



Strong economic growth

Western Australia boasts an open, dynamic economy built on strong international investment. The State's economic growth (Gross State Product) has averaged 5.21 per cent during the past 10 years, outperforming Australia's growth of 4.34 per cent (Gross Domestic Product) and OECD countries' growth of 2.8 per cent for the same period. The outlook for WA's economy continues to be strong.

Further information on WA's economy, including quarterly reports, is available from the State Government's Department of Treasury and Finance.

In addition, the Australian Bureau of Statistics provides economic data on both the State and Australia.

Close to existing and emerging markets in Asia

WA is close to the Asia Pacific and the Indian Ocean Rim markets. These are the world's fastest growing economic regions, housing almost two thirds of the world's population. Western Australia shares similar time zones to major cities including Singapore, Hong Kong, Beijing, Shanghai, Tokyo and Seoul.

Perth is within easy flying distance of most countries in Asia. Shipping is considerably quicker from Western Australia compared with competing locations.

Shorter shipping time translates into lower transport costs for WA-based producers relative to most of the world's major mineral and petroleum producers based elsewhere. Merchandise exports from Western Australia to Asia comprised more than 63 per cent of the State's total exports totalling US\$26 billion in 2004. Seven of WA's top trading partners are in Asia including the largest, Japan.



Proximity to Asian Markets (flight times)

A proven track record of successful resource projects

WA has a solid track record for developing world scale, technically advanced mineral and petroleum processing projects. A prime example is the heavy duty Pilbara rail networking system which is acknowledged as being the most advanced and efficient in the world.

A wealth of mineral opportunities

WA has discovered globally significant mineral and energy resources which are not yet developed.

Large areas of the State remain unexplored.

There are about US\$43 billion worth of resource projects either committed or currently under consideration for development in WA.

Key advantages of investing in WA

- Strong economic growth performance
 - A proven track record of successful resource projects
 - Close to existing and emerging markets in Asia
- A wealth of mineral opportunities
 - A mineral and petroleum rich State
 - Extensive industrial land and infrastructure
 - Abundant and competitively priced energy
 - Skilled and productive workforce
- Political stability and low sovereign risk
- Government supportive of industrial development
- Relaxed multicultural lifestyle and clean environment



A mineral and petroleum rich State

Minerals and petroleum are dominant industries in Western Australia and strong growth is forecast for these sectors.

WA is one of the most productive and diversified mineral regions in the world with more than 50 mineral and petroleum products being produced in commercial quantities worth around US\$21 billion annually.

The State leads the nation in minerals and petroleum output and produces a significant proportion of the world's trade in several key commodities.

WA's Share of World Mineral Production 2004 (by volume)

Tantalum	55%	Iron Ore	17%	LNG	7%
Zircon	36%	Alumina	17%	Gold	7%
Rutile	27%	Nickel	15%	Salt	5%
Ilmenite	19%	Diamond	14%		

WA's mineral and petroleum production has increased exponentially since the mid 1960s contributing about 51 per cent of Australia's total. It hosts more than 1,055 operating mines sites (open pit, underground mines and quarries) plus 169 processing plants and about 50 different minerals in commercial production. There are also 58 operating petroleum fields.

Petroleum and iron ore comprise about 59 per cent of the State's total annual commodity sales of US\$21.3 billion in 2004.

WA's Mineral and Petroleum Resource Facts 2004

- US\$21 billion in commodity sales
- 80 per cent of the State's exports
- 55 per cent of the State's new investment

Additional information on WA's resources sector can be obtained from **Mineral and Petroleum Resource Statistics and Economics**.

