Chapter 8 Mining and Energy

Key Points

- In terms of output, mining is the largest industry in the Territory and was almost 22 per cent of Gross State Product in 2002-03, compared to 4.6 per cent nationally.
- Like most commodity-based industries, mining output is volatile. Global supply and demand conditions and the impact of exchange rate movements on competitiveness are key factors affecting production and income. Output can also jump markedly as new mines commence production.
- The Territory produces a diverse range of mineral products, most notably oil, bauxite, manganese, lead/zinc and uranium.
- Output has been dominated in recent years by oil production from the Laminaria-Corallina oil fields in the Timor Sea.
- Half the production from developments in the Joint Petroleum Development Area in the Timor Sea will be attributed to the Northern Territory for national accounts purposes.
- In the short term, strengthening global demand is expected to lead to increased demand for minerals, although increased supply globally is expected to result in price falls for many Territory-produced minerals.

The mining industry (which includes energy) undertakes exploration for, and development of, metallic and non-metallic minerals and energy resources, including crude oil, natural gas and uranium oxide. Mining is the most significant industry in the Territory, accounting for 21.9 per cent of GSP in 2002-03, and averaging 21.3 per cent per annum in the past five years. Although classified as manufacturing, alumina production is estimated to account for a further 2.0 per cent of GSP.

Mining is a highly capital intensive activity with low employment relative to other industry sectors. Nationally, mining accounted for 5.2 per cent of Gross Domestic Product (GDP) but only 1.0 per cent of employment in 2002-03.

Exploration is the foundation for future mining activity, and is essential if the industry is to continue to develop and generate employment and revenue opportunities. Globally there is intense competition to attract exploration expenditure. Recent exploration initiatives in the Territory have focused on providing sophisticated base-level geological data and increasing land access.

Table 8.1: Mining as a Percentage of Gross State Product and Gross Domestic Product (2002-03)

New South Wales	1.7
Victoria	1.5
Queensland	6.9
South Australia	2.2
Western Australia	18.3
Tasmania	1.3
Northern Territory	**21.9**
Australian Capital Territory	0.0
Australia	**4.6**

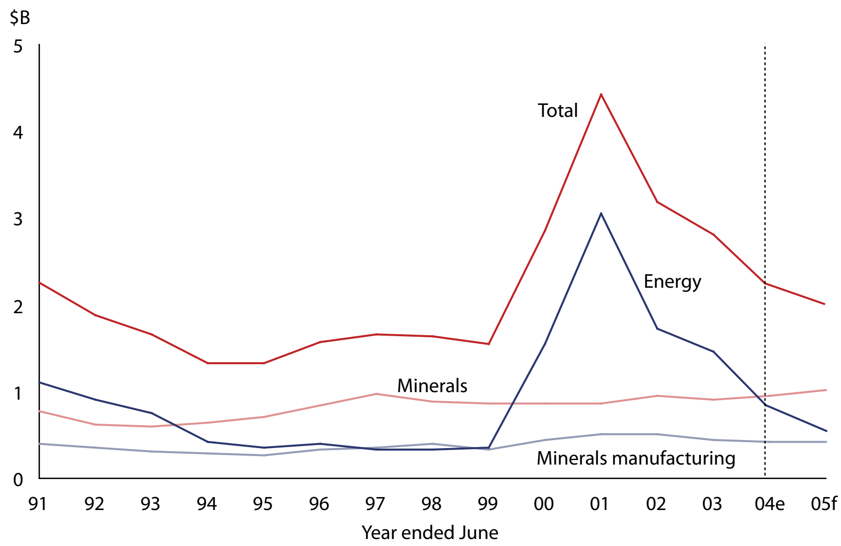
Source: NT Treasury, ABS Cat. No. 5220.0

Australian Bureau of Statistics (ABS) 2001 data report resident Territory mining industry employment of 2 400 in 2002-03, while the Department of Business, Industry and Resource Development (DBIRD) estimates employment of 4 400 (3 300 in mining and 1 100 in oil and gas). The variation reflects differing methodologies and classification (for example, the treatment of employees undertaking construction and transport activities), but also suggests that a significant number of workers reside interstate (fly-in fly-out).

The Territory Government secures direct revenue from onshore mining operations through royalties levied on a profit basis and, in certain cases, on a quasi *ad valorem* (that is, based on the value of production) basis. Profit-based royalties are more efficient in promoting activity, but revenues fluctuate from year to year in line with project profitability. Royalty revenues for 2003-04 are estimated at $37.1 million. A further $2.2 million is expected from the Commonwealth as a grant in lieu of uranium royalties.

The Territory Government does not receive offshore petroleum resource rent tax, which is collected by the Commonwealth Government.

