MINERALS and PETROLEUM in AUSTRALIA
A GUIDE FOR INVESTORS
Australia’s resources sector is underpinned by highly prospective geology, quality geoscientific databases and information, proven tenement systems, a world-class services sector, strong legal framework and stable investment environment.

The purpose of this publication is to promote exploration and investment in the minerals and petroleum sectors in Australia. Exploration is essential if the next generation of deposits is to be found and ongoing wealth created.

This publication includes information investors should know when considering exploring or investing in Australia’s minerals and petroleum industries.

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Australia provides a safe, low-risk environment to do business. We have had 25 years of continued economic growth and are on target to hit 26, when we’ll match the record among OECD countries. We provide a stable financial regime, a highly educated workforce and some of the world’s most liveable cities.

The Australian resources sector is one of the largest and most advanced in the world. Our extensive natural onshore and offshore reserves, well-established industry and world-leading mining equipment and technology services sector make us an attractive destination for global resources investment.

The Australian resources sector is globally integrated and relies on open trade and markets to support the development of new projects. To ensure that we maintain a strong global market position and remain highly attractive to international resource investment we are continuing to build on our natural advantages and promote free trade and investment.

This investor guide explains Australia’s regulatory environment for resources investment. It provides an overview of Australia’s regime to international partners that are considering investing in Australia’s resources sector.

To remain internationally competitive and continue to attract investment we will continue to improve how we find, produce, transport and use our resources. To do this, the Australian Government and the resources sector are working together to deliver world-class innovation, expertise and technology in exploration, development, production, processing and environmental management of our natural resources.

Geoscience Australia is one of the world’s finest scientific research bodies, and its expertise helps ensure we can make the best use of our vast resources.

Australia offers untapped and exciting opportunities for resources development. We have a resilient industry that continues to perform despite current market challenges. It will continue to deliver vital economic and social benefits to both Australia and its investment partners.

I look forward to continuing to work closely with the resources sector to ensure we remain a premier destination for resources investment.

Senator the Hon Matt Canavan
Minister for Resources and Northern Australia
June 2017
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1. Minerals and petroleum and the Australian economy
The resources sector (mineral and petroleum industries) in Australia makes a significant economic and social contribution to the Australian economy.

Australia’s vast natural resources, social stability, human and intellectual capital, and economic strengths have created a strong global market position that has proved to be highly attractive to international resource investment. Australia’s resource industries are based on world-class expertise and technology in exploration, development, production, processing and environmental management. These industries are entrepreneurial, innovative and highly successful. Large international companies continue to operate successfully in Australia alongside small and medium-sized Australian companies. These companies continue to be active in exploration and mining, either individually or in partnership.

These industries clearly recognise the need to operate in a way that addresses the three pillars of sustainable development (economic, social and environment). These factors, combined with Australia’s proximity to the energy-hungry markets of Asia, the country’s rich intellectual capital and a supportive government, make Australia attractive to investors and new market entrants seeking sustainable, long-term returns.

Overview of the resources sector in Australia

- The resources sector includes both the minerals and petroleum industries. For the purposes of this guide, mineral commodities include metalliferous ores, uranium, coal, heavy mineral sands and most other minerals. Petroleum relates to any hydrocarbon resources, including conventional oil and gas, and unconventional shale gas, tight gas and coal seam gas.
- In 2015–16, the mining sector accounted for 6% of Australia’s GDP. This figure would increase significantly if downstream mining-related activities in industries such as manufacturing, construction, transport and storage, property and business services, as well as electricity and gas were included.
- All six Australian states, the Northern Territory, and the Australian Capital Territory have operating mines or quarries. Australia’s major petroleum operations are in offshore basins off northern Western Australia and the Northern Territory, in Bass Strait between Victoria and Tasmania, and in onshore basins in Queensland, South Australia and New South Wales. Only one Remote Offshore Territory has an active mine, Christmas Island, where phosphate rock is extracted.
- In February 2017, the mining sector employed 241,000 people in minerals and petroleum exploration, extraction and associated services.

Capital expenditure

- In October 2016, there were 39 committed (have received a positive final investment decision) projects, each over $50 million, at a combined value of $195 billion.

Minerals and petroleum exports

- The resources sector is Australia’s largest single export sector, with combined export earnings of $163 billion in 2015–16.
- Australia’s mineral resources exports accounted for 64% of Australia’s merchandise exports income in 2015–16, and 51% of all goods and services exports (Figure 1).
- Australia is the world’s largest exporter of iron ore and metallurgical coal, accounting for an estimated 54% and 59% of world trade in 2016, respectively, and is the second largest exporter of thermal coal, accounting for 19% of world trade. Australia was the second largest exporter of LNG in the world in 2016 and is expected to overtake Qatar as the leading exporter of LNG by the end of the decade. Australia is also a major exporter of bauxite, alumina, copper, gold, uranium and zinc.

![Figure 1 Contribution to Australia’s merchandise exports by sector 2015–16, Balance of Payments Basis.](image-url)
Exploration expenditure

The ability of Australia’s resources sector to sustain its growth and expand its contribution to national economic performance in the medium and longer terms depends critically on investment in minerals and petroleum exploration. Most of the strong growth in the sector over recent years is underpinned by past minerals and petroleum exploration expenditure.

The most up-to-date information on exploration expenditure can be found in the Resources and Energy Quarterly and Resources and Energy Major Projects publications by the Office of the Chief Economist: https://industry.gov.au/Office-of-the-Chief-Economist/Publications/Pages/Resources-and-energy-quarterly.aspx

Australia’s prospectivity for individual commodities together with the long-term outlook for global demand and prices will be influential in determining future levels of exploration activity and expenditure.

Australia’s key petroleum regions

Australia’s primary areas of petroleum production are in offshore Victoria, and along the North West Shelf in the Northern Carnarvon and Bonaparte basins. The Cooper-Eromanga basins in South Australia and Queensland are the main oil and gas producing provinces onshore. The production of condensate and natural gas from the Browse Basin will commence in 2017. In addition, the coal basins in eastern Australia, especially in Queensland, have large resources of coal seam gas which has been produced in increasing volumes over the last 10 years.

Offshore Victoria

Over the past 50 years, nearly 5 billion barrels of oil and over 9 trillion cubic feet of natural gas, LPG and ethane have been produced from the Gippsland Basin where exploration and development is continuing, albeit at a low level. The latest completed project to deliver natural gas is the $5.5 billion Kipper Tuna Turrum Project, the largest domestic gas development on the eastern seaboard. The production of condensate and natural gas from the Browse Basin will commence in 2017. In addition, the coal basins in eastern Australia, especially in Queensland, have large resources of coal seam gas which has been produced in increasing volumes over the last 10 years.

Carnarvon Basin (Western Australia)

A number of oil fields are located in the offshore Carnarvon Basin, including: Vincent/Van Gogh; Pyrenees; Enfield; Cossack, Wanaea, Lambert and Hermes (CWLH); and Mutineer-Exeter. Oil production from the basin accounts for around 60% of Australia’s total oil production.

The Carnarvon Basin is also home to the North West Shelf Venture’s (NWSV) LNG project which is, by far, Australia’s largest natural gas resource development. It is located about 130 kilometres north of Karratha in north-western Australia. The facility has an LNG export capacity of 16.9 million tonnes per year and also produces gas for Western Australia’s domestic market and condensate and oil for export. The Pluto/Xena gas field which supports the 4.3 million tonnes per year Pluto LNG project is also located in the Carnarvon Basin, as are the gas fields that will support the Gorgon LNG project (capacity of 15.6 million tonnes per year) and the Wheatstone LNG project (capacity of 8.9 million tonnes a year on completion).

Browse Basin (Western Australia)

The petroleum development underway in the offshore Browse Basin includes the development of the Ichthys LNG project. The gas produced from the project will be piped almost 900 kilometres to Darwin via a subsea pipeline. The Darwin gas processing plant will have the capacity to export 8.9 million tonnes a year of LNG when complete in 2017. Also associated with the project will be condensate production, peaking at more than 100,000 barrels a day.

The development of the remote Prelude and Concerto natural gas fields is also proceeding. Located over 200 kilometres from the nearest point on the coast of the Kimberly region in the Browse Basin, production from these fields will utilise, for the first time in Australia, floating LNG (FLNG) technology, with ships directly loading products from the facility for transport to customers worldwide.

Also proposed for the Browse Basin is the Browse LNG project. The project will develop the extensive gas resources in the Torosa, Brecknock and Calliance gas fields, which are located about 250 kilometres from the West Australian coastline.

Bonaparte Basin

Bonaparte Basin is a northerly sedimentary basin in Western Australia, straddling the border between offshore Northern Territory and Western Australia. Production from the basin is largely crude oil and condensate, including production from the Montara and Kitan oilfields (the latter in the Joint Petroleum Development Area, jointly managed with Timor-Leste).
Natural gas is produced from the Blacktip gas field, which is located approximately 110 kilometres off northern Australia. The gas is sold into the Northern Territory gas market and is largely used for electricity generation in Darwin and other Northern Territory locations. In Western Australian waters, an economic market is being sought for the Tern, Petrel and Frigate gas fields, which are currently being appraised for future development.

Cooper-Eromanga basins (South Australia/Queensland)
The Cooper-Eromanga basins, located in central Australia, historically was Australia’s largest onshore gas producing region, but production from conventional gas reservoirs has been in decline for a number of years. However, there is now significant work being undertaken to understand the basin’s potential for gas in unconventional reservoirs (e.g. tight sandstone, shale formations and deep coals). Oil production has increased in recent years, driven by new discoveries on the western flank of the Cooper-Eromanga basins in South Australia.

Surat-Bowen basins (Queensland)
The Surat-Bowen basins are Australia’s major coal seam gas producing basins, accounting for more than 20% of Australia’s gas production in 2016. Coal seam gas production will increase significantly over the remainder of this decade as field developments support three LNG projects that have been under construction in Queensland. These projects, Gladstone LNG (GLNG), Queensland Curtis LNG (QCLNG) and Australia Pacific LNG (APLNG), will have a combined capacity of around 25 million tonnes per year when fully operational. These are the first LNG export projects in the world to use coal seam gas as their primary feedstock. Exports began in January 2015 from Train 1 at QCLNG with the sixth and final train (APLNG Train 2) exporting its first cargo in October 2016. This, combined with LNG production from offshore conventional gas fields, could make Australia the leading supplier of LNG in the world by 2019.

Sydney-Gunnedah-Bowen basins (New South Wales/Queensland)
The Sydney-Gunnedah-Bowen basins extend from southern coastal New South Wales to Central Queensland. These basins have favourable geological attributes for the development of a coal seam gas industry. Currently, coal seam gas is produced at Camden meeting 5% of NSW’s domestic demand (around five petajoules annually). Work is progressing on the development of a coal seam gas field at Narrabri.

Geophysical surveys, studies and basin evaluation undertaken by the NSW government through pre-competitive initiative funding have demonstrated that the Sydney-Gunnedah and Clarence-Moreton basins in NSW have all the elements of petroleum systems suitable for the generation of oil and gas.

Australia’s key mining regions
Australia has an abundant supply of natural resources and is a major producer of a range of mineral and energy commodities, including bauxite, coal, copper, diamonds, gold, iron ore, lead, lithium, manganese, nickel, silver, tantalum, titanium minerals, uranium, zinc and zircon.

There are roughly 200 mines across Australia, of which almost half are in Western Australia.

Western Australia
Western Australia produces a range of mineral commodities. It accounts for almost all of Australia’s iron ore, nickel, diamond, tantalum and lithium, and major proportions of Australia’s gold, bauxite and mineral sands (ilmenite, rutile, leucoxene and zircon). The main regions of minerals and energy commodities in Western Australia are:

- the Eastern Goldfields region, including Kalgoorlie, contains major gold and nickel mines
- the Hamersley Basin in the Pilbara region hosts major iron ore deposits containing high-grade prime ores. Manganese is also mined in the Pilbara
- in the southwest, there are world-class bauxite and mineral sand resources and coal is mined at Collie, mainly for local electricity generation. Also the Greenbushes mine contains half the world’s known reserves of tantalum and is the largest lithium resource in the world
- the Kimberley region in the far north is home to the Argyle diamond mine.

Northern Territory
The notable mineral deposits and operations in the Northern Territory are:

- major uranium deposits, including the Ranger mine in the Alligator Rivers Region
- the Tanami gold province in the west of the Territory and extending into Western Australia
- the McArthur River zinc-lead mine in the far northeast is part of the world-class zinc-lead province which extends into Queensland
- the Gove bauxite mine on the northeastern coast of Arnhem Land
- the Groote Eylandt manganese mine in the Gulf of Carpentaria and the Bootu Creek manganese mine in the central Northern Territory.

South Australia
South Australia has significant copper, gold, uranium and mineral sands deposits which are mined in the central areas of the state. Significant mineralisation in South Australia includes:

- the Olympic Dam copper-gold-uranium mine in the highly prospective Gawler Craton in the centre of the state which is the world’s largest uranium deposit, third largest gold deposit and fifth largest copper deposit in the world
the Prominent Hill copper-gold mine to the northwest of Olympic Dam and other significant iron-oxide copper-gold deposits—Carrapateena and Khamsin
the Beverley/Four Mile ISR uranium mines in the state’s northeast
Jacinth-Ambrosia mineral sands mine, in the Eucla Basin in the state’s far west, the most significant new global zircon source for decades, capable of supplying ~25% of global demand.

Queensland
Queensland is home to some world-class mineral regions including:
the world’s leading lead-zinc-silver district and the country’s largest copper producing region, extending in a north-westerly direction from Mount Isa, Ernest Henry and Cannington, to the McArthur River mine in the Northern Territory
the Weipa bauxite operations on the western side of Cape York Peninsula
major coal deposits in the Bowen, Galilee, Surat and Clarence-Moreton basins which are a focus also for the rapidly expanding coal seam gas industry
a major gold province around Charters Towers where production is continuing despite over 100 years of mining.

New South Wales
New South Wales contains a number of large and high quality resources for coal and base metals including:
major coal deposits in the Hunter Valley, Gunnedah, Illawarra and Lithgow regions
the huge Broken Hill lead-zinc-silver mine, which is still in production even after more than 120 years of mining
large gold, gold-copper and copper mines in the central west, Northparkes, Cadia, Ridgeway and Cowal
heavy mineral sands in the Murray Basin in the southwest of the state
large resources of strategic metals such as scandium in central NSW, and antimony in the southern New England Orogen
significant zirconium and rare earth elements in the central west Alkane Dubbo Zirconia Project.

Victoria
Victoria’s notable mineral deposits and mining operations include:
gold mines in the west and centre of the state, which was one of the world’s major gold producing regions during the 19th century and has the potential for further discoveries
extensive brown coal deposits in the Latrobe Valley, which are used in adjacent power stations
heavy mineral sands in the Murray Basin in the state’s northwest.

Tasmania
Tasmania has a long history of mining highlighted by a number of world-class mineral deposits. Notable deposits include:
world-class polymetallic deposit including gold and base metal production at Rosebery
world-class tin deposit at Renison Bell
more than 80% of Australia’s economic resources of tin are in Tasmania, specifically in the west and northeast of the state
significant magnetite deposits, including Savage River and Hampshire in the northwest
Tasmania hosts greater than 20% of Australia’s economic resources of tungsten, including the Dolphin deposit on King Island
a nickel deposit at Avebury on the state’s west coast
gold is produced at the Henty mine
coal is mined on the east coast for domestic consumption.

Sources
2. Exploring for minerals in Australia
Australia is one of the world’s leading exploration and mining nations and a major source of minerals and metals.

Australia’s exploration and mining success is underpinned by its highly prospective geology, quality geoscientific databases and information systems, renowned geoscience expertise, strong legal framework, proven mining and petroleum tenement system, stable and welcoming investment environment, and world-class services sector. The value of these attributes is reflected in Australia’s consistent high ranking in international investment surveys related to the industry.

Australia’s mineral resources

Australia has the world’s largest resources of diamond, gold, iron ore, lead, nickel, rutile, tantalum, uranium, zinc and zircon, and the second largest resources of bauxite, brown coal, cobalt, copper, ilmenite, manganese ore, niobium, silver, thorium and tungsten. Australia’s resources of antimony, black coal, lithium, magnesite, rare earths, tin and vanadium are ranked in the top five countries.

Over 70 types of mineral deposits of economic significance are known in very old (Archean) to very young (Quaternary) rocks and over a wide range of geological settings. From these, more than 20 mineral commodities are produced in significant amounts. Australian mineral production comes from more than 200 mines, including mines in world-class deposits of most major mineral commodities.

Australia has substantial deposits of major minerals that can be recovered profitably under current conditions. Even with high levels of production, Australia also has a robust inventory of Economic Demonstrated Resources (EDR) that will continue to sustain production for many decades. EDR of the major mineral commodities has increased through new discoveries and incremental increases in resources at known deposits over the past three decades (Table 1).

Information about Australia’s identified mineral and coal resources and recent developments is available at www.ga.gov.au/scientific-topics/minerals.

Key commodities

Iron ore

Australia’s premier iron ore province is the Hamersley Basin in Western Australia’s Pilbara region. The province hosts many deposits ranging in type from premium high-grade hematite ores to channel iron deposits. Major operations in the province include Hamersley Iron, Mount Newman, Jimblebar, Yandi and Mining Area C, which all yield premium high-grade hematite ore. Since 2002, Australia’s iron ore resources have increased substantially because of increases in resources of hematite direct shipping ores. Over the last decade, Australia’s annual mine production of iron ore increased more than three times, from 274 million tonnes in 2006 to 858 million tonnes in 2016. Australia’s iron ore production growth will continue to be supported by expansions and the continued development of high quality deposits.

