

Chapter 8 Mining and Energy

Key Points

- In terms of output, mining is the largest industry in the Territory, accounting for 18.8 per cent of Gross State Product in 2003-04, compared to 4 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 projects 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 oilfields in the Timor Sea.
- For developments in the Joint Petroleum Development Area in the Timor Sea, half the production will be attributed to the Northern Territory for national accounts purposes.
- The delivery of gas onshore will continue to create significant opportunities for the Territory economy, particularly gas-related manufacturing of LNG and helium and for electricity generation at Gove and for the Territory electricity grid.
- 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 18.8 per cent of GSP in 2003-04, and 2 per cent of employment. On average over the past five years mining accounted for 22.4 per cent of GSP. 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 4.0 per cent of Gross Domestic Product (GDP) but only 1.0 per cent of employment in 2003-04.

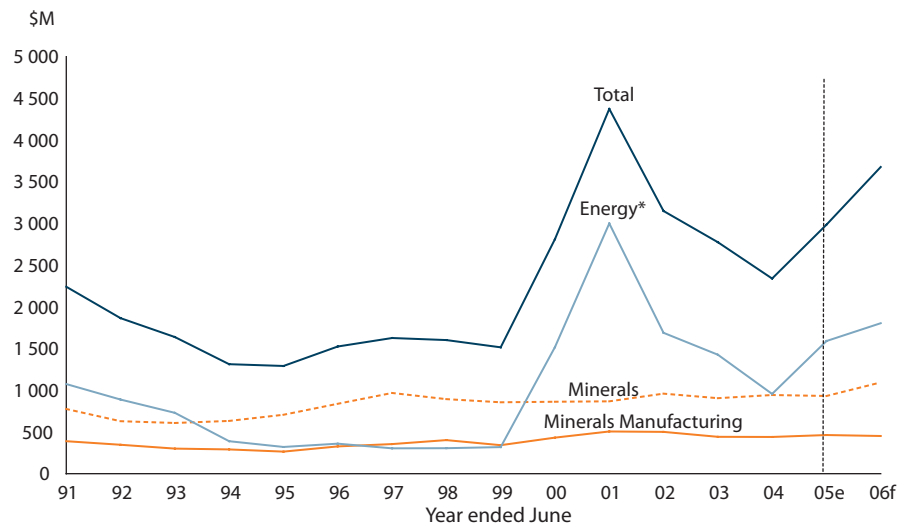
Exploration is the foundation for future mining activity, and is essential if the industry is to continue to develop and generate employment and revenue opportunities. Globally there is intense competition to attract exploration expenditure. Recent exploration initiatives in the Territory have focused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

Table 8.1: Mining as a Percentage of Gross State Product and Gross Domestic Product (2003-04)

New South Wales	1.5
Victoria	1.3
Queensland	5.9
South Australia	1.9
Western Australia	16.2
Tasmania	1.2
Northern Territory	18.8
Australian Capital Territory	0.0
Australia	4.0

Source: ABS Cat. No. 5220.0

Chart 8.1: Mineral and Energy Production and Processing



*Includes JPDA Production

e: estimate; f: forecast

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

Australian Bureau of Statistics (ABS) data report resident Territory mining industry employment of 2000 in 2003-04, while the Department of Business, Industry and Resource Development (DBIRD) estimates employment of 4600 (3500 in mining and 1100 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 and are employed on a fly-in fly-out basis (included in DBIRD estimates).

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. Northern Territory Government royalty revenues for 2004-05 are estimated at \$38.5 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 Australian Government.

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, and a new mine at Bootu Creek is due to commence production in 2005-06;
- 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.

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 2003-04. It is expected that these deposits will continue to dominate the value of production in the medium term.