Chart 8.1: Mineral and Energy Production and Processing



Source: NT Treasury, Department of Business, Industry and Resource Development

Minerals

Mineral Resources

The Territory's most significant metallic and non-metallic mineral resources are:

- bauxite – the third largest bauxite mine in Australia near Nhulunbuy;
- gold – major mines located in the Tanami Desert and Pine Creek areas;
- manganese –the world's third largest producer of high grade manganese ore is at Groote Eylandt;
- zinc, lead and silver – one of the world's largest ore bodies at McArthur River;
- deposits of phosphate near Wonarah, and garnet sands and vermiculite near Alice Springs;
- magnesite – a major resource in the Batchelor area; and
- lead, cobalt, copper, nickel and silver – a major polymetallic deposit in the Batchelor area.

Onshore Mineral and Energy Resources

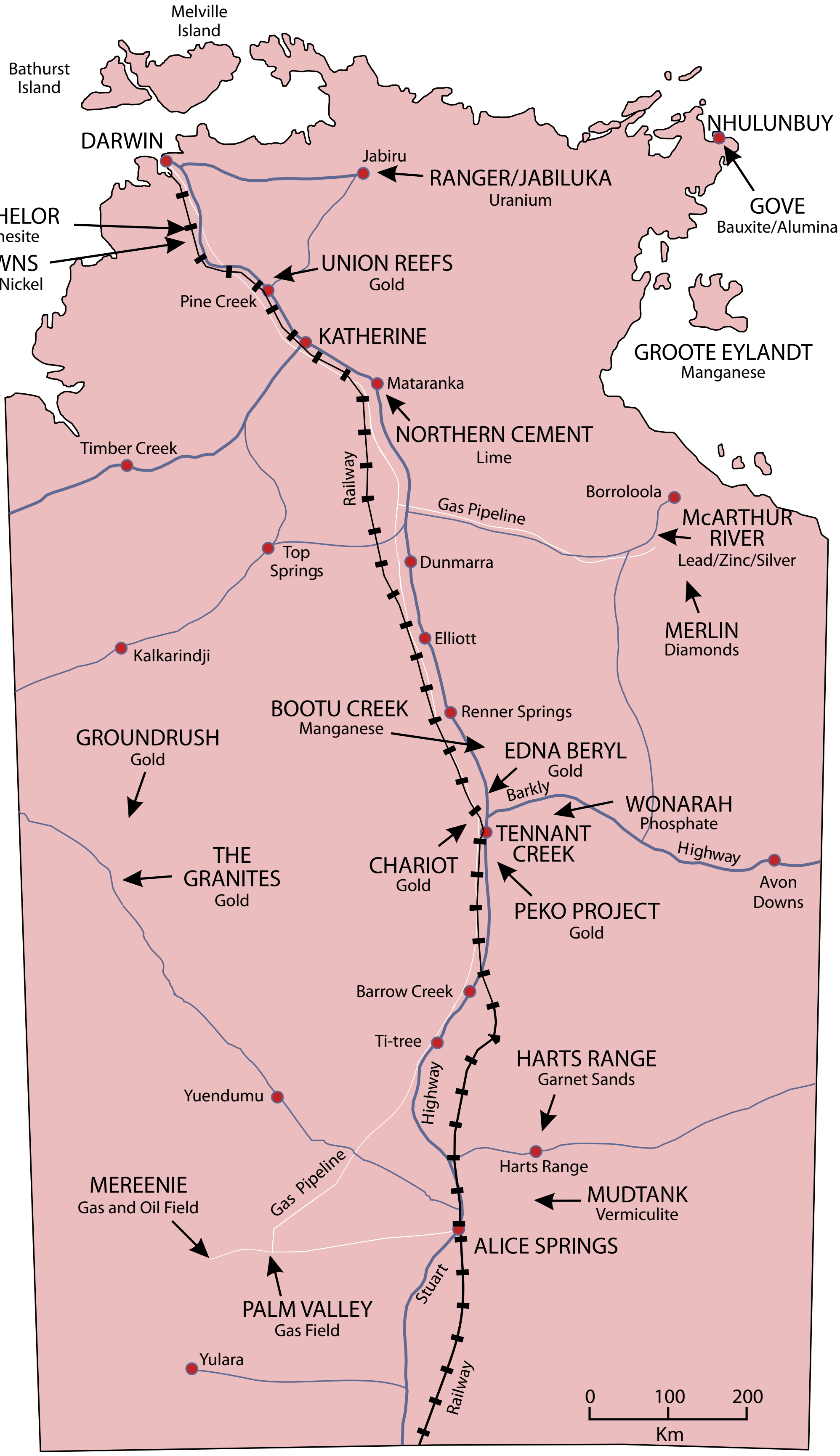
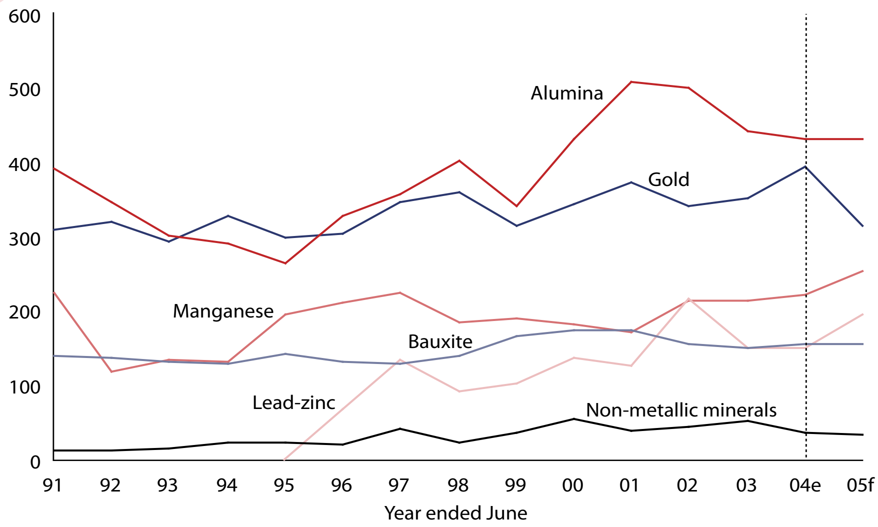


