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2025 Offshore Petroleum Exploration Acreage Release, Otway Basin

Overview of the 2025 release areas

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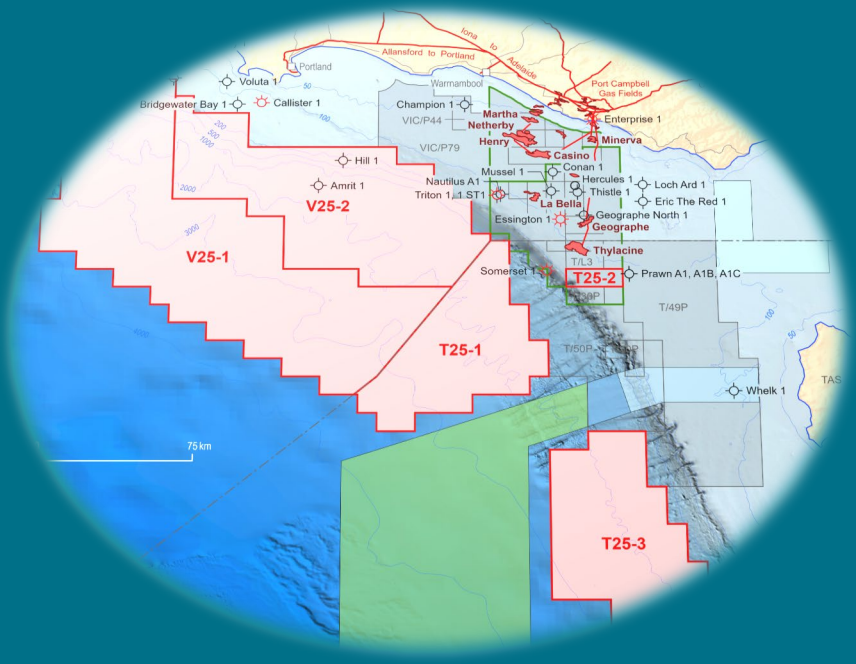

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Department of Industry, Science and Resources

Minister for Resources and Minister for Northern Australia: the Hon Madeleine King MP

Secretary: Meghan Quinn PSM

Geoscience Australia

Chief Executive Officer: Melissa Harris PSM

Geoscience Australia values the lands, water and sky as we work to deepen a shared understanding of Country and Earth. We respect First Nations peoples and their enduring connection, contribution and obligations to Country. Reflecting on our shared history, we are committed to listen and learn.

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2025 Offshore Petroleum Exploration Acreage Release, Otway Basin

The Australian Government has released five new offshore exploration areas in the offshore Otway Basin for petroleum exploration in Commonwealth waters (Figure 1). These release areas are supported by industry nominations; a process that has confirmed ongoing industry interest in the Otway Basin. The closing date for all work program bid submissions for all five areas is Tuesday, 30 June 2026. Companies awarded a permit must meet a range of requirements before starting any offshore exploration activities in Australian Commonwealth waters. We have partnered with the Department of Industry, Science and Resources to provide geological information to support this release. Refer to the Department of Industry, Science and Resources for more information about the release areas, including maps, shapefiles, bidding instructions and the offshore petroleum acreage release process.

The Australian Government supports the release of offshore acreage with open file petroleum datasets which can be accessed via the National Offshore Petroleum Information System (NOPIMS). Geoscience Australia (GA) supports the acreage releases by providing pre-competitive data and information. Of relevance to this release is GA's Deepwater Otway Basin Study, which delivered new insights regarding the stratigraphy, depositional environments, structure, evolution and petroleum systems. The study was informed by over 7000 km of new broadband deep 2D seismic data acquired by Schlumberger in 2020 over the deep-water Otway Basin and further supported by reprocessing of existing data.

Quick links

- Geoscience Australia's recent Deepwater Otway Basin Study
- Read more on the Otway Basin Regional Geology
- Access the data via National Offshore Petroleum Information System - NOPIMS
- Visit the Department of Industry, Science and Resources 2025 acreage release website

