



MINERAL RESOURCES DIVISION

Nature and scope of activities

The Mineral Resources Division contributes to the prosperity of NSW through its stewardship of mineral resources. In 2006-07 NSW mineral and metallic mineral export earnings were worth approximately \$11 billion while government royalties from the mining industry totalled approximately \$489 million.

The division comprises five branches:

- Mineral Resources Development
- Environmental Sustainability
- Development Coordination
- Geological Survey of NSW
- Mine Safety Operations

Major outcomes achieved

Primary industries competitiveness is increased

Continued strong production and royalties

(State Plan: P1 P6)

The combined value of NSW mineral production in 2006-07 was \$12.3 billion.

Coal, with an estimated value of \$8.1 billion, accounted for around 65 per cent of the total as the coal boom continued. Strong global demand (especially from Asia), a slump in Chinese exports and supply shortages from key producing nations all helped to maintain export prices for both thermal and metallurgical coal at high levels.

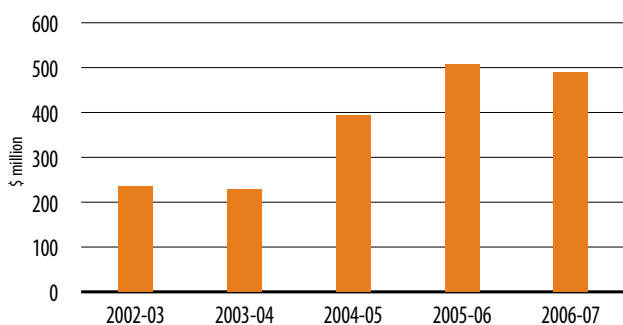
The value of metallic and industrial mineral production rose by around 1 billion to an estimated \$4.2 billion.

NSW royalty figures for 2006-07 were slightly down on the previous record year as a result of improvement in the Australian dollar. The net royalty collection was approximately \$489 million, a decrease of 3 per cent on 2005-06.

At \$416 million, coal royalty collection was down by 7 per cent, largely due to exchange rate variations. Non-coal royalties increased by approximately 30 per cent to \$73 million due to increased commodity prices.

The graph below shows the value of mineral royalties over the period 2002-03 to 2006-07.

Mineral royalties 2002 - 03 to 2006 - 07



New development (State Plan: P1 P6)

In June 2007 the NSW Government approved Centennial Coal's proposed \$240 million Anvil Hill open cut coal mine project and the proposed Abel underground coal mine. The former project involves the mining of up to 10.5 million tonnes per annum (Mtpa) of thermal coal and will create up to 240 full-time jobs. The corresponding figures for the Abel mine are up to 4.5 Mtpa of run-of-mine coal and up to 375 full-time jobs.

Other projects approved during the year included the Duralie coal mine extension, Angus Place coal mine extension, Invincible coal mine extension, Mt Arthur coal exploration adit, Ivanhoe North coal mine rehabilitation project, Northparkes E48 copper-gold project, and the Broula magnetite and limestone project.

Presently there are over 30 coal projects and 20 metallic and industrial mineral projects proposed for development over the next decade. If all were to proceed, the cumulative investment in NSW would exceed \$7 billion and more than 5 500 jobs would be directly generated.

Titles (State Plan: S8, P1, P6)

NSW DPI processed over 400 exploration licence applications in 2006-07 – more than double the numbers received in eight of the last 10 years. There were 2 074 dealings (or actions required) for exploration and mining titles over the year. Of these, about 81 per cent were completed, with the remainder carried forward to 2007-08.

Industry information (State Plan: S8, P1, P6)

Development of a graphical information system of all known historic and active coal mine workings within NSW is in progress and will enable NSW DPI to quickly determine the extent of mining relative to surface features.

In other information initiatives, the scanning of over 4 000 mining lease plans for the DIGS database took the total plan images publicly available via the internet to over 40 000. The database will further expand when the current program to make historical plan registers available in electronic form is completed.

On the safety front, the completed review of the Survey and Drafting Directions for Mine Surveyors and development of check sheets for industry will facilitate a quality assured process for lodging plans required under the Coal Mines Health and Safety Regulations 2006.