Onshore Mineral and Energy Resources

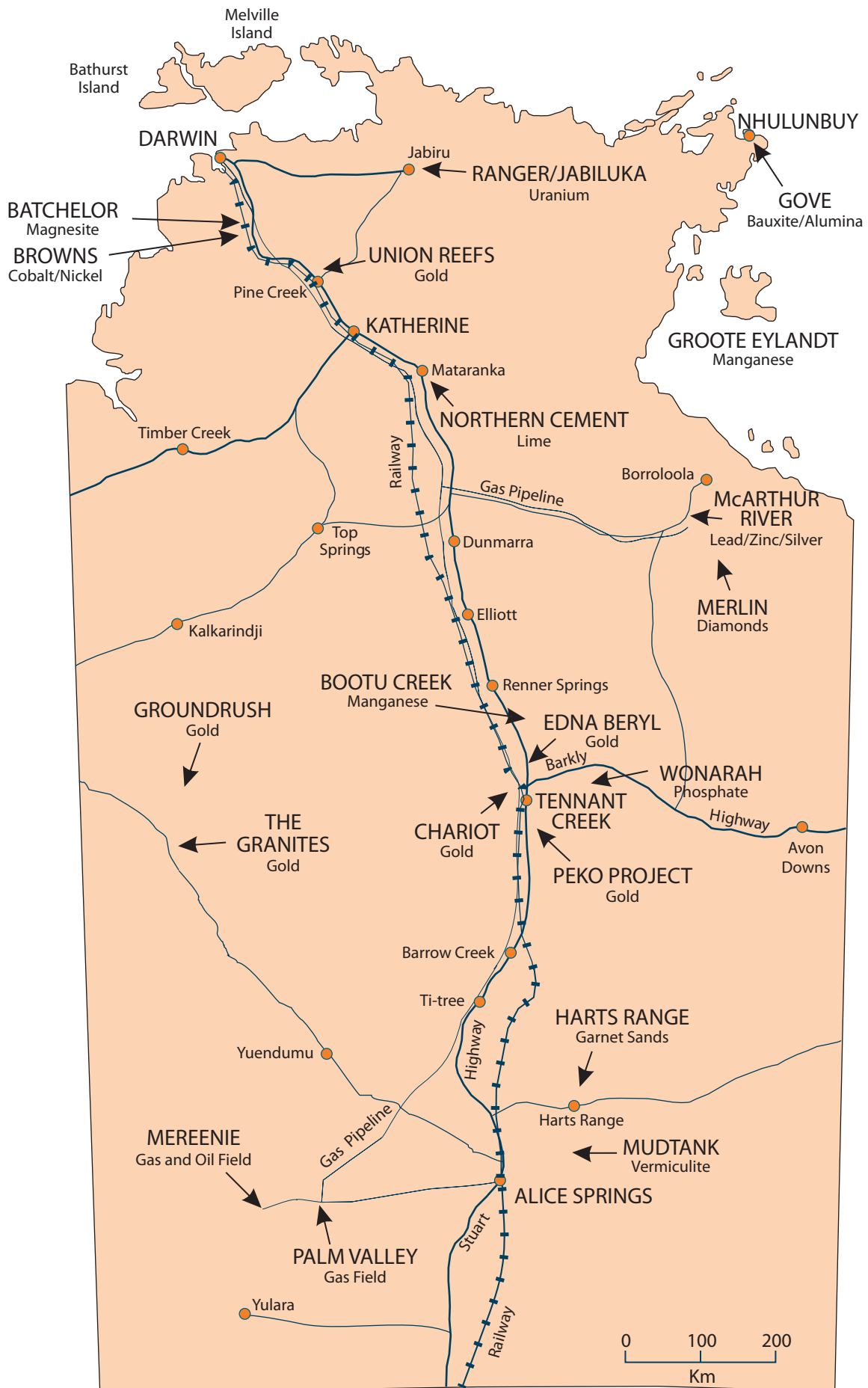
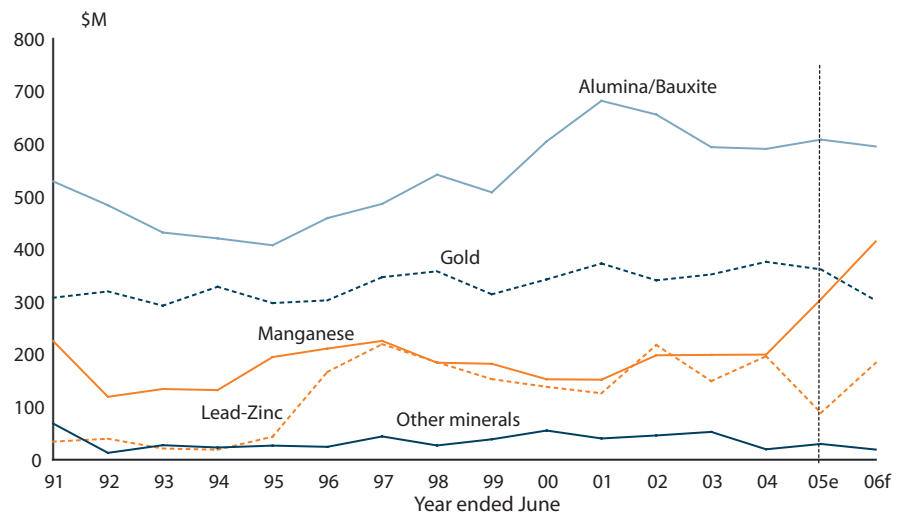