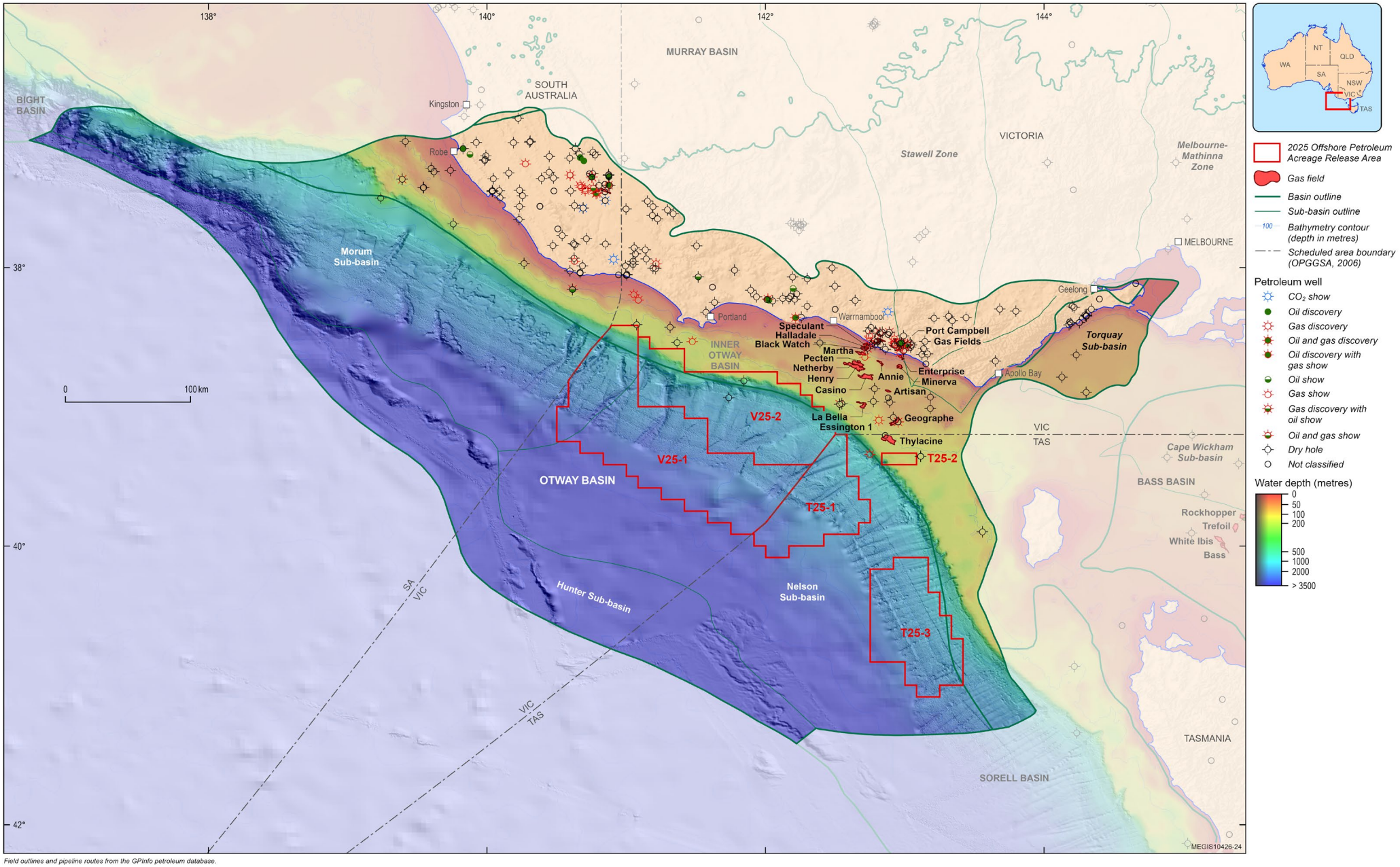


Figure 1 Map of the Otway Basin, showing the location of the 2025 Release Areas, petroleum fields and well distribution.

Overview of the 2025 Release Areas

The Otway Basin is a northwest to southeast-striking extensional basin that extends approximately 500 km along the onshore and offshore parts of southeastern Australia (Figure 2). The basin covers an area of approximately 165 000 km^2 in offshore Victoria, South Australia and Tasmania and onshore Victoria and South Australia. Approximately 83% of the basin is located offshore and 17% onshore. In the offshore water depths range from shelfal to over 5,000 m. The Otway Basin hosts Late Jurassic–Cenozoic sediments (Figure 3). In the offshore, rifting created the basin's principal structural elements, including the Morum, Nelson and Hunter sub-basins, Mussel Platform, Prawn Platform and Shipwreck Trough (Totterdell *et al*., 2014; Nicholson *et al*., 2024).

The Otway Basin is an important gas-producing region with discoveries onshore, and in shallow water areas offshore, approximately 170–220 km west-southwest of Melbourne. Gas is delivered to the southeastern Australian energy market. As of 2025, there are commercial gas fields on the offshore shelf, in and around the Shipwreck Trough (Figure 1), but no oil discoveries. Offshore producing gas fields are: Casino-Henry-Netherby, Enterprise, Geographe, Black Watch, Halladale, Speculant, and Thylacine (Figure 1). Gas fields under development include Artisan and La Bella. In 2023, 48 petajoules (PJ; 0.04 trillion cubic feet, Tcf) was produced from the Otway and Bass basins, with cumulative gas production to the end of 2023 of 2,083 PJ (1.85 Tcf) from these basins (Geoscience Australia, 2025a). Remaining gas reserves (2P) are estimated at 1.065 PJ (0.95 Tcf) and contingent resources (2C) at 721 PJ (0.64 Tcf).

Most exploration in the offshore Otway Basin has been focussed on the Shipwreck Trough, which hosts all currently producing gas fields. During the previous decade, drilling has largely focused on the appraisal and development of known accumulations, with some recent discoveries. Relatively recent exploration successes include the 2019 Annie 1 gas discovery, drilled by Cooper Energy in VIC/P44 (Cooper Energy, 2019), and the 2021 Artisan 1 gas discovery in VIC/P43 by Beach Energy (Beach Energy, 2021). In September 2025, Beach Energy drilled Hercules 1 in VIC/P43. The well was considered a moderate to high-risk target and failed to intersect hydrocarbons in the Waarre C target (Beach Energy, 2025).

