

# A SUSTAINABLE PERSPECTIVE

Zero Harm

Sound  
Governance

Social  
Responsibility

Economic  
Contribution

## BHP BILLITON SUSTAINABILITY REPORT

Our Health, Safety, Environment and Community Performance

FULL REPORT 2005



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## About this Report

Welcome to the BHP Billiton Sustainability Report for 2005.

You will notice that this year's Report has been renamed from the BHP Billiton HSEC Report to the BHP Billiton Sustainability Report. The change reflects the further evolution of the report since we commenced public reporting on non-financial performance in 1997. Our first Report was limited to environmental performance. Safety, health and community data was included in subsequent Reports. As well as reflecting the progressive broadening of the Report to cover socio-economic and ethical issues, the title more closely aligns with [Global Reporting Initiative \(GRI\)](#) Sustainability Reporting Guidelines.

Following encouraging stakeholder feedback, we have again produced the Report in two formats: a printed summary report for general readership, and a more detailed web based report. We have endeavoured to improve the usability of the web based report this year, as the intent is to make it the key focus for the bulk of reporting. Should you wish to obtain a printed copy of the summary report, please [Contact Us](#).

Refer to the following for more information about:

- Who we are in [About Us](#)
- [Our Approach to Reporting](#)
- Report [Assurance](#)
- [What's New for 2005](#)

See our [GRI Navigator](#) to read how we have sought to meet the requirements of the GRI Guidelines, and our [Global Compact Navigator](#), which seeks to demonstrate our progress in line with our commitment to the [UN Global Compact](#).

## About Us

BHP Billiton is the world's largest diversified resources company, with a portfolio of high-quality, long-life assets and a significant pipeline of growth projects. We have around 36 000 employees working in more than 100 operations and offices in 25 countries ([see BHP Billiton Locations Map](#) PDF 159 KB).

BHP Billiton was created in 2001 through the Dual Listed Companies (DLC) merger of BHP Limited (now BHP Billiton Limited) and Billiton Plc (now BHP Billiton Plc). Headquartered in Melbourne, the Group has primary listings on the Australian and London stock exchanges.

We have adopted a business model based on customer-oriented groupings called Customer Sector Groups (CSGs). This structure reflects our focus on the needs of our customers. In March 2004, we announced that we had modified our organisational structure to streamline reporting and maximise the operational effectiveness of the Company. As a result, the existing CSGs were brought together under three broadly related business areas of Non-Ferrous Materials, Carbon Steel Materials and Energy.

Each of the CSGs is a substantial business in its own right, and several are leaders in their respective fields. They have autonomy to optimise their businesses, with clear accountabilities.

The CSGs are:

- Aluminium (mining of bauxite, refining to alumina and smelting to produce aluminium)
- Base Metals (mining of copper, lead, zinc, gold, silver and uranium, processing of copper and uranium oxide)
- Carbon Steel Materials (mining and processing of iron ore, mining of metallurgical coal and mining and smelting of manganese)
- Diamonds and Specialty Products (mining and processing of diamonds and titanium minerals, exploration and technology, production of high-analysis fertiliser)
- Energy Coal (mining of thermal coal)
- Petroleum (onshore and offshore processing of oil, gas, liquefied natural gas, liquefied petroleum gas)
- Stainless Steel Materials (mining and processing of nickel, cobalt and chrome).

The CSGs are supported by marketing 'hubs' located in The Hague and Singapore.

Annual attributable volumes of production for some of our most significant commodities have been in the order of:

- 1.3 million tonnes of aluminium and 4.1 million tonnes of alumina
- 1.0 million tonnes of copper
- 96.7 million tonnes of iron ore
- 37.3 million tonnes of metallurgical coal
- 87.4 million tonnes of thermal coal
- 3.6 million carats of diamonds
- 50.8 million barrels of crude oil and condensate
- 345.7 billion cubic feet of natural gas
- 0.1 million tonnes of nickel.

Our key markets downstream are refiners and processors of raw materials, for example, steelworks, smelters, petroleum refiners, thermal power stations and diamond cutters. For a summary of the various uses for our products, refer to [Our Resources at Work](#) (PDF 50 Kb).

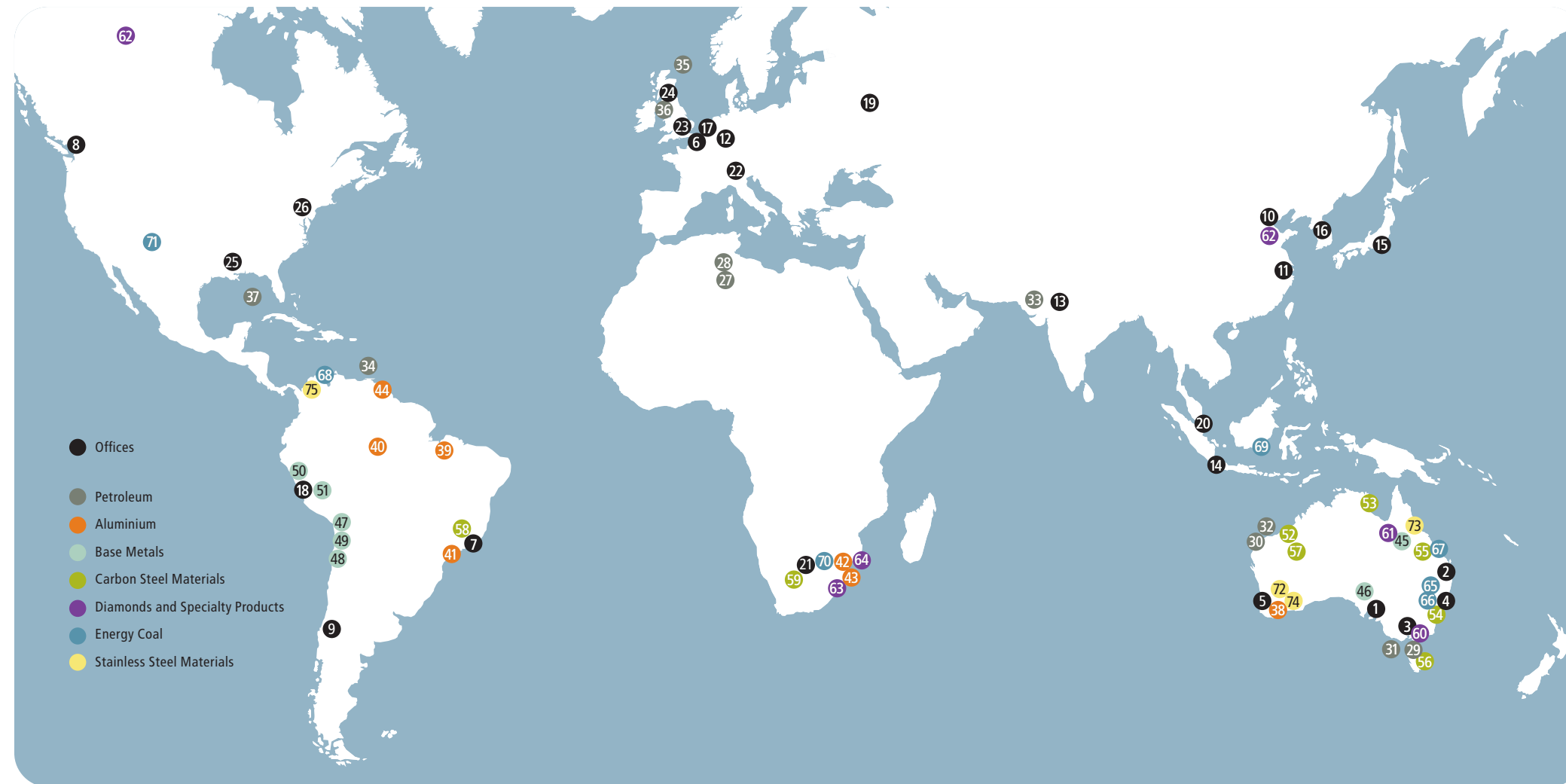
During the year, we acquired WMC Resources Ltd (WMC) and sold our Samancor Chrome business (South Africa). The hot briquetted iron facilities at the Boodarie Iron plant in Port Hedland (Australia) was also placed under care and maintenance.

BHP Billiton has an annual turnover of US\$31.8 billion, attributable profit (excluding exceptional items) of approximately US\$6.5 billion and net operating assets of US\$29.6 billion (at 30 June 2005).

Our shareholder base is widely diversified, with approximately 58 per cent of shares held in Australia and Asia, 30 per cent in the UK and Europe, and 12 per cent in Africa.

The Company aims to be diversified in terms of our markets and countries of operation, and this enhances the stability of our cash flows and capacity to invest and grow throughout the business and commodity price cycles. This stability also enables us to take a longer-term approach to all aspects of our business, including financial, social and environmental perspectives, improving our ability to deliver value for all our key stakeholders.