Iron ore is also produced from established mines in South Australia and Tasmania. The bulk of iron ore exploration occurs in Western Australia although the Northern Territory, South Australia, Tasmania and New South Wales also have prospective regions. Exploration in recent years has also delineated large magnetite deposits in Western Australia and South Australia.

Location maps for Australia’s hematite and magnetite mines and deposits are available at https://d28rz98at9fiks.cloudfront.net/74858/74858-1.pdf and https://d28rz98at9fiks.cloudfront.net/74858/74858-2.pdf.

Coal

Australia’s coal resources are amongst the largest in the world with significant deposits occurring in all Australian states. Compared to major export competitors, Australia’s typical thermal coal is cleaner, with high energy, low ash and low sulphur, making it suitable for use in modern and efficient power plants that require higher quality coal.

The majority of black coal resources are in Queensland (Surat-Bowen basins) and New South Wales (Sydney-Gunnedah basins) with numerous large-scale mining operations producing metallurgical and thermal coal for the domestic and export markets. In Queensland, black coal deposits in the Surat-Bowen basins support a significant coal seam gas industry which supplies domestic gas and liquefied natural gas (LNG) for export.

Australia’s brown coal resources are predominantly located in the Gippsland Basin where they are an important fuel source for Victoria’s thermal power stations.

Despite the variability of coal prices in recent years, coal exploration and mine development in Australia is ongoing in New South Wales, Queensland and Victoria. Recent exploration of the Galilee Basin in Queensland has led to the discovery of large deposits of thermal coal with several new projects slated for development. At December 2016, new coal mines and expansions with positive feasibility results numbered 37 with a further eight projects committed to development at a total capital cost of approximately $7.6 billion (Resources and Energy Quarterly, December 2016).

A location map for Australia’s coal mining resources is available at https://d28rz98at9fiks.cloudfront.net/74097/74097.pdf.
Gold

Gold occurs and is mined in all Australian states and the Northern Territory. The Yilgarn Craton in Western Australia’s Eastern Goldfields is Australia’s premier gold province with major Archean greenstone-hosted deposits such as Kalgoorlie, Granny Smith and Boddington. South Australia’s Gawler Craton hosts Olympic Dam which is Australia’s largest gold deposit and a major iron oxide-copper-gold-uranium deposit. In the Northern Territory, the low-sulphide quartz vein Callie deposit in the Tanami region is of world-class size. Australia’s eastern states—Tasmania, Victoria, New South Wales and Queensland—host many substantial gold deposits in a range of styles and provinces including, for example, Bendigo in Victoria (low-sulphide quartz veins), Cadia in New South Wales (porphyry gold-copper), Henty in Tasmania and Vera-Nancy and Mount Carlton in Queensland (epithermal). The large discoveries in Western Australia of the Tropicana deposit in the Albany-Fraser Belt and the Gruyere deposit in the Yilgarn block highlight the potential for major new gold discoveries in Australia.

Nickel

Australia is one of the world’s leading nickel producers with substantial resources of both sulphide and lateritic nickel occurring in the Yilgarn Craton in Western Australia. The first major sulphide deposit discovered was at Kambalda, followed by other major deposits such as Mount Keith, Perseverance and Yakabindie as well as numerous small deposits. Major lateritic nickel mines in the Yilgarn include Murrin Murrin and Ravensthorpe. Currently, all of Australia’s major nickel production comes from the Yilgarn with the Nickel West operations (Mount Keith, Perseverance, Leinster, Cliffs, Rocky’s Reward), Murrin Murrin, Ravensthorpe, Forrestania, Savannah, Long Complex, Lanfranchi and South Kambalda dominating.

Significant potential for further discoveries exists and is highlighted by the recent nickel-cobalt-copper discovery at Nova in the new nickel province of the Albany-Fraser region in southern Western Australia. The Musgrave Province in Western Australia and South Australia also has potential for nickel sulphides, with the Nebo-Babel deposit being of significance. Lateritic nickel-cobalt deposits, including some with significant scandium, are also present in New South Wales, Queensland and Tasmania.

Copper

Copper production is centred primarily on the major deposits at Olympic Dam and Prominent Hill in the Gawler Craton of South Australia and in the Mount Isa region in north Queensland. Total production from these mines accounts for more than half of Australia’s annual copper production. Other significant production comes from Northparkes, Cadia East, Cobar and Tritton in the Lachlan Fold Belt of central New South Wales, and Nifty, Telfer, DeGrussa, Boddington and Golden Grove in Western Australia. There is also production from a number of smaller deposits. Proterozoic iron oxide-copper-gold deposits dominate Australia’s copper resources with the Olympic Dam deposit being the largest, accounting for 7% of world economic resources of copper. Exploration programs continue to progress in South Australia, including at Australia’s largest undeveloped copper deposits of Carrapateena and Hillside; New South Wales; Queensland; Western Australia; and the Northern Territory.

Zinc-Lead

Australian zinc production and resources are dominated by the world-class sediment-hosted stratiform deposits of the McArthur–Mount Isa belt extending from the Northern Territory to northwest Queensland, notably the McArthur River, Century, Mount Isa, George Fisher and Cannington deposits, and Broken Hill in western New South Wales. Other important zinc deposits include Rosebery in Tasmania, Endeavor (Elura) in central western New South Wales and those of the Lennard Shelf in Western Australia.

In 2015, Australia was the second largest producer of zinc and lead in the world. The state of Queensland dominates production but mining also occurs in Western Australia, Tasmania and New South Wales. Recent exploration successes have been recorded in New South Wales, Queensland and the Northern Territory at both greenfield projects and as extensions to historical or established mines.

Bauxite

Australia hosts major world-class bauxite deposits and produces bauxite, alumina and aluminium for both the domestic and international markets. The principal deposits of world-wide significance are at Weipa in Queensland, Gove in the Northern Territory and the Darling Range in Western Australia. New developments in Queensland include the delineation of the Bauxite Hills project with a resource suitable for direct shipping of 145 million tonnes and the construction of the major Amrun bauxite project that brings the Weipa resource to over 3 billion tonnes. In addition, a number of smaller projects in Queensland and Tasmania have started producing bauxite for the direct shipping ore market. In light of growing global bauxite demand, declining quality of domestic bauxite and dwindling reserves in China, Australian bauxite production is projected to grow at an average annual rate of 6% for the next three financial years to 98 million tonnes in 2019–20, and will remain at that level until 2021–22.

Mineral sands

Australia is one of the world’s leading suppliers of the mineral sands commodities ilmenite, rutile and zircon. All Australian states and the Northern Territory host mineral sand provinces, with particular concentrations in Victoria, Western Australia, Queensland and New South Wales. Most current production is from ancient shoreline deposits in the Murray Basin in New South Wales, Victoria and South Australia, as well as in the Eucla and Perth basins in South Australia and Western Australia. With continuing investment in exploration, additional mineral sand resources are being delineated or discovered, for example in the Eucla and Canning basins and on Cape York in Queensland, ensuring Australia will remain a major supplier of mineral sand-sourced industrial commodities into the future.
Specialty Minerals

Australia is the world’s leading supplier of rare earths outside of China. The Mount Weld mine in Western Australia supplies rare earth concentrates to the Lynas Advanced Materials Plant (LAMP) in Malaysia, where the concentrates are treated to produce separated rare earth oxides. Australia is home to a number of rare earth deposits at various stages of exploration and development such as the Dubbo Project (Toongi) in New South Wales, Nolans Bore in the Northern Territory and Browns Range in Western Australia. While these deposits are predominantly focused on rare earths and yttrium, Australia also hosts deposits of scandium such as those near Fifield, New South Wales.

The Yilgarn Craton of Western Australia is home to the Greenbushes lithium mine which is the world’s largest hard-rock source of spodumene. The Yilgarn and Pilbara regions of Western Australia also host lithium deposits at Mount Marion, Mount Cattlin and Pilgangoora that are under development, and exploration in these regions has been increasing in recent years.

In 2008, one of the world’s largest and highest grade deposits of molybdenum and rhenium was discovered at Merlin (Mount Dore) in northwest Queensland. The Merlin deposit contains more than 80,000 tonnes of molybdenum and over 140 tonnes of rhenium and the surrounding areas are highly prospective for further discoveries of similar deposits.

South Australia’s Eyre Peninsula is home to a number of graphite deposits that have been the subject of noteworthy mining and development activity in recent years. Graphite is not restricted to South Australia but occurs in many areas of Australia with exploration also occurring at projects such a Yalbra in Western Australia and Mount Dromedary in Queensland.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Unit</th>
<th>Economic demonstrated resource</th>
<th>Sub-economic demonstrated resource</th>
<th>Inferred resources</th>
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<tr>
<td>Bauxite</td>
<td>Mt</td>
<td>6021</td>
<td>1573</td>
<td>1954</td>
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<tr>
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<td>Mt</td>
<td>68 310</td>
<td>4876</td>
<td>78 715</td>
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<td>Brown Coal (recoverable)</td>
<td>Mt</td>
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<td>256 561</td>
<td>103 579</td>
</tr>
<tr>
<td>Copper</td>
<td>Mt Cu</td>
<td>88.75</td>
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<tr>
<td>Diamond</td>
<td>Mc</td>
<td>209.44</td>
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<td>42.53</td>
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<tr>
<td>Gold</td>
<td>t Au</td>
<td>9546</td>
<td>302</td>
<td>4832</td>
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<tr>
<td>Iron Ore</td>
<td>Mt</td>
<td>51 545</td>
<td>9477</td>
<td>86 429</td>
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<tr>
<td>Lead</td>
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<td>35.29</td>
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<td>Ilmenite</td>
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<td>267.8</td>
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<tr>
<td>Rutile</td>
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<tr>
<td>Zircon</td>
<td>Mt</td>
<td>81.4</td>
<td>1.2</td>
<td>74.9</td>
</tr>
<tr>
<td>Nickel</td>
<td>Mt Ni</td>
<td>18.8</td>
<td>3.7</td>
<td>19.4</td>
</tr>
<tr>
<td>Phosphate Rock</td>
<td>Mt</td>
<td>1072</td>
<td>312</td>
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<tr>
<td>Silver</td>
<td>kt Ag</td>
<td>88.68</td>
<td>2.28</td>
<td>41.14</td>
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<tr>
<td>Tantalum</td>
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<td>6.9</td>
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<tr>
<td>Tin</td>
<td>kt Sn</td>
<td>434</td>
<td>86</td>
<td>316</td>
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<tr>
<td>Uranium</td>
<td>kt U</td>
<td>1287</td>
<td>32</td>
<td>920</td>
</tr>
<tr>
<td>Zinc</td>
<td>Mt Zn</td>
<td>62.58</td>
<td>1.37</td>
<td>25.66</td>
</tr>
</tbody>
</table>

Abbreviations: kt = kilotonnes = 10^3 tonnes. Mt = million tonnes = 10^6 tonnes. Mc = million carats

Australia is an under-explored continent

Discoveries continue to be made in both brownfield (proven) and greenfield (under-explored or unexplored) provinces. Established mining districts, even in regions where there has been production for over 100 years, continue to provide significant discoveries and the past decade has seen substantial additions to resources at many deposits across the country. Greenfield exploration has resulted in the discovery of a range of world-class deposits, opening up new areas for mining and development.

Australia’s high mineral potential is demonstrated by:

- favourable geological settings including new greenfield regions
- extensions of known mineralised provinces beneath thin cover
- ongoing discoveries of deposits.
Australian mineral exploration has been particularly successful in discovering new deposits and delineating additional resources at known deposits. Factors contributing to this exploration success include:

- a rich mineral resource endowment
- the existence of a comprehensive and high-quality geoscientific knowledge base
- application of advanced geological concepts and technology
- well-developed scientific services support
- a relatively flat topography with low and sparse vegetation cover facilitating exploration and physical access
- a very strong mining-related goods and services sector.

Despite an imposing and long history of discovery, the Australian continent remains effectively under-explored. Prospective basement rocks are obscured by sedimentary cover sequences over three-quarters of the Australian continent. Modern survey methods and the application of mineral systems thinking is seeing new discoveries in previously unexplored areas. The National Mineral Exploration Strategy, adopted in 2012, is designed to stimulate new mineral discoveries in covered regions. One of its key outcomes is the UNCOVER initiative (www.uncoverminerals.org.au) that brings together the Australian geoscience community in industry, universities and government to grow the knowledge base and technology that will lessen the technical risks of mineral exploration beneath post-mineralisation cover in Australia.

Exploring for minerals

Modern exploration uses a mineral systems predictive framework synthesising multi-disciplinary datasets drawing on advanced knowledge in geophysics, geochemistry and geology, and new exploration tools. New and adapted exploration technologies and techniques have been developed for exploring beneath the cover materials which blanket extensive areas of the Australian continent. Chief amongst these has been the application of state-of-the-art geophysical surveys to define the distribution of rock types and structure at and beneath the surface, and to identify anomalies potentially related to the presence of mineralisation. Multi-element geochemical exploration techniques have been developed to detect subtle anomalies associated with mineralisation in the regolith-dominated terrains common in Australia. Advances in understanding ore-forming processes are providing new insights into Australia’s mineral prospectivity. Similarly, advances in data processing, GIS systems and visualisation technologies enable on-line access, integration and rapid analysis of a wide range of high-quality geoscientific data available from government, industry and other sources to assist in improved selection of prospective areas and delineation of exploration targets.

Pre-competitive geoscience information

The Australian, state and Northern Territory governments recognise the importance of high-quality geoscientific information in assessing mineral and petroleum prospectivity and the stimulation of exploration. They undertake major geoscience programs to support mineral and petroleum exploration in Australia. These programs provide the explorer with pre-competitive geoscience information and datasets as a basis for exploration in both proven and greenfields mineral provinces. Australian governments have recognised the importance attached by industry to accessing modern high-resolution geophysical data, including regional gravity, deep seismic and high-resolution airborne magnetic data.

The geophysical data are supported by geological maps, databases of geochemical and mineral occurrence/deposit information, GIS datasets, reports and interpretative products. All this material is made available to potential explorers either via the Internet or as other products in digital formats. The Australian, state and Northern Territory governments are undertaking geoscientific programs to acquire a range of geological and geophysical data to support exploration.

To facilitate the ready access to these data, information collaboration between Geoscience Australia and its state and Northern Territory counterparts led to the establishment of a national geoscience internet portal: AUSGIN, the Australian Geoscience Information Network. AUSGIN, www.geoscience.gov.au, provides one point of entry to fundamental geoscience data and information. The site enables investors and explorers to access geoscience information at a national level and further refine searches down to regional and local scales via links to the relevant state and territory datasets.

Exploration assistance programs

The Australian, state and Northern Territory governments all have exploration incentive programs to promote and support resource exploration and development:

- Geoscience Australia—Exploring for the Future
- NSW—New Frontiers
- Northern Territory—Creating Opportunities for Resource Exploration (CORE)
- Queensland—Queensland geoscience program
- South Australia—Plan for Accelerating Exploration (PACE)
- Tasmania—Northern Tasmanian Geoscience Initiative and Mining Sector Innovation Initiative
- Victoria—TARGET Minerals Exploration Initiative
- Western Australia—Exploration Incentive Scheme.

More information on these programs can be obtained from the relevant state or territory. Please refer to Appendix A for a list of state and territory contacts.

Source:
3. Exploring for petroleum in Australia
Australia is globally recognised as a prime destination for hydrocarbon exploration and production. In recent years, significant petroleum discoveries have been made in Australia and many new development projects are proceeding rapidly to the production phase.

**Australia’s petroleum resources**

Australia’s petroleum production comes from twelve sedimentary basins: the Browse, Carnarvon, Bonaparte and Perth basins in Western Australia; the Gippsland, Otway and Bass basins off south-eastern Australia; the Cooper-Eromanga and Amadeus basins in central Australia; and the Surat-Bowen basins in southern Queensland as shown in figure 2 below.

Australia is also a gas-rich nation with known conventional natural gas resources located largely in the Carnarvon, Browse and Bonaparte basins off the northwest coast of Australia, the Gippsland, Otway and Bass basins off south-eastern Australia, and the Cooper Basin in central Australia. Australia also has significant gas resources in unconventional reservoirs. Large shallow coal seam gas resources exist in the coal basins of Queensland and New South Wales, and the Cooper Basin has potential for deep coal seam gas in South Australia and Queensland. Tight gas accumulations are located in onshore Western Australia, Victoria and South Australia, while potential shale gas plays have been explored for in the Northern Territory, South Australia and Western Australia. Current demonstrated resources for oil and gas are outlined in Table 2.
Table 2 Australian petroleum demonstrated resources as at 31 December 2014. Source: AERA Interim Report.

<table>
<thead>
<tr>
<th>Resource Type</th>
<th>Unit</th>
<th>Demonstrated Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude oil</td>
<td>MMbbl</td>
<td>1202</td>
</tr>
<tr>
<td>Condensate</td>
<td>MMbbl</td>
<td>2800</td>
</tr>
<tr>
<td>Liquified Petroleum (LPG)</td>
<td>MMbbl</td>
<td>1415</td>
</tr>
<tr>
<td>Conventional gas</td>
<td>Tcf</td>
<td>169</td>
</tr>
<tr>
<td>Coal seam gas (CSG)</td>
<td>Tcf</td>
<td>75</td>
</tr>
</tbody>
</table>


Australia continues to add to its large reserves of natural gas, particularly in the North West Shelf area and in the Browse Basin off Western Australia. As a large user of natural gas, innovations such as the gas to liquids process enable Australia to further commercialise its large gas resources. Current gas production is supported by Australia’s world-class LNG export facilities which utilise the large quantities of natural gas found off Australia’s northwest coast and on-shore in Queensland.