Chart 8.2: Value of Mineral Production and Processing (nominal dollars)



e: estimate; f: forecast

Source: Department of Business, Industry and Resource Development

2004-05 Production

Mineral processing includes the manufacturing of alumina. The nominal value of mineral production and processing is estimated to have increased by 0.8 per cent to \$1395 million in 2004-05.

The nominal value of gold production is estimated to have decreased by 3.8 per cent to \$362 million in 2004-05, as a 2.0 per cent increase in production was more than offset by a 5.7 per cent decrease in prices. The value of manganese production increased by 52.7 per cent in 2004-05, driven by higher prices and increased production. Following an increase of 31.5 per cent in 2003-04, the value of lead/zinc production is estimated to have fallen by 54.7 per cent to around \$89 million in 2004-05 as commercial difficulties at the McArthur River mine caused production to fall by 55.2 per cent. The value of bauxite and alumina production is estimated to have increase by 3.0 per cent to \$609 million in 2004-05.

The nominal value of non-metallic mineral production is estimated to have increased by 52.8 per cent to \$29 million in 2004-05, due largely to a jump in demand for limestone for the construction sector.

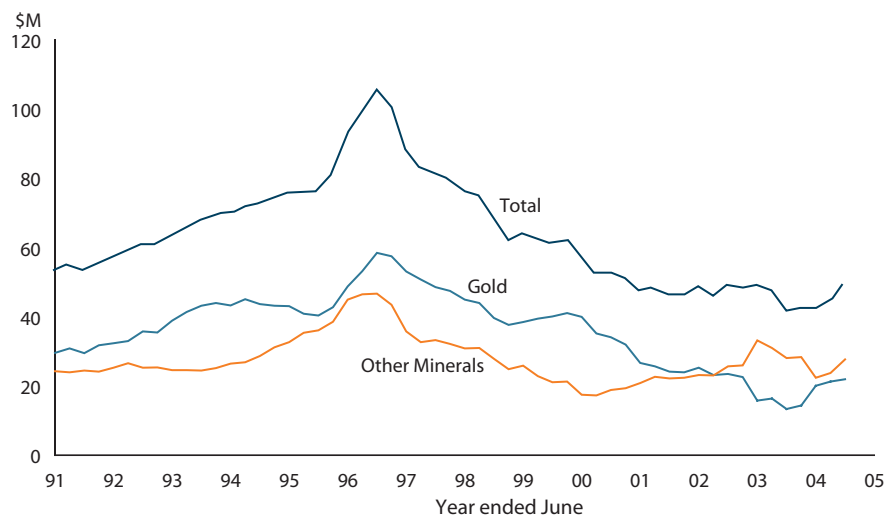
Mineral Exploration

Including uranium, Territory private mineral exploration expenditure decreased by 13.3 per cent to \$43 million in 2003-04. Nationally, exploration expenditure increased by 8.2 per cent. Approximately 5.3 per cent of Australian exploration expenditure occurred in the Territory in 2003-04, the lowest proportion for several years. Nonetheless, exploration expenditure strengthened in the first half of 2004-05 (see Chart 8.3).

In the Territory, gold and base metals exploration is currently around 40 per cent of the levels reported during the exploration peak in the mid 1990s. Gold continues to attract the majority of exploration activity in the Territory, accounting for about 50 per cent of total annual exploration expenditure in the past five years. Improved geological data (associated with recent initiatives), better land access and the continuation of 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 2003-04, while diamond exploration increased. Following solid growth in 2002-03, non-gold exploration activity decreased by 32 per cent to \$22.5 million in 2003-04.

Chart 8.3: Mineral Exploration
(moving annual total)



Source: ABS Cat. No. 8412.0

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. Constraining factors on exploration expenditure continue to include the *Native Title Act* and the *Aboriginal Land Rights (Northern Territory) Act*. These constraints are being addressed and are easing.

The current low level of exploration expenditure is a serious concern as there is generally a lead time of 10 to 15 years between the discovery of a major orebody and mineral ore commercial production. In 2003-04, the ABS introduced a new classification system for exploration expenditure, based on deposit type, replacing a system that was based on lease type. In 2003-04, 31 per cent (\$13.3 million) of exploration expenditure was on the exploration of new deposits (greenfield exploration) and 69 per cent was on existing deposits (brownfield exploration).

In response to the declining trend in mineral exploration since 1995-96, the Territory Government implemented a new exploration initiative to attract investment, Building the Territory's Resource Base, following from the success of the previous four-year Northern Territory Exploration Initiative. The new initiative provides \$15.2 million over four years towards the provision of pre-competitive geoscientific data and the promotion of prospectivity. It also provides extra resources towards Indigenous liaison and the processing of exploration and mining titles.

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 Timor Sea 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 attributed to the Territory) include:

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

Although in Western Australian-administered waters, the Blacktip field is expected to be used for processing bauxite into alumina at Gove.

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 Northern 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 Timor Sea Designated Authority, jointly administer the Joint Petroleum Development Area (JPDA). The Timor Sea Treaty has been ratified by both governments and in effect since May 2002. Output from 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; and
- Western Australia administers the Browse and part of the Bonaparte basins in the Timor Sea.