# BHP Billiton Locations Map



## Offices

Ref	Country	Location	Corporate Centres	Marketing Offices	Minerals Exploration Offices	Technology Centres
1	Australia	Adelaide	◆	●		
2	Australia	Brisbane	◆	●	▲	■
3	Australia	Melbourne (Global Headquarters)	◆	●	▲	■
4	Australia	Newcastle				■
5	Australia	Perth	◆	●	▲	■
6	Belgium	Antwerp		●		
7	Brazil	Rio de Janeiro	◆	●	▲	
8	Canada	Vancouver	◆	●		
9	Chile	Santiago	◆	●	▲	
10	China	Beijing	◆	●	▲	■
11	China	Shanghai		●		
12	Germany	Essen		●		
13	India	New Delhi	◆	●	▲	
14	Indonesia	Jakarta		●		
15	Japan	Tokyo		●		
16	Korea	Seoul		●		
17	Netherlands	The Hague		●		
18	Peru	Lima	◆	●	▲	
19	Russia	Moscow	◆	●	▲	
20	Singapore	Singapore		●		
21	South Africa	Johannesburg	◆	●	▲	■
22	Switzerland	Baar		●		
23	UK	London	◆			
24	UK	Sheffield		●		
25	US	Houston	◆	●		
26	US	Pittsburgh		●		

## Petroleum

Ref	Country	Site/Asset	Description	Ownership
27	Algeria	Ohanet	Joint operator with Sonatrach of wet gas development	45%
28	Algeria	ROD Integrated Development	Onshore oil development	36.04%
29	Australia	Bass Strait	The Bass Strait operations produce oil, condensate, LPG, natural gas and ethane	50%
30	Australia	Griffin	Operator of oil and gas project offshore WA	45%
31	Australia	Minerva	Operator of Minerva gas field development in the Otway Basin	90%
32	Australia	North West Shelf	One of Australia's largest resource projects, producing liquids, LNG and domestic gas	8.33–16.67%
33	Pakistan	Zamzama	Operator of onshore gas development	38.5%
34	Trinidad and Tobago	Angostura	Operator of oil field	45%
35	UK	Bruce/Keith	Oil and gas production in the UK North Sea	16–31.83%
36	UK	Liverpool Bay	Operator of oil and gas development in the Irish Sea	46.1%
37	US	Gulf of Mexico	Interests in several producing assets, the Atlantis and Neptune developments, and a significant exploration acreage position	4.95–100%
–	Various	Exploration	Exploration interests in Algeria, Australia, Brazil, Brunei, Maritime Canada, Pakistan, South Africa, Trinidad and Tobago, UK, US	–

## Aluminium

Ref	Country	Site/Asset	Description	Ownership
38	Australia	Worsley	Integrated alumina refinery/ bauxite mine	86%
39	Brazil	Alumar	Alumina refinery and aluminium smelter	36–46.3%
40	Brazil	MRN	Bauxite mine	14.8%
41	Brazil	Valesul Aluminio	Aluminium smelter	45.5%
42	Mozambique	Mozal	Aluminium smelter	47.1%
43	South Africa	Hillside/Bayside	Two aluminium smelters	100%
44	Suriname	Paranam	Alumina refinery and bauxite mines	45%

## Base Metals

Ref	Country	Site/Asset	Description	Ownership
45	Australia	Cannington	Silver, lead and zinc mine in north-west Queensland	100%
46	Australia	Olympic Dam	Large underground copper/uranium mine in South Australia	100%
47	Chile	Cerro Colorado	Copper mine in northern Chile, producing cathode copper through a SX-EW leach operation	100%
48	Chile	Escondida	The world's largest copper mine, located in northern Chile	57.5%
49	Chile	Spence	Open cut copper mine under development	100%
50	Peru	Antamina	Large copper-zinc mine	33.75%
51	Peru	Tintaya	Produces copper concentrate and copper cathode within the 'Skarn Belt' of south-eastern Peru	99.95%

## Carbon Steel Materials

Ref	Country	Site/Asset	Description	Ownership
52	Australia	Boodarie Iron	Hot briquetted iron plant (permanently closed 24 August 2005)	100%
53	Australia	GEMCO	Producer of manganese ore (part of Samancor)	60%
54	Australia	Illawarra Coal	Three underground coal mines	100%
55	Australia	Queensland Coal	World's largest supplier of high-quality metallurgical coal for steel production	50–80%
56	Australia	TEMCO	Producer of manganese alloys (part of Samancor)	60%
57	Australia	WA Iron Ore	Pilbara iron ore mine, rail and port operations	85–100%
58	Brazil	Samarco	An efficient low-cost producer of iron ore pellets	50%
59	South Africa	Samancor Manganese	Integrated producer of manganese alloys and ferroalloys	60%

## Diamonds and Specialty Products

Ref	Country	Site/Asset	Description	Ownership
60	Australia	Melbourne	Hi Fert head office	33.3%
61	Australia	Southern Cross Fertilisers	Mt Isa sulphuric acid manufacture and Phosphate Hill phosphate mine and plant (formerly known as Queensland Fertilizer Operations)	100%
62	Canada	Yellowknife	EKATI diamond mine in the Northwest Territories of Canada	80%
63	South Africa	Richards Bay Minerals	World's largest producer of titanium slag	50%
64	Mozambique	Corridor Sands	Titanium minerals project	90%

## Energy Coal

Ref	Country	Site/Asset	Description	Ownership
65	Australia	Hunter Valley Energy Coal	Mt Arthur Coal	100%
66	Australia	Illawarra Coal	Marketing agent for energy coal output	–
67	Australia	Queensland Coal	Marketing agent for energy coal output	–
68	Colombia	Cerrejón	Largest coal producer in Colombia	33.3%
69	Indonesia	PT Arutmin	Exclusive agent for coal output	–
70	South Africa	Ingwe	Largest coal producer in South Africa	100%
71	US	New Mexico Coal	Mine-mouth operations	100%

## Stainless Steel Materials

Ref	Country	Site/Asset	Description	Ownership
72	Australia	Nickel West	Nickel assets including Mt Keith and Leinster operations, Kalgoorlie nickel smelter, Kwinana nickel refinery, Kambalda concentrator	100%
73	Australia	QNI Yabulu Refinery	The Yabulu refinery is one of the world's major laterite nickel-cobalt processing plants	100%
74	Australia	Ravensthorpe Nickel Project	Ravensthorpe nickel mine and processing facility (currently in development)	100%
75	Colombia	Cerro Matoso	Integrated ferronickel mining and smelting complex in north Colombia	99.8%



# Our Resources at Work

Customer Sector Group	Petroleum	Aluminium	Base Metals					Carbon Steel Materials			Diamonds and Specialty Products		Energy Coal	Stainless Steel Materials			
Commodity	OIL AND NATURAL GAS	ALUMINIUM	COPPER	GOLD	LEAD	SILVER	URANIUM*	ZINC	MANGANESE	IRON ORE	COKING COAL	DIAMONDS	TITANIUM	THERMAL COAL	CHROME	NICKEL	COBALT
<b>Energy</b>	Fuel, heating, electricity generation	High-tension power lines, wires and cables	Wire and cables, electrical wiring in buildings, electrical generators and motors		Lead-acid storage batteries (car batteries), remote area power storage		Electricity generation	Zinc carbon batteries	Dry cell batteries					Electricity generation, heating		Electricity generation turbines, batteries	Rechargeable lithium batteries for mobile telephones and laptop computers, jet engine turbines
<b>Construction</b>	Carpets, paints, plastics	Door and window frames, wall cladding, roofing, awnings	Electrical wiring, plumbing pipes and tanks, roofing, light fixtures, treated timbers	Gold leaf for decoration	Roofing, plumbing, soundproofing, stained glass windows	Solder		Roofing, fences, doors, handles, paints, plumbing, nuts and bolts		Steelmaking, buildings, bridges, tools, cranes		Diamond grit and powder impregnated rock drilling bits, masonry drilling, machine tool tips and cutting discs	Pigment for paints, fabric, plastics, paper		Treated timbers, street furniture, building cladding, stainless steel	Street furniture, building cladding, stainless steel	Tyre adhesives, magnets, carbide cutting tools
<b>Industry</b>	Electricity generation, transport, furnace fuel	Propellers, body sheet (for ships, aeroplanes, vehicles), gearboxes, motor parts, wires, cables, packaging	Wires and cables, electrical wiring in buildings and vehicles, robotics, airconditioning and refrigeration units, scientific instruments	Electronics for computers, industrial equipment, aerospace technology, tinted-glass windows	Lead foil, radiation shields, toxic waste storage containers, dyes, solder	Photographic paper and film, medicines, super conductors	Electricity generation	Galvanising and corrosion protection, car bodies, carburettors, tyres	Steel alloys	Steelmaking, transport equipment, motor vehicles, farm machinery	Steelmaking	Polishing compounds in fine optical surfaces, jewel bearings, wire drawing dies	Titanium metal for aerospace equipment, engines, abrasives, ceramics, robotics	Electricity generation, heating, cement	Pigments for paints, food and beverage equipment, vehicles	Computer hard disks, surgical implements and implants, jet engines, food and beverage equipment, pharmaceutical equipment, vehicles, metal hardening	Paints, enamels, glazes
<b>Household appliances</b>	Plastic components, packaging	Components for TV sets, radios, refrigerators and airconditioners	Electrical appliances, telephone cables, microwave equipment, radio and TV sets	Electronic technology	Electronic and electrical appliances such as radios and TV sets (soldered connections)			Door handles and other household components, brass fittings		Refrigerators, washing machines, ovens		Knife 'sharpeners'	Paper products, computer and TV screens		Electrical appliances	Colour TV tubes, kitchen sinks, white goods	Videotape coatings, heating elements on electric stoves
<b>Personal use</b>	Electricity, fuel for vehicles, fuel for cooking and heating, clothing fabric, plastic toys, pens	Beverage cans, bottle tops, foil wrap, foil semi-rigid containers, kettles and saucepans, cutlery, tennis racquets, softball bats, indoor and outdoor furniture, bicycles, vehicles	Ornaments, telephones, cooking utensils, home heating systems, decorative applications, coins	Jewellery, watches, currency, dentistry, decoration for dinnerware and ornaments	Computers, leadlight windows, glass in TV and computer screens for radiation protection	Jewellery, watches, dinnerware and ornaments, mirrors, cutlery, currency, medallions	Electricity	Medications, zinc cream, TV sets, computer parts, toys	Glass, ceramics, dry cell batteries	Food cans, vehicles, tools, cutlery, jewellery, watches		Jewellery	Cosmetics and sunscreens, fabric, clothing, jewellery, heart pacemakers, hip replacements, food colouring	Electricity, fuel for cooking and heating	Bathroom and kitchen fittings	Kitchen utensils, coins, mobile telephones, bathroom and kitchen fittings and fixtures	

\* Safeguards are in place to ensure that Uranium produced by our Olympic Dam operation is used only for power generation in countries which are signatories to the Nuclear Non-Proliferation Treaty and have bilateral agreements with the Australian Government.