Recent permit awards include exploration permit VIC/P79 to 3D Energi in 2022, and exploration permit T/50P to Beach Energy in 2024. 3D Energi subsequently farmed out parts of the VIC/P79 permit interest, within the eastern flank of the Shipwreck Trough near the Geographe and Thylacine gas accumulations, to the major international operator, ConocoPhillips. In November 2025, 3D Energi and ConocoPhillips announced the Essington 1 gas discovery in VIC/P79, recovering gas from the Waarre A and Waarre C reservoirs, intersecting gross gas bearing intervals of 62.6 m (58.5 m net pay) and 33.2 m (31.5 m net pay), respectively (3D Energi, 2025a, 2025b). A second exploration well, Charlemont 1, spudded in the permit in December 2025 targeting the Charlemont B prospect (Waarre A reservoir), which has a best estimate (2U) prospective resource of 88 Bcf (3D Energi, 2025c).

All gas discoveries are related to the Waarre/Flaxman play, a coastal plain sequence that developed during the Turonian (early Late Cretaceous). Further drilling is planned in the basin in 2026 including an initial four well program (Elanora 1, Elenora 1 ST1, Juliet 1 and Nestor 1) by Amplitude Energy in VIC/L24 and VIC/P76. There is also the possibility of further wells as part of the 3D Energi–ConocoPhillips campaign, and possible development of Annie (Annie 2; Amplitude Energy, 2025).

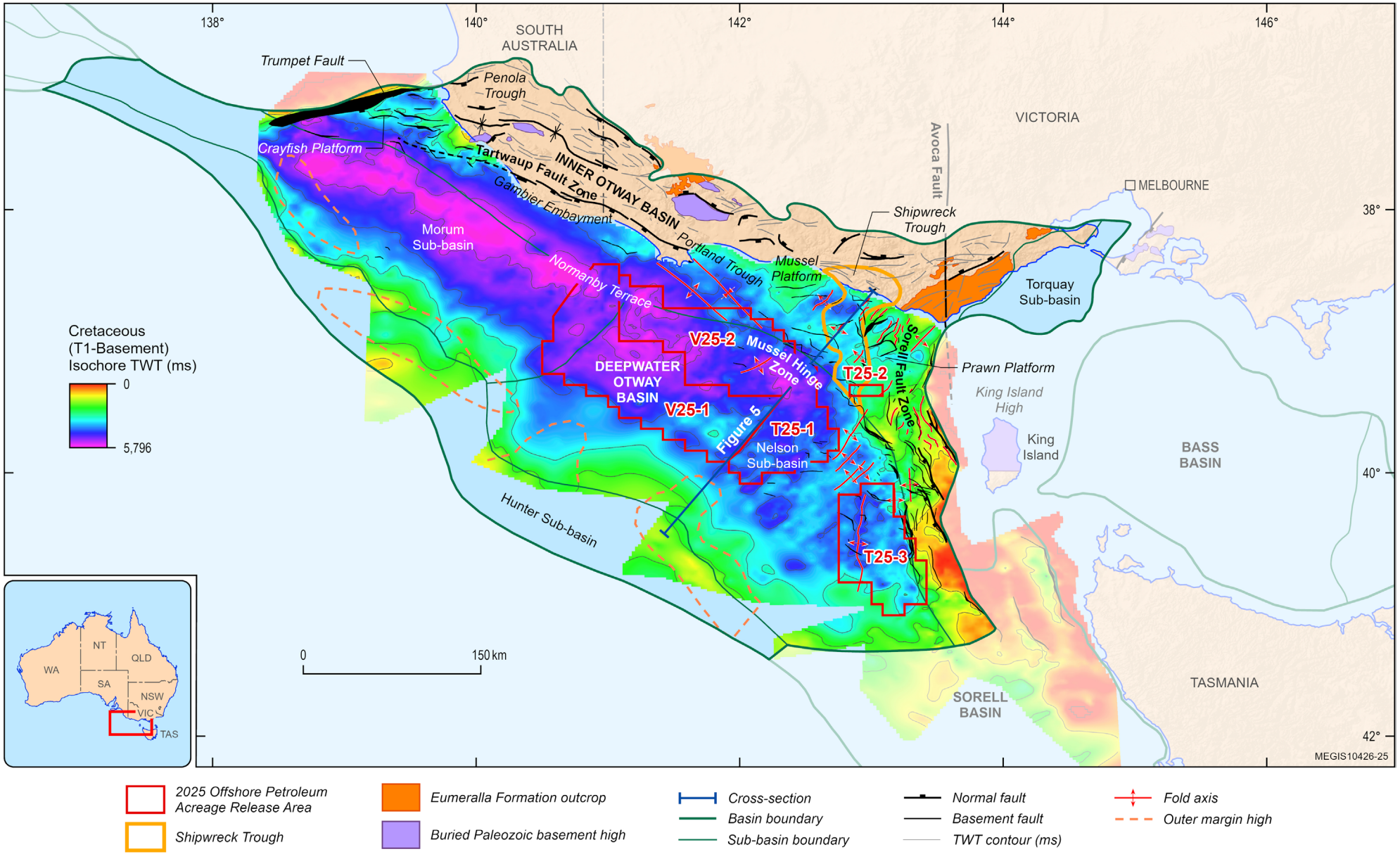


Figure 2 Regional geological setting of the Otway Basin showing petroleum wells and fields, structural elements, and Cretaceous isochore (Basement = latest Jurassic, T1 = base Cenozoic; after Abbott *et al*., 2024, and Nicholson *et al*., 2024).