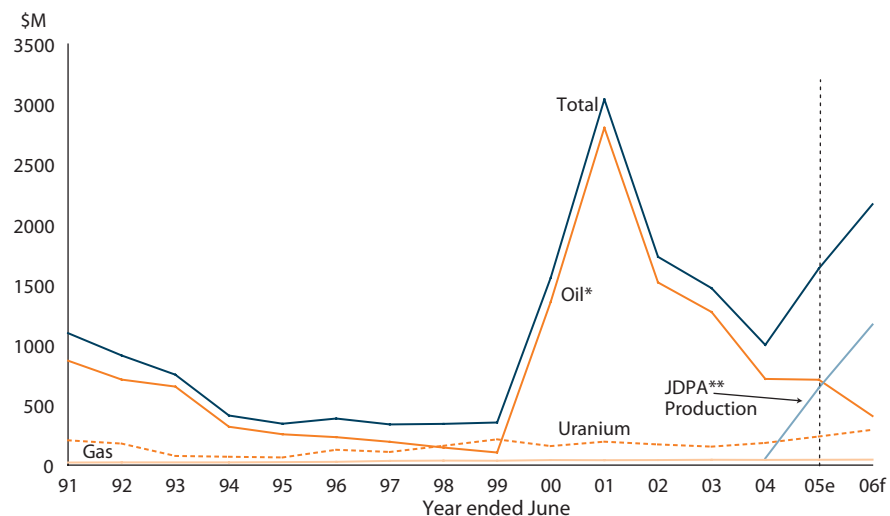
2004-05 Production

Including output from the JPDA (that is, the 50 per cent of the condensate production from Bayu-Undan stage 1 attributed to the Northern Territory), the nominal value of energy production is estimated to have increased by 66.3 per cent to \$1590 million in 2004-05. Excluding JPDA output, the value of production is estimated to have increased by 5 per cent as increased uranium production and prices offset the modest fall in the value of oil production. Oil production fell by 27 per cent in 2004-05 while prices increased by 35 per cent. The nominal value of