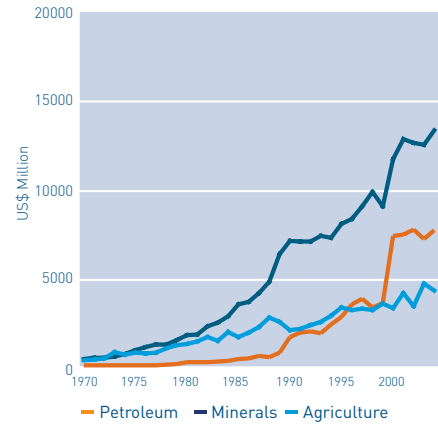


Figure 1 | WA's Production by Sector 1970-2004

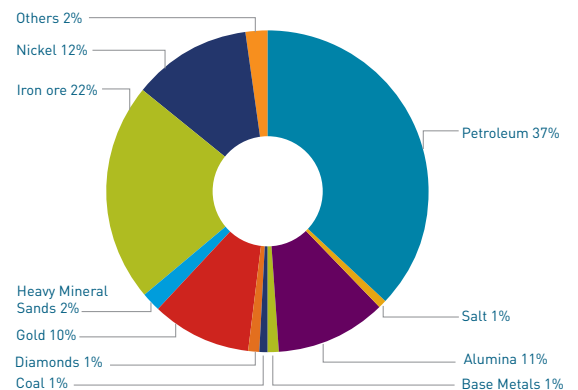


Figure 2 | WA's sales by commodity 2004

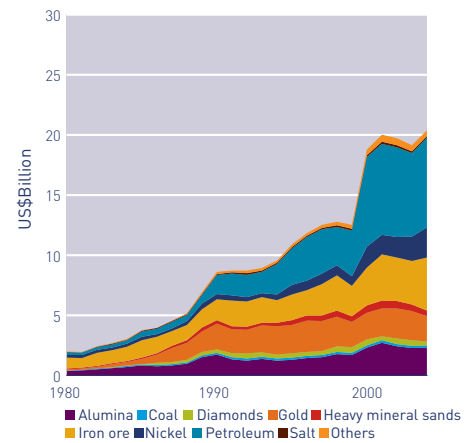


Figure 3 | WA's Mineral and Petroleum Production \$US 1980-2004



Extensive industrial land and infrastructure

WA has world-competitive, low-cost mining with many mines and processes now at the forefront of world's best practice. Its producers are in the lower half of the international cost curve for a number of commodities.

It has well developed infrastructure including roads, hospitals, power, water, communications facilities and ports close to sites for industrial development. Its competitive road, rail and export port facilities provide significant cost advantages for investors. Extensive land planning has also been undertaken to ensure suitable areas continue to be available for resources and associated infrastructure development.

Abundant and competitively priced energy (particularly gas)

Critical to the development and processing of WA's resources is the availability of attractive, competitively priced energy. As a result of deregulation of the WA gas market it has extensive supplies of cost-effective energy available.

Accordingly, with the outlook for the resources sector being strong, energy is a main focus for:

- LNG exports
- Mineral development
- Gas processing
- Mineral processing

Currently, WA's energy requirement (excluding transport) is 530 PJ pa. This is currently supplied through 400 PJ pa of gas and 130 PJ pa of coal.

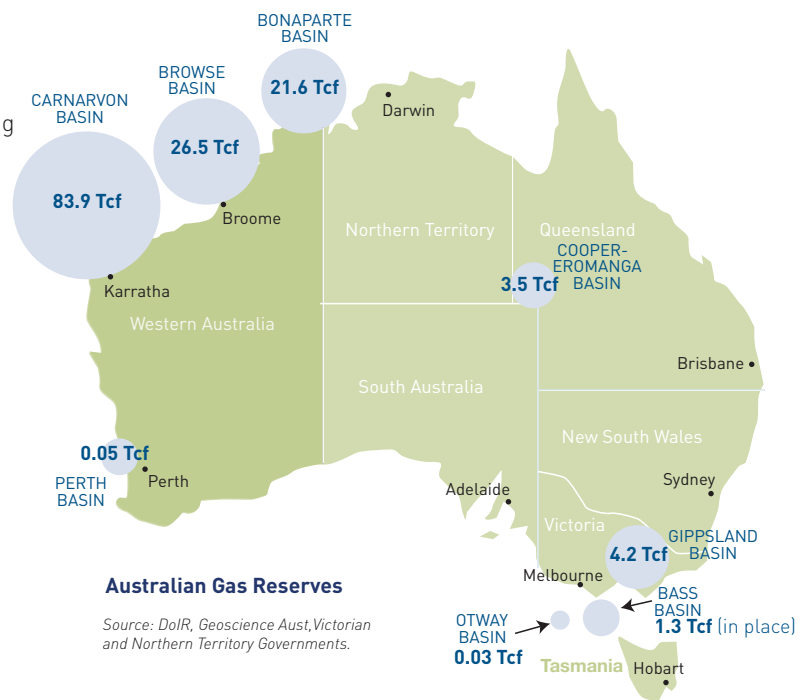
Plentiful gas reserves

Western Australia has substantial gas reserves with approximately 113 Tcf available in the Bonaparte, Browse and Carnarvon Basins.