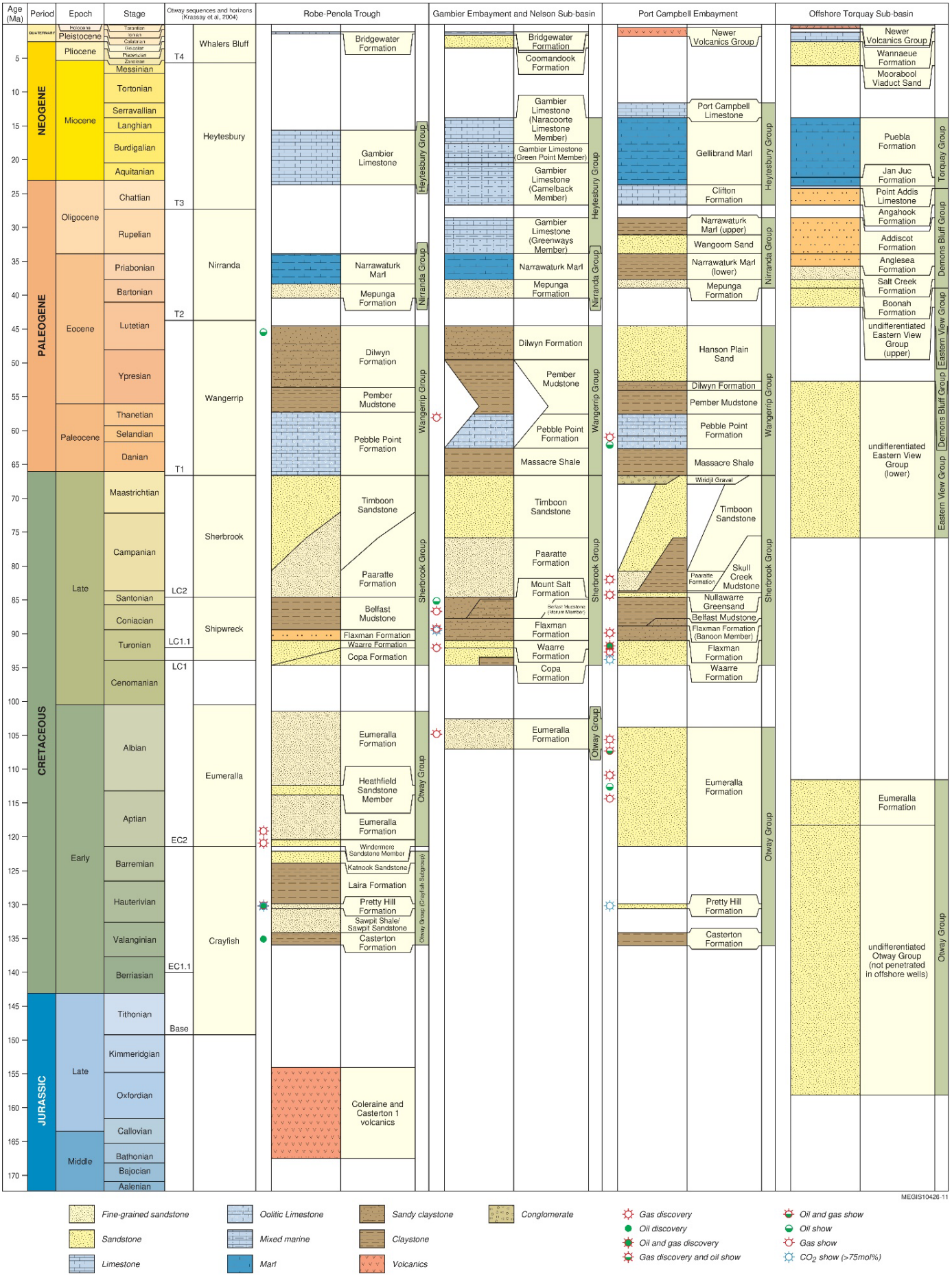


Figure 3 Stratigraphic chart for the Otway Basin showing hydrocarbon occurrences (after Kelman *et al.*, 2015; Geologic Time Scale after Gradstein *et al.*, 2020).

Pre-competitive work undertaken by Geoscience Australia, from 2020 to 2024, has greatly improved understanding of the offshore Otway Basin. Reflection seismic mapping in the Deepwater Otway Basin was informed by the 2020 Otway Basin 2D seismic program, which improved resolution over most of the area to 10 km line-spacing and was further supported by reprocessing of existing data (Schlumberger, 2021a, 2021b). This new and reprocessed seismic data totals 18,000 line-km. Seismic mapping in the Shipwreck Trough was undertaken using the Otway 3D Mega merge dataset, a 3D post-stack merge of fourteen input volumes totalling 8,092 km^2 (Gunning *et al*., 2024). The pre-competitive program focused on the Upper Cretaceous sedimentary sequences and identifies potential deltaic environments in deep-water areas analogous to the Bight Basin. Key results and data sets are available via the Deepwater Otway Study webpage (Geoscience Australia, 2025b), including Petroleum Systems Modelling released in 2021, and updated in 2023, that has demonstrated new prospectivity of the Deepwater Otway Basin (Schenk *et al*., 2021, 2023).

The 2025 Acreage Release in the Otway Basin is dominated by four large blocks, comprising 389 graticular blocks, that span most of the deep-water Nelson Sub-basin, offshore Victoria and Tasmania (Figure 1). An additional small area, consisting of 3 graticular blocks, is on offer in the Shipwreck Trough, Inner Otway Basin, Tasmania.