Chart 8.2: Value of Mineral Production and Processing (nominal dollars)



Source: Department of Business, Industry and Resource Development

The world-class deposits and mines at Nhulunbuy, Groote Eylandt and, to a lesser extent, McArthur River underpin the value of metallic and non-metallic mineral production and processing, accounting for around 70 per cent of production value in 2002-03. It is expected that these deposits will continue to dominate the value of production in the medium term.

2003-04 Production

Mineral processing includes the manufacturing of alumina. The nominal value of mineral production and processing is estimated to have increased by 2.8 per cent to $1 386 million in 2003-04. The increase was due to stronger production for many of the Territory's major mineral commodities, offset somewhat by lower prices.

The nominal value of gold production is estimated to have increased by 12 per cent to $393 million in 2003-04, as an 18 per cent increase in production more than offset a 5.5 per cent price decrease. Following a fall of over 30 per cent in 2002-03, the value of lead/zinc production is estimated to have been static, at around $150 million, in 2003-04. The value of bauxite and alumina production is estimated to have fallen marginally, to $585 million in 2003-04.

The nominal value of non-metallic mineral production is estimated to have fallen by 31 per cent to $36.4 million in 2003-04 as demand for crushed rock, gravel, sand and soil fell with the completion of the Alice Springs to Darwin leg of the rail link with Adelaide.

Mineral Exploration

Including uranium, Territory private mineral exploration expenditure increased by 1.2 per cent to $49 million in 2002-03, only the second year of growth since 1995-96. Nationally, exploration expenditure increased by 14.4 per cent. Approximately 6.7 per cent of Australian exploration expenditure occurred in the Territory in 2002-03, the lowest level for several years.

In the Territory, gold and base metals exploration is currently about half of the levels reported during the exploration peak in the mid 1990s. Nonetheless, gold continues to attract the majority of exploration activity in the Territory, accounting for about 60 per cent of total annual exploration expenditure in the past five years. Nonetheless, increased exploration for other minerals in the past three years resulted in gold exploration falling to an estimated 48 per cent of total expenditure in 2003. Improved geological data (associated with recent initiatives), better land access and still relatively high gold prices are expected to stimulate gold exploration in the short to medium term.

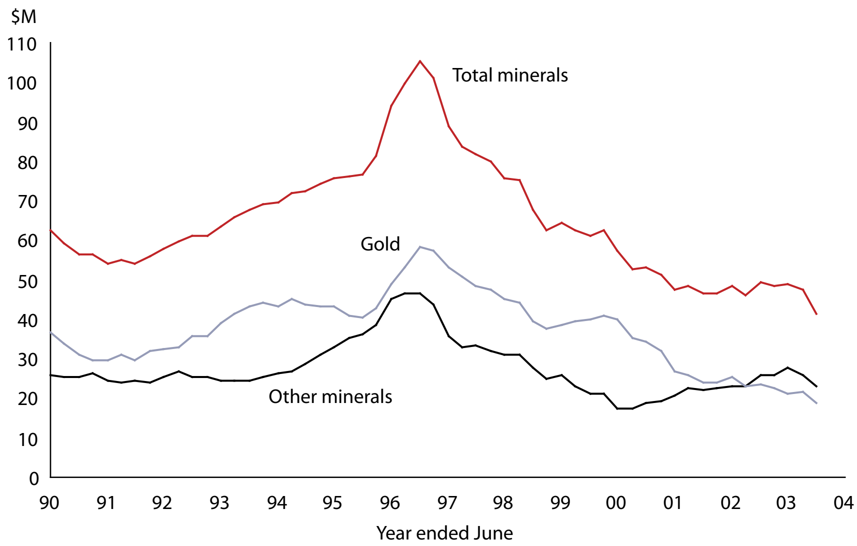
Base metals and uranium exploration activity decreased marginally in 2002-03, while diamond exploration increased. In all, non-gold exploration activity increased by 44 per cent to $33.2 million in 2002-03.

Other important factors affecting mineral exploration in the medium term include access to investment funds, resource acquisitions, overseas competition, company rationalisation, outsourcing of exploration and shareholder returns.

In September 2000, the Territory formally commenced the right to negotiate process for the grant of exploration licences under the *Native Title Act*. Since then, the backlog of applications has been cleared, and in the 12 months to March 2004, some 238 exploration were granted.