Australia has seven operating LNG projects. Four are offshore gas projects (North West Shelf, Darwin, Pluto and Gorgon) and three are based on onshore coal seam gas (Queensland Curtis LNG, Gladstone LNG and the Australia-Pacific LNG projects). There are also three offshore LNG projects under construction. These are the Wheatstone (8.9 Mtpa), Ichthys (8.4 Mtpa) and Prelude floating LNG (3.6 Mtpa) projects.

### Australia’s high potential for new discoveries

Australia has the potential for further discoveries of oil and gas. Although there are limits to the demonstrated petroleum resources outlined in Table 2, many basins remain largely or entirely unexplored, with more than 40 onshore and offshore basins awaiting in-depth exploration to determine their full potential. The total undiscovered conventional oil resources have been estimated as 126 632 PJ (21 536 mmbbl), mainly in the offshore sedimentary basins. A total of 125 400 PJ (114 tcf) of yet-to-find recoverable gas has been estimated in the Carnarvon, Bonaparte, Browse and Gippsland basins, with the potential for significantly higher reserves to exist in unconventional shale and tight gas.

Australia’s under-explored basins hold the greatest promise of making a major new discovery. To encourage exploration in these areas and help reduce the risk of exploration, state and territory petroleum authorities, often in collaboration with Geoscience Australia, lead programs designed to provide pre-competitive data and geological information aimed at improving the understanding of petroleum prospectivity and resource potential of frontier basins. Explorers are currently evaluating a diversity of play trends and drilling prospects in both producing and frontier basins, on and offshore Australia.

### Why explore in Australia?

Australia’s vast sedimentary basins offer significant opportunities for exploration success. There are many reasons for petroleum exploration and development companies to invest in these onshore and offshore opportunities. These include:

- the regular release of new offshore exploration acreage covering a range of basins from mature to frontier
- the release of onshore acreage by state and territory authorities via competitive work programs tenders and the ability to lodge over the counter applications for frontier acreage in some jurisdictions
- ready access to high-quality geoscientific data and analysis at low or no cost
- continued government support of pre-competitive geoscientific exploration, data acquisition and analysis
- a free-market philosophy which welcomes foreign investment (Australia has no mandatory local equity requirements and no government-owned petroleum companies)
- close proximity to major markets in the Asia–Pacific region
- an attractive policy and legal framework for oil and gas development, conducive to companies of all sizes
- security of title with the right to retain and/or develop a discovery, subject to meeting the specified terms of a retention lease or a production licence
- transparent, predictable and practical regulatory requirements covering all stages of petroleum operations
- expanding physical infrastructure, sophisticated technical and services support, a highly educated workforce and pool of skilled petroleum professionals
- an internationally competitive profit-related tax system
- government assistance with project facilitation, including assistance to complete approvals processes for declared major projects
- an open and competitive economy, including deregulated banking and foreign exchange arrangements, a sophisticated capital market and a good record of industrial harmony.

The Australian Government encourages investment in petroleum exploration through the annual release of offshore petroleum exploration acreage. The Offshore Petroleum Exploration Acreage Release is underpinned by Australia’s stable economic environment and well-established regulatory framework for offshore petroleum activities. The annual Acreage Release package contains a range of information on petroleum geology and exploration, legislative framework and assistance in preparation of bids for areas. Further information is available at [www.petroleum-acreage.gov.au](http://www.petroleum-acreage.gov.au). (refer also to chapter 7)

Information about onshore acreage releases and lodging ‘over the counter’ applications can be obtained from the relevant state or territory authority (refer to the list of contacts at Chapter 4).
Geoscientific information in support of exploration

Australia provides comprehensive petroleum exploration and production data to potential and current explorers to de-risk exploration opportunities. The Australian, state and Northern Territory governments recognise the importance of high-quality geoscientific information in assessing petroleum prospectivity.

Geoscience Australia maintains Australia’s national geological and geotechnical data repository. It continually adds to this physical and digital data collection by:

- acquiring precompetitive data through regional seismic and marine reconnaissance surveys
- capturing, storing, managing and delivering offshore petroleum data and samples
- undertaking regional basin studies to develop foundational understanding of energy systems
- developing hydrocarbon resource assessments and providing geoscientific data and reports to develop and support new scientific concepts.

Legislation has been in place since the 1950s requiring exploration data to be submitted for public release after a relatively brief confidentiality period. Australia also encourages speculative surveys and data acquisition by the service sector, enabled by the offshore and most onshore regulatory frameworks.

The bulk of data from operations on Australia’s continental shelf, comprising seismic and well survey information and cores, cuttings and reports, is stored by Geoscience Australia at its Geology and Geophysics Data Repository. Repositories in the states and the Northern Territory manage similar material from their respective onshore and coastal waters petroleum titles.

Geoscience Australia provides online access to data through the National Offshore Petroleum Information Management System at http://www.ga.gov.au/nopims which provides online ordering for loan requests and interrogation of data holdings. Queries for data can also be directed to ausgeodata@ga.gov.au.
4. Role of government
There are three tiers in Australia’s federal system of government; the Australian Government, the eight state and territory governments and local government.

Under Australian law, mineral and petroleum resources are owned either by the Australian or state/territory governments rather than private individuals. However, none of the three tiers of government themselves engages in commercial exploration and development. The private sector initiates exploration and undertakes subsequent mining activities. However Australian and state/territory governments invest significantly in the collection and release of pre-competitive geoscientific data that encourages and facilitates mineral and petroleum exploration.

Separate roles and responsibilities
In the Australian federal system, the Australian and state/territory governments have separate roles and responsibilities with regard to resource exploration and development.

- **The Australian Government** sets national policy including fiscal, monetary and taxation policy, foreign investment law, immigration, competition policy, trade and customs, company law, international agreements, native title, national environmental law and regulates operations in offshore waters.

- **The states and territories** manage and allocate mineral and petroleum property rights onshore and in coastal waters, have primary responsibility for land administration, regulating operations (including environmental and occupational health and safety) and collecting royalties on the minerals produced.

- **Local governments** operate at city, town or shire/district level and have responsibility for handling community needs like waste collection, public recreation facilities and town planning.


Common roles and responsibilities
The Australian and state/territory governments have four common roles in relation to the minerals and petroleum sectors. Together they:

- establish the macro-economic environment
- look for ways to remove or reduce impediments to industry competitiveness
- reduce commercial risk in exploration by generating and disseminating geoscientific information free or at reasonable cost
- provide a regulatory framework for exploration, development, project approval, safety and environmental assessment.

Australian Government involvement
The Australian Government’s jurisdictional involvement is mainly limited to resources in the offshore area, which starts three nautical miles from the territorial sea baseline and extends seaward to the outer limits of the continental shelf (‘offshore’).

Offshore resources are owned by the Australian Government, with title decisions made jointly between the Commonwealth Minister for Resources and Northern Australia and the relevant state or Northern Territory Resources Minister. The day-to-day administration of petroleum titles is carried out by the National Offshore Petroleum Titles Administrator (NOPTA). The regulation of occupational health and safety, structural integrity and environmental management for facilities, wells, well-related equipment and petroleum activities in Commonwealth waters, and state and territory waters where regulatory powers and functions have been conferred, is overseen by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

There are cases where the Australian Government wishes, and is able, to exercise control over the environmental impact of mining through its constitutional power over exports, trading corporations and external affairs (for example matters of national environmental significance).

The Australian Government is committed to reducing the regulatory burden imposed on the resources industry and reducing duplication in environmental regulation by streamlining environmental assessment processes. Onshore, assessment bilateral agreements are in place with all jurisdictions and the government is working to make joint assessments as seamless as possible. Offshore the Australian Government has streamlined regulatory arrangements by establishing NOPSEMA as the sole environmental assessor for offshore oil and gas projects and activities in Commonwealth waters.

Australian Government Major Project Facilitation Services
The Major Projects Facilitation Agency provides a ‘single-entry-point’ for information and advice on regulations and approvals at all levels of government; maps critical approvals pathways and process for major investment projects, in consultation with regulators and government agencies; monitors approvals milestones for projects, and provides ad hoc information on regulatory issues. The Agency also administers the government’s Major Projects Facilitation programme and provides an online help tool for project proponents to use when developing an overview of their Commonwealth approvals requirements.

State/territory involvement

The jurisdictional involvement of the states and territories encompasses resources found on their lands or in waters landward of three nautical miles from the Australian Territorial Sea Baseline (‘designated coastal waters’). Here, the resources are owned and administered by the respective state or territory, which also carries out day-to-day administration.

All the states and territories contain areas where access for exploration is restricted because of environmental sensitivity, the needs of urban development, agriculture, Department of Defence requirements (e.g. the Woomera Prohibited Area in South Australia), or Aboriginal ownership of land. Inquiries about access to land for exploration (including out to three nautical miles from shore) or companies seeking exploration licences, require an approach to the relevant state or territory government (Appendix A).
5. Foreign investment guidelines and business entry into Australia
The Australian Government welcomes foreign direct investment (FDI). It has helped build Australia’s economy and contributes to economic growth, innovation, and prosperity.

Australia reviews foreign investment proposals against the national interest on a case-by-case basis. Australia’s foreign investment review framework includes the Foreign Acquisitions and Takeovers Act 1975 (Act) and the Foreign Acquisitions and Takeovers Fees Impositions Act 2015 (Fees Imposition Act) and their associated regulations. The review framework is well-established, practical and non-discriminatory. Australia rarely rejects foreign investment proposals.

Foreign persons may require approval to acquire an interest in a tenement or the underlying land used to carry on a mining operation. Whether foreign investment approval is required can depend on a range of factors including:

- the type of tenement
- who the interest in the tenement is being acquired from
- whether the foreign person is a foreign government investor
- the type of underlying land
- the value of the interest being acquired.

For further information on how to apply, and Australia’s foreign investment rules, investors should see the FIRB website or call the enquiry line.

**Foreign Investment General Enquiries:**

Phone: 02 6263 3795  
From Overseas: +61 2 6263 3795  
Email: firbenquiries@treasury.gov.au  
Website: [www.firb.gov.au](http://www.firb.gov.au)

**Exploration**

**Cash Bidding for offshore Acreage Release Program**

Foreign government investors intending to participate in this program must receive foreign investment approval prior to acquiring an interest in an exploration permit issued under the Program. Privately-owned foreign investors do not need to seek approval under this program.

**Investment assistance**

The Australian Trade and Investment Commission (Austrade) is responsible for the promotion, attraction and facilitation of productive FDI into Australia.

Austrade helps international companies establish and build their business in Australia by providing the following investment services free of charge:

- Information on the Australian business and regulatory environment:
  - guidance at the early stages of the investment decision-making process
  - information on issues such as economic factors, business costs, the taxation regime, ease of doing business, investment regulations, skills availability and immigration
  - advice on Australian business practices and cultural customs
  - assistance and introductions for establishing operations in Australia.

- Market intelligence and investment opportunities:
  - Tailored research on industry capabilities and opportunities
  - Advice on market developments, trends and forecasts
  - Information on peers and competitors in the Australian market
  - Support for Australian subsidiary business proposals to global headquarters.

- Identification of suitable investment locations and partners in Australia. Austrade works as appropriate with Australian state and territory governments to identify partners and locations for international investors through:
  - comparative information on different Australian locations
  - identification of specific locations and sites, based on your requirements
  - organisation of visit programs and meeting schedules in Australia
  - introductions to specialists and possible partners including: local market, industry experts and professional service providers (e.g. legal, taxation); relevant Australian, state and local governments, regulatory agencies and authorities; and research and development partnership opportunities and potential business partners.

- Advice on Australian government programs and approval processes. Austrade can connect international investors to government programs to maximise their investment through:
  - advice on government development programs that may be applicable to your business, including support for skills development, research and innovation activities
  - advice on government approvals required for your business and help to streamline the relevant processes
  - advice on exporting to third markets through Austrade’s trade services to Australian subsidiaries.

6. Onshore approval processes
The legislation governing exploration and mining/petroleum production in each jurisdiction can be accessed online. In addition, each jurisdiction publishes information leaflets and brochures that summarise key aspects of its mining and petroleum law, policies and administration. Information regarding the reporting requirements attached to exploration licences is also available online.

In most jurisdictions information and data from past exploration is accessible online, as is current tenement information. A quick reference to tenement distribution and status is available through the Geoscience portal at www.geoscience.gov.au and more detailed information may be obtained from the relevant state/Northern Territory agency’s Internet site. Online submission of applications for new titles is also available.

The following is an overview of the requirements for exploration and mining/petroleum production in Australian states/Northern Territory. It is extremely important that interested persons consult the relevant state/Northern Territory laws, regulations and guidelines to ensure they understand the current requirements of the jurisdiction(s) in which they are interested. A contact list for relevant state and territory agencies is provided at Appendix A.

The Australian Government encourages the streamlining of approvals process and is working closely with state governments to ensure this.

**The mining approval process**

Onshore mineral and petroleum exploration and development in Australia’s states and the Northern Territory are administered by the relevant agency of each jurisdiction. While all states and the Northern Territory have their own laws governing mineral activities, they are very similar in content and administration.

In Australian mining and petroleum legislation, there are three basic stages in the development of a mine or a petroleum field:

1. initial exploration
2. further detailed exploration and assessment (possibly under a retention licence)
3. mining or production of petroleum.

In addition, there are requirements relating to the closure and rehabilitation of a mine and petroleum field after completion of production.

**Initial exploration**

The exploration licence/permit generally provides the holder with a conditional sole right of access to land to carry out exploration activities and sampling for a specified range of minerals. This tenure also provides conditional access to land for supporting activities such as cultural, heritage and environmental surveys. The holder of exploration tenure also has the priority of right to apply for mining and petroleum production leases and retention tenure over the permit area.

In most states and the Northern Territory, an application for an exploration licence or permit must include a work program setting out details of proposed exploration methods and expected expenditure. This work program has to satisfy the relevant minister who grants the licence and who may also impose title specific conditions. For example, in South Australia, applicants for an exploration licence must also provide a statement and evidence of financial and technical capability of carrying out the proposed exploration.

These applications may also be required to meet conditions under other environmental, cultural and/or heritage legislation. In addition, public notification of the application may be required, often by publication in the government gazette or in a local newspaper to ensure transparency.

As an example, in all jurisdictions, the terms of the Native Title Act 1993 must be satisfied to enable the grant of exploration licences and any subsequent non-conjunctive licences where native title persists.

In Victoria, Western Australia, the Northern Territory, New South Wales and Tasmania there is provision for public comment or lodgement of objections on the granting of an exploration licence and the terms under which these comments are considered are specific to each jurisdiction. Queensland currently has no provision for comment on the grant of the exploration licence application.

Queensland requires notification of the owner of the land before entry and such entry onto land is subject to various access conditions including compliance with the Land Access Code 2016. South Australia and Tasmania require notification to the land owner by the explorer prior to entry to the land.

Alternatively, a licensee may negotiate an agreement with the land owner setting out conditions of entry and landowners may seek compensation for demonstrable deprivation or loss. In Victoria, access to private land for exploration and mining activity is subject to written consent and/or compensation to the landholder prior to activities commencing.

All jurisdictions levy application fees and there are additional fees specific to each jurisdiction. They each also have provision for compensation to the landowner/occupier and the details are available in the relevant legislation for the jurisdiction. Exploration tenures are generally granted for periods of one to six years with renewals being subject to reductions in area, but ministers can vary conditions where special circumstances exist. Tenure holders are required to report, in a digital format, at least annually on their exploration activities. When tenure is relinquished those reports will generally be made available for other explorers to access. Conditions under which reports are released are available from each jurisdiction.

Please refer to Appendix A for a list of state and territory contacts. Information on exploration licensing can be found on individual state and territory websites.
Retention licence

Rights provided under retention tenure are generally very similar to an exploration licence except that conditions for investment in exploration, appraisal and development are a matter of negotiation for the term (years) of retention licences. Even if there are no requirements to actively explore, retention licence holders can generally undertake exploration and pilot development if they choose and have approval to do so. In most instances, retention licence holders are required to demonstrate on a periodic basis their continued efforts to prove that the explored-for resource is potentially viable. Six jurisdictions have some form of retention licence. These licences allow the licence holders to postpone development if necessary until it becomes commercially viable.

An application for a retention licence must include a work program and sufficient evidence of potential commerciality. Tenure is generally granted for five years with provision for renewal and includes a priority of right to apply for a mining or production or gas storage tenure.

As may occur under an exploration licence, compensation may also be payable to involved parties under a range of conditions under a retention licence.

Mining, production and gas storage leases

A mining, production or gas storage lease generally grants the holder the right to produce minerals and/or energy resources (usually a specified list) and to then sell or otherwise use or dispose of the substances or energy produced. Where surface rights are granted this also gives the holder the right to disturb the surface in order to mine the minerals. Some mining leases are granted without surface rights. These generally enable the holder to extract minerals, petroleum, and geothermal energy from underground workings, and to store gas in the subsurface (to balance natural gas markets or sequester greenhouse gases) so long as social, natural and economic environments are not, as a consequence, harmed in significant ways.

The general conditions pertaining to a mining lease are outlined in Table 3. Mining and energy projects may also require an environmental impact assessment under Commonwealth and/or state legislation. This is a consultative assessment process that also includes public notification and enables public comment and input to ensure transparency.

