Investment opportunities in Australian oil and gas
Australia has a long history of oil and gas production. The ongoing development of its substantial reserves is strengthening the country’s position as a leading global player in the sector. Oil and gas exports are a major contributor to the Australian economy, earning A$23.2 billion in 2015.1

Oil remained the largest primary energy source in Australia, at 38 per cent in 2013–14. Gas is Australia’s third largest energy resource after oil and coal, accounting for 24 per cent.2 By the end of the decade, Australia should be home to ten operational LNG projects with a combined nameplate capacity of 86 million tonnes per annum (mtpa). This will put Australia on track to become the world’s largest exporter of LNG by the end of the decade.

Australia’s competitive position is underpinned by a strong economy, abundant resources, supportive government policies, mature trade links with key markets, and the participation of the world’s major oil and gas companies at all stages of the supply chain.

Australia offers investors:
- significant oil and gas reserves
- large pipeline of LNG projects
- proximity to the rapidly growing Asian energy markets
- a government committed to developing the oil and gas sector by reducing red tape and streamlining environmental approvals
- a supportive environment for exploration with access to comprehensive geoscience data
- opportunities to enter the global supply chains of multinational oil and gas companies
- access to world-leading research and development and innovative oil and gas technologies.
Australia’s oil and gas resources

Conventional gas

Australia has substantial conventional gas resources. Australia’s proved and probable gas reserves stood at 126,000 petajoules, comprising 83,000 petajoules of conventional gas. Australia produced 2,460 petajoules of gas in 2014–15, of which 50 per cent was exported as liquefied natural gas (LNG).\(^\text{3}\)

Around 92 per cent of Australia’s conventional gas resources are located in the Carnarvon, Browse and Bonaparte basins off the coast of Western Australia and the Northern Territory. There are also resources in offshore basins along Australia’s southern margin as well as in onshore basins. The potential for additional commercial discoveries is large.

Unconventional gas

Australia also has significant unconventional gas resources. The economic demonstrated resources (EDR) for coal seam gas (CSG) has continued rising to an estimated 45,553 petajoules at the end of 2014. Large CSG resources exist in the coal basins of Queensland and New South Wales.\(^\text{4}\)

Shale gas production in Australia is an emerging industry. Australia’s estimated shale gas resource is almost twice the size of its conventional gas resources.\(^\text{5}\) Several onshore basins have significant potential for shale gas and tight gas, which have attracted exploration activities in South Australia, Western Australia and the Northern Territory.

Oil resources

Australia’s oil resources are primarily condensate and naturally occurring liquefied petroleum gas (LPG) associated with large offshore gas fields. Australia also has a number of crude oil reserves. There is scope for growth in Australia’s oil reserves in existing fields, and for new oil discoveries in proven basins and in underexplored frontier basins. Australia has large unconventional oil resources hosted in oil shales. These resources, along with the recently recognised potential for shale gas liquids and light tight oil, could potentially contribute to future oil supply. Identified shale oil resources contained in immature oil shale deposits is estimated at 131,659 petajoules (22,391 MMbbl).\(^\text{6}\)

AUSTRALIA’S GAS RESOURCES AND INFRASTRUCTURE

Liquefied natural gas (LNG)

Australia remained the world’s third largest LNG exporter in 2014 and accounted for 10 per cent of world LNG trade. The strongest growth in Australia’s export earnings will be in LNG, which is projected to increase from 23.2 million tonnes in 2013–14 to about 80 million tonnes in 2019–20. By the end of this decade Australia is expected to be the world’s largest LNG exporter, generating estimated export earnings of almost $45 billion in 2019–20 compared to just over $17 billion in 2014–15.

Large gas fields in the Carnarvon, Bonaparte and Browse basins and the vast CSG reserves in Australia’s eastern onshore basins underpin a growing LNG sector, with project proponents set to mark several significant milestones.

There are seven liquefaction plants which have either recently started exporting or are currently under construction, providing a total capacity of 62.3 million tonnes. The Queensland Curtis LNG Project (QCLNG) started production from its first LNG train in late 2014, representing the first LNG exports from CSG in the world and the first LNG from Australia’s east coast. Three new projects – Australia Pacific LNG, Gladstone and Gorgon – are scheduled for or have already started first production in 2015–16, and construction of the Wheatstone, Ichthys and Prelude projects off the coast of Western Australia are well advanced.

AUSTRALIAN LIQUEFACTION CAPACITY

SHELL PRELUDE FLNG

Longer than four soccer fields and displacing six times as much water as the largest aircraft carrier, Shell’s Prelude Floating Liquefied Natural Gas (FLNG) facility will be the biggest floating production facility in the world.

When completed, the facility will be 488 metres long and 74 metres wide, and when fully loaded will weigh around 600,000 tonnes. It will be towed to its location in the Browse Basin, off the northwest coast of Western Australia, to extract and process gas from the Prelude and Concerto gas fields. Onshore support services for the facility will be spread between Broome, Darwin and Perth, and Perth will be established as a centre for operational excellence in FLNG.

