



Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**



Leading practice principles for a sustainable resources sector

A Western Australian perspective

Disclaimer

Information provided in this document is made available without charge, as a public service, in good faith. The information provided is derived from sources believed to be reliable and accurate at the time of publication. However, use of the information in the document is at your own risk. It is provided solely on the basis that users will be responsible for making their own assessment of the information provided therein and users are advised to verify all representations, statements and information for decisions that concern the conduct of business that involves monetary or operational consequences.

Each user waives and releases the Department of Mines, Industry Regulation and Safety and the State of Western Australia and its servants to the full extent permitted by law from all and any claims relating to the use of the material in the document. In no event shall the Department of Mines, Industry Regulation and Safety or the State of Western Australia be liable for any incidental or consequential damages arising from any use or reliance on any material in this document.

Copyright © 2018

Copyright in this document is reserved to the State of Western Australia. Reproduction except in accordance with copyright law is prohibited.

Introduction

Western Australia is one of the world's leading diversified mineral and petroleum provinces.

The success of the State's resources sector is underpinned by its:

- highly prospective geology;
- quality geoscientific databases and information systems;
- renowned geoscience expertise;
- strong legal framework;
- proven mineral and petroleum tenement system;
- stable and welcoming investment environment; and
- world-class services sector.

The value of these attributes is reflected by Australia's consistently high ranking in international investment surveys.

Continued successful development will, however, depend on the ability of government, industry and communities to achieve balance in environmental, social and economic outcomes through continually evolving policy and regulatory settings.

The purpose of this document is to provide an overview of the leading practice principles underpinning the regulatory framework for the resources sector in Western Australia.

These principles are:

Principle 1: Attract investment by minimising commercial risks for explorers and investors

Principle 2: Provide the industry with certainty regarding its rights to resources

Principle 3: Provide a clear and consistent regulatory framework

Principle 4: Ensure the community receives appropriate royalty returns

Principle 5: Foster public trust and confidence

Western Australia's resources sector – a brief history

Development of the resources sector began with the first gold rush in the 1890s, which brought unprecedented numbers of people and amounts of capital into the State. However, it was not until the 1960s that a transformational development of the mining sector took place. This was fuelled by demand for

iron ore from Japan, as well as the development of significant nickel, petroleum and bauxite industries.

A major revival of gold mining in the 1980s preceded another surge in demand for iron ore that began in the mid to late 2000s, this time led by China.

Since major discoveries of gas were made in the 1970s and 1980s, significant investment in LNG production has occurred in offshore areas of the State's North West.

Western Australia is currently a leading global supplier of iron ore, alumina, nickel, gold and LNG (see Figure 1).

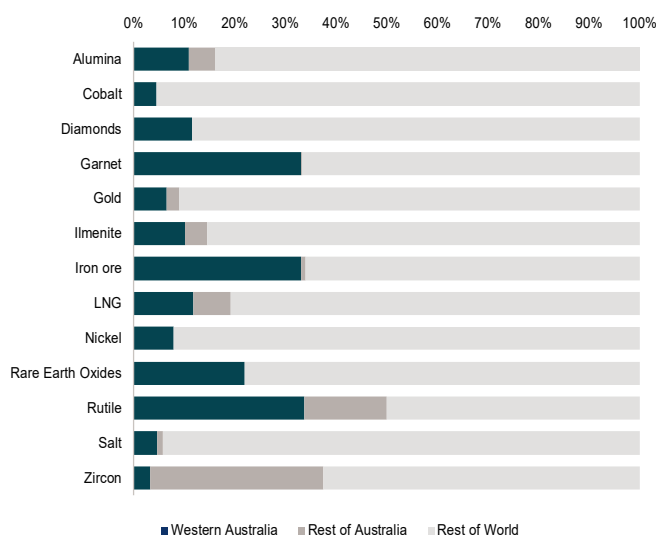


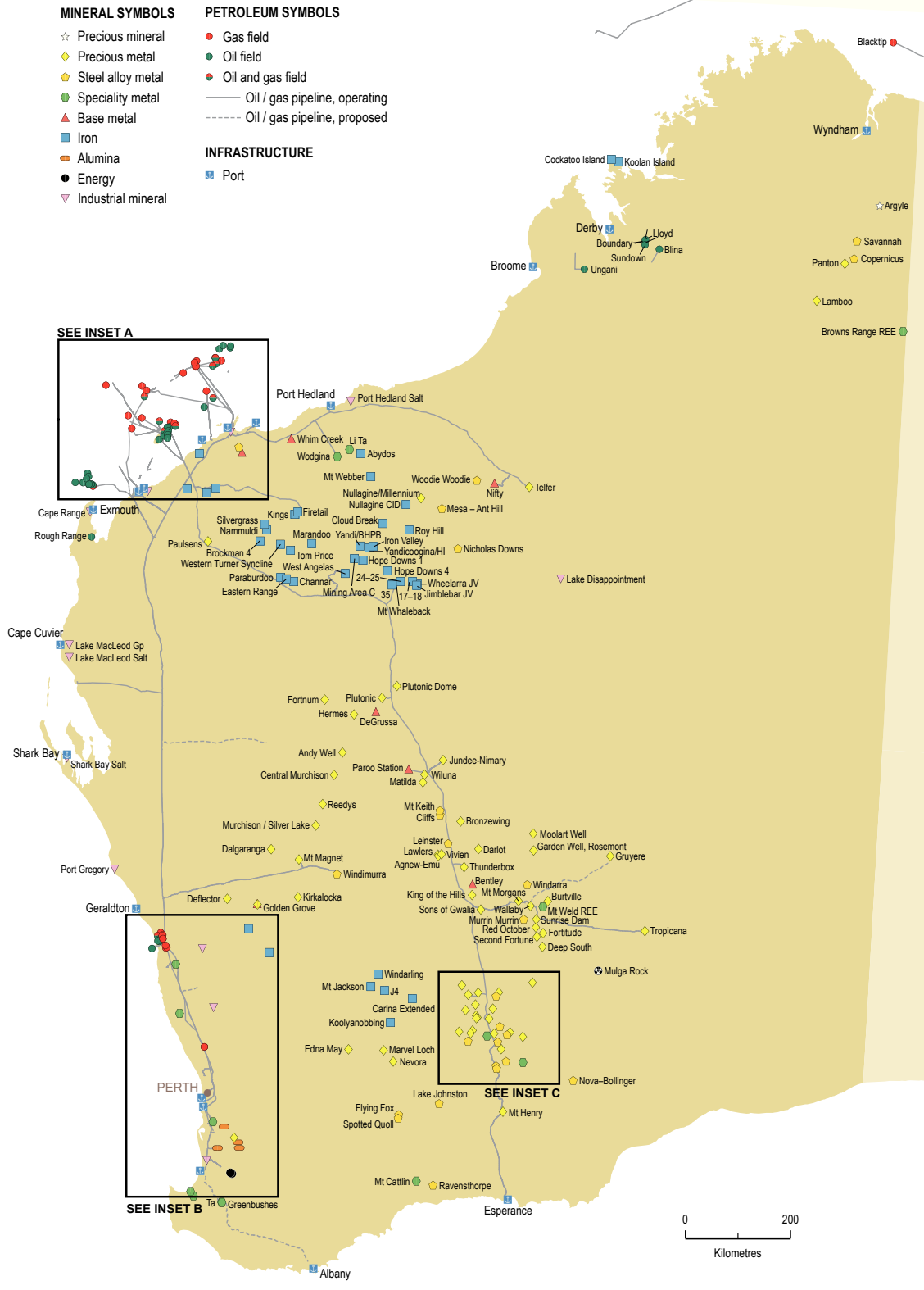
Figure 1. Western Australia's share of global production for selected commodities, 2017

The State hosts mining projects operated by many of the world's major mining companies, including BHP, Rio Tinto, Fortescue Metals Group, Glencore, Barrick Gold, Newmont Mining, Newcrest Mining, AngloGold Ashanti, Gold Fields and Alcoa.

