The history of the Australian mining industry began, very modestly, at the end of the 18th century with the discovery of coal. The industry since then has had its booms and depressions, but with the discovery of gold, it has been a major contributor to Australia’s economy and infrastructure. Providing the nation’s basic industrial requirements - construction materials, fuel, and industrial raw materials, and been a major earner of export income. A major factor in decentralisation of both population and industry, as towns, railways and ports were established to serve the mines and smelters. Encouraging technological advancement, both in its own and other fields.

Throughout most of Australia’s history, exploration and mining activities have been conducted entirely by the private sector. The relationship between the industry and government generally has been simple: State governments have granted mining leases, ensured that the mining laws are observed, and collected royalties; the Commonwealth Government has collected those taxes to which it is entitled, and has been responsible for petroleum activities in Commonwealth waters.

The early history of the mining industry, from settlement to mid-20th Century. The emergence of a world class mining industry in the 1950s to 1970s. Then the consolidation and further growth of the mining industry through the 1980s. A look at the mining industry in the 1990s, during which ‘globalisation’ was a major influence. Through to the current period.

THE EARLY MINING INDUSTRY: FROM SETTLEMENT TO MID-20TH CENTURY

Traces of gold were reported from 1823 onwards. The first metalliferous mining was of silver-lead, at Glen Osmond near Adelaide, in 1841. Copper mining began at Kapunda, in the same general area, in 1842, and at Burra, to the north, in 1844. At the end of the same decade, the first pig iron was produced from a small deposit of iron ore near Mittagong, New South Wales. It was the discovery of payable alluvial gold in 1851, at Ophir, near Bathurst in New South Wales and, soon after, the rich Victorian fields, that gave impetus to the metalliferous sector of the mining industry. As search and discovery quickly spread to other parts of eastern Australia, people migrated here to look for gold, the infrastructure which resulted, and realisation of the mineral potential of the young country, all profoundly influenced the development of Australia from the 1850s onwards.

The wealth created by the newly mined gold and the influx of migrants began the transition away from an agricultural and pastoral economy. Industries were established to supply the machinery and transport facilities needed by the mines, service industries expanded to cater for increasing population and growing commercial activities. Gold was the prospectors’ prime target for many years after 1851, and the Victorian discoveries were followed by many others around the continent. Many of the new gold-fields were abandoned as the shallow surface alluvia's were exhausted, but on some, especially in Victoria, mining progressed to the deep leads - alluvial deposits covered by tens of metres of later sediments or by lava flows. The initial discoveries on the Kalgoorlie Golden Mile were made in the 1890s, and this was to become one of the world’s major centres of sustained gold mining.
Individual miners or syndicates was being replaced by companies, employing dozens or even hundreds of men. Towns were established and, as confidence in the long life of the mines increased, tents and shanties gave way to more permanent private and commercial buildings.

The interest and expertise in prospecting aroused by gold soon led to discoveries of other metals. Tin mining began almost simultaneously in 1872 at Inverell, New South Wales, Mount Bischoff, Tasmania, and Stanthorpe, Queensland. With the discovery soon after of other fields, especially Herberton in North Queensland, Australia became the major world source of tin in the late 1870s and early 1880s. Base metals were discovered at many places, including Moonta-Wallaroo, South Australia, Zeehan-Dundas and Mount Lyell, Tasmania and Cobar, New South Wales, and Mount Morgan, Queensland. The fabulous Broken Hill lode, whose profits spawned a variety of industries, including steel at Newcastle in 1915, was discovered in 1883.

Each mine needed a town for its workers, engineering and machinery suppliers and transport facilities - including ports to ship its products to the world. Many towns in existence today owe their foundation to mines found before the mid-20th century.

Hydrocarbons, in the form of crude bitumen, were first recorded in 1839, at the mouth of the Victoria River, near the Western Australia-Northern Territory border. The first well drilled specifically for petroleum was put down in 1882 at Alfred Flat, in the Coorong area of South Australia.