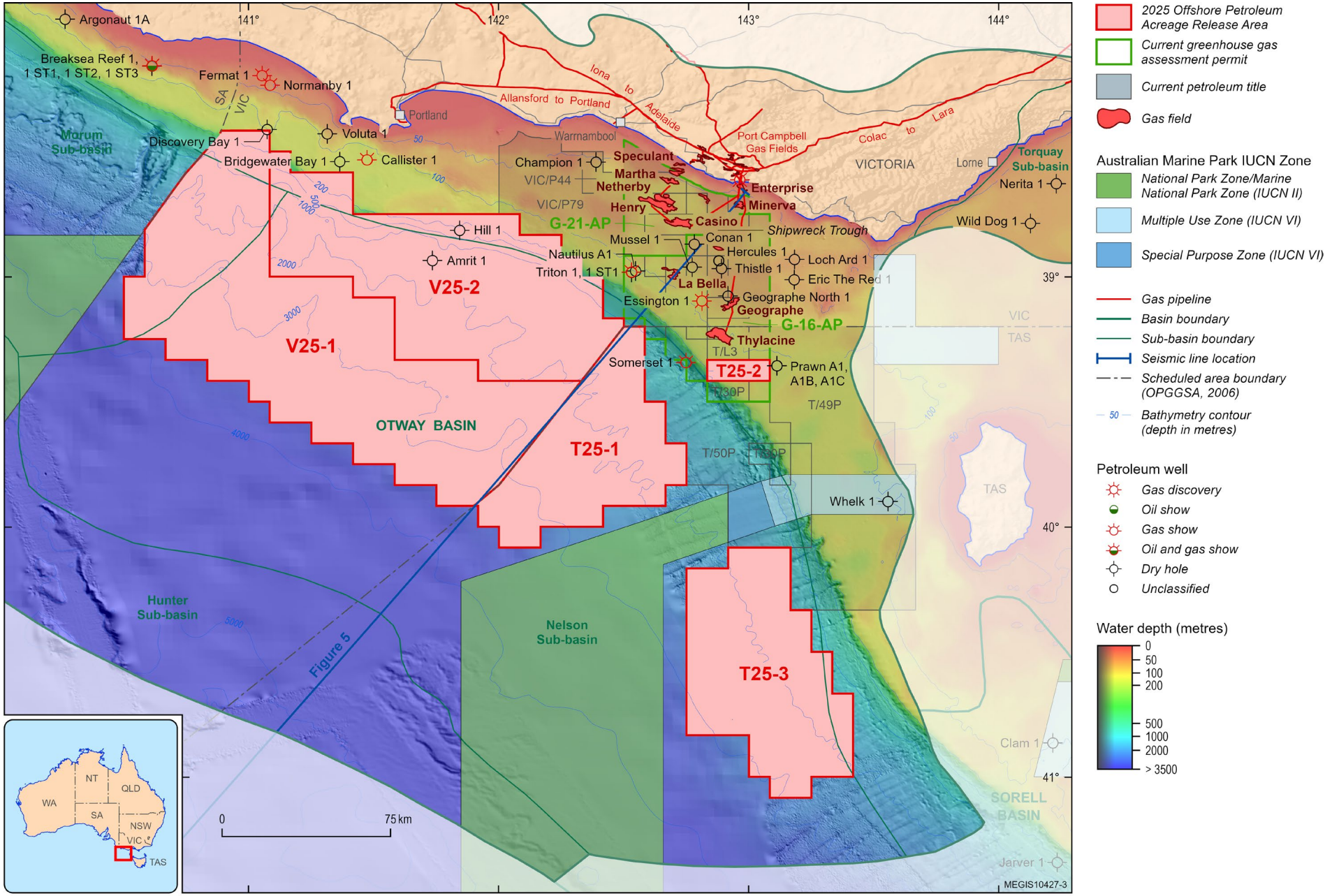
Nelson Sub-basin, Release Areas V25-1, V25-2, T25-1 and T25-3

Four large release areas (V25-1, V25-2, T25-1 and T25-3) totalling 389 graticular blocks, covering much of the inboard Nelson Sub-basin, are available for work program bidding. These areas span the transition from the continental shelf to the abyssal plain in the deepwater Otway Basin, in water depths of 100 to >3,500 m (Figure 4, Figure 5) and benefit from the improved seismic data quality and coverage of recent years (Figure 6).

Only two wells have been drilled in the Nelson Sub-Basin release areas. Amrit 1 (situated within Release Area V25-2) and Somerset 1 (located inboard of Release Area T25-1) were drilled in the Nelson Sub-basin in 2004 and 2009, respectively. These wells are located on the edge of the continental shelf, and both were deemed dry holes. The continental slope and deep-water areas remain an exploration frontier. Inboard, exploration well Hill 1 (located in Release Area V25-2) was drilled by Santos in 2003 and tested tilted-fault block closure at top Paaratte Formation level. The well demonstrated the presence of good quality potential reservoir and top seal rocks, although only minor gas shows and weak oil shows were recorded. Further well control on the continental shelf, inboard of release areas V25-1 and V25-2, is provided by Discovery Bay 1 (1982), Triton 1/1 ST1 (1982), Bridgewater Bay 1 (1993) and Callister 1 (2004).