## Our Approach to Reporting

Our aim is to provide a balanced and reasonable representation of our Company's economic, environmental and social performance.

We are continually improving our reporting systems and endeavour to present useful and accurate information. Further background is available on our approach to reporting, [why we report](#), [who we report to](#), the [basis of our data](#) and a guide to our [terminology](#).

The 2005 Full Sustainability Report has been prepared in accordance with the [Global Reporting Initiative \(GRI\) 2002 Sustainability Reporting Guidelines](#). It should be recognised that, due to the size and complexity of our business, judgements have had to be made regarding the extent of the information presented in relation to each GRI Indicator.

While every effort has been made to ensure the accuracy of the information, including the figures, in this Report, the data are derived from our many operations around the world and, in some cases, grouped data are not strictly comparable. Anyone seeking to rely on information in this Report or seeking to draw detailed conclusions from the data should contact the Company for verification and assistance.

Your comments on the content and usability of our Sustainability Report are appreciated as they are useful in preparing future Reports. Please use our [Feedback](#) mechanism if you have any suggestions for our future Sustainability Reports.

If you have any further queries, please do not hesitate to contact us:

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Our past Sustainability (previously Health, Safety, Environment and Community) Reports are available on our [website](#).

Refer to Report Packs for PDFs of the Report or you can order a hard copy of our printed Summary Report from [hsec@bhpbilliton.com](mailto:hsec@bhpbilliton.com)

## Purpose of Reporting

Our Sustainable Development Policy states that we are committed to 'regularly review our performance and and publicly report our progress'.

We make this commitment to publicly report our sustainability performance because we recognise it is important:

- as a useful demonstration of accountability and transparency
- as a central element of effective stakeholder engagement
- as a management tool, providing a collation of performance data and articulation of key issues and related management approaches.

Our reporting approach is evolving in line with changing stakeholder and societal expectations, report feedback received and our own learnings. We have reported annually since 1997 when we began with environmental reporting. By 2000, we had produced our first Environment and Community Report, and by 2001 this report had evolved into our first integrated Health, Safety, Environment and Community (HSEC) Report. In 2002, we adopted the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines and have been endeavouring to progressively improve our compliance with these guidelines.

Our 2005 Sustainability Report represents the next step change in this evolution. The change has been a result of the increasing breadth of our reporting, reflecting the maturing of BHP Billiton's approach to sustainable development through the improved integration of social, environmental, ethical and economic factors into all that we do.

## Audience

Our Report is designed to meet the requirements of a diverse audience, ranging from those with minimal knowledge of our operations, to those who are familiar with our business and processes. Our stakeholders range from employees, local communities, shareholders and contractors, to non-government organisations, unions, socially responsible investment analysts, governments and academia. For more information see [Our Stakeholders](#).

It remains an ongoing challenge for us to ensure we meet the needs of, and remain relevant to, such a broad range of stakeholder groups. An important stage in planning for our Report is engaging with different stakeholders to assess their reaction to both content and presentation. In addition to the feedback received via our online feedback mechanism, we conduct annual stakeholder dialogues to ascertain the effectiveness of the Report and opportunities for improvement. A summary of the results of this process conducted in preparation of our 2005 Report can be read at [Report Dialogue](#).

Given the size and nature of our organisation, we recognise that it is not possible for the Company's Sustainability Report to meet the information needs of all our stakeholders - particularly at the local and regional level. We therefore require our operations to produce annual public [site HSEC or sustainability reports](#). It is the intent of these site-based reports to provide a review of the HSEC issues and performance specific to their site circumstances, regional context and stakeholder needs.

## Indicator Selection

The decision as to which indicators are reported within our Sustainability Report is based on:

- consideration of the key health, safety, environment, community and socio-economic risks of our business
- consideration of stakeholder feedback and commentary with regards to issues of materiality
- a desire to continually improve our 'in accordance' reporting with the Global Reporting Initiative (GRI) 2002 Sustainability Reporting Guidelines
- our support of industry-based reporting initiatives such as the recently introduced pilot [GRI Industry Sector Supplement for Mining and Metals](#)
- meeting our public commitments.

Refer to [Report Dialogue](#) for further details on the outcomes of our stakeholder consultation processes and [Our Sustainability Challenges](#) for details on how we have determined the material non-financial matters for our business.

## Data Collection and Basis

Our aim is to provide a balanced and reasonable presentation of the Company's health, safety, environmental, community and socio-economic performance.

The statistics in this Report cover the facilities owned and operated by BHP Billiton during the 12-month period to 30 June 2005. Data is reported on a 100 per cent basis for facilities operated by BHP Billiton irrespective of our equity share, unless otherwise stated. Joint venture projects where we are not the operator are excluded unless expressly stated. All dollar figures in the Report are US unless otherwise indicated. Throughout the report, tabulated figures in italics indicate that this figure has been adjusted since it was previously reported.

BHP Steel began trading on the Australian Stock Exchange as a separate listed company in July 2002 and was subsequently renamed BlueScope Steel. The data in this report have been restated to facilitate year-to-year comparison of our performance without BHP Steel.

BHP Billiton took control of WMC Resources Ltd (WMC), effective 3 June 2005. Due to the timing of this transaction in the 2005 reporting year and variations between the two companies' data collection and reporting systems, our 2005 Sustainability Report does not reflect data from WMC. This data will be integrated into our 2006 reporting cycle. In the interim, historic WMC sustainability data can be viewed online in the [WMC sustainability reports](#).

Effective 1 June, we sold our Samancor Chrome business (South Africa). For the purposes of this Report, performance data for these interests is included to the point of divestment. In addition, during the reporting period, our Boodarie Iron facility (Australia) was placed under care and maintenance; data continues however to be collected.

We are continuously improving our reporting systems and endeavour to present useful and accurate information. While every effort has been made to ensure the accuracy of the information, including the figures, in this Report, the data is derived from our many operations around the world and, in some cases, grouped data is not strictly comparable. In addition, as we seek to improve our data collection processes, data may not be strictly comparable year on year. To date, this is particularly the case within our Socio-Economic section, as we are still refining processes for employee relations and supply data.

Anyone seeking to rely on information in this Report or seeking to draw detailed conclusions from the data should contact the Company for verification and assistance.

## Explanation of Company terms

BHP Billiton is a Dual Listed Company comprising BHP Billiton Limited and BHP Billiton Plc and their subsidiaries. The two entities continue to exist as separate companies but operate as a combined group known as BHP Billiton.

The headquarters of BHP Billiton Limited and the global headquarters of the combined BHP Billiton Group are located in Melbourne, Australia. BHP Billiton Plc is located in London, UK. Both companies have identical Boards of Directors and are run by a unified management team. Throughout this Report, the Boards are referred to collectively as the Board. The terms BHP Billiton, the Company and the Group refer to the combined group, including both BHP Billiton Limited and subsidiary companies and BHP Billiton Plc and subsidiary companies.

For further explanation of the terms used throughout this Report, refer to our [Glossary](#).

### **BHP Billiton Limited. ABN 49 004 028 077.**

Registered in Australia.

Registered Office:

BHP Billiton Centre, 180 Lonsdale Street, Melbourne, Victoria 3000, Australia.

### **BHP Billiton Plc. Registration Number 3196209.**

Registered in England and Wales.

Registered Office: Neathouse Place, London SW1V 1BH, United Kingdom.

## Glossary of Terms

Term	Definition
<b>Assurance</b>	An evaluation method that uses a specified set of principles and standards to assess the quality of a Report and the underlying systems, processes and competencies that underpin performance as specified in the Report. Assurance includes the communication of the results of this evaluation to provide credibility to the subject matter for its users.
<b>bcms</b>	billion bank cubic metres
<b>BHP Billiton</b>	The Dual Listed Company comprising BHP Billiton Limited and BHP Billiton Plc and their subsidiary companies.
<b>BHP Billiton Group</b>	The whole BHP Billiton organisation.
<b>Biodiversity</b>	The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.
<b>The Company</b>	BHP Billiton
<b>CO<sub>2</sub>-e</b>	Carbon dioxide equivalent (CO <sub>2</sub> -e) is the basis of comparing the warming effect of greenhouse gases such as carbon dioxide, methane and perfluorocarbons.
<b><a href="#">Charter</a></b>	The set of clearly defined values applicable to each employee of the BHP Billiton Group.
<b>CIFR</b>	Classified Injury Frequency Rate - the number of classified injuries per million work hours (a classified injury is any workplace injury that has resulted in the person not returning to their unrestricted normal duties after the day on which the injury was received).
<b>Controlled Site</b>	A site owned and operated wholly by BHP Billiton or managed by the Company in a joint venture operation.
<b>Controlled activities</b>	These are work-related activities where BHP Billiton is the operator and can set HSEC standards and directly supervise and enforce their application. Incidents arising from controlled activities are reported, investigated and included in HSEC performance measures in accordance with BHP Billiton requirements.
<b>Contractor</b>	An individual, company or other legal entity that carries out work or performs services pursuant to a contract for service. This includes sub-contractors.
<b>CEMP</b>	Crisis and Emergency Response Program
<b>CSIRO</b>	Australian Commonwealth Scientific and Industrial Research Organisation
<b>Customer Sector Group (CSG)</b>	A primary operating division of the Company that groups together commodities for a common customer sector.
<b>DLC</b>	Dual Listed Companies
<b>Earthmoving equipment (EME)</b>	Excavators, trucks, dozers and support equipment used in our operations to move earth.

