

PESA Industry Review: Exploration



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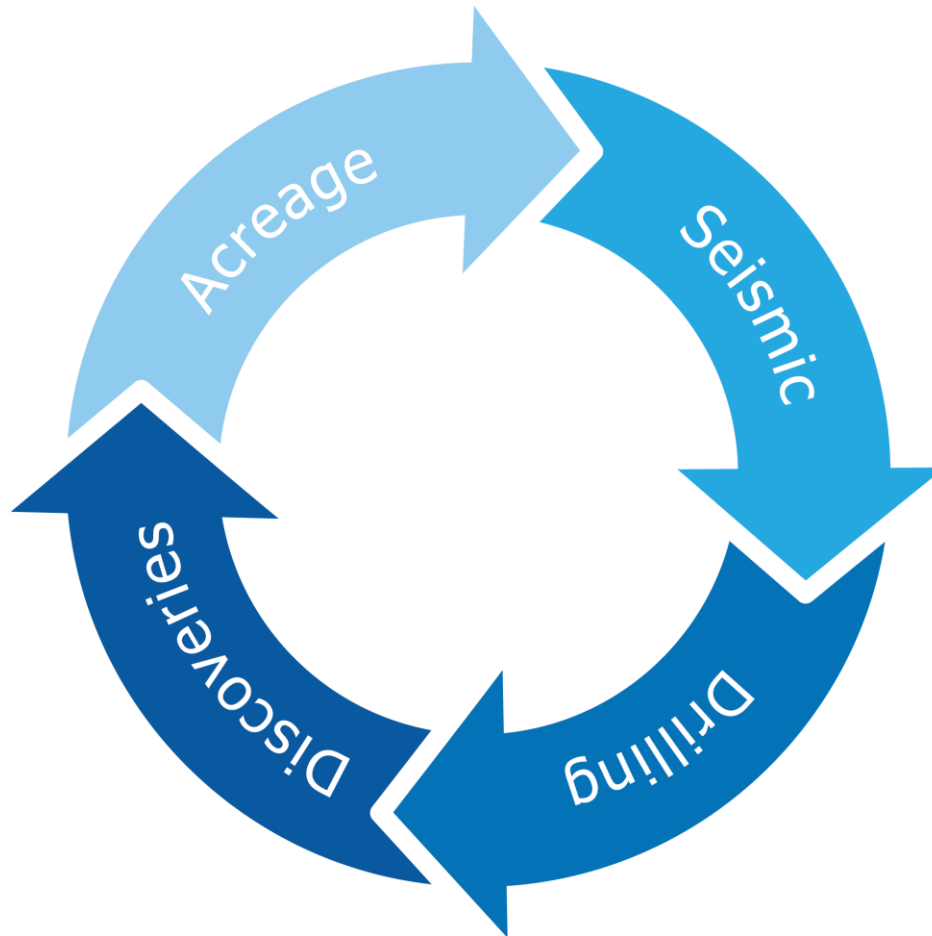


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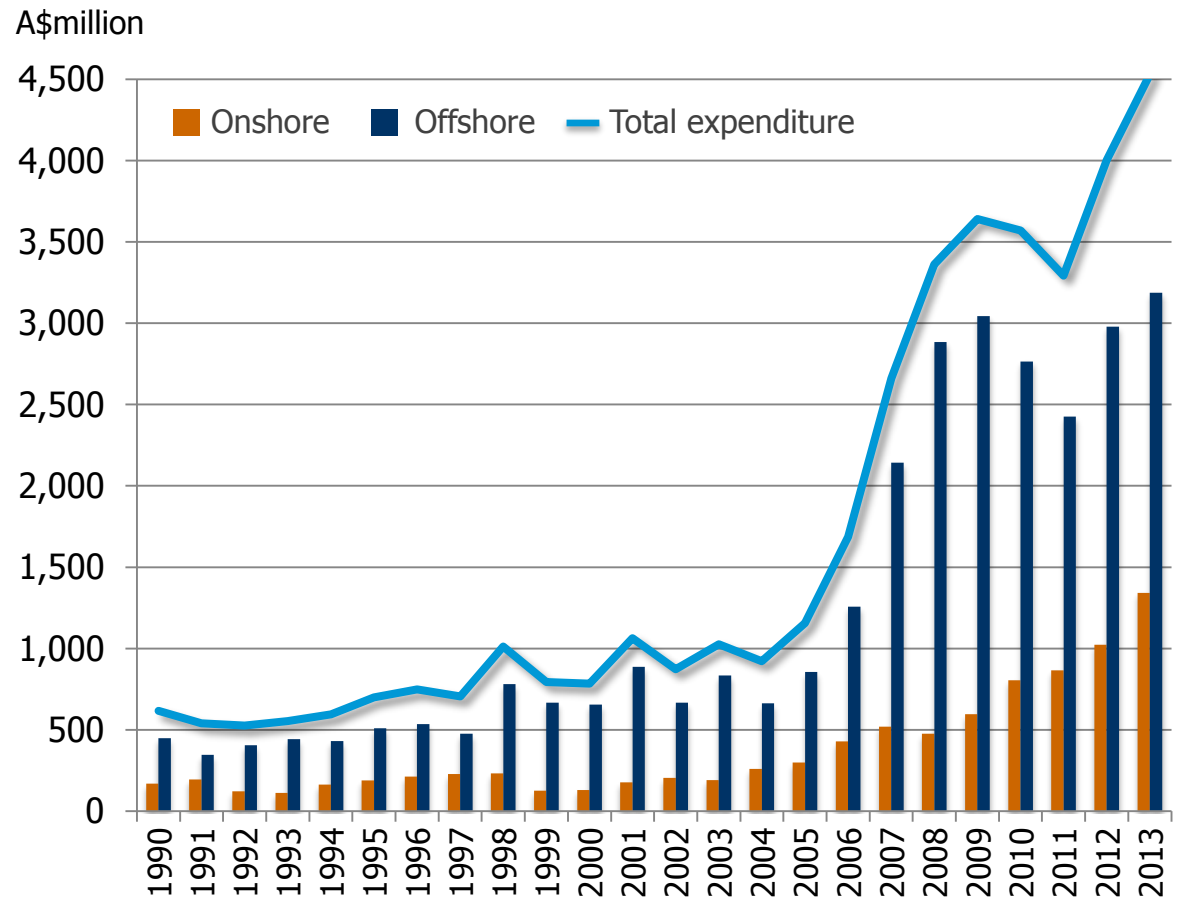
This presentation contains forward looking statements that are subject to risk factors associated with the oil and gas industry. It is believed that the expectations reflected in these statements are reasonable, but they may be affected by a range of variables which could cause actual results or trends to differ materially, including but not limited to: price fluctuations, actual demand, currency fluctuations, geotechnical factors, drilling and production results, gas commercialisation, development progress, operating results, engineering estimates, reserve estimates, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory developments, economic and financial markets conditions in various countries, approvals and cost estimates.

All references to dollars, cents or \$ in this document are to Australian currency, unless otherwise stated. All references to project completion percentages are on a value of work done basis, unless otherwise stated.