Petroleum systems modelling (Schenk *et al*., 2021, 2023) that uses the 2020 Otway 2DMC MSS data shows that hydrocarbon generation is mainly driven by burial of the Upper Cretaceous Shipwreck Group, with most deep-water areas ceasing generation by the end of the Cretaceous. In the Nelson Sub-basin, source rocks are now shallower and less impacted by erosion, suggesting greater post-Cretaceous hydrocarbon generation potential. Hydrocarbon generation during the Cenozoic occurs in isolated outboard depocenters and tilted fault blocks near the shelf edge, aided by late burial of the late Cenozoic sediments. Although deep-water source rocks may be overmature before seals form, the model results suggest potential exists due to slow migration through mud-rich layers.

These areas have potential for Cretaceous structural plays, although the presence of effective reservoirs, seals and an effective petroleum system remain to be proven in the deep-water frontier.



Field outlines and pipeline routes from the GPInfo petroleum database.

Figure 4 Map of the Otway Basin showing the location of Release Areas V25-1, V25-2, T25-1 and T25-3 in the Nelson Sub-basin, Release Area T25-2 in the Shipwreck Trough, in the Inner Otway Basin. Petroleum fields, exploration wells, gas fields and marine parks are also shown.

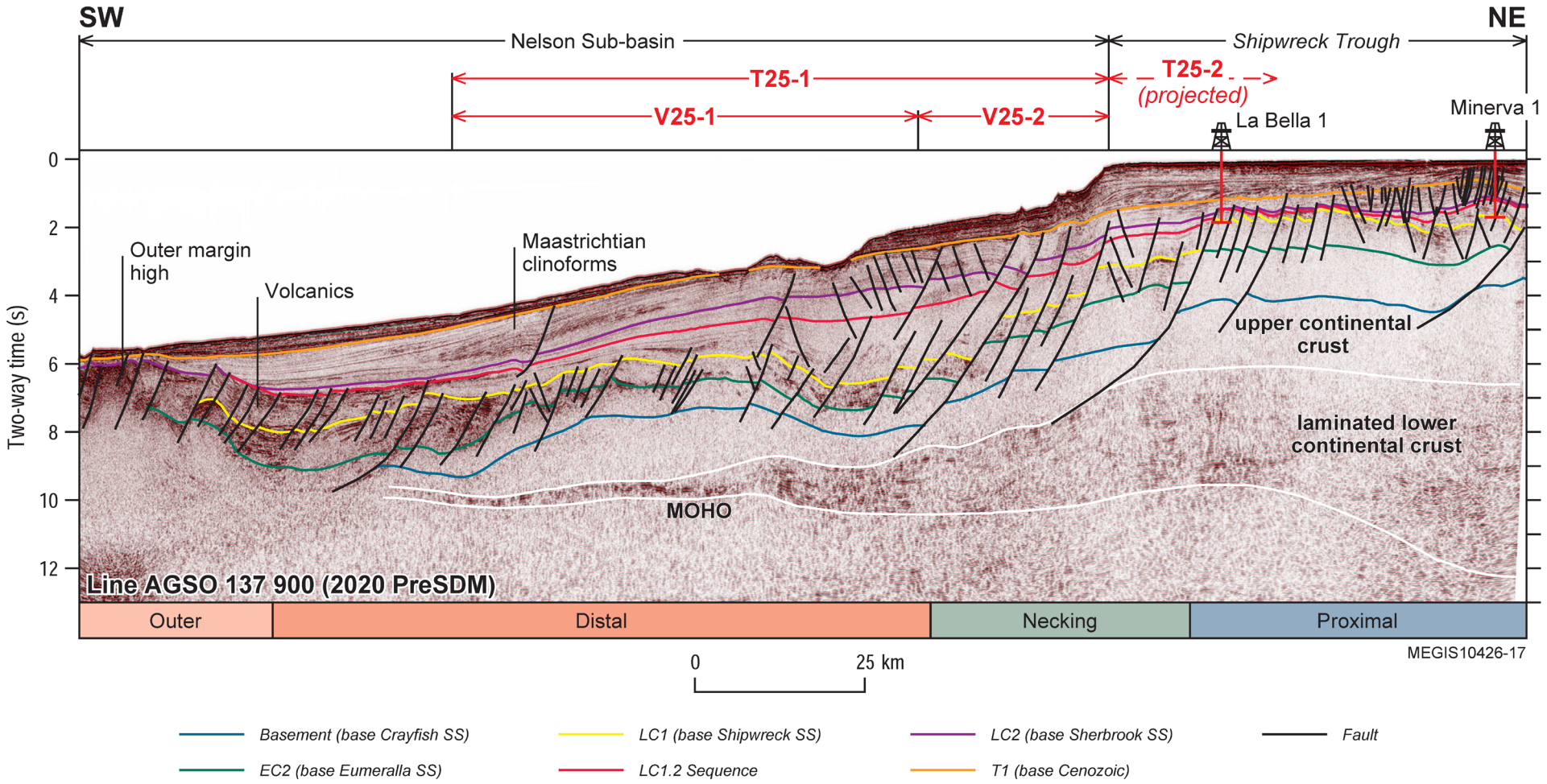


Figure 5 Seismic line from the Shipwreck Trough to the Nelson Sub-basin, offshore Otway Basin, showing stratigraphy and structure interpretation of the Cretaceous and deep crustal reflectors. Proximal, Necking, Distal and Outer structural domains illustrate progressive crustal thinning outboard, corresponding with thickening of Cretaceous sediments (after Nicholson *et al*., 2024). See Figure 2 for location.