Term	Definition
<b>EWRM</b>	Enterprise-Wide Risk Management - a structured and consistent approach that aligns strategy, processes, people, technology and knowledge with the purpose of evaluating and managing the uncertainties the Company faces to create shareholder value.
<b>Extractive Industries Transparency Initiative</b>	A multi-stakeholder initiative launched at the World Summit on Sustainable Development in Johannesburg, September 2002. Its aim is to increase transparency about payments and revenues to governments by companies in the extractive industries.
<b>Fatal Risk Control Protocols</b>	A set of regulations, mandatory at all our operated sites and operations, which prescribe requirements applicable to identified key risk areas with a view to eliminating fatalities from our operations.
<b>FPSO</b>	Floating Production, Storage and Offloading Facility
<b>Footprint</b>	The area affected or covered by BHP Billiton operations.
<b>Forum on Corporate Responsibility (FCR)</b>	A forum that brings together representatives of our senior management team, the leaders of several key non-government organisations and community opinion leaders to discuss and debate social and environmental matters relevant to the Company.
<b>Greenhouse gases (GHG)</b>	Gaseous emissions to the atmosphere that may contribute to global warming.
<b><a href="#">Global Reporting Initiative (GRI)</a></b>	A multi-stakeholder process developing and disseminating globally applicable sustainability reporting guidelines for organisations to report on the economic, environmental and social dimensions of their activities, products and services.
<b><a href="#">Guide to Business Conduct</a></b>	The set of guidelines, published in eight languages, that provides all our employees and contractors with direction and advice on carrying out business and interacting with governments, communities and business partners.
<b>Global Ethics Panel</b>	A panel of representatives from our Corporate functions and businesses that reviews all business conduct cases raised throughout the Company.
<b>Hierarchy of control</b>	<p>A series of controls which should be applied in the following order (a number of these options may be considered and applied individually or in combination):</p> <ul style="list-style-type: none"> <li>● Eliminate: completely eliminating the hazard</li> <li>● Substitute: replacing the material or process with a less hazardous one</li> <li>● Redesign: redesigning the equipment or work processes</li> <li>● Separate: isolating the hazard by guarding or enclosing it</li> <li>● Administrative: providing controls such as training, procedures, etc.</li> <li>● Personal Protective Equipment / Pollution control: using properly fitted PPE and/or pollution control equipment where other controls are not practical. PPE and pollution control devices include impact minimisation equipment such as spill clean up material or dust suppression measures.</li> </ul>



<b>Term</b>	<b>Definition</b>
<b>HIV/AIDS</b>	AIDS is a disease, caused by the human immunodeficiency virus (HIV), that destroys the body's white cells, causing illness and, ultimately, death.
<b>HSE Committee</b>	Health, Safety and Environment Committee - a subcommittee of the Board and the Company's peak HSE governance body.
<b>HSEC</b>	Health, Safety, Environment and Community
<b>HSEC Management Standards</b>	A set of 15 management standards, mandatory at all our operated sites and operations, that form the basis for the development and application of HSEC management systems at all levels of the Company.
<b>HSEC targets</b>	A set of goals and requirements specified for our sites and operations to achieve, covering management systems, health, safety, environment and community performance measures. A scorecard on performance against the targets is included in our Sustainability Report.
<b>Human rights</b>	Basic standards of treatment to which all people are entitled, regardless of nationality, gender, race, economic status or religion.
<b>ICAM</b>	Incident Cause and Analysis Methodology
<b>Indigenous peoples</b>	Those people who are the descendants of the original inhabitants of a country or a region, with a distinct social or cultural identity that may be vulnerable or disadvantaged in the current social and economic context.
<b>ISO 9000</b>	International standard for quality management. It is intended to help an organisation enhance customer satisfaction by meeting customer and applicable regulatory requirements and to improve its performance in this regard.
<b>ISO 14001</b>	International standard for environmental management. It is intended to help an organisation to minimise harmful effects on the environment caused by its activities and to improve its environmental performance.
<b>IUCN protected area categories</b>	The World Conservation Union (IUCN) defines a protected area as 'an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means'. IUCN categorises protected areas by management objective and has identified six distinct categories of protected areas. (See <a href="http://www.iucn.org">www.iucn.org</a> )
<b>Kilolitre (kL)</b>	One kilolitre is equal to one thousand litres.
<b>Licence to operate</b>	Securing and maintaining the trust and confidence of a community and regulators in order to set up and conduct business.
<b>Lifecycle Assessment/Analysis</b>	A detailed examination of the full lifecycle of a product, process, system or function.
<b>Megalitre (ML)</b>	One megalitre is equal to one million litres.

Term	Definition
<b>Monitored activities</b>	These are activities where BHP Billiton can influence but cannot set HSEC standards and cannot directly supervise and enforce their application. Monitored activities include all situations where BHP Billiton is involved, excluding controlled activities. Incidents arising from monitored activities are, where possible, reported and investigated in accordance with Company requirements, but are not included in BHP Billiton HSEC performance measures.
<b>MMSD</b>	Mining, Minerals and Sustainable Development study (1998) of the global mining industry's current and potential contribution to sustainable development.
<b>MSDS</b>	Material Safety Data Sheet - prepared for each of our products and which identifies potential health, safety and environmental aspects associated with their use.
<b>NGO</b>	Non-government organisation
<b>OHSAS 18001</b>	An international occupational health and safety management system specification. It is intended to help an organisation to control occupational health and safety risks.
<b>Perfluorocarbons</b>	Group of chemicals composed of carbon and fluorine produced by process disturbances during the aluminium smelting process.
<b>Petajoule (PJ)</b>	One petajoule is equal to 10 <sup>15</sup> joules
<b>PPE</b>	Personal protective equipment
<b>Precautionary approach</b>	Precautionary approach emerged from Article 15 of the Rio Principles, which states, 'In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation'. (See <a href="http://www.unep.org/unep/rio.htm">www.unep.org/unep/rio.htm</a> )
<b>R&amp;D</b>	Research and development
<b>REACH</b>	New EU regulatory framework on chemicals - Registration, Evaluation and Authorisation of Chemicals,
<b>Risk</b>	Exposure to the consequences of uncertainty. It has two dimensions, the likelihood of something happening and the consequences if it were to happen.
<b>Significant incident</b>	An environmental incident classified as level 3 or above, or a safety incident classified 4 or above in the <a href="#">BHP Billiton Consequence Severity Table</a> .
<b>Sites</b>	The individual operating assets of BHP Billiton. Also refer to <a href="#">Controlled Site</a> .

Term	Definition
<b>Sphere of Influence</b>	<p>The term used to describe the role BHP Billiton can take to manage human rights across its various relationships. In broad terms there are two levels of influence as they apply to BHP Billiton sites:</p> <ul style="list-style-type: none"> <li>● Direct control and responsibility for human rights, such as for employees and contractors</li> <li>● Influencing and contributing to the realisation of human rights in conjunction with others, such as suppliers.</li> </ul> <p>It is recognised, however, that in certain circumstances it may also be appropriate to contribute to the promotion of human rights, with, for example, host governments.</p>
<b>SRI</b>	Socially Responsible Investment - a sector of the financial community that takes an organisation's environmental and social performance into account when judging its investment rating.
<b>Stakeholders</b>	Any person, group or interested party that may be affected by the financial or safety, health, environment and community performance of BHP Billiton or its operations.
<b>Stewardship</b>	A life cycle approach to identify, manage and reduce HSEC impacts relating to BHP Billiton resources, processes, materials and products, including the involvement and sharing of responsibility with suppliers and customers where appropriate.
<b>Sustainable development</b>	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs - as defined by the World Commission on Environment and Development (Brundtland Commission) 1987.
<b><a href="#">Sustainable Development Policy</a></b>	The Company's primary statement of principles applicable to health, safety, environment and community matters. The Policy is implemented via the HSEC Management Standards and Protocols.
<b>TRIFR</b>	Total Recordable Injury Frequency Rate - the total number of fatalities and injuries resulting in lost time, restricted work duties and medical treatment.
<b>Tollgate</b>	A review system or procedure that must be satisfied before proceeding to the next stage of a project or process.
<b>WRI-WBCSD Greenhouse Gas Protocol</b>	A measurement protocol developed jointly by the World Resources Institute and World Business Council for Sustainable Development (see <a href="http://www.ghgprotocol.org">www.ghgprotocol.org</a> ).
<b>UN</b>	United Nations
<b>UNEP</b>	United Nations Environment Program aims to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations (see <a href="http://www.unep.org/">http://www.unep.org/</a> )
<b>Value Add</b>	As defined by GRI Mining and Metals Sector Supplement. Total revenues less total cost of procurement.
<b>Zero Harm</b>	Our aspirational goal, expressed in our Sustainable Development Policy, that reflects our continual drive to minimise harm to people or the environment from our activities.