Exploration expenditure

A record year



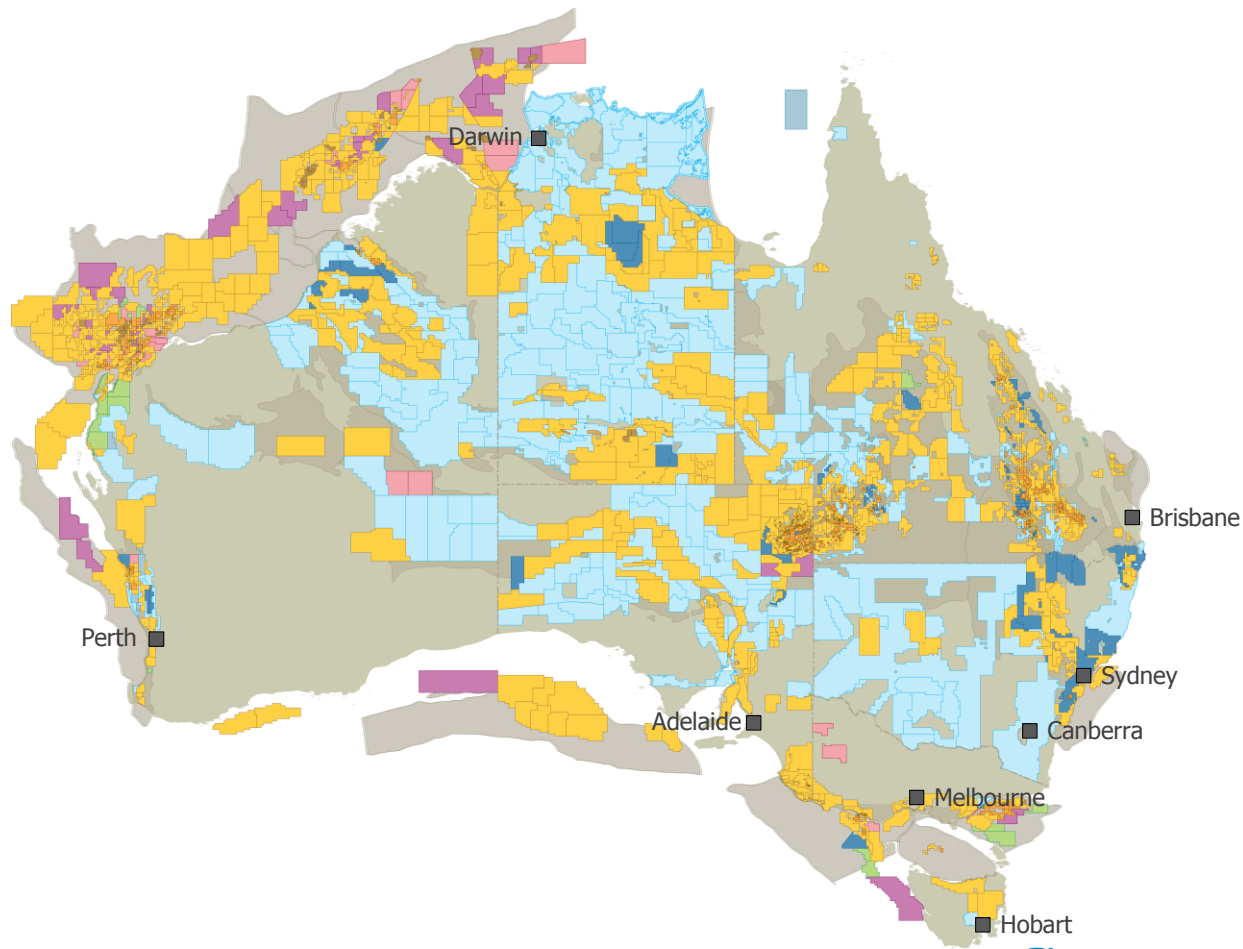
Acreage activity

Many basins are almost fully licensed or under application

Unconventional plays driving the latest onshore licensing

Legend

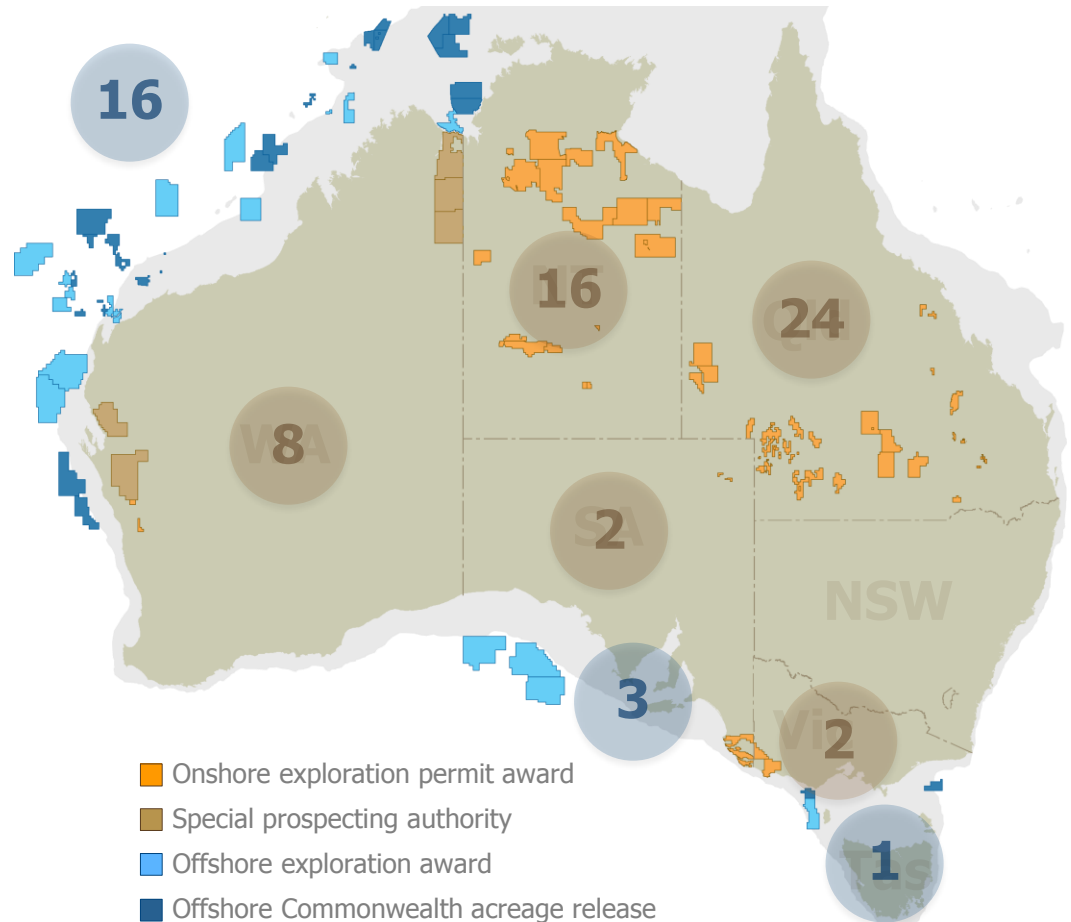
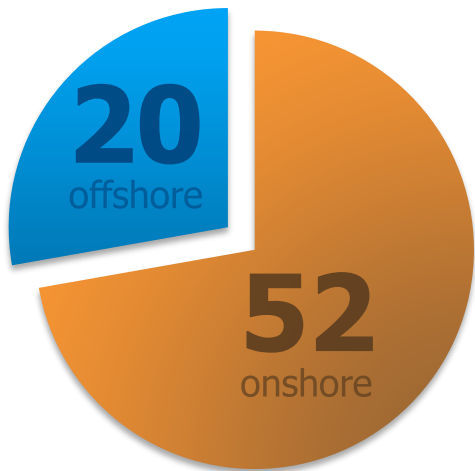
- Basin
- Exploration permit
- Production license
- Retention license
- Under application
- Renewing
- Relinquishing
- Suspended
- Gazettal, under application
- Gazettal, available



Awarded permits

72

permits awarded
in 2013



Seismic acquisition

7,816km

2D acquired onshore

up from 6,966km
in 2012

13,113km

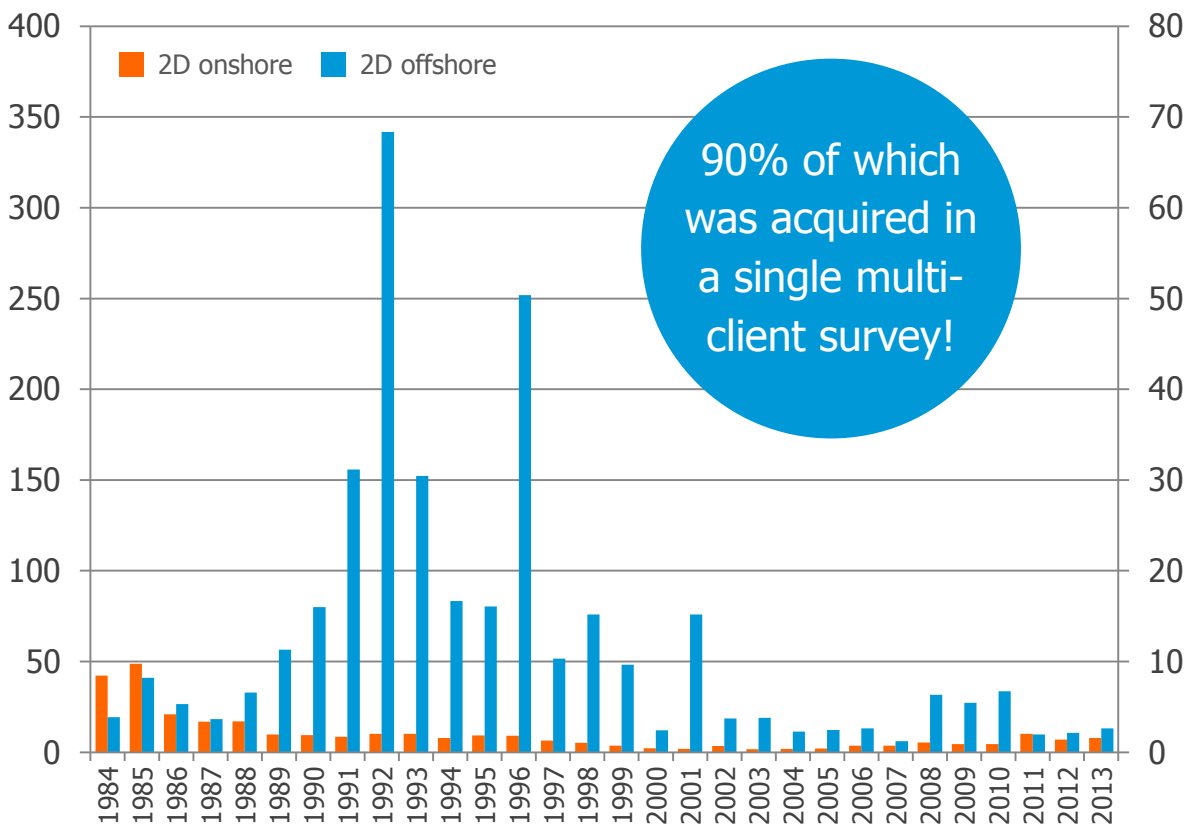
2D acquired offshore

up from 10,707km
in 2012

2D onshore and offshore

2D lines km (x1000)

3D square km (x1000)



90% of which
was acquired in
a single multi-
client survey!