Exploration and development proposals are subject to environmental and cultural heritage assessment and approvals. Details of exploration and development proposals must be provided to the relevant government authority before exploration and development activities can commence. Requirements may include:

- lodging a bond or security for compliance with environmental and rehabilitation conditions
- an approved development and rehabilitation program
- in some cases, further environmental and rehabilitation conditions can be added after grant of the mining, production, or gas storage lease.

Generally, mining, production or gas storage leases are granted for terms of up to 21 years with provision for renewal beyond that time. In South Australia petroleum, geothermal energy and gas storage licences have unlimited terms subject to a requirement to consider whether a production/storage licence should continue after 24 months of no production or storage within the licence. The licence holder is required to pay annual rent (except in New South Wales) and lodge production reports and periodic environmental reports. A royalty is payable on all minerals (and petroleum) recovered and sold or intended for sale, or utilised for commercial or industrial purposes.

### Table 3 Application for a Mining Lease.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Public Notification</th>
<th>Public hearing of Objections</th>
<th>Consent by owner/occupier of private land required prior to mining</th>
<th>Annual Rent</th>
<th>Required to lodge production reports</th>
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</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>Northern Territory</td>
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<tr>
<td>Queensland</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>South Australia</td>
<td>✓</td>
<td>For objections to Notice of Entry (only for exempt land e.g. when within 400 metres of residences etc.)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Tasmania</td>
<td>✓¹</td>
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<tr>
<td>Victoria</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Western Australia</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

¹ In Tasmania there is generally no public advertisement of mining lease applications, although planning and environmental approvals require public advertisement and provide an opportunity for anyone to comment and/or appeal in regard to proposed mining plans.
Onshore Petroleum
State and territory petroleum, geothermal energy and gas storage approval processes operate in coastal waters and on land within the relevant state or territory borders.

All states have a competitive application assessment process, where the applicants are required to submit a detailed work program and fulfill designated assessment criteria. Similar to the offshore petroleum approval processes, some jurisdictions operate an annual acreage release program detailing prospective areas for petroleum exploration.

Legislation applicable to petroleum operations in state coastal waters are distinct from the legislation applicable to petroleum operations conducted on land. Please refer to Appendix A for state and territory website links where more information on each state’s onshore petroleum licence are detailed.

Environmental approvals
Environmental approval is a critical aspect of the broader mining and petroleum approvals process and occurs concurrently with each of the above stages. The states and Northern Territory are the main authorities for environmental management of mines, petroleum, geothermal energy and gas storage projects within their respective jurisdictions.

Environmental management of mining, petroleum, geothermal energy and gas storage projects in Australia is based on the integration of all phases of resource exploration, development planning and development: from assessment, through construction, operation and closure to rehabilitation.

Approvals processes involve identifying environmental impacts and determining ways to manage those impacts. Processes vary among the states and territories, but there are some common features. The main steps are:

▶ proposal, notice of intention, environmental management plan or initial advice statement
▶ government assessment, including consultation with potentially affected people, enterprises and organisations
▶ government approvals that entail line-of-sight and at times, management of stakeholder/landowner consultation.

For detailed environmental approvals processes in each jurisdiction, refer to the states/Northern Territory website links in Appendix A.

In addition to state and Northern Territory requirements, the Commonwealth Government is involved through the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act). The EPBC Act provides a legal framework to protect and manage matters of national environmental significance, including World Heritage properties and listed threatened species and communities.

The EPBC Act applies to any activity that is likely to have a significant impact on identified matters of national environmental significance. When an activity is referred to the Department of the Environment and Energy, details of the activity are assessed and the Commonwealth Environment Minister then makes a decision on whether or not it is a controlled action requiring further assessment and approval under the EPBC Act. When making a decision, the minister cannot consider matters that fall outside the EPBC Act.

State and local government approvals cover additional matters under their relevant legislation from those protected by the EPBC Act, creating the possibility that an activity may need approval from all three levels of government. The Commonwealth Environment Minister cannot intervene in matters that fall outside of the EPBC Act. The Department of the Environment and Energy works with its state and territory counterparts to ensure information is shared and to align assessment processes where possible.

As part of the One-Stop Shop reforms to streamline regulatory processes, assessment bilateral agreements allow some environmental assessments to be undertaken by the relevant state and territory on behalf of the Australian Government. Following the assessment, the activity will require approval from the Commonwealth Environment Minister under the EPBC Act, as well as the relevant state or territory. Any relevant state or territory conditions of approval will be taken into account by the Commonwealth Environment Minister when making an approval decision, and the Australian Government policy is to recognise and not duplicate conditions attached by another jurisdiction, to the greatest extent practicable.

Commonwealth and Defence Land
The Lands Acquisition Act 1989 governs approval processes for access to Commonwealth land for the purposes of exploration, development, production and transport via road, rail and pipelines. The Finance Minister may authorise access to Commonwealth land for mineral, petroleum, geothermal energy and gas storage exploration, and the Governor-General may authorise production for related resources on Commonwealth land.

Mineral and energy resource exploration and/or production activities are typically governed by a ‘deed of access’ between the Commonwealth and the relevant licence holder. Further information is available at www.finance.gov.au/property/lands-acquisition/access-commonwealth-land-mining-activities.html.

The Woomera Prohibited Area (WPA), which covers around 12% of South Australia, is a globally unique weapons testing range. The WPA is mainly South Australian Crown land declared a ‘Prohibited Area’ under regulation 35 of Part VII of the Defence Force Regulations 1952. The Department of Defence is the primary user of the WPA as a significant national security asset.

The WPA overlaps a major part of South Australia’s significant minerals and energy resources potential, covering over 30% of the Gawler Craton, one of the world’s major mineral domains, and the Arckaringa, Officer and Eromanga Basins that contain conventional...
and unconventional hydrocarbons and coal. The area has significant resources potential with an estimated 62% of Australia’s known copper resources and 76% of uranium resources.

There are two legislative regimes covering access to the WPA for non-Defence users:

- The Defence Force Regulations 1952, which only apply to users who had authority to be in the WPA before the commencement of the Woomera Prohibited Rule 2014. Deeds of access obtained under this regime may be maintained after a change of ownership, subject to conditions outlined in the Rule.

- The Woomera Prohibited Rule 2014, which came into effect on 27 August 2014 and provides a standard system of resources exploration and production permits, along with personnel access permits.

The WPA Coordination Office, jointly operated by Defence and the South Australian Government, administers all non-Defence use of the WPA. Further information concerning access to the WPA can be found at [www.defence.gov.au/woomera](http://www.defence.gov.au/woomera).
7. Offshore approval processes
Offshore Petroleum Exploration Acreage Release

The annual Offshore Petroleum Exploration Acreage Release (acreage release) is a key part of the Australian Government's strategy to promote petroleum exploration in Australia's offshore waters. It provides explorers with new opportunities to invest and enables industry to undertake longer term planning to support the ongoing investment in, and development of, Australia's offshore petroleum exploration industry.

The acreage release is underpinned by Australia’s stable economic environment and well-established, objective-based regulatory framework that seeks to balance environmental, social and economic considerations in the development of Australia’s natural resources.

The acreage release also ensures access to comprehensive pre-competitive geological and geophysical datasets and ensures the provision of quality information on third party issues that may impact on successful applicants. The main steps in the acreage release cycle are:

- Nominations invited—in April/May each year, the Australian Government invites nominations for areas for inclusion in the next acreage release. The nomination process ensures areas that are of interest to commercial parties are considered.
- Short-listing—based on the nominated areas, the Australian Government shortlists the nominated areas.
- The Australian Government undertakes consultation on the shortlisted areas. This is undertaken in two phases:
  - Phase 1—consultation process with agencies in Commonwealth and state/territory jurisdictions with direct responsibility for managing the marine environment.
  - Phase 2—the proposed areas are made available for public comment.
- The acreage release is announced by the Commonwealth Minister for Resources and Northern Australia.
- Companies are formally invited to place bids on the release area. Bids are assessed using publicly available criteria and an exploration permit granted to the bidder who proposes an exploration strategy and work program that will significantly advance the assessment and understanding of the petroleum potential of the area and has satisfactory record of past performance.

In Australia, offshore petroleum exploration and development is regulated by a title system that ensures the orderly exploration for, and production of, offshore petroleum. Offshore petroleum titles are awarded on a successive basis, beginning with an exploration permit that is the result of a successful bid on an acreage release area. If a discovery is made during the exploration phase and a location is declared, the titleholder may apply for a production licence if the discovery is commercial, or a retention lease if the discovery is not commercial but is expected to become commercial within 15 years. From a retention lease the titleholder progresses to a production licence once the discovery becomes commercial.

Following this process, if an exploration permit is granted, it could be several years before any physical exploration activities occur in the area. A typical timeline for the exploration and development of an area released for petroleum exploration is outlined in Table 4.


Offshore petroleum legislation and regulatory arrangements

In Australia, governments seek to establish the macroeconomic climate, provide a sound regulatory framework for offshore activities and reduce commercial risk through collection and dissemination of pre-competitive geoscientific data. Governments neither undertake petroleum projects nor engage in commercial petroleum exploration or development.

Offshore petroleum activities beyond three nautical miles from the Australian Territorial Sea Baseline are governed by the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Commonwealth) (the OPGGS Act) and associated regulations. The legislation provides for the orderly exploration for, and recovery of, offshore petroleum resources and sets out a basic framework of rights, entitlements and responsibilities of governments and industry.

The key matters covered by the OPGGS Act are:

- issue of invitations to apply for exploration permits
- granting of permits to successful applicants and determination of conditions of the title
- declaring locations where petroleum has been discovered
- granting of retention leases over discoveries that are not currently commercial but are expected to become commercial within 15 years
- granting of production and pipeline licences
- granting of infrastructure licences for various processing activities
- renewal of titles (where considered appropriate)
- approval of applications for the registration of legal transactions, including farm-ins and transfers of titles
granting of special prospecting authorities, access authorities, and consents for scientific investigations

variations of title conditions, exemption from title commitments and cancellation of titles for non-compliance with the conditions of the title

core functions and responsibilities of the National Offshore Petroleum Titles Administrator (NOPTA) and the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

The OPGGS Act is supplemented by a set of regulations and guidelines covering the activities of the petroleum industry, including the:

- Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009
- Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009

Table 4 Launch of the Annual Acreage Release

<table>
<thead>
<tr>
<th>Launch of the annual Acreage Release</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acreage release</td>
<td>The Minister for Resources and Northern Australia launches the acreage release each year in April/May and calls for bids.</td>
</tr>
<tr>
<td>Bidding</td>
<td>Bidding occurs in two rounds. Round 1 closes in October/November and Round 2 usually closes in April. Refer to <a href="http://www.petroleum-acreage.gov.au">www.petroleum-acreage.gov.au</a> for information about the areas available for bidding and how to bid.</td>
</tr>
<tr>
<td>6 (and 12) months</td>
<td></td>
</tr>
<tr>
<td>Bid assessment</td>
<td>Bids are assessed and permits granted usually 3 months after bidding closes.</td>
</tr>
<tr>
<td>3 months</td>
<td></td>
</tr>
<tr>
<td>Permit granted with a work program</td>
<td>Permits are granted with work programs including initial geological, geophysical studies and seismic surveying and possible drilling of exploration well/s if the area is prospective.</td>
</tr>
<tr>
<td>Years 1 to 3 (guaranteed commitment)</td>
<td></td>
</tr>
<tr>
<td>Years 4 to 6</td>
<td>Further seismic work and possible drilling of exploration well/s generally in later years of permit.</td>
</tr>
<tr>
<td>Permit renewal (up to 10 years)</td>
<td>Up to two periods of 5 years to conduct further exploratory activities, including seismic surveys and exploration wells. A renewal is subject to acceptance of an appropriate work program.</td>
</tr>
<tr>
<td>Title Transition</td>
<td>Transition to a production licence if a petroleum discovery is considered commercial or to a 5-year retention lease if any petroleum find is not considered currently commercial but is likely to be commercially viable within 15 years.</td>
</tr>
</tbody>
</table>

The regulatory regime for offshore petroleum exploration in Commonwealth waters is jointly administered by the Commonwealth and the state and Northern Territory governments through a Joint Authority arrangement, and supported by NOPTA and NOPSEMA.

NOPTA performs functions associated with titles administration and data management as a statutory office holder supported by the Department of Industry, Innovation and Science. NOPTA also provides information, assessments, analysis, reports, advice and recommendations to the Joint Authority, to the responsible Commonwealth Minister and to state and territory Resources Ministers relating to the performance of their functions. NOPSEMA performs its regulatory functions for health, safety, structural integrity (including well integrity) and environmental management as an independent authority.

NOPTA and NOPSEMA both operate on a full cost recovery basis achieved through a system of fees and levies imposed on titleholders and other industry participants holding relevant duties under the OPGSG Act and regulations—such as the operators of offshore facilities.

Joint Authority

There is a Joint Authority for each offshore area, comprising the responsible Commonwealth Minister and the relevant state or Northern Territory Resources Minister. The Joint Authority for the Eastern Greater Sunrise offshore area, the offshore area of each external territory (i.e. the Territory of Ashmore and Cartier Islands) and for the Tasmanian offshore area is the responsible Commonwealth Minister only.

The Joint Authorities make all major decisions under the OPGGS Act, including the release of offshore petroleum exploration areas, the granting of titles, changes to title conditions and decisions about resource management and resource security. The Joint Authority also approves a titleholder’s proposed field development strategy through Field Development Plans.

The Joint Authority may delegate any or all of its functions and powers to the relevant Australian state or Northern Territory government resources department officials of sufficient seniority.
National Offshore Petroleum Titles Administrator (NOPTA)

NOPTA is responsible for the day-to-day administration of offshore petroleum titles on behalf of the Joint Authorities. NOPTA is the point of contact for all offshore petroleum and greenhouse gas matters in Commonwealth waters.

NOPTA’s key functions include:
- providing information, assessments, analysis, reports and advice to the Joint Authorities, to the responsible Commonwealth Minister, and to state and Northern Territory Resources Ministers
- managing the collection, administration and release of data
- approval and registration of transfers and dealings

For more information about the role of NOPTA please visit www.nopta.gov.au.

National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)

Offshore petroleum titles do not by themselves authorise a person or entity to undertake petroleum activities. Rather, a title grants the registered holder or holders the right to apply for permission to undertake petroleum activities in the relevant title area. Before an activity may commence, further regulatory approvals must be obtained under the Offshore Petroleum and Greenhouse Gas Storage Act 2006 and associated regulations.

NOPSEMA is the Australian Government’s independent regulator of occupational health and safety, structural integrity and environmental management for facilities, wells, well-related equipment and petroleum activities in Commonwealth waters and in the designated coastal waters of a state or the Northern Territory where regulatory powers and functions have been conferred.

As an independent, expert regulator, NOPSEMA is separate from policy agencies and from activities that promote the development of Australia’s offshore petroleum industry. NOPSEMA’s primary role is to assess and where appropriate, accept risk management plans submitted by duty holders, and to verify compliance with those plans through routine inspections. NOPSEMA is ultimately accountable to the responsible Commonwealth Minister.

For more information about the role of NOPSEMA, including information regarding its assessment processes and compliance and enforcement functions, please visit www.nopsema.gov.au.

Occupational Health and Safety

Occupational health and safety (OHS) in the Commonwealth offshore petroleum sector is regulated under Schedule 3 to the OPGGS Act and under the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 (OPGGS Safety Regulations). Schedule 3 to the OPGGS Act imposes OHS duties on the operators of offshore facilities, as well as on other relevant persons such as employers, manufacturers and suppliers. The Schedule also provides for the powers of NOPSEMA inspectors in relation to OHS inspections.

The OPGGS Safety Regulations provide for the requirements for safety cases (including content requirements and criteria for acceptance). Under the OPGGS Safety Regulations, a person (including a corporate entity) is not permitted to construct, install, operate, modify or decommission a facility, or do any other work at a facility or part of the facility, except in accordance with a safety case in force that provides for the relevant activity. A safety case may relate to one or more stages in the life of a facility, and may relate to one or more facilities.

A safety case identifies relevant hazards and risks, describes the controls in place to reduce those risks to as low as reasonably practicable (ALARP) describes the safety management system (SMS) in place to ensure the controls are effectively and consistently applied, and describes the means by which the SMS will be continually and systematically improved.

The operator of a facility must submit a safety case to NOPSEMA, and NOPSEMA must accept the case, before any work at a facility or part of a facility may take place. Once NOPSEMA has accepted a safety case, NOPSEMA will monitor compliance by the facility operator with the accepted case (as well as with relevant OHS duties) through routine inspections.

Environmental Considerations

The Australian Government requires titleholders to conduct their activities in a manner that ensures a high standard of environmental protection. Of particular importance to offshore petroleum exploration are the requirements of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGS Act) and Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Penalties may apply to any activities in breach of the OPGGS Act and EPBC Act.

The Australian Government’s National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is the sole designated assessor for environmental management of offshore petroleum activities in Commonwealth waters.

In February 2014, the Australian Minister for the Environment issued an approval under Part 10 of the EPBC Act for ‘All actions which are petroleum and greenhouse gas activities taken in Commonwealth waters and in accordance with the endorsed program’.

The approved class of actions means titleholders seeking to undertake petroleum activities in Commonwealth waters are not required to refer those actions for assessment by the Commonwealth Department of the Environment and Energy, provided they are undertaken in accordance with the program. However, the Director of National Parks (DNP) is considered a relevant person for consultation.
where the proposed activity is within the boundaries of a Commonwealth marine reserve (CMR) or may impact on values within a CMR.


The program describes the requirements under the OPGGS Act and subordinate regulations, in particular the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (environment regulations).