## Assurance

In 2005, BHP Billiton commissioned [URS Australia Pty Ltd](#) (URS) to provide an independent review of the 2005 Sustainability Report. The intent of the review was to provide an opinion on:

- data accuracy, capture processes and controls
- the corporate processes and mechanisms in place for the preparation and delivery of the Report
- adequacy and relevance of information contained in the Report
- 'In accordance' claim with regards to the Global Reporting Initiative 2002 Sustainability Reporting Guidelines.

URS was requested to undertake the assurance in line with the requirements of the [Accountability AA1000 Assurance Standard](#), seeking demonstration of materiality, completeness and responsiveness of the Report.

For further details see:

- [URS Assurance principles](#) (PDF 93 Kb)
- [URS Assurance statement](#) (PDF 93 Kb)

See [Audt and Self Assessment](#) for details on our internal assurance processes.



# Assurance Principles

## Public Report Verification/Assurance – Asia Pacific

These principles have been adopted to achieve the following objectives:

- ◆ A consistent approach to public report verification/assurance projects throughout the region
- ◆ Maintenance of the independence and integrity of the verification/assurance process.

The following activities will be regarded as a conflict to the verification/assurance process:

- ◆ Participation in the design, development or implementation of the client reporting and monitoring systems
- ◆ Review of work and/or data that has been substantially prepared by URS or is fundamentally based on URS data or design
- ◆ Participation in an active creative manner in the development of the client public report including:
  - Participating in the decision making process regarding its production/preparation
  - Giving specific advice towards its development and implementation that does not directly relate to the verification/assurance or clarification resulting from the verification/assurance process , e.g. advice on layout and content
  - Preparing text (other than the verification/assurance statement or GRI content reviews) for inclusion in it
- ◆ Promotion of other URS services or activities.

All verification/assurance projects will:

- ◆ Prior to commencement have review carried out through the standard URS Conflict of Interest procedure to ensure an appropriate level of impartiality
- ◆ Define a scope of the verification/assurance (including limitations and qualifications) with the client at the start of the project
- ◆ Document all data reviews and site visit interviews through a project specific protocol
- ◆ Provide a supporting document to the client as back-up to the verification/assurance statement; this may take the form of a Verification/Assurance Report, potentially made available by the client to the public.

The URS verification/assurance team will:

- ◆ Comprise individuals who are experienced in the verification/assurance of public reports and accredited by the Asia Pacific Peer Review Panel\*
- ◆ Be led by an experienced professional approved by the Asia Pacific Peer Review Panel\*
- ◆ Comprise URS employees who have completed the standard URS Conflict of Interest training and contractors who have been counselled on URS Conflict of Interest principles; as such the URS team will be able to demonstrate a level of impartiality with respect to the organisation being reviewed
- ◆ Be able to add value during assessments by identifying opportunities for improvement to future reports
- ◆ Explain the verification/assurance findings without giving prescriptive advice or consultancy
- ◆ Keep the client informed throughout the verification/assurance process, in particular through introduction and close-out meetings during site inspections.

The verification/assurance statement will:

- ◆ Only be finalised after review of the final draft of the public report
- ◆ Be peer reviewed by an independent member of the Asia Pacific Peer Review Panel\* prior to release
- ◆ Include a description of the scope of the verification/assurance process including areas or subjects that have been excluded
- ◆ Include a description of the independence from the data being verified
- ◆ Confirm that URS has no conflict of interest in carrying out the verification/assurance work, including a declaration of the extent of other work carried out for the client including the financial value of that work for the previous 3 years
- ◆ Verifier's/assurance provider's findings including an opinion on the accuracy, completeness, reliability and balance of the report as required by the URS brief
- ◆ Verification/assurance standards referenced
- ◆ Date of the verification/assurance, which should be post the reporting period.



# Assurance Statement

URS Australia Pty Ltd (URS) was commissioned by BHP Billiton to provide an independent review of their 2005 Sustainability Report (the "Report"). The Report covers the global operations of BHP Billiton for sites over which it has operational control. The Report relates to the 12 months to 30 June 2005.

## OBJECTIVES

The objectives of the independent review were to provide an opinion on:

- a) data accuracy, capture processes and controls;
- b) the corporate processes and mechanisms in place for the preparation and delivery of the Report;
- c) adequacy and relevance of information contained in the Report; and
- d) compliance of the Report against the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines 2002.

## SCOPE OF WORK

The URS review of BHP Billiton sites' health, safety, environmental, community and socio-economic performance was addressed through:

- ◆ visits to 10 sites located in North America (Navajo), South America (Tintaya), Australia (Cannington, GEMCO, Minerva and Ravensthorpe) and Southern Africa (Metalloys, Ingwe Mine Closure Operations and Mozal) and the Technology Centres in Melbourne, Newcastle and Johannesburg;
- ◆ review of case studies contained in the Report pertaining to the sites visited by URS;
- ◆ review of the understanding by operations of BHP Billiton's Sustainability Challenges; and
- ◆ interviews with relevant BHP Billiton and contractor personnel.

URS reviewed the corporate processes and mechanisms in place for the preparation and delivery of the 2005 Sustainability Report, in accordance with the AA1000 Assurance Standard, through:

- ◆ reviewing data collation, transcription and reporting processes at corporate headquarters in Melbourne;
- ◆ cross-checking of a selection of reported data from site questionnaires for approximately 30% of sites;
- ◆ reviewing of data trails from site retrieval to final report for selected material parameters; and
- ◆ reviewing of report drafts and the final Report for significant anomalies.

The data and information was assessed on the basis of the three AA1000 principles of completeness, materiality and responsiveness.

URS also assessed the Report against the GRI Sustainability Reporting Guidelines 2002 to confirm that the Report has been prepared in accordance with these Guidelines.

Whilst the URS scope of work did not allow detailed review of all data sets contained in the Report, it was designed to provide a representative sample. However, the scope specifically excluded verification of data relating to site ownership, commodity production and group-wide financial information.

Additionally, the scope did not include any data or statements pertaining to the acquisition of Western Mining Corporation (WMC) by BHP Billiton. The extrapolation of performance data of the Samancor Chrome business unit, divested during the reporting period was also not included in the scope.

## URS INDEPENDENCE AND IMPARTIALITY

The data and information in the Report reviewed by URS does not include any work with which URS has had substantial involvement. URS has not been involved in the design or compilation of the Report or decisions regarding its content (except by way of this review).

URS, its parent companies and related companies have previously been engaged by BHP Billiton and its subsidiary companies and anticipates further engagements in relation to the provision of consultancy advice.

The average annual value of work carried out by URS Corporation globally on behalf of BHP Billiton over the 3 year period to March 2005 is approximately US\$1.6 million per year. This represents less than 0.05% of annual URS Corporation gross revenue based on our 2004 reporting year.

URS Corporation does not make any direct investment in any member of the BHP Billiton Group or their business interests and has no commercial interests other than as a service provider to BHP Billiton.

All team members were deemed competent in accordance with the URS Assurance Principles and their expertise and qualifications have been communicated to BHP Billiton.

## FINDINGS – OVERALL

Overall, URS is of the opinion that the Report fairly represents the health, safety, environment, community and socio-economic performance of BHP Billiton within



# Assurance Statement

the context of its review. URS is also of the opinion that the Report has been prepared in accordance with the GRI Sustainability Reporting Guidelines 2002 and the Mining and Metals Sector Supplement (Pilot Version 1.0).

In conjunction with this Statement, URS will be providing a supporting report to BHP Billiton that provides details of the corporate data review and the site reviews.

During the site reviews, URS observed a substantial degree of commitment to stakeholder engagement and support at all sites across health, safety, environment, community and socio-economic issues. In particular, BHP Billiton's support of community health and socio-economic programs in the South American and Southern African regions is to be commended, and reinforces the commitments and values presented in the Company Charter and the Sustainability Policy.

In reviewing information prepared for the Report, URS has identified a number of areas that BHP Billiton should consider as improvements to its reporting and performance monitoring systems. These include the following:

- Streamline the existing data management system currently in use at Corporate, to minimise the number of manual transcription processes;
- First Priority reporting system – continued training and integration of the reporting system into all facets of operation, including educating site personnel on their responsibility for safety data; and
- Increasing the level of knowledge and understanding on site with respect to the role of the HSEC questionnaire and the reporting of Company non-financial performance.

## FINDINGS – MATERIALITY

During our corporate data review some minor inconsistencies were noted in data results in less than 1% of data reviewed.

## DISCLAIMER

*It should be noted that the veracity of the information summarised in the Report is dependent upon the uniformity, consistency and thoroughness of site/operational staff reporting all relevant matters. Whilst URS identified a good appreciation of BHP Billiton's Sustainability Challenges and site specific initiatives at site level, URS did not and can not determine precisely the uniformity, consistency and thoroughness of reporting. URS has prepared this Statement for the use of BHP Billiton in accordance with the usual care and thoroughness of the consulting profession. The opinions provided are based on generally accepted practices and standards at the time they were prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Statement. To the extent permitted by law, URS excludes all liability that may arise from the professional advice contained in this Statement. This Statement must be read in conjunction with the supporting document prepared by URS. No responsibility is accepted for use of any part or all of this Statement in any other context or for any other purpose or by third parties. No third party is entitled to rely on any matter contained in this Statement without URS's prior consent in writing. Neither URS's name nor the material submitted in this Statement may be included in any prospectus or use in offering or representations in connection with the sale of securities or participation interest to the public without URS's prior consent in writing. URS owes no duty of performance to any party other than our contracted client.*

Inconsistencies noted during this review were conveyed to, and corrected by, BHP Billiton prior to finalisation of the Report.