The oil shale industry is one of Australia’s oldest, and ‘kerosene shale’, was the only petroleum-related commodity produced in Australia during the 19th century. Kerosene was placed on the market in 1868 as ‘Comet Oil’, the 'Bottled Sunshine of Australia'. This was distilled in Sydney from oil shale mined in the foothills of the Blue Mountains in New South Wales.

By the beginning of the twentieth century, the metalliferous mining industry, with associated smelters and refineries, was well established. Gold was still pre-eminent, accounting for three quarters of the total value of metalliferous mine production, with copper, lead and silver accounting for most of the remaining quarter.

The mining industry continued to prosper in the early years of the twentieth century. However, it was severely affected by the collapse of metal prices after the ending of World War I. Many mines closed, and the value of mineral exports fell from $15.3 million in 1919-20 to $7.6 million in 1921-22. The Mount Isa lead-zinc-silver deposit was discovered in 1923, and mining and smelting commenced in 1931. The existence of copper at Mt Isa was known from this time, but the copper lodes were not defined and mined until World War II.

In the mid-1920s Australian coal production was almost 14 Mt, but the depression of the 1930s saw it fall by over a third of this amount. Exports, which normally exceeded 1 Mt/year until the mid-1920s, had fallen to about 50,000 t by the late 1940s because of increasing competition. At that time also, petroleum products began to replace coal in industry and railways.

In the late 1930s the mining industry, although well established, played only a minor role in the Australian economy. The need for new ore reserves of many minerals was the major concern of the industry in the late 1930s and early 1940s. Indeed, the paucity of new discoveries, after the flood of the previous century, had led some to the belief that there were few new resources to be found, and that the industry would gradually run down. An embargo was placed on the export of iron ore in 1938 by the Commonwealth Government, when reserves of high-grade ore were believed to be no more than 260 Mt.
Although it had been sought for many decades, petroleum (which includes crude oil and natural gas) was a latecomer to the mineral production scene in Australia. In 1900, at Roma in Queensland, natural gas was encountered in an artesian water bore which was being deepened. This discovery marks the real beginning of petroleum exploration in Australia. In 1924, the first discovery of crude oil was made at Lake Bunga No. 1 well near Lakes Entrance, Victoria.

**EMERGENCE OF A WORLD CLASS MINING INDUSTRY: 1950s TO 1970s**

This period saw the discovery of major new base metal, iron, manganese, nickel and uranium resources, and the establishment of Australia’s petroleum industry. A series of mineral discoveries, which began in the late 1940s, completely changed the structure of the industry and elevated Australia to a major mineral exporting country.

**METALLIFEROUS AND COAL RESOURCES**

In the 1950s the mainstays of the industry were lead, zinc, copper, gold, and coal, and only the first four were exported in any quantity. In the mid-1960s, the Australian mining industry began to expand with growth in both production and exports combined with a change in relative importance of the various commodities gold and base metals declined, while coal, iron ore and ‘other minerals’ increased. By the late 1960s Australia was a world force in black coal, bauxite, iron ore, nickel, manganese, titanium and zirconium, and the first major uranium deposits had been found.

There are several reasons for the surge of mineral discoveries from the late 1940s. An important factor has been the greatly increased knowledge of the geology of Australia resulting from systematic geological and geophysical surveys across the continent, and the subsequent increasing focus of State and Northern Territory Geological Surveys on mineral resources. Mineral explorers were able to search more efficiently by using geological maps and theories on the origin of mineral deposits to target specific areas for exploration. This, together with Australia’s political stability, led to an influx in the early 1960s of major overseas mining companies who, in addition to increasing exploration expenditure, brought in new expertise and ideas. The discovery of new ore bodies close to former mines and in greenfield regions was aided by the development of geochemical and geophysical exploration methods suited to Australian conditions. Many techniques developed in the northern hemisphere were not successful in the arid, deeply weathered terrain characteristic of most of Australia.