The resources industry is a major contributor to the State's economy, representing almost a third of Western Australia's Gross State Product. The resources sector is also the single largest employer in the State, directly employing more than 110,000 people.

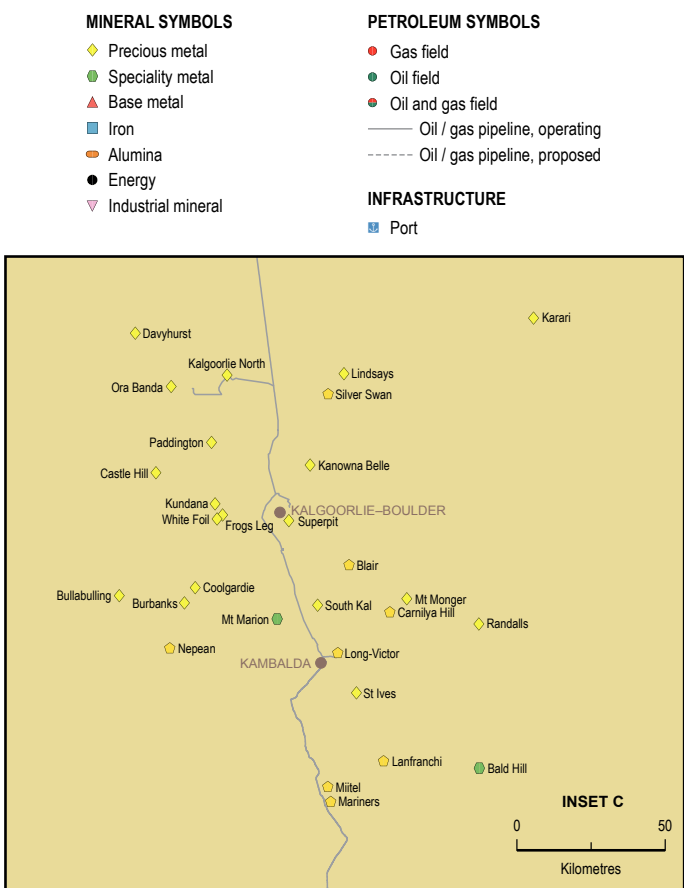
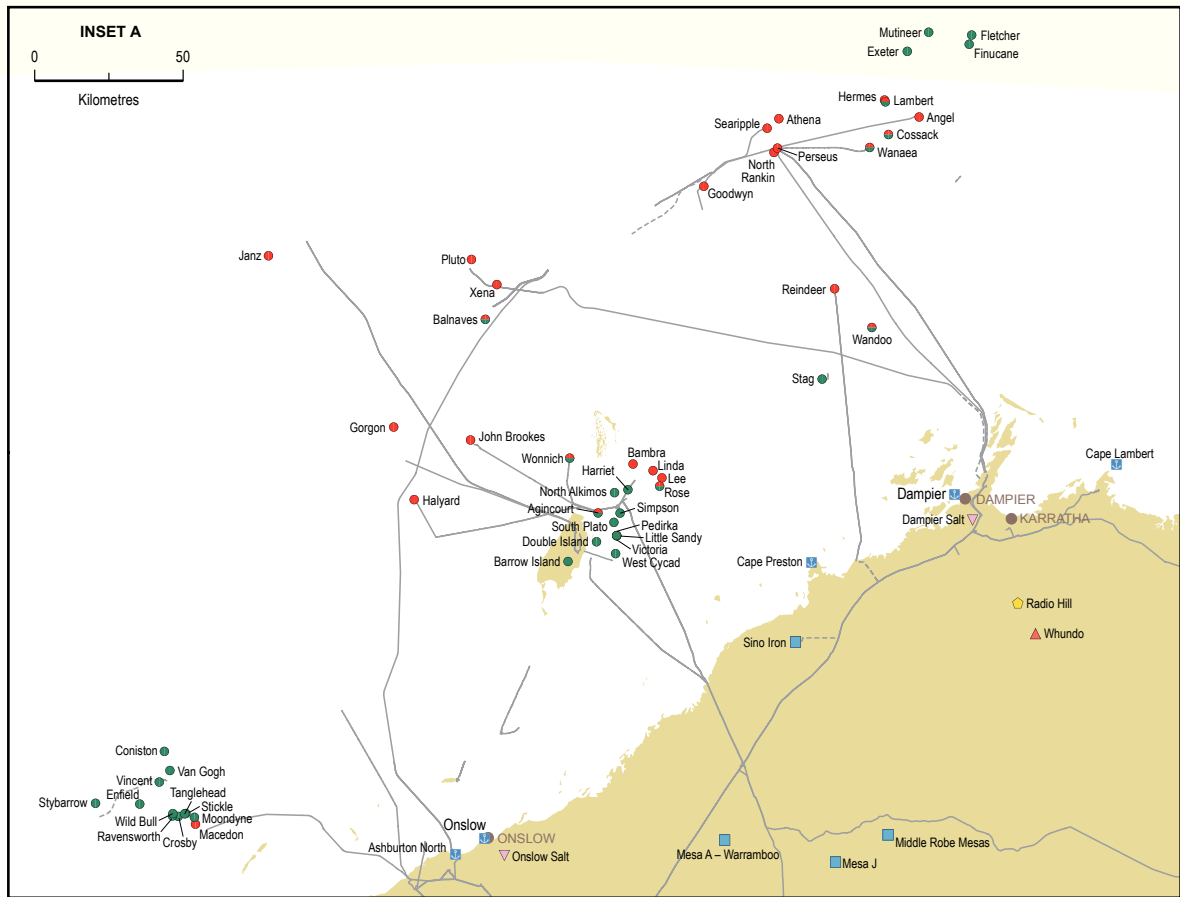
Since 2013, Western Australia's resources sector has averaged sales of more than A\$100 billion (US\$75 billion) per year. Iron ore has been the most valuable commodity at an average of A\$60 billion, followed by petroleum (A\$14 billion) and gold (A\$10 billion).

A map of major resource projects is provided in Figures 2 and 3.