Seismic acquisition

4,119km²

3D acquired onshore

up from 3,255km²
in 2012

35,794km²

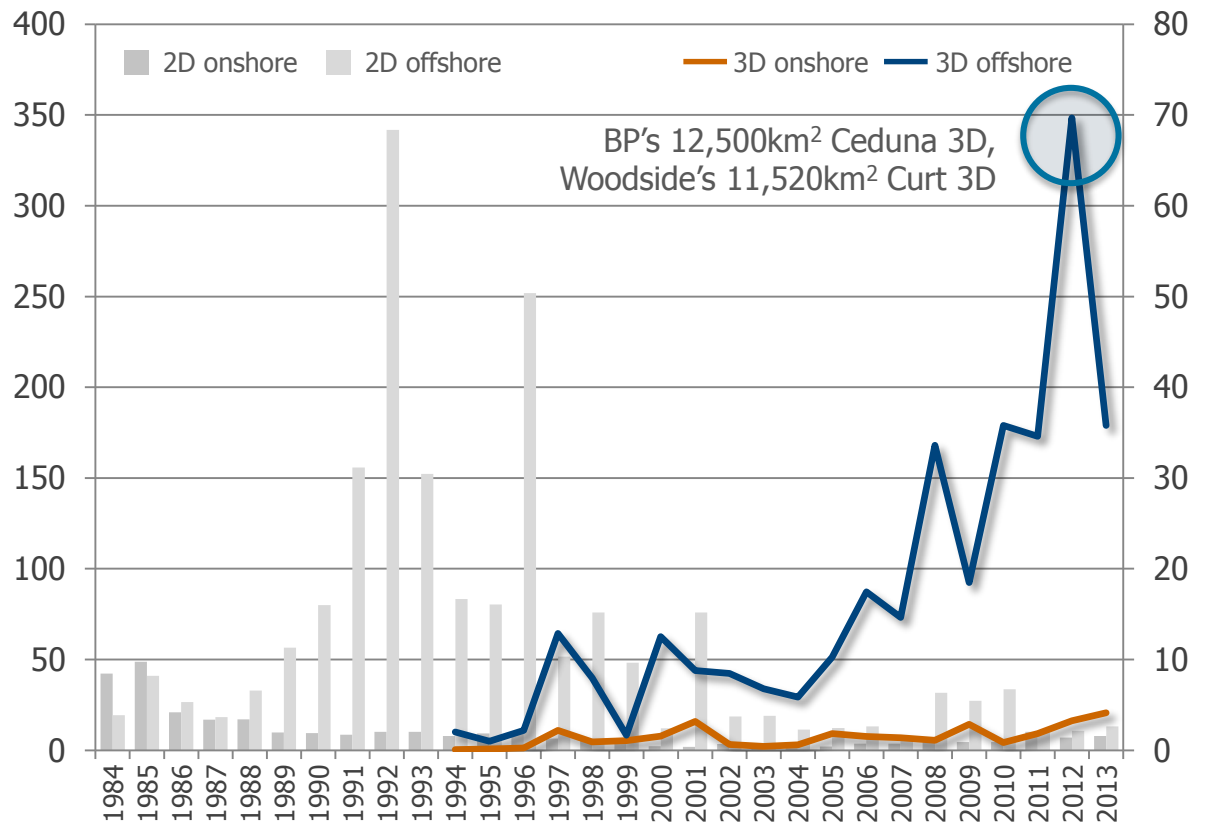
3D acquired offshore

down from 69,687km²
in 2012

3D onshore and offshore

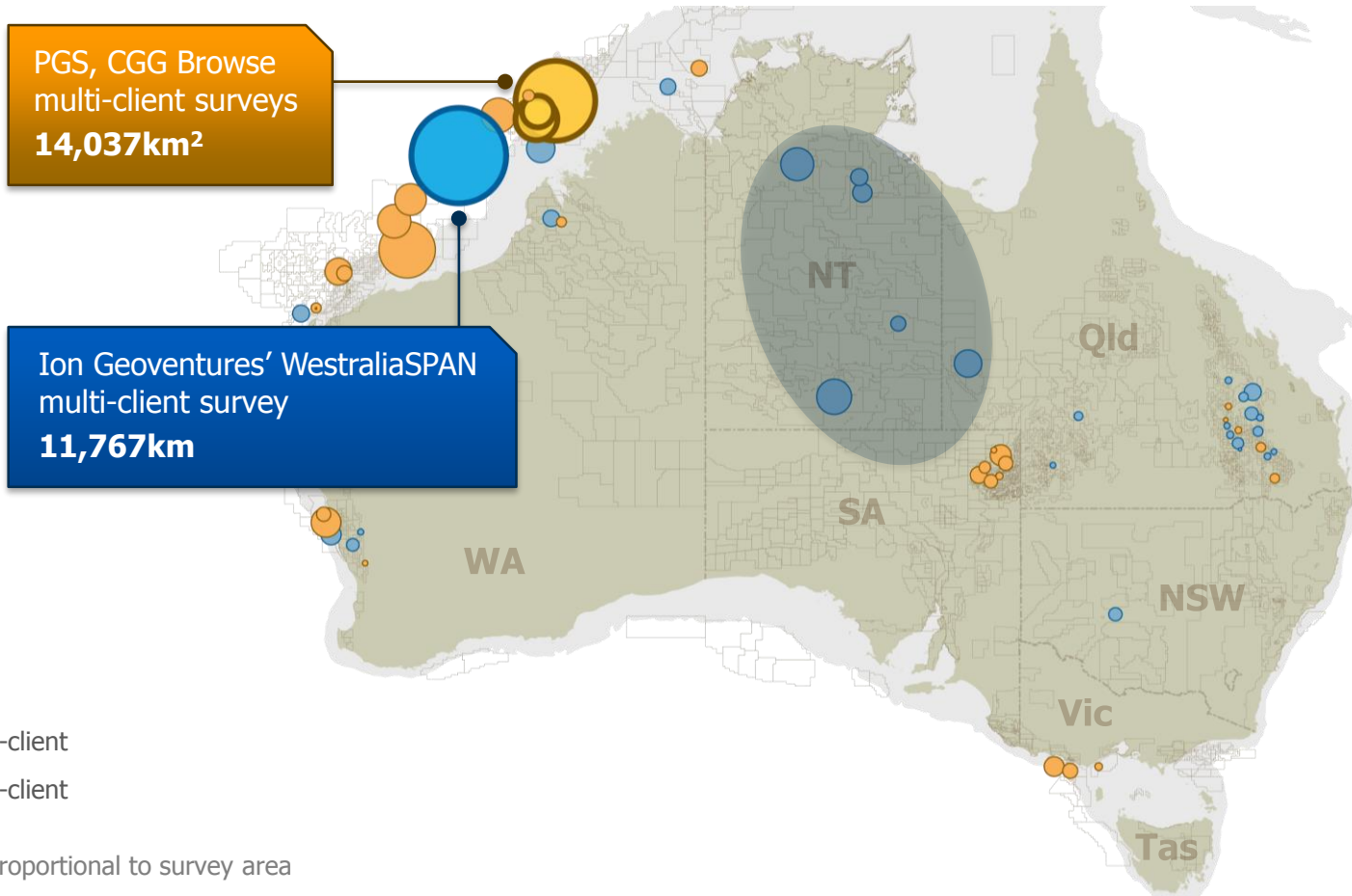
2D lines km (x1000)

3D square km (x1000)