The economics of working some previously uneconomic deposits changed remarkably because of technological advances which lowered the cost of mining and transporting huge quantities of material, but these advances would not have been decisive without the emergence of Japan as a major buyer of coal, iron ore and bauxite. The emergence of large markets for coking coal in Japan particularly, together with measures taken to improve the efficiency of mining, and realisation of the economic importance of near-surface seams in the Bowen Basin in Queensland. Exports began to increase rapidly in the mid-1950s, and, with impetus added by the oil shocks of the 1970s, Australia was well on the way to becoming the world’s largest coal exporter. The 1950s and 1960s meant an ever-increasing demand for minerals. Australia, with its well-established industry, had the experience needed to find and develop the new deposits needed to meet this demand.

A major expansion of Australia’s aluminium industry followed the decision to mine bauxite in the Darling Range, Western Australia, in the early 1960s. The perception that high-grade iron ore resources were limited in Australia was turned around with the discovery of vast resources in the Pilbara from the mid-1960s. A five-year nickel exploration and discovery boom in Western Australia in the late 1960s, set Australia on the path to becoming a major nickel producer for domestic and overseas markets.
In 1965, industry spent $22 million on exploration for mineral commodities, and this had increased to $576 million in 1981-82.

Labour Government policy in the early 1970s was to acquire a financial interest in mineral exploration and mining. This was short-lived and following the Liberal-National Party Coalition Government's decision to divest itself of interests in uranium and petroleum in the late 1970s, the cessation of uranium mining at Mary Kathleen in early 1980s and phosphate mining on Christmas Island in 1987, the Australian mining industry became wholly owned and operated by the private sector.

**Petroleum resources**

The 1960s also saw the discovery of Australia’s first economic accumulations of petroleum, which has since become one of Australia’s major mineral products in terms of value of production. The first substantial flow of oil was in 1953 from the Rough Range No. 1 well in the northwest of Western Australia. With the increasing importance of petroleum and petroleum products to the Australian economy, the Government adopted several measures to encourage petroleum exploration, including a subsidy for specific approved operations. The subsidy scheme based on the Commonwealth **Petroleum Search Subsidy Act** of 1957 proved one of the most successful government subsidies. This scheme undoubtedly helped to encourage overseas companies as well as local ones to explore onshore and offshore sedimentary basins in Australia. Most of today’s crude oil reserves were discovered under this scheme, which was active from 1957 to 1974. Australia’s first commercial oil field was discovered at Moonie in Queensland in 1961. In 1964-65, there was a series of important discoveries: oil at Barrow Island, Western Australia; gas in what has become a cluster of oil and gas fields in north-east South Australia and the adjoining part of south-west Queensland; and most important of all, the Barracouta gas field some 25 km off the Gippsland coast in Australia’s first offshore well. The latter, and subsequent discoveries on the Gippsland shelf in the following years have become Australia’s major supply source of oil and gas. The exploration success in the Gippsland Shelf also turned attention to Australia’s extensive continental shelf, and the first of the huge gas fields of the North West Shelf were discovered in 1971.
In the early 1970s, indications from exploration were that onshore oilfields probably would be small and hence unlikely to be economic. However, the oil shocks of 1973 and 1979, when oil prices increased several-fold, completely changed the economics of the industry. Expenditure on exploration increased rapidly, from $49 million in 1976 to $948 million in 1982. With many new fields being discovered, especially in south-west Queensland and the adjoining part of South Australia.

**CONSOLIDATION AND FURTHER GROWTH: 1980s**

In the late 1970s, the rate of growth of the mining industry in Australia, which had been maintained for more than 15 years, began to slow. New mines had been developed around the world to meet a forecast demand for mineral, which turned out to be overly optimistic. The Australian industry’s costs had increased but mineral prices generally had not. The industry was largely dependent on exports and had to compete for sales with an increasing number of mines in other countries; some of these mines were less affected by cost increases, or were assisted in various ways by their governments.

Many new coal mines were established in Australia after the second oil shock in 1979, but world demand stagnated, leaving the industry in Australia with substantial surplus capacity. Metal prices failed to increase in line with the world economic upturn in the early 1980s, and few new metal mines were opened - Australian production increased largely because of capacity increases at existing mines to achieve economies of scale. Statistics show mine production and exports increased year after year, but the return on funds employed generally was low and a number of mines closed. Coal exports in 1985 reached 88 Mt, providing 16% of total Australian merchandise exports.

