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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# Contents

1. Minerals and petroleum and the Australian economy 1
   - Overview of the resources sector in Australia 2
   - Minerals and petroleum exports 2
   - Exploration expenditure 2
   - Australia’s key petroleum regions 3
   - Australia’s key mining regions 4

2. Exploring for minerals in Australia 7
   - Australia’s mineral resources 8
   - Australia is an under-explored continent 10

3. Exploring for petroleum in Australia 13
   - Australia’s petroleum resources 14
   - Australia’s high potential for new discoveries 14

4. Role of government 17
   - Separate roles and responsibilities 18
   - Common roles and responsibilities 18
   - Australian Government involvement 18
   - State/Territory involvement 19
   - State and Territory contacts 19

5. Foreign investment guidelines and business entry into Australia 21
   - Exploration 22
   - Investment 22

6. Onshore approval processes 23
   - The mining approval process 24
   - Mining, production and gas storage leases 27

7. Offshore approval processes 31
   - Offshore Petroleum Exploration Acreage Release 32
   - Offshore petroleum legislation and regulatory arrangements 32
   - Offshore minerals exploration and mining legislation 35
   - State and Northern Territory legislation 37

8. Industry growth centres 39
   - Focus 40
   - Activities 40

9. Social licence to operate 41
   - Sustainable development 42
   - Multiple land use 43

10. Mine health and safety 45
    - Management of health and safety 46
    - Contacts 48

11. Working visas, immigration and skills 47
    - Visa options for entry to Australia 48
    - Contact information 49

12. Indigenous engagement 51
    - Native title 52
    - The Native Title Act 52
    - Onshore exploration and minerals and petroleum projects 52
    - Summary of native title processes 53
    - Offshore exploration or petroleum projects 53
    - Protection of Indigenous heritage 54
    - Aboriginal Land Rights (Northern Territory) Act 1976 54

13. Transport infrastructure 55
    - Iron ore transport 56
    - LNG transport 56
    - Coal transport 57

14. Mining equipment, technology and services 59
    - Research and development and innovation 60
    - Mining equipment, technology and services sector support 60

15. Tariffs and customs duty concessions 63
    - Concession items 64

16. Taxation—general 67
    - General taxation arrangements 68
    - Exploration Development Incentive 68

17. Taxation—petroleum 69
    - Petroleum Resource Rent Tax 70
    - Key petroleum taxation legislation and information 72

18. Taxation—minerals 73
    - Royalties on mineral production 74
    - Mineral royalties—offshore 74
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 which 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.

The industry is 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.

The industries clearly recognise the need to operate in a way to address the three pillars of sustainable development (economic, social and environment).

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 conventional or unconventional hydrocarbon oil and gas resource, including oil, shale gas, tight gas and coal seam gas.
- In 2013–14, the minerals (including coal) and petroleum industries produced 8% 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 [1, 2].
- Australia’s exports of mineral and petroleum commodities were estimated to be $174 billion in 2014–15, representing 71% of Australia’s merchandise exports income [3].
- Australia is the world’s largest exporter of iron ore, accounting for 53% of world trade in 2014, and is the second largest exporter of coal, accounting for around 28% of world trade [5]. Australia is the third largest exporter of LNG in the world [8] and is on track to overtake Qatar as the leading exporter of LNG by 2020 [2]. Australia is also a major exporter of aluminium, copper, gold, uranium and zinc.
- All six Australian States, the Northern Territory, and the Australian Capital Territory have operating mines or quarries. Australia’s major petroleum resources are in offshore basins in 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.
- As of June 2015, the resources sector employed 229,000, including in minerals and petroleum exploration, extraction and associated services [2].

Capital expenditure

- In April 2015, there were 39 committed projects (projects that have received a positive final investment decision) at a value of $226 billion. Of these projects there were [4]:
  - 13 petroleum projects at an estimated value of $200 billion
  - 19 mining and processing projects at an estimated value of $20.5 billion
  - 7 infrastructure projects at an estimated value of $5.5 billion.

Minerals and petroleum exports

The resources sector is Australia’s largest single export sector, with combined earnings estimated at $174 billion in 2014–15. Over 80% of its output is exported, accounting for around 60% of total goods and services exports (Figure 1).

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.

In 2013–14, total Australian minerals and petroleum exploration expenditure decreased by 12% to $6.9 billion. The overall decline in 2013–14 resulted from a decrease in exploration expenditure in coal and the major metal commodities including iron ore, gold, base metals, silver and cobalt. Exploration for petroleum has steadily increased in recent years however a decline in oil prices at the end of 2014 may affect petroleum exploration expenditure for the remainder of 2014–15 [2]. This significant decrease in exploration expenditure was largely a consequence of lower commodity prices with companies seeking to improve productivity and reduce production costs rather than invest in additional capacity.

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 Basin in South Australia and Queensland is the main oil and gas producing province onshore. The production of condensate and natural gas will commence in the Browse Basin in 2016. 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 4 billion barrels of oil as well as over 7.5 trillion cubic feet of natural gas, LPG and ethane have been produced from the Gippsland Basin and exploration and development is continuing. The latest project to deliver natural gas is the $4.5 billion Kipper Tuna Turrum Project, the largest gas development on the eastern seaboard. The Otway Basin has been a gas-producing province since the late 1980s with small onshore fields being developed. Since the early 2000s offshore fields such as Thylacine, Casino, Minerva and Henry provide natural gas to Australia’s south-eastern market via a network of interconnected pipelines. Finally, the Bass Basin continues to deliver gas from the Yolla Field.

Carnarvon Basin (Western Australia)

A number of oil fields are located in the Carnarvon Basin, including Vincent, Pyrenees, Okha 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 and is Australia’s largest natural resource development. It is located about 130 kilometres north of Karratha in north-western Australia. The facility has an LNG export capacity of 16.3 million tonnes a year and 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 a 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 a year when completed in 2015) and the Wheatstone LNG project (capacity of 8.9 million tonnes a year plan to be completed in 2016).

Browse Basin (Western Australia)

The petroleum development underway in the Browse Basin includes the development of the Ichthys LNG project. The gas produced from fields such as Ichthys North and Ichthys West will be piped almost 900 kilometres to Darwin via a subsea pipeline. The Darwin gas processing plant will have the capacity to export 8.4 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 Kimberley region in the Browse Basin, production from these fields will utilise, for the first time, 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 based on the Torosa, Brecknock and Calliance gas fields, located about 250 kilometres from the West Australian coastline. In mid-2013, project proponents determined that a land based processing facility at James Price Point was not viable and are now considering other development options, including a FLNG facility.
Bonaparte Basin (Western Australia/Northern Territory)
The Bonaparte Basin is a northerly sedimentary basin in Western Australia, straddling the border between the Northern Territory and Western Australia. Production from the basin is largely crude oil and condensate, including product from the Montara and Kitan oilfields (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 Basin (South Australia/Queensland)
The Cooper Basin, located in central Australia, historically was Australia’s largest 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, deep coal) potential. Oil production has increased in recent years, driven by new discoveries on the western flank of the Cooper Basin in South Australia. The Cooper-Eromanga Basin accounts for around 18% of Australia’s oil production and around 6% of gas production.

Surat-Bowen Basin (Queensland)
The Surat-Bowen Basin is Australia’s major coal seam gas producing basin, accounting for more than 10% of Australia’s gas production. Coal seam gas production will increase significantly over the remainder of this decade as field developments support three LNG projects which have been under construction in Queensland. These projects, Gladstone LNG, Queensland Curtis LNG and Australia Pacific LNG, will have a combined capacity of 25 million tonnes a 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 and will continue to ramp up over 2015-16.

Sydney-Gunnedah-Bowen Basin (New South Wales/Queensland)
The Sydney-Gunnedah-Bowen Basin, extends from southern coastal New South Wales to Central Queensland. This basin has 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 8 petajoules). Work is progressing on the development of two other coal seam gas fields, one at Narrabri and the other at Gloucester.

Geophysical surveys, studies and basin evaluation undertaken by the NSW government through pre-competitive initiative funding have demonstrated that the Sydney - Gunnedah, and the 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 300 mines across Australia, of which almost half are in Western Australia.

Western Australia
Western Australia produces a range of mineral commodities. It accounts for about 69% of Australia’s gold, almost all its nickel, diamond and lithium, and major proportions of Australia’s iron ore, 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.
- 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 region 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 western coast of the Gulf of Carpentaria.
- 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 states 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 production.

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 north east of the state.
- Significant magnetite deposits, including Savage River and Hampshire in the NW.
- Tasmania hosts greater than 20% of Australia’s economic resources of tungsten, including 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’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, niobium, silver, thorium and tungsten. Australia’s resources of antimony, black coal, lithium, magnesite, manganese ore, rare earths, tin and vanadium are ranked in the top five countries (Source: Australia’s Identified Mineral Resources, GA 2014).

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 23 mineral commodities are produced in significant amounts. Australian mineral production comes from about 300 mines, including mines in world-class deposits of most major mineral commodities.

Australia has substantial deposits of major minerals which can be recovered profitably under current conditions. Despite high levels of production, Australia’s economic demonstrated resources (EDR) for the major mineral commodities have increased, through new discoveries and incremental increase in resources at known deposits over the past three decades (Table 1). These resources can sustain current levels of mine production for many decades.

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

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 deposits in the province include Hamersley Iron, Mount Newman, Jimblebar, Yandi and Mining Area C deposits which all yield premium high-grade hematite ore for export. Medium mine operations and development of a new major project, Roy Hill in the Hamersley basin, is expected to increase iron ore production. Since 2002, Australia’s iron ore resources have increased substantially because of increases in resources of hematite direct shipping ores. Over the 10 years to 2014, Australia’s mine production of iron ore increased from 234 million tonnes to 734 million tonnes a year and is forecast to continue increasing. Iron ore is also produced from established mines in South Australia, the Northern Territory and Tasmania.

In addition to further exploration in these major iron ore provinces, substantial exploration programs are in progress for iron ore in other regions in Australia. These include the Northern Territory, South Australia, Tasmania and New South Wales, as well as other regions in Western Australia. Exploration in recent years has delineated large magnetite deposits in Western Australia and South Australia (e.g. Central Eyre Iron Project).


Coal

While significant deposits of coal occur in all Australian states, most black coal resources are in Queensland (Bowen and Surat basins) and New South Wales (Sydney and Gunnedah basins). Numerous large-scale mining operations which produce metallurgical and/or thermal coal for the export market are located in these basins. At April 2015, a further 7 new coal mines and coal mine expansions were committed to development at a total capital cost of approximately $5.5 billion (Resources and Energy Major Projects List, April 2015). Recent exploration of the Galilee Basin in Queensland has led to the discovery of large deposits of thermal coal. Several new projects are slated for possible development in the Galilee Basin.