Shipwreck Trough, Release Area T25-2

Release Area T25-2 consists of 3 graticular blocks and lies in the in the southeastern margin of the Shipwreck Trough in water depths between 100 to >650 m. The area lies directly south of the Thylacine and Geographe producing gas fields hosted by Upper Cretaceous basal Sherbrook Group reservoirs—Belfast Mudstone (Thylacine Member), Flaxman and Waarre formations. The area has good 2D seismic data coverage (Figure 6), with partial 3D data cover, including the Flanagan 3D (2014) and Aragorn 3D (2006) surveys that are included in the open file Otway 3D Mega merge (Gunning *et al.*, 2024). Gas accumulations reservoired in the Waarre and Flaxman formations in the Shipwreck Trough are charged by Austral 2 (lower Cretaceous Eumeralla Formation) source rocks. These are sealed by the thick Belfast Mudstone and trapped within faulted anticlines and tilted fault blocks. There are no wells within T25-2, however Prawn A1 (1968) and Somerset 1 (2009) border the area (Figure 4).

Prawn A1 targeted Sherbrook Group reservoirs in a large anticlinal closure, and was plugged and abandoned with no significant shows after reaching a total depth of 3,193 mKB in the Eumeralla Formation. The well intersected >900 m net Sherbrook Group reservoir, averaging 18.0% and 22.5% porosity in the Sherbrook and Shipwreck supersequences, respectively (Nguyen *et al*., 2024). The absence of hydrocarbons was attributed to a lack of seal in the Upper Cretaceous section, however, more recent seismic data indicates the well was drilled off structure. Somerset 1 also targeted sandstones within the Upper Cretaceous Sherbrook Group. The well was plugged and abandoned due to an unanticipated pore pressure influx at a total depth of 2912 mRT. The well sampled ~142 m of Upper Cretaceous sediments (Shipwreck Supersequence; Nguyen *et al*., 2024) without encountering any significant hydrocarbons.

Abbott *et al*. (2023, 2024) presented maps that indicate the distribution of the Belfast Mudstone in the upper Shipwreck Supersequence, an important seal play element and, therefore Shipwreck Supersequence prospectivity, is greater in area than previously suggested. Further, deltaic reservoir facies (Thylacine Member and other seismically imaged bodies) are sealed within the Shelf to Coastal-Delta Plain regional gross depositional environment (RGDE) transition of the Shipwreck Supersequence. Modelling of the Austral 1 and Austral 2 petroleum systems indicates Eumeralla Formation source rocks are in the present-day generative window in parts of the Shipwreck Trough (Van Aarssen, 2020), including the T25-2 release area. Despite the lack of exploration success in the two nearby exploration wells, Area T25-2 is located in a prospective part of the Otway Basin, close to existing infrastructure. The recent production history highlights that even relatively small gas accumulations can be fed into the existing gas pipeline network supplying much needed extra gas to the Australian east coast energy market.