By the mid-1980s, one of the few bright spots in the Australian mining industry was gold. Because its price had been fixed, gold was largely ignored in the expansion of the industry after World War II. Interest revived to some extent when the price was freed in 1968, and strengthened with increasing confidence that the price increases of the late 1970s were likely to be sustained.

Other factors heightened the interest in gold. There was the development in the early 1980s of the efficient carbon-in-pulp method for recovering very fine-grained and low grade gold. This, and other developments with mining equipment, meant that it was now economically feasible to mine entire zones of gold bearing veins (whereas in the past only the main veins themselves would have been mined).

So another gold boom emerged in the early 1980s. Australian gold production multiplied from 18t in 1981 to 57t in 1985. In 1984 and 1985 alone, 24 new gold mines were opened, and re-treatment of old tailings began at several centres. Notably, almost all the deposits opened up were close to, or at, old mines - very few were completely new discoveries. Economic demonstrated resources increased from 332t in 1980 to 1,486t in 1989.

In the early 1980s, lower mineral prices resulting from decreased world demand for minerals caused a drastic decline in the Australian industry’s profitability; which was only 2.2 per cent of shareholders funds in 1981-82. Measures to increase efficiency, including mining higher-grade ores, workforce reductions and changed work practices, and, in a number of cases, mine closures, had their effect, and by 1985-86 the return on shareholders funds had increased to 4.9%.
Infrastructure trends

Up to the early 1980s, many of the new mines were planned as large-scale operations from the very beginning. They needed a large workforce - which had to be housed and provided with community services - and transport facilities to handle millions of tonnes of product each year. Rather than provide these facilities themselves, governments made it a condition of many new mining leases that the companies provided, or made a major financial contribution to, the infrastructure for the mining operation - not only the railways and ports, but the social infrastructure such as streets, houses, schools, hospitals and recreation facilities. This requirement arose partly because governments had difficulty finding the funds required because of competing demands in a time of rapid economic expansion; but another argument was that, because the mineral deposits belonged to the State, the benefits of their exploitation should go to the public generally as well as the companies concerned. In the mid-1980s, a change occurred with regard to the development of new mines in remote regions of Australia. Many companies, particularly in the metalliferous sector, adopted a fly-in/fly-out arrangement to servicing mining operations rather than constructing mining townships. And, indeed no new mining towns have been constructed in Australia since the late-1980s. Many new mines in and after the 1980s would not have been economic if a town had to be constructed near the mine site. Other factors contributing to adoption of fly-in/fly-out included: the potential to attract a higher quality workforce; ability to control shift start-times of employees when at the mine; and a reduction in absenteeism compared to many town-based mining operations.

The 1980s also saw increased vertical integration in the mining industry, most notably in regard to the processing bauxite to alumina and aluminium. This was a springboard for growth of some regional centres, such as Gladstone in Queensland.

The collapse of world crude oil prices in the first quarter of 1986 changed the fortunes of the petroleum exploration industry, and exploration expenditure bottomed out in 1987. The collapse, however, did not significantly affect the level of production or the expenditure on production and development during this period. Petroleum exploration in the 1980s resulted in the discovery of large resources of natural gas. Indeed, indications are that geological conditions in Australia have favoured the formation of gas rather than oil.

The Timor Sea became a focal point of petroleum exploration from 1983 when the Jabiru oil field was discovered. In 1986, this field became Australia’s first production project that is based on floating production, storage and off-loading technology. The North West Shelf, in addition to supplying Western Australia, began a liquefied natural gas export project in 1989.

In 1985, 96% of Australia’s crude oil requirement was met by domestic production. Since then, however, oil self-sufficiency has been declining slowly as demand has increased.
FURTHER CONSOLIDATION AND GLOBALISATION: 1990s

The 1990s was a period of significant change for the mining industry: - a period of consolidation with considerable focus on further improving efficiency and safety of operations and movement towards ‘globalisation’; a period of increasing diversity with reduced dependence on a few major customers for minerals and metals; and a period in which the industry, despite far-reaching changes in world mineral production and consumption patterns and a financial crisis in Asia late in the decade, was able to retain its role as a major source of export income for the Australian economy. Environmental and social concerns in relation to the mining industry became global with the widespread uptake of new communication technologies.