The approval does not cover activities that:
- have, will have or are likely to have a significant impact on the environment on Commonwealth land
- are taken in any area of sea or seabed that is declared to be a part of the Great Barrier Reef Marine Park under the Great Barrier Reef Marine Park Act 1975
- have, will have or are likely to have a significant impact on the World Heritage values of the Great Barrier Reef World Heritage property or on the national heritage values of the Great Barrier Reef National Heritage place
- are taken in the Antarctic
- are injection and/or storage of greenhouse gas.

**Environment management**

Under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (OPGGS Environment Regulations), the proponent of an offshore project must submit an offshore project proposal (OPP) to NOPSEMA before commencing the project. Offshore projects include the construction and operation of facilities and pipelines, and the recovery of petroleum other than on an appraisal basis. An offshore project does not include exploration activities such as seismic surveys or exploration drilling.

The OPP assessment process allows NOPSEMA to holistically consider an offshore project, and gives the public an opportunity to consider and provide input to project development and raise potential environmental sensitivities. A titleholder may not submit an environment plan for any component activity of an offshore project unless NOPSEMA has accepted an OPP for that project, or the relevant activity has previously been approved by the Environment Minister under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

The OPGGS Environment Regulations also require titleholders to have an Environment Plan accepted by NOPSEMA prior to undertaking a petroleum activity. The plan must identify and describe all the potential environmental impacts and risks for the activity, and demonstrate that the titleholder will put in place control measures to reduce those risks to as ALARP and to an acceptable level. This includes the matters protected under Part 3 of the EPBC Act. NOPSEMA will consider an environment plan on its scientific merits, and in accordance with the acceptance criteria set out in the OPGGS Environment Regulations. As part of its assessment, NOPSEMA will also consider whether an activity covered by an environment plan will comply with other relevant Australian laws. Once NOPSEMA has accepted an environment plan, NOPSEMA will monitor compliance by the titleholder with the plan through routine inspections.

An Environment Plan must also contain an Oil Pollution Emergency Plan (OPEP), detailing arrangements for preparing for and responding to an oil pollution incident. As part of their environment plan, Titleholders must also demonstrate that they have sufficient financial assurance to meet costs, expenses and liabilities arising in connection with, or as a result of, the carrying out of a petroleum activity, doing any thing for the purposes of a petroleum activity, or complying or failing to comply with a requirement under the OPGGS Act or a legislative instrument made under the OPGGS Act. Titleholders must demonstrate compliance with financial assurance requirements before NOPSEMA can accept the titleholder’s Environmental Plan.

Additional Australian Government legislation relevant to the environmental management of offshore petroleum exploration and development activities includes:
- EPBC Act
- Environment Protection (Sea Dumping) Act 1981
- Protection of the Sea (Prevention of Pollution from Ships) Act 1983

Under the EPBC Act, the Australian Government Director of National Parks (DNP) is responsible for the management of Commonwealth marine reserves (CMRs). Australia’s system of CMRs includes six networks, comprising the South-East network (originally proclaimed in 2007), and five networks proclaimed in 2012: the South-West, North-West, North, Coral Sea and Temperate East networks. Specific management and administrative arrangements for CMRs are detailed in management plans for prepared by the DNP under the EPBC Act. These management plans give effect to broad reserve management principles, and define what activities may occur without specific authorisation from the DNP, allowed to occur with authorisation from the DNP, or prohibited. Following an independent review of the CMRs, the DNP is now in the process of developing new management plans. Until those plans are in place, transitional management arrangements apply to activities in CMRs.

All offshore petroleum activities undertaken in a CMR must be undertaken in accordance with the applicable management plan, or otherwise in accordance with the transitional management arrangements. Titleholders must demonstrate, through their environment plan, that any activities undertaken in a CMR will remain consistent with the applicable management plan or the transitional management arrangements.

**Further information**

An electronic compendium of all current legislation, regulations and guidelines governing the offshore petroleum industry can be found at www.nopca.gov.au/legislation/.
Industry may also subscribe to regular updates on regulatory developments and general information on the regulation of the Australian offshore petroleum industry through the free newsletter, Australian Petroleum News, by emailing: petroleum.exploration@industry.gov.au.

**Offshore minerals exploration and mining legislation**

*Note.* The states and Northern Territory have title and legislative responsibility over the resources of the seabed adjacent to their jurisdiction, from the low water mark out to the outer limit of the first three nautical miles of the Territorial Sea Baseline. This area is known as the Coastal Waters of the relevant state or the Northern Territory.

The **Commonwealth Offshore Minerals Act 1994** provides the statutory framework for the exploration for, and the production of, minerals other than petroleum in the area that is under Australian Government jurisdiction, i.e. the area beyond the coastal waters of the states and the Northern Territory to the outer limits of Australia’s continental shelf.

Six associated Acts provide for the payment of royalties, registration fees and fees related to exploration, retention, mining and works licences.

**Australian Government offshore minerals Acts**

The total Australian Government legislative package is set out in Table 5.

### Table 5 Australia’s Minerals Legislation Package.

<table>
<thead>
<tr>
<th>Acts</th>
<th>Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Offshore Minerals (Fees) Regulations 1994</td>
</tr>
<tr>
<td></td>
<td>Offshore Minerals (Data Lodgement and Reporting) Regulations 1996</td>
</tr>
<tr>
<td>Offshore Minerals (Royalty) Act 1981</td>
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</tr>
</tbody>
</table>


**Administration of the Commonwealth Offshore Minerals Act 1994**

The **Commonwealth Offshore Minerals Act 1994** (COM Act) is jointly administered by the Commonwealth, state and Northern Territory governments. Administration of the COM Act is undertaken by two regulatory entities, the Designated Authority and the Joint Authority, each of which is established for individual states and the Northern Territory and for Australia’s inhabited remote offshore Territories.

The Designated Authority for the offshore area of each state and the Northern Territory is the relevant state or Northern Territory government minister with portfolio responsibility for minerals exploration and development. The Designated Authority for the offshore area of each external territory (such as the Territory of Ashmore and Cartier Islands) is the Commonwealth Government minister responsible for resources and energy. All applicants and licence holders deal directly with the relevant Designated Authority for all matters involving the day-to-day administration of the Australian Government legislation.

The Joint Authority for the offshore area of each state and the Northern Territory is the relevant state or Northern Territory government minister and the Commonwealth Government minister with portfolio responsibility for minerals exploration and development. The Joint Authority for the offshore area of each external territory is the Commonwealth Government minister. Major decisions relating to licences, such as granting and refusal, are made by the Joint Authority and those decisions are carried out by the Designated Authority. In the event of a disagreement between the Joint Authority members, the decision of the Commonwealth Government minister prevails.

**General provisions of the Commonwealth Offshore Minerals Act 1994**

The COM Act establishes a mining code within which the development of offshore minerals resources (other than petroleum) may be undertaken in the area under Australian Government jurisdiction beyond the outer limit of the coastal waters of each state and the Northern Territory.

Under section 22 of the COM Act, a mineral is defined as a naturally occurring substance or a naturally occurring mixture of substances, which may (without limitation) be in the form of sand, gravel, clay, limestone, rock, evaporites, shale, oil-shale and coal. For the purposes of the COM Act, a mineral does not include petroleum.

The **Commonwealth Offshore Minerals Act 1994** establishes five kinds of authorisations. They are:

- exploration licences
- retention licences
- mining licences
- works licences
- special purpose consents.
Exploration licence

An exploration licence is designed to cover the exploration phase of a project and confers exclusive rights to explore for, and take, samples of minerals in the licence area.

In general, all offshore areas which are not already under a mineral authorisation are open to application for a licence to a maximum area of 500 blocks. A block is defined as an area bound by adjacent minutes of latitude and longitude (around 3.39 square kilometres at 10 degrees south, to 2.64 square kilometres at 40 degrees south). A licence is valid for four years, or two years on renewal, and may be renewed three times for up to 50% of the area in the licence at the time of each renewal.

A fee of $3000 is payable on application and an annual fee of $20 per block or $600 (whichever is the greater) is payable for each year of the licence. A renewal fee of $600 is payable on renewal of the licence.

Retention licence

A retention licence is an intermediate form of tenure, between the exploration licence and the mining licence. It is designed to ensure the retention of rights pending the transition of a project from the exploration phase to the commercial mining phase. Its primary purpose is to allow the holder of an exploration licence to retain, for a strictly limited time, title to an area:

- on which a significant mineral deposit has been identified and evaluated
- which is not a commercially viable proposition in the short term
- where there is reasonable prospect for development in the longer term.

The licence allows the holder to retain the area under strict conditions until market or technological developments make exploitation of the deposit viable. It also authorises the exploration for, and the recovery of, minerals in the licence area, but not as part of a commercial mining operation.

The licence is valid for up to a maximum of five years and may be renewed at the discretion of the Joint Authority.

A fee of $3000 is payable on application and an annual fee of $20 per block is payable for each year of the licence. A renewal fee of $600 is payable on each renewal of the licence.

Mining licence

A mining licence is designed to cover the commercial mining phase of a project and authorises the exploration for, and full recovery of, minerals from the licence area. A licence may be applied for at any time for any area either held by the applicant under another title or currently free of any title. A licence may be for up to 20 blocks, with the initial term not exceeding 21 years and no limit on the number of renewals.

A fee of $3000 is payable on application and a renewal fee of $200 per block is payable for each year of the licence. A renewal fee of $600 is payable on each renewal of the licence.

Works licence

A works licence authorises operations associated with an exploration, retention or mining licence to be carried on outside the area of the principal licence, such as a jetty. The works licence can be issued for up to a maximum of five years and can be renewed on application.

A fee of $3000 is payable on application and $20 per hectare, or part of a hectare, is payable each year for the area under the licence. A renewal fee of $600 is payable on renewal of the licence.

Special purpose consent

A special purpose consent authorises the holder to carry out scientific investigations, a reconnaissance survey or collect a small amount of minerals.

The reconnaissance surveys are intended to cover broad-scale short-term surveys which companies may undertake to decide whether to apply for an exploration licence. Small-scale collection activities might cover the collection of dead coral or a similar limited operation. The consent differs from other licences in that it does not give the holder any exclusive rights over the area covered; nor does it give any preference when it comes to granting other licences for the same area. Because it does not give exclusive proprietary rights, the consent can be granted to cover an area already covered by a licence or another consent; however, the applicant for the consent must obtain the permission of the affected licence holder (in the case of an exploration licence, retention licence or mining licence) or notify the affected licence holder (in the case of a works licence).

The consent can be issued for a period of up to a maximum of 12 months and a fee of $300 is payable on application.

State and Northern Territory legislation

Some jurisdictions are in the process of developing respective complementary offshore minerals legislation using the Commonwealth Offshore Minerals Act 1994 as a model, in accordance with state and Northern Territory legislative priorities. This legislation will apply to the mineral resources of the seabed within the first three nautical miles of the Territorial Sea Baseline. The current status of complementary offshore minerals legislation in the various jurisdictions is set out in Table 6.

There is no Australian Government involvement in the administration of offshore minerals activities within the area that is under state and Northern Territory jurisdiction.
Table 6 Status of Complementary Offshore Minerals Legislation.

<table>
<thead>
<tr>
<th>State</th>
<th>Acts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria</td>
<td>Mineral Resources (Sustainable Development) Act 1990 applies in Victoria’s coastal waters to the sea bed and its subsoil as per Victoria’s Underseas Act 1963</td>
</tr>
<tr>
<td>Tasmania</td>
<td>Not yet enacted.</td>
</tr>
</tbody>
</table>

Disclaimer. This section has been developed as a guide only. It does not replace or amend information provided in the Offshore Petroleum Legislation, Regulations and Guidelines available at [www.nopta.gov.au/legislation](http://www.nopta.gov.au/legislation). In the event that there is a discrepancy between this fact sheet and the legislation, the legislation has precedence. Explorers should not rely solely on this information when making commercial decisions.
8. Industry growth centres
The Industry Growth Centres Initiative is an industry-led approach driving innovation, productivity and competitiveness by focusing on areas of competitive strength and strategic priority.

Focus

The Industry Growth Centres Initiative enables national action on key issues such as collaboration, commercialisation, international engagement, skills and regulation reform.

Growth Centres are being established to deliver the Initiative in six industry sectors of competitive strength and strategic priority. The Growth Centres that relate most directly to Australia’s resources sector include:

- METS Ignited, focusing on the Mining Equipment, Technology and Services (METS) sector
- NERA (National Energy Resources Australia) focusing on the Oil, Gas and Energy Resources sector.

Growth Centres are not-for-profit organisations, led by a strategic board of industry experts who oversee the operation of the Growth Centre.

While the Growth Centres are flexible in their approach to addressing barriers to success, they are tasked with looking at four broad themes:

1. Identifying regulations that are unnecessary or overburdensome for the key growth sectors and impede their ability to grow, and suggesting possible reforms
2. Improving engagement between research and industry, and within industry, to achieve stronger coordination and collaboration of research and stronger commercialisation outcomes in the key growth sectors
3. Improving the capability of the key growth sectors to engage with international markets and access global supply chains
4. Improving the management and workforce skills of key growth sectors.


NERA

National Energy Resources Australia (NERA) is an Industry-led, government-funded initiative which has been established to maximise the value to the Australian economy by having an energy resources sector—the oil, gas, coal and uranium industries—that is globally competitive, sustainable, innovative and diverse.

Through a national focus, NERA’s role is to grow collaboration and innovation to assist the energy resources industry manage cost structures and productivity, direct research to industry needs, deliver the future work skills required, facilitate partnerships and promote fit for purpose regulation.

In consultation with stakeholders, NERA has developed a Sector Competitiveness Plan as a 10 year roadmap to increase the global competitiveness and sustainability of the sector. The plan includes key themes, knowledge priorities, goals and initiatives.

These priorities are being addressed through industry-led projects and collaborative Initiatives facilitated through NERA.

Further information on NERA is available at [www.nera.org.au](http://www.nera.org.au).

METS Ignited

METS Ignited is an industry-led, government-funded Growth Centre for the mining equipment, technology and services (METS) sector. METS Ignited works with Australian suppliers to the mining industry, global miners, research organisations and capital providers to improve the competitiveness and productivity of the Australian METS sector.

In consultation with stakeholders, METS Ignited developed a Sector Competitiveness Plan as a 10-year roadmap to increase the global competitiveness and sustainability of the sector. The plan includes five areas of strategic focus to help strengthen the global competitiveness of the Australian METS sector—aligned strategy, global brand, internationally competitive, collaborate and innovate, and skilled for 2026. Information on METS Ignited is available at [www.metsignited.org](http://www.metsignited.org).
9. Social licence to operate
Good mining practices are invariably tied to activities that are environmentally sound, socially responsible and economically viable. Getting it right is critical to the ongoing acceptance and support of mining by a local community, regardless of where mining takes place. It is the ongoing acceptance and support for a mining project by the community which determines a project’s ‘social licence to operate’.

Sustainable development

As new challenges emerge and new solutions are developed, mining practices must be flexible and innovative to match site-specific requirements and community expectations. The Leading Practice Sustainable Development Program (LPSDP) for the Mining Industry helps to address these challenges by supporting sustainable development and industry self-regulation through the proactive adoption of leading practice principles.

The LPSDP was launched in 2006 and elements were updated in 2016. The program is administered by the Department of Industry, Innovation and Science in partnership with the Department of Foreign Affairs and Trade. The program provides practical guidance to the mining industry through a series of targeted handbooks to assist with the implementation of leading practice, and encourage the mining industry and other stakeholders to continue to improve their social and environmental performance. Demand for the handbooks has been strong internationally, with a selection of the handbooks being translated into Spanish, Indonesian, Chinese, Vietnamese, Japanese, Korean, Mongolian and French.

The handbook translations are in recognition of the role that mining can play in driving economic growth and reducing poverty. The handbooks will assist developing countries to build capacity in the management and regulation of sustainable mining practices and engendering community acceptance of resources development.

The LPSDP has been a cooperative effort between government, industry, and academia. Each publication was created with the oversight of individual working groups comprising experts in Australian mining, including Australian mining and minerals industry operators, Australian mining peak bodies and industry training providers, the Minerals Council of Australia, and Australian state and territory government agencies.

Following the success of the handbooks, an overarching publication A Guide to Leading Practice Sustainable Development in Mining was developed to complement the original handbooks. This publication, along with the series of 17 handbooks, is available online and for public download at www.industry.gov.au/sdmining.

The handbooks are:

- A Guide to Leading Practice Sustainable Development in Mining—Draws together the key principles of the 17 themes from the handbook series.
- Airborne Contaminants, Noise and Vibration Handbook—Addresses issues associated with emissions of airborne contaminants (dust, gas, odours, etc.), noise and vibration control at mining operations. These issues can have a significant impact on local communities and contribute to concerns about ongoing environment and health risks.
- Biodiversity Management Handbook—Addresses the broad issue of biodiversity management for mining operations, including environment protection and conservation legislation, flora and fauna management, landscape level planning and environmental offsets.
- Community Engagement and Development Handbook—Addresses some of the key issues surrounding community engagement and development. It also offers insights into approaches and practical discussion about the challenges companies may encounter when engaging with local communities and seeking to contribute to long-term community development.
- Community Health and Safety Handbook—Addresses the influence that mining operations can have on local communities—that of health and safety. This includes the traumatic injury risks and diseases that people may incur due to mining activity.
- Cyanide Management Handbook—Addresses the principles and procedures for effective and safe cyanide management.
- Energy Management in Mining Handbook—Addresses the best way to improve the energy performance of a given site in a way that best contributes to its business objectives.
- Evaluating Performance: Monitoring and Auditing Handbook—Addresses the ongoing impact of all stages of a resource project from initial planning through development and operation to closure and rehabilitation.
- Hazardous Materials Management Handbook—Outlines the principles for managing hazardous materials in the mining industry. Hazardous materials are used at most mining and mineral processing operations in Australia and many waste products generated by these operations can be hazardous to human health and the environment.
- Preventing Acid and Metalliferous Drainage Handbook—Addresses issues associated with the social and environmental impacts and remediation of acid and metalliferous drainage in the mining industry.
Multiple land use
Access to land under clear and efficient processes which take into account economic, social, environmental, heritage, cultural and land ownership considerations is fundamentally important to the international competitiveness of the mineral and petroleum resources sector.