In Queensland, black coal deposits in the Bowen and Surat basins support a rapidly expanding coal seam gas industry. By the end of 2015, three LNG projects using feedstock from Queensland coal seam gas fields will be commissioned and exporting. In early 2015, Queensland Curtis LNG began production, exporting 2 million tons of LNG to global markets as of July. The further two LNG projects, Australia Pacific LNG and Gladstone LNG, will be completed during 2015. When completed, the projects will have a total capacity of approximately 25 million tonnes per annum (Resources and Energy Major Projects List, Oct 2014).

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.

Australia’s brown coal resources are predominantly located in the Gippsland Basin, Victoria. In Australia, brown coal is mined exclusively for domestic electricity generation and provides the primary fuel for Victoria’s power stations.

Gold
Gold occurs and is mined in all 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 holds the major iron oxide copper-gold-uranium Olympic Dam deposit, the world’s third largest gold 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 discovery of the Tropicana deposit (14.9 million ounces of gold) in the Albany-Fraser Belt, Western Australia, highlights the potential for major new gold discoveries in Australia. Ongoing exploration suggests that Tropicana may be the first discovery in a new gold province.

Nickel
Australia is one of the world’s leading nickel producers with production based on substantial resources of both sulphide and lateritic nickel. Major deposits of both forms of resources occur in the Yilgarn Craton in Western Australia. The first major sulphide deposit discovered was at Kambalda and has been followed by numerous small deposits and a number of major deposits such as Mount Keith, Perseverance and Yakabindie. Major lateritic nickel mines in the Yilgarn include Murrin Murrin and Ravensthorpe. 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. Nebo-Babel is a significant nickel sulphide deposit in Western Australia’s Musgrave Province. South Australia has potential for nickel sulphides in the Musgrave Province. Lateritic nickel-cobalt-scandium deposits are also present in New South Wales and Queensland.

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-Ridgeway, 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 8% of world economic resources of copper. Exploration programs are in progress in the Gawler Craton, including at Australia’s largest undeveloped copper deposits of Carrapateena and Hillside, in the Lachlan Fold Belt, and in the Mount Isa region.

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 and Endeavor (Elura) in central western New South Wales and those of the Lennard Shelf in Western Australia. There is also production elsewhere in Western Australia and in Queensland. Mining commenced in 2006 at the Magellan deposit in Western Australia.

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. Recent developments include the approval of the South of Embley bauxite project in Queensland that has a combined reserve and resource value of 3.5 billion tonnes (SNL), and the Bauxite Hills project with an inferred combined reserve and resource value of 47 million tonnes (SNL). In light of growing global bauxite demand, a ban on exports in Indonesia and dwindling reserves in China, Australian bauxite production is forecast to increase in the medium term.

Mineral sands
Australia is the world’s leading supplier of mineral sands (ilmenite, rutile and zircon) with production from New South Wales, Queensland, South Australia and Western Australia. Exploration resulted in new mineral sands provinces being discovered in the Eucla and Canning basins with the potential to ensure Australia remains a major supplier into the future. Most of the production is from ancient shoreline deposits occurring inland 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. A major new mineral sand province, the Eucla Basin in South Australia, contains zircon-rich deposits being mined at Jacinth/Ambrosia while resources at other deposits have been delineated. Mineral sands deposits have also been discovered at Cyclone in the Eucla Basin and more recently at Thunderbird in the Canning Basin; as well as the activity occurring in Cape York, Queensland exemplified by Urquhart Point.

Molybdenum-Rhenium
Further highlighting Australia’s potential to host major mineral deposits was the 2008 discovery of the Merlin molybdenum and rhenium deposit in northwest Queensland. This deposit is one of the world’s largest and highest grade deposits and contains more than 80,000 tonnes of molybdenum and over 15,000 kilograms of rhenium. The surrounding areas are highly prospective for further discoveries of similar deposits.
Table 1: Australia’s mineral and coal resources as at December 2014 (www.ga.gov.au/scientific-topics/minerals/mineral-resources/aimr/table1).

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<td>Mt Zn</td>
<td>62.6</td>
<td>1.7</td>
<td>28.4</td>
</tr>
</tbody>
</table>

* Coal figures as at December 2013

Abbreviations: kt = kilo tonnes = 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. Since 1990, more than 12 new world-class mineral deposits have been discovered. Significant discoveries are being made in established mining districts, even in regions where there has been production for over 100 years. The past decade has seen the discovery of, or substantial addition to, resources at significant deposits across the country.

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, particularly at depths of greater than one hundred metres, and throughout three quarters of the Australian continent, where prospective basement rocks are obscured by sedimentary cover sequences. 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 multi-disciplinary approach 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 established a national geoscience internet portal. The portal, 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 pathways to the relevant State and Territory datasets.
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 seven basins, the Carnarvon, Bonaparte and Perth basins in Western Australia, the Gippsland Basin off south-eastern Australia, the Cooper-Eromanga and Amadeus basins in central Australia and the Bowen-Surat basins in southern Queensland (Table 2, Figure 2).

Australia is a gas-rich nation with known conventional natural gas resources located in the Carnarvon, Browse and Bonaparte basins off the northwest coast of Australia, and the Gippsland Basin off south-eastern 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 and South Australia, while potential shale gas plays are being actively explored in the Northern Territory (Table 2, Figure 2).

Australia continues to add to its large reserves of natural gas, particularly in the North West Shelf area off Western Australia. As a large user of natural gas, gas to liquids technology also offers Australia an opportunity to further commercialise its large gas reserves. 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 now on-shore from Queensland. In addition to Australia’s four operating projects (North West Shelf, Darwin LNG, Pluto Train 1 and the coal seam gas-based Queensland Curtis LNG), there are currently six LNG projects under construction. They include four conventional gas-based projects, the Gorgon 15.6 million tonnes per annum (Mtpa) project and the Wheatstone (8.9 Mtpa), Ichthys (8.4 Mtpa) and Prelude floating LNG (3.6 Mtpa) projects. There are also two coal seam gas-based LNG projects the Gladstone LNG project (7.8 Mtpa) and the Australia-Pacific LNG project (9.0 Mtpa).

**Australia’s high potential for new discoveries**

Australia has the potential for further discoveries of oil and gas. Many basins remain largely or entirely unexplored, with more than 40 onshore and offshore basins awaiting in-depth exploration to determine their full potential.

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 markets in the growing economies of 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 fast-tracking of 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 geology, legislative framework and assistance in preparation of bids for areas. Further information is available at www.petroleum-acreage.gov.au.

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 is one of the best world-wide in providing petroleum exploration and production data to potential and current explorers. 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 undertaking regional basin studies, acquiring regional seismic and marine reconnaissance surveys, undertaking hydrocarbon resource assessments and providing geoscientific data and reports.

Access to petroleum exploration data has been subject to legislation since the 1950s and requires 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 internet access to data through the National Offshore Petroleum Information Management System at www.nopims.gov.au which provides online ordering for loan requests and interrogation of data holdings. Queries for data can also be directed to ausgeodata@ga.gov.au.
Figure 2 Australia’s key petroleum regions.

Table 2 Australian petroleum demonstrated resources as at 1 January 2014. Source: AERA.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Demonstrated resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude oil</td>
<td>MMbbl 1255</td>
</tr>
<tr>
<td>Condensate</td>
<td>MMbbl 2716</td>
</tr>
<tr>
<td>Liquefied petroleum gas (LPG)</td>
<td>MMbbl 1342</td>
</tr>
<tr>
<td>Conventional gas</td>
<td>Tcf 156</td>
</tr>
<tr>
<td>Coal seam gas (CSG)</td>
<td>Tcf 203</td>
</tr>
</tbody>
</table>

4. Role of government
There are three tiers in Australia’s commonwealth system of government; the Australian Government, the eight State or Territory Governments and the local government sector.

According to 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 engage in commercial exploration and development. Only the wealth-generating private sector initiates exploration and undertakes subsequent mining activities. However Federal 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 commonwealth 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 guidelines, immigration, competition policy, trade and customs, company law, international agreements, native title, 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 jurisdicitional 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 titles decisions made jointly between the Commonwealth Minister for Industry and Science together with the counterpart State or Northern Territory Minister. The day-to-day administration is carried out by the National Offshore Petroleum Titles Administrator, and safety, wells and environmental regulatory oversight by the National Offshore Petroleum Safety and Environmental Management Authority.

- 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 uranium in the Northern Territory).

The Australian Government has announced several measures designed to encourage investment. In particular, the Australian Government has abolished the carbon and mining taxes and introduced the Exploration Development Incentive, which will enable eligible investors to deduct the expense of mining exploration against their taxable income.

The Australian Government is also committed to reducing the regulatory burden imposed on the resources industry by streamlining assessment and approval processes. Onshore, efforts to remove duplication in environmental regulation between State and Territory governments have resulted in new bilateral agreements between the Government and all states/territories with an overarching intent to establish a one-stop-shop for environmental assessment and approvals. Offshore the Australian Government has streamlined regulatory arrangements by establishing the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) as the sole environmental assessor for offshore oil and gas projects in Commonwealth waters.
State/Territory involvement

The jurisdictional involvement of the States and Territories is limited to resources found on their lands or inside the first three nautical miles of the territorial sea (‘designated coastal waters’). Here the resources are owned and administered by the respective State or Territory, which also carries out day-to-day administration. Offshore jurisdiction is essentially within the remit of the Australian Government as outlined above. 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.

State and Territory contacts

**New South Wales**
Department of Industry, Skills and Regional Development
Division of Resources and Energy
GPO Box 7060
Sydney NSW 2001
Toll Free: 1300 736 122 (Australia only)
www.resourcesandenergy.nsw.gov.au
T. +61 2 9338 6887
investmentresourcesandenergy@trade.nsw.gov.au

**Northern Territory**
Department of Mines and Energy
T. +61 8 8999 6443
geoscientific.info@nt.gov.au
www.nt.gov.au/d/Minerals_Energy

**Queensland**
Department of Natural Resources and Mines
T. +61 7 137468

**South Australia**
Department of State Development
Petroleum, geothermal and gas storage: Energy Resources Division
T. +618 8463 3204
DSD.petroleum@sa.gov.au
www.petroleum.statedevelopment.sa.gov.au
Minerals: Mineral Resources Division
T. +61 8 8463 3000
resources.customerservices@sa.gov.au
minerals.statedevelopment.sa.gov.au/

**Tasmania**
Department of State Growth
Mineral Resources Tasmania
T. +61 3 6165 4800
info@mrt.tas.gov.au
www.mrt.tas.gov.au

**Victoria**
Department of Economic Development, Jobs, Transport, and Resources
Energy and Earth Resources Division
GPO Box 4509
Melbourne VIC 3001
T. 136 186
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
www.dmp.wa.gov.au
5. Foreign investment guidelines and business entry into Australia
The Australian Government welcomes direct foreign investment consistent with the needs of the Australian community, including the expansion of private investment, the development of internationally competitive and export-oriented industries and the creation of employment opportunities.