From a corporate perspective, the Australian mining industry grew beyond being a large national sector into a world player. The industry is now diversified and integrated internationally through its exploration, mining and processing activities, and the supply of information technology, engineering, construction and other services. Annual surveys by the Minerals Council of Australia show that from the mid- to late-1990s, respondents spent over 40% of their total exploration budgets overseas. The industry is also making a wide range of major investments in overseas mines and forging international marketing and processing alliances in regard to many minerals and metals. The flow of investment, however, has not all been one way, with significant overseas investment coming into Australia for exploration and the development or expansion of mining and processing facilities.

Australia retained its position as the world’s largest exporter of black coal. In 1999, coal exports exceeded 170 Mt and provided 10% of total Australian merchandise exports. Greenhouse gas emissions concerns placed coal exports under pressure, and are resulting in enhanced efforts to sell Australian coal on the basis of its high quality (low sulphur and ash contents) and to ‘package’ it with efficient coal burning plants in developing nations.
Exploration expenditure fluctuated through the 1990s, before reaching new peaks of $981 million for petroleum in 1997-98, and $1,149 million for minerals in 1996-97. By 1998-99 expenditure for mineral exploration had fallen back to $838 million, and has continued to decline. Allowing for inflation, the peaks in the nineties represent a multiplication of exploration expenditure of six times for minerals and three times for petroleum since the mid 1960s. The trend for gold to dominate exploration expenditure continued and this contributed to a dramatic growth in Australia’s economic demonstrated resources for this metal, from 2,129 t in 1990 to 4,404 t in 1998, much in oxidised ore. Many lateritic gold deposits were mined in the 1990s. Late in the decade, several lateritic nickel projects were developed, with potential to produce nickel at significantly lower cost than the sulphide deposits that have dominated world production.

Throughout the period, there was limited growth in, or falling, demand for most mineral commodities. This was because economic growth in many developed nations had become largely decoupled from mineral demand. The economic crisis in Asia in the late 1990s reduced demand for many mineral commodities and fuelled further declines in metal prices. Again, Australian companies increased production of metalliferous commodities, and with abundant production from other countries, this exacerbated over-supply and maintained downward pressure on metal prices.

For gold producers, significant central bank selling in the late 1990s was another burden that led to price falls and diminished the role of gold as national reserve asset. This contributed to the closure of some operations.

The return on mining industry shareholders funds continued to fluctuate. Average annual returns for companies reporting to the Minerals Council of Australia varied from over 23% in 1989-90 to less than 2% in 1997-98, before recovering slightly in 1998-99, reflecting the cyclic nature in world demand for commodities and the subsequent impact on their prices. The 10-year average return on shareholders funds was 8.7% per year.

These factors, together with heightened awareness toward competition, product quality, customer responsiveness and environmental considerations, have meant that it is imperative for every Australian mining and processing centre to achieve and maintain lower unit costs of production.

In an attempt to achieve this, large to small companies have been making major changes that are re-shaping the mining industry. Of particular note are retrenchments of many experienced staff, severe cuts in exploration expenditure, and outsourcing of many mining-related activities.

The mining industry has been increasingly seen by investors as too high risk, compared with the opportunities offered by floats of major public enterprises and high tech/dot.com' companies. The resultant paucity of venture capital has had an adverse effect on smaller exploration companies. Larger companies are increasingly looking to acquisition of promising projects, and strategic investments in selected smaller exploration companies.

Many small companies supplying specialised services to the mining industry are benefiting from exported services and products. Australia has established an international reputation in mining software and according to the Minerals Council of Australia and Centre for International Economics (1999) supplied 60 - 70% of mining software worldwide. In 2000, one of the more fascinating developments in the information technology field involved successful demonstrations by CSIRO Australia of mine modelling with Internet-based virtual reality tools. Interactive 4D virtual mine technologies are being developed to, reduce mining risk in relation to investment and safety, and win gains in productivity.