Land use regulation
In Australia, the state and Northern Territory governments have onshore mineral and petroleum rights and are responsible for the regulation of exploration and mining activities, including licensing, royalty charges, environmental assessment and approvals as well as land access arrangements. There may be instances in which a proposed mining activity requires assessment and approval by the Australian Government under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) if the development is deemed likely to have a significant impact on matters of national environmental significance. Additionally, where land is being used for other purposes, such as agriculture, a land access agreement is generally required with the individual landowner.

All Australian governments recognise the importance of maximising economic and social benefits of regulated land use for all Australians and future generations through encouraging the multiple use of regulated land while respecting and protecting environmental, cultural and heritage values. Governments strive to provide improved investment certainty for the mining sector and community confidence in land use decisions.
10. Mine health and safety
Safety in mining operations and the health of mine workers is of the utmost importance to the Australian mining industry and to governments. The Australian mining industry is a world leader in health and safety performance and is committed to a goal of ‘zero harm’, that is, an industry free of fatalities, injuries and diseases.

Mining is an inherently dangerous industry and sound workplace structures and operational arrangements are essential. Because of the inherent danger, workers at all levels within the industry are empowered to identify mine safety and health issues and detail options for dealing with them. While the primary responsibility for safety and health rests with the industry, governments have a crucial role in ensuring their delivery. Governments have a responsibility to set the standards of safety management they expect to be observed and have a responsibility on behalf of both workers and the broader community to require adherence to these standards.

The industry’s commitment to continuous improvement to achieve ‘zero harm’ has resulted in a wealth of knowledge, leadership and innovation in the area of health and safety.

**Management of health and safety**

In Australia, individual state and territory governments are responsible for regulating health and safety at mine sites within their jurisdiction, through state-based work health and safety legislation for the mining sector.

While each state and territory has its own legislation, all adopt a general duty of care, which requires the operator of a mine to ensure the health and safety of workers and other persons is not put at risk as a result of activities at the mine. In addition, the legislation is based on a risk management approach, which requires the ongoing identification, mitigation and monitoring of all risks present at a mining operation to ensure hazards are eliminated or suitable controls are put in place to minimise the risks to the health and safety of workers.

Risk management approaches and controls are documented in site-specific safety management systems, which are auditable documents that address site safety and health procedures and responsibilities. The overall risk management approach aims to identify the outcomes that mine sites must achieve, rather than a set of prescriptive rules that must be followed. It recognises that no two workplaces are the same and that the hazards present will vary from mine to mine, as will the controls used to eliminate or manage the risks posed by those hazards. In order to be effective, this approach requires ongoing consultation with mine workers, as those carrying out the day-to-day work at the mine site are best placed to identify hazards and the most appropriate methods for addressing them.

At a national level, the Australian Government was involved in the development of the National Mine Safety Framework, an initiative aimed at improving consistency in mine safety regulation and processes between jurisdictions. The Australian Government also provides the Secretariat for the Conference of Chief Inspectors of Mines (CCIM), a group of the most senior officer with regulatory responsibility for mine safety in each state and territory of Australia, New Zealand and Papua New Guinea.


**Contacts**

More information on individual state and Northern Territory mine safety regulators is available at:

- **NSW Department of Industry, Skills and Regional Development**

- **Northern Territory WorkSafe**

- **Queensland Department of Natural Resources and Mines**

- **SafeWork South Australia**

- **WorkSafe Tasmania**

- **WorkSafe Victoria**

- **Western Australian Department of Mines and Petroleum**
11. Working visas, immigration and skills
The Australian Government is implementing a range of measures to prioritise the employment and training of Australian workers to meet labour demand. The government maintains a range of temporary and permanent migration options for business persons, investors and skilled workers to supplement the Australian labour market and alleviate potential limitations in labour supply.

**Visa options for entry to Australia**

**Business and investor entry to Australia**


Business people can apply for a visa to conduct short business visits, establish or manage a new or existing business or invest in Australia. Visas include temporary, provisional and permanent options. Information on the alternatives can be found at

- business visits to Australia for up to three months (several visa options)
  http://www.border.gov.au/Trav/Visa-1/651-
- Business Innovation and Investment—Provisional (several visa options)
  http://www.border.gov.au/Trav/Visa-1/188-
- Business Innovation and Investment—Permanent (several visa options)
  http://www.border.gov.au/Trav/Visa-1/888-
- Business Development Sponsorship (by a state or territory government)
  www.border.gov.au/Trav/Work/Work

**Significant Investor Visa**

The Significant Investor Visa (SIV) is part of a suite of government policy initiatives which aim to promote investment, innovation and commercialisation of Australian ideas, research and development which are important to our economic future. The SIV provides a pathway to permanent residence in Australia while ensuring a balance between investment migration and economic benefit to the Australian economy for individuals investing $5 million over four years.

The visas are administered by the Department of Immigration and Border Protection (DIBP). Before lodging an application with DIBP, potential applicants for the SIV must be nominated by a state or territory government or Austrade.


**Employer sponsored options**

www.border.gov.au/Trav/Work

**Skilled workers temporary visa options**

Australian and overseas employers may engage approved skilled workers for temporary vacancies in particular occupations required in Australia. Some temporary visas can offer a pathway to a permanent visa. They include Temporary Work Visas and Labour Agreements.

**Temporary Work (Skilled) Visa (subclass 457)**

http://www.border.gov.au/Trav/Visa-1/457-

A program for employers to sponsor approved skilled workers to work in Australia on a temporary visa. Employers can nominate a number of positions for different occupations under the same sponsorship application.

**Labour Agreements**


Labour Agreements are formal arrangements between an employer and the Commonwealth of Australia which allows for the recruitment of an agreed number of overseas skilled workers. The agreement must:

- identify the relevant skills shortage in the business and why these vacancies cannot be filled by Australian workers
- specify the number of skilled workers needed from outside Australia
- specify the age, skill and English language requirements that relate to the nominated occupations. Semi-skilled occupations can be considered for nominated positions if specified in the agreement.

Currently, there are four types of labour agreements:

- **Company-specific labour agreements**—are developed directly with an employer and will be considered only where a genuine skills or labour shortage for an occupation exists which is not already provided for.
- **Industry labour agreements**—provide fixed terms and conditions agreed to by the Minister in consultation with key industry stakeholders, specific to an industry sector.
- **Designated Area Migration Agreements (DAMA)**—assist Australian businesses in geographically defined areas facing acute skills and labour shortages, to access suitably qualified skilled and semi-skilled workers.
- **Project agreements**—allow infrastructure or resource development projects experiencing genuine skills or labour shortages access to temporary skilled and specialised semiskilled temporary overseas workers through the subclass 457 visa.
Skilled workers permanent visa options

- Employer Nomination Scheme (subclass 186)
  http://www.border.gov.au/Trav/Visa-1/186-

- Regional Sponsored Migration Scheme (subclass 187)
  http://www.border.gov.au/Trav/Visa-1/187-

General skilled migration
There is a range of visa options for Points Tested skilled workers who want to live in Australia and who do not have an employer to sponsor them. These include options for skilled people applying as an independent migrant as well as those sponsored by a relative or nominated by a state or territory government.

Professionals and Other Skilled Migrants (several visa options)

SkillSelect

SkillSelect is an online service which enables skilled workers and business people interested in migrating to Australia to record their details to be considered for a skilled visa through an expression of interest. Intending migrants can then be found and nominated for skilled visas by Australian employers or state and territory governments, or they may be invited by the Australian Government to lodge a visa application. Since 1 July 2012, all intending migrants interested in the points-based skilled migration or business investment and innovation visa programs are required to submit an expression of interest before being invited to lodge a visa application.

SkillSelect is a major change to the way Australia manages its skilled migration program. SkillSelect helps to ensure the skilled migration program is based on the economic needs of Australia. It supports the Australian Government’s management of who can apply for skilled migration, when they can apply and in what numbers. As a result, the Department of Immigration and Border Protection expects to significantly reduce the time taken to process visa applications.

SkillSelect will also help address regional skill shortages. SkillSelect allows intending migrants to indicate whether they are willing to live and work in regional Australia. This will be of particular benefit to employers experiencing regional skill shortages and attempts by the state and Northern Territory governments to settle migrants in regional Australia.

Contact information
To obtain further information about temporary and permanent migration options for professionals, business persons, investors and skilled workers, visit the Department of Immigration and Border Protection website at www.border.gov.au/Trav/Work.
12. Indigenous engagement
Australians in both remote and urban areas take a real and active interest in how local or neighbouring land is accessed and used. Demonstrating a commitment to effective and early engagement with local communities, in particular Indigenous communities, is a critical and ongoing process for mining proponents, regardless of where mining takes place.

In Australia, when referring to the country’s traditional owners it is common for ‘Aboriginal’ and ‘Indigenous’ to be used. As a broad guide ‘Indigenous’ is used on occasions where both mainland Aboriginal people and Torres Strait Islanders are involved. The most appropriate terms may be people terms (i.e. Koori, Murri) and/or language names (i.e. Wiradjuri Ngunnawal). As a courtesy, local preference should be sought before meeting or dealing with local communities.

**Native title**

Native title is the recognition by Australian law that Indigenous people have rights to and interests in their land which come from their traditional laws and customs where:

- those people have maintained their traditional connection with the land
- their title has not been removed by a law or other action of government (such as a grant of freehold title).

Native title represents the interaction between traditional Indigenous law and customs and Australia’s legal system.

**The Native Title Act**

The Native Title Act 1993 came into force on 1 January 1994 to:

- recognise and protect native title
- establish a national framework for future dealings affecting native title and to set out processes for those dealings
- establish a mechanism for determining claims to native title
- confer legal validity on past grants of titles which could be affected by the existence of native title.

The Native Title Act recognises and protects native title, carefully balances the interests of Indigenous people, miners, pastoralists and other land users, and ensure governments can continue to improve infrastructure and manage natural resources.

The Native Title Act provides for the recognition and funding, by the Australian Government, of Native Title Representative Bodies (NTRBs) to undertake a number of functions. Including facilitating and assisting registered native title claimants or persons who may hold native title in relation to native title applications and developments that may affect native title (called ‘future acts’), including mineral exploration and development. Among other things, NTRBs can provide for the representation of native title claimants in negotiations on Indigenous Land Use Agreements (ILUAs) and other agreements between native title claimants and proponents.

### Onshore exploration and minerals and petroleum projects

Under Australia’s federal system of government, the states and territories have responsibility for land management, including grants of onshore exploration permits, and mining and petroleum titles.

Consistent with the Native Title Act, granting an exploration permit or a mineral or petroleum title may affect native title for the period of the title. However, native title is not extinguished.

On land where native title has not been extinguished, the Native Title Act gives registered native title claimants, or native title holders, the right to negotiate with project proponents in relation to certain acts, including the grant of an exploration, mining or petroleum permit or title. The Native Title Act requires native title claimants to demonstrate the merits of their claim before they gain access to the right to negotiate, which is referred to as a ‘Registration Test’. If the claim passes all of the conditions, the Registrar must record the details of the claim on the Register of Native Title Claims, which subsequently becomes a ‘registered claim’.

The Native Title Act does not provide native title claimants a right to veto a project. However, it does provide under specified circumstances for a negotiation process with native title claimants prior to the issue of an exploration or mining interest.

It also allows mining and petroleum titles to be renewed without the right to negotiate where the relevant mining or petroleum title does not involve a larger area, a longer term or new rights.

### Summary of native title processes

Applicants for onshore mining or petroleum titles may be required under the Native Title Act or approved state or territory legislation to negotiate an agreement with native title holders or registered native title claimants who have registered a claim over an area prior to the grant or the mining or petroleum titles being made. The right to negotiate is triggered when a government issues a section 29 notice, which states that the relevant government intends to undertake an activity in a given area in the future. When the government issues a section 29 notice...
the right to negotiate applies. The process requires that the
government, the developer and the native title parties must
negotiate in good faith. The right to negotiate is not a right
to stop or veto projects from going ahead, but it does give
native title parties a right to have a say about how a project
affects their native title rights and interests with a view to
finding an agreed or best way forward for the project.

If agreement between the native title parties and the
company involved cannot be reached within six months
after the notification date, one or more parties may apply to
an arbitral body for a determination in relation to the future
activity going ahead. This arbitral body is generally the
National Native Title Tribunal. The arbitral body must take all
reasonable steps to make a determination within a further
six months on whether or not the project can go ahead and
under what conditions. It cannot impose any conditions
based on the value of resources or production as a condition
for approving the grant. However, such conditions are
possible as a result of an agreement between the parties.

The Native Title Act enables the states and territories to
establish their own Australian Government-accredited
regimes to integrate native title requirements into their
land management systems, provided the legislation is
consistent with the requirements of the Native Title Act, and
is approved by the Commonwealth Parliament.

The Native Title Act also enables proponents and native title
parties to negotiate voluntary but legally binding ILUAs as a
flexible means of taking native title interests into account in
exploration or project developments.

The National Native Title Tribunal has prepared a number
of booklets which provide an overview of native title system
in Australia called About Native Title (2006) and Indigenous
land use agreement or the right to negotiate? A comparison
for mineral tenement applications (2008), which can be
found on the Tribunal’s website at www.nntt.gov.au/News-
and-Publications/Pages/Forms-and-Publications.aspx.

The Tribunal provides information for anyone seeking
details on:

➤ native title
➤ how native title is recognised
➤ native title on pastoral and agricultural leases
➤ native title and exploration, mining and future
development
➤ mediation
➤ Indigenous Land Use Agreements
➤ the role of the National Native Title Tribunal.

The National Native Title Tribunal also has a series of fact
sheets about these and other native title topics which are

Offshore exploration or petroleum projects

The Native Title Act requires that offshore grants and other
Commonwealth of Australia actions are undertaken in a
non-discriminatory manner. This ensures that offshore
native title interests are given the same consideration as
holders of other offshore rights and interests.

The right to negotiate does not apply in the case of offshore
projects. Applicants for offshore mineral or petroleum titles
are not subject to the formal negotiation and arbitration
processes contained in the Native Title Act. However, the
Australian Government undertakes consultations with
native title interests as part of the administrative procedures
covering the release of acreage in Commonwealth of
Australia offshore areas.

These processes may result in special conditions
applying in some acreage. Any conditions are set out in
the information packages provided to companies when
they apply for exploration permits covered by the acreage
release. More details on acreage release are available in
Chapters 3 and 7.

Protection of Indigenous heritage

In addition to recognising traditional rights and interests in
land, the Australian, state and territory governments have
specific laws to protect Indigenous heritage sites and objects.

The state and territory governments have primary
responsibility for the protection of Indigenous heritage. State
and territory laws generally protect sites and objects of
Indigenous cultural significance, including archaeological,
anthropological and historical sites, natural or manufactured
objects and human remains not buried in accordance with
state and territory law. In general, it is an offence to interfere
with a site or object in any way without the consent of the
relevant state or territory minister.

It is critical for mineral and petroleum proponents to engage
with Indigenous communities as prescribed in relevant state
and territory heritage legislation. Information on state and
territory government legislation as it relates to Indigenous
heritage protection can be found at www.environment.gov.
au/topics/heritage/laws-and-notices/indigenous-heritage-

The Australian Government provides protection for
Indigenous heritage under two pieces of legislation, the
Environment Protection and Biodiversity Conservation
Act 1999 (EPBC Act) and the Aboriginal and Torres Strait
Islander Heritage Protection Act 1984 (ATSIHP Act).
The EPBC Act protects National Heritage places and World Heritage properties as matters of national environmental significance. Many of these heritage places are listed for their Indigenous heritage values. Any action which is likely to have a significant impact on the values of a listed National Heritage place or a World Heritage property must be referred for consideration by the Australian Government minister who has responsibility for the protection of Indigenous heritage. If the minister decides that the action is likely to have a significant impact on a matter of national environmental significance, the activity will require approval under the EPBC Act.

Sections 23 and 26 of the EPBC Act protect Indigenous heritage as part of the environment from actions in Commonwealth of Australia marine jurisdictions or on Commonwealth of Australia land, and from an action by an Australian Government agency which will have a significant impact on the environment.

The purpose of the ATSIHP Act is the preservation and protection from injury or desecration of areas and objects in Australia and in Australian waters which are of particular significance to Aboriginals in accordance with Aboriginal tradition. Aboriginal people can apply to the Australian Government minister for protection of significant Aboriginal areas or objects. If the minister is satisfied that the area or object is of particular significance in accordance with Aboriginal tradition he may make a protective declaration. The ATSIHP Act is a measure of last resort which allows the Australian Government to provide protection where state or territory laws and processes have not done so.


Aboriginal Land Rights (Northern Territory) Act 1976

The Aboriginal Land Rights (Northern Territory) Act (ALRA) provides for detailed regulation of exploration and mining on Aboriginal land within the Northern Territory. The process is initiated by a company obtaining consent to negotiate from the Northern Territory Government. The consent allows the company to negotiate with Traditional Owners for an agreement that covers exploration and, usually, provisions about possible mining. ALRA gives Traditional Owners the right to veto exploration activities on their lands.