Low levels of greenfield exploration expenditure (exploring in new regions) is a serious concern as there is generally a 10 to 15 year period between the discovery of a major ore body and production. Greenfield exploration is estimated to have increased by 16 per cent, to $45 million in 2002-03, after declining 5 per cent in 2001-02. Brownfield exploration expenditure (exploring on or around existing mine sites) decreased by 59 per cent to $3.9 million in 2002-03, after increasing by 45 per cent in the previous year.

Chart 8.3: Mineral Exploration (moving annual total)



Source: NT Treasury, ABS Cat. No. 8412.0

Government Initiatives

In response to declining mineral exploration, the Territory Government has implemented the Building the Territory's Resource Base initiative, which follows from the previous four-year Northern Territory Exploration Initiative. The initiative provides $15.2 million over four years to provide geoscientific data to promote prospectivity. It also provides resources for Indigenous liaison and the processing of exploration and mining titles.

The Initiative will continue large-scale airborne geophysical surveys throughout the Territory, and the work program includes multi-disciplinary (including geochemical) studies of under-explored geological regions. The Initiative will produce high quality geoscientific data sets over prospective terrains, develop predictive mineralisation models for greenfield exploration areas, and digital datasets in a geographic information system format.

New private sector exploration efforts have been focused on gold in the Tanami Region, polymetallic deposits in the Rum Jungle area, gold and polymetallic resources around Tennant Creek (in the Arunta region) and diamonds (across the central part of the Territory).

Energy

Energy Resources

The significant known energy resources in the Territory are:

- uranium – deposits at Ranger, Jabiluka and Koongarra;
- natural gas – onshore in the Amadeus Basin at Palm Valley and Mereenie;
- natural gas and condensate – offshore in the Bonaparte Basin at Greater Sunrise, Evans Shoal, Petrel and Crux;
- oil – onshore production at Mereenie;
- oil – offshore production in the Timor Sea at Jabiru, Challis/Cassini and Laminaria-Corallina and non-developed, marginal resources at Audacious, Barnett, Montara, Oliver, Puffin, Talbot and Tenacious.

Significant resources in the Timor Sea Joint Petroleum Development Area, adjacent to the Territory (half the value of production is now attributed to the Territory) include:

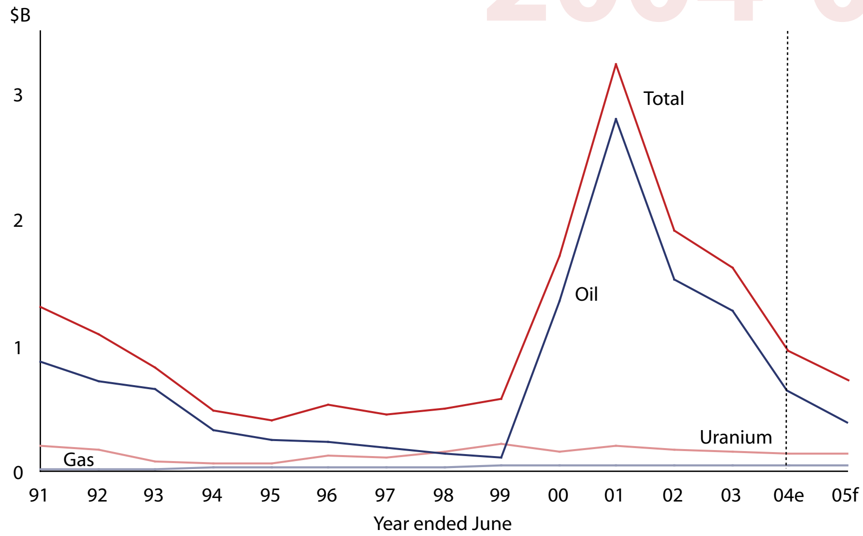
- natural gas and condensate – world class reserves comprising the Bayu-Undan, Hingkip, Chuditch and Kelp fields and 20 per cent of Greater Sunrise;
- oil – current production at Elang/Kakatua/Kakatua North and reserves at Jahal and Krill.

Although in Western Australian-administered waters, the Blacktip field is being mooted as a gas source for a Territory-based mineral processing project.

Decreased Oil Production

The nominal value of energy production in the Territory is estimated to have decreased by 45 per cent to $811 million in 2003-04. Offshore oil production is estimated to have fallen by 40 per cent, and the average oil price in Australian dollar terms by 16 per cent. This follows a 27 per cent fall in production and a 15 per cent increase in Australian dollar prices in 2002-03. The nominal value of natural gas production from Central Australia is estimated to have fallen by 6.0 per cent despite a moderate price increase. The value of the uranium ore production is estimated to have fallen by 10 per cent in 2003-04.

