Woodside Energy

June 2026

Browse Carbon Capture & Storage Project

Browse to North West Shelf Project overview

Woodside, as Operator for and on behalf of the Browse Joint Venture (BJV), is proposing to develop the Brecknock, Calliance, and Torosa natural gas fields located in the offshore Browse Basin, approximately 425 km north of Broome, Western Australia.

The proposed concept includes using two floating, production, storage, and offloading (FPSO) facilities to extract hydrocarbons from the gas fields and send them via a pipeline approximately 900 km long to North West Shelf (NWS) Project's existing infrastructure in Karratha.

Addressing emissions through a CCS solution

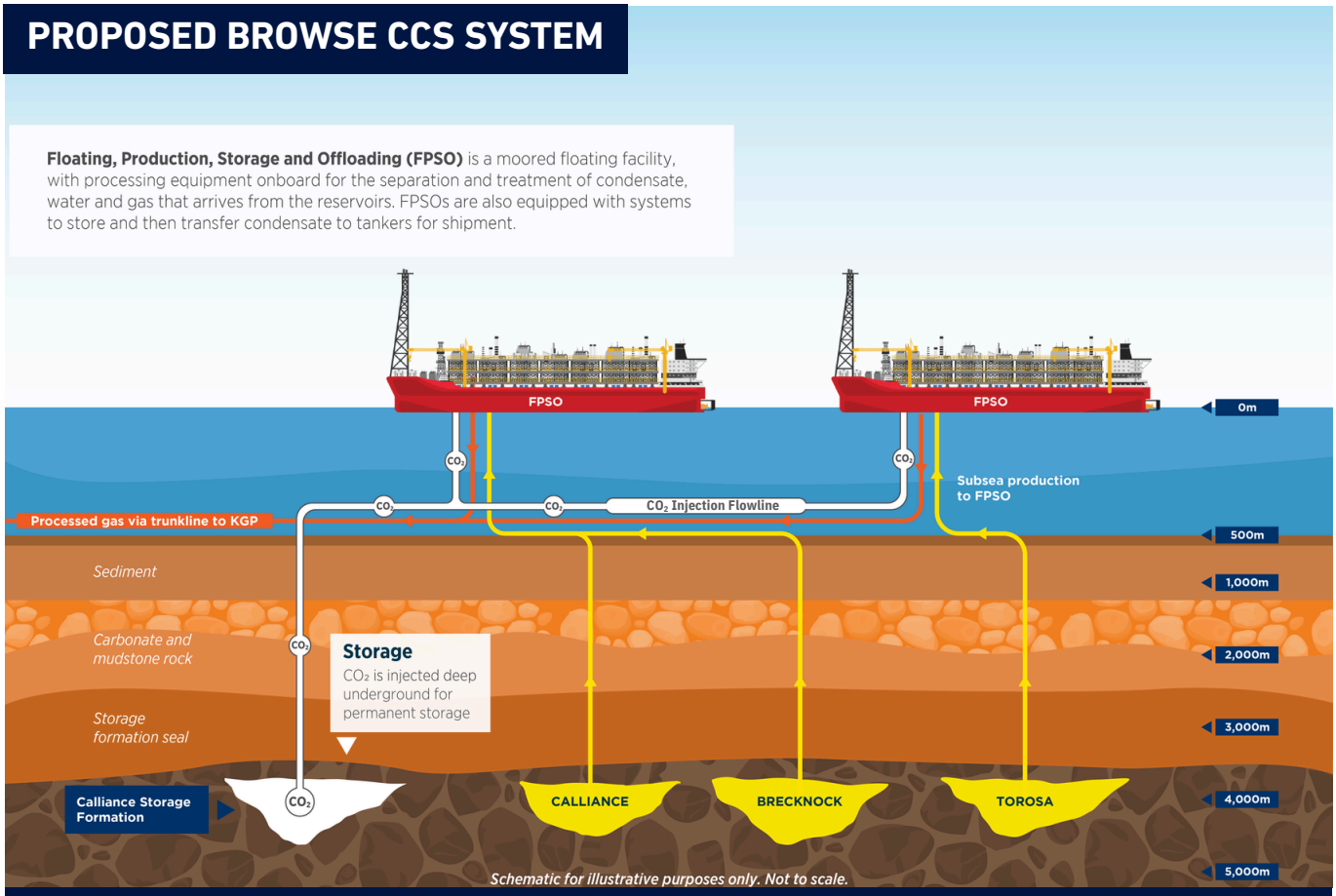
A carbon capture and storage (CCS) system has been incorporated into the offshore design. CCS is designed to capture and permanently store carbon dioxide in deep geological formations offshore.