Seismic acquisition

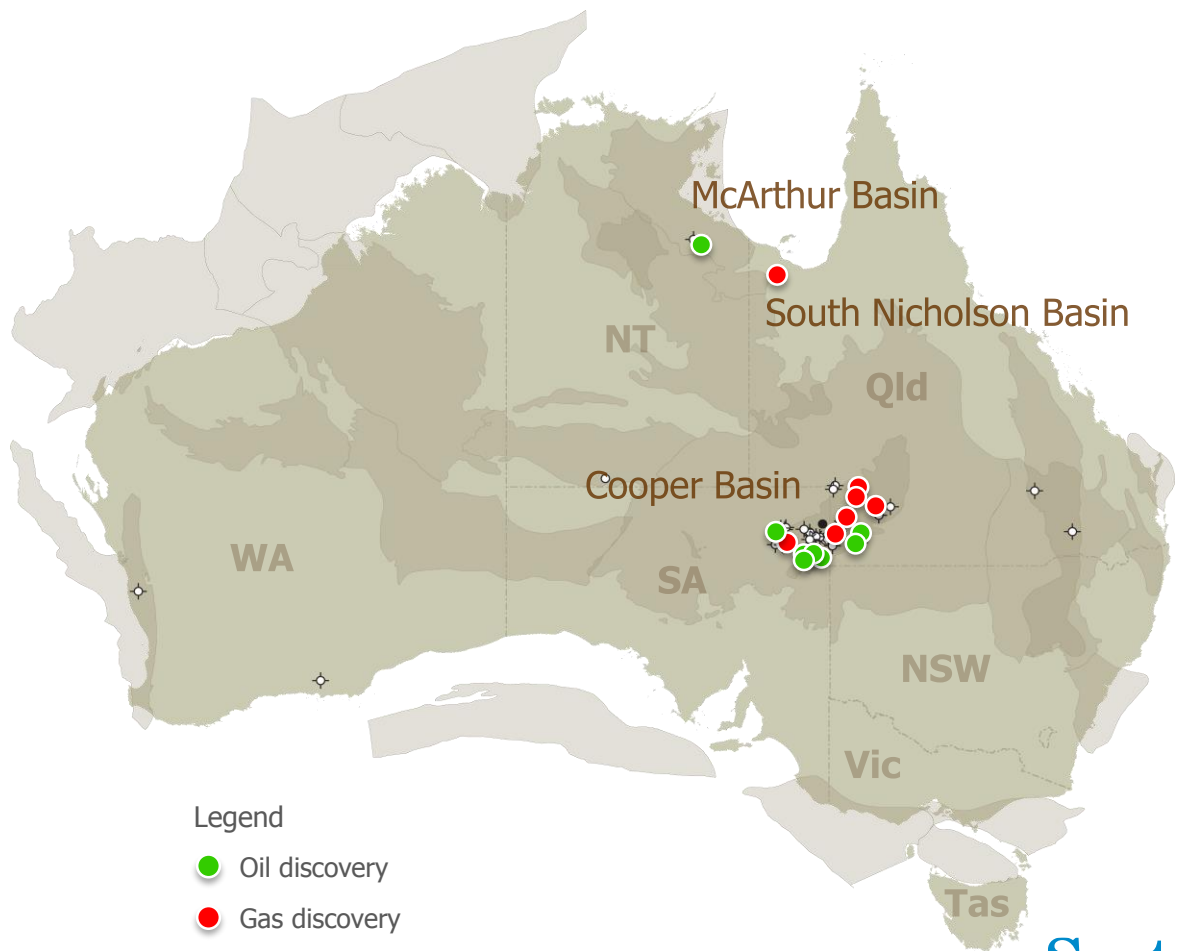
2013 activity



69

wells drilled in
onshore basins

vs 69 in 2012



Legend

- Oil discovery
- Gas discovery

Exploration drilling

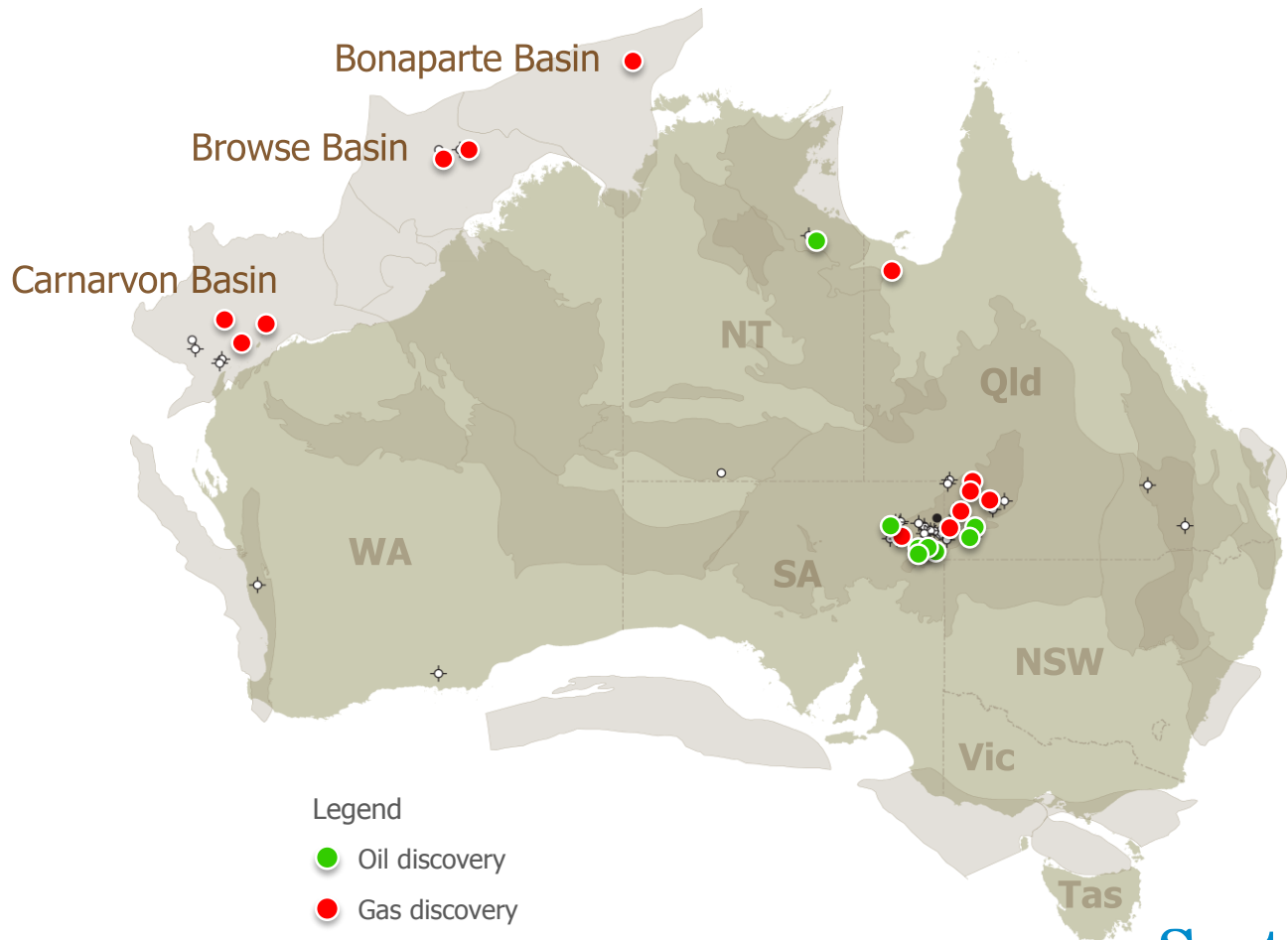
Offshore

13

wells spudded in
offshore basins

vs 21 in 2012

6 were
gas discoveries



Drilling

CSG – Activities ramping up ahead of first LNG cargo delivery in 2014/2015

1,317

CSG wells drilled in
Queensland

46

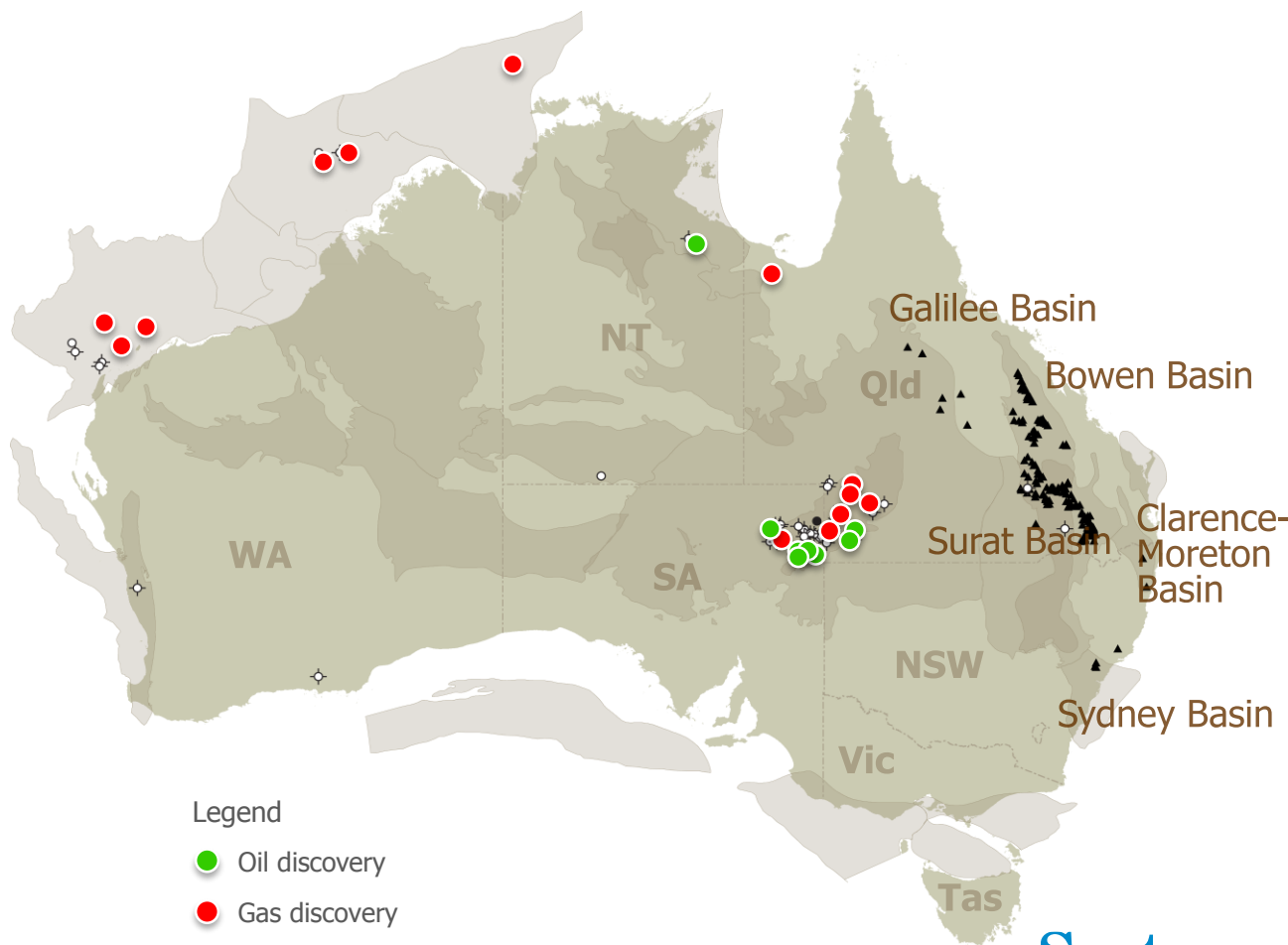
exploration

167

appraisal

1,104

development



Legend

- Oil discovery
- Gas discovery
- ▲ CSG well

Exploration wells drilled onshore and offshore

69

wells drilled in **onshore basins**

vs 69 in 2012

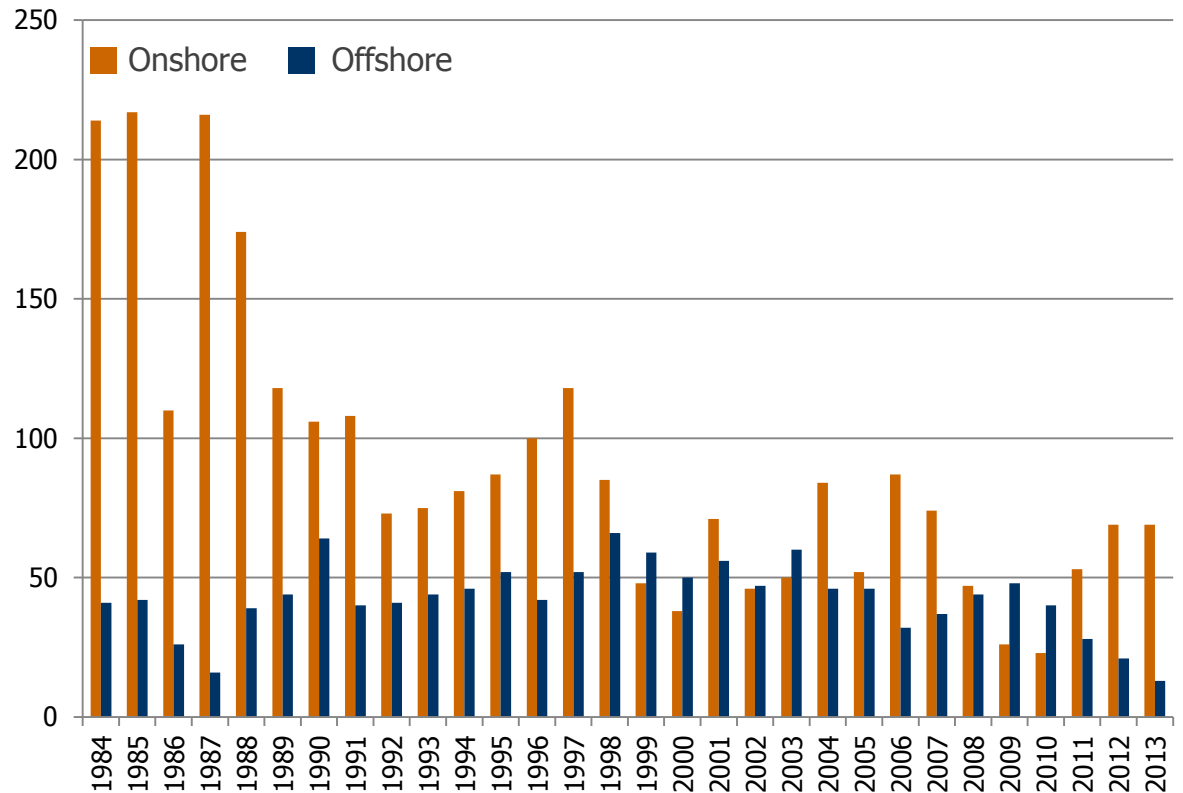
13

wells drilled in **offshore basins**

vs 21 in 2012

The last 5 years are marked by a resurgence in onshore activity... whereas offshore exploration observes a steady decline