Chart 8.4: Value of Energy Production (nominal dollars)



Source: NT Treasury, Department of Business, Industry and Resource Development

Timor Sea Oil and Gas

The Timor Sea contains world scale oil and natural gas resources. Oil and gas exploration and production activities in the Timor Sea are administered by three jurisdictions:

- The Territory administers two separate Commonwealth areas, the area adjacent to the Northern Territory and the area adjacent to the Territory of Ashmore and Cartier Islands.
- Australia and East Timor, through the Designated Authority, jointly administer the Joint Petroleum Development Area (JPDA). The Timor Sea Treaty has been ratified by both governments and has been in effect since 20 May 2002. Economic activity in the JPDA is allocated equally to East Timor and Australia. Petroleum rents, royalties or taxes are allocated 90 per cent to East Timor and 10 per cent to Australia.
- Western Australia administers the Browse and part of the Bonaparte basins in the Timor Sea.

Laminaria-Corallina

Offshore oil production in areas administered by the Territory is estimated to have fallen by 40 per cent in 2003-04. This comes after a 27 per cent decline in production in 2002-03. Oil production continues to be dominated by the Laminaria-Corallina oilfields, which still have a production life of several years. Production from Laminaria-Corallina peaked at 180 000 barrels per day in 2000-01. To supplement declining output from the six Phase One development wells, a second phase of development drilling of two additional production wells commenced in December 2001. Phase two production commenced in mid 2002.

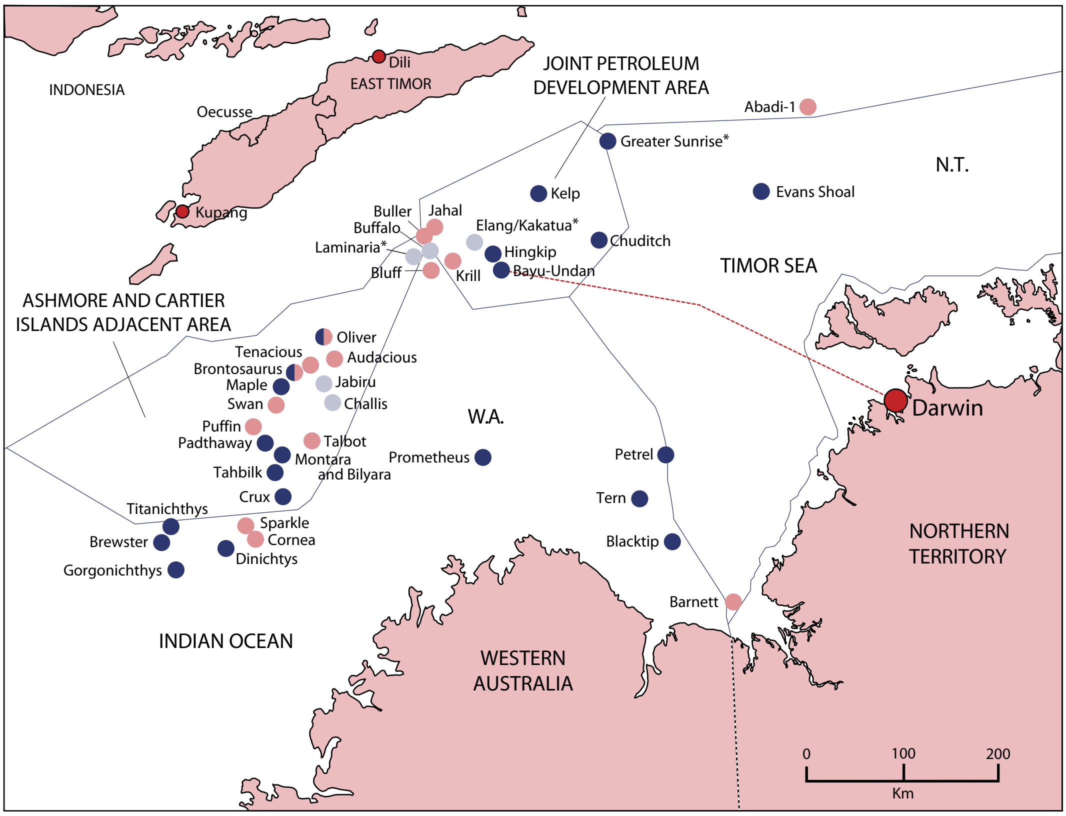
Other Producing Fields

Oil production from the mature Jabiru and Challis/Cassini fields continues to decline. These fields remain profitable due to relatively high oil prices and cost reduction measures effected by the operator. For these fields and the decommissioned Skua field, economic recovery of oil is expected to be over three times initial estimates of proven reserves.

Energy Exploration

Despite substantially higher crude oil prices and the relatively weak Australian dollar in recent years, offshore exploration commitments in the Timor Sea have been flat. After exploration expenditure of almost $700 million for the drilling of 57 offshore wells in the five years to 2001-02, only one exploration well and one appraisal well were drilled in 2002-03.

Timor Sea Oil and Gas



LEGEND

- Producing Oil Field
- Discovered Undeveloped Oil Field
- Discovered Undeveloped Gas Field
- ----- Proposed Gas Pipeline

Laminaria* includes Corallina

Greater Sunrise* includes Sunset, Sunrise Loxton Shoals, Bard Troubadour

Elang/Kakatua* includes Elang West and Kakatua North

In 2004, 10 offshore exploration wells are planned to be drilled. Further out, in the period to 2007, drilling activity is expected to decline, despite new acreage being made available to prospective explorers.