This system will be designed to capture the majority of carbon dioxide (CO_2) from the Browse reservoir and inject it deep underground into the Calliance Storage Formation, which has a proven capability to trap high-pressure gas.[1] This formation is located in Federal waters within GHG Assessment Permit (G-8-AP), granted in 2022 and is held by the BJV participants.

The CCS system is expected to enable a reduction in potential Browse Scope 1 greenhouse gas (GHG) emissions by approximately 53 million tonnes (Mt) CO_2-e over the expected life of the Project, which equates to approximately 47% of Scope 1 GHG emissions.[2]

The system design also means less CO_2-e would be sent to the NWS onshore facilities, enabling a further reduction of 9 Mt of emissions over the expected life of the Project that might otherwise be released into the atmosphere.

PROPOSED BROWSE CCS SYSTEM



The Browse CCS system is designed to reduce the carbon intensity of the project as well as reducing reliance on carbon offsets to meet net GHG emissions requirements. CCS is expected to **enable a 47% reduction in Scope 1 GHG emissions** by capturing and permanently storing reservoir CO_2 in deep geological formations offshore.[2]

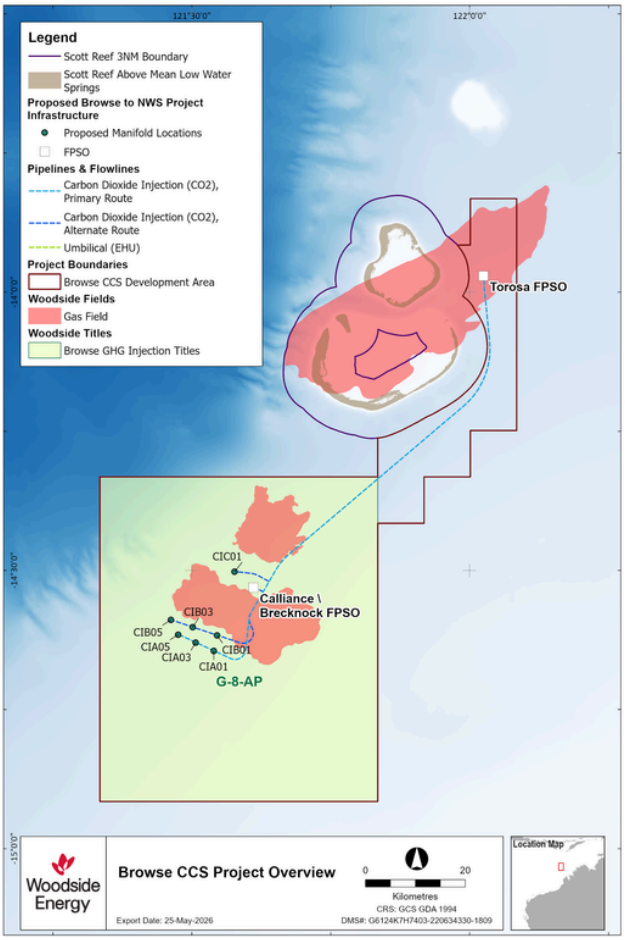
[1] The Calliance Storage Formation interval has a proven ability to contain and trap hydrocarbons, as the interval is currently holding Brecknock, Calliance, and Torosa natural gas fields. The fields were first discovered in the 1970s, and subsurface data indicates the traps have held the pressurised natural gas for millions of years.