StatisticsDigest_2017_08

Figure 2. Major mineral and petroleum projects in Western Australia



MINERAL SYMBOLS

- ◆ Precious metal
- Speciality metal
- ▲ Base metal
- Iron
- Alumina
- Energy
- ▽ Industrial mineral

PETROLEUM SYMBOLS

- Gas field
- Oil field
- Oil and gas field
- Oil / gas pipeline, operating
- - - Oil / gas pipeline, proposed

INFRASTRUCTURE

- Port

Figure 3. Major mineral and petroleum projects in Western Australia inserts

The role of government in the regulation of the resources sector

Australia is a federation of six states: Western Australia, South Australia, New South Wales, Victoria, Tasmania and Queensland. There are also various territories administered by the Australian Government, including the Northern Territory and the Australian Capital Territory.

Australian law operates primarily on two levels: federal and state/territory. The two levels of government have separate roles and responsibilities with regard to resource exploration and development.

Exploration and extractive activities are regulated primarily at the state and territory level. An exception is offshore areas, where the Australian Government has responsibility for the regulation of the offshore petroleum industry.

Certain federal laws impact the resources sector in onshore areas. For example, the Australian Government sets national policy around company taxation, foreign investment, immigration, competition policy, trade and customs, company law, international agreements, and native title (Aboriginal people's rights to land that is not privately owned).

Federal environmental legislation can also impact on the development of resource projects in areas of the country with national environmental significance.

Western Australia

The Department of Mines, Industry Regulation and Safety is the lead regulator for the resources sector in Western Australia.

The department:

- manages a system of leases, licences, permits and other approvals, which ensure the exploration and development of mineral and petroleum resources is done in a secure and orderly manner;
- regulates resource development activities to ensure compliance with worker safety and health requirements, and resource management and environmental legislation; and
- collects royalties on minerals and petroleum produced.

The department works closely with a range of other state and federal government agencies involved in regulation of the industry, such as those providing environmental approvals or protecting Aboriginal heritage sites. The department also facilitates native title agreements between companies and Aboriginal representative bodies.

Ownership of resources and development principles

The ownership of mineral and petroleum resources is vested in the state/territory governments (onshore areas) or the Australian Government (offshore areas), rather than private companies.

The private sector pays royalties to the respective government for the minerals and petroleum it extracts.

In Western Australia, an exception is where private (or freehold) title was granted before 1899 that included rights to subsurface minerals, except gold, silver and other precious metals.

The government does not engage in commercial exploration or development activities. All such activities are conducted by the private sector.

Government does, however, play a role in encouraging exploration through the provision of geoscientific information and monetary incentives for explorers.

The mining and petroleum legislation creates a system of resource tenure separate from land tenure.

Landholders, be they freehold, leasehold or native title, do not generally have any ownership rights to minerals or petroleum, although they may be entitled to compensation for the loss of the use of land due to exploration and development activities.

Government investment policy

Domestic savings in Australia have historically been inadequate to support the scale of capital investment required for the resources sector. Foreign investment has been, and will continue to be, critically important for the industry's development.

Both the federal and state governments actively encourage foreign investment, subject to certain restrictions.

In general, proposals to acquire an interest of 20 per cent or more in an Australian business valued at more than A\$261 million require the approval of the Australian Government's Foreign Investment Review Board (FIRB). Non-government foreign investors from Chile, China, Japan, Korea, Singapore, New Zealand and the United States are subject to a higher threshold of A\$1134 million, a requirement that is consistent with Australia's free trade agreement commitments.

All direct investments, new business proposals and land acquisitions by foreign government investors require approval, regardless of the value.

Foreign investment proposals found to be contrary to the national interest can be prohibited, or provided with conditional approval, to address national interest concerns.

Principle 1 – Attract investment by minimising commercial risks for explorers and investors

Encourage exploration through the provision of pre competitive geoscience information and other exploration incentives

Ongoing exploration success is critical to the sustainability of the resources sector. Up to 100 exploration projects may be required to progress a single successful resource production project.

Exploration activity depends on both a natural resource endowment as well as a perceived opportunity to discover economic resources.

The provision of pre-competitive geoscience information is crucial to improving perceptions of mineral and petroleum potential, as well as reducing the actual financial and technical risks.

Effective strategies to increase awareness of prospectivity include the publication and promotion of high quality pre-competitive regional geoscience maps, reports and geotechnical data. Legislation can also be implemented to ensure that exploration data generated by the industry becomes pre competitive information for subsequent explorers and to ensure that exploration activities are not repeated unnecessarily.

Principles in practice in Western Australia Geoscience information

Both the federal and state governments recognise the importance of high quality geoscientific information in assessing mineral and petroleum prospectivity and its role in encouraging exploration, particularly in under-explored areas.

Large geophysical datasets can be downloaded free of charge from the Australian Government via Geoscience Australia's website.

The State Government has a history of providing substantial funding to ensure that the resources sector has access to world class pre competitive geoscience information.

The Department of Mines, Industry Regulation and Safety produces and releases maps that show the State's geology and its mineral and petroleum endowment.

Geological, geophysical and resources maps cover the entire State at scales from 1:100,000, while regional maps are available at scales from 1:50,000. They are available in digital format as PDFs or special datasets. 3D models incorporating geophysical, geological and geochemical data will also enable analysis of bedrock obscured by soil, sand and sedimentary rock.

More than 5,000 geological products including maps, books, reports and records are all available free of charge or at a very low cost via an online catalogue.

This information is stored in online databases that include:

- Airborne Geophysics Index (MAGIX) – a register of datasets from privately-commissioned airborne geophysical surveys and government-commissioned airborne and ground regional geophysical surveys;
- Geochemistry (GeoChem Extract) – access to geochemical data from samples collected during mapping and mineralisation programs;
- GeoVIEW – an interactive geographic information based mapping system, allowing construction of a geological map incorporating other mineral and petroleum exploration datasets including mines, mineral deposits, petroleum wells and active leases;
- Mineral Exploration Reports (WAMEX) – a database of exploration reports and data, including over 100,000 company exploration reports;
- Mines and Mineral Deposits (MINEDEX) – a comprehensive database of mines, mineral deposits and prospects; and
- Petroleum and Geothermal Information (WAPIMS) – a petroleum exploration database containing non-confidential data on wells, geophysical survey titles and other exploration and production data.

Core libraries

Western Australia has core libraries based in Perth (mineral and petroleum core) and Kalgoorlie (mineral core). These libraries provide a reference archive and viewing amenities for geologically-significant drill core acquired during exploration programs. Mineral tenement holders may also request drill core to be archived in the core libraries.

The core library in Perth houses a HyLogger spectral scanner. This is a rapid spectroscopic logging and imaging system that uses continuous visible and infrared spectroscopy and digital imaging to examine cores, samples and cuttings.

Industry reporting requirements

Mineral and petroleum explorers are required to report annually on exploration activities and submit any data collected to the State Government, as well as submitting drill core upon request.

After a period of confidentiality, exploration reports and data become pre-competitive geoscientific information and are made publicly available on the WAMEX or WAPIMS databases. Reports and data are available for download free of charge.

Companies must also retain their own archives, making data available to the government if requested and providing three months' written notice if they plan to destroy it.