Number of wells



Central and Northern Australian basins

McArthur Basin

- › Lamont Pass 3 reported as an oil/gas discovery from Mesoproterozoic Barney Creek Shale

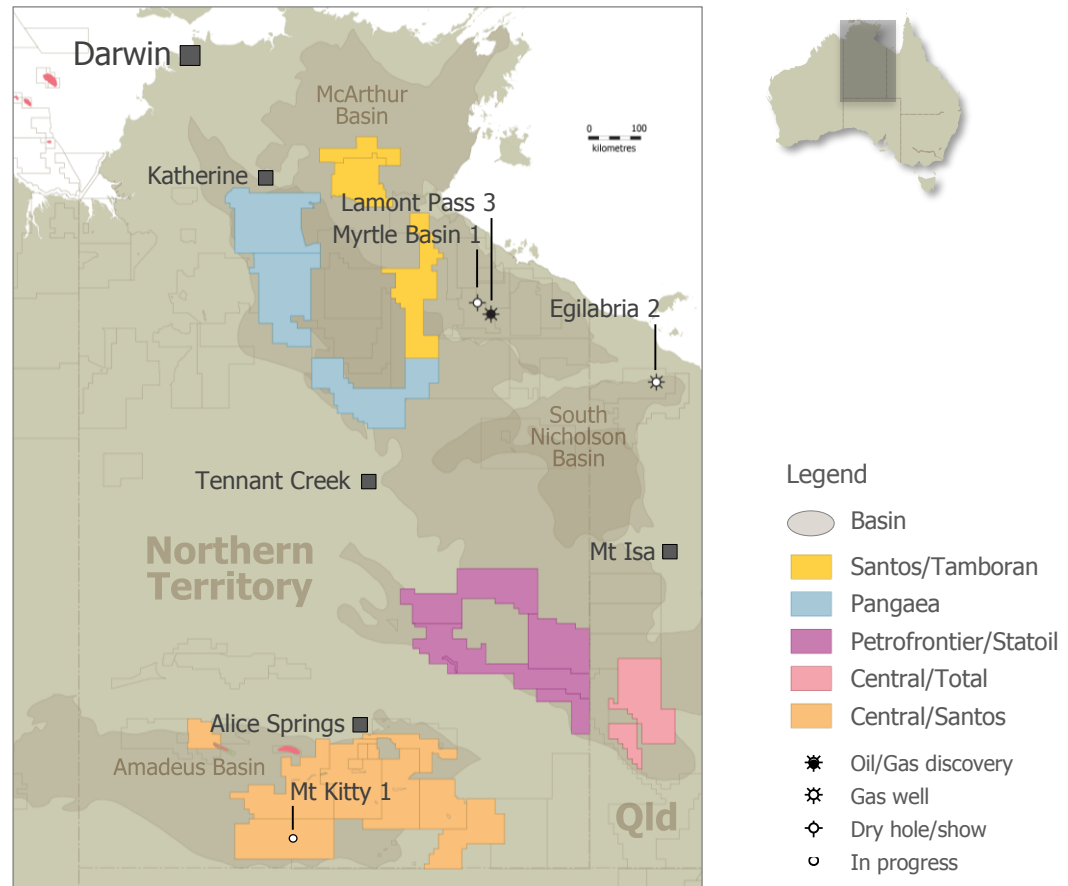
South Nicholson Basin

- › Egilabria drilling campaign, included successful flow test at Egilabria 2

Amadeus Basin

- › Mount Kitty 1 spud

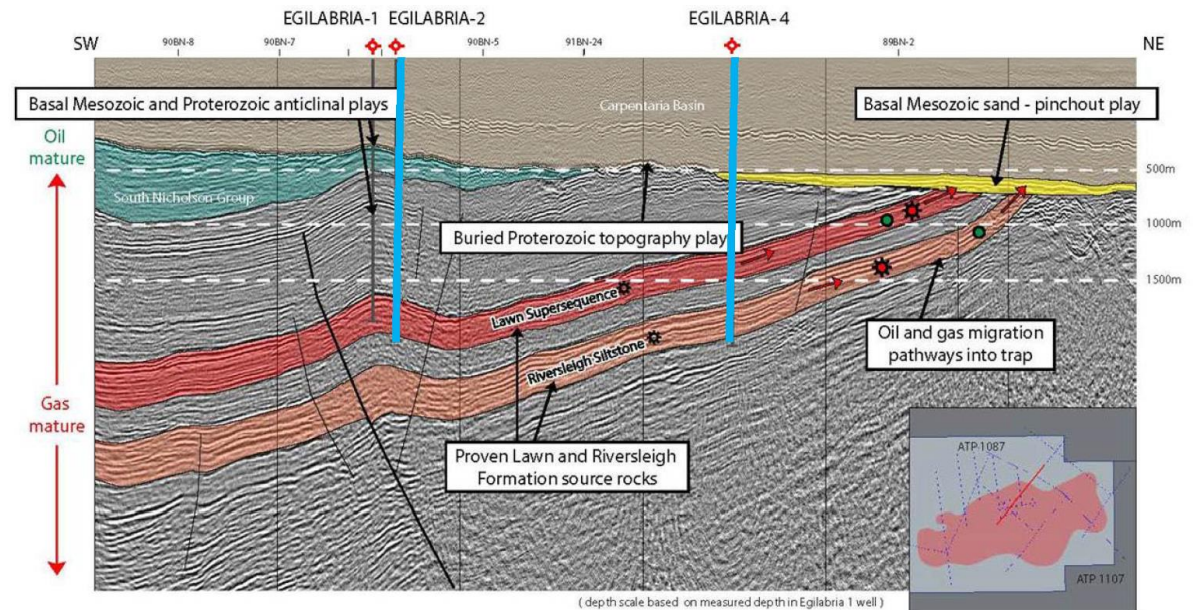
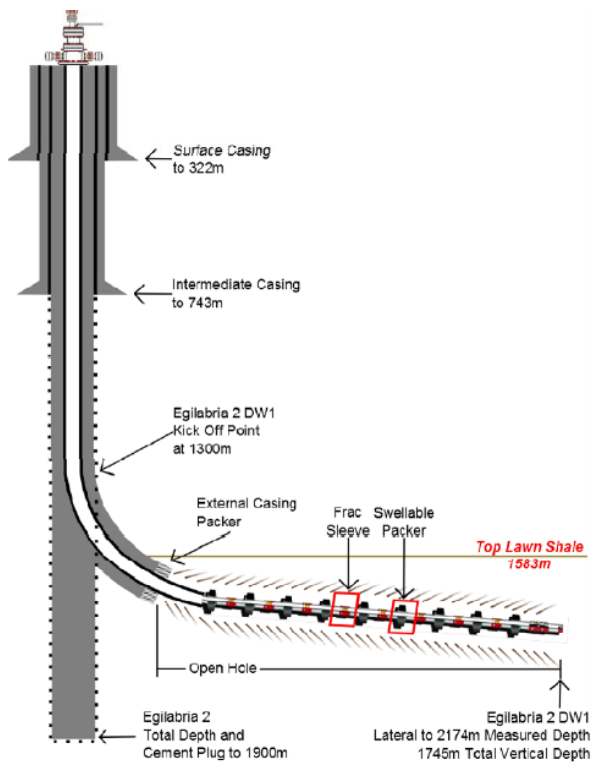
Activities ramping up in Palaeozoic and Proterozoic Basins with several smaller players now assisted in their exploration effort by companies such as Total and Statoil ...