Like many countries, Australia reviews foreign investment proposals on a case-by-case basis to ensure they are not contrary to the national interest. Australia’s foreign investment review framework comprises the Foreign Acquisitions and Takeovers Act 1975, its associated Regulations and Australia’s Foreign Investment Policy. The review framework is well-established, practical and non-discriminatory. Most proposals are considered within 30 days and Australia rarely rejects or imposes conditions on foreign investment business proposals. Since 2001 only three resources-related business proposals have been rejected.

**Exploration**

Non-government foreign investors granted a new mineral or petroleum exploration right by a State or Territory government are not required to seek approval under the foreign investment review framework to take up the exploration right, nor are they obliged to seek Australian participation in mineral or petroleum exploration activities.

**Cash Bidding 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**

All acquisitions of an interest of 15% or more in an Australian business that is valued above $252 million or an offshore company which has Australian subsidiaries or gross assets valued at more than $252 million require approval. This threshold is indexed annually on 1 January to keep pace with inflation and to prevent foreign investment screening from becoming more restrictive over time. All direct investments, new business proposals and land acquisitions by foreign government investors require approval, regardless of the value.

Consistent with Australia’s free trade agreement commitments, non-government foreign investors from Chile, Japan, Korea, New Zealand and the United States are subject to a higher threshold of $1094 million (indexed annually).¹

Please note that the monetary values listed above are those for 2015. Investors are advised to confirm notification requirements and relevant thresholds with the Foreign Investment Review Board (FIRB) at the time of investment.

The Government encourages potential investors to engage with FIRB prior to lodging applications on significant proposals to allow timely consideration. The Government respects any ‘commercial-in-confidence’ information that it receives and ensures that appropriate security is provided.

Further information is available from the FIRB website at www.firb.gov.au.

¹ This higher threshold will also apply to Chinese investors once the China-Australia Free Trade Agreement enters force.
6. Onshore approval processes
The legislation governing exploration and mining/petroleum production in each jurisdiction can be accessed via the Internet. 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 in an area is also 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 the end of this guide.

The Australian Government has announced several measures designed to encourage investors and streamline the approvals process.

In particular, the Australian Government has abolished the carbon and mining taxes and introduced an Exploration Development Incentive that will allow investors to deduct the expense of minerals exploration against their taxable income. The Australian Government has also indicated it plans to offer State and Territory governments the opportunity to act as a One-Stop-Shop for environmental approvals. The One-Stop-Shop will provide substantial benefits to business and the Australian economy. Revised or new bilateral assessment agreements have commenced with all jurisdictions and draft approval agreements have been released for consultation for the majority of States and Territories.

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 the 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:

- Initial exploration
- Further detailed exploration and assessment (possibly under a retention licence)
- Mining and 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 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. In South Australia, applicants for an exploration licence must also provide a statement and evidence of financial and technical/operational 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 Commonwealth’s 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 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 and South Australia have 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 a code of conduct. South Australia and Tasmania require notification to the land owner by the explorer prior to entry to the land. In South Australia, for petroleum, geothermal energy and gas storage operations, land owners are defined as potentially affected people, enterprises and organisations, and land owners have a right to object to land access as posed. The dispute resolution process in relation to land access for petroleum operations in South Australia is within the relevant court. Roughly 1,000 notices of entry for upstream petroleum operations are given annually in South Australia. Since September 2000 when the relevant petroleum legislation was put in place in South Australia, roughly 15,000 notices of entry have been given without a single instance of a dispute resolution going to the prescribed court.
Alternatively, a licensee may negotiate an agreement with the landowner 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.

Table 3 Application for Exploration Licences—Summary of Requirements.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Public Notification</th>
<th>Public Comment Provision</th>
<th>Objections Considered in Warden’s Court</th>
<th>Considered by Minister or Minister’s Delegate</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>✓</td>
<td>Licencee to enter access arrangement with landowner.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Northern Territory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Queensland</td>
<td>✓</td>
<td>Only required where the permit is being processed in accordance with the native title expedited procedures. Required to notify the owner, or if the owner cannot be contacted, the occupier of the land before entry.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>South Australia</td>
<td>✓</td>
<td>For petroleum, approval for any/all land access within a licence is open to public comments in the pre-activity process of developing a Statement of Environmental Objectives. This occurs as a precedent to on-ground operations that may have significant impacts on social, natural and economic environments. Landowners have a further right to comment (and object) at the notice of entry stage</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Tasmania</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victoria</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Australia</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 The New South Wales Government has announced a number of reforms to improve the effectiveness and efficiency of its resources planning and regulatory system. Details of these are being released in 2015 and 2016. Please visit [www.resourcesandenergy.nsw.gov.au](http://www.resourcesandenergy.nsw.gov.au) for the latest information.

All jurisdictions have provision for compensation to the landowner/occupier and the details are available in the relevant legislation for the jurisdiction. A broad summary is outlined in Table 4.

Table 4 Exploration Licences—Compensation Conditions by Jurisdiction.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Compensation includes deprival of use of land, loss of earnings &amp; social disruption</th>
<th>Security deposits or private property bonds; may also include provision for environmental harm</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Northern Territory</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Queensland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Australia</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Tasmania</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Victoria</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Western Australia</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

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.
### Table 5 Mineral Exploration Licences—Life, Reporting Conditions and Accessibility of Historical Reports.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Legislation</th>
<th>Exploration Tenement Life/Confidentiality</th>
<th>Major reporting frequency and content</th>
<th>Open file reports (online sources)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Australia</td>
<td>Mining Act 1971</td>
<td>Up to 5 years. Subsequent licences may be granted up to a further 5 years. Reports, data and samples are confidential for the currency of the licence and will be released after a period of at least 5 years. Non-commercial in confident reports for surrendered areas are released and not confidential.</td>
<td>Annual (full technical reports) and a six monthly summary report. See reporting guidelines.</td>
<td>Available at SARIG: <a href="http://minerals.stat.development.sa.gov.au/petroleum/data_and_publications/sarig">http://minerals.stat.development.sa.gov.au/petroleum/data_and_publications/sarig</a></td>
</tr>
<tr>
<td>Tasmania</td>
<td>Mineral Resources Development Act 1995</td>
<td>5 years for Category 1, 2, 3 and 5 minerals (metallics, coal, atomic minerals, oil shale etc) or for a period the Minister determines for Category 4 minerals (petroleum). Confidentiality is for 5 years or life of tenement whichever occurs first.</td>
<td>Annual (full technical reports). See reporting guidelines.</td>
<td>Available at TIGER: <a href="http://www.mrit.tas.gov.au">www.mrit.tas.gov.au</a></td>
</tr>
<tr>
<td>Western Australia</td>
<td>Mining Act 1978</td>
<td>Not exceeding 5 years. Mining exploration reports are held by the government for 5 years may be released.</td>
<td>Annual (full technical reports). See reporting guidelines.</td>
<td>Available at WAMEX: <a href="http://www.dmp.wa.gov.au/5136.aspx">www.dmp.wa.gov.au/5136.aspx</a></td>
</tr>
</tbody>
</table>

**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 explored-for resource is potentially viable. Six jurisdictions have some form of retention licence. This licence allows the permittee that discovered the resource 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 6. 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.

Table 6 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>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Queensland</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<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. within 400 metres of residences etc.)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Tasmania</td>
<td>✓¹</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<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 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.
Table 7: Petroleum Exploration Licences—Life, Reporting Conditions and Accessibility of Historical Reports.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Legislation</th>
<th>Exploration Tenement Life/Confidentiality</th>
<th>Major reporting frequency and content</th>
<th>Open file reports (online sources)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>Petroleum (Onshore) Act 1991</td>
<td>Not exceeding 6 years. Annual exploration reports remain confidential while tenement is current.</td>
<td>Major reports are annual. See reporting guidelines</td>
<td>Open file geoscience reports are available at DIGS, which may be accessed through <a href="http://www.resourcesandenergy.nsw.gov.au">www.resourcesandenergy.nsw.gov.au</a></td>
</tr>
<tr>
<td>Northern Territory</td>
<td>Petroleum Act 1984 Petroleum (Submerged Lands) Act 1981 (PSLA)</td>
<td>5 years/Annual reports never released. Basic well and geophysical data available after 2–3 years, interpretive data after 6 years.</td>
<td>Well completion reports - basic within 3 months of rig release, interpretive within 12 months of rig release; geophysical reports within 12 months of data acquisition. Annual reports (expenditure) on expiry of each permit year.</td>
<td>Available at GEMIS: <a href="http://www.geoscience.nt.gov.au/gemis/ntgsjspui/">www.geoscience.nt.gov.au/gemis/ntgsjspui/</a> (from 2016)</td>
</tr>
<tr>
<td>Queensland</td>
<td>Petroleum and Gas (Production and Safety) Act 2004 Petroleum Act 1923</td>
<td>Generally, a maximum of 12 years.</td>
<td>Reports on or about authorised petroleum activities, including relinquishment, end of tenure/surrender, well completion, well abandonment, hydraulic stimulation, seismic or scientific acquisition, reserves, production and production testing reports.</td>
<td>All reports are to be lodged in the electronic Queensland Digital Exploration Reports (QDEX) database. Once regulatory confidentiality periods for individual types of reports have expired, these are available for public viewing. qdexdata.dnrm.qld.gov.au</td>
</tr>
<tr>
<td>South Australia</td>
<td>Petroleum and Geothermal Energy Act 2000</td>
<td>Reports, data and samples are confidential for up to 2 years for petroleum licences.</td>
<td>Annual (full technical reports) and a six monthly summary report. See reporting guidelines.</td>
<td>Available at SARIG: <a href="http://minerals.statedevelopment.sa.gov.au/petroleum/data_and_publications/sarig">http://minerals.statedevelopment.sa.gov.au/petroleum/data_and_publications/sarig</a></td>
</tr>
<tr>
<td>Tasmania</td>
<td>Mineral Resources Development Act 1995</td>
<td>5 years for Category 1, 2, 3 and 5 minerals (metallics, coal, atomic minerals, oil shale etc) or for a period the Minister determines for Category 4 minerals (petroleum). Confidentiality is for 5 years or life of tenement whichever occurs first.</td>
<td>Annual (full technical reports). See reporting guidelines.</td>
<td>Available at TIGER: <a href="http://www.mrt.tas.gov.au">www.mrt.tas.gov.au</a></td>
</tr>
</tbody>
</table>

¹ The New South Wales Government has announced a number of reforms to improve the effectiveness and efficiency of its resources planning and regulatory system. Details of these are being released in 2015 and 2016. Please visit www.resourcesandenergy.nsw.gov.au for the latest information.