Comprehensive reviews of the geological framework and petroleum prospectivity have recently been produced for the onshore Georgina, Eromanga/Pedirka and Amadeus basins. This has resulted in a significant increase in the onshore area under exploration licence. Significant Territory Government expenditure on base-level data over the past five years has provided more detailed geoscientific information to explorers.

Uranium exploration expenditure, concentrated in western Arnhem Land, fell by over 25 per cent to $5.3 million in 2002-03.

Gas Onshore

Benefits

The economic benefits to the Territory of significant volumes of multi-use gas onshore would include higher employment, value-adding, household income, export income and cheaper electricity for Territory businesses and residents.

The major benefit to the Territory from the signing of the Timor Sea Treaty is natural gas from the Joint Petroleum Development Area (JPDA) arriving onshore in Darwin. Landed gas could be used for value-added gas-related manufacturing projects, initially liquefied natural gas (LNG), but if more gas becomes available, also for power generation and distribution possibly to other parts of the Territory and Australia. At this stage, the Blacktip field is being considered to supply for the expansion for alumina production at Nhulunbuy.

Economy-wide Benefits

The direct benefits to the Territory economy from activity in the JPDA and for JPDA projects relates to construction and operational phase employment and skills development and the opportunity for Darwin-based enterprises to compete for supply and service contracts for offshore and onshore facilities.

With the current offshore oil projects there is significant leakage of operational benefits from the Territory economy, particularly to Western Australia. This is primarily due to the use of fly-in fly-out staffing and purchasing through Perth offices. However, the situation continues to be addressed with major efforts to market Darwin to operators as an effective place to base staff and undertake purchasing, operational and support activities.

A range of gas-based manufacturing projects continues to be considered by industry and the Territory and Australian Governments. Gas manufacturing projects considered to date include the production of liquefied natural gas (LNG), methanol, ammonia / urea fertilisers and various petrochemicals.

The plan for the Bayu-Undan field is to bring the natural gas through a sub-sea pipeline to Wickham Point in Darwin Harbour. Construction for this project is currently underway, with first shipments to Japanese customers expected in early 2006.

Energy costs are typically critical in the mining and processing of ore, and in downstream manufacturing processes. Competitively priced natural gas in large volumes from the Timor Sea could act to trigger an expansion of the Territory mining industry on a scale of national significance.

Major metal manufacturing projects that have been under consideration and that are largely reliant on significant quantities of cheap energy include expanded alumina processing at Nhulunbuy, aluminium smelting near Darwin, polymetallic smelting for the Browns project and smelting of the magnesite deposits near Batchelor into mangesium.

In addition to major projects, the generation of more competitively priced electricity in the Territory will stimulate the growth of small to medium size manufacturing and service businesses. Cheaper electricity also means benefits to consumers and households.

While these gas-related manufacturing and power supply proposals have been or are currently under investigation or negotiation, they are not yet committed. Most importantly, they depend on decisions by the owners of Greater Sunrise and other Timor Sea fields on whether to bring gas onshore, and the delivered gas price. Except for the ConocoPhillips LNG plant, the forecasts to 2009-10 do not include any of these gas-related manufacturing and power supply proposals previously or currently under investigation or negotiation. These proposals are not yet sufficiently advanced or committed.

Minerals Outlook

The value of mineral production (including minerals processing) is forecast to increase by 6.8 per cent, to $1 440 million in 2004-05.

The outlook for minerals is determined by global supply and demand, with world economic growth and the exchange rate major influences on demand. Strengthening world economic activity is expected to have a positive impact on demand in 2004-05, though increased supply of many commodities produced by the Territory will put some downward pressure on prices and the stronger Australian dollar will impact on competitiveness.

Gold

Higher gold prices in the past year reflected concerns about the sustainability of the world economic recovery and the weakening of the US dollar against the major currencies. From US$364 an ounce after the war in Iraq, the gold spot price reached a peak of US$427 in April 2004. The Australian Bureau of Agricultural and Resource Economics (ABARE) forecasts world gold prices to average US$410 during 2004 before falling to US$380 in 2005 as stronger global economic growth sees investors move to growth rather than defensive investment stocks. ABARE forecasts that Australian gold prices will fall from $572 per ounce in 2003, to $541 per ounce in 2004 and $526 per ounce in 2005.

The Department of Business, Industry and Resource Development forecasts the nominal value of Territory gold production to fall by 20 per cent in 2004-05. Production is forecast to decrease by 17.6 per cent and prices by 3.0 per cent. Contributions to growth are forecast to come from the new mining operations of the Burnside Joint Venture at Pine Creek, and the Peko Tailings Project at Tennant Creek in 2005-06.