Natural gas accounts for 46 per cent of the State's identified energy reserves and is expected to last around 146 years at the current levels of production. Much of this gas is waiting to be commercialised.

Gas is currently landed on the Burrup Peninsula where the North West Shelf LNG plant produces more than 11.9m tonnes of LNG per year. This area has been identified by the WA Government to be further developed for gas processing.

Gas is transported via a network of pipelines of more than 2,000km to the State's southwest and northern parts of the Pilbara.



Source: DoIR, Geoscience Aust, Victorian and Northern Territory Governments.

Note: Reserves for WA are calculated on the basis of a 50 per cent probability of recovery level as well as unbooked resources. These refer to resources that may or may not eventually prove viable. They are resources that have not been delineated, audited or appraised by an independent third party. Reserve figures for the rest of Australia are calculated on a 50 per cent probability only.

It is worth noting that the gas in the Bonaparte, Browse and Carnarvon Basins currently represent approximately 80 per cent of Australia's discovered gas reserves. In 20 years time the gas available in these three basins is expected to represent almost 100 per cent of Australia's discovered gas.



Strong domestic gas demand

Growing total primary energy consumption in WA

Primary energy demand in WA is expected to continue to grow strongly. It is forecast to increase to a total of 1,178 PJ in 2020, representing a growth rate of 3 per cent per year.

Natural gas – WA’s dominant source of primary energy

The proportion of primary energy consumption being met by natural gas has grown over the past 25 years. In 2004 natural gas had the highest primary energy use, representing 50 per cent of total energy consumption.

Natural gas – WA’s fastest growing fuel source

Historically, natural gas primary energy consumption has grown from 31 PJ in 1976 to 400 PJ in 2004 at an average rate of 10 per cent pa.

This is faster than any other primary fuel source in WA. This trend is expected to continue with natural gas consumption forecast to grow at an annual rate of 3.9 per cent until 2020.

The higher historical rate of growth is primarily due to the rapid increase in gas production/consumption in 1984/85 and 1989/90 from the commissioning of the Dampier to Bunbury Natural Gas Pipeline, the North West Shelf Gas Project and the LNG phase of the North West Shelf Gas Project.

Natural gas – WA is the largest consumer in Australia

WA is the biggest consumer of natural gas in Australia and this is expected to continue. It is forecast to consume 632 PJ (under the ABARE reference case) in 2020 – 54 per cent higher than the next closest State’s consumption.

Drivers of growth in gas consumption

Various inter-related factors have contributed to the strong increase in the use of gas contributing to the continued growth of usage in WA.

Relatively low price of gas

WA’s gas price is internationally competitive and the lowest in the Asian region. A systematic deregulation of the State’s gas market since 1995 has resulted in lower gas prices and today the price of gas is approximately US\$2.35/GJ.

Gas is relatively cheap compared to other petroleum products. WA’s relatively low finding cost and abundant discovered reserve base combine to present potential commercial opportunities in a range of industry areas including LNG, GTL and mineral and petrochemical processing.

Importantly, the deregulated WA market enables natural gas sellers and buyers to continue to negotiate and compete to secure the best terms (including price) for natural gas sales.