Industry see NSW as an attractive state in which to invest

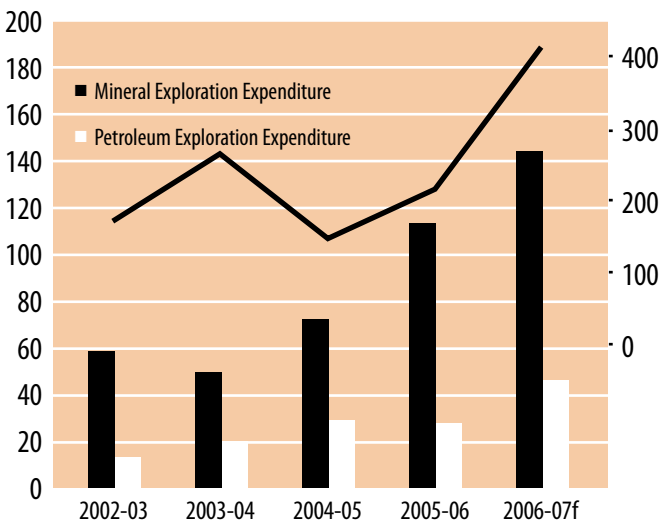
The booming exploration industry (State Plan: P1, P6)

A booming global minerals market and high energy prices, together with strong government support for exploration investment, drove the private sector's mineral exploration expenditure to record levels in 2006-07. At the end of the financial year, NSW exploration spend was \$144.1 million, a 26 per cent increase over 2005-06 and a 100 per cent increase over two years. To this figure should be added forecast expenditure of around \$47 million on petroleum exploration and development, which brings total expenditure on exploration for the year to around \$190 million.

Increased exploration interest was similarly reflected in the number of mineral exploration licence applications NSW DPI received. Applications almost doubled from 215 in 2005-06 to 414 in 2006-07. The increase was largely due to heightened interest in metals, including tin, tungsten and molybdenum.

There was also a significant takeup of petroleum exploration licences.

Private Mineral and Petroleum Exploration Expenditure in New South Wales



f-forecast

New Frontiers (State Plan: P1, P6)

To ensure the state remains competitive in the global market for exploration investment, the NSW Government announced New Frontiers, a two-year \$8 million enhancement program that will build on the success of the Exploration NSW initiative. This initiative stimulated mineral and petroleum exploration investment through new high-technology geoscience programs over under-explored regions of NSW.

New Frontiers was successful in its first year in generating increased interest in exploration in the far northwest and southwest of NSW. Major gravity surveys conducted during the year will substantially improve the three-dimensional understanding of these regions and thus increase confidence in exploring these challenging terrains.

Core library (State Plan: S8, P1, P6)

The E C Andrews Regional Core Storage Facility was constructed at Broken Hill in 2006-07. This core library will hold 80 000 metres of regional exploration drill core and offers an important information resource to the local exploration industry.



New E.C. Andrews Regional Core Storage facility at Broken Hill

Promotion (State Plan: P1, P6)

NSW DPI actively promoted mineral and petroleum investment opportunities in NSW at international industry events such as the Prospectors and Developers Association of Canada Convention in Toronto, the China Mining conference in Beijing, and meetings with the Japan Oil, Gas and Metals National Corporation in Tokyo.

Appropriate access to natural resources

NSW DPI continued to participate in strategic land use studies covering local government areas across NSW. The studies will inform the local environmental plans that councils will prepare over the next three years.

At the next level, a new state environmental planning policy (SEPP) commenced in February 2007. The SEPP (Mining, Petroleum Production and Extractive Industries) 2007 aims to facilitate the orderly use of land containing mineral, petroleum and extractive material resources, and to encourage ecologically sustainable development through the establishment of appropriate planning controls.

Environmental management standards (State Plan: E4)

NSW DPI continued to advance environmental management standards for exploration and mining in NSW.

Improvements to the security deposit process for environmental rehabilitation came into effect from 1 July 2006. The new process requires that mining, petroleum and exploration titleholders provide NSW DPI with a self-calculated estimate of rehabilitation costs – a change that ensures securities adequately reflect the environmental rehabilitation liability on any site. As a result of this change, the value of securities held by NSW DPI increased from \$511 million in 2005-06 to \$733 million in 2006-07. Guidelines to assist industry to calculate rehabilitation costs are available on the NSW DPI website.

Information and education (State Plan: S8, P7, E4)

The new-look NSW DPI website launched in early 2007 provides the latest information on environment policies, guidelines and procedures as well as a list of the environmental factors that exploration and mining proposals must address.

More than 420 new licence and mineral claim holders at Lightning Ridge attended environmental awareness courses designed to improve environmental performance standards and rehabilitation outcomes.

