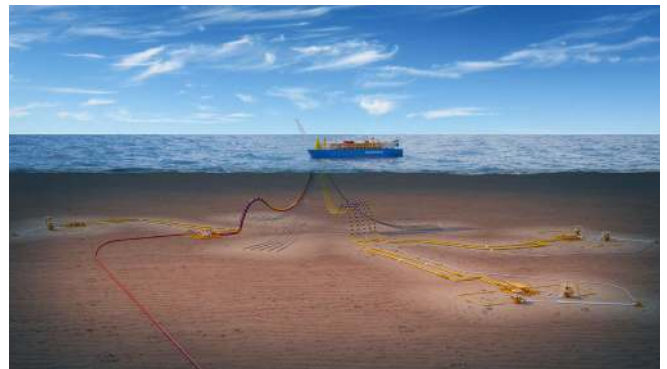
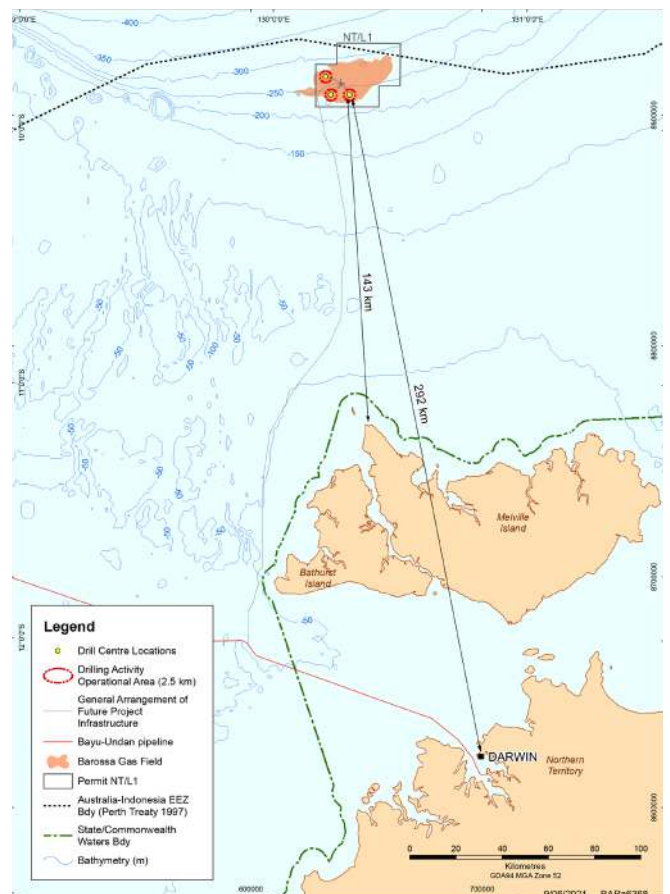
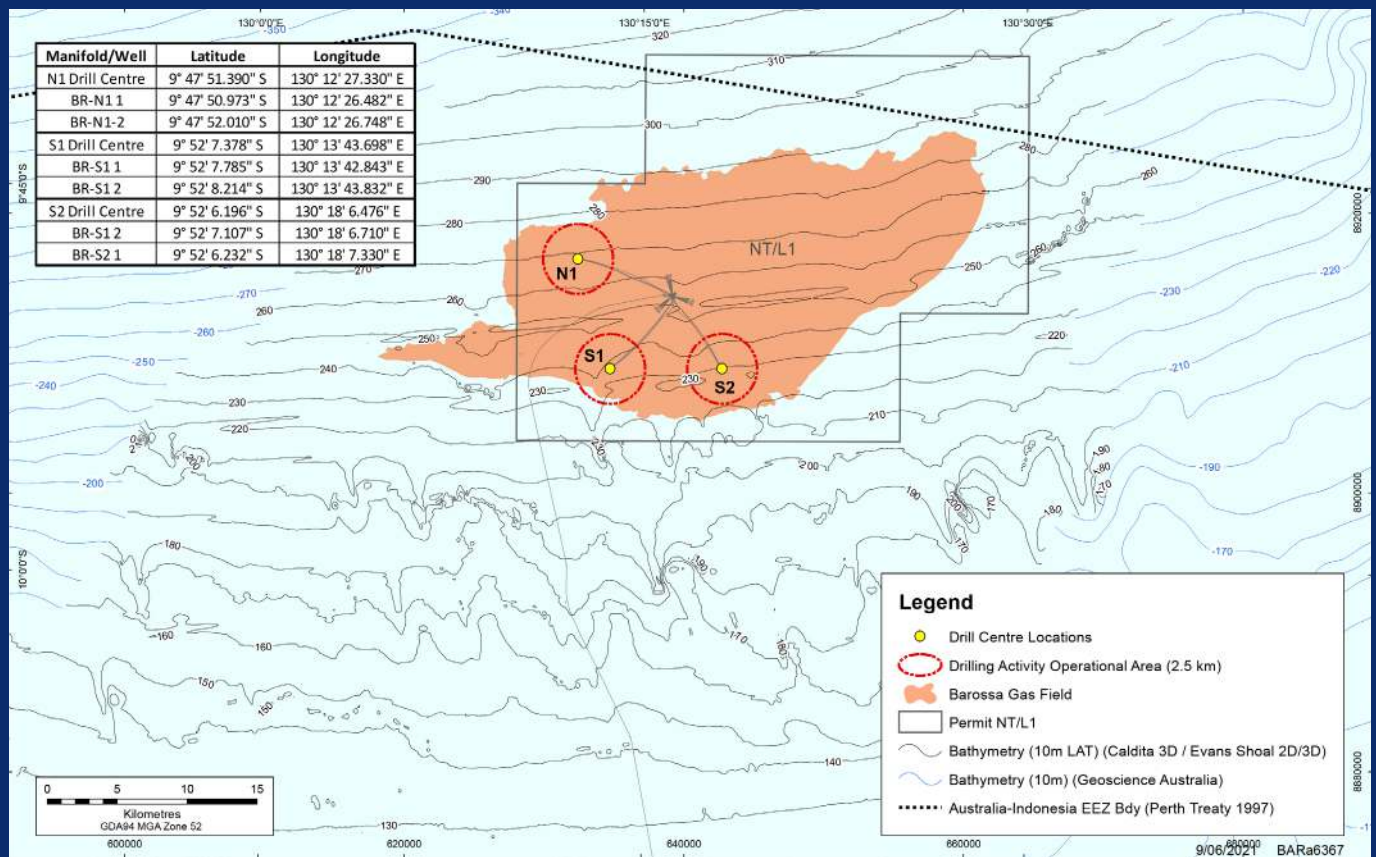