² A moratorium is in place on issuing new exploration licences for all types of onshore gas, exploration drilling and hydraulic fracturing. These measures will remain in place while the Parliamentary Inquiry into unconventional gas in Victoria is underway and the Government considers the findings and recommendations.
Table 8 Application for a Petroleum Production 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>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>✓</td>
<td></td>
<td>Owner/occupier agreement is achieved at the exploration stage</td>
<td>PA - $13,225</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Petroleum Production Licences agreements are conjunctive initiated at the Exploration stage.</td>
<td>PSLA - $18,000</td>
<td></td>
</tr>
<tr>
<td>Northern Territory</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Queensland</td>
<td></td>
<td></td>
<td>Generally, a conduct and compensation agreement must be in place with the landowner or occupier before advanced activities may be carried out in the area of the production lease. Advanced activities include the acquisition of seismic and the drilling of wells. Compliance with the land access code is also required of the lease holder.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>South Australia</td>
<td>✓</td>
<td>For petroleum, approval for any/all land access within a licence is open to public comments in the pre-activity process of developing a Statement of Environmental Objectives. This occurs as a precedent to on-ground operations that may have significant impacts on social, natural and economic environments. Landowners have a further right to comment (and object) at the notice of entry stage.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tasmania</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<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>A compensation agreement developed by owner and company required.</td>
<td></td>
<td>Kept confidential</td>
</tr>
</tbody>
</table>

1 The New South Wales Government has announced a number of reforms to improve the effectiveness and efficiency of its resources planning and regulatory system. Details of these are being released in 2015 and 2016. Please visit www.resourcesandenergy.nsw.gov.au for the latest information.

2 A moratorium is in place on issuing new licences for all types of onshore gas, exploration drilling and hydraulic fracturing. These measures will remain in place while the Parliamentary Inquiry into unconventional gas in Victoria is underway and the Government considers the findings and recommendations.

Additional information specific to petroleum exploration and production in each jurisdiction can be found via the relevant links provided below:

**New South Wales**

**Victoria**

**Western Australia**

**Northern Territory**

**Queensland**

**South Australia**

**Tasmania**
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 mining website links above.

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. The EPBC legislation applies to any activity that is likely to have a significant impact on identified matters of national significance. When an activity is referred to the Department of the Environment, details of the proposal are assessed and the Commonwealth Minister for the Environment then makes a decision on whether it is a controlled action and if further assessment of the proposed action is required. 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 national environment law, 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 national environment law. The Department of the Environment works with its State and Territory counterparts to ensure information is shared and to align assessment processes where possible.

The Australian Government is committed to implementing a One-Stop Shop for environmental approvals and to having approval bilateral agreements in place with all jurisdictions as soon as possible. This will accredit State and Territory planning systems under national environment law, to create a single environmental assessment and approval process for nationally protected matters. Revised or new bilateral assessment agreements have commenced with all jurisdictions and draft approval agreements have been released for consultation for the majority of States and Territories.

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.


The Woomera Prohibited Area, which covers around 13% of South Australia, is a globally unique weapons testing range. The Woomera Prohibited Area is not Commonwealth land but access is governed by Defence to ensure safety and security of weapons testing activities. The area also has significant resources potential with an estimated 62% of Australia’s copper resources and 78% of uranium resources. Further information concerning access to the Woomera Prohibited Area can be found at [www.defence.gov.au/woomera](http://www.defence.gov.au/woomera).

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.
7. Offshore approval processes
The Australian Government has the ultimate responsibility for petroleum operations in the offshore areas beyond three nautical miles from its Territorial Sea Baseline.

Offshore Petroleum Exploration Acreage Release

The Australian Government’s annual release of quality petroleum exploration acreage is the first step to support the search for petroleum in Australia’s offshore sedimentary basins. The Offshore Petroleum Exploration Acreage Release (the Acreage Release) is underpinned by Australia’s stable economic environment and a well-established, objective-based regulatory framework which seeks to balance environmental, social and economic considerations in the development of Australia’s natural resources.

In Australia, offshore petroleum exploration and development is regulated by a title system that ensures the orderly exploration for, and production of, offshore petroleum. Petroleum activities can occur only if a company holds a valid title, which in itself provides holders with a right to apply for further approvals to conduct safe petroleum operations in the area. For example, each seismic survey or well drilling operation requires further approvals under the Offshore Petroleum and Greenhouse Gas Storage Act 2006 and associated regulations.

The most common title is an exploration permit, which allows a titleholder to explore for oil and gas. If an oil and gas resource is discovered, the exploration permit holder may apply for a production licence or a retention lease (if the resource is currently uneconomic).

The issuing of new exploration permits is facilitated by the Acreage Release process. In an Acreage Release, the Australian Government announces a number of areas for which exploration companies can submit work program bids for exploration permits (usually within a 6 or 12-month timeframe). Since 2014, a small number of selected areas in mature basins have been made available for cash-bidding.

Areas included in an Acreage Release are selected following a nomination process and assessment by the Australian Government. Extensive stakeholder consultation is undertaken to ensure the provision of accurate information about marine reserves, environmental restrictions, navigational safety, fishing, security and other considerations that could impact on future petroleum activities in an area. This analysis is integrated into an annual Acreage Release information package, which also includes pre-competitive geological and geophysical data analysis.

Inclusion in the Acreage Release does not automatically mean that petroleum exploration, or future development, will occur in an area. For a company to be awarded an exploration permit, it must lodge a comprehensive bid detailing the exploration work it proposes to undertake in the area, along with evidence of its financial and technical capability to facilitate the work. Assessment of bids is a competitive process against publicly available criteria. A company will only be granted a permit if it can satisfy decision makers that it has a work program that will significantly advance the assessment and understanding of the petroleum potential of the area, and has the technical and financial ability to carry out exploration activities.

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 9.


Offshore petroleum exploration permits do not, of themselves, authorise petroleum exploration activities. Rather, an exploration permit grants the titleholder the exclusive right to apply for permission to undertake exploration activities in the area for which the permit is granted. Permits are assessed by the national offshore petroleum regulator for compliance with the law, including environmental and other requirements.

Offshore petroleum legislation and regulatory arrangements

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

Offshore petroleum activities beyond designated State and Territory coastal waters 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 in the legislation 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
- Functions and responsibilities of the National Offshore Petroleum Titles Administrator and the National Offshore Petroleum Safety and Environmental Management Authority.

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 9 Launch of the Annual Acreage Release

<table>
<thead>
<tr>
<th>Launch of the annual Acreage Release</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acreage Release</strong></td>
</tr>
<tr>
<td><strong>Bidding</strong> 6 (and 12) months</td>
</tr>
<tr>
<td><strong>Bid assessment 3 months</strong></td>
</tr>
<tr>
<td><strong>Permit granted with a work program Years 1 to 3 (guaranteed commitment)</strong></td>
</tr>
<tr>
<td><strong>Years 4 to 6</strong></td>
</tr>
<tr>
<td><strong>Permit renewal (up to 10 years)</strong></td>
</tr>
<tr>
<td><strong>Title Transition</strong></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. The National Offshore Petroleum Titles Administrator (NOPTA) performs regulatory functions associated with offshore petroleum activities under the jurisdiction of the Joint Authority. The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) performs its regulatory functions for health, safety, structural integrity and environmental management as an independent authority.

NOPTA and NOPSEMA operate on a full cost recovery basis achieved through a system of fees and levies on title holders/duty holders.

**Joint Authority**

The Joint Authority for each State and the Northern Territory comprises the Minister for Industry and Science and the responsible State or Northern Territory Minister (often the Resources Minister). The exception to this is offshore Tasmania and the external territories – in these areas, Commonwealth Minister alone constitutes the Joint Authority. 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.

The Joint Authority makes the majority of resource allocation and management policy decisions under the OPGGS Act, such as in relation to granting petroleum titles, the imposition of title conditions and title cancellation, as well as core decisions about resource management and resource security. Other key functions and powers of the Joint Authority include the release of offshore petroleum exploration areas.
National Offshore Petroleum Titles Administrator (NOPTA)

NOPTA is responsible in all offshore areas for the day-to-day administration of petroleum titles, including the administration of exploration permits. NOPTA also acts as a single point of contact for all matters pertaining to offshore titles administration in Australian waters.

Key functions include:
- Providing information, assessments, analysis, reports and advice to members of the Joint Authority
- Managing the collection, administration and release of data
- Facilitating title administration, including Joint Authority consideration of changes to permit conditions, and approval and registration of transfers and dealings associated with offshore petroleum titles
- Maintaining the registers of petroleum and greenhouse gas storage titles in accordance with the legislation.

For more information, see the NOPTA website at www.nopta.gov.au.


National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)

NOPSEMA has regulatory responsibility under the OPGGS Act for occupational health and safety, structural integrity of facilities, wells and well-related equipment, environmental management and day-to-day operations of offshore petroleum facilities in Commonwealth waters, and in coastal waters where the relevant State and the Northern Territory powers have been conferred.

For more information, see the NOPSEMA website at www.nopsema.gov.au.

The Australian regulatory regime is an objective based (or goal setting) regime. This is based on the principle that the legislation sets the broad goals to be attained and the duty holder develops the most appropriate methods of achieving those goals. The ongoing management of risks is the responsibility of the dutyholder. All petroleum operations require specific approvals from NOPSEMA before the activity commences (e.g., acceptance of an environment plan, facility safety case, and well operations management plan).

Occupational Health and Safety

A facility cannot be constructed, installed, operated, modified or decommissioned without a safety case in force for that stage in the life of the facility. A safety case identifies hazards and risks, describes how the risks are controlled, and describes the safety management system in place to ensure the controls are effectively and consistently applied. The operator of a facility must submit the safety case to NOPSEMA. The Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 set out the requirements for the contents of safety cases.

Environment management

Under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (OPGGS Environment Regulations), titleholders must have an Environment Plan accepted by NOPSEMA prior to commencement of a petroleum activity. The plan must detail environmental impacts and risks for the activity, demonstrate that those risks will be reduced to as low as reasonably practicable and show there will be acceptable environmental outcomes. In addition, the Environment Plan must contain an Oil Pollution Emergency Plan. Titleholders must also demonstrate that they have sufficient financial assurance to meet any costs of response and remediation in the event of an incident involving hydrocarbon release before NOPSEMA can accept the titleholder’s Environmental Plan.