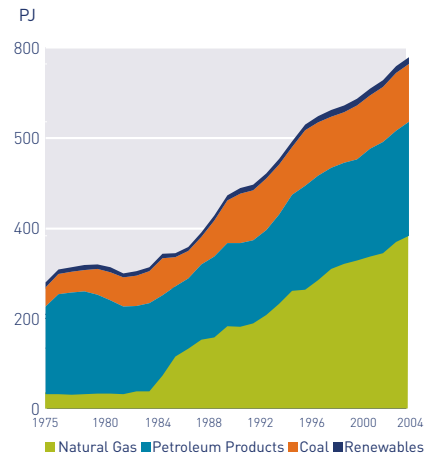


Figure 4 | WA Primary Energy Demand
Source: ABARE energy data

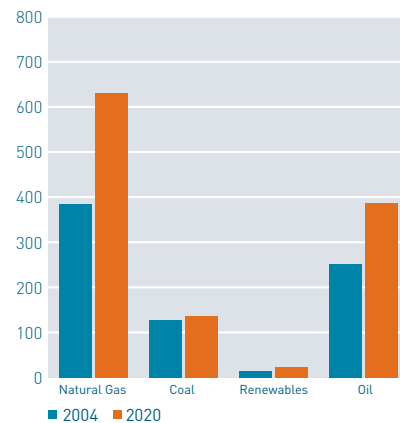


Figure 5 | Growth in Primary Energy Consumption in WA by Fuel
Source: ABARE energy data projections

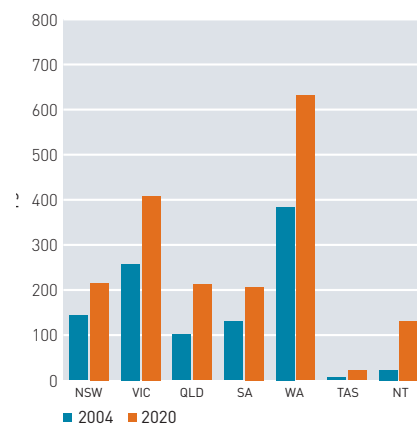


Figure 6 | Australia's Primary Consumption of Gas by State/Territory
Source: ABARE energy data projections.



Development of major gas based industrial, mining and electricity generation projects

Natural gas consumption has traditionally been driven by electricity generation and resource development based on or fuelled by gas. This trend is expected to continue.

In WA energy use in the mining sector (which accounted for 18 per cent of consumption in 2004) is forecast to grow by 6 per cent pa over the next five years and manufacturing (including minerals and metals processing which accounted for almost 31 per cent of total energy consumption in 2004) is forecast to grow by 3.6 per cent over the next five years.

Resource Processing

WA's natural gas consumption is forecast to increase significantly, driven by a series of mineral and gas-based processing projects that use gas directly in resource processing and/or as fuel for power generation. For example:

- Gas use in the iron and steel sector is forecast to grow rapidly on the back of the development of WA's HIs melt plant. Lower gas prices resulting from the deregulation of the gas market have made downstream processing of abundant iron ore in the Pilbara far more economically viable and attractive.
- The proposed expansion of existing nickel and alumina processing facilities which are gas-fuelled.
- Developments in the non-ferrous sector which use gas.
- New downstream gas-processing projects (including ammonia plants) on the Burrup Peninsula using the extensive Carnarvon Basin gas reserves.
- Increased LNG exports.

Electricity Generation

WA was the largest producer of gas-fired electricity generation in Australia in 2004. WA accounted for 44 per cent of Australia's total electricity generated by gas.

Natural gas was the dominant fuel used for electricity generation in WA in 2004, comprising 58 per cent of total fuel used followed by coal at 38 per cent.

Gas is forecast to remain the predominant fuel used in electricity generation in WA with gas-fired electricity forecast to grow by more than 3 per cent pa to 2030, largely at the expense of coal. This reflects the advantages of natural gas in electricity generation, which include:

- Shorter lead times.
- Allowing installation of small-to-medium sized capacity close to load areas.
- Lower greenhouse gas emissions (50 per cent less than coal).
- Competitiveness with coal in peak and shoulder markets.

Technological change in the electricity generation sector has resulted in the expansion of the number of gas-fired power

stations.