Mine rehabilitation (State Plan: E4)

During the year 37 rehabilitation projects were completed at derelict mine sites across NSW with funding of \$1.77 million provided by the government. Projects included rehabilitation of the former Yerranderie silver mine where the Sydney Catchment Authority provided \$100 000 of supplementary funding. In addition, there were 19 smaller rehabilitation

projects undertaken at Lightning Ridge. Environmental assessments at various sites included surveys for threatened species, heritage assessments, soil and water investigations and preparation of remediation action plans.

The Environmental Levy Works Program commenced at Lightning Ridge. It will lead to rehabilitation of abandoned opal claims through a \$20 per annum levy on each mineral claim renewal.

Subsidence management (State Plan: E4)

NSW DPI manages mine subsidence planning under a whole-of-government approach and in 2006-07 approved 28 of the 35 mine subsidence management plans received. The remainder are currently being assessed. Assessment involves consideration of each plan by an interagency committee comprising senior personnel from the Sydney Catchment Authority, the Department of Environment and Climate Change, Department of Water and Energy, Department of Planning, the NSW Dams Safety Committee and the Mine Subsidence Board in addition to personnel from NSW DPI.

Mining industry operates to best practice health and safety standards

NSW DPI continued to focus on front-line safety activities. We also aided industry compliance with statutory obligations under the new legislative framework through education and development and review of compliance support material. In recognition of the program's success over 13 years, the Lightning Ridge Opal Mine Safety Awareness Course received the 2006 Staff Achievement Award for project excellence, customer service, sustained performance and innovation.

Other major activities included oversight of engineering standards for the design, application and testing of equipment used in NSW mines. NSW DPI monitored those organisations accredited with issuing certificates to ensure the credibility of the certification process that has replaced the previous approval system for electrical plant and equipment used in coal mine hazardous zones.

Significant issues

Water management (State Plan: E1)

NSW DPI continued to promote efficient water management at mining and processing sites in 2006-07 and worked to instil an understanding that water is a vital business and community asset. With better management increasingly important due to the drought and limited water access by mines, NSW DPI began liaising with affected mines to implement contingency plans that will allow ongoing operation with reduced supplies.

Greenhouse gas research (State Plan: P1, E3)

NSW became a member of the Cooperative Research Centre for Greenhouse Gas Technologies. The centre is one of the

world's leading collaborative research organisations focused on carbon dioxide capture and geological storage. Membership will enable NSW DPI to advocate for the state's carbon dioxide storage potential.

Enhancing community consultation and addressing concerns

As part of the allocation of the Caroon Coal Exploration Area in 2006, the Minister for Mineral Resources appointed the Hon. Garry West to chair a community committee to act as a forum for consultation and information exchange during the exploration period. The committee will help address local concerns regarding coal exploration at Caroon. Members include representatives from the community, Gunnedah and Liverpool Plains Councils, BHP Billiton and NSW DPI.

In response to issues raised by the local community, the Minister for Planning and Minister for Mineral Resources jointly announced an independent expert panel to inquire into underground coal mining in the Southern Coalfield. The terms of reference for the inquiry are to:

- review the impacts of underground mining on significant natural features including rivers and streams, swamps, and cliff lines
- advise on best practice in regard to assessing subsidence impacts; avoiding and/or minimising adverse impacts on significant natural features; and managing, monitoring and remedying subsidence
- report on the social and economic significance to the region and the state of the coal resources in the Southern Coalfield.

The panel is expected to report in late 2007.

Review of subsidence management plans (State Plan: P3)

NSW DPI commenced a review of the subsidence management plan process in line with a commitment made when the process was introduced in July 2004.

The review will focus on the streamlining of documentation, risk management and removal of duplication with other statutory requirements, including the integration of plan approval with Part 3A approvals. The findings of the Southern Coalfield Independent Expert Panel will inform the review as will industry and stakeholder consultations.

Future directions

Clean coal technology (State Plan: P1, P6, E3)

The NSW Government announced its commitment to two clean coal technology projects in March 2007. The first aims to capture and store carbon dioxide emissions in underground rock formations (geosequestration). The initial stage of the project will identify potential carbon dioxide storage sites in NSW and pave the way for a pilot geosequestration program. The second project – an Ultra Clean Coal demonstration plant

at Cessnock – will produce high purity, cleaned coal that can be burnt directly in gas turbines to generate electricity, thereby potentially reducing greenhouse gas emissions from the generator by between 20 and 30 percent.