Additional Australian Government legislation relevant to environmental management of offshore petroleum exploration and development activities includes:
- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
- Environment Protection (Sea Dumping) Act 1981
- Protection of the Sea (Prevention of Pollution from Ships) Act 1983

Under the EPBC Act, any action which is likely to have a significant impact on a matter of national environmental significance needs to be considered for environmental assessment and approval by the Australian Government. On 28 February 2014, the Minister for Industry and Science and the Minister for the Environment announced a new streamlined approach for environmental approval for offshore petroleum activities which made NOPSEMA the sole designated assessor for these activities in Commonwealth waters. With the exception of certain specified exclusions, proponents of an offshore petroleum activity do not need to seek separate assessment and approval under the EPBC Act if the requirements of the OPGGS Environment Regulations have been met in relation to that activity (refer http://www.industry.gov.au/resource/UpstreamPetroleum/OffshorePetroleumEnvironment/Documents/ProgramReport.pdf).

Under the EPBC Act, the Australian Government Director of National Parks is responsible for the management of Commonwealth marine reserves. Where the Director has not issued a class approval or general approval in relation to activities within a marine reserve, that activity may require separate assessment and approval.

The Australian Government is now building on the success of streamlining Commonwealth waters, working to streamline arrangements for projects that cross between offshore and coastal jurisdictions.

Further information

An electronic compendium of all current legislation, regulations and guidelines governing the offshore petroleum industry can be found at www.nopta.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 10**.

<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>
<td></td>
</tr>
</tbody>
</table>


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

The **Commonwealth Offshore Minerals Act 1994** (the Act) is jointly administered by the Commonwealth, State and Northern Territory governments. Administration of the 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.

The Commonwealth Offshore Minerals Act 1994 (the 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 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. A mineral for the purposes of the Act 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 $200 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 11.

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 11 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.nptla.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 (the Initiative) is the centrepiece of the Australian Government’s new industry policy direction and part of the Industry Innovation and Competitiveness Agenda. It will lift competitiveness and productivity by focusing on areas of competitive strength.

**Focus**

The focus of the Growth Centres is to address key issues including deregulation, skills, collaboration and commercialisation. It will drive excellence, not dependence, and create an Australian economy that will provide the right economic incentives to enable businesses, big and small, to grow.

The Growth Centres are established to deliver the Initiative in five growth sectors in which Australia already has a competitive advantage. The Growth Centres that relate most directly to Australia’s resources sector include:

- Mining Equipment, Technology and Services
- Oil, Gas and Energy Resources.

The Growth Centres are chaired by respected appointees who have extensive industry expertise and board experience that will bring together key stakeholders in their sectors to work in collaboration.

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.

**Activities**

Overarching activities that all Growth Centres will complete include:

- Development and implementation of a roadmap to lift sector competitiveness
- Provision of advice to Government on how to best reduce the regulatory burden within their sector
- Development of annual industry knowledge priorities to help inform the research sector of industry needs and commercialisation opportunities.

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) draws on leading mining practices by addressing key sustainable development issues for the mining industry, including environmental, social and economic considerations.

The LPSDP was established in 2005 and is managed by the Australian Government Department of Industry and Science. The program consists of a series of handbooks containing practical guidance and case studies and is distributed to mine sites across Australia and overseas. Requests for the handbooks have been received from Cambodia, Korea, Japan, Thailand, The Philippines, USA, Canada, Indonesia, Vietnam, Chile, China, India, Botswana, Ghana, Iceland, Mongolia, Tanzania and Zimbabwe. Because of this international demand, selected handbooks have been translated into Spanish, Indonesian, Chinese, Vietnamese, Japanese, Korean and Mongolian.

The handbooks have also been used to promote leading practices in sustainable development in regional and international forums and provide valuable information for workshops focusing on the implementation of leading practices in mine management.

The LPSDP has been a cooperative effort between government, industry, and academia.

The LPSDP series covers subjects that address different aspects of on-site mine management. Under the guidance of the Steering Committee, expert working groups with representatives from government, the mining and exploration industry and its representative associations, consultancy firms, non-government organisations and academic institutions have developed handbooks for each of 14 key themes. An overarching guide which includes the 14 key themes was launched in July 2011 as a single reference point on leading practices in sustainable development.

The Steering Committee is finalising a review of the handbooks to ensure the series remains credible, current and relevant globally in sharing leading practices in sustainable development. The review covers selected handbooks, explores emerging themes as a basis for new handbooks and broadens translations to enhance the global reach of the series in sharing Australia’s leading practices. The revised handbooks will be available online from December 2015.

All of the current handbooks are available in hardcopy and electronically at www.industry.gov.au/resource/Programs/LPSD/Pages/default.aspx.

They are:

► A Guide to Leading Practice Sustainable Development in Mining – Draws together the key principles of the 14 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.

► Cyanide Management Handbook – Addresses the principles and procedures for effective and safe cyanide management.

► 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.

► Managing 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.

► Mine Closure and Completion Handbook – Examines planning for mine closure and completion after a mine has reached the end of its life. It describes the business case for planned, structured and systematic mine closure and completion of mines in the context of sustainable development.

► Mine Rehabilitation Handbook – Outlines the principles and practices of mine rehabilitation to repair the impacts of mining on the environment.
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.

Multiple Land Use Framework

The Australian Government recognises 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. To this end the Australian Government, in partnership with relevant State and Territory Governments, worked through the Council of Australian Governments (COAG) Energy Council to develop a Multiple Land Use Framework (MLUF).

The MLUF supports the delivery of multiple and sequential land use outcomes that are merit based, thereby providing improved investment certainty for the minerals and petroleum sectors and community confidence in land use decisions. In doing so, the MLUF advances Australia’s sustainable development aspirations in energy security, mineral resource development, agricultural production, greenhouse gas emissions reduction, biodiversity, heritage conservation and healthy communities. Further information on the MLUF can be found at www.scer.gov.au/workstreams/land-access/mluf.
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
www.safework.sa.gov.au

WorkSafe Tasmania
www.worksafe.tas.gov.au/safety

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

Employer sponsored options
www.border.gov.au/Trav/Work

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 (Skilled)—Standard Business Sponsorship (Subclass 457 visa)
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
▶ 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.
▶ Designated Area Migration Agreements (DAMA)

The DAMA program assists Australian businesses in geographically defined areas facing acute skills and labour shortages, to access suitably qualified skilled and semi-skilled workers. It is a custom-designed program which supports a tailored, localised response to labour needs. It is an important tool in assisting local, state and territory authorities to manage workforce strategies that support local growth. The overarching nature of the agreement allows employers streamlined access to a broader range of overseas workers than is allowed under standard skilled migration programs, without the need to individually re-negotiate terms and conditions.

▶ Project agreements

The project agreement program allows infrastructure or resource development projects experiencing genuine skills or labour shortages access to temporary skilled and specialised semi-skilled temporary overseas workers through the subclass 457 visa. The project agreement program is designed to complement existing Australian government initiatives to address skill and labour shortages by ensuring that shortages do not create constraints on major projects and jeopardise Australian jobs.
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
Effective engagement with local communities is an important element in mining for sustainable development. Successful engagement that provides ongoing acceptance and support for a mining project by the Indigenous community and others is a precursor for a project earning a ‘social licence to operate’.

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. 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 ensures governments can continue to improve infrastructure and manage natural resources.

The Act provides for the recognition and funding by the Australian Government of Native Title Representative Bodies to undertake a number of functions. These include 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, Native Title Representative Bodies can provide for the representation of native title claimants in negotiations on Indigenous Land Use Agreements and other agreements between native title claimants and proponents.

Onshore exploration and minerals and petroleum projects

Under Australia’s Commonwealth 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 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 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 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 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 Act also enables proponents and native title parties to negotiate voluntary but legally binding agreements (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.

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-laws/protection-under-state-and-territory-laws.

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 Northern Territory’s Aboriginal Land Rights Act provides for detailed regulation of exploration and mining on Aboriginal land within the 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.

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 2013–14, Australia exported 651 million tonnes of iron ore. This is expected to increase by an average of 6.2% a year until at least 2019-20 (REQ, OCE 2015). 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, Port Latta in Tasmania and Darwin in the Northern Territory. Considerable investment has been allocated to the development of expanded and new facilities in the Pilbara region to accommodate increased production. Further large expansion is planned, especially in Port Hedland Inner Harbour and a number of greenfield ports such as Anketell and Cape Preston East in the Pilbara region, Oakajee in the Midwest region of Western Australia and on the Eyre Peninsula in South Australia. 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 23.2 million tonnes for 2013–14 and is projected to increase to around 76.6 million tonnes a year by 2019-20 as six projects under construction come online progressively from 2015. The tripling of LNG export volumes in the next five years will transform the Australian LNG sector, with Australia projected to overtake Qatar as the leading LNG exporter by 2020 if these projections are realised. A total of ten LNG plants comprising 21 trains and 86.1 million tonnes of liquefaction capacity are expected to be online by this time and will leave Australia well placed to continue to supply the large existing Japanese, Chinese and South Korean markets [2]. 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.

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 a 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 a year. The Darwin LNG project commenced operations in February 2006 and has a capacity of 3.24 million tonnes a 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.

Queensland Curtis LNG began production in December 2014. It has one producing LNG train and a second train due to start production in 2015. Each train has a capacity of 4.25 million tonnes a year.
Coal transport

Australia is the world’s second 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 largest is the Port of Newcastle, which services the northern New South Wales coal fields and is operated by Port Waratah Coal Services Limited and the Newcastle Coal Infrastructure Group.

A number of new coal terminal and expansion projects have been completed or are underway which will increase capacity from the current 467 million tonnes a year to 596 million tonnes by 2017 to meet expected long-term global growth, particularly from China and India.

New South Wales

- A 30 million tonnes a year third terminal in Newcastle (Newcastle Coal Infrastructure Group) commenced operations in 2010 and has since increased to 66 million tonnes a year capacity (www.ncig.com.au).
- Port Waratah Coal Services has the potential to increase capacity to between 45 and 120 million tonnes a 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).

Queensland

- Abbot Point Coal Terminal was recently upgraded to increase throughput to 50 million tonnes a 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 a year throughput. Current feasibility studies have been developed for expansions up to 90 million tonnes per year. It will have approximately 120 million tonnes per year capacity once fully developed (www.wicet.com.au/im/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. Australia’s current generation of trains can each carry up to 8600 net tonnes of coal. 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 which leases and operates the Hunter Valley coal rail system, is undertaking a $1.4 billion investment program to upgrade the Hunter Valley coal rail network following a $580 million capital injection into the corporation in December 2008. This latest investment aims to reduce train transit times and increase rail network capacity from about 113 million tonnes a year in 2009 to over 220 million tonnes in 2013.