The Prelude FLNG facility is expected to stay moored at location for 25 years, and to produce at least 3.6 million tonnes of LNG per year as well as liquefied petroleum gas and condensate for export.


Australia is a reliable LNG producer offering investors a stable regulatory environment and proximity to the expanding Asian LNG market. Gas is a relatively flexible and clean fuel and is projected to be the fastest growing non-renewable energy source over the next twenty years.

**AUSTRALIAN LNG PROJECTS, EXISTING AND UNDER CONSTRUCTION**

<table>
<thead>
<tr>
<th>Commence production</th>
<th>Project name</th>
<th>Company</th>
<th>Capacity (Mt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td>North West Shelf (WA)</td>
<td>Woodside, BHP Billiton, BP, Chevron, Shell, MIMI</td>
<td>16.3</td>
</tr>
<tr>
<td>2006</td>
<td>Darwin LNG (NT)</td>
<td>Conoco Philips, INPEX, Eni, Santos, TEPCO, Tokyo Gas</td>
<td>3.7</td>
</tr>
<tr>
<td>2012</td>
<td>Pluto LNG (WA)</td>
<td>Woodside, Tokyo Gas, Kansai Electric</td>
<td>4.3</td>
</tr>
<tr>
<td>2014</td>
<td>Queensland Curtis LNG (QLD)</td>
<td>BG Group, CNOOC</td>
<td>8.5</td>
</tr>
<tr>
<td>2015</td>
<td>Gladstone LNG (QLD)</td>
<td>Santos, Total, Petronas, KOGAS</td>
<td>7.8</td>
</tr>
<tr>
<td>Under construction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>Gorgon LNG (WA)</td>
<td>Chevron, Shell, ExxonMobil</td>
<td>15.6</td>
</tr>
<tr>
<td>2016</td>
<td>Wheatstone (WA)</td>
<td>Chevron, Apache, KUFPEC, Shell, Kyushu Electric Power Company, PE Wheatstone</td>
<td>8.9</td>
</tr>
<tr>
<td>2017</td>
<td>Prelude (WA)</td>
<td>Shell, INPEX, KOGAS, CPC</td>
<td>3.6</td>
</tr>
<tr>
<td>2017</td>
<td>Ichthys (NT)</td>
<td>INPEX, Total</td>
<td>8.4</td>
</tr>
</tbody>
</table>

Improving industry competitiveness

The Australian oil and gas industry is no longer seen as a high-cost jurisdiction and is becoming increasingly cost-competitive. A lower Australian dollar, reduction in raw material costs and an easing in salary levels are combining to significantly reduce project costs in the Australian oil and gas industry.

In addition, the Australian Government has been working with industry on a range of measures to ensure Australian oil and gas projects are cost-competitive and to secure the next wave of investment in Australia’s LNG sector. In 2014, Australia’s Minister for the Environment announced a new streamlined approach for offshore petroleum and greenhouse gas activity environmental approvals. The approach will lead to savings for industry worth an estimated A$120 million per year.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is now the sole assessor for offshore petroleum and greenhouse gas activities in Australian waters. This one-stop shop approvals process removes unnecessary duplication between two sets of laws, which had discouraged investment by adding layers of red tape for businesses trying to develop offshore projects.

Oil and gas exploration opportunities

Australia has significant potential for world-class oil and gas discoveries. The country offers a stable petroleum regulatory regime with security of tenure and is focused on enhancing pre-competitive data acquisition programs to stimulate exploration activity.

Major new offshore discoveries continue to be made in the North West Shelf, the Carnarvon Basin and the Browse Basin, which may soon become Australia’s newest gas-producing province. In the Otway Basin, along Australia’s southern margin, a new commercial gas discovery was made at the Speculant-1 exploration well.

Onshore exploration for shale oil and gas has increased. In the Cooper Basin, Australia’s main onshore hydrocarbon province, the existence of large volumes of basin-centred gas in the Roseneath-Epsilon-Murteree (REM) formations has been demonstrated. Drilling campaigns are also being carried out in the Georgina Basin in the Northern Territory, and in the Canning and Perth basins in Western Australia, which continue to offer wide-ranging exploration opportunities. The proposed North East Gas Interconnector is currently being progressed to link the Northern Territory’s significant gas resources to eastern states.12

Offshore petroleum exploration and development is regulated by a title system. Petroleum activities can occur only if a company holds a valid title, which provides holders with an exclusive right to apply for further approvals to conduct safe petroleum operations in the area.

The issuing of new exploration permits is facilitated through the Offshore Petroleum Exploration Acreage Release. Every year, the Australian Government releases a number of vacant offshore petroleum areas for which companies can bid for exploration permits (usually within a six- or 12-month timeframe).

The 2015 Acreage Release comprises 29 areas located across eight basins in the offshore areas of the Northern Territory, the Territory of Ashmore and Cartier Islands, Western Australia, South Australia, Victoria and Tasmania. Twenty-three areas are available for work program bidding and six areas for cash bidding. All release areas are supported by pre-competitive geological and geophysical data and analysis (see petroleum-acreage.gov.au for more information).