Exploration Incentive Scheme

The State Government's Exploration Incentive Scheme (EIS) provides funding to promote exploration, with a particular emphasis on areas that are underexplored for mineral deposits and on frontier petroleum basins.

The program was launched in April 2009, and is provided with funding of A\$10 million per year.

The scheme is designed to maintain investment and exploration activity at levels required for the long-term sustainability of the resources sector.

It supports five high-level programs:

- 3D prospectivity mapping
- Geophysical and geochemical mapping
- Strategic research with industry
- Exploration facilitation
- Innovative co-funded drilling

The co-funded drilling program is the flagship incentive program of the EIS. Under this program, the government offers a refund of up to 50 per cent for innovative exploration drilling projects (capped to a maximum of A\$200,000). Refunds are offered through competitive application rounds.

The EIS also encourages exploration through the provision of pre-competitive geoscience information. EIS funding has resulted in the 100 per cent coverage of Western Australia by aeromagnetic surveys and an increase in regional gravity coverage from eight per cent to more than 50 per cent. More than 50 major reports that increase the collective understanding of the State's geology have also been published.

Key points

- The provision of pre-competitive geoscience information to industry is essential to attracting investment.
- Industry should contribute to the sharing of knowledge.

Facilitate development approvals

A proposal to develop a new resource project, or even expand an existing project, can require companies to navigate a complex system of approvals.

The degree of complexity is determined by the type and scale of the proposed activity, with a range of approvals, licences, permits and agreements required to be obtained before mining or the extraction of petroleum can commence.

Failure to properly appreciate the complexities surrounding potential impacts and risks to the environment, worker health and safety and the local community can result in development delays and increased costs.

Appropriate facilitation and coordination of approval processes by government, without compromising on the regulatory rigour required to ensure thorough assessments are conducted, can play a crucial role in attracting investment.

Principles in practice in Western Australia

Resource companies wishing to progress projects in Western Australia can benefit from the State's Lead Agency Framework.

Lead Agency Framework

The Department of Mines, Industry Regulation and Safety is the lead agency for mineral and petroleum projects.

While many of the smaller and less complex operations can be managed through standard approval processes without difficulty or unnecessary delays, the department may provide more complex projects with project approval coordination support.

In such cases, the department will:

- provide a single entry point to government;
- coordinate the approvals process across government for all proposals;
- assign officers and case managers in accordance with the project's size and complexity, as well as the potential environmental, economic or social impacts; and
- provide online application and approval tracking services.

State Agreements

Very large projects considered to be of strategic importance to the State may also be provided with a State Agreement that provides a greater level of government facilitation.

State Agreements have been used in Western Australia since the 1950s to facilitate the development of the State's major resource projects for alumina, coal, copper, diamonds, iron ore, mineral sands, nickel, petroleum, salt and silicon. Many of these projects required the development of significant infrastructure such as railways and ports, for which proponents accepted or shared responsibility with the State Government.

State Agreements are essentially contracts between the State Government and companies that are ratified by an Act of Parliament. They specify the rights, obligations, terms and conditions for the development of projects and establish a framework for cooperation between the parties to the agreement. They are negotiated on a case-by-case basis and have project specific clauses which can only be changed by negotiation and mutual agreement between the parties.

In return, proponents are provided with certainty through secure long-term tenure in addition to assistance with facilitating the coordination of approval processes across government.

State Agreements represent a highly visible sign of the State's support for and commitment to key projects.

In determining the suitability of granting a State Agreement for a prospective project, the State Government takes into account:

- the lifespan of the project;
- the requirement for long-term certainty for the proponents;
- the existence of extensive or complex land tenure issues;
- whether the project is located in a relatively remote area of the State, and requires significant infrastructure development, such as rail networks; and
- the significance of the project to the economic development of the State.

All State Agreements are managed by the Department of Jobs, Tourism, Science and Innovation.

Key points

- **Complex approval processes can hinder investment if they are not appropriately managed.**

Principle 2 – Provide the industry with certainty regarding its rights to resources

Exploring for and confirming the economic viability of mineral and petroleum resources presents considerable investment and financial risks for industry.

Providing industry with certainty regarding its rights to resources is crucial for attracting investment, and is a key principle of the legislative framework in Western Australia.

A secure and equitable titles system is also essential to providing certainty and minimising conflicts between the resources sector and other land users.

Principles in practice in Western Australia

All minerals and petroleum are owned by the State, on behalf of the community, regardless of whether they are within private or public (or "Crown") land. Exceptions are minerals that are on land sold or granted by the Crown prior to 1899.

The vast majority of land in Western Australia (93 per cent) is Crown land, which includes unallocated ("vacant") Crown land, pastoral leasehold land, road reserves, conservation reserves and land owned by government authorities. While all this land is open for mineral and petroleum development, existing land rights and uses have implications for resource development activities.

Providing explorers with guaranteed rights to identified resources is fundamental to the philosophy under which the resources sector in Western Australia has been developed. Both mineral and petroleum legislation provide for holders of exploration licences or permits to have the right to apply for, and to have granted to them, rights over the lands covered by their initial licences.

Investors are provided with certainty through secure title to the resources they discover and develop.

The title registry systems are administered by the Department of Mines, Industry Regulation and Safety.

Acquiring mineral titles

The principal statute governing mining in Western Australia is the Mining Act 1978. This Act allows individuals or companies to apply for rights to explore for and extract minerals. These rights include prospecting licences, exploration licences, mining leases and retention licences.

A **prospecting licence** entitles a person to enter land to prospect for minerals and to undertake activities necessary for that purpose, such as drilling bores, digging trenches and pits, taking samples for testing and taking water. A prospecting licence covers a maximum area of 200 hectares. The duration of a prospecting licence is four years, with the possibility of a further four-year extension in certain circumstances.

An **exploration licence**, like a prospecting licence, authorises a person to enter land and to undertake exploration activities. Exploration activities can include extraction of a relatively small quantity of material in order to test the quality of the resource. The main difference between a prospecting licence and an exploration licence is that an exploration licence can apply over a very large area (up to 21,700 hectares) and is made up of pre-determined graticular blocks. The initial term of an exploration licence is five years, however they may be extended once for five years, and by further two-year periods.

To ensure new and prospective areas continue to be made available for exploration, 40 per cent of the area is required to be surrendered after six years.

Fundamental to Western Australia's mineral titles system is the "first-in-time" principle for the granting of exploration titles. This means that land will be allocated to any individual or company applying for eligible land that fulfils all the conditions for grant before anyone else.

In order to commence commercial mining production, a person must have a **mining lease**. The holder of a mining lease can mine the land, extract minerals and conduct any other operations that are necessary for that purpose. A mining lease may be granted for a term of up to 21 years and is renewable for further 21-year periods.

A person who holds a prospecting licence or exploration licence can apply to convert that licence to a **retention licence** if there is a known mineral deposit on the land but it is not yet feasible to commence mining. This gives the licence holder more time in which to evaluate the resource, develop plans, obtain finance, or wait for better economic conditions. In order to keep a retention licence, the holder may have to comply with an approved work program and may be required to show cause as to why the holder has not applied for a mining lease.