Egilabria 2

South Nicholson Basin

Egilabria 2 Well Design



Source: Armour Energy

Offshore Western Australia

Browse Basin

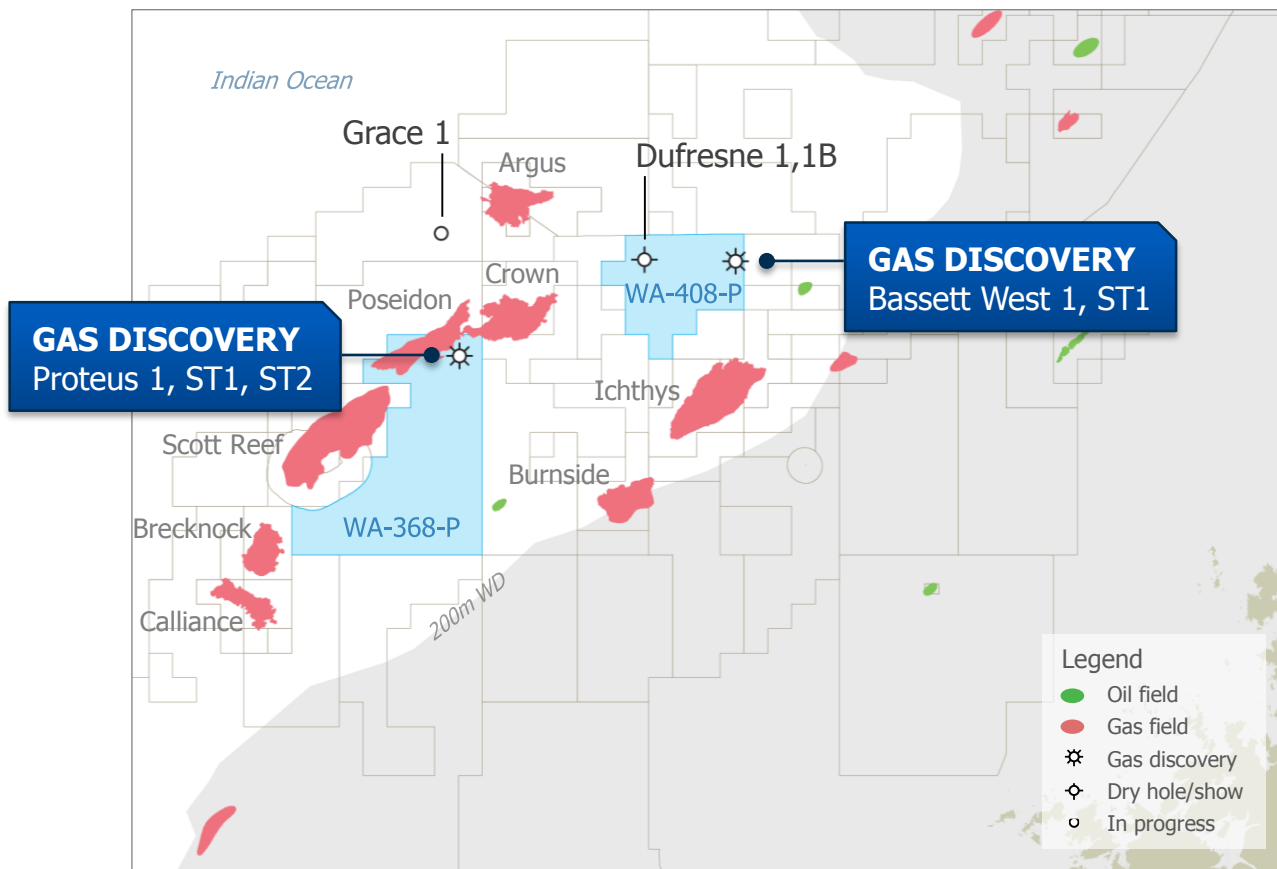


4

wells drilled
in 2013

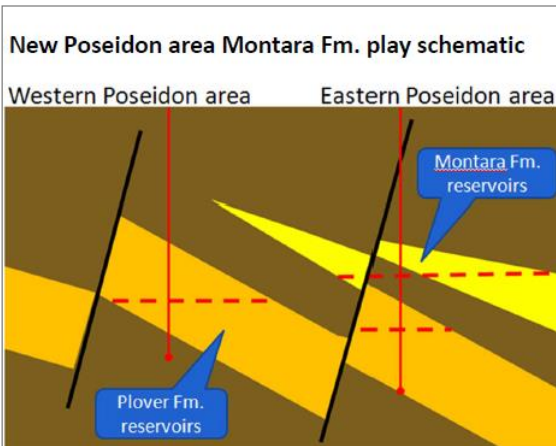
2

were
gas discoveries



Proteus-1

87m gross gas condensate in Plover, Montara sst



Opened up New Montara Fm play in the Greater Poseidon Structure

Browse Basin



Proteus-1

Proteus-1 penetrated an 87m gross, good quality gas condensate bearing reservoir in the Jurassic aged interval.

The well was successfully flow tested over the open hole section covering the Plover and Montara formations. The well flowed at a constrained 7.3mmscf/d measured through a 16/64" choke with a flowing well head pressure of 4457psi. The condensate rate was 19-22 bbl/mmscf/d.

Consistent with the other flow tests in the Greater Poseidon structure, production wells in the Proteus block are expected to be commercial, flowing >100mmscf/d.

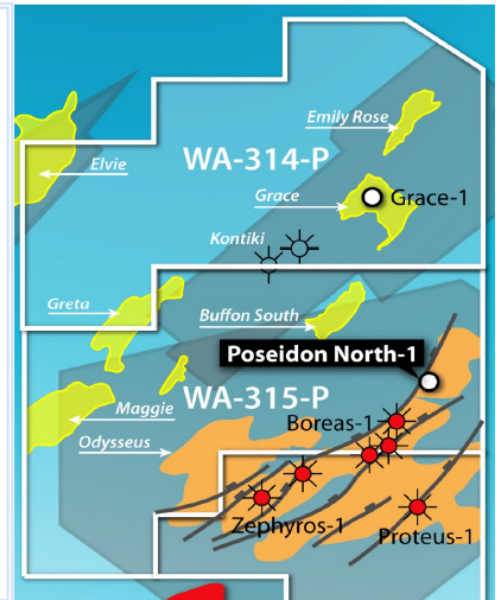
Greater Poseidon Structure

A total of 6 wells drilled to date in the Greater Poseidon structure, with only 3 wells of the 6-7 Phase 2 drilling program drilled to date.

Proteus-1 discovery opens up a new play in the Greater Poseidon structure in the Montara Fm.

Additional Resource Potential

Outside greater Poseidon trend, additional exploration potential is present with 7 prospects identified with gross unrisked mean prospective resource of 15 tcf.



Note: This data represents the views of Karoon Gas and do not necessarily represent the view of ConocoPhillips.

Offshore Western Australia

Carnarvon Basin – Steady decline in exploration drilling activity



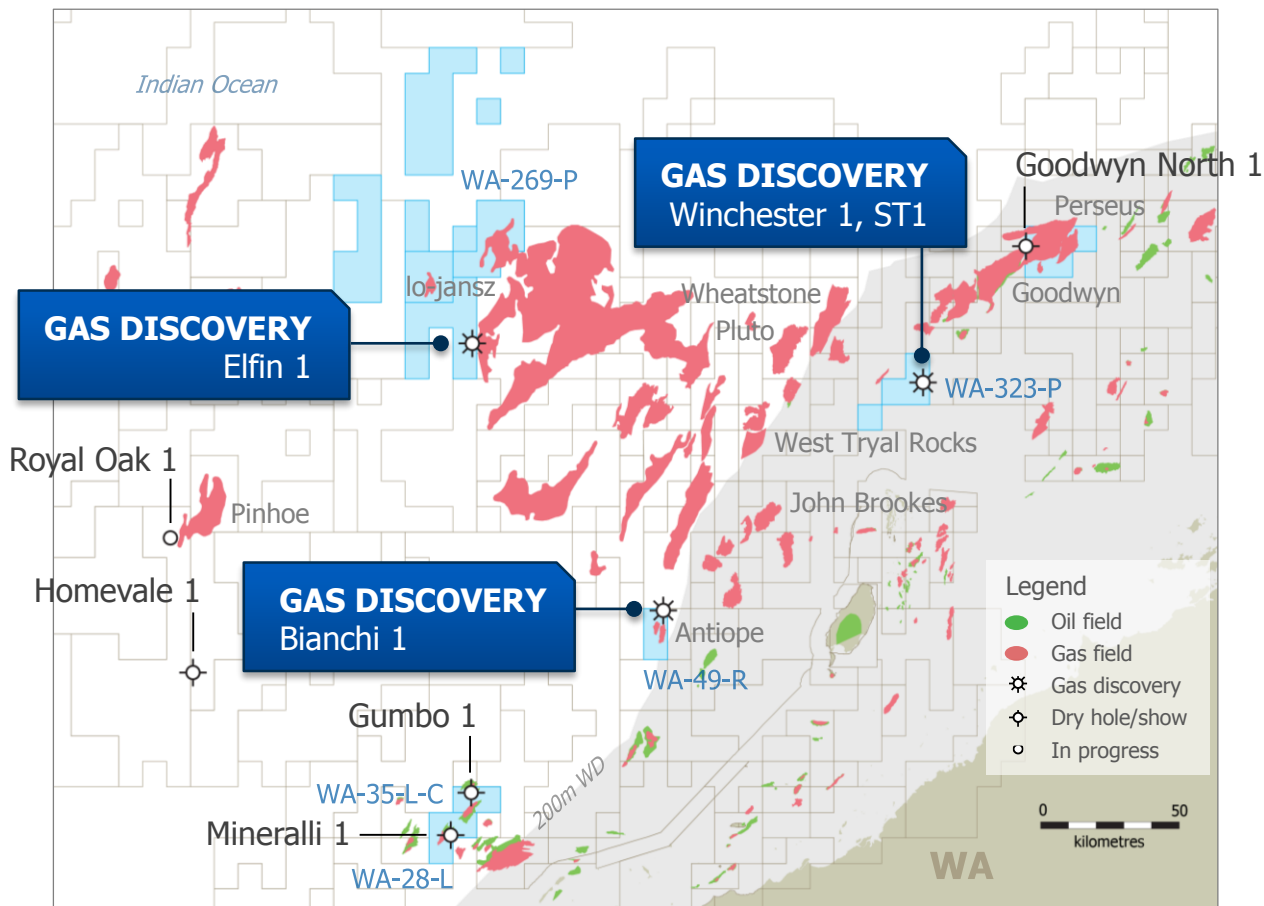
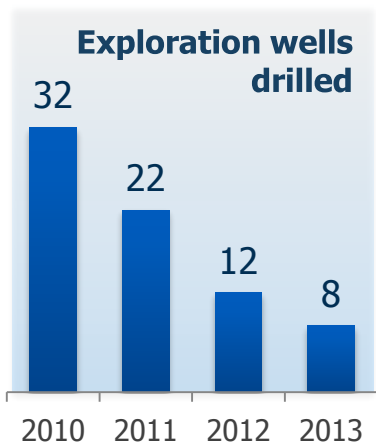
8