Amendments to the Northern Territory Act in 2006, and delegation to the Northern Territory Government responsibility for administering the exploration licence applications, have improved the procedures to enable companies to access country.

13. Transport infrastructure
The Australian minerals and petroleum industry is a leading provider and user of transport and logistics services.

The industry operates highly efficient private rail systems and is a major customer of public rail transport throughout Australia.

The Australian minerals and petroleum industry is a major user also of public and privately built road facilities and of air services—the latter being used for transporting precious metals, key supplies and personnel to and from remote and regional areas. Both industries are also significant users of shipping.

In recent years, the minerals and petroleum industry, along with other private investors and government agencies, have invested in new rail and port infrastructure to support resource development and planned for further capacity building to ensure the provision of adequate land transport infrastructure (including port and related facilities) is available to meet the expanding needs of Australia’s trade.

Iron ore transport

Australia is the world’s largest exporter of iron ore. In 2015–16, Australia exported 786 million tonnes of iron ore. This is expected to reach 915 million tonnes in 2021–22. Australia’s proximity to key Asian markets and low cost of production ensures it continues to be a major player in the global iron ore trade.

Australian iron ore producers, primarily located in the Pilbara and the Midwest region of Western Australia, have undertaken major mine development and expansion projects in recent years to meet a growing global demand for iron ore from China and continuing demand from longstanding customers in Asia and Europe.

Most of Australia’s iron ore is exported through Port Hedland, Port Dampier and Cape Lambert Port in the Pilbara region of Western Australia. Other iron ore export ports include Geraldton and Esperance in Western Australia. Considerable investment has been allocated to the development of expanded and new facilities in the Pilbara region to accommodate increased production. Ongoing investment in bulk infrastructure capacity to service Australia’s iron ore sector will help to ensure that Australia continues to remain a reliable, low-cost supplier of high-quality iron ore to the world.

LNG transport

Australia’s LNG industry is developing as a series of hubs around Australia’s western, northern and eastern coastlines, providing significant new development and expansion potential.

Australia’s LNG export volume reached 36.9 million tonnes for 2015–16 and is projected to increase to around 77 million tonnes per year by 2021–22. The projected doubling of LNG export volumes over the next five years has the potential to see Australia overtake Qatar as the world’s leading LNG exporter. A total of ten LNG plants comprising 21 trains and around 87 million tonnes of liquefaction capacity are expected to be online over the next few years and will leave Australia well placed to continue to supply the large existing Japanese, Chinese and South Korean markets.

Australia’s largest LNG project, the North West Shelf gas project, is located on the Burrup Peninsula in Western Australia. The plant commenced operation in 1984 and currently incorporates five trains with a combined annual LNG production capacity of 16.3 million tonnes per year. The North West Shelf ships LNG to a number of countries including Japan, South Korea and China. The Pluto LNG project, also located on the Burrup Peninsula, started operations in May 2012 and has a capacity of 4.3 million tonnes per year. The Darwin LNG project commenced operations in February 2006 and has a capacity of 3.7 million tonnes per year. The first of over 300 LNG shipments under long term contract to Japan was delivered in May 2006.

The North West Shelf Shipping Company currently owns and operates a fleet of seven purpose built vessels and charters a number of LNG tankers. The LNG carriers that transport Australia’s LNG are among the most advanced in the world and have been specially designed to carry the super-chilled LNG safely and efficiently. The tankers transport the LNG to receiving terminals in Japan, South Korea, China and other countries. The vessels are propelled by steam turbines designed to provide flexible and economic operation, using gas from their LNG cargoes as the primary fuel.

The three Queensland LNG projects being constructed are the first LNG export projects in the world to use coal seam gas as their primary feedstock. Queensland Curtis LNG began production in December 2014. Gladstone LNG produced first gas in October 2015. Australia Pacific LNG began production in January 2016. Each of the Queensland LNG projects has two trains. All six trains are now producing LNG.

Coal transport

Australia is the world’s largest exporter of black coal by volume. The largest coal production areas are located in the Hunter Valley of New South Wales and the Bowen-Surat Basin in Queensland. Demand for coal is expected to increase, particularly from India and other emerging countries in the region.

There are numerous mines and rail, road and port facilities in Australia offering customers different supply sources. In addition to transporting coal they supply services such as logistics management and coal blending. All have access to efficient transport facilities to move export coal to the ports.
The coal industry is supported by a strong equipment and services sector. Australia has world-class expertise in design, construction and operation of mines, transport systems and loading facilities. It also has expertise in training, technical support and project management.

The coal export industry is serviced by 10 coal terminals at six ports along the eastern coast of Australia. Port ownership is a combination of public and private interests.

The Port of Newcastle (which includes access to the shipping channel) is operated by Port of Newcastle Investments, trading as ‘Port of Newcastle’ (owned 50% by The Infrastructure Fund and 50% by China Merchants Group). Port Waratah Coal Services Limited and Newcastle Coal Infrastructure Group operate coal terminals at the port.

A number of new coal terminal and expansion projects have been completed to increase capacity to approximately 600 million tonnes per annum to meet expected long-term global growth, particularly from China and India.

**New South Wales**
- A 30 million tonnes per year third terminal in Newcastle (Newcastle Coal Infrastructure Group) commenced operations in 2010 and has since increased to 66 million tonnes per year capacity ([www.ncig.com.au](http://www.ncig.com.au)).
- Port Waratah Coal Services has the potential to increase capacity to between 45 and 120 million tonnes per year through its T4 project. Approval for an initial 70 million tonnes per year throughput is currently being sought due to reduced demand; however, future expansion up to 120 million tonnes per year is possible if demand increases ([www.pwcs.com.au](http://www.pwcs.com.au)).

**Queensland**
- Abbot Point Coal Terminal can produce throughput of 50 million tonnes per year. Additional expansions are planned to increase capacity to 100 million tonnes after 2017.
- Stage 1 of the Wiggins Island Coal Export Terminal in Gladstone is complete. The first coal was loaded in May 2015, finalising the commissioning of the facility, and was the first of the contracted 27 million tonnes per year throughput. Current feasibility studies have been developed for expansions up to 90 million tonnes per year. ([www.wicet.com.au/irm/content/default.aspx](http://www.wicet.com.au/irm/content/default.aspx)).
- Port Alma, near Rockhampton is used for the importation of blasting accessories that are essential to the mining industry. Port Alma is a significant explosives port and the explosives imported are used throughout Australia.

**Road and conveyor**
Road transport is used for short distance haulage and is an effective method when the mine site is located near ports or far away from the rail head. Conveyor systems are used to transport the coal from the mine site directly to the rail head or to coal fired electricity plants.

**Rail**
Rail is the most effective means of long distance transport in Australia, especially for export coal. Australia has the advantage that most coal mines are located less than 300 kilometres from the port of loading and many are within 100 kilometres. This results in short rail haulage times and fast responses to changes in demand. Balloon loops and rapid overhead loading bins ensure efficient loading and unloading.

**New South Wales**
The Australian Rail Track Corporation, a Commonwealth of Australia owned corporation, leases and operates the Hunter Valley coal rail system and has a rail network capacity of more than 220 million tonnes per annum. More information on their services can be found at [https://www.artc.com.au/](https://www.artc.com.au/)

Pacific National is the primary coal rail haulage operator in New South Wales and is responsible for hauling approximately 80% of the state’s total domestic and export coal. More information on Pacific National can be found here: [https://pacificnational.com.au/](https://pacificnational.com.au/)

**Queensland**
In Queensland, the coal rail network is owned by Queensland Rail, a wholly-owned subsidiary of the Statutory Authority. Above rail freight services are predominantly provided by Aurizon, Australia’s largest freight rail operator, and Pacific National, which entered the Queensland rail market as an above rail competitor in April 2009.

A number of investments have been made in rail infrastructure capacity to complement port capacity projects in Queensland, including the $900 million rail project to connect to the new Wiggins Island coal terminal to the existing rail infrastructure which was completed 2015.

More information on Aurizon can be found here: [https://www.aurizon.com.au/](https://www.aurizon.com.au/)
14. Equipment, technology and services
Australia is a technologically advanced mining nation. Its minerals and petroleum industries are export driven, capital intensive and innovative, exhibiting:

- a high level of demand for technical equipment, services and personnel
- an increasing role for mining equipment using refining technology
- more sophisticated exploration methods and geological analysis
- improvements in safety, efficiency and reliability through applied technology
- an increasing use of contract mining, especially in those mines with very short lives and where it is difficult for owners to justify large amounts of capital
- an increasing emphasis on research and development (R&D).

Mining Equipment, Technology and Services (METS) firms provide specialised products and solutions for mineral exploration, extraction and mining supply chains. This includes equipment manufacturers, engineering services, mine software products and other related equipment, technologies and services where the primary function is to support the mining and mineral extraction industries.

Australia’s minerals and petroleum industries are underpinned by a sophisticated, internationally competitive METS industry which has an excellent track record in planning, designing, developing and servicing mining software and equipment. The service industry also has an excellent record in specialist fields such as scientific analysis, exploration assessment and mineral processing technology, environmental services, and health and safety services and equipment.

Australia has emerged as one of the world leaders in the development and provision of METS as a result of its position as one of the world’s leading mining nations. The minerals industry is internationally competitive and export-oriented. In addition, rapid globalisation over the past decade has seen Australia emerge as one of a small number of key centres in the global minerals industry.

The technological expertise required to create complex minerals projects, from initial exploration through to design, plant construction and ongoing management, is an export industry in its own right. A recent survey of the METS sector conducted by Austmine estimated that the sector generated mining-related revenue of $90 billion in 2011–12 including exports of approximately $15 billion.

Research and development and innovation

A crucial element in Australia’s METS sector is R&D, which is seen by many companies as a key to their competitive edge and growth. Innovation and the resulting product quality and process efficiencies are principal differentiating factors for a company’s products and services. Expenditure on R&D is viewed as core business by many companies in this sector. The Austmine survey established that METS business expenditure on R&D in 2011–12 was $1.6 billion, which represents approximately 9% of total R&D spend by businesses, according to the Australian Bureau of Statistics.

Equipment, technology and services sector support

Australia’s mining and petroleum equipment, technology and services sector is supported by a number of organisations including industry groups and governments. The sector also collaborates on R&D activities with universities, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Cooperative Research Centres.

Department of Industry, Innovation and Science

The Australian Government facilitates a number of programs to help industry become more efficient, competitive and innovative, including:

- **AusIndustry**—Provides programs and services to help existing and new businesses grow and succeed
- **Entrepreneurs’ Infrastructure Programme**—Connects businesses to specialist expertise, knowledge and tools to increase competitiveness
- **Industry Growth Centres Initiative**—Boosts the competitiveness and productivity of Australia’s high-growth sectors. More information is available in Chapter 8.

Austmine

Austmine is Australia’s leading industry association connecting the METS sector with mining companies both locally and internationally. It works closely with the Australian Government, particularly Austrade, to market Australian mining industry expertise to the world.


Austrade

Austrade (the Australian Trade & Investment Commission) has one of the largest METS databases in the country and is a first point of call for international companies seeking to connect with the METS industry. Austrade provides tailored support to international enquirers and assists visiting international delegations to ensure the best connections with Australia’s mining industry companies and government and industry bodies.

Subsea Energy Australia
Subsea Energy Australia (SEA) is a not-for-profit industry association formed to promote Australia’s subsea capabilities to local, regional and global markets. It provides opportunities for networking, training and collaboration. SEA has a membership base of over 60 organisations.

More info is available at www.subseaenergy.org.au.

Mining and Energy Services Council of Australia
The Mining and Energy Services Council of Australia (MESCA) is part of the Australian Industry Group and is an industry body that provides a cost-effective way for its members to keep informed and engaged and increase business opportunities with project proponents, including engineering, procurement and construction managers and other members. MESCA aims to assist both greenfield and brownfield mining projects to access the very best technology designed to deliver project outcomes.

MESCA’s membership base is more than 350 companies and encompasses a diverse range of skills and services, including capital equipment providers, contractor and consultancy resources, original equipment manufacturers, project management, engineering, maintenance, repair and operational suppliers and specialty services.


Commonwealth Scientific and Industrial Research Organisation (CSIRO)
The CSIRO is Australia’s national science agency and one of the largest and most diverse research agencies in the world. To transform research into real-world results, the CSIRO regularly partners with both small and large companies, particularly in technology-intensive sectors such as mining, manufacturing, food, health and life sciences. In 2012, the CSIRO worked with more than 1500 industry partners on a range of projects.

More information is available at www.csiro.au.

The CSIRO Queensland Centre for Advanced Technologies (QCAT) is Australia’s largest integrated research and development precinct for the resources and associated advanced technology industries. World-class facilities have been established for R&D clusters in smart mining, autonomous systems and advanced minerals processing.

More information is available at www.cat.csiro.au.

Cooperative Research Centres
The Cooperative Research Centres (CRC) program is an Australian Government initiative which forms collaborative partnerships between publicly funded researchers and industry to address the major challenges facing Australia. The CRC program provides opportunities to:

- involve industry in research relevant to their needs
- build small and medium enterprise (SME) innovation and research capacity
- cultivate a culture of long-term collaboration
- develop industry capacity through education and training
- support international engagement.


CRCs with a particular emphasis on resources and energy include:

- CRC for Optimising Resources Extraction (crcore.org.au)
- Deep Exploration Technology CRC (detcrc.com.au)
- Energy Pipelines CRC (apcrc.com.au)
15. Tariffs and customs duty concessions
The Australian Government administers the taxes and duties on all goods entering and leaving the country. These taxes and duties have implications for industry and business.

Concession items

The Australian Government has a number of items under Schedule 4 of the **Customs Tariff Act 1995** that, subject to eligibility, allow for the concessional entry of goods into Australia. A duty concession may be granted in circumstances such as where substitutable goods are not produced in Australia, or the goods to be imported are technically superior to the Australian made version.

Some of the most commonly used programs under Schedule 4 include:

- **Certain Inputs to Manufacture (CIM)**
  Provides import duty concessions on certain imported raw materials and intermediate goods such as chemicals, plastics or paper goods. In addition, CIM covers metal materials and goods which are used for the packaging of food.

- **The Tariff Concession System**
  Provides for duty-free entry of goods into Australia through a Tariff Concession Order, where substitutable goods are not produced in Australia.

- **The Tradex Scheme**
  Provides for up-front exemptions from customs duty and GST on eligible imported goods that are intended for direct export or imported goods that are incorporated into other goods through a manufacturing process and then exported.

**Certain Inputs to Manufacture (CIM)**

CIM provides an opportunity for duty relief on certain imported raw materials and intermediate goods. The concession applies to certain inputs to production that are substantially and demonstrably superior to comparable goods produced in Australia.

Eligibility is restricted to production inputs that are classified under certain chapter headings in Schedule 3 of the **Customs Tariff Act 1995**. Raw materials and intermediate goods consisting of chemicals, plastics and paper goods are eligible for concession when, in the opinion of the minister, they have a substantial and demonstrable performance advantage in the production of a specific end product over similar goods produced in Australia. Metal materials and goods are eligible for a concession where they have a substantial and demonstrable performance advantage and are used in the packaging of food.


**Tariff Concession System**

The Tariff Concession System (the System) is a mechanism for granting concessional entry for imported goods as a means of assisting local industry become more internationally competitive. It is administered by the Department of Immigration and Border Protection. Certain classes of goods specified in Schedule 9 of the Customs Regulation 2015 (the Excluded Goods Schedule), including foodstuffs, clothing and passenger motor vehicles, are ineligible for concessional entry under the System.

Under the System, a Tariff Concession Order (TCO) is granted and maintained if substitutable goods are not produced in Australia in the ordinary course of business. Substitutable goods are defined as Australian-made goods which have a use corresponding to a use of the imported goods.

When applying for a TCO it is the responsibility of the applicant to ensure that, based on information expected to be held and enquiries made or expected to be made by the applicant, there are sufficient grounds for asserting that the application meets the core criteria—that is, substitutable goods are not produced in Australia in the ordinary course of business.

Further information is available from the Department of Immigration and Border Protection website at [www.border.gov.au](http://www.border.gov.au).

**Tradex Scheme**

The Tradex Scheme is an entitlement program that provides an upfront exemption from customs duty and GST for eligible imported goods that are to be subsequently exported. The imported goods may be:

- exported in the same condition as imported
- subjected to a process or treatment after importation and then exported
- incorporated in other goods after importation and then exported.

The only imported goods that are not eligible under the Tradex Scheme are:

- goods intended for sale in an establishment that offers goods for sale free of customs duties and other taxes
- goods which, if they were produced in Australia, would be subject to duties or excise (also known as excise-equivalent goods; for example, most forms of alcohol, cigarettes and other tobacco products, a wide range of petroleum products).
To claim the exemption from the relevant customs duty and GST, the importer must apply for and hold a valid Tradex Order which nominates the particular goods that are being imported. Tradex Orders are issued by the Secretary for the Department of Industry and Science. Once issued a Tradex Order remains valid until revoked, either at the request of the Tradex Order holder, or if the Tradex Order holder ceases to exist or becomes insolvent.

Export of the imported goods may be carried out by the importer or a third party but must occur within 12 months of the time of import, or within a longer period, if approved by the Secretary of the Department of Industry and Science, or the Secretary’s delegate.

If goods imported under a Tradex Order are not exported within one year (or other agreed period) of their importation or are otherwise used or disposed of in Australia, Tradex duty must be paid on those goods to the Department of Industry and Science. The Tradex duty is an amount equivalent to the customs duty that was exempted when the goods were imported. The GST component must be accounted for in the importer’s next scheduled Business Activity Statement required to be lodged with the Australian Tax Office.