[2] Estimated reduction in Scope 1 GHG emissions is in comparison to the Browse JV Scope 1 GHG emissions estimate of the Browse Project presented in Chapter 7 of the 2019 EIS (EPBC 2018/2319) and is further detailed in the CCS Project referral. The estimated reduction is based on abatement of 85% of reservoir CO_2 extracted by the offshore AGRU over the expected field life after the first year of operations. Reduction is 100% project share.

How does Browse CCS work?

- CO_2 separated from natural gas on each FPSO.
- CO_2 compressed into a concentrated stream.
- CO_2 transported approximately 100 km via a subsea pipeline to injection wells.
- Injection wells control the flow of CO_2 into the Calliance Storage Formation.
- Stored at a depth of approximately 4 km below sea level.

The Browse CCS system is expected to be operational a few months after the Browse to NWS Project offshore production facilities have started up and have achieved steady state production, as CO_2 is required to commission the system.



Proposed Browse CCS development area and key infrastructure locations

Summary of Key Activities

The inclusion of the Browse CCS system as part of the proposed Browse to NWS Project would involve:

- drilling and completion of up to seven CO_2 injection wells;
- installation and commissioning of the CO_2 injection flowlines and subsea infrastructure;
- monitoring migration of the CO_2 plume using seismic survey techniques;
- operations and maintenance of the subsea CCS project infrastructure; and
- decommissioning of project infrastructure at the end of project life.

Environmental approvals

The proposed Browse to the NWS Project is currently being assessed against State and Commonwealth environment legislation. CCS was not part of the original environmental referrals submitted in 2018. The proposed Browse CCS Project was referred to the Commonwealth regulator for assessment in accordance with the EPBC Act in 2024.

In March 2026, the referral was withdrawn as a procedural step to allow a revised referral to be submitted under the newly proclaimed EPBC Act reforms.

The BJV remains committed to progressing the CCS Project through a transparent and robust federal environmental assessment process and intends to resubmit the referral in June 2026.

Environmental impacts and management

In conjunction with leading Australian academic and research organisations, Woodside and the BJV have invested more than three decades of environmental research to better understand the offshore marine environment in the vicinity of the Browse resources. This includes programs to build understanding on whale, turtle, other marine life, and fish species in the region, as well as long-term monitoring of coral and fish communities at Scott Reef.

This knowledge has been used to inform a detailed assessment of the potential impacts and risks associated with the proposed Browse CCS system. The CO_2 injection planned for the Calliance Storage Formation will occur approximately 50 km to the south of Scott Reef.

As part of the impact and risk assessment process for Browse CCS, management and mitigation measures have been identified and proposed to reduce the level of impact and risk.

Frequently Asked Questions

1. What is CCS?

Carbon capture and storage (CCS) is a mature technology which represents a proven solution to abate large-scale project or industrial greenhouse gas emissions.

Globally, CCS has been successfully used for decades, in particular in support of enhanced oil recovery, but is now being utilised for permanent greenhouse gas emissions storage.[3] The skills and capabilities required to store carbon dioxide in geological formations are similar to those needed to find and produce oil and gas.

2. Does CCS work?

Carbon capture and storage is a well-understood technology. The Global CCS Institute notes there are 77 CCS/carbon capture utilisation and storage (CCUS) facilities in operation around the world, currently injecting 64 Mtpa of CO_2 with another 47 in construction and 610 under development.[4]

CCS has a key role to play in meeting the world's greenhouse gas emissions reduction requirements.

In the United Nations Intergovernmental Panel on Climate Change (IPCC) 2022 Report Summary for Policymakers, CCS was recognised as a critical mitigation option to reduce greenhouse gas emissions from large-scale industry sources.[5]

3. How much CO_2 could be sequestered in the Browse CCS system Storage Formation?

Feasibility studies indicate the proposed Storage Formation within Calliance (G-8-AP) could be utilised for sequestration of the majority of Browse reservoir CO_2. Subsurface studies indicate the proposed storage formation may have the capacity to store approximately 4 million tonnes of CO_2 per year.