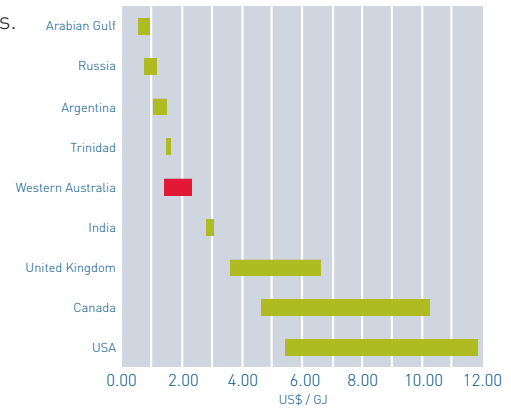


Figure 7 | **Indicative World Natural Gas Prices**
For heavy industrial users. A\$1=US\$0.75

Sources: Bloomberg, Economic Times, EIA, Ferretcon, Financial Times, Pace, Platts, World Bank, September 2005, except WA (DoIR estimate)

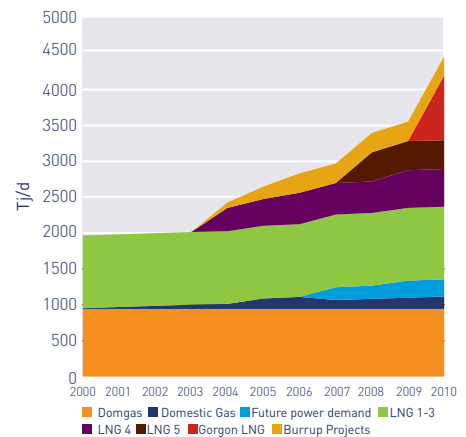


Figure 8 | **Potential Gas Demand Growth**

Source: DoIR

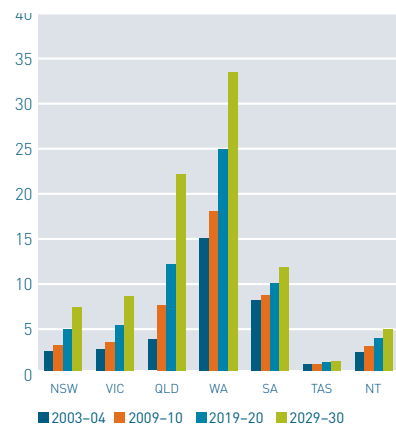


Figure 9 | **Gas Fired Electricity Generation by State**

Source: ABARE energy data projections



It is expected that any new power stations commissioned in WA will be gas fired.

Further information on WA's energy resources, including supply and demand statistics, can be obtained through ABARE energy data.

New resource projects

A number of resource development projects currently committed or under consideration with significant projected gas usage are outlined below.

These projects either use gas directly and/or gas in generating electricity to process resources.

Growing export demand for LNG

Since the first exports in 1989, when the LNG phase of the North West Shelf Gas Project was commissioned, LNG has developed as a major export commodity for WA.

The outlook for LNG exports shows continuing strong growth with a number of new projects expected to bring further gas onshore.

- The construction of a second offshore gas trunkline for the North West Shelf was completed in February 2004. It has a capacity to transport approximately 2,400 TJ/day from offshore to onshore gas production facilities.
- This trunkline complements a fourth LNG Train completed in 2004. Almost all of the output from this train is already contracted to Japanese customers. Train 4 has the capacity to process 4.2 Mt/a of LNG.
- The Northwest Shelf LNG Train 5 is currently being constructed and is based on a copy of Train 4. LNG from this train is mainly expected to be exported to China but may also include other markets such as Korea and Japan.

In addition, Chevron operated joint ventures are planning the development of the large natural gas reserves of the Greater Gorgon fields to support LNG and domestic gas projects. Natural gas is planned to be transported from the Gorgon field via a sub-sea trunkline to Barrow Island.

Proven and probable reserves in these fields are estimated to exceed 17.6Tcf. A large proportion of this gas is expected to be liquefied for export.

