



Australia's Offshore Petroleum Industry

In 2008-09, the upstream oil and gas sector generated revenue of about \$35.6 billion, paid \$8.8 billion in taxes and other charges, held approximately \$130.7 billion in assets, employed about 10,700 people and generated approximately \$22.2 billion in export income. About 95 per cent of Australia's petroleum production comes from our offshore sedimentary basins.

Australia exported \$8.8 billion of crude oil, \$10.1 billion of LNG and \$1.0 billion of LPG.

How much does the industry contribute to domestic and global energy security?

In 2007-08, Australia's primary energy consumption was 5,772 petajoules, of which oil accounted for 34 per cent and gas 22 per cent. Unless new oil discoveries are made in Australia, we face a long-term fall in production as ageing oil fields decline. At the same time Australia is faced with a growing trade deficit in crude oil, refined products and LPG. In 2030 the demand for petrol, diesel and jet fuel imports plus refinery crude imports (assuming current refining capacity is maintained) will have grown to 1.016 million barrels per day, up from 601 thousand barrels per day in 2008. At \$85 per barrel, this equates to an additional \$35.3 million per day (\$13 billion per annum). Australia's offshore petroleum industry is therefore critical to our energy security both now and into the future.

International ranking

During 2009, Australia produced approximately 42.3 billion cubic metres of natural gas representing 1.4 per cent of the world's natural gas production, ranking us as the world's 18th largest natural gas producer. Approximately half this production – 18 million tonnes (Mt) – was exported as LNG. This ranked us as the world's 4th largest LNG exporter. During 2009, Australia's major LNG export customers were Japan (66%, 11.9 Mt), China (19%, 3.5 Mt), Korea (7%, 1.3 Mt) and India (0.7 Mt, 4%). During 2009, Australia produced 559,000 barrels per day of crude oil representing 0.6 per cent of the world's crude oil production.

What major trends are happening in the industry?

Floating LNG: FLNG is the treatment of gas and production of LNG on a specialist vessel located at an offshore gas field. FLNG has the potential to enable Australia to develop its substantial stranded (isolated from infrastructure) offshore natural gas fields that are currently uneconomic to develop via a conventional land based LNG development or as stand-alone domestic gas projects. Australia is likely to be the first country in the world where FLNG is used.

Improving drilling equipment and techniques: Industry continues to develop new drilling equipment and employ innovative drilling techniques that enable it to better target oil and gas accumulations and improve oil and gas recovery. Developments in seismic data acquisition, processing and reprocessing are also enabling industry to more accurately identify areas and subsurface structures that are likely to contain oil and gas accumulations.

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Growing importance of natural gas: Natural gas, as a clean, low-carbon emissions fuel, is an important transition fuel for both Australia and its LNG trading partners. Australia has just 1.7 per cent of world gas reserves, but almost 20 per cent of OECD gas reserves. This, along with other factors including its proximity to key Asia Pacific markets, its unrivalled reputation as a reliable supplier over more than 25 years, and its attractiveness as a safe haven for investment, makes Australia strategically very important in the global gas market

Current LNG demand/supply balance: Since 2009, global LNG supply has increased substantially with new projects in Qatar, Russia, Yemen, Indonesia and Peru coming on-stream along with an increase in unconventional gas supplies in the US. The global gas demand/supply balance is expected to favour gas buyers in the short-term; however, robust LNG demand in Asia indicates the outlook for Australia's LNG exports is encouraging.

Where are the major up-and-running projects located?

Three of Australia's largest petroleum projects source gas from the offshore Carnarvon Basin located off Western Australia's north-west coast:

- North West Shelf Venture's LNG project, Australia's largest operating petroleum production facility, located near Karratha. It sources gas from numerous fields and accounts for around 40 per cent of Australia's oil and gas production and approximately 65 per cent of Western Australia's total domestic gas supply. It also produces approximately 84 per cent of Australia's LNG exports. The total investment in this project is \$27 billion.
- Pluto LNG project, also located near Karratha, is currently under construction and will source gas from the Pluto field. Pluto is scheduled to begin production in early 2011 and will represent an investment of approximately \$13 billion.
- Gorgon LNG project, located west of Karratha on Barrow Island, recently began construction and will source gas from the large Gorgon, Io and Jansz fields as well as from several other small fields. The project is scheduled to begin production in 2014 and is estimated to represent an investment of approximately \$43 billion.

In Victoria's offshore Gippsland Basin there are more than 20 oil and gas platforms and 600km of underwater petroleum pipelines that feed the Gippsland Basin Joint Venture's onshore oil and gas processing facilities near Hastings and Sale. The Venture accounts for approximately 19 per cent of Australia's crude oil production and 21 per cent of Australia's domestic gas supply. Total investment in the Venture's production facilities exceeds \$1 billion and the Venture has plans to invest almost \$3 billion in future developments in the Basin.

The Darwin LNG Project sources gas from the Bayu-Undan offshore gas field in the Joint Petroleum Development Area with Timor Leste. The facility commenced operations in 2006 and currently has an export capacity of 3.6 million tonnes per annum.

Who are the major corporate players in the industry?

BHP Billiton, Woodside, Santos, Origin, ExxonMobil, Chevron, Apache, BP, Shell, ConocoPhillips, BG Group, MIMI, INPEX, ENI, China National Offshore Oil Corporation.



How many exploration licences have been granted over the past five years?

Since 2005, there have been 119 new exploration titles granted in Australian waters under the competitive work program bidding system. The majority of these (84 permits or 70.5 per cent) were granted in waters located offshore Western Australia. These new offshore exploration permits have provided significant investment in exploration with around \$6 billion of exploration activity (primary and secondary) proposed in the work programs.

All petroleum exploration and/or production operations in granted titles are subject to rigorous approvals processes in accordance with the requirements of both the *Offshore Petroleum and Greenhouse Gas Storage Act* and the *Environment Protection and Biodiversity Act 1999*. Both pieces of legislation are very clear that a comprehensive assessment of all significant impacts on matters of national and environmental significance must be completed before any well is drilled, before any seismic line is run and before any production facility is installed.

How many oil and gas wells are there under Australian Government jurisdiction?

Around 3,000 wells have been drilled in Australian offshore waters since 1965 – with around 390 of these located within the coastal waters of the States/NT. About half of the wells are classified as exploration wells. Since the mid 1990s there has been an average of around 110 wells drilled offshore per year.

Australia has an excellent safety record in the offshore petroleum industry and a strong regulatory framework. The Montara uncontrolled hydrocarbon release in 2009 was the first and only significant adverse event in the last twenty five years. Lessons from the Montara incident have already and will continue to inform continuous improvements to the regulatory safety framework (refer *FACT SHEET 2 – AUSTRALIA'S OFFSHORE PETROLEUM REGULATORY FRAMEWORK* and *FACT SHEET 3 – INCIDENT AND RESPONSE* for further information).