Additionally, inconsistencies noted during the site reviews, were conveyed to the BHP Billiton Reporting team, and data and information were amended accordingly. During this review, we did not identify any inconsistencies that would have a material impact on data and statements included in the Report.

## FINDINGS – COMPLETENESS

Based on our review URS considers that the Report appropriately describes the process BHP Billiton has for identifying issues, impacts and stakeholder views considering the size and complexity of the organisation. These have been adequately discussed and presented within the Report. It was evident during our review that BHP Billiton has continued its efforts towards the company-wide implementation and integration of systems and standards to enhance consistency across the company.

## FINDINGS – RESPONSIVENESS

During this review, we noted a sound appreciation of BHP Billiton's Sustainability Challenges and site specific programs at both a corporate and site level. Based on the scope of work undertaken, we conclude that the Report reliably describes the mechanisms BHP Billiton use to respond to significant health, safety, environmental, community and socio-economic issues, as well as effectively engaging its relevant stakeholders.

**2 September 2005**  
**Melbourne**



**URS Australia Pty Ltd**

## What's New for 2005

This year, we have implemented a number of improvements to our online Report in response to feedback from users. Some of these improvements include:

- improved website functionality of the Report
- a [Browsing Guide](#) to guide users to sections of most relevance to them
- a search engine for easier navigation of the online Report
- more detail in our [Case Studies](#)
- more detail about our [HSEC performance](#), including [Customer Sector Group Performance](#) reviews
- a [Key Sustainability Data Summary](#) to enable year-on-year comparison of key sustainability data
- information on the process and criteria used to select the [Sustainability Challenges](#) included in the Report
- further detail on [Our Approach to Sustainable Development](#) including our vision and strategy.

In addition, some material previously consolidated into a single section has been placed in easily identifiable, separate sections; for example, the section 'Performance Summaries' has been replaced with separate sections for [Governance](#), [Health](#), [Safety](#), [Environment](#), [Community](#) and [Socio-Economic](#).

We welcome your suggestions and [Feedback](#) for further improvements.



## Global Compact Navigator

This progress assessment represents our judgement of how the principles of the UN Global Compact have been progressed through our policy and actions during the year. Refer to the items highlighted below for the particular document or a more detailed description of our performance in relation to the related UN Global Compact principle. Please contact the Company if you would like further information in relation to this assessment.

### Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2005 Sustainability Report	GRI Indicator Reference
<p><a href="#">Sustainable Development Policy</a></p> <p><a href="#">Guide to Business Conduct</a></p> <p><a href="#">HSEC Management Standards (PDF 284KB)</a></p> <p><a href="#">HSEC Management Standard 8</a></p> <p>UN Universal Declaration of Human Rights</p> <p>US-UK Voluntary Principles on Security and Human Rights</p> <p>World Bank Operational Directive on Involuntary Resettlement</p>	<p><a href="#">HSEC Targets Scorecard</a></p> <p>No transgressions within the Group's activities of the principles embodied within the UN Universal Declaration of Human Rights were identified.</p> <p><a href="#">Governance - Our Performance - Management Systems Review</a></p> <p>We made further progress preparing and revising our detailed policy, management standards, targets, protocols and guidelines.</p> <p><a href="#">Governance - Our Performance - Audit and Self Assessment</a></p> <p>A total of twelve HSEC audits were conducted during the reporting period.</p> <p><a href="#">Community - Our Performance - Human Rights</a></p> <p>Human Rights Self Assessment - implementation, 40 per cent of sites have completed the self assessment.</p> <p><a href="#">Governance - Our Performance - Business Conduct</a></p> <p>There were 103 substantive enquiries to the Business Conduct Helpline and fraud hotline systems.</p> <p><a href="#">Case Studies</a></p> <p>The selection of case studies illustrates how we have progressed with regards to upholding fundamental human rights across the areas of health, safety, environment, community and socio-economics.</p>	<p><a href="#">HR1</a></p> <p><a href="#">HR2</a></p> <p><a href="#">HR3</a></p> <p><a href="#">HR4</a></p>

**Principle 2: Businesses should make sure their own corporations are not complicit in human rights abuses**

<p><a href="#">Sustainable Development Policy</a></p> <p><a href="#">Guide to Business Conduct</a></p> <p><a href="#">HSEC Management Standards (PDF 284KB)</a></p> <p><a href="#">HSEC Management Standard 8</a></p> <p>Human Rights Self Assessment Toolkit</p> <p>UN Universal Declaration of Human Rights</p> <p>US-UK Voluntary Principles on Security and Human Rights</p> <p>World Bank Operational Directive on Involuntary Resettlement</p>	<p><a href="#">HSEC Targets Scorecard</a></p> <p>No transgressions within the Group's activities of the principles embodied within the UN Universal Declaration of Human Rights were identified.</p> <p><a href="#">Governance - Our Performance - Audit and Self Assessment</a></p> <p>A total of twelve HSEC audits were conducted during the reporting period.</p> <p><a href="#">Community - Our Performance - Human Rights</a></p> <p>Human Rights Self Assessment - implementation, 40 per cent of sites have completed the self assessment.</p> <p><a href="#">Governance - Our Performance - Business Conduct</a></p> <p>There were 103 substantive enquiries to the Business Conduct Helpline and fraud hotline systems.</p> <p><a href="#">Case Studies</a></p> <p>The selection of case studies illustrates how we have progressed with regards to upholding fundamental human rights across the areas of health, safety, environment, community and socio-economics.</p>	<p><a href="#">HR2</a></p> <p><a href="#">HR3</a></p>
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**Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining**

<p><a href="#">Sustainable Development Policy</a></p> <p><a href="#">Employment Principles</a></p> <p><a href="#">Guide to Business Conduct</a></p> <p><a href="#">Letter to UN Secretary General from Chip Goodyear (December 2003)</a></p>	<p><a href="#">Socio-economic - Our Performance- Employee Relations</a></p> <p>Employee relations arrangements at individual workplaces are required to respect local legislative requirements and other local standards and circumstances.</p> <p>All employees are free to join trade unions.</p> <p><a href="#">Socio-economic - Our Performance - Freedom of Association</a></p> <p>Over 50 per cent of the workforce was covered by collective bargaining agreements at operated sites and offices.</p> <p><a href="#">Socio-economic - Our Performance- Remuneration</a></p> <p>All Company employees earned greater than the stipulated minimum wage in the countries in which they worked.</p>	<p><a href="#">HR5</a></p> <p><a href="#">LA3</a></p> <p><a href="#">LA4</a></p>
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**Principle 4: Businesses should uphold the elimination of all forms of forced and compulsory labour**

<p><a href="#">Sustainable Development Policy</a></p> <p><a href="#">Guide to Business Conduct</a></p> <p>UN Universal Declaration of Human Rights</p>	<p><a href="#">Socio-economic - Our Performance- Child and Forced Labour</a></p> <p>We exclude the use of child labour and prohibit forced labour at our operations.</p> <p><a href="#">Socio-economic - Our Performance- Remuneration</a></p> <p>All Company employees earned greater than the stipulated minimum wage in the countries in which they worked.</p>	<p><a href="#">HR7</a></p>
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**Principle 5: Businesses should uphold the effective abolition of child labour**

<p><a href="#">Sustainable Development Policy</a></p> <p><a href="#">Guide to Business Conduct</a></p> <p>UN Universal Declaration of Human Rights</p>	<p><a href="#">Socio-economic - Our Performance- Child and Forced Labour</a></p> <p>We excluded the use of child and forced labour at our operations. The youngest employees were 16.5 years of age, working as apprentices/administrative trainees in our Australian operations.</p>	<p><a href="#">HR6</a></p>
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**Principle 6: Businesses should uphold the elimination of discrimination in respect of employment and occupation**

<p><a href="#">Sustainable Development Policy</a></p> <p><a href="#">Employment Principles</a></p> <p><a href="#">Guide to Business Conduct</a></p> <p>UN Universal Declaration of Human Rights</p>	<p><a href="#">Socio-economic - Our Performance- Employee Profile</a></p> <p>A breakdown of employee numbers by region is presented in the chart.</p> <p><a href="#">Socio-economic - Our Performance- Diversity</a></p> <p>Approximately 12 per cent of full-time employees at operated sites and offices were women.</p> <p><a href="#">Socio-economic - Our Performance - Diversity - Employment Equity in South Africa</a></p> <p>To address historical issues in South Africa, which resulted in the majority of South Africans being excluded from participating in the mainstream economy, BHP Billiton South Africa adopted an empowerment strategy of change.</p> <p><a href="#">Socio-economic - Our Performance - Diversity - Indigenous Employment and Training</a></p> <p>We recognise indigenous employment and training as an important issue and, as has been reported in previous years, undertake a number of initiatives in this regard.</p> <p><a href="#">Black Economic Empowerment Procurement Policy implemented across our sites in southern Africa</a></p> <p><a href="#">EKATI training program promotes sustainable new careers in the emerging Canadian underground diamond mining industry</a></p> <p><a href="#">Mozal - a model for integrating sustainability into resource projects</a></p>	<p><a href="#">HR4</a></p> <p><a href="#">LA10</a></p> <p><a href="#">LA11</a></p>
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**Principle 7: Businesses should support a precautionary approach to environmental challenges**