natural gas production from Central Australia is estimated to have increased by 3.0 per cent in 2004-05, while the value of uranium ore production is estimated to have increased by 29.1 per cent.

Laminaria-Corallina

Offshore oil production in areas administered by the Territory is estimated to have fallen by 27 per cent in 2004-05. This comes after a 44 per cent decline in production in 2003-04. 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.

Chart 8.4: Value of Energy Production (nominal dollars)



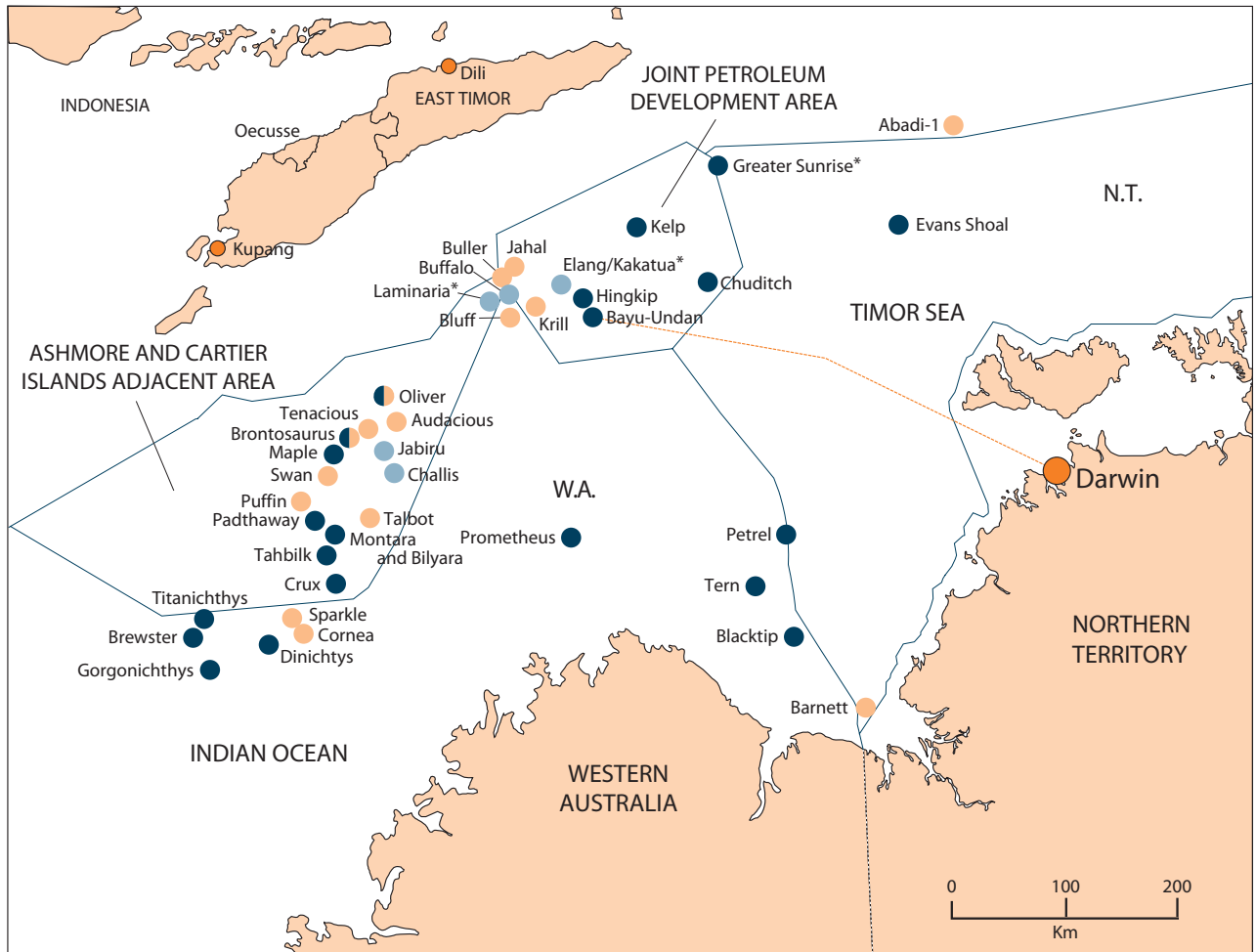
* Onshore and offshore oil production excluding JPDA production