4. How can you be sure that the CO_2 is permanently stored after it is injected and won't leak out from the reservoir?

The Calliance Storage Formation is at a depth of about 4 km below the seabed. It consists of 165-million-year-old Jurassic sedimentary rock, overlain by a thick cap rock, which forms a natural impermeable barrier. This Storage Formation has a proven ability to trap and contain hydrocarbons for millions of years[1] and is therefore interpreted as a highly suitable candidate for permanent storage of CO_2. The storage formation will be monitored throughout the project.

5. How will you monitor the CO_2 once it has been injected?

Woodside would conduct regular seismic surveys to monitor the CO_2 once it has been injected into the Storage Formation. Marine seismic surveys will be undertaken to monitor the CO_2 plume within the reservoir as required.

As an alternative or complementary option to traditional seismic surveys, vertical seismic profiling (VSP), distributed acoustic sensing (DAS) and other emerging technologies such as subsea nodes may be utilised to generate a high-resolution seismic image of the geology in the vicinity of CO_2 injection wells and to monitor the plume.

[3] IPCC, 2022. "Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change" Summary for Policymakers paragraph C.4.6.

[4] Global CCS Institute, 2025. "Global Status of CCS 2025 – Staying the Course https://www.globalccsinstitute.com/wp-content/uploads/2025/10/GSR-2025-Executive-Summary-21-October.pdf

[5] United Nations Intergovernmental Panel on Climate Change (IPCC), 2022. Working Group III Contribution to the Sixth Assessment Report Summary for Policymakers, section C.4.6, p.28. https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf

Summary of key potential impacts and mitigations/management measures

Environmental aspect, impact risk	Mitigations and/or management measure
Planned	
Seabed disturbance from equipment presence and installation	• CCS injection wells and pipelines are proposed in deep (>75m) offshore waters in locations with no sensitive habitats.
Generation of underwater noise from construction equipment and subsea equipment, including seismic surveys.	• Seismic surveys to be conducted outside of sensitive migration periods. • Ongoing monitoring to understand timing of presence of fauna migrating through the region. • Process for observing for and stopping activities upon sighting of fauna.
Exclusion of other users from the area	• Relevant fishery stakeholders and Government maritime safety agencies to be notified of start and end dates and any exclusion zones prior to commencement of the activity. • Commercial fishers permitted to use the Operational Area around the mobile offshore drilling unit (4 km radius) and pipelay vessel (1.5 km radius). • No restrictions on safe use of development area when vessels are not present during the construction phase.
Light emissions	• No activities planned for within 20 km of turtle nesting/internesting areas. • Implementation of appropriate light mitigation measures in accordance with the National Light Pollution Guidelines.
Unplanned	
Hydrocarbon release from installation vessels or mobile offshore drilling units (MODU)	• Comply with regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements. • Establish temporary exclusion zones and inform other marine users of project activities to reduce likelihood of a collision. • Use appropriate refuelling procedures and equipment to prevent spills to the marine environment.
Marine fauna collisions	• Measures to be taken to protect marine fauna such as applying speed restrictions to vessels or assigning crew to maintain watch for fauna. Animals not to be approached.
Accidental introduction of Invasive Marine Species (IMS)	• Vessels to be assessed and managed as appropriate to prevent the introduction of invasive marine species. • Compliance with Australian biosecurity requirements and guidance.
Unplanned carbon dioxide release from pipeline or injection well	• Calliance Storage Formation assessed as technically suitable • for containment of injected CO_2. • Monitoring to ensure integrity limits are met. • CO_2 in the reservoir will be monitored (via seismic techniques) to ensure it is being contained. • CO_2 pipeline designed, installed, and maintained to appropriate standards.

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