wells drilled in 2013

3

were

gas discoveries



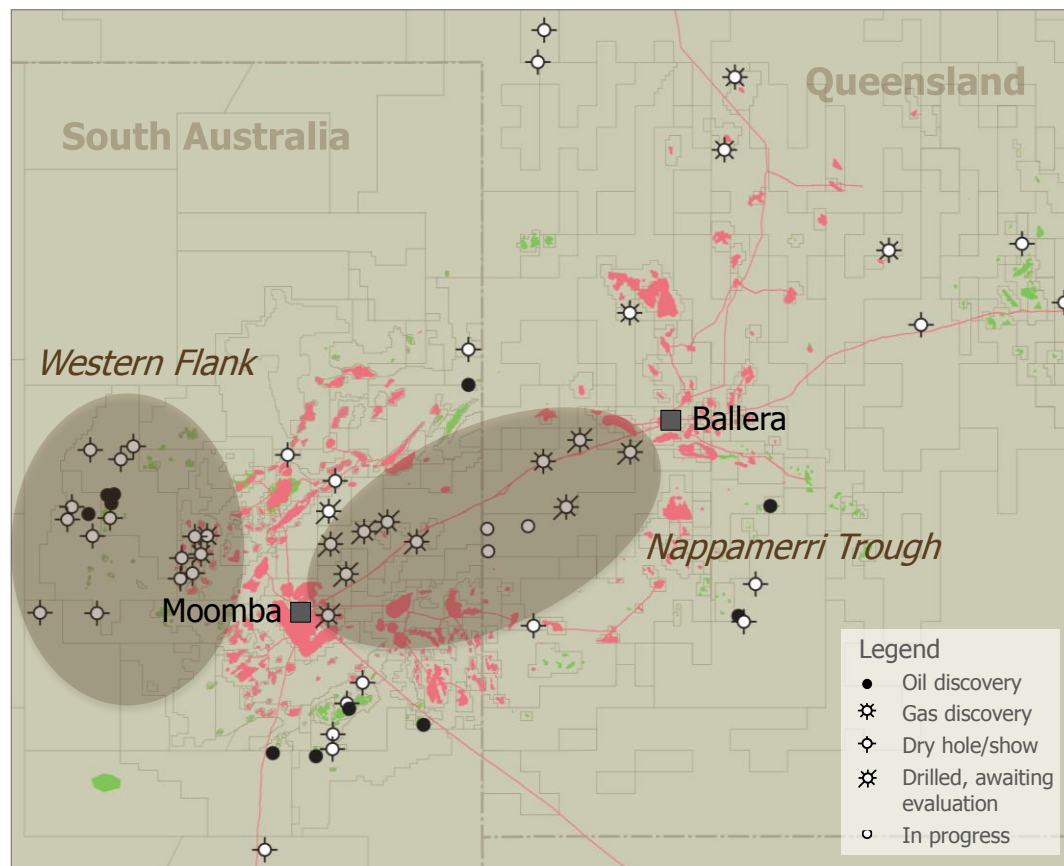
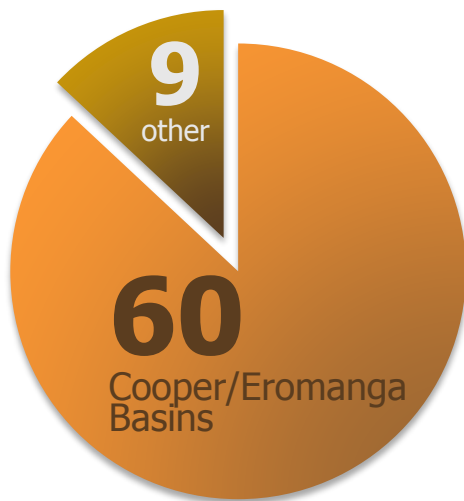
Onshore South Australia and Queensland

Cooper/Eromanga Basins



69

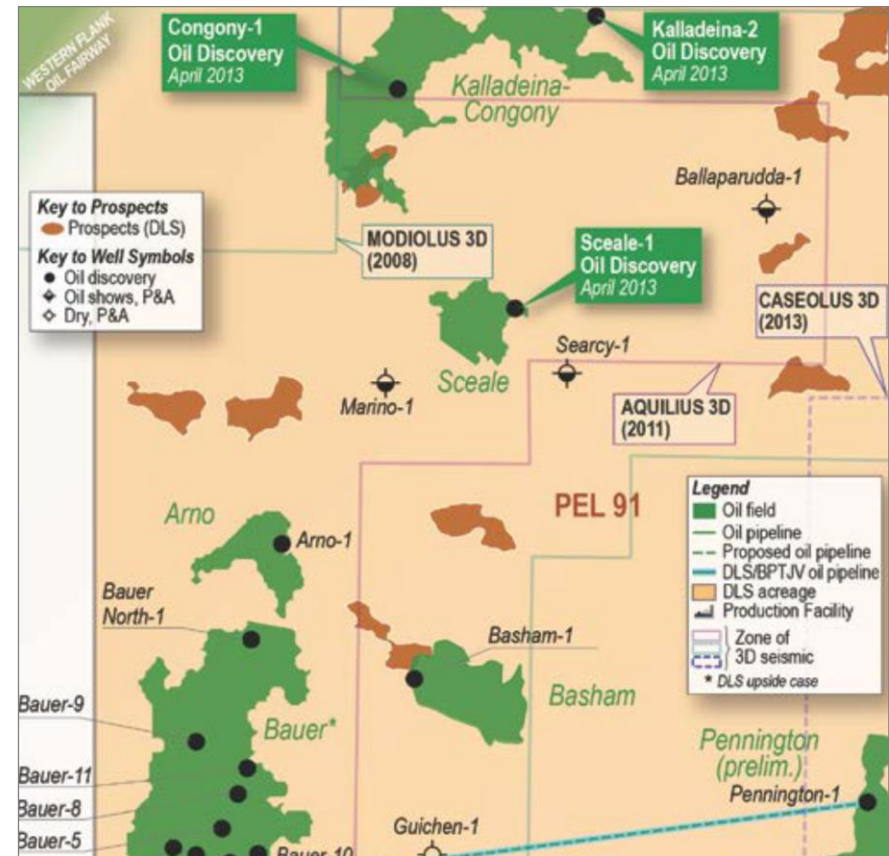
wells drilled onshore Australia
in 2013



Onshore South Australia

- **Kalladeina-2:** 8m oil column in McKinlay/Namur. Tested at 986bopd
- **Congony-1:** 6m oil column in McKinlay/Namur. Test of McKinlay zone recovered 41bbls of clean oil, equivalent rate of 239bopd
- **Sceale-1:** 6m gross oil column in McKinlay/Namur, tested oil at 830bopd in McKinlay zone
- **Rincon North-1:** 7m oil column

Western Flank activity –
Continued oil exploration success by Beach, Drillsearch and Cooper Energy...

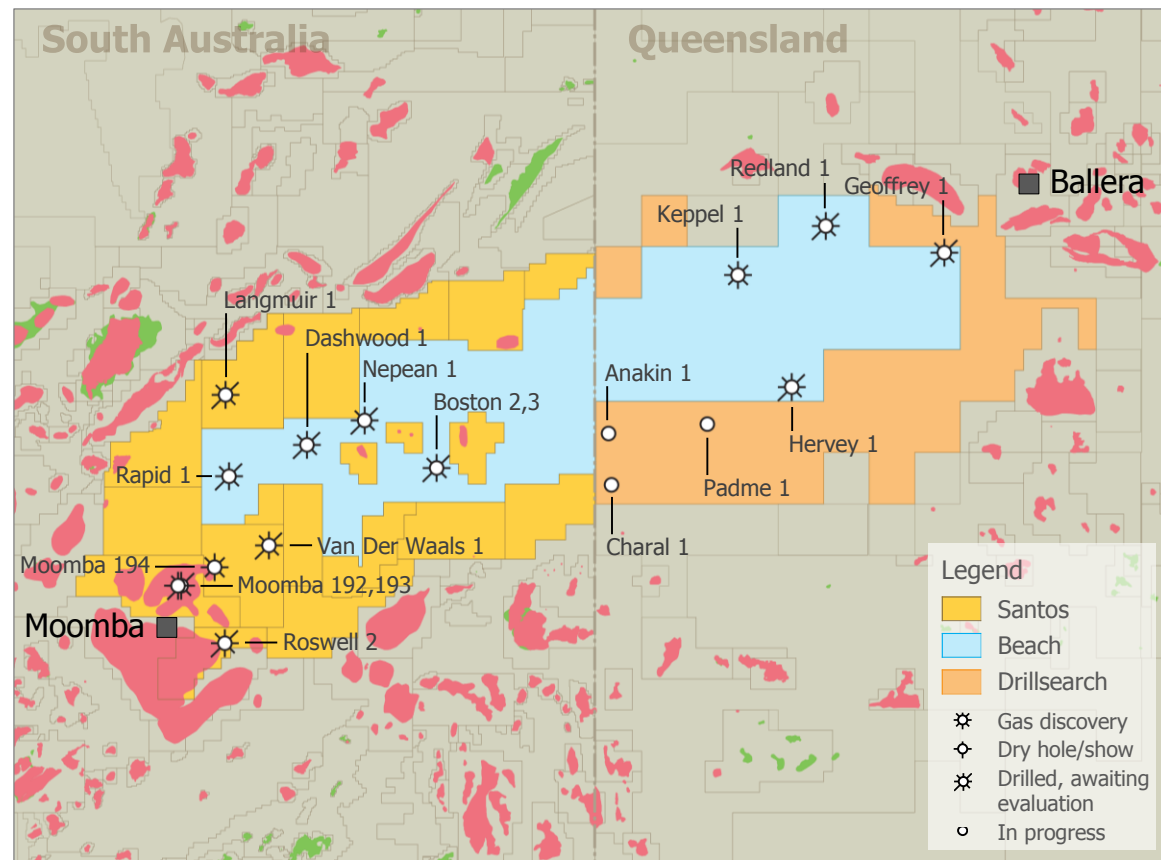


Onshore South Australia and Queensland

- > **Chevron** staged farm-in into Beach Energy's PEL218, ATP855 finalised in May
- > **18** wells spudded, including 14 classified as exploration
- > **Drillsearch** and JV partner QGC joined the drilling effort in 2013