The right to mineral titles is assured, subject to certain conditions. Exploration licence holders must meet minimum levels of exploration expenditure, otherwise the licence can be revoked without compensation. In other words, licence holders must "use it or lose it", an important principle of the Mining Act that ensures areas are adequately explored. Together with the surrender requirements, this also

serves to prevent "land banking" (i.e. retaining rights to the ground without conducting exploration and then selling when there is demand).

Acquiring petroleum titles

The *Petroleum and Geothermal Energy Resources Act 1967* and the *Petroleum (Submerged Land) Act 1982* allows individuals or companies to apply for rights to explore for and extract petroleum.

In contrast to mining, exploration rights in onshore areas and in state waters are conducted by a competitive process rather than a "first-in-time" system.

At least once a year, portions of land are identified and promoted for oil and gas exploration. This is known as an "acreage release" and is the most common process for companies to secure an area to explore.

In order to assist companies in planning ahead, a five-year schedule of acreage releases is provided to industry. The schedule is updated at least once a year after each acreage release, or when a significant amount of new prospectivity data or acreage becomes available.

Following an acreage release, petroleum companies submit applications for **exploration permits** over the release area. Companies must provide details of the proposed work and expenditure, as well as the technical and financial resources available to the applicant. The assessment of applications will also take into account each company's performance history.

Exploration permits are awarded to the applicant that will undertake the fullest assessment of an area's petroleum potential, in accordance with sound resource management principles.

Exploration permits are awarded for a period of six years and can typically be renewed for two further periods of five years. When a permit is renewed, half the area is relinquished.

Companies can also conduct exploration activities following the grant of:

- a drilling reservation (where a drillable target has already been identified); or
- a special prospecting authority (which can be granted in greenfields areas where little or no exploration has been conducted previously).

If an exploration program is successful and oil or gas is discovered, the company must advise the department of the details of the discovery. The company then has the right to apply for a production licence.

Production licences can be granted over areas found to contain commercial petroleum discoveries.

A production licence allows a person to enter an area and recover petroleum, subject to an approved Field Management Plan. License holders can be directed to maintain, increase or reduce the rate of recovery. They are also expected to continue to explore for resources within the licence area.

Production licences can be held for an indefinite period as long as they are being utilised. A production licence may be terminated if there have been no operations for the recovery of petroleum for a continuous period of five years (not including circumstances beyond the licensee's control).

Similarly to mining retention leases, a petroleum **retention lease** may be applied for when a petroleum discovery has been made that is not currently commercial, but may become commercial within 15 years. Evidence of non-commerciality is a requisite for being granted a retention lease.

A retention lease allows the holder to continue to explore for petroleum, as well as giving the holder the right to apply for a production licence if the petroleum discovery becomes commercial.

The term of a retention lease is five years and can be renewed for subsequent five-year periods provided the title holder continues to comply with the requirements of the lease.

Strategic land use planning

Overall, land use in Western Australia is guided by the State Planning Strategy 2050, which outlines the State Government's collaborative approach in planning for the State's infrastructure, environment, food security, land availability and economic development.

Within the planning framework is an environment and natural resources policy which is designed to:

- integrate environment and natural resource management with broader land use planning and decision-making;
- protect, conserve and enhance the natural environment; and
- promote and assist in the wise and sustainable use and management of natural resources.

As most of the development of land occurs in the more populated South West of the State, a key focus of planning policies involves ensuring that basic raw materials including sand, clay, hard rock, limestone and gravel together with other construction and road building materials can be extracted as development occurs.

The Department of Mines, Industry Regulation and Safety maintains up-to-date geological data to identify areas of the

State prospective for mineral and petroleum resources and works closely with other government agencies to assist in land use decision making. This ensures that the value of the resources can be considered when decisions on alternative land uses are being made.

Undeveloped resources that may be impacted by competing land uses are also protected by the Mining Act, as a change of ownership from state-owned land to private land cannot occur without the approval of the Minister for Mines.

Land rights – private landholders

Private landholders generally have a right of veto over the granting of mining tenements, unless the land is unused or unimproved. Landholder consent is not required, however, for the grant of a mining tenement for subsurface rights (i.e. land 30 metres below the surface). If consent is given, mining companies must pay compensation for loss and damage suffered, or likely to be suffered.

With respect to petroleum, title holders are required to negotiate access agreements with the private landholders and consent is required in certain circumstances, including private land not exceeding 2000 m². Similarly to mining, compensation is payable for actual loss suffered, and there is no requirement for consent or compensation for subsurface activity.

Land rights – conservation reserves and marine parks

Mineral and petroleum titles cannot be granted in the most highly protected classes of conservation reserves (i.e. national parks, Class A nature reserves, marine parks or marine nature reserves) without Parliamentary consent.

In other conservation parks and nature reserves, activities can be carried out with the approval of the Minister for Mines and Petroleum, after consultation with other relevant government ministers.

Land rights – holders of pastoral and other leases

Both mineral and petroleum titles can be granted over such land without consent. Before exploration or development activities can begin, however, occupants of the land are required to be notified, and compensation is payable for any damage caused.

For some reserved land, titles are granted that do not allow for any exploration or development activity without consent.

Land rights – native title

Native title rights and interests relate to land or waters possessed under traditional laws and customs acknowledged and observed by Aboriginal people or Torres Strait Islanders.

These rights are recognised by the common law of Australia.

The legislative framework for the recognition and protection of native title rights to land and for its co-existence with other land users, including the resources sector, is provided by the Australian Government under the Native Title Act 1993.

Where mineral or petroleum titles impact native title rights, companies must negotiate with the native title holders or claimants in good faith, with a view to obtaining an agreement to access the land. The Department of Mines, Industry Regulation and Safety works with both parties to facilitate agreements.

Agreements must be finalised before tenements or titles are granted.

Co-existing mineral and petroleum titles

All petroleum titles in Western Australia require applicants to consult with existing title holders, including holders of existing mining tenements, to ensure a constructive working relationship. This usually requires them to enter into an agreement about how the operations will co-exist (including any compensation).

Key points

- **The legislative framework must be clear on rights to land with respect to development of mineral and petroleum resources.**
- **A secure and equitable titles system is crucial in enabling industry to provide the significant investment required to find and develop resources.**
- **The titles system also needs to encourage exploration activity by requiring minimum levels of exploration expenditure and discouraging land banking.**

Principle 3 – Provide a clear and consistent regulatory framework

A clear and consistent regulatory framework is essential for providing industry with the certainty required to make investment decisions. It also provides the community and other stakeholders with the confidence that the industry is complying with its obligations, particularly with respect to the environment and occupational health and safety.

Principles in practice in Western Australia **Objective-based and risk-based regulation**

For a number of years, Western Australia's regulatory framework has been transitioning from prescriptive regulation towards a regulatory system that is both objective- and risk-based. This means a move away from prescribing specific standards or procedures to emphasising achievement of the objectives of legislation, allowing industry to determine the regulatory processes under which objectives are achieved.

Objective-based regulation requires the operator of a project to identify hazards and risks and describe how the risks are to be controlled. The operator must also describe the systems in place to ensure that controls are effectively and consistently applied. This is the most efficient and effective approach because the operator has the greatest in-depth knowledge of the operation.