Base Metals

ABARE forecasts stronger demands and prices for base metal (lead, zinc and copper) ore concentrates in 2004-05. This follows from excess supply in the global zinc market in 2002-03 which resulted in significantly weaker prices leading to pressure for production cuts. Increased production and prices is forecast to result in the nominal value of Territory base metal concentrates production increasing by 30 per cent in 2004-05.

The proposed expansion of production at the McArthur River lead/zinc mine, and possible refining of zinc, will be influenced by smelter availability, shipping costs and new smelting technology. Territory production of base metals has some upside, with reserves of copper associated with the Peko Tailings Project and the Browns polymetallic orebody near Batchelor. No production values from these proposed projects are included in the current forecasts.

Alumina

World alumina demand and production are forecast to increase in 2004 and 2005, although increased global supply is expected to result in price falls. Global demand over the next five years is expected to be driven by China, which is expected to outpace the United States as the world's largest aluminium consumer by 2004.

New Projects

In the Territory, the value of alumina production in 2003-04 and 2004-05 is forecast to be static, at about 2 million tonnes. The planned $1.5 billion expansion by Alcan is expected to significantly increase alumina production to 3.5 million tonnes from 2006-07, with an associated increase in bauxite production. The final approval of the project is expected by mid 2004. The proposed expansion of alumina production capacity at Nhulunbuy is included in the forecasts.

The Definitive Feasibility Study for the Browns polymetallic orebody (lead, cobalt, copper and nickel) near Batchelor is expected after 2004. The developer has proposed two development options (small scale and large scale) which have estimated capital costs of $150 million to $550 million and will employ 100 to 350 people respectively. The large-scale development includes a smelter. An Environmental Impact Study is currently being conducted on the proposal.

The Batchelor Magnesium Project has a defined resource of 16.6 million tonnes of magnesium oxide. In the absence of a firm commitment to develop natural gas fields in the region to supply competitively priced energy, the prospect of the project proceeding is weak. Also, the developer has set a new direction as a participant in a proposed low-cost magnesium metal project in Malaysia.

Bootu Creek, located 100 kilometres north of Tennant Creek and relatively close to the Adelaide to Darwin railway, has very large reserves of high-grade manganese. Planning for the development of the resource is proceeding, however, a range of important issues including those relating to land, agreements and freight are yet to be resolved.

Extractive Minerals

Demand for crushed rock, gravel, sand and soil is expected to remain strong in 2004-05. Demand is underpinned by a number of projects, including a sub-sea pipeline to the Bayu-Undan gas/condensate fields in the Timor Sea and strengthening construction activity.

Exploration

Greenfield exploration expenditure is expected to continue to recover in the short term. Progress continues to be made in the processing of applications affected by native title, and enhanced exploration base datasets from recent initiatives will support greater interest from private exploration companies.

The outlook for 2004 and beyond is for increasing exploration related to gold, diamond, nickel and rare earths. While recent mineral exploration in the Territory has resulted in a number of significant discoveries, there have been no commitments leading to commercial production.

Mineral Leases

Some 185 mineral leases, mineral claims, extractive mineral leases and other forms of mining tenements still require processing in accordance with the normal right to negotiate provisions of the *Native Title Act*. The negotiation process has commenced on a number of these applications.

Energy Outlook

The energy production outlook for the Northern Territory is positive. Oil production from Laminaria-Corallina (which is in the Ashmore and Cartier Islands region administered by the Northern Territory) will continue to dominate nominal value of production in the short term, while major gas extraction and gas manufacturing will dominate in the long term. Oil production from Laminaria-Corallina will continue to fall in 2004-05 and the years beyond that, while liquids production from Bayu-Undan, which commenced in February 2004, is anticipated to reach full production by late 2004. Although Bayu-Undan is in the JPDA, and is administered by the Joint Petroleum Development Authority, production is to be shared equally between Australia and East Timor, with the Australian portion attributed to the Northern Territory. In the longer term, gas extraction and gas manufacturing are expected to dominate energy output.

Oil Production

Oil production from Laminaria-Corallina will continue in coming years, but is expected to fall markedly. Nonetheless, Laminaria-Corallina will remain the largest production field in Territory administered waters. The focus of production will be accessing incremental reserves and accelerating the production. Jabiru and Challis will continue to produce oil over at least the next two years.

A number of other marginal oil discoveries in the Timor Sea await further appraisal and/or development. These include Audacious, Barnett, Montara, Oliver, Puffin, Talbot and Tenacious. Development options for Audacious and Montara are being reviewed. Project economics could be enhanced by tying-in nearby prospects.