**Basin
Centered Gas
(BCG)
proved up in
2013!**

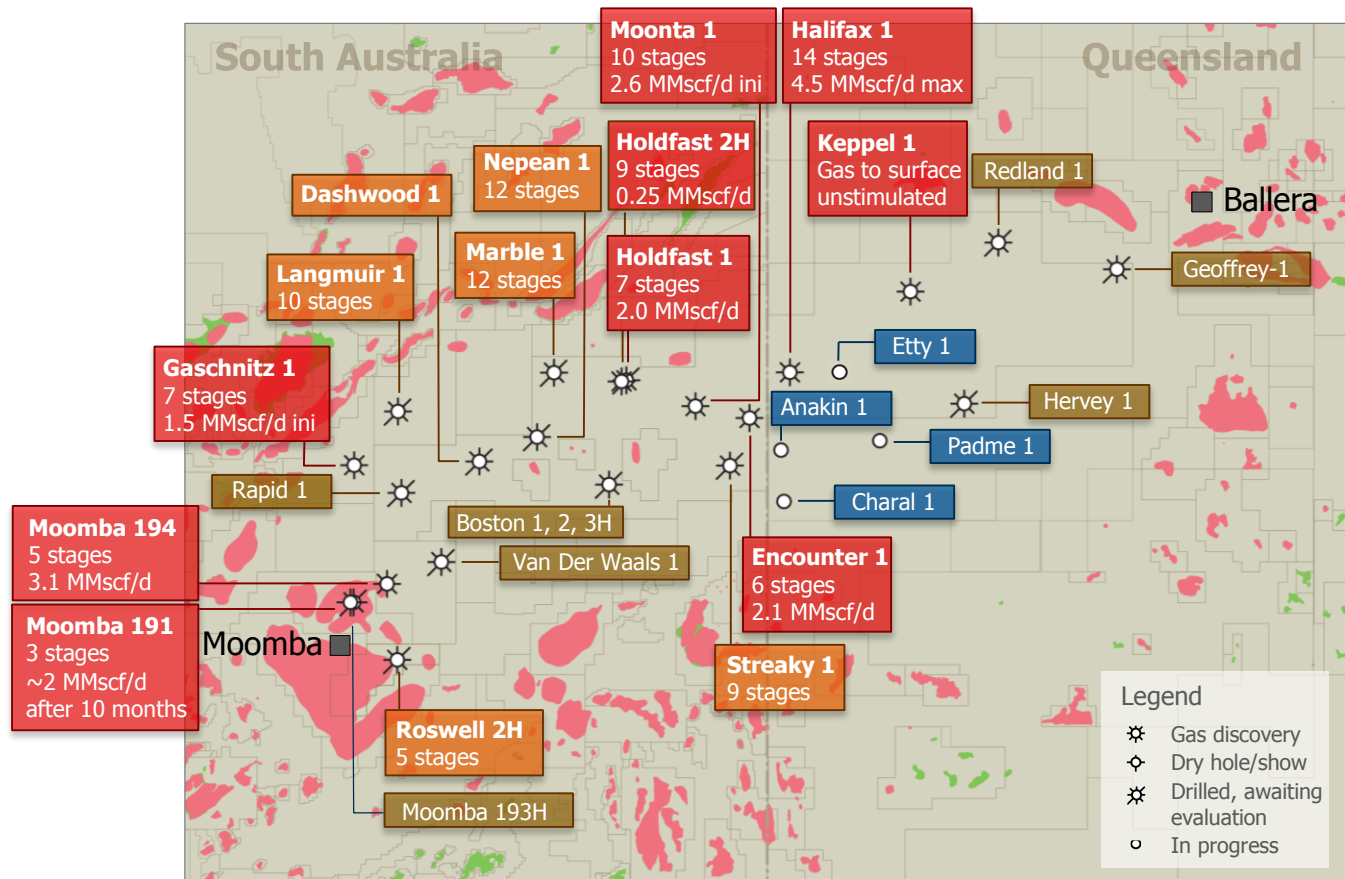
Nappamerri Trough activity



Onshore South Australia and Queensland

Nappamerri Trough Activity Status

April 2014



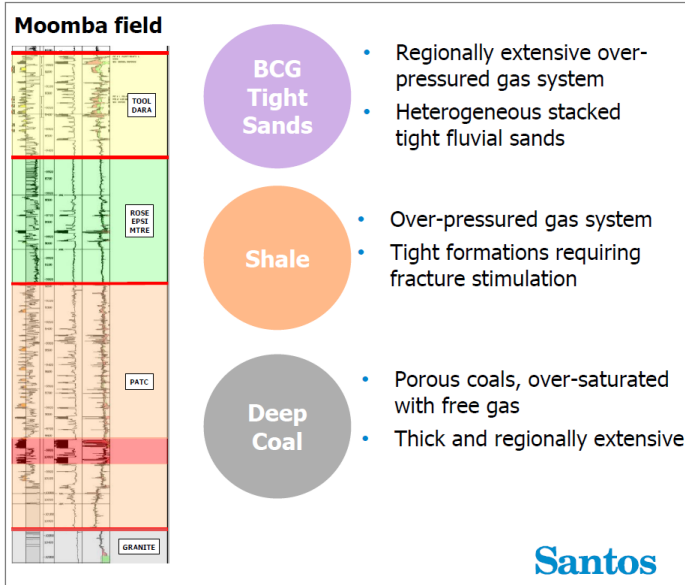
- Legend
- Successful flow test
 - Awaiting flow test
 - Awaiting stimulation
 - Drilling

- Legend
- ☼ Gas discovery
 - ⊕ Dry hole/show
 - ☼ Drilled, awaiting evaluation
 - In progress

Modified after Beach. Compiled from Santos, Beach, Drillsearch

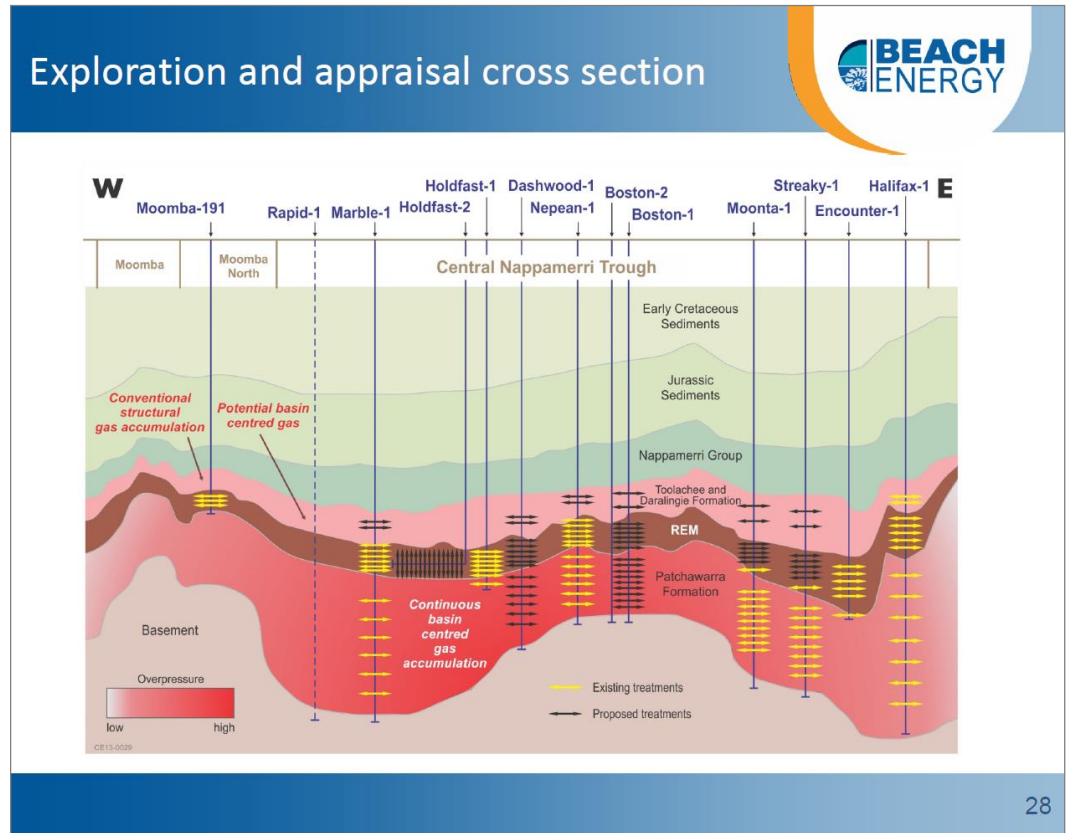
Unconventional plays

Nappamerri Trough



It's not all about shale...

Source: Beach, Santos



- Onshore drilling activity levels at or near all time highs, offshore on the decline.
- Browse getting plenty of attention as outlined by large multiclient 3D seismic acquisition and sustained drilling activity.
- Significant bids for the deepwater Great Australian Bight acreage with awards to Chevron and Murphy/Santos who will join BP/Statoil in exploring the basin.
- Cooper/Eromanga Basin the centre of attention for onshore exploration in both conventional and unconventional plays.
- Major international players continue to enter onshore unconventional plays to partner small and medium sized players (e.g. Chevron in 2013).
- US shale plays and East Coast/LNG market, two factors driving interest in unconventional gas plays exploration onshore Australia.
- 2014 shaping up as critical for unconvensionals in the Nappamerri Trough and the Northern Territories basins where critical tests may determine future direction.

Acknowledgements



- › Petroleum Division, WA Department of Mines and Petroleum;
- › Geological Survey of Queensland Department of Natural Resources and Mines;
- › NSW Department of Trade and Investment, Resources and Energy Services;
- › Earth Resources Regulation Branch, Department of State Development Business and Innovation Victoria;
- › Energy Resources Division, SA Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE);
- › The Northern Territory Geological Survey, Department of Mines and Energy;
- › Geothermal and Petroleum Thermal Resources Tasmania;
- › NOPTA – National Offshore Petroleum Titles Administration;
- › Geoscience Australia; and
- › Polarcus, Schlumberger, Western Geco, CGG, PGS, Ion, Seabird and Terrex.