By the early 1990s, Australia wide, there were over 40 fly-in/fly-out mining operations, the majority being in Western Australia with others in Queensland and the Northern Territory.
Continuing the trend of the 1980s, the 1990s saw a large number of small oil fields discovered in the inshore part of the north-west shelf of Western Australia. These fields now account for most of the offshore production facilities built in the last 20 years. Victoria remained the highest crude oil and condensate producing State until 1996, when Western Australia took over as the nation’s leader in petroleum production.

During the 1990s, a number of oil and gas accumulations was discovered in the zone of cooperation in the Timor Gap between Australia and East Timor. The Elang and Kakatua oil fields became the first production project, which is also based on floating production, storage and off-loading technology, in the Timor Gap Zone of Cooperation in 1998.

Rapidly improving petroleum exploration and development technologies are creating greater interest in the frontier areas, as well as allowing for new perspectives on the mature basins. These have permitted enhanced interpretation of petroleum exploration mapping data, enabled drilling horizontal wells, and diversified the range of development options available for offshore petroleum production. They are assisting in discovery of subtle petroleum accumulations, and in production of petroleum from otherwise uneconomic accumulations. By any measure, Australia is still under-explored for petroleum, both onshore and offshore.

---

**Economic importance**

The economic importance of Australia’s mining industry at the end of the 20th century is reflected in the following statistics for 1998-99:

- 8.8% of GDP (minerals and petroleum);
- Exports (unprocessed and processed minerals and petroleum) amounted to $38.8 billion (35% of total exports of goods and services; 61% of commodity; and 45% of merchandise exports);
- 80,000 employed directly in minerals and petroleum extraction (1% of national employment), in addition 325,000 manufacturing jobs (3.8% of total employment) in areas of metal products, non-metallic mineral products and petroleum, coal and chemical products;
- Investment of $12.7 billion (28% of total New Capital Expenditure) - mining and upstream petroleum $8.7 billion (19.6%); - metal products $2.0 billion (4.4%); - non-metallic minerals $0.5 billion (1.1%); - petroleum, coal and chemicals $1.5 billion (3.4%);
- Expenditure on exploration $1.7 billion (minerals and petroleum) - petroleum $868 million; - gold $486 million; - base metals $177 million; - other minerals $175 million.
TOTAL EXPENDITURE

The trend estimate for total mineral exploration expenditure fell 4.5% (or -$36.8m) to $772.6m in the March quarter 2013. The largest contributor to the fall in the trend estimate this quarter was Queensland (down 6.4% or -$11.4m). The March quarter 2013 was 24.6% lower than the March quarter 2012.

The seasonally adjusted estimate for mineral exploration expenditure rose 1.0% (or $7.9m) to $797.4m in the March quarter 2013. The largest contributor to the rise this quarter was Western Australia (up 7.0% or $31.9m).

MINERAL EXPLORATION, Seasonally adjusted and trend
In original terms, mineral exploration expenditure fell 18.4% (or -$151.7m) to $672.2m in the March quarter 2013. Exploration on areas of new deposits fell 33.1% (or -$87.1m) and expenditure on areas of existing deposits fell 11.5% (or -$64.7m).
In original terms, the largest fall by minerals sought came from expenditure on coal exploration down 30.0% (or -$44.7m). The next largest fall came from expenditure on copper exploration (down 33.8% or -$31.1m).

MINERAL EXPLORATION, Original series

METRES DRILLED
The trend estimate for metres drilled fell 9.3% in the March quarter 2013. The current quarter estimate is 32.0% lower than the March quarter 2012 estimate.
The seasonally adjusted estimate for metres drilled fell 7.0% in the March quarter 2013.

METERS DRILLED, Seasonally adjusted and trend
In original terms, metres drilled fell 29.6%. Drilling in areas of new deposits fell 38.4% and drilling in areas of existing deposits fell 25.6%.
METRES DRILLED, Original series
The trend estimate for total petroleum exploration expenditure rose 2.7% (or $32.5m) to $1232.5m in the March quarter 2013. Exploration expenditure on production leases fell 0.5% (or -$1.6m), while exploration expenditure on all other areas rose 2.6% (or $22.6m).