Projects Currently Committed or Under Consideration – Major Potential Gas Users

Company	Project	Location	Project Value (estimated)
PILBARA			
Chemical/Petrochemical			
Burrup Fertilisers	Ammonia Plant	Burrup Peninsula	US\$0.45b
Dampier Nitrogen	Ammonia-Urea Plant	Burrup Peninsula	US\$0.67b
Agrium	Ammonia-Urea Plant	Burrup Peninsula	US\$0.67b
Oil and Gas			
Chevron	Gorgon LNG	Barrow Island	US\$8.2b
Woodside Energy	North West Shelf – Project Expansion -LNG Train 5	Burrup Peninsula	US\$1.5b
Iron Processing			
Mineralogy	Mine and Pellet Plant	Cape Preston	US\$1b
MID WEST			
Iron Ore			
Midwest Corporation	Iron Ore Pellet Project ²	Koolanooka	US\$0.6b
Gindalbie Metals	Iron Ore Mine ²	Blue Hills	US\$0.54b
Nickel/Cobalt			
Heron Resources	Mine and processing plant	Goongarrie - Kalgoorlie	US\$1b
SOUTH WEST			
Titanium Dioxide			
Lyondell	Pigment Plant Expansion ²	Kemerton	US\$0.35b
Alumina Refining			
Alcoa World Alumina Australia	Refinery Expansion ²	Wagerup	US\$1.1b
Worsley Alumina	Refinery Expansion ²	Worsley	US\$0.67b
Nickel/Cobalt			
BHP Billiton	Nickel mine ²	Ravensthorpe	US\$1b

Source: DoIR

¹ This table is not comprehensive ² Project would require gas to be transported a reasonable distance



Environmental advantages

The environmental advantages of gas, particularly in regards to greenhouse emissions, makes natural gas an attractive fuel.

Economic growth

Strong historical economic growth in WA has resulted in an increase in total energy consumption flowing through to an increase in natural gas as an energy source. The economic outlook for the State continues to be strong.

Expansion of pipeline network

The expansion of the pipeline network has led to a substantial increase in the markets reached by natural gas. In the period 1966-76, pipeline gas was introduced to all mainland States and since that time the pipeline network has expanded.

Gas is the preferred energy source

Gas is the preferred source of energy in WA because:

- It is low cost.
- Relatively abundant supplies are available.
- It offers environmental advantages over coal (50 per cent less greenhouse emissions).
- It can be converted to liquid hydrocarbons.

Transport infrastructure opportunities from resource development projects

The growth in gas demand in WA will ultimately lead to substantial infrastructure development opportunities to bring the State's gas reserves to its developing mineral provinces.

In addition, with the Eastern States' (excluding Northern Territory) gas reserves expected to be nearly depleted by 2020, a northern gas supply will be required to service the East. This presents further infrastructure development opportunities to connect WA's vast gas reserves with the Eastern States.

A skilled and productive workforce

Searching for highly skilled, highly productive and cost efficient employees? WA has precisely what you need.

WA offers access to a 987,700 strong workforce with levels of education and technical skills among the highest in the world.

Equally beneficial is the fact that many are multilingual with more than 30 per cent of WA's population born overseas.

Political stability and low sovereign risk

WA is a low-risk investment location. Independent surveys show that Australia is a world leader in terms of political stability and sovereign risk.

A government supportive of industrial development

A stable and supportive government at both State and Federal levels assist resources projects in a fair, open and accountable way. The Government of Western Australia actively encourages major private sector investment in resource projects and supporting infrastructure.

WA's Department of Industry and Resources (DoIR) and the Federal Government's Invest Australia assist and encourage the development of major resource projects.

DoIR helps companies establish and manage their investment in WA from the start of a resource project to its completion.

Relaxed multicultural lifestyle and clean environment

WA presents an attractive lifestyle for the international investment community with its open, relaxed and multicultural environment. Perth provides owners and operators with an affordable way of life in a Mediterranean type climate.

One of the world's most livable cities

In a survey by the Economist Intelligence Unit Perth was ranked fifth most livable city in the world in 2005.

Western Australia – Share our success

How can we help?

Through the **Department of Industry and Resources (DoIR)**, the Government of Western Australia is building on the State's success in mineral and petroleum production. At DoIR we can show you the best way of bringing your resource project to reality. We welcome your enquiries. To find out more please return to the Mineral and Petroleum Investment Opportunities section where you can access information on specific commodities, infrastructure and key contact details.