Figure 1: Barossa Development Location Map



## Figure 2: Barossa Development Development Drilling and Completions Location Map



### OPERATIONAL AREA

Manifold	Latitude	Longitude
N1 Manifold	9° 47' 51.390" S	130° 12' 27.330" E
S1 Manifold	9° 52' 7.378" S	130° 13' 43.698" E
S2 Manifold	9° 52' 6.196" S	130° 18' 6.476" E

## Proposed Activity

Santos plans to drill six (6) development wells in the Barossa Field with a moored semi-submersible mobile offshore drilling unit (MODU) commencing in mid-2022. Provision for a re-spud is carried should technical difficulties be encountered. The MODU will be supported by up to four (4) support vessels which will transit between the development area and onshore supply base as required.

Activities associated with the drilling campaign will occur within a 2.5-km radius of each well, i.e., the Operational Area. The Operational Area includes the well head location, MODU and anchoring arrangement and support vessel and helicopter operations.

A 500-metre exclusion zone (called a 'petroleum safety zone' or PSZ) will be in place around the MODU during drilling. The exclusion zone will remain in place around each well until eventual field decommissioning.

Once drilling has been completed, an offshore intervention vessel will be used to install a subsea Christmas tree on each well and prepare the wells for hook-up to the subsea production system (which will be addressed in a separate Environment Plan).

## Timing

Development drilling activities are expected to commence in Q2 2022 subject to receipt of all regulatory approvals. Each well is expected to take approximately 90 days to drill. The entire drilling campaign is expected to take approximately 18 months subject to weather and operational performance.

Santos commits to notifying relevant stakeholders of the activity commencement date once confirmed and to providing at least quarterly activity updates.