Australia’s unconventional gas potential

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Landbridge Group

In November 2014, China’s Landbridge Group, a privately owned company based in Shandong Province, invested A$200 million in Australia’s oil and gas sector through its acquisition of Brisbane-based WestSide Corporation. This strategic acquisition provides Landbridge Group with significant reserves and exploration interests in Queensland.

Comprehensive geoscience data

Australia’s federal, state and territory governments have developed major geoscience programs to provide explorers with open access to precompetitive information and datasets.

Geophysical information, including regional gravity, deep seismic and high-resolution airborne magnetic data, is supplemented with geological maps, GIS datasets, and various reports and charts.

The Australian Government, through Geoscience Australia (ga.gov.au), also provides access, which is typically free, to large volumes of data and reports submitted by industry under the Offshore Petroleum and Greenhouse Gas Storage Act 2006. This reporting is done as part of the industry’s work program commitments. This data assists industry to make informed investment decisions in relation to exploration programs and provides relevant geological information to companies considering participating in oil and gas exploration in Australia.

A national geoscience portal (geoscience.gov.au) provides an entry point to fundamental geoscience data and information. The site allows investors and explorers to access geoscience information at a national level and refines searches down to the regional and local level via pathways to the relevant state and territory datasets.

Supply chain opportunities

The large concentration of multinational oil and gas companies with expanding operations in Australia provides investors and international firms with significant opportunities to enter their supply chains. Many are undertaking projects that will require operational support and maintenance services.

Firms offering innovative technologies and services will be in demand in Australia given the focus on increasing productivity and efficiency at time of weak commodity prices. For oil and gas service providers, Australia also provides a regional base to pursue work in the Asia Pacific region.

There are various services available to help companies identify and secure work in the oil and gas sector. These include:

- **Project Connect**: an online service that lists project opportunities and connects Australian businesses with industry suppliers
- **Achilles Supply Base**: a vendor pre-qualification and supplier management system for the oil and gas sector
- **Industry Capability Network**: an independent networking organisation that connects local suppliers and service providers to meet the requirements of local projects.

Investors can also learn from the experience of global companies operating in Australia. Global companies with oil and gas operations in Australia include Chevron, ConocoPhillips, ExxonMobil, PetroChina and Shell. Engineering, procurement and construction management, and tier-one firms such as Bechtel, Halliburton, Mitsubishi, Schlumberger and Technip also have businesses in Australia.

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**Innovative R&D**

Australia's oil and gas industry has a reputation worldwide for overcoming challenges related to the remote location of its resources, inherent technical challenges and risks, and mounting environmental and social pressures. These difficulties have driven a unique culture of innovation that has been the hallmark of Australia's oil and gas industry.

Oil and gas R&D scientists in Australia focus on exploration, development, production, processing and transport, and sustainability.

Australian oil and gas companies are pioneering innovations in floating LNG, major developments in CSG, advanced subsea geotechnics in extreme marine environments and implementing large-scale geosequestration projects. Australian companies are also recognised as leaders in innovation around safety, remote operations and environmental controls.

Investors can collaborate and share in research outcomes with world-class institutions, including the national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Cooperative Research Centres, Centres of Excellence and universities.

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**ENERSIGHT CORPORATION**

In 2013, Canadian oil and gas software provider Enersight Corporation (enersight.com) opened an office in Brisbane, its first outside North America. The Canadian company expanded into Australia after attracting a second Australian client that converts CSG to LNG. The company says adding a second CSG-to-LNG client has made it the dominant player in Australia’s unconventional field development planning market.

‘In addition to its large coal seam gas projects, Australia has a burgeoning unconventional industry for shale gas and oil,’ says Don Merritt, Vice President for Enersight Australia. ‘Being the dominant player in the North American shale gas planning market, we are very excited by the potential for growth of Enersight in Australia.’

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How Austrade can help

The Australian Trade Commission – Austrade – contributes to Australia’s economic prosperity by helping Australian businesses, education institutions, tourism operators, governments and citizens as they:

› develop international markets
› win productive foreign direct investment
› promote international education
› strengthen Australia’s tourism industry
› seek consular and passport services.

What we provide

Working in partnership with Australian state and territory governments, Austrade provides international investors with the information needed to establish or expand a business in Australia.

Services for international investors include:

› initial coordination of investment enquiries and assistance
› information on the Australian business and regulatory environment
› market intelligence and investment opportunities
› identifying suitable investment locations and partners in Australia
› advice on Australian government programs and approval processes.

Accessing Austrade’s investment services

Austrade’s investment services are free of charge and are focused on productive foreign direct investment outcomes of strategic importance to the Australian economy, to build capability and enhance productivity. Austrade does not assist with real estate and portfolio investments, sales or representation offices, straight acquisitions, hostile takeovers or investments by individuals.

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