

RESOURCES IN WESTERN AUSTRALIA



Government of Western Australia
Department of Mines and Petroleum

Petroleum Exploration

To discover world-class oil and gas fields



Introduction

Western Australia ranks among the best areas in the world for petroleum exploration and has a success rate in the order of 10-40 per cent in recent years.

From humble beginnings over 50 years ago, numerous major discoveries of oil, gas and condensate have been made in Western Australia. As a result, the value of the State's petroleum industry reached \$22.3 billion in 2008. Expenditure on petroleum exploration in Western Australia amounted to \$2,474 million in 2008, of which the majority was spent offshore. Western Australia's share of the

national petroleum exploration expenditure has also reached a record level of 73 per cent.

The potential for ongoing exploration success in Western Australia is enormous, with numerous in under-explored areas having one billion barrel-plus potential.

Supportive Government

The Western Australian State Government is committed to attracting international investment to explore the State's resources, even through the current challenging economic times.

With this in mind, the Department of Mines and Petroleum invites work-program bidding for petroleum acreage, helps facilitate access to land, provides online access to exploration data, conducts basin studies, and in recent years, the Department has released farm-in opportunities booklets in cooperation with industry. New investors are welcome in Western Australia.

The State Government is currently implementing an \$80 million Exploration Incentive Scheme. Part of this five-year program is committed to targeting frontier petroleum basins through pre-competitive stratigraphic drilling and aeromagnetic surveys over the sedimentary basins. It aims to help increase exploration in greenfields and frontier areas, significantly increasing knowledge of the State's geology and resources, and potentially leading to new discoveries. These activities will help the State build on the 64 producing oil and gas fields Western Australia already hosts.

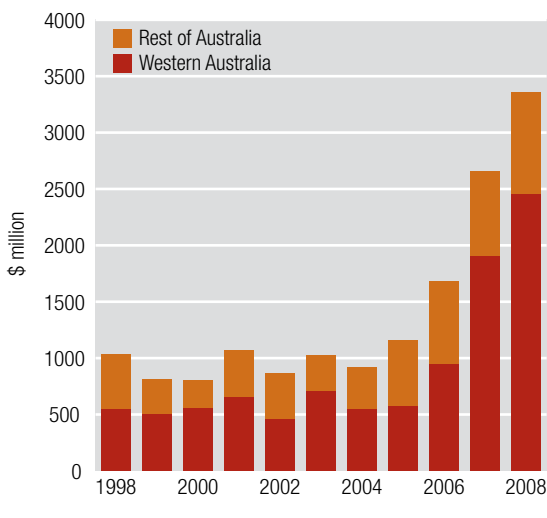


Figure 01 | **Petroleum Exploration Expenditure**
Source: ABS

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World-class production

Petroleum production in Western Australia has grown steadily over the years, from US\$38 million worth of production in 1973 to more than US\$22 billion in 2008.

In 2008, Western Australian oil and gas fields produced approximately:

- 13 million kilolitres of crude oil;
- 6 million kilolitres of condensate;
- 12 million tonnes of LNG;
- 760 thousand tonnes of LPG (butane and propane); and
- 9 billion cubic meters of natural gas.

Western Australia has a proven track record in developing world-scale, technically complex petroleum and mineral processing projects. Western Australia has more than 8112.35 km of offshore and onshore pipelines under license, as well as ports capable of exporting LNG and other petroleum products.

Petroleum demand

Despite the recent downturn in the global economic climate and commodity prices, Western Australia has maintained its position as the nation's number one petroleum producer and a major provider of economic growth.

2008 was a year of records with the oil price reaching around US\$147/bbl in July before tumbling below US\$40/bbl by the end of the year due to decreased demand.