Table 8.2: Mineral and Energy Value of Production and Processing (nominal dollars)

Year ended June	Minerals and Processing $M	Minerals and Processing % Ch	Energy $M	Energy % Ch	Total $M	Total % Ch
1984	349	29.6	346	3.8	695	15.3
1985	452	29.4	400	15.6	851	22.5
1986	459	1.7	386	-3.5	845	-0.7
1987	567	23.5	552	43.1	1 119	32.4
1988	693	22.2	555	0.6	1 249	11.6
1989	776	12.0	596	7.3	1 372	9.9
1990	1 102	42.0	862	44.8	1 965	43.2
1991	1 166	5.8	1 098	27.3	2 264	15.2
1992	976	-16.3	912	-16.9	1 888	-16.6
1993	908	-6.9	752	-17.5	1 661	-12.0
1994	924	1.8	414	-45.0	1 338	-19.4
1995	971	5.1	347	-16.2	1 318	-1.5
1996	1 165	20.0	395	13.9	1 560	18.4
1997	1 323	13.6	341	-13.7	1 664	6.7
1998	1 297	-2.0	342	0.4	1 639	-1.5
1999	1 197	-7.7	361	5.3	1 558	-5.0
2000	1 295	8.2	1 557	331.8	2 852	83.1
2001	1 374	6.1	3043	95.4	4 417	54.9
2002	1 460	6.3	1735	-43.0	3 195	-27.7
2003	1 348	-7.7	1468	-15.4	2 816	-11.8
2004e	1 386	2.8	811	-44.8	2 197	-22.0
2005f	1 440	6.8	561	-61.8	2 001	-28.9
Compound Annual Growth %						
1983-84 to 2003-04e		8.4		7.7		8.0
1983-84 to 1987-88		20.8		10.8		15.7
1988-89 to 1992-93		5.5		6.3		5.9
1993-94 to 2003-04e		3.8		13.5		7.7
1993-94 to 1997-98		7.4		-14.6		-0.3
1998-99 to 2003-04e		3.9		2.1		3.2

Source: NT Treasury, Department of Business, Industry and Resource Development

Crude oil prices have remained high since the war in Iraq. Several factros have contributed to this outcome, including a slow recovery in Iraq's oil exports, low oil stocks in many of the major economies of the world, and the Organisation of Petroleum Exporting Countries (OPEC) supply restrictions. ABARE forecasts the 2004 oil price to average about $US31 per barrel. As concerns about supply abate, oil prices are expected to ease back to average around US$27 in 2005.

OPEC, which supplies around 38 per cent of world oil production, continues to manipulate supply to maintain oil prices in the range of US$22-$28 a barrel. OPEC's ability to manage global prices is constrained by production from non-OPEC countries and by partial member country non-compliance with production and sales quotas.

Australian crude oil and condensate production and exports peaked in 2000-01 boosted by production from Laminaria-Corallina. Production and exports have since declined, and are expected to continue to fall through to 2005-06. ABARE forecasts that Australia's LNG export earnings will be boosted in 2004-05 as substantial new capacity comes online, despite weaker prices.

Gas Field Developments

The Territory remains on the verge of a major development phase for gas reserves and gas-based manufacturing. Other than the Bayu-Undan fields, progress is being made towards the development of Timor Sea gas fields and Darwin and regional gas infrastructure. Within the Territory's economic zone, the more significant gas fields are Greater Sunrise (encompassing the Sunrise and Troubadour fields), Evans Shoal and Crux.

Gas Onshore

First gas production from the JPDA will come from the major Bayu-Undan gas-condensate field. Work is on schedule for the Wickham Point plant and pipeline, with the delivery of gas onshore expected in early 2006 and first LNG deliveries to Japan not long after. The gas field has an estimated life of 17 years based on the LNG production profile.

Greater Sunrise

Greater Sunrise has gas reserves estimated at 7.7 trillion cubic feet (Tcf) of gas and 299 million barrels of condensate. It is not included in the forecast period as considerable uncertainty exists regarding the nature and timing of the field's development. Numerous development concepts were considered in negotiations with a variety of potential gas customers, including domestic markets in the Territory, other Australian markets, and LNG customers in the United States and South East Asia.

Evans Shoal

Evans Shoal has recoverable gas reserves estimated at 6.6 Tcf. Recent feasibility studies have examined various options to commercialise the resource and have included options for cooperative development with other Timor Sea gas fields and for an offshore methanol plant on nearby Tassie Shoal - a seamount in relatively shallow water.

Development options being considered for Crux include a floating gas-to-liquids scheme, including methanol, possibly in conjunction with the nearby Montara oil and gas field. Crux is 700 kilometres from Darwin with estimated recoverable reserves of 1.4 Tcf.

Blacktip

Blacktip is a gas field near the Western Australian-Northern Territory border. The field is administered by Western Australia, and has estimated gas reserves of 0.9 Tcf. Further exploration is being undertaken in this area. Blacktip is being considered to supply gas to the proposed alumina expansion project at Nhulunbuy. Key development issues for this to occur include negotiations on gas contract and pipeline routes across Aboriginal lands in the Territory.

Gas production for the Mereenie and Palm Valley gas fields, which is used primarily for the generation of electricity in the Territory, is forecast to increase at around 3 per cent in 2004-05.

Uranium

The value of Territory uranium production is forecast to remain relatively stable for the life of the Ranger mine. All uranium produced is exported.

Jabiluka mine is on a stand-by, care and environmental maintenance status. Energy Resources of Australia Ltd has given an undertaking to the Commonwealth Government that they will not commence Jabiluka until the mining at Ranger has been completed. Reserves at Jabiluka are estimated as sufficient to maintain production for nearly three decades.