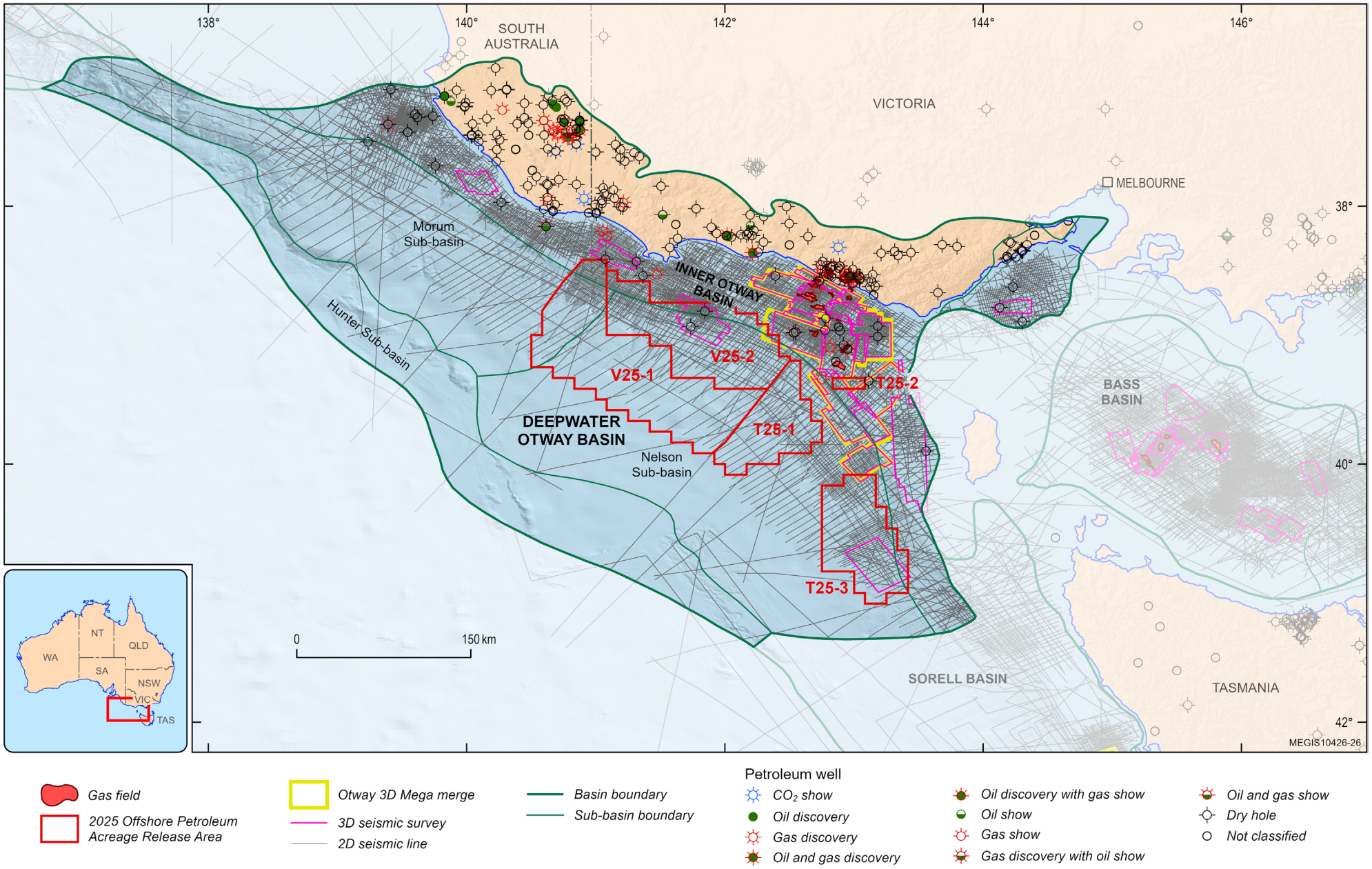


Figure 6 Distribution of petroleum wells and seismic data in the Otway Basin.

References

3D Energi (2025a) Essington-1 Intersects Two Gas-Bearing Waarre Reservoirs, ASX announcement 17 November 2025. (last accessed 27 November 2025)

3D Energi (2025b) Gas Discovery Confirmed at Essington-1, ASX announcement 20 November 2025. (last accessed 27 November 2025)

3D Energi (2025c) Drilling Commences at Charlemont-1 Exploration Well, ASX announcement 11 December 2025. (last accessed 12 December 2025)

Abbott S, Cubitt C, Bernardel G, Nicholson C, and Nguyen D (2023) Towards a regional understanding of Sherbrook Supersequence gross depositional environments, offshore Otway Basin (extended abstract). In '4th Australasian Exploration Geoscience Conference, Brisbane 2023'. Australian Society of Exploration Geophysicists Extended Abstracts.

Abbott S, Cubitt C, Bernardel G, Nicholson C, and Nguyen D (2024) Shipwreck and Sherbrook Supersequence regional gross depositional environments, offshore Otway Basin (extended abstract). Australian Energy Producers Journal 64 (2), S302-S307.

Amplitude Energy (2025) East Coast Supply Project, ASX announcement 24 March 2025. (last accessed 27 November 2025)

Beach Energy (2021) Artisan Gas Discovery, ASX announcement 22 March 2021 (last accessed 27 November 2025)

Beach Energy (2025) FY26 First Quarter Activities Report. (last accessed 27 November 2025)

Cooper Energy (2019) New gas field discovery at Annie, ASX announcement 6 September 2019 (last accessed 27 November 2025)

Esso Australia (1975) Morum No. 1, S.A., well completion report. Esso Australia report (unpublished).

Geoscience Australia (2025a) Australia's Energy Commodity Resources, 2025 Edition. Geoscience Australia, Canberra.

Geoscience Australia (2025b) [Webpage] Deepwater Otway Basin Study. Geoscience Australia, Canberra.

Gunning M-E, Wilkinson S, Chau P-F, Mitchell C, and Badry J (2024) Post-stack 3D merging to fast-track regional interpretation – offshore Otway Basin case study (extended abstract). Australian Energy Producers Journal 64(S1), S388-S392.

Nguyen D, Cubitt C, Edwards DS, Abbott S, and Bernardel G (2024) The central and southeast offshore Otway Basin well folio. Australian Energy Producers Journal 64 (2), S423-S429.

Nicholson C, Abbott ST, Bernardel G, and Poudjom-Djomani Y (2024) A new perspective on regional structural architecture across the offshore Otway Basin (extended abstract). Australian Energy Producers Journal 64(S1), S416–S422.

Schenk, O, Karvelas, A, West, T, and Kornpihl, D (2021). Otway basin regional study report. Geoscience Australia. Downloadable from https://dnxxuwuw8tglo.cloudfront.net/Surveys/D00019710.zip

Schenk, O, Grosjean, E, Edwards, D, Boreham, C, West, T, Karvelas, A, and Kornpihl, D (2023) Petroleum system modelling of the deep-water Otway Basin. 4th Australasian Exploration Geoscience Convention, Brisbane Convention and Exhibition Centre.

Schlumberger. (2021a). 2020 Otway Basin regional PreSTM and PreSDM 2D reprocessing. ENO0603870; [SEGY]. https://public.neats.nopta.gov.au/nopims/reprocessing or ausgeodata@ga.gov.au.

Schlumberger. (2021b). Otway Basin MC 2D MSS 2020. ENO0603786; [SEGY]. https://public.neats.nopta.gov.au/nopims/reprocessing or ausgeodata@ga.gov.au

Totterdell JM, Hall L, Hashimoto T, Owen K, and Bradshaw MT (2014) Petroleum geology inventory of Australia's offshore frontier basins. Record 2014/09. Geoscience Australia, Canberra.

Van Aarssen BGK (2020) Petroleum systems modelling, Otway Basin, Victoria. VGP Technical Report 48. Geological Survey of Victoria, Department of Jobs, Precincts and Regions, Melbourne, Victoria, 88 pp.