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.

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 in rail infrastructure capacity are either underway or planned to complement port capacity projects in Queensland. Overall the investments total over $3 billion and include a:

- $185 million upgrade of the Goonyella rail system, servicing both the Dalrymple Bay and Hay Point coal terminals
- $900 million rail project to connect to the new Wiggins Island coal terminal to the existing rail infrastructure
- $195 million upgrade of the Blackwater rail system servicing the coal terminals at Gladstone.
14. Mining equipment, technology and services
Australia is a technologically advanced mining nation. Its minerals and petroleum industries are strongly export driven, capital intensive and highly innovative, exhibiting:

- A high level of demand for technical equipment, services and personnel
- An increasing role for high technology in refining mining equipment
- 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).

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.

Mining equipment, technology and services sector support

Australia’s METS 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.

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.


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.

Department of Industry 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.

The METS Industry Growth Centre will create opportunities for the Australian METS firms to become more competitive by undertaking projects under four broad themes:

► Encouraging collaboration and the commercialisation of new products
► Enhancing management and improving workforce skills
► Identifying opportunities to reduce regulatory burden
► Improving capabilities to engage with international markets and global supply chains.


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](http://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](http://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](http://crcore.org.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 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:

- **The Enhanced Project By-law Scheme (EPBS)**
  Provides duty-free tariff concessions for eligible goods imported for use in the mining, resource processing, agriculture, food processing, food packaging, manufacturing, gas supply, water supply and power supply industries.

- **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.

**The Enhanced Project By-law Scheme (EPBS)**

The EPBS provides tariff concessions on eligible goods for major projects in the mining, resource processing, food processing, food packaging, manufacturing, agriculture, gas, power and water supply industry sectors.

Eligible goods for the petroleum and minerals industries under EPBS include functional units, procurement/equipment packages, pipes, pipelines, conveyors and flexible flow lines used to convey gas, liquids, minerals or other materials. Stainless steel is an eligible good also in cases where it is a direct input to the manufacture of other eligible goods. Only eligible goods integral to the project may be eligible for a tariff duty concession. Exploration and other services to the mining industry are excluded.

The eligibility criteria used to assess an EPBS application include:

- **Sector eligibility** – Projects in the mining, resource processing, food processing, food packaging, manufacturing, agriculture and gas, power and water supply industry sectors are eligible to apply for an EPBS duty concession.

- **Expenditure threshold** – Projects must have total project expenditure on eligible goods of $10 million or greater.

- **Availability of equivalent Australian goods** – Goods are eligible for a concession under the EPBS only where equivalent goods are not produced in Australia or are technologically more advanced, more efficient or more productive than all goods currently available from Australian production.

- **A satisfactory Australian Industry Participation (AIP) Plan** – Applicants must develop and implement an approved AIP Plan to demonstrate how they intend to provide full, fair and reasonable opportunity to Australian industry to supply goods and services to the project.

- **Prospective in nature** – Applications must be lodged with AusIndustry before eligible goods which are the subject of the EPBS applications are imported.

Project proponents in eligible industry sectors are invited to apply for the EPBS tariff duty concession where the project meets the eligibility criteria. Applicants interested in applying for the EPBS concession should contact AusIndustry at the earliest possible stage of a project. EPBS Policy and Administrative Guidelines are available at [www.business.gov.au/grants-and-assistance/import-export/epbs/Pages/default.aspx](http://www.business.gov.au/grants-and-assistance/import-export/epbs/Pages/default.aspx).

**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.

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; or
► subjected to a process or treatment after importation and then exported; or
► 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; and
► 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](http://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.

- **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 and the energy grants credits scheme.

- **Capital allowances** – Capital allowances measures contain the rule for calculating the decline in value of depreciable assets.

- **Losses** – An income tax loss can be carried forward and deducted in future years against income for tax purposes.

- **Exploration Development Incentive (EDI)** – The EDI targets small exploration companies with no taxable income. The scheme started for investments made from 1 July 2014 and will be capped at $100 million.

**Exploration Development Incentive**

From 1 July 2014 junior exploration companies undertaking greenfields mineral exploration in Australia are able to take advantage of the Exploration Development Incentive. The scheme provides added incentive to invest in participating companies, by allowing investors to deduct from their taxable income the expense of mineral exploration incurred by the company.

To participate, an eligible company will:

- Be a disclosing entity under section 111AC of the Corporations Act 2001
- Have no taxable income for the year in which it participates
- Have not commenced resource production, or be affiliated with an entity that has commenced resource production
- Be engaged in eligible greenfields mineral exploration.

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 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.

\[
\text{Assessable receipts} - \text{Deductible expenditure} = \text{Taxable profit} \\
\text{Taxable profit} \times \text{PRRT rate (40%)} = \text{PRRT liability}
\]

Figure 3 Calculating a PRRT Liability.

Existing Commonwealth, State and Northern Territory government royalties, as well as Australian Government excises, are deductible against current and future PRRT liabilities from a project. This ensures that petroleum projects are not subject to double taxation.

Payments of PRRT are deductible for company tax purposes in the year they are assessed and paid to avoid double taxation. Company tax is levied at the rate of 30%. PRRT and company tax instalments are payable quarterly in the year of tax liability.

There is an order of deduction for different categories of expenditure under the PRRT. General project expenditure is deducted first, then exploration expenditure incurred within the project, followed by closing down expenditure and, finally, exploration expenditure that is transferred from another project. There are expenditures which are not deductible. These include financing costs, private override royalty payments, income tax, goods and services tax, cash bidding payments and certain indirect administrative costs.

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 60 cent/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 12). 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 Australia 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.

### Key petroleum taxation legislation and information

- **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.
- **Offshore Resource and Income Taxation, a brief guide to taxation of offshore petroleum production released in January 1992.**
- **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. The Act replaced the wellhead royalty and excise system which applied previously.

### Table 12 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>
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 – a comparison across commodities is provided at Table 13 of this publication.

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.

Profit costs may include:

- Operating costs
- Depreciation on project capital assets
- Inventory adjustments
- Interest on borrowings
- Pre-development and exploration costs.

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 1 May 2015, 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.
Table 13 Comparison of Royalty Systems for Mineral Commodities.