A risk-based approach to regulation ensures that regulatory efforts are targeted and proportionate with respect to higher risk projects.

Governance

The Department of Mines, Industry Regulation and Safety is the lead agency for the regulation of the resources sector in Western Australia. The department employs a total of about 700 staff to administer mineral and petroleum titles, regulate exploration and development activities, and provide administrative support.

This includes about 50 specialist mines inspectors with wide-ranging expertise including electrical, geotechnical, mechanical, chemical and mining engineers.

There are also about 15 specialist petroleum geoscientists and engineers, including five petroleum inspectors, with expertise in drilling, well integrity, resource management and pipelines.

About 25 specialist environmental officers are employed, along with about 40 inspectors involved in dangerous goods and onshore petroleum safety.

About 70 staff specialise in land access and tenement administration, and a further 150 are employed to provide geoscience and mapping expertise.

The remainder of the staff comprise corporate support (e.g. finance, human resources and information technology), and specialty roles such as royalty administration and management.

Most staff are located in the department's head office in Perth, with a number of regional offices across the State (see Figure 4).

The overarching governance framework for the resources sector also involves other regulatory agencies across government, such as the Department of Water and Environment Regulation. All agencies are focused on ensuring a high level of transparency in the way the legislation is administered as well as industry's compliance with the legislative requirements.



Figure 4. Location of regional offices of the Department of Mines, Industry Regulation and Safety

Environmental approvals

Gaining environmental approval to proceed with exploration and development activities is often the most complex of the overall regulatory process, and occurs concurrently with the exploration, development and mine closure or (for petroleum operations) decommissioning stages.

The process involves companies completing an application process at each stage, usually once mineral tenements or petroleum titles have been granted. Detailed guidance material is provided to assist with the completion of applications.

Most environmental approvals for mining and petroleum exploration and development activities are processed by the Department of Mines, Industry Regulation and Safety.

Operations that are likely to have a significant impact on the environment, or are located in environmentally sensitive areas, are referred to the Environmental Protection Authority (EPA), an independent statutory body that provides public advice on significant proposals and environmental issues, for assessment.

The highest level of assessment conducted by the EPA is known as a Public Environmental Review, which involves a public consultation process.

The EPA makes recommendations on the potential environmental impact to the Minister for Environment. While the Minister may place conditions on a project to address the environmental impact or, alternatively, recommend that the project does not proceed, the ultimate decision making authority is the State Government.

If a proposal impacts an area of *national* environmental significance, assessment under federal environmental legislation is required.

Once all environmental approvals are completed, the company is provided with conditional approval, in accordance with the unique circumstances of the project. The detailed conditions are enforceable during operation.

Environmental inspectors will identify and evaluate potential liabilities, risks and hazards, and monitor compliance. Inspection sites are prioritised using a risk-based approach.

A particular focus for the mining industry is the requirement to have approved mine closure plans as part of the mining proposal application process. Designed to allow for progressive closure and whole of mine life planning, closure plans are progressively refined during the term of each mining operation.

Similarly, the petroleum industry is required to have approved Field Management Plans which must detail a decommissioning program.

Financial security to ensure all mines in the State will be rehabilitated is required in the form of annual contributions to the Mining Rehabilitation Fund.¹

Health and safety approvals

Worker health and safety in the resources sector onshore and within state waters is promoted by the Department of Mines, Industry Regulation and Safety through education, enforcement and the provision of specialist advice.

¹ Following a lengthy review of its mining securities system, Western Australia replaced the former unconditional performance bond system with the Mining Rehabilitation Fund from 2013. This fund is unique in that it also provides funds for the rehabilitation of legacy abandoned mines.

The mines safety legislation requires that mining operators have an approved Project Management Plan in place before the start of any construction or mining operations.

The preparation of a Project Management Plan is the basis for the initial identification of potential major risks at the various stages of the operation's life cycle, from construction to development, production and closure. It is a starting point for developing ongoing strategies to manage those risks and must be approved by the department before the start of operations.

The Project Management Plan provides the basis for developing site-specific occupational health and safety management systems.

For petroleum operations, an approved Safety Case or Safety Management System forms the basis for ongoing safety audit and inspection activities for the life of the operation.

Safety Cases are generated for activities where the risks are well understood and can be controlled. Safety Management Systems are appropriate for many activities including drilling, vessel operations and/or diving operations where the management of risk occurs in real-time.

Safety Management Systems require the ongoing monitoring and assessment of risks and ongoing assessment as part of a continuous improvement process that the operator uses to manage process, health and safety risks on its facility. The Safety Case should also document the process of assessment of hazards and development of management measures as required in the hierarchy of controls e.g. elimination, substitution, management of change.

Petroleum resource management approvals

Applications for petroleum activities are assessed before approval is given for an activity to begin. Well Management Plans cover the life of petroleum wells with particular regard to well integrity. The Plans must be revised and approved before a new activity on a well can begin.

Field Management Plans must be assessed and approved for fields in production licences before recovery of petroleum is permitted. Revisions to Field Management Plans must be submitted if changes occur to the way the resource is being managed.

Compliance

The Department of Mines, Industry Regulation and Safety undertakes assessments, audits and site inspections to identify non compliance. Instances of non-compliance are followed up with enforcement and/or prosecution.

The department also informs and educates workers and industry about their safety, environmental and social responsibilities. The department actively encourages companies to conduct self-audits of their Safety Management Systems and provides detailed guidance material in areas ranging from traffic management to electrical safety to facilitate these activities.

A risk-based approach is taken to monitoring mining and petroleum operations involving desk top audits and strategic, systematic and random field inspections. Daily petroleum reports are reviewed for compliance with Well Management Plans and anomalies are investigated.

Information submitted to the department in regular compliance reports on health and safety is analysed to identify underlying causes of accidents, significant incidents and injuries. Such information is used to improve worker health and safety and help prevent future similar occurrences. This is achieved through education initiatives and continuous improvement processes applied throughout the department.

An integrated approach to doing business allows the department to further streamline approval and compliance processes, continue to reform legislation and policies to improve efficiency, and to boost risk-based regulatory compliance.

Transparency

Western Australia has legislation (the *Freedom of Information Act 1992*) that provides the community with a right to access government documents.

The Department of Mines, Industry Regulation and Safety supports transparency across government and publishes a wide range of information on its website regarding mining applications and activities, such as environmental conditions on mineral titles including approved mining proposals and annual environmental reports.

Online systems such as Mineral Titles Online also provide the public and industry with the ability to access information regarding existing mineral titles and applications for new titles.

The department is committed to ongoing improvements in the accessibility of information and ensuring that all information that can legally be requested by the community is made publicly accessible.

Similarly, other government agencies, such as the Environmental Protection Authority, provide the public with access to relevant environmental documents such as Public Environmental Reviews.

The department is also continually focused on ways to raise awareness and seek compliance with respect to occupational health and safety, going beyond day-to-day inspectorate activities. The department maintains an online resource ("Towards 2020") that is easily accessible, and can be updated as emerging issues and trends are identified. It describes the goals, focus areas and measures of success for safety and health initiatives undertaken by the department.