In addition, the NSW Government established the NSW Clean Coal Technologies Working Group in late 2006 to identify priorities and projects in NSW that will reduce carbon emissions from coal. The group includes representatives from government agencies, the coal and electricity generation industry, and research organisations.

Exploration (State Plan: P1, P6, E3)

The successful New Frontiers initiative will further promote exploration opportunities in poorly understood and explored regions of NSW. The focus for 2007-08 will be on both mineral exploration and clean energy, including gas and geothermal.

Legislation (State Plan: P3)

Amendments to the environmental provisions of the *Mining Act 1992* will strengthen administration of mining activities in NSW and improve environmental outcomes without adding significantly to industry compliance costs.

Regional assessment of Western Coalfield

(State Plan: P1, P6)

After delays due to increased demand in 2006-07 for drill rigs, the assessment will continue to identify coal resources suitable for the domestic and export markets.

Mineral Resources Divisional performance

	Units	2004-05	2005-06	2006-07
Outcomes:				
NSW share of private mineral exploration in Australia	%	7.2	9.2	8.4
Value of NSW mineral production	\$m	9 200	11 700 ²	12 300 ¹
Royalties collected	\$m	396	503	489
Lost time due to injuries	no.	565	443 ²	475 ¹
Fatal injuries	no.	1	0	2
Mines operating to agreed mining operation plans	%	95	95	95
Environmental security deposits held	\$m	473	511	733
Outputs:				
Coverage of state by new standard series geoscience maps and data	km2	30 000	27 000	27 000
Titles and dealings processed within published time frames	%	90	88	81
Royalty debt level - % of total royalties	%	0.20	0.15	0.25
Safety regulation				
- Investigations (safety operations) ³	no	494	501	450 ^{1,3}
- Enforcement actions	no	411 ²	360	666 ¹
Environmental regulation				
- Audits, assessments and reviews	no	798	812	857
- Investigations and enforcements	no	45	134	75
Rehabilitation of derelict mine sites	no	50	26	37

Note:

1 forecast figures for 2006-07 may be subject to change, other data may change following audits

2 2003-04, 2004-05 and 2005-06 figures have been updated where new validated information is available

3 reporting incidents where a NSW DPI official attends (i.e. Level 2 and Level 3 investigations only)



CASE STUDY



Mine presents golden opportunities for local community

(State Plan: P1, P6, P7)

Now in full production, Barrick Gold's Cowal Gold Mine will prove a major economic boost to the local area, particularly the towns of West Wyalong, Wyalong and Forbes.

The mine employs around 260 full-time workers and 80 contractors, many of whom are locals, and spends approximately \$18 million on salaries and wages. An additional sum of around \$9 million is outlaid on goods and services.

There will also be major benefits for the Wiradjuri people, who are the Native Title Claimants to the area around Lake Cowal. These stem from an agreement between Barrick Gold and the Wiradjuri Community initiated by the Council of Elders and concluded before mine construction started in 2003. The agreement protects Wiradjuri heritage and the environment while ensuring a wide range of benefits flow to the Wiradjuri Community during the mine's estimated 13-year life.

What this means in practice is increased employment and training opportunities coupled with funding for a Wiradjuri Cultural Studies Centre.

During the advanced drilling and early pre-construction work, Barrick employed Wiradjuri people as aboriginal heritage monitors. (The area contains Aboriginal artefacts and cultural objects such as marked trees and stone axes and blades.) Working alongside the company's archaeologists, they helped to minimise any impacts on heritage sites in the mining lease. In total more than 80 Wiradjuri people were employed in a variety of jobs at Cowal up to the commencement of operations.

Since mining started, the agreement has provided tertiary scholarships and apprenticeships for 12 young Wiradjuri people. New scholarships and apprenticeships are being awarded annually. Barrick has also teamed up with Condobolin TAFE College on a new *Introduction to Mining* course. To date, 36 Wiradjuri students have completed the course, some later gaining valuable jobs at Cowal and others taking up opportunities in Condobolin and elsewhere.

Under the agreement's cultural commitments, Barrick will make an annual grant for a Wiradjuri Cultural Studies Centre to be constructed in Condobolin. The Centre will be a place where people can gather to teach and learn Wiradjuri culture.

For the Wiradjuri, the agreement with Barrick Gold marks a new beginning.

Barrick is also the major sponsor of the Lake Cowal Foundation, a non-profit environmental trust established in June 2000. Its primary goal is to protect and enhance the environment of Lake Cowal. The foundation is expected to use funds of over \$2 million for this purpose during the life of the mine.