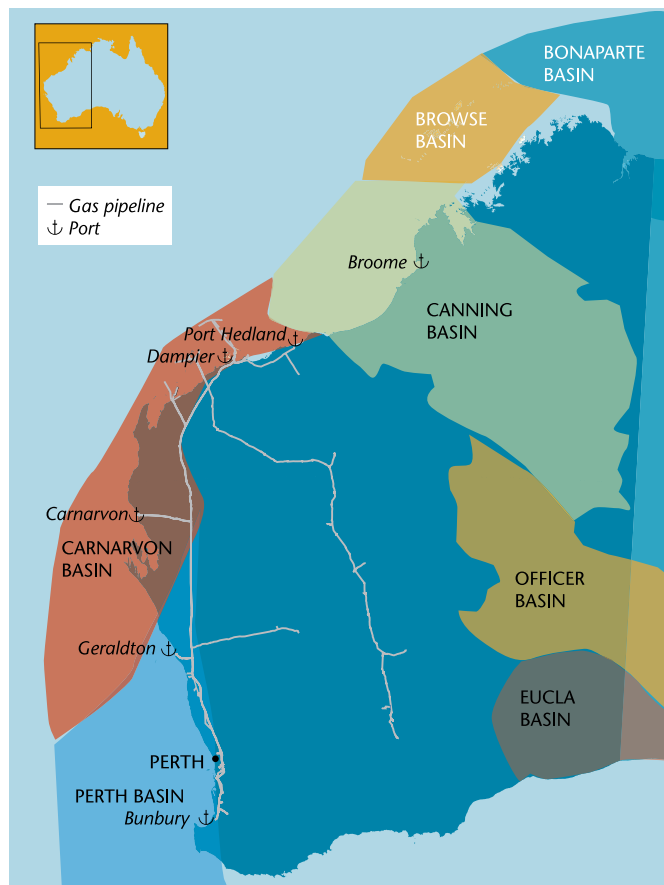
Petroleum exploration

29 exploration wells were drilled and 28,612 km² of 3D seismic were acquired in 2008. Exploration commitments remain high in 2009 and are likely to maintain the current high exploration activity levels.

It is unknown what the effects of the global financial crisis will be on petroleum exploration. There is a general correlation between crude oil prices and exploration in Western Australia but there is a noticeable time lag between the two.

Basins of opportunity

Western Australia has extensive onshore and offshore sedimentary basins. The State currently hosts more than 3681 million cubic meters (130 trillion cubic feet) of discovered gas reserves, but much of the State is still under-explored.



Western Australia's northwest offshore region is now recognised as a world-class gas province, one of the 10 largest in the world, and also boasts large oilfields.

As a relatively new hydrocarbon province, opportunities for newcomers are still available in Western Australia. Unlike mature areas such as the North Sea and North America, most of Western Australia remains relatively under-explored, even in basins with extensive production histories. There are abundant opportunities to bid for acreage or to farm-in to existing joint ventures. There are also a wide range of exploration opportunities from high-risk onshore and offshore frontier plays to lower cost, lower risk prospects near existing production facilities.

Western Australia is one of the few places in the developed world where potential remains for larger discoveries. The potential for ongoing exploration success is enormous, with several targets in under-explored onshore areas having one billion barrel-plus potential. These represent low-cost exploration opportunities to gain significant leverage from a modest investment.

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Internationally competitive

Western Australia now ranks among the best areas in the world for petroleum new ventures. The extensive areas of petroleum bearing sedimentary basins includes a vast continental shelf.

Western Australia	
Onshore	Size Comparison; more than 3.5 times the area of Texas
Offshore	Larger than entire Gulf of Mexico; nearly 4 times as large as the North Sea

Some international companies with petroleum interests in Western Australia include:

Apache Energy Limited	Chevron Australia Pty Ltd	Santos Limited
BHP Billiton Petroleum (Australia) Pty Ltd	Exxon Mobil Corporation	Royal Dutch Shell
BP Developments Australia Limited	INPEX Browse Ltd	Woodside Energy Ltd
ConocoPhillips (Browse Basin) Pty Ltd	CNOOC Australia E&P Pty Ltd (China National Offshore Oil Corporation)	Hess Exploration Australia Pty Ltd

Healthy success rates

Western Australia is achieving a high success rate with petroleum exploration. The following indicates the percentages of new field wildcat wells drilled that were considered economic and under serious development review:

2000	2001	2002	2003	2004	2005	2006	2007	2008
44%	18%	28%	10%	31%	23%	34%	22%	41%

This gives an average of more than 25 per cent, which is good by international standards.

Petroleum expertise

A large pool of petroleum expertise and numerous oilfield service companies are located in the State capital, Perth. This experience is invaluable to support new players coming here. Local universities also provide a full spectrum of courses including petroleum geology, geophysics, and engineering.

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