** Oil and gas production from JPDA attributed to the Territory

e: estimate; f: forecast

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

Timor Sea Oil and Gas



LEGEND

- Producing Oil Field
- Discovered Undeveloped Oil Field
- Discovered Undeveloped Gas Field
- - - Gas Pipeline
- Laminaria* includes Corallina
- Greater Sunrise* includes Sunset, Sunrise, Loxton Shoals, Bard Troubadour
- Elang/Kakatua* includes Elang West and Kakatua North

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, 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. In 2004, 10 offshore exploration wells were drilled. 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 Northern 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 more than 9 per cent to \$4.8 million in 2003-04.

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 the prospect of natural gas from the JPDA arriving onshore in Darwin. Landed gas will be used for value-added gas-related manufacturing projects, initially liquefied natural gas (LNG) and helium, 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 expected to be used to supply energy to the Gove alumina plant.

Economy-wide Benefits The direct benefits to the Territory economy from activity in the JPDA and for JPDA-related projects is 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, this continues to be addressed, with major efforts to market Darwin to operators as a cost-effective base for staff and 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 LNG, methanol, ammonia / urea fertilisers and various petrochemicals.

Natural gas from the Bayu-Undan field is to be transported by a sub-sea pipeline to Wickham Point in Darwin Harbour to produce LNG. Construction for this project is well under way, with the first shipments to Japanese customers expected in early 2006. Direct operational employment for the LNG plant is expected to be around 140 positions, and there will be additional employment opportunities associated with supply and maintenance contracts.

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's 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 Gove, aluminium smelting near Darwin, polymetallic smelting for the Browns project and smelting of the magnesite deposits near Batchelor into magnesium.

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

While several gas-related manufacturing and power supply proposals have been, or are currently, under investigation or negotiation, only the Wickham Point LNG plant is committed. Most importantly, these proposals depend on the further development of the Greater Sunrise and other Timor Sea fields. Negotiations between the governments of Australia and East Timor have stalled, putting the short-term development of these new fields in doubt. Except for the ConocoPhillips LNG plant and associated helium production, the forecasts to 2009-10 do not include further gas-related manufacturing and power supply proposals preceding. Though the Blacktip gas field is likely to be developed for use in the Territory, the field is in Western Australia waters.

Minerals Outlook

The value of mineral production (including minerals processing) is forecast to increase by 10.9 per cent to \$1546 million in 2005-06 largely due to a significant increase in the value of manganese production.

The outlook for minerals is determined by global supply and demand, with world economic growth and the exchange rate being major influences on demand. Solid world economic activity is expected to have a positive impact on demand in 2005-06, although increased supply of many commodities produced in the Territory will put some downward pressure on prices and the stronger Australian dollar will impact on competitiveness.