<table>
<thead>
<tr>
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<th>Northern Territory</th>
<th>Tasmania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal (all types)</td>
<td>A variable royalty rate depending on the method of extraction is applied to the value of the mineral sold, which is the Net Disposal (Sales—Purchases) less allowable deductions (primarily beneficiation and levies). The royalty rate for open cut methods is 8.2%, underground is 7.2% and coal extracted below 400 metres is 6.2%.</td>
<td>From the Mineral Resources Development Act 1990, the royalty is based on the energy value of the coal extracted.</td>
<td>The effective royalty rate applied to the value of coal for a particular return period depends on the average price per tonne of coal sold, disposed of or used during the period: (a) Where the average price per tonne is $100 or less, a 7% rate applies. (b) Where the average price per tonne is over $100 but less than $150, the rate is 7% for the first $100 and 12.5% for the balance. (c) Where the average price per tonne is over $150, the rate is 7% for the first $100, 12.5% for the next $50 and 15% for the balance. For instance, if the average price per tonne is over $150, the royalty rate is calculated as follows: The first $100 attracts royalty at the rate of 7% (i.e. $7 per tonne). The next $50 attracts royalty at the rate of 12.5% (i.e. $6.25 per tonne). The balance of $40 attracts royalty at the rate of 15% (i.e. $6 per tonne). Therefore, the effective royalty rate for the period is 10.13% (i.e. $19.25 per tonne). The royalty rate must be calculated separately for coal sold, disposed of or used inside Queensland, and coal sold, disposed of or used outside Queensland.</td>
<td>Export - 7.5% value. Non export—$1 per tonne, to be adjusted each year at 30 June in accordance with the percentage increase in the average ex-mine value of Collie coal for the year ending on that date when compared with the corresponding value of Collie coal for the year ending on 30 June 1981.</td>
<td>5% of the value.</td>
<td>Subject to royalty under the Mineral Royalty Act 1982 (NT) (MRA). The MRA establishes a profit-based regime in which royalty is calculated at a rate of 20% of the net value (less the threshold).</td>
<td>Profits-based royalty (mine gate).</td>
</tr>
<tr>
<td>Gold &amp; Silver</td>
<td>4% ex-mine mouth.</td>
<td>Gold—nil. Silver—nil when silver is a product of the gold recovery process, otherwise 2.75% of net market value.</td>
<td>Variable rate between 2.5% and 5% (varying in 0.02% increments) depending on average market prices during the period. Eligible for threshold exemption.</td>
<td>Gold—2.5% of value. First 2500 oz are exempt from royalty. Silver—2.5% of value.</td>
<td>Concentrate—5% of the value. Refined Gold and Silver (min content of 95%)—3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the thresholds).</td>
<td>As for coal.</td>
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<td>Commodity</td>
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<tr>
<td><strong>Copper</strong></td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>Variable rate between 2.5% and 5% (varying in 0.02% increments), depending on average market prices during the period. Eligible for threshold exemption.¹ Where copper is processed in Queensland to a metal content of at least 95%, the royalty payable is discounted by 20%.</td>
<td>The rate is— (a) if sold as a concentrate, 5% of the royalty value; (b) if sold in metallic form, 2.5% of the royalty value; or (c) if sold as nickel by product, the rate calculated in accordance with the following formula: [ P \times \frac{U}{100} \times \frac{2.5}{100} = \frac{R}{\text{tonne}} ] Where ( P ) = the gross copper metal price per tonne f.o.b. in Australian currency of its computed equivalent used for the purpose of calculating the actual sale price of copper metal in the nickel by product (under usual conditions of sale, without special discounts); ( U ) = the number of units per hundred of copper metal in the nickel by product sold; ( R ) = the royalty.</td>
<td>Copper ore &amp; concentrate—5% of value. Refined Copper (min content of 95%)—3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold¹).</td>
<td>As for coal.</td>
</tr>
<tr>
<td><strong>Lead &amp; Zinc</strong></td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>Variable rate between 2.5% and 5% (varying in 0.02% increments), depending on average market prices during the period. Eligible for threshold exemption.¹ Where lead is processed in Queensland to a metal content of at least 95%, the royalty payable is discounted by 25%. Where zinc is processed in Queensland to a metal content of at least 95%, the royalty payable is discounted by 35%.</td>
<td>The rate is— (a) if sold as a concentrate, 5% of the royalty value; (b) if sold in metallic form, 2.5% of the royalty value.</td>
<td>Concentrate—5% of the value. Refined lead and zinc (min content of 95%)—3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold¹).</td>
<td>As for coal.</td>
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<tr>
<td>Bauxite &amp; Alumina</td>
<td>$0.35 per tonne.</td>
<td>2.75% of net market value.</td>
<td>For bauxite sold, disposed of or used outside Queensland— the higher of 10% of the value, or $2 per tonne. For bauxite sold, disposed of or used inside Queensland— the higher of 75% of the rate calculated for bauxite sold, disposed</td>
<td>Bauxite—7.5% of value (alumina—1.65% of value—rate specified in several State Agreement Acts).</td>
<td>Subject to the MRA at 20% of the ‘Net Royalty Value’ except for mines subject to specific agreement.</td>
<td>As for coal.</td>
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</tr>
<tr>
<td>Silica</td>
<td>No royalty.</td>
<td>$1.43 per cubic metre or $0.87 per tonne.</td>
<td>$0.90 per tonne.</td>
<td>$1.00 per tonne from 1 July 2010. (from 1 July 2010 subject to five yearly reviews in accordance with increases in the Australian Bureau of Statistics Non-Metallic Mineral Products Price Index).</td>
<td>3.5% of the value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold).</td>
<td>Metallurgical, greater of 1.32 per tonne or 5% of value, other uses $0.66 per tonne.</td>
</tr>
<tr>
<td>Nickel</td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>Variable rate between 2.5% and 5% (varying in 0.02% increments), depending on average market prices during the period. Eligible for threshold exemption.1</td>
<td>In accordance with the following formula: P x U/100 x 2/5/100 = $R/tonne Where P = the gross nickel metal price per tonne f.o.b. in Australian currency of its computed equivalent used for the purpose of calculating the actual sale price of the nickel containing product (under usual conditions of sale, without special discounts). Where U = the number of units per hundred of nickel metal in the nickel containing product sold. Where R = the royalty.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold).</td>
<td>As for coal.</td>
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</tr>
<tr>
<td>Mineral Sands</td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>5% of the value of the concentrate.</td>
<td>5% of royalty value. Ilmenite Feedstock that is of a marketable quality—5% of royalty value. Ilmenite Feedstock that is not of a marketable quality—$1.50/tonne escalated annually.</td>
<td>5% of the value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold).</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Kaolin</td>
<td>$0.70 per tonne.</td>
<td>2.75% of net market value.</td>
<td>$1.00 per tonne.</td>
<td>5% of royalty value.</td>
<td>3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold).</td>
<td>$1.32/tonne (mine gate).</td>
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</table>
| Limestone & Lime Earth | $0.40 per tonne or $0.35 per tonne if it is sold or used for the purposes of application to land for agricultural purposes to improve the chemical and physical characteristics of the soil on that land. | $1.43 per cubic metre or $0.87 per tonne.  
Limestone—$0.75 per tonne.  
Lime, earth—$0.50 per tonne. | Limestone (including limesands and shellsands).  
Used for agricultural or construction purposes or as a neutralising agent: $0.62 per tonne from 1 July 2010.  
Used for metallurgical purposes $1.00 per tonne from 1 July 2010.  
(From 1 July 2010 both rates subject to five yearly reviews in accordance with increases in the Australian Bureau of Statistics Non-Metallic Mineral Products Price Index). | Industrial—3.5% of market value.  
Subject to the MRA at 20% of the net value (less the threshold), except where not liable as an extractive mineral.  
(From 1 July 2010 subject to five yearly reviews in accordance with increases in the Australian Bureau of Statistics Non-Metallic Mineral Products Price Index). | Subject to the MRA at 20% of the net value (less the threshold).  
As for coal. | Chemical and metallurgical  
$1.32/tonne, other uses $0.66/tonne (mine gate). |
| Salt                | $0.40 per tonne.                 | It is outside the scope of mineral, extractive and petroleum legislations in Victoria. | $1.50 per tonne.  
$0.62 per tonne from 1 July 2010.  
(From 1 July 2010 subject to five yearly reviews in accordance with increases in the Australian Bureau of Statistics Non-Metallic Mineral Products Price Index). | 3.5% of the value.  
(From 1 July 2010 subject to five yearly reviews in accordance with increases in the Australian Bureau of Statistics Non-Metallic Mineral Products Price Index). | Subject to the MRA at 20% of the net value (less the threshold).  
As for coal. | As for coal. |
| Gemstone            | 4% ex-mine mouth.                | 2.75% of net market value.  
2.5% of value. Eligible for threshold exemption.  
7.5% of royalty value  
(includes semi-precious stones, specimen stones).  
3.5% of market value,  
ex mineral production tenement.  
Subject to the MRA at 20% of the net value (less the threshold).  
As for coal. | 2.5% of value.  
7.5% of royalty value  
(includes semi-precious stones, specimen stones).  
3.5% of market value,  
ex mineral production tenement.  
Subject to the MRA at 20% of the net value (less the threshold).  
As for coal. | 3.5% of market value,  
ex mineral production tenement.  
Subject to the MRA at 20% of the net value (less the threshold).  
As for coal. | 3.5% of market value,  
ex mineral production tenement.  
Subject to the MRA at 20% of the net value (less the threshold).  
As for coal. | As for coal. |
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<tr>
<th>Commodity</th>
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<tbody>
<tr>
<td>Magnetite</td>
<td>4% ex-mine mouth</td>
<td>2.75% of net market value.</td>
<td>Where the average price per tonne is: $100 or less—$1.25 per tonne More than $100—the higher of: 1.25% of value, or the percentage of value calculated by the following formula, rounded down to the nearest increment of 0.02%: 1.25% + ((A-100)/A) x 1.25% A is the average price per tonne of the iron ore sold, disposed of or used in the return period. Where magnetite is processed in Queensland to a metal content of at least 95%, the royalty payable is discounted by 20%.</td>
<td>Refer ‘iron ore’. There is no differentiation between the administration of beneficiated iron ore and magnetite for royalty purposes.</td>
<td>5% of the value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold&quot;).</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Bentonite</td>
<td>$0.70 per tonne.</td>
<td>2.75% of net market value.</td>
<td>$1.80 per tonne.</td>
<td>See Miscellaneous.</td>
<td>3.5% of market value, ex mineral production tenement.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold&quot;) except where not liable as an extractive mineral.</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Clay</td>
<td>$0.35 per tonne.</td>
<td>Fine clay 2.75% of net market value. Building clay $1.43 per cubic metre or $0.87 per tonne.</td>
<td>Clay shale, or clay used for fired clay products—$0.50 per tonne.</td>
<td>Excludes Kaolin: $0.62 per tonne from 1 July 2010. (From 1 July 2010 subject to five yearly reviews in accordance with increases in the Australian Bureau of Statistics Non-Metallic Mineral Products Price Index.)</td>
<td>Extractive minerals—$0.55 per tonne.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold&quot;), except where not liable as an extractive mineral.</td>
<td>$1.32/tonne (mine gate).</td>
</tr>
<tr>
<td>Tin Concentrate</td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>2.5% of value. Eligible for threshold exemption.</td>
<td>2.5% of royalty value of tin metal when sold in that form; or, when sold in any other form 2.5% of the value of the contained tin calculated at the ruling price of tin metal used for the purpose of the sale.</td>
<td>3.5% of market value, ex mineral production tenement.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold&quot;).</td>
<td>As for coal.</td>
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<tr>
<td>Dolomite</td>
<td>$0.40 per tonne.</td>
<td>2.75% of net market value.</td>
<td>$1.00 per tonne.</td>
<td>$0.62/tonne from 1 July 2010. (From 1 July 2010 subject to five yearly reviews in accordance with increases in ABS Non-Metallic Mineral Products Price Index.)</td>
<td>Extractive minerals—$0.55 per tonne.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1), except where not liable as an extractive mineral2.</td>
<td>Chemical and metallurgical $1.32/tonne, other uses $0.66/tonne (mine gate).</td>
</tr>
<tr>
<td>Diatomite</td>
<td>$0.70 per tonne.</td>
<td>$1.43 per cubic metre or $0.87 per tonne.</td>
<td>$1.50 per tonne.</td>
<td>See Miscellaneous.</td>
<td>3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1), except where not liable as an extractive mineral2.</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Perlite</td>
<td>$0.70 per tonne.</td>
<td>2.75% of net market value.</td>
<td>$1.00 per tonne.</td>
<td>See Miscellaneous.</td>
<td>3.5% of market value, ex mineral production tenement.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1), except where not liable as an extractive mineral2.</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Peat</td>
<td>$0.70 per tonne.</td>
<td>$1.43 per cubic metre or $0.87 per tonne.</td>
<td>2.5% of value.1 Eligible for threshold exemption.1</td>
<td>Nil.</td>
<td>3.5% of the value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1), except where not liable as an extractive mineral2.</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Phosphate</td>
<td>$0.70 per tonne.</td>
<td>2.75% of net market value.</td>
<td>The higher of: $0.80 per tonne the rate (rounded down to 2 decimal places) worked out using the following formula: $1 x G/32.3 x Pcurr/$72.50 G is the average P2O5 content of the phosphate rock for the return period. Pcurr is the average price (in A$) for the return period of Moroccan phosphate rock with 32.3% P2O5 content.</td>
<td>See Miscellaneous.</td>
<td>3.5% of the value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Magnesite</td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>$1.50 per tonne.</td>
<td>See Miscellaneous.</td>
<td>3.5% of the value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
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<tr>
<td>Iron Ore &amp; Iron</td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value. Where the average price per tonne is: $100 or less–$1.25 per tonne. More than $100 – the higher of: 1.25% of value; or the percentage of value calculated by the following formula, rounded down to the nearest increment of 0.02%: 1.25% + ((A-100)/A) x 1.25% A is the average price per tonne of the iron ore sold, disposed of or used in the return period. Where iron ore is processed in Queensland to a metal content of at least 95%, the royalty payable is discounted by 20%. Beneficiated ore (iron ore that has been concentrated or upgraded otherwise than by crushing, screening, separating by hydrocycloning or a similar technology, washing, scrubbing, trommelling or drying, or by a combination of 2 or more of those processes)—5% of royalty value. Fine and lump ore (iron ore, excluding beneficiated ore, that will pass through a 6 mm mesh screen)—7.5% of royalty value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
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<tr>
<td>Stone</td>
<td>$0.70 per tonne.</td>
<td>$8.07 per cubic metre or $3.23 per tonne as dimension stone.</td>
<td>$1.00 per tonne.</td>
<td>See Miscellaneous.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
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<tr>
<td>Marble</td>
<td>$0.70 per tonne.</td>
<td>$8.07 per cubic metre or $3.23 per tonne as dimension stone.</td>
<td>$1.00 per tonne.</td>
<td>See Miscellaneous.</td>
<td>3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1), except where not liable as an extractive mineral2.</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Chromite</td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>2.5% of value. Eligible for threshold exemption.1 Where tungsten is processed in Queensland to a metal content of at least 89%, the royalty payable is discounted by 20%.</td>
<td>5% of the value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
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<tr>
<td>Granite &amp;</td>
<td>No royalty unless mined as dimension stone, which is charged at $0.70 per tonne.</td>
<td>$1.43 per cubic metre or $0.87 per tonne.</td>
<td>$1.00 per tonne, for rock mined in block or slab form for building or monumental purposes.</td>
<td>See Miscellaneous.</td>
<td>Extractive minerals—$0.55 per tonne.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1), except where not liable as an extractive mineral2.</td>
<td>Building stone—$5 per cubic metre (mine gate).</td>
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<tr>
<td>Sandstone</td>
<td>$0.40 per tonne.</td>
<td>$1.43 per cubic metre or $0.87 per tonne.</td>
<td>$1.00 per tonne.</td>
<td>See Miscellaneous.</td>
<td>3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1), except where not liable as an extractive mineral2.</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Calcite</td>
<td>$0.40 per tonne.</td>
<td>$1.43 per cubic metre or $0.87 per tonne.</td>
<td>$1.00 per tonne.</td>
<td>See Miscellaneous.</td>
<td>3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1), except where not liable as an extractive mineral2.</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Serpentine</td>
<td>$0.70 per tonne.</td>
<td>$1.43 per cubic metre or $0.87 per tonne.</td>
<td>2.5% of value. Eligible for threshold exemption.1</td>
<td>See Miscellaneous.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1), except where not liable as an extractive mineral2.</td>
<td>As for coal.</td>
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<tr>
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<tr>
<td>Cobalt</td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>Variable rate between 2.5% and 5% (varying in 0.02% increments), depending on average market prices during the period. Eligible for threshold exemption.¹ Where cobalt is processed in Queensland to a metal content of at least 50%, the royalty payable is discounted by 20%.</td>
<td>The rate is— (a) if sold as a concentrate, 5% of the royalty value; (b) if sold in metallic form, 2.5% of the royalty value; or (c) if sold as nickel by product, the rate calculated in accordance with the following formula: ( P \times U/100 \times 2/5/100 = $R/\text{tonne} ) where ( P ) = the gross cobalt metal price per tonne; ( U ) = the number of units per hundred of cobalt metal in the nickel by product sold; ( R ) = the royalty.</td>
<td>3.5% of market value, ex mineral production tenement.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold¹).</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Gypsum</td>
<td>$0.35 per tonne.</td>
<td>2.75% of net market value.</td>
<td>$0.50 per tonne.</td>
<td>$0.62/tonne from 1 July 2010. (From 1 July 2010 subject to five yearly reviews in accordance with increases in ABS Non-Metallic Mineral Products Price Index.)</td>
<td>3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold¹), except where not liable as an extractive mineral².</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Manganese Ore</td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>2.7% of value. Eligible for threshold exemption. Where manganese is processed in Queensland to a metal content of at least 75%, the royalty payable is discounted by 35%.</td>
<td>7.5% of royalty value (beneficiated by the producer in Western Australia otherwise than by crushing, screening, washing, scrubbing, trommelling or drying, or by a combination of 2 or more of those processes)—5%.</td>
<td>5% of market value, (ex-mineral production tenement).</td>
<td>Subject to the MRA at 20% of the net value (less the threshold¹).</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Platinoids</td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>2.5% of value. Eligible for threshold exemption.¹</td>
<td>2.5% of royalty value for metals.</td>
<td>3.5% of market value, ex mineral production tenement.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold¹).</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Commodity</td>
<td>New South Wales</td>
<td>Victoria</td>
<td>Queensland</td>
<td>Western Australia</td>
<td>South Australia</td>
<td>Northern Territory</td>
<td>Tasmania</td>
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</tr>
<tr>
<td><strong>Construction Materials</strong></td>
<td>No royalty.</td>
<td>$1.43 per cubic metre or $0.87 per tonne.</td>
<td>$0.50 per tonne, for sand, gravel and rock (other than rock mined in block or slab form for building or monumental purposes).</td>
<td>$0.62/tonne from 1 July 2010. (From 1 July 2010, subject to five yearly reviews in accordance with increases in ABS Non-Metallic Mineral Products Price Index. The outcomes of the 2015 review will be announced in Q4 2015.) (includes Aggregate, Gravel, Rock and Sand). Amount A applies when mineral is used for agricultural or construction purposes or as a neutralising agent. Amount B per tonne applies when mineral used for metallurgical purposes.</td>
<td>Extractive minerals—$0.55 per tonne.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1), except where not liable as an extractive mineral2.</td>
<td>Building stone $5 per cubic metre Gravel $0.62/tonne Stone crushed and broken $0.62/tonne (mine gate).</td>
</tr>
<tr>
<td><strong>Quartzite</strong></td>
<td>$0.70 per tonne.</td>
<td>$1.43 per cubic metre or $0.87 per tonne.</td>
<td>2.5% of value.2 Eligible for threshold exemption.1</td>
<td>See Miscellaneous. Production of Quartzite relates to Construction Material production.</td>
<td>3.5% of market value, ex mineral production tenement.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
</tr>
<tr>
<td><strong>Diamonds</strong></td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>2.5% of value. Eligible for threshold exemption.1</td>
<td>7.5% of royalty value. (For Ellendale and Argyle projects—5% of f.o.b. value).</td>
<td>3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
</tr>
<tr>
<td><strong>Spodumene</strong></td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>2.5% of value.2 Eligible for threshold exemption.1</td>
<td>Lithium minerals: 5% of value.</td>
<td>3.5% of market value, ex mineral production tenement.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
</tr>
<tr>
<td><strong>Talc</strong></td>
<td>$0.70 per tonne.</td>
<td>2.75% of net market value.</td>
<td>2.5% of value.2 Eligible for threshold exemption.1</td>
<td>$1.00/tonne from 1 July 2010. (From 1 July 2010 subject to five yearly reviews in accordance with increases in ABS Non-Metallic Mineral Products Price Index.)</td>
<td>3.5% of value.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
</tr>
<tr>
<td><strong>Tantalum</strong></td>
<td>4% ex-mine mouth.</td>
<td>2.75% of net market value.</td>
<td>2.7% of value. Eligible for threshold exemption.1 Where tantalum is processed in Queensland to a metal content of at least 95%, the royalty payable is discounted by 30%.</td>
<td>The rate is— (i) 5% of the royalty value if sold as concentrate; (ii) 5% of the value in concentrate form if processed further before sale.</td>
<td>3.5% of market value, ex mineral production tenement.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
</tr>
<tr>
<td><strong>Pyrophyllite</strong></td>
<td>$0.70 per tonne.</td>
<td>2.75% of net market value.</td>
<td>2.5% of value.2 Eligible for threshold exemption.1</td>
<td>See Miscellaneous.</td>
<td>3.5% of market value, ex mineral production tenement.</td>
<td>Subject to the MRA at 20% of the net value (less the threshold1).</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Commodity</td>
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<tr>
<td>Uranium Oxide</td>
<td>Uranium mining is prohibited in NSW.</td>
<td>Uranium mining is prohibited in Victoria.</td>
<td>The effective royalty rate applied to the value of uranium for a particular return period depends on the average price per kilogram of uranium sold, disposed of or used during the period: (a) Where the average price per kilogram is $220 or less, a 5% rate applies. (b) Where the average price per tonne is over $220, the rate is 5% for the first $220 and 10% for the balance. Eligible for threshold exemption.</td>
<td>The rate is 5% of the royalty value if sold as a uranium oxide concentrate. One agreement act applies a rate of 3.5% of the f.o.b. value and the rate will be reviewed and fixed by the Minister after consultation with the Corporation, 7 years after the treatment plant comes into operation and thereafter each succeeding period of 5 years.</td>
<td>Concentrate—5% of the value. (Certain prescribed costs, such as transportation may be deducted when determining the mineral value)</td>
<td>Northern Territory uranium is owned by the Commonwealth. The Uranium Royalty (Northern Territory) Act 2009 (Cth) applies the profit-based mineral royalty regime under the MRA to new mining operations or any expansion to existing mining operations.</td>
<td>As for coal.</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Either 4% ex-mine mouth or a cents per tonne.</td>
<td>Various.</td>
<td>2.5% of value.¹ Eligible for threshold exemption.¹</td>
<td>Any other mineral not specifically listed in the Mining Regulations Table—if sold as crushed or screened material, 7.5% of the royalty value or if sold as a concentrate, 5% of the royalty value.</td>
<td>New mines may qualify for 2% for first 5 years (other than Extractive Minerals).</td>
<td>If a mineral, then subject to the MRA at 20% of the net value (less the threshold¹), except where not liable as an extractive mineral².</td>
<td>Various.</td>
</tr>
</tbody>
</table>
Notes

Queensland
1 No royalty is payable on the first $100,000 of the combined value of eligible minerals sold, disposed of or used during a year by a mining operation.

2 There is currently no specific royalty rate for this commodity, so the commodity is therefore covered by a “catch-all” rate of 2.5%.

South Australia
All royalties paid as a percentage of sales value are excluding prescribed costs. Some minerals are covered separately, eg Roxby Downs Indenture 1998 & Whyalla Steelworks Act 1958.

Northern Territory
1 Royalty-free threshold applies to all minerals except crude oil petroleum, condensate, LPG & LNG; and uranium oxide.
2 Extractive minerals that are authorised to be recovered under the terms of an extractive mineral permit, an extractive mineral lease or an authorisation to occupy an extractive permit or an extractive mineral lease are not subject to royalties. However, extractive minerals that are authorised to be recovered under the terms of a mineral lease or mineral claim are subject to royalties.

Commodities

Base metals
Copper, lead, zinc, bauxite/alumina, nickel, magnetite, tin, iron ore, magnesite, tungsten, chromite, cobalt.

Precious metals
Gold, silver, gemstones, diamonds, platinoids, manganese, tantalum.

Other minerals
Mineral sands, silica, limestone/lime earth, bentonite, salt, kaolin, clay, dolomite, diatomite, phosphate, perlite, peat, marble, granite, calcite, serpentine, construction materials, gypsum, pyrophilites, quartzite, spodumene, talc, aramium.