The seasonally adjusted estimate for total petroleum exploration expenditure fell 13.6% (or -$175.9m) to $1121.7m in the March quarter 2013. Exploration expenditure on production leases fell 32.9% (or -$132.3m) and exploration expenditure on all other areas fell 4.9% (or -$43.6m).

The largest contributor to the rise in the trend estimate was South Australia (up 27.8% or $30.2m) and the largest contributor to the fall in the seasonally adjusted estimate was Western Australia (down 17.7% or -$165.5m).

PETROLEUM EXPLORATION, Seasonally adjusted and trend

ONSHORE

The trend estimate for onshore petroleum exploration expenditure rose 11.6% (or $35.4m) to $339.8m in the March quarter 2013. Expenditure on drilling rose 16.3% (or $32.7m), while other onshore petroleum exploration expenditure rose 1.7% (or $1.8m).

The seasonally adjusted estimate for onshore petroleum exploration expenditure rose 16.0% (or $48.3m) to $349.7m in the March quarter 2013. Expenditure on drilling rose 16.6% (or $34.2m), while other onshore petroleum exploration rose 14.8% (or $14.1m).

PETROLEUM EXPLORATION: ONSHORE, Seasonally adjusted and trend

OFFSHORE

The trend estimate for offshore petroleum exploration expenditure fell 0.8% (or -$7.0m) to $889.0m in the March quarter 2013. Expenditure on drilling fell 0.8% (or -$5.7m), while other offshore petroleum exploration expenditure fell 0.6% (or -$1.2m).

The seasonally adjusted estimate for offshore petroleum exploration expenditure fell 22.5% (or -$224.1m) to $772.1m in the March quarter 2013. Expenditure on drilling fell 24.1% (or $185.7m), while other offshore petroleum exploration expenditure fell 16.9% (or -$38.4m).

PETROLEUM EXPLORATION: OFFSHORE, Seasonally adjusted and trends
CONCLUDING REMARKS

Not surprisingly, the mineral deposits found in the first century of mineral search were those well exposed at the surface; and the first petroleum accumulations found tended to be the larger, more easily delineated, ones. Consequently, finding further economic ore bodies and petroleum accumulations has become progressively more difficult, requiring the use of increased skills in applying suitable methods and interpreting the results.

Notwithstanding this, discoveries have continued apace and, over the last 50 years, Australia has developed into one of the world’s leading mining nations. The mining industry has created wealth for the nation and its people through the discovery and mining of mineral deposits and processing the ore. It mines, or has un-worked deposits of, almost all mineral commodities. Australia is one of the world’s leading miners of bauxite, diamonds, gold, iron ore, lead, manganese ore, nickel, titanium (rutile and ilmenite), zinc and zircon. The annual value of production for individual commodities is of the order of $9 billion in the case of coal and petroleum, and $4 billion in the case of gold, iron ore and bauxite.

Some commodities, such as petroleum, nickel, bauxite, diamonds and uranium have had a relatively short production history in Australia; others, such as gold, coal, base metals and iron ore go back to the early days of the industry.

Despite its importance as a mineral producer, Australia remains under-explored over vast regions. For metals, this is the case at depths of greater than a hundred metres or so in established mineral provinces, and under the covered margins of these provinces. In the case of petroleum, most of the sedimentary basins and deepwater areas are unexplored or under-explored.

While Australia’s remaining known resources of many of the major commodities are vast, this is not the case for oil. Unless major new discoveries are made and recovery from discovered fields is maximised, Australia’s crude oil self sufficiency will begin to decrease as production from some existing fields declines. Natural gas supplies, however, are adequate for many years, although resources are unevenly distributed around the continent.

The search for a variety of minerals in diverse geological conditions has developed a highly experienced mineral exploration industry which is now exporting its skills to other parts of the world. At the start of the 21st century, Australia’s mining industry is global in its outlook, innovative and highly successful. It has also become recognised for its commitment and skills to sustain and improve the practice of mining in an environmentally responsible manner. But it is under pressure from low commodity prices and plentiful world supply, and restructuring continues in an effort to cut costs.