Gold The Australian Bureau of Agricultural and Resource Economics (ABARE) forecasts world gold prices to average US\$404 during 2005 before falling to US\$375 in 2006 as stronger global economic growth sees investors move to growth rather than defensive investment stocks. ABARE forecasts that Australian gold prices will increase by 3 per cent to \$564 per ounce in 2005 before falling to \$534 per ounce in 2006.

DBIRD forecasts the nominal value of Territory gold production to fall by 16.4 per cent in 2005-06. Production is forecast to decrease by 12 per cent and prices by 5 per cent. Existing major operators will continue exploration and development of their portfolios of various ore bodies in their tenements and new mining developments are planned at Toms Gully and the Peko Tailings projects.

Base Metals ABARE forecasts demand and prices for base metal (lead, zinc and copper) ore concentrates to ease in 2005-06 as producers work through the effects of excess supply in the global zinc market in 2002-03. Excess supply resulted in significantly weaker prices leading to pressure for production cuts. Uncertainty exists as to the future production levels from the McArthur River mine. This will be a major influence on the future value of base metal production in the Territory.

The value of Territory production of zinc-lead concentrates is forecast to decrease by around 55 per cent in 2004-05, mainly due to lower production. The McArthur River Mine is facing commercial difficulties due to significantly reduced world smelting capacity for the type of metallurgical ore that it produces. Ongoing reduced production levels have been factored into forecasts, although the future operations of the mine are uncertain.

Alumina World alumina demand and production are forecast to increase in 2005 and 2006, although increased global supply is expected to result in price falls. Strong growth in global alumina demand, particularly from China, combined with limited supply growth, led to historically high spot prices in 2004. ABARE expects alumina prices to ease during 2005 and beyond as new production capacity is commissioned.

- Manganese** Manganese is used primarily in steel production. As such, demand for manganese is closely linked to demand for steel, although prices growth will also depend on supply dynamics that are independent of iron ore and steel supply. On the back of stronger demand and constrained supply, manganese prices are estimated to increase by almost 30 per cent in both 2004-05 and 2005-06.
- New Projects** Exploration and developments on existing mining tenements enable existing operations to continue and expand. In addition, several emerging and potential commercial projects are in the process of feasibility assessments, planning or commercial development. These include the Bootu Creek, Peko Tailings and Browns Oxide projects.
- In the Territory, the value of alumina production in 2004-05 and 2005-06 is forecast to be static at about 2 million tonnes. The \$1.5 billion expansion by Alcan which is under way is expected to significantly increase alumina production to 3.5 million tonnes from 2007, with an associated increase in bauxite production. The expansion of alumina production capacity at Gove is included in the forecasts.
- Bootu Creek has large reserves of high-grade manganese located 120 kilometres north of Tennant Creek and relatively close to the new railway. Planning for the development of the resource has been active and includes joint planning with the Northern Territory Government for a critical \$14 million bulk loading facility, railway spur and stockpile reclamation facility at the East Arm Port. Production and exports of 500 000 tonnes are expected to begin in 2006, increasing to 1.5 million tonnes. Bootu Creek production is included in the forecast values.
- The Peko Tailings Project contains significant reserves of gold, magnetite, cobalt and copper. The mining processes will be biological. Initial extraction is expected to be of magnetite, commencing in 2005, followed by gold in 2006.
- The Browns polymetallic orebody (lead, cobalt, copper and nickel) near Batchelor is expected to begin production in early 2006. 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.
- Extractive Minerals** Demand for crushed rock, gravel, sand and soil is expected to remain strong in 2005-06. Demand is underpinned by a number of projects, including the Alcan Gove expansion and associated pipeline and strengthening construction activity.
- Exploration** After gradually declining over the seven years to 2003-04, exploration expenditure is starting to show signs of improving. In the medium to long term, the level of exploration is expected to continue to increase, consistent with Australian trends and supported by Territory Government initiatives. Improved geological datasets through the Building the Territory's Resource Base initiative are being complemented by progress in the processing of applications for exploration licences on land subject to native title.
- The outlook is for increasing exploration for gold, diamonds, nickel, rare earths and onshore hydrocarbons. Exploration activity is particularly buoyant in several major geological provinces across the southern and central parts of the Territory.