<p><a href="#">Sustainable Development Policy</a></p> <p><a href="#">HSEC Management Standards (PDF 284KB)</a></p> <p><a href="#">HSEC Management Standard 3</a></p> <p><a href="#">Enterprise-Wide Risk Management Policy</a></p>	<p><a href="#">HSEC Targets Scorecard</a></p> <p>Risk registers are in place and maintained at all required sites, businesses and Corporate levels.</p> <p><a href="#">Governance - Our Performance- Risk Management</a></p> <p>An HSEC risk assessment project was established, which will continue over the coming year.</p> <p><a href="#">Selbaie Mine develops environmental program for the long term</a></p> <p><a href="#">The Worsley Alumina Air Emissions Impact Assessment Project</a></p> <p><a href="#">Land rehabilitation programs at Cerrejón and Mt Arthur Coal show the value of mine closure planning</a></p> <p><a href="#">Recognising and managing the impacts of our operations on biodiversity values</a></p>	<p><a href="#">3.13</a></p>
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**Principle 8: Businesses should undertake initiatives to promote greater environmental responsibility**

<p><a href="#">Sustainable Development Policy</a></p> <p><a href="#">HSEC Management Standards (PDF 284KB)</a></p> <p><a href="#">HSEC Management Standard 5</a></p> <p><a href="#">HSEC Management Standard 12</a></p>	<p><a href="#">HSEC Targets Scorecard</a></p> <ul style="list-style-type: none"> <li>• Three Level 3 environmental incidents.</li> <li>• 100 per cent of required self assessments were completed at operating sites.</li> <li>• All sites requiring ISO 14001 are certified or have been recommended for certification by their ISO auditor.</li> <li>• Energy conservation plans in place at all required sites and at 11 sites that were below the emissions threshold.</li> <li>• Greenhouse gas management programs in place at all required sites and at 12 sites that were below the emissions threshold.</li> <li>• Water management plans in place at 98 per cent of required sites and at 26 sites that were below the usage threshold.</li> <li>• Waste minimisation programs in place at 98 per cent of required sites and at 14 sites that were not required to meet this target.</li> <li>• Land management plans in place at 98 per cent of required sites and at 21 sites that were not required to meet this target.</li> <li>• Life cycle assessments completed for all major minerals products. In addition, we have also commenced work on the life cycle assessments of several minor products.</li> </ul> <p><a href="#">Environment - Our Performance - Environmental Management Systems</a></p> <p>During the reporting period we continued to strengthen environmental management systems across our operations</p> <p><a href="#">Environment - Our Performance - Closure Standard Update</a></p> <p>We progressed implementation of the Company-wide Closure Standard.</p> <p><a href="#">Environment - Our Approach - Climate Change</a></p> <p>We are working on activities related to climate change risks and opportunities in a number of ways.</p> <p><a href="#">Environment - Our Performance- Biodiversity</a></p> <p>Over the reporting period we progressed a number of aspects ranging from biodiversity plans at some sites through to biodiversity-related research and development.</p> <p><a href="#">Working towards our water target</a></p> <p><a href="#">Land rehabilitation programs at Cerrejón and Mt Arthur Coal show the value of mine closure planning</a></p> <p><a href="#">Recognising and managing the impacts of our operations on biodiversity values</a></p> <p><a href="#">Managing dust suppression issues at our operations</a></p>	<p><a href="#">EN1</a></p> <p><a href="#">EN2</a></p> <p><a href="#">EN3</a></p> <p><a href="#">EN4</a></p> <p><a href="#">EN5</a></p> <p><a href="#">EN6</a></p> <p><a href="#">EN7</a></p> <p><a href="#">EN8</a></p> <p><a href="#">EN9</a></p> <p><a href="#">EN10</a></p> <p><a href="#">EN11</a></p> <p><a href="#">EN12</a></p> <p><a href="#">EN13</a></p> <p><a href="#">EN14</a></p> <p><a href="#">EN15</a></p> <p><a href="#">EN16</a></p> <p><a href="#">1.1</a></p>
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**Principle 9: Businesses should encourage the development and diffusion of environmentally friendly technologies**

<p><a href="#">Sustainable Development Policy</a></p> <p><a href="#">HSEC Management Standards (PDF 284KB)</a></p> <p><a href="#">HSEC Management Standard 9</a></p> <p><a href="#">HSEC Management Standard 12</a></p>	<p><a href="#">HSEC Targets Scorecard</a></p> <ul style="list-style-type: none"> <li>• Three Level 3 environmental incidents.</li> <li>• 100 per cent of required self assessments were completed at operating sites.</li> <li>• All sites requiring ISO 14001 are certified or have been recommended for certification by their ISO auditor.</li> <li>• Energy conservation plans in place at all required sites and at 11 sites that were below the emissions threshold.</li> <li>• Greenhouse gas management programs in place at all required sites and at 12 sites that were below the emissions threshold.</li> <li>• Water management plans in place at 98 per cent of required sites and at 26 sites that were below the usage threshold.</li> <li>• Waste minimisation programs in place at 98 per cent of required sites and at 14 sites that were not required to meet this target.</li> <li>• Land management plans in place at 98 per cent of required sites and at 21 sites that were not required to meet this target.</li> <li>• Life cycle assessments completed for all major minerals products. In addition, we have also commenced work on the life cycle assessments of several minor products.</li> </ul> <p><a href="#">Governance - Our Performance - Stewardship</a></p> <p>Over the past year we have been working to refine our understanding of stewardship and how we can better integrate it into our organisation.</p> <p><a href="#">Environment - Our Performance - Environmental Spending</a></p> <p>Over the reporting period environmental expenditure for the Group totalled US\$267 million.</p> <p><a href="#">Environment - Our Performance- Biodiversity</a></p> <p>Over the reporting period we progressed a number of aspects ranging from biodiversity plans at some sites through to biodiversity-related research and development.</p> <p><a href="#">Working towards our water target</a></p> <p><a href="#">Managing dust suppression issues at our operations</a></p>	<p><a href="#">EN17</a></p>
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**Principle 10: Businesses should work against all forms of corruption, including extortion and bribery**

<p><a href="#">Sustainable Development Policy</a></p> <p><a href="#">Guide to Business Conduct</a></p> <p><a href="#">HSEC Management Standards (PDF 284KB)</a></p> <p><a href="#">HSEC Management Standard 8</a></p>	<p><a href="#">Governance - Our Performance - Business Conduct</a></p> <p>There were 103 substantive enquiries to the Business Conduct Helpline and fraud hotline systems.</p> <p><a href="#">Socio-economic - Our Performance - Economic Contributions</a></p> <p>Our economic contribution to society includes the value that flows from the broader contributions of our operations, such as payments to our employees and suppliers and disbursements to governments, including taxes and royalties.</p> <p><a href="#">Socio-economic - Our Performance - Value Add</a></p> <p>Refer to our table on Expenditure by Region for disclosure of regional tax payments.</p> <p><a href="#">Business conduct and the supply relationship</a></p>	<p><a href="#">SO2</a></p>
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## Links

The following provides additional information relevant to this Report.

### Initiatives, Activities and Organisations

<p><u><a href="#">Business in the Community</a></u></p> <p>Business in the Community is a unique movement in the UK of 700 member companies, with a further 1600 participating in its programs and campaigns. It operates through a network of 98 local business-led partnerships, as well as working with 45 global partners. Its purpose is to inspire, challenge, engage and support business in continually improving its positive impact on society.</p>	<p><a href="http://www.bitc.org.uk">http://www.bitc.org.uk</a></p>
<p><u><a href="#">Carbon Disclosure Project (CDP)</a></u></p> <p>The Carbon Disclosure Project (CDP) provides a secretariat for the world's largest institutional investor collaboration on the business implications of climate change. CDP represents an efficient process whereby many institutional investors collectively sign a single global request for disclosure of information on greenhouse gas emissions. CDP then sends this request to the FT500 largest companies in the world, and 300 of the 500 largest corporations in the world currently report their emissions through this website.</p>	<p><a href="http://www.cdproject.net/about.asp">http://www.cdproject.net/about.asp</a></p>
<p><u><a href="#">COAL21</a></u></p> <p>Initiated by the Australian Coal Industry, COAL21 is a program aimed at fully realising the potential of advanced technologies to reduce or eliminate greenhouse gas emissions associated with the use of coal. The program will also explore coal's role as a primary source of hydrogen to power the hydrogen-based economy of the future. The program is a collaborative partnership between Federal and State governments, the coal and electricity generation industries and the research community.</p>	<p><a href="http://www.coal21.com.au">http://www.coal21.com.au</a></p>
<p><u><a href="#">Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC)</a></u></p> <p>CO2CRC researches the logistic, technical, financial and environmental issues of storing industrial carbon dioxide emissions in deep geological formations. The CRC also researches the capture and separation of carbon dioxide from industrial systems.</p>	<p><a href="http://www.co2crc.com.au">http://www.co2crc.com.au</a></p>
<p><u><a href="#">Cooperative Research Centre for Coal in Sustainable Development (CCSD)</a></u></p> <p>CCSD brings together the majority of Australia's coal research skill base as well as experts in sustainability. The vision of CCSD is to optimise the contribution of coal to a sustainable future, and its research is underpinned by a focus on the three dimensions of sustainability - economic, social and environmental.</p>	<p><a href="http://www.ccsd.biz">http://www.ccsd.biz</a></p>