**Table 1: Development drilling and completions activity summary**

ACTIVITY INFORMATION		
<b>Location</b>	Santos permit NT/L1 (the Barossa field) located wholly in Commonwealth Waters ~300kms north of Darwin.	
<b>Schedule</b>	Targeting a commencement in Q2, 2022.	
<b>Duration</b>	Each well is expected to take ~90 days to drill and complete. The six wells are anticipated to be completed within ~18 months. Note: provision for a re-spud is carried should technical difficulties be encountered.	
<b>Water depth</b>	230-280 metres.	
<b>Equipment/vessels</b>	A moored semi-submersible mobile offshore drilling unit (MODU) will be supported by up to four offshore support vessels which will transit between the drilling area and the supply base as required.  An offshore intervention vessel will be used to install a subsea Christmas tree on each well and to suspend the wells.	
<b>Key activities</b>	<ul style="list-style-type: none"> <li>• MODU towing and mooring</li> <li>• Drilling and completions activities</li> <li>• Use of water-based and synthetic-based drilling muds</li> <li>• Discharge of drilled solids, drilling muds, completions fluids and residual cement</li> <li>• Well-flowback to a MODU well test package</li> <li>• Installation of subsea wellheads and Christmas trees</li> <li>• Offshore material/bulk transfers and diesel bunkering</li> <li>• MODU, ROV, vessel and helicopter operations</li> </ul>	
<b>Exclusion Zone</b>	500 metres around the MODU and completed wells.	
<b>Operational Area</b>	Approximately 2.5 km around the MODU.	
<b>Description of natural environment</b>	Seabed in the development area is generally flat and devoid of any significant bathymetric features. Marine sediments are predominantly silty sand and lack hard substrate.	
<b>Proximity to key regional features</b>	<b>Regional Feature</b>	<b>Distance</b>
	Darwin, NT	~300 kms
	Tiwi Islands, NT	~150 kms
	Oceanic Shoals Australian Marine Park	~50kms
	Key Ecological Feature (KEF) – 'Shelf break and slope of the Arafura Shelf'	Partial overlap
Commercial Fisheries – refer to supplementary information provided to fishing stakeholders	Partial overlap with Timor Reef Fishery	
<b>Anticipated worst case oil spill scenario</b>	A loss of well control could result in a well blowout and release of Barossa reservoir fluids, which includes natural gas and condensate.	
<b>Response tier required</b>	In the event of loss of well control a Level 3 response would be implemented as per the activity-specific Oil Pollution Emergency Plan (OPEP) arrangements described in the EP.	

## Stakeholder Engagement

Santos encourages open, two-way communication with stakeholders throughout the planning and implementation of this activity.

Stakeholder engagement for the proposed drilling activity was undertaken by the previous development operator in June/July 2019. Santos has decided to re-engage on the same activity to ensure relevant stakeholders remain informed and are afforded the opportunity to comment.

If you wish to discuss this consultation package further, please provide comment by **9 July 2021**.

Consultation for this activity will be ongoing post regulatory acceptance, until the activity is completed.

## Timing

The Commonwealth Offshore Petroleum and Greenhouse Gas Storage Environment Regulations 2009 require a titleholder to have an accepted Environment Plan (EP), including corresponding Oil Pollution Emergency Plans (OPEPs), accepted by NOPSEMA before any petroleum activity can commence.

New projects proposed for development in Australian Commonwealth waters, such as Barossa, are required to have an over-arching Offshore Project Proposal (OPP) accepted by NOPSEMA as the first stage of the environmental assessment process. The Barossa Development OPP was accepted in March 2018. The OPP is available at [www.nopsema.gov.au](http://www.nopsema.gov.au)

The OPP is the over-arching environmental management plan that guides the preparation of more detailed EPs for each project activity. During the subsequent development of each EP, the titleholder must undertake consultation with 'relevant persons', as defined by regulations. In doing so, relevant persons are to be provided with sufficient information with reasonable time to assess the possible consequences of the activity on their functions, interests and activities. Titleholders must then provide feedback to relevant persons that their objections or claims have been understood, considered and appropriately addressed.

The Barossa Gas Export Pipeline Installation EP was the first Barossa EP to be prepared and submitted by Santos. It was accepted by NOPSEMA in March 2020. This consultation package relates to the Development Drilling & Completions EP, which will be the second to be prepared for submittal to NOPSEMA. Further EPs will be developed to cover other project activities, including subsea structure installation and FPSO facility and gas export pipeline commissioning and operations.

## General Commitments

In the development of the EP, Santos will incorporate control measures to ensure environmental impacts and risks are acceptable and ALARP. The following control measures relating to interactions with other marine users will also be included. Any additional control measures identified during stakeholder engagement will be considered for inclusion in the EP.

POTENTIAL AREA OF INTEREST	SANTOS COMMITMENTS
<b>Maritime notices</b> <ul style="list-style-type: none"><li>• <b>Notice to Mariners (NTM)</b></li><li>• <b>AUSCOAST warnings</b></li></ul>	A notification will be provided prior to MODU/vessel arrival in the Operational Area and following departure. Notifications are provided to the Australian Maritime Safety Authority (AMSA) Joint Rescue Coordination Centre, Australian Hydrographic Office and designated port authorities so the maritime industry is aware of activities.
<b>Stakeholder notifications</b>	Other relevant marine users identified during stakeholder consultation and listed in the EP will be provided a commencement notification at least two weeks prior to the activity commencing. Santos will have a process in place to ensure any stakeholder feedback is recorded, evaluated and responded to.
<b>Support vessel in place during activity to reduce potential for collision or interference with other marine users</b>	At least one support vessel will be on standby at all times to monitor the MODU exclusion zone to identify approaching third-party vessels and communicate with the vessels.

## Feedback

Your feedback on the planned development drilling is important to us. If you have any objections, concerns or information requests regarding this activity, or any of Santos' current or proposed activities in Northern Australia, please contact us by **9 July 2021** via phone or email.

### Contact

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