Reducing red tape

While regulation and bureaucracy, in general, provide the foundation and structure for a well functioning society, excessive or unnecessary regulation is known as 'red tape'. Such regulation entails a compliance burden but does not advance the legitimate purpose it was intended to serve. It results in extra time, paperwork and capital outlays for businesses, which can delay and slow down economic activity and increase the costs of doing business. Red tape also wastes government resources through requiring the performance of unnecessary administrative tasks.

The Department of Mines, Industry Regulation and Safety has an ongoing program of reviewing the legislative framework governing the resources sector, with a key objective being to reduce red tape.

Improving processes also reduces red tape. For a number of years, the department has had an ongoing program to provide online technologies for all approvals and compliance transactions, including the lodgement and processing of applications, submissions and correspondence. About 92 per cent of the department's annual volume of business is now being conducted online.

An example of ongoing efforts to improve online systems is the introduction of a new map based online system that has made lodging applications for environmental approval for mineral exploration activities more efficient. The new system went online in March 2017, and provides all relevant tenement spatial information before lodgement. The system enables any areas which need follow-up or clarification to be addressed before the application is submitted, improving application quality and reducing assessment times.

The department also maintains administrative agreements with other relevant government agencies that are designed to produce more efficient processes and support best practice for industry.

Key points

- A clear and consistent regulatory framework provides both industry and the community with confidence that the resources sector is being appropriately regulated.
- A comprehensive and transparent approvals process, that takes into account the impact on the environment, occupational health and safety and other land users, is critical for ensuring sustainable development.
- The regulatory framework should be subject to ongoing review and improvement.

Principle 4 – Ensure the community receives appropriate royalty returns

Balancing investment attraction while ensuring adequate compensation to the community for the loss of its resources is a challenge for governments, particularly as other mining jurisdictions are also competing for scarce and mobile investment capital.

Royalties are payments made by mineral and petroleum producers to governments as compensation for the depletion of non-renewable resources.

Royalty systems can be complex and governments administer the collection of royalties through various approaches (see Table 1).

In most countries, royalty rates set at a fixed percentage of the value of production (also known as ad valorem royalty rates) are commonly applied to minerals, petroleum, coal and gemstones. Specific-rate royalties (a fixed dollar amount per unit of mass) usually apply to low-value, high-volume, non-metallic commodities, such as construction materials.

Rent based royalties are used in some countries, such as Canada, for minerals, as well as in Australia's offshore petroleum industry.

Principles in practice in Western Australia

Mineral and petroleum royalties represent a significant source of revenue for the State Government. Since 2013, royalties collected from mineral and petroleum producers in Western Australia have averaged over \$5.5 billion. Figure 5 shows the growth in royalties and the total value of the resources sector over the past 10 years.

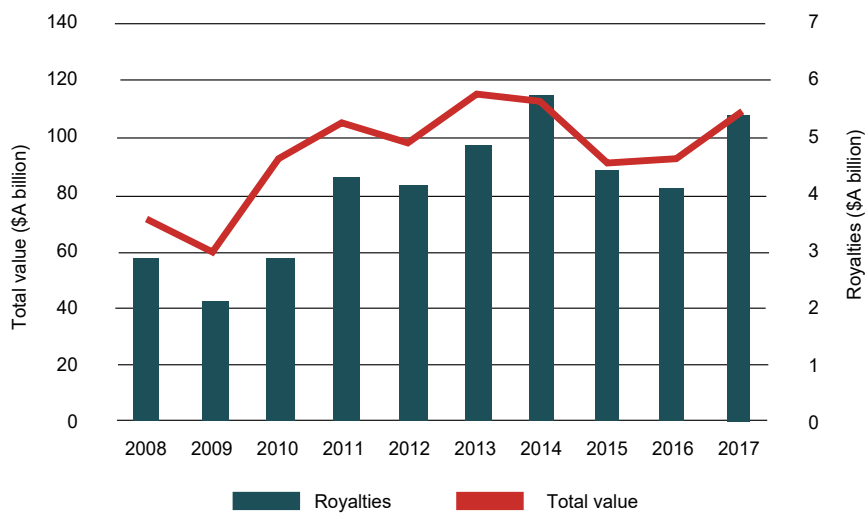


Figure 5. Total value of royalties collected in comparison to the total value of the resources sector, 2008 to 2017

Principles

Western Australia's royalty system has been designed to strike an acceptable balance between giving a fair return to the community while not imposing an unacceptable economic burden on industry.

Royalties are based on consideration of the following key principles:

- **Equity:** the royalty system should return fair and appropriate compensation to the community for the loss of the resources, and treat producers equitably so that similar projects are required to make similar royalty payments.
- **Efficiency:** the royalty system should not reduce the productive capacity of the economy, or unduly deter or distort employment and investment decisions.
- **Stability and predictability:** the royalty system should provide stable and predictable revenue to allow government to plan and deliver services sustainably, and to provide proponents with a stable and competitive royalty framework when planning projects.
- **Transparency and simplicity:** the royalty system should be simple for government to administer, and for proponents to comply with and understand.

Royalty rates

The majority of Western Australia's **minerals** royalty revenue comes from a three-tiered ad *valorem* system applied to metallic minerals and generally higher value industrial minerals, calculated as a percentage of sale (or metal) value that is designed to represent 10 per cent of the value of the ore ex mine:

- a 7.5 per cent royalty is applied to bulk material, such as iron ore
- a 5 per cent royalty is applied to for mineral concentrates, such as copper and zinc
- a 2.5 per cent royalty is applied to minerals in metallic form or equivalent, such as gold doré and nickel.

Specific-rate royalties apply to basic raw materials such as limestone, gypsum and sand, but also extend to some industrial minerals, notably salt and talc. Specific rate royalties are specified in the Mining Regulations 1981 for each tonne produced and are indexed every five financial years according to the Non-Metallic Minerals Producer Price Index published by the Australian Bureau of Statistics.

With respect to the production of **petroleum** onshore or in state waters, royalties are levied at a rate of 10 per cent for primary production licences (of the wellhead value of the resource) and 12.5 per cent for secondary production licences. Once the secondary entitlement licence is invoked, the 12.5 per cent rate applies to both the primary and secondary entitlements.

Calculating royalties payable

The royalty value is broadly calculated as the quantity of the mineral in the form in which it is first sold, multiplied by the price in that form, minus any allowable deductions. This system takes price fluctuations into account.

Likewise, petroleum royalties are calculated by taking a percentage of the value of petroleum at the wellhead, less deductible processing, storage and transport costs.