## Initiatives, Activities and Organisations

<p><a href="#">Council for Responsible Jewellery</a></p> <p>The Council for Responsible Jewellery Practices (CRJP) was founded in May 2005 with 14 members from a cross-section of the diamond and gold jewellery supply chain, from mine to retail. Council members believe that a coordinated worldwide approach to addressing ethical, social and environmental challenges will drive continuous improvement throughout the jewellery industry to the benefit of stakeholders.</p>	<p><a href="http://www.responsiblejewellery.com/">http://www.responsiblejewellery.com/</a></p>
<p><a href="#">Dow Jones Sustainability World Indexes</a></p> <p>The Dow Jones Sustainability World Indexes (DJSI) consist of more than 300 companies that represent the top 10 per cent of the leading sustainability companies in 60 industry groups in the 34 countries covered by the biggest 2500 companies in the Dow Jones Global Indexes.</p>	<p><a href="http://www.sustainability-index.com">http://www.sustainability-index.com</a></p>
<p><a href="#">Extractive Industries Transparency Initiative</a></p> <p>The UK Prime Minister Tony Blair announced the The Extractive Industries Transparency Initiative at the World Summit on Sustainable Development in Johannesburg, September 2002. It aims to increase transparency in transactions between governments and companies within extractive industries.</p>	<p><a href="http://www.eitransparency.org">http://www.eitransparency.org</a></p>
<p><a href="#">FTSE4GOOD</a></p> <p>Launched in 2001, the FTSE4Good Index series has been designed to measure the performance of companies that meet globally recognised corporate responsibility standards and to facilitate investment in those companies. The series covers four markets: US, Global, UK and Europe. Each market consists of both a benchmark and tradable index.</p>	<p><a href="http://www.ftse4good.com/ftse4good/index.jsp">http://www.ftse4good.com/ftse4good/index.jsp</a></p>
<p><a href="#">FutureGen</a></p> <p>FutureGen is an initiative to build the world's first integrated sequestration and hydrogen production research power plant. The US\$1 billion project is intended to create the first zero-emissions fossil fuel plant. When operational, the prototype will be the cleanest fossil fuel fired power plant in the world.</p>	<p><a href="http://www.kansasenergy.org/futuregen/info.html">http://www.kansasenergy.org/futuregen/info.html</a></p>
<p><a href="#">Global Mining Initiative (GMI)</a></p> <p>The GMI brought together many of the world's largest mining, metals and minerals companies. This leadership exercise aimed to ensure that an industry that is essential to the wellbeing of a changing world is responsive to global needs and challenges. The Initiative had three main strands: creation of an industry association that could focus on sustainable development in the mining, metals and minerals industry; an independent analysis of the key issues facing these industries; and a global conference on mining, metals and sustainable development in May 2002.</p>	<p><a href="http://www.globalmining.com">http://www.globalmining.com</a></p>

## Initiatives, Activities and Organisations

<p><u><a href="#">Global Reporting Initiative</a></u></p> <p>The Global Reporting Initiative (GRI) is a multi-stakeholder process and independent institution whose mission is to develop and disseminate globally applicable Sustainability Reporting Guidelines.</p>	<p><a href="http://www.globalreporting.org">http://www.globalreporting.org</a></p>
<p><u><a href="#">Green Lead™ Project</a></u></p> <p>Green Lead™ is the use of best practices in all aspects of mining, transport, manufacture, use and reuse of lead in order to minimise people and planet exposure to lead. The concept is based on taking a 'whole of lifecycle' approach to lead and its impacts on people and the environment and to analyse all of them.</p>	<p><a href="http://www.greenlead.com">http://www.greenlead.com</a></p>
<p><u><a href="#">International Aluminium Institute (IAI)</a></u></p> <p>The IAI is the global forum of aluminium producers dedicated to the development and wider use of aluminium as a competitive and uniquely valuable material. The IAI in all its activities supports the concept that aluminium is a material that lends itself to improving world living standards and developing a better and sustainable world environment.</p>	<p><a href="http://www.world-aluminium.org">http://www.world-aluminium.org</a></p>
<p><u><a href="#">International Chromium Development Association (ICDA)</a></u></p> <p>The ICDA was set up in Paris in 1990 and now has 74 members from 21 countries on 5 continents. It provides a watching brief on regulatory issues, consistent responses to specific HSE issues, hazard and risk management information and reviews of available data by independent institutions. It also collects and disseminates global production data, trade movements and the latest industry news.</p>	<p><a href="http://www.chromium-asoc.com">http://www.chromium-asoc.com</a></p>
<p><u><a href="#">International Copper Association</a></u></p> <p>The International Copper Association, Ltd. (ICA) is the leading organization for promoting the use of copper worldwide. The Association's 37 member companies represent about 80 per cent of the world's refined copper output and are among the largest copper producers, copper alloy fabricators, and wire and cable companies in the world.</p>	<p><a href="http://www.copperinfo.com/index1.html">http://www.copperinfo.com/index1.html</a></p>
<p><u><a href="#">International Council on Mining &amp; Metals (ICMM)</a></u></p> <p>ICMM members offer strategic industry leadership towards achieving continuous improvements in sustainable development performance in the mining, minerals and metals industry. ICMM provides a common platform for the industry to share challenges and responsibilities as well as to engage with key constituencies on issues of common concern at the international level, based on science and principles of sustainable development.</p>	<p><a href="http://www.icmm.com">http://www.icmm.com</a></p>

## Initiatives, Activities and Organisations

<p><a href="#"><u>ISO 14001 - Environmental Management Systems</u></a></p> <p>The ISO 14000 family consists of standards relating to environmental management systems and others which are specific tools for realising environmental policy and achieving objectives and targets.</p>	<p><a href="http://www.iso.org">http://www.iso.org</a></p>
<p><a href="#"><u>Johannesburg Stock Exchange Socially Responsible Investment Index</u></a></p> <p>The JSE Socially Responsible Investment Index was launched in 2004. This was the culmination of an extensive consultation and development process, which the JSE has guided over the past year as a means of helping to focus the debate on triple bottom line practices in South Africa.</p>	<p><a href="http://ftse.jse.co.za">http://ftse.jse.co.za</a></p>
<p><a href="#"><u>Minerals Council of Australia</u></a></p> <p>The Minerals Council of Australia (MCA) represents Australia's exploration, mining and minerals processing industry, nationally and internationally, in its contribution to sustainable development and society.</p>	<p><a href="http://www.minerals.org.au">http://www.minerals.org.au</a></p>
<p><a href="#"><u>Mining, Minerals and Sustainable Development</u></a></p> <p>Mining, Minerals and Sustainable Development (MMSD) was an independent two-year process of consultation and research with the objective of understanding how to maximise the contribution of the mining and minerals sector to sustainable development at the global, national, regional and local levels. The Project began in April 2000 and was designed to produce a Final Report, a series of Working Papers, and to create a dialogue process capable of being carried forward into the future. MMSD was managed by the <a href="#"><u>International Institute for Environment and Development</u></a> in London, UK, under contract to the <a href="#"><u>World Business Council for Sustainable Development</u></a> (WBCSD). The project was initiated by WBCSD and supported by the <a href="#"><u>Global Mining Initiative</u></a> (GMI).</p>	<p><a href="http://www.iied.org/mmsd">http://www.iied.org/mmsd</a></p>
<p><a href="#"><u>Nickel Development Institute</u></a></p> <p>The Nickel Development Institute, whose members represent over 70 per cent of current world production, generates and communicates knowledge required to support safe and sustainable production, use and reuse of nickel.</p>	<p><a href="http://www.nidi.org">http://www.nidi.org</a></p>

## Initiatives, Activities and Organisations

<p><u><a href="#">OHSAS 18001 - Occupational Health and Safety Management Systems</a></u></p> <p>OHSAS 18001 was developed to be compatible with the ISO 9001 (Quality) and ISO 14001 (Environmental) management systems standards, in order to facilitate the integration of quality, environmental and occupational health and safety management systems by organisations. The specification gives requirements for an occupational health and safety (OH&amp;S) management system, to enable an organisation to control its OH&amp;S risks and improve its performance. It does not state specific OH&amp;S performance criteria, nor does it give detailed specifications for the design of a management system.</p>	<p><a href="http://www.osha-bs8800-ohsas-18001-health-and-safety.com/ohsas-18001.htm">http://www.osha-bs8800-ohsas-18001-health-and-safety.com/ohsas-18001.htm</a></p>
<p><u><a href="#">SA 8000 - Social Accountability Standard</a></u></p> <p>Social Accountability International (SAI) is a US-based, non-profit organisation dedicated to the development, implementation and oversight of voluntary verifiable social accountability standards. SAI's first social accountability system, SA8000, is a way for retailers, brand companies, suppliers and other organisations to maintain just and decent working conditions throughout the supply chain.</p>	<p><a href="http://www.cepaa.org">http://www.cepaa.org</a></p>
<p><u><a href="#">South African Chamber of Mines</a></u></p> <p>The Chamber of Mines of South Africa is a prominent industry employers' organisation which exists to serve its members and promote their interests in the South African mining industry.</p>	<p><a href="http://www.bullion.org.za/welcome.htm">http://www.bullion.org.za/welcome.htm</a></p>
<p><u><a href="#">US-UK Voluntary Principles on Security and Human Rights</a></u></p> <p>Throughout 2000, representatives from the US Department of State and the UK Foreign and Commonwealth Office met with oil, mining and energy companies, together with human rights, labour and corporate responsibility groups, to develop a set of Voluntary Principles on Security and Human Rights. These principles are designed to provide practical guidance that will strengthen human rights safeguards in company security arrangements in the extractive sector. They are the basis of a global standard for the extractive sector. The principles are the first set of guidelines of their sort for this sector.</p>	<p><a href="http://www.state.gov/g/drl/rls/2931.htm">http://www.state.gov/g/drl/rls/2931.htm</a></p>
<p><u><a href