A Tradex Order holder must maintain records of all goods imported and exported under their Tradex Order, including, where applicable, relevant manufacturing records.

Information on the Tradex Scheme can be found at www.business.gov.au/grants-and-assistance/import-export/tradex/Pages/default.aspx or by phoning 13 28 46.

For importers who, for their own business reasons, would prefer to pay the relevant import duty, if any, on goods at the time they are imported, a Duty Drawback facility remains in place to allow for repayment of that import duty after the goods have been exported. This facility is managed by the Department of Immigration and Border Protection and details can be found at www.border.gov.au.
16. Taxation—general
General taxation arrangements

Those currently investing, or considering investing, in minerals and petroleum exploration and development in Australia, should be considering the taxation implications.

The Australian Taxation Office (ATO) has a considerable amount of related material available at www.ato.gov.au.

The following links provide details about Australia’s various taxation elements:

- **Company taxation arrangements**—Learn about the tax treatment of business expenditure by exploring the business part of the web site.

- **Tax incentives for research and development**—The R&D tax incentive provides targeted R&D tax offsets designed to encourage more companies to engage in R&D.
  www.ato.gov.au/randdtaxincentive

- **Payroll tax**—The general revenue base of Australian states and territories includes a tax on payrolls. The tax is payable by all employers and is based on wages paid or payable.

- **Capital Gains Tax (CGT)**—CGT is the tax payable on any net capital gain included in an annual income tax return.

- **Fringe Benefits Tax (FBT)**—Employers generally are required to pay FBT on the value of certain fringe benefits they provide to their employees.

- **Dividend imputation, dividend withholding tax exemption for foreign source dividend income**—Learn about the imputation system of company taxation that applies in Australia.

- **Agreements on avoidance of double taxation and foreign tax credits**—Learn about the comprehensive international tax agreements Australia has with a number of countries.

- **Thin Capitalisation**—The Thin Capitalisation regime is principally about the extent to which an investment is financed by way of debt compared to equity.

- **Indirect taxation**—A broad based goods and services tax (GST) applies in Australia. Businesses are able to claim a tax credit for GST paid on business inputs. Excise duties become payable on petroleum products, including gasoline and diesel fuel, produced for the Australian market while exported goods are excise exempt.

- **Fuel tax credits include heavy road vehicles, biodiesel and biodiesel blends and alternative fuels**—Learn about the application of fuel tax credits for businesses

- **Losses**—An income tax loss can be carried forward and deducted in future years against income for tax purposes.
  www.ato.gov.au/General/Losses

17. Taxation—petroleum
**Petroleum Resource Rent Tax**

Australia’s petroleum taxation regimes aim to provide a fair and reasonable return to the Australian community from the development of these non-renewable resources, while at the same time providing an incentive for companies to explore for and develop resources.

The Petroleum Resource Rent Tax (PRRT) began in 1987 when it was applied to offshore petroleum projects. It has been applied to the Bass Strait Project since 1990 and from 1 July 2012, has been applied to onshore petroleum projects (such as coal seam gas projects) and the North West Shelf project. The PRRT does not apply to the Joint Petroleum Development Area, which lies in the waters between Australia and Timor-Leste and is subject to arrangements under Production Sharing Contracts.

The PRRT is a profit based project tax. It is applied at a rate of 40% to a project’s taxable profit and is based on assessable receipts less general project expenditure, project exploration expenditure and project exploration expenditure transferred in from other associated PRRT projects.

The PRRT applies to upstream petroleum production, defined by the point at which a saleable commodity is first produced such as crude oil, condensate, natural gas, liquid petroleum gas (LPG) and ethane. Downstream processing or value adding activities, such as liquefaction of natural gas (or LNG) which is categorised as a processed product, are not subject to PRRT. A gas transfer pricing formula has been developed to establish the upstream value of gas produced and consumed in an integrated gas to liquids project. This formula, known as the residual pricing method, ensures the application of arm’s length principles in valuing the resource at the taxing point.

**The PRRT liability**

The PRRT is levied before company tax and its liability is incurred when all allowable expenditures have been deducted from assessable receipts. Deductible expenditures are compounded forward at a variety of set uplift rates depending on the nature of those expenditures and the time that they are incurred prior to a production licence being granted.

Figure 3 illustrates the basic framework for calculating a PRRT liability.

The PRRT liability for a project is not influenced by changes in ownership or farm-in agreements. Joint ventures will be assessed on an individual participant basis.

![Figure 3 Calculating a PRRT Liability.](image)

**Deductible expenditure**

Prior to the extension of PRRT from 1 July 2012, there were three categories of eligible real expenditure:

- exploration expenditure
- general project expenditure
- closing-down expenditure.

After 1 July 2012, these categories were expanded to include the following additional categories of deductible expenditure which are unique to onshore petroleum interests and the North West Shelf project. They are:

- resource tax expenditure
- acquired exploration expenditure
- starting base expenditure.

Native title payments to landowners are deductible to the extent they are liable to be made in relation to securing access to land for the operations, facilities and other elements of a petroleum project. Amendments have also been made to ensure that any native title component of a payment that would generally be classified as a private override royalty payment if it is made prior to 1 July 2012 and would be treated as excluded expenditure can give rise to deductible expenditure from 1 July 2012 onwards.

To avoid doubt, from 1 July 2012 expenditure incurred for an environmental purpose in relation to carrying on or providing the operations, facilities and other elements of a petroleum project is specifically deductible as either exploration or general project expenditure.

Acquired exploration expenditure represents the exploration component of the cost of acquiring an interest in a petroleum project, exploration permit or retention lease between 1 July 2007 and 2 May 2010. The amount of acquired exploration expenditure is taken to be equal to the amount of the cost of acquiring the interest that has been allocated to the exploration and evaluation assets recognised in a financial report.
The starting base amount recognises the value of investment which existed prior to the extension of the PRRT. Companies may elect to use the market value rather than the book value as the starting base for project assets, including oil and gas rights that are subject to PRRT. Starting base deductions can only be utilised after crediting of resource tax expenditures and deduction of any carried-forward resource tax expenditure balances.

As an alternative to using market value or book value, a taxpayer may choose to use the look-back approach. Under the look-back approach, the taxpayer is able to account for expenditures incurred from 1 July 2002, which would have been deductible had the PRRT applied at that time, in calculating their tax liability after 1 July 2012. Where the look-back approach is chosen in relation to a project interest, there is no starting base amount. Instead, expenditures incurred in relation to the project interest from 1 July 2002 will be able to be taken into account in determining PRRT liability, consistent with existing PRRT deductible expenditure provisions.

Project closing-down costs are also deductible, including costs incurred in environmental restoration of a project site.

The PRRT legislation also provides a short cut valuation method for coal seam gas projects using the market valuation method. This method allows a 60cent/gigajoule (GJ) value to be applied to 3P (i.e. proven AND probable AND possible) coal seam gas reserves as at 2 May 2010 to determine a project’s starting base. This choice can be made only if:

- an interest in the project was acquired by any entity between 1 July 2007 and 2 May 2010
- where a company that held an interest or another interest in the project, was wholly acquired by any entity between 1 July 2007 and 2 May 2011.

The costs of water treatment processes and associated facilities that are integral to the production of coal seam gas are deductible against a PRRT liability.

Uplifted and carried forward deduction

Any unused deductible expenditure is uplifted and carried forward and will be deducted against assessable receipts derived in later years. The carry forward rate that applies to un-deducted general project costs is a crucial parameter in the PRRT framework. The type of expenditure, and the date of the project’s production licence, determines the expenditure uplift rate.

General expenditure incurred less than five years before the application for a project production licence is compounded at the Australian Long Term Bond Rate (LTBR) plus 5%.

Market value and book value starting bases, and amounts calculated via the look-back approach, are immediately deductible from 1 July 2012. Un-deducted amounts are carried forward and uplifted at LTBR plus 5%.

Exploration expenditure that is not deducted in the tax year in which it is incurred can be uplifted and carried forward to be used as a deduction in subsequent years. This expenditure is uplifted at the following levels:

- expenditure incurred more than five years before the application for a project production licence is compounded at a rate based on the Implicit Price Deflator for Expenditure on Gross Domestic Product (GDP)
- exploration expenditure incurred less than five years before the application for a project production licence is compounded at LTBR plus 15%.

Petroleum projects are entitled to deduct exploration expenditure transferred from related projects when the following conditions are satisfied:

- the exploration expenditure must have been incurred after 1 July 1990
- the receiving project must be making a taxable PRRT profit
- the company must have held an interest in the transferring project and the receiving project from the time the expenditure was incurred until the time of the transfer (an interest is defined as the entitlement to receive receipts from the sale of petroleum recovered in relation to the project)
- the transfer must go to the project which has the most recent production licence.

The ATO is responsible for administering the PRRT and additional information is available on its website at www.ato.gov.au.

Any announced changes to the PRRT will be advertised in the Australian Petroleum News, which is a free occasional newsletter produced by the Australian Government to inform the offshore petroleum industry of regulatory developments in Australia. To be added to the Australian Petroleum News mailing list, please send an email with your contact details to: petroleum.exploration@industry.gov.au.

Excise and royalty

Crude oil and condensate excise and royalties are payable in state and territory coastal waters and on the North West Shelf project. Royalties are levied at a rate of between 10% and 12.5% of the net wellhead value of all petroleum produced (see Table 7). Royalties are calculated by taking a percentage of the value of petroleum at the wellhead, less deductible processing, storage and transport costs.

Commonwealth of Australia legislation provides for an excise on all oil and condensate produced from fields of greater than 30 million barrels. The first 30 million barrels produced from a field are exempt.
The rate of crude oil and condensate excise depends on the annual rate of production of crude oil and condensate, the date of discovery of the petroleum reservoir and the date on which production commenced.

The crude oil excise applies to condensate but does not apply to liquefied petroleum gas, natural gas and liquefied natural gas (LNG).

Petroleum royalties are administered and collected under Australian, state or territory government legislation. Royalties collected for onshore projects are retained by the relevant state or territory government, while offshore projects are shared between the Australian and state governments or the Australian and territory governments in accordance with the relevant legislation.

Royalties from activities on Barrow Island off Western Australia are also shared between the Australian and Western Australian governments.

The crude oil excise tax and royalties are deductible for company tax purposes.

Further information on state and territory royalties is available from the relevant state or from the Northern Territory mines and petroleum department (or, in the case of Queensland, the Office of State Revenue). The relevant information on excise is available at www.ato.gov.au.

**Table 7** Comparison of Royalty Systems for Petroleum Commodities.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>New South Wales</th>
<th>Victoria</th>
<th>Queensland</th>
<th>Western Australia</th>
<th>South Australia</th>
<th>Northern Territory</th>
<th>Tasmania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude oil, petroleum, condensate, LPG &amp; LNG</td>
<td>10% of net wellhead value.</td>
<td>10% of wellhead value.</td>
<td>10% of the wellhead value.</td>
<td>10% to 12.5% of wellhead value. Primary production licences—10%. Secondary production licences—12.5%. Once the secondary entitlement licence is invoked, the 12.5% rate applies to both the primary and secondary entitlements.</td>
<td>10% of net wellhead value.</td>
<td>Royalties are collected under the Petroleum Act 1984 (NT) at a rate of 10% of the gross value at the wellhead.</td>
<td>12% of the gross value of the petroleum at the wellhead.</td>
</tr>
</tbody>
</table>

**Key petroleum taxation legislation and information**

- **Petroleum Resource Rent Tax Assessment Amendment Act 2012 and Explanatory Memorandum.** This Act amends the Petroleum Resource Rent Tax Assessment Amendment Act 1987 to expand its coverage to onshore projects and the North West Shelf.

- **Petroleum Resources Rent Tax Assessment Act 1987** applies to all offshore waters seaward of the outer limit of coastal waters other than the North West Shelf project area.

- **Offshore Petroleum and Greenhouse Gas Storage Act 2006** applies to petroleum production licences originating from the North West Shelf project areas covered by exploration permits WA-1-P and WA-28-P. This is an area of Commonwealth of Australia jurisdiction in which a wellhead value royalty system is used.

- **Barrow Island Royalty Variation Agreement Act 1985** applies only to Barrow Island. The royalty regime was developed in negotiations between the Commonwealth of Australia, the Western Australian Government and the West Australian Petroleum Pty Ltd consortium. This Act replaced the wellhead royalty and excise system which applied previously.
18. Taxation—minerals
Royalties on mineral production

All the state and the Northern Territory governments collect royalties on mineral production in return for granting the right to private businesses to exploit mineral resources within their jurisdictions. With limited exceptions, these take the form of output-based royalties imposed as a percentage of the value of production or, less commonly, the volume of production. Royalty payments are a deduction for company income tax purposes.

The state and territory governments generally own, on behalf of the community, all mineral resources in their jurisdictions and therefore have roles in regulating the access to, and development of, these resources. Compensation in the form of royalties is paid to the jurisdiction for the extraction and sale of its mineral assets.

Royalty systems and rates vary among the jurisdictions and commodities. The systems can be any one of the following:

- a specific rate royalty (a fixed dollar amount per unit of mass, e.g. per tonne)
- an ad valorem royalty, a fixed percentage of the value of production
- a profit-related or rent-based royalty
- a hybrid royalty with a flat ad valorem combined with a profit component.

Royalty systems on minerals across Australian states and the Northern Territory vary significantly.

Royalties are generally levied at the mine mouth or on what is termed a free on board basis. A range of allowable deductions apply in each case in calculating the value for royalty purposes.

Profit-related royalty regimes also vary for the type of minerals extracted and in the respective state and territory jurisdictions. Where profit-based royalties do apply, they tend to incorporate elements of both ad valorem and profits-based regimes. This system is project-based and profit is calculated by deducting allowable project costs from all project revenues.

Project costs may include:

- operating costs
- depreciation on project capital assets
- inventory adjustments
- interest on borrowings
- pre-development and exploration costs.

In some cases, jurisdictions will also implement exemptions or reductions in rates to address such issues as downturn in commodity prices, attracting new investment or encouraging processing within the jurisdiction. Examples of this include:

- Queensland, a $100,000 royalty free threshold applies to some minerals and discounted royalty rates can apply where certain ores are processed within the state
- Western Australia has previously applied royalty rebates for magnetite producers in recognition of the additional cost of processing
- South Australia applies a reduced royalty rate to new mining projects for up to five years from when the first royalty payment is due

It is suggested that investors visit the relevant websites for each jurisdiction to obtain the most up to date royalty information applicable.

Mineral royalties—offshore

The Offshore Minerals Act 1994 governs exploration for and mining of offshore minerals, other than petroleum, within the Australian Government’s jurisdiction. That jurisdiction is beyond the outer limits of the first three nautical miles as measured from the Territorial Sea Baseline. The offshore area within the first three nautical miles of the Territorial Sea Baseline is under the jurisdiction of the relevant state or territory.

The Australian Commonwealth, state and Northern Territory governments have adopted a common mining code for all offshore minerals and agreed arrangements for sharing offshore minerals royalties 60:40 in favour of the states.

Since commencement of the Offshore Minerals Act, a number of minerals exploration licences have been granted. However, as at 30 May 2017, there were no mineral mining licences under the Act.

Agreement with states on common regime

At present, there is no common offshore minerals royalty system operating. The Offshore Minerals (Royalty) Act 1981 provides the Joint Authority, consisting of the Commonwealth minister and the relevant state minister, with the power to determine the type and rate of royalties on minerals, other than petroleum, recovered beyond the outer limits of the states and the Northern Territory coastal waters. Pending the introduction by the states and the Northern Territory of complementary royalty legislation, the various onshore minerals royalty systems apply to the offshore area within the first three nautical miles of the Territorial Sea Baseline.
19. Appendix A
State and Territory contacts

New South Wales
Department of Planning and Environment
Division of Resources and Energy
PO Box K348
Haymarket NSW 1240
T: Toll Free: 1300 736 122 (Australia only)
or +61 (0) 2 8289 3968
E: minres.webcoordinator@industry.nsw.gov.au
W: www.resourcesandenergy.nsw.gov.au

Northern Territory
Department of Primary Industry and Resources
T: +61 8 8999 1385
E: geoscience.info@nt.gov.au
W: https://core.nt.gov.au/
or https://nt.gov.au/industry/mining-and-petroleum

Queensland
Department of Natural Resources and Mines
1 William Street
Brisbane QLD 4000
PO Box 15216
City East QLD 4002
T: 13 QGOV (137 468)
E: geological_info@dnrm.qld.gov.au

South Australia
Department of the Premier and Cabinet
Petroleum, geothermal and gas storage: Energy Resources Division
T: +61 8 8463 3204
E: DPC.petroleum@sa.gov.au
W: www.petroleum.dpc.sa.gov.au
Minerals: Mineral Resources Division
GPO Box 320
Adelaide SA 5001
T: +61 8 8463 3000
E: resources.customerservices@sa.gov.au

Tasmania
Department of State Growth
Mineral Resources Tasmania
PO Box 56
Rosny Park Tasmania 7018
T: +61 3 6165 4800
E: info@mrt.tas.gov.au
W: www.mrt.tas.gov.au

Victoria
Department of Economic Development, Jobs, Transport, and Resources
Earth Resources Division
Earth Resources Information Centre
GPO Box 2392
Melbourne VIC 3001
T: 136 186 (within Australia)
E: customer.service@ecodev.vic.gov.au

Western Australia
Department of Mines and Petroleum
Mineral House
100 Plain Street
East Perth WA 6004
T: +61 8 9222 3333
W: www.dmp.wa.gov.au