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

Year ended June	Minerals		Energy*		Total	
	\$M	% Ch	\$M	% Ch	\$M	% Ch
1986	459		386		845	
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	390	-54.8	1 556	-20.8
1992	976	-16.3	346	-11.3	1 322	-15.0
1993	908	-6.9	300	-13.3	1 208	-8.6
1994	924	1.8	291	-3.1	1 215	0.5
1995	971	5.1	264	-9.0	1 235	1.7
1996	1 165	20.0	327	23.6	1 492	20.8
1997	1 323	13.6	304	-7.1	1 627	9.0
1998	1 297	-2.0	306	0.7	1 603	-1.5
1999	1 197	-7.7	318	4.0	1 515	-5.4
2000	1 295	8.2	1 517	376.6	2 811	85.5
2001	1 374	6.1	3 000	97.8	4 374	55.6
2002	1 460	6.3	1 690	-43.7	3 150	-28.0
2003	1 348	-7.7	1 426	-15.6	2 774	-11.9
2004	1 383	2.6	956	-33.0	2 339	-15.7
2005e	1 395	0.8	1 590	66.3	2 985	27.6
2006f	1 546	10.9	2 057	29.4	3 604	20.7
Compound Annual Growth %						
1985-86 to 2004-05e		5.7		7.3		6.5
1999-00 to 2004-05e		0.5		0.3		0.4
1994-95 to 2004-05e		3.7		19.7		9.2

* Includes JDPa production

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

Energy Outlook

The energy production outlook for the Northern Territory, including the JPDA, is positive. Oil production from Laminaria-Corallina will continue to fall in 2005-06 and the years beyond that, while liquids production from Bayu-Undan reached full production of about 100 000 barrels per day in late 2004. Although Bayu-Undan is in the JPDA, and is administered by the Timor Sea Designated 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.

Crude oil prices have remained high since the war in Iraq. Strengthening demand, coupled with supply constraints and a significant risk premium being factored into prices, have been the major influences. ABARE forecasts the 2005 oil price to average about \$US41 per barrel, easing back to average around US\$35 in 2006.

ABARE forecasts that Australia's LNG export earnings will be boosted in 2005-06 as substantial new capacity, including from the Territory, comes online.

- Gas Field Developments** The Territory remains on the verge of a major development phase for gas reserves and for gas-based manufacturing. Other than the Bayu-Undan fields, progress continues to be made towards developing Timor Sea gas fields, and Darwin and regional gas infrastructure. 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 the 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 Western Australian-administered gas field near the Western Australian and Northern Territory border. The field has estimated gas reserves of 0.9 Tcf. Blacktip is being considered to supply gas to the proposed alumina expansion project at Gove. Key development issues for this to occur include negotiations on gas contracts and pipeline routes across Aboriginal lands in the Territory. The gas is expected to travel to Gove via the proposed 950 kilometre Trans-Territory pipeline, a \$500 million joint venture between the Blacktip operators and Alcan.
- Petrel and Tern** Also located near the Western Australian and Northern Territory border, the Petrel and Tern gas fields have estimated reserves of 1.4 Tcf. Santos Energy currently holds retention leases over these fields.
- Onshore Gas** 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 2005-06. However, the long term commercial sustainability of these fields is uncertain.
- Uranium** Uranium production is forecast to remain relatively stable for the life of the Ranger mine with the value of production expected to grow in line with rising international prices. 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 Australian Government that it will not commence Jabiluka until mining at Ranger ceases. Reserves at Jabiluka are estimated as sufficient to maintain production for nearly three decades.