Table 1. Types of royalty systems

Type	Advantages	Disadvantages
Specific rate (fixed dollar amount per unit of mass e.g. \$1.17 per tonne)	Generates stable revenue and is administratively efficient and easy to audit.	Can be extremely economically inefficient and distortionary. For these reasons, unit-based royalties are generally applied to bulk, low value commodities.
Ad valorem (based on a percentage of the value of output, e.g. 5% of the value of the minerals produced)	Provides a simple, stable, transparent and predictable framework – qualities important for both industry and government when planning expenditure and income. Some jurisdictions apply progressively lower royalty rates as the nature of a product progresses from crude ore to metal. Because the royalty rate applies to the value of the mineral it continually reflects the changing value of the mineral.	If applied to the value-base regardless of how it is defined and irrespective of the nature of the product sold, a single royalty rate is inequitable to products which have had value added. This creates a disincentive to invest in downstream processing. Government's revenue will be variable, as it reflects changes in commodity prices which can be economically inefficient.
Profit-based (a percentage rate is applied to a measure of accounting profit realised by the project)	An accounting profit-based tax has greater economic allocative efficiency.	The accounting profit base is computed at the project level and may not be consistent with the contribution that the project makes to the consolidated profit of the holding entity on which corporate income tax is levied. Deductions can be very difficult to set and audit. This system can also result in unstable government revenue and high compliance costs for both government and industry. Low levels of administrative efficiency and transparency.
Economic rent-based (i.e. based on returns in excess of those necessary to attract commercial activity, such as the Petroleum Resources Rent Tax)	Relatively simple concept with high level of economic allocative efficiency and equity. Governments can protect their interests by requiring minimum payments based on revenues.	Low levels of administrative efficiency and transparency. Practical implementation is complex, often misunderstood and can lead to significant compliance costs, disputes and revenue instability. Due to high levels of deductions on a cash basis, royalty rent revenues are likely to be received late in the project's life.
Hybrid systems combining a profit or rent-based system with an ad valorem system	Limits the risk that government may collect no revenue if in any year there is not taxable profit or rent. This ensures a modicum of revenue stability.	Low levels of administrative efficiency and transparency.
Production sharing (shares are divided between a private company and a state-owned company or another public body)	Production sharing contracts are very commonly used in the petroleum industry, but rarely in the mining industry. Holding these equity stakes can give the State access to a portion of dividend payments.	Royalties are often levied on the value of the company's share of minerals before calculating the "net profit mineral".

The methodology for calculating the wellhead value, including allowable cost deductions, is included in a schedule developed specifically for each project.

The schedule is generally developed with the assistance of external technical experts with costs audited periodically by the department to ensure they are properly incurred.

Ensuring proper royalties are paid

Royalties are payable monthly or quarterly and are the result of a self-assessment process undertaken by the producers.

To assist in monitoring and administering royalties the Department of Mines, Industry Regulation and Safety uses an online system known as the Royalties Management System (Royalties Online). The key input document is the Royalty Return, similar to a tax return, that is submitted by producers. The return must be in an approved form, showing where relevant the:

- quantity of the product mined or produced;
- details of any sale, transfer, shipment or disposal of the resource;
- royalty value of the resource;
- gross invoice value of the resource, when it was paid, and any allowable deductions; and
- rate of royalty used.

Royalty returns are subject to audit by the department at least once every three years. The royalty returns can be prepared and lodged online via Royalties Online. Payments are made either by electronic funds transfer or cheque. Once payment is received a journal transfer to the financial system is automatically generated by the Royalties Management System. The system also provides for the department to monitor and follow up issues such as overdue payments and overdue returns.

Non-payment of royalties can result in a fine or forfeiture of a company's mining leases (in the case of mining companies) or production licences (in the case of petroleum companies).

Key points

- To be effective, a royalty system must provide the community with adequate compensation for the loss of its resources while not adversely impacting investment.
- The system must also be fairly and equitable applied, so that companies can accurately predict costs.

Principle 5 – Foster public trust and confidence

Community interest in resource projects is increasing, particularly in relation to environmental and land access issues. Greater expectations for regulatory and approvals transparency and accountability has resulted in increasing needs for effective community engagement by industry and government.

Even when a jurisdiction's economy is heavily reliant upon the jobs and other economic and social benefits provided by resources development, such development can divide local communities.

The community needs to be confident that the regulatory framework promotes a culture of integrity that minimises corruption and ensures that public servants and politicians are not putting private sector interests before the public interest.

Principles in practice in Western Australia Integrity and accountability

The Department of Mines, Industry Regulation and Safety has robust systems in place to promote transparency and accountability, and provide a fair and equitable legislative environment, thereby mitigating the risk of corruption.

In addition to providing public access in real time to applications being lodged and comprehensive information on the State's geology, geophysics and geochemistry, the department ensures that criteria for assessments by departmental officials are clearly defined.

The department adheres to a Code of Conduct which applies to all public sector employees and involves ethics training and education. All staff that have a decision-making role are

required to sign a declaration stipulating that resource shares or interests are not held, and all staff are required to register all gifts, hospitality and conflicts of interest.

All significant legislative and policy amendments are also open to a public consultation process, and public inquiries may be held into contentious development issues.

The State Government also has integrity systems, offices and commissioners for oversight, education and corruption prevention for public authorities, companies, ministers and members of Parliament:

- Corruption and Crime Commission, Public Sector Commission, Ombudsman, Information Commissioner, and the Auditor General
- Ministerial Code of Conduct and Code of Conduct for Members of the Legislative Assembly; Lobbyist Code of Conduct and Register; Register of Members of the Legislative Assembly's financial interests

Awareness and education

The Department of Mines, Industry Regulation and Safety focuses on increasing community confidence through its efforts to consistently improve information available to the public regarding companies and individuals that have gained the right to explore and develop the State's mineral and petroleum resources.

The department is also focused on promoting good corporate behaviour by publicly recognising outstanding achievement and leadership in building constructive community partnerships through an annual awards program.

In 2016, the Awards for Excellence brought together the prestigious Golden Gecko Awards for Environmental Excellence, which celebrated its 25th anniversary, and the inaugural Community Partnership Resources Sector Award. From 2017, the event has also incorporated the Safety and Health Resources Sector Awards.

Regional liaison officers

The Department of Mines, Industry Regulation and Safety employs three regional liaison officers, located in Broome, Kalgoorlie and Karratha.

The officers work with a wide range of stakeholders including prospectors, pastoralists, local government and Aboriginal communities, and deal with issues ranging from land access to illegal mining.

An important function of the regional liaison officers is to educate local communities on the department's regulatory role.

Key points

- **Fostering public trust and confidence require the regulatory framework to promote a culture of integrity that minimises corruption.**

Find out more

The following websites provide further information on the regulatory requirements for the Western Australian resources sector:

Western Australian Government

Department of Mines, Industry Regulation and Safety

www.dmirs.wa.gov.au

Department of Jobs, Tourism, Science and Innovation

www.jtsi.wa.gov.au

Department of Planning, Lands and Heritage

www.dplh.wa.gov.au

Department of Water and Environmental Regulation

www.dwer.wa.gov.au

Environmental Protection Authority

www.epa.wa.gov.au

Australian Government

Department of Industry, Innovation and Science

www.industry.gov.au

Department of the Environment and Energy

www.environment.gov.au

Geoscience Australia

www.ga.gov.au

National Native Title Tribunal

www.nntt.gov.au

National Offshore Petroleum Safety and Environmental Management Authority

www.nopsema.gov.au

National Offshore Petroleum Titles Administrator

www.nopta.gov.au

This page has been left blank intentionally.

