Australia: update on current and emerging oil & gas opportunities

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Australia is the world’s biggest LNG exporter

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**Australia grabs world's biggest LNG exporter crown from Qatar in Nov**

Source: INPEX

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**Australia overtakes Qatar as world's biggest LNG exporter - Refinitiv data**

Jessica Jaganathan

SINGAPORE, Dec 10 (Reuters) - Australia overtook Qatar as the world’s largest exporter of liquefied natural gas (LNG) for the first time in November, data from Refinitiv Eikon showed on Monday.

In November, Australia shipped out 6.7936 million tonnes of LNG while Qatar exported 6.2025 million tonnes, the data showed.

Source: Shell
Fuel Mix in Primary Energy Consumption (2014)

- Australia’s primary energy consumption remains strongly fossil fuel based
- Oil and coal accounting for over 60%
- Increased production of gas-generated energy supported by government initiatives
- Production and consumption of renewables increasing steadily
- No nuclear energy production, exporter of uranium

Note: OECD = Organization for Economic Co-operation and Development; PV = photovoltaic
• Australia is net importer of petroleum (80%)
• Total production was 4% of total Australian energy production in 2014-15
• Rapid decline of oil production
• The Australian Government provides impetus to discover the next commercial oil province
• Untested potential of unconventional resources
Oil and Gas Resources

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- Australia is net exporter of natural gas
- Natural gas accounted for 25% of Australia’s total primary energy consumption in 2014-15
- Large volumes of coal-seam gas in eastern coal-basins developed for LNG exports and domestic demand
- Significant unconventional potential in onshore basins (shale gas, tight gas, basin-centred gas, deep coal)

from: AERA 2018
Recent Successes: Roebuck Basin

- New oil province on NW Shelf
- At least two operating petroleum systems identified (oil and wet gas)
- Source rocks not understood
- Sedimentary facies mapping needed to predict changes in reservoir quality
- Early Triassic (and older?) section offer new exploration opportunities

Phoenix South-1 (2014):
- Oil

Roc-1 (2015):
- Gas / condensate

Roc-2 (2016):
- Gas / condensate

Phoenix South-2 (2016):
- Gas / condensate

Phoenix South-3 and Dorado-1 (2018):
- BIG OIL
Beetaloo Sub-basin, NT

- Vast geologically continuous shale gas basin with stacked plays
- Analogous to US shale gas plays (e.g., Marcellus Shale)
- > 10,000 sq miles of prospective shales
- Industry estimates of > 500 Tcf gas in place within B-shale of Velkerri Formation
- First horizontal hydraulically fractured well successfully flowed gas
- Multiple dry gas, wet gas & liquids plays
- 11 Wells drilled targeting Velkerri and Kyalla shales since 2014
- Extensive seismic acquisition
- Drilling and hydraulic fracturing to restart in 2019
The 2019 proposed release areas

- 66 new areas proposed for work program bidding, (NW Shelf, Otway, Gippsland)
- 2019 Acreage to be formally released on 22 July 2019
- Comprehensive support documentation provided by government (DIIS and GA)
- Ready access to relevant petroleum data
- Acreage Release process optimized, industry nominations accepted all year long
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Timeline from nominations to permit award

- **Call for nominations – Industry**
  - GA/govt
  - 4.5 months

- **Selection of Areas, Technical Write-ups, Data Collection, Production**
  - Joint Authority / GA
  - 7 months

- **Open for Bidding**
  - 6 months (Mature); 12 Months (Frontier)

- **Bid Assessment**
  - Joint Authority / GA
  - 3 months

- **Offer of Permit**
  - Designated Authority
  - 30 days to accept offer

- **Permit Award**
  - Joint Authority / GA

- **Annual release of areas by Minister at APPEA**

**ACREAGE RELEASE: PREVIOUS PROCESS (pre-2019)**

- **Mature Release Areas** – less uncertainty
  - Up to 18 months

- **Frontier Release Areas** – more uncertainty
  - Up to 24 months
NEW PROCESS (2019 onwards): condensed timeline

Jan/Feb
Nominations for next release close

May/June
Consultation process completed

March/April
Work program bidding closes

July/Aug
Bid assessments completed

Oct/Nov
Permit awarded

Nominations accepted

18 months

Consultation period
4 months

Bidding period
9 months

Bid assessments
3-4 months

Permit offer and award
1-2 months

Formal acreage release - July

Nominations accepted

12 months

18 months
Geoscience Australia’s petroleum studies
example: Roebuck Basin – regional tectonostratigraphy

- **Strong interest after recent discoveries in Bedout Sub-basin**
- Regional 2D and 3D seismic interpretation to provide an update of basin architecture and Triassic stratigraphy
- Using key wells that have intersected Triassic stratigraphy
- Mapping five key time-structure surfaces at basin scale
- Approval obtained to utilise selected multi-client data
GA’s major pre-competitive program across northern Australia

- A major new investment initiative in pre-competitive geoscience from the Australian Government (Minister for Resources and Northern Australia)
- Federal Budget measure of $100.5 million over 4 years (2016 to 2020)
- Comprises three integrated elements:
  - Energy
  - Minerals
  - Groundwater

- Energy related data acquisition includes new seismic data and stratigraphic drilling in:
  - McArthur and related basins of Proterozoic and old Paleozoic age (e.g. South Nicholson)
  - Kidson Sub-basin of the Canning Basin

872 line km acquired in collaboration with GSWA
Further Information (in support of acreage release)

www.petroleum-acreage.gov.au
• General information about offshore acreage release
  • Location maps, graticular block diagrams
  • Information about how to bid and how to nominate

www.ga.gov.au
• Regional petroleum geological information
  • Compilation of previously published materials
  • New results from GA’s prospectivity studies
    (new content to be launched with 2019 acreage release)

www.ga.gov.au/nopims
• Online data discovery and delivery system
  • Open file data for all Australian offshore petroleum wells and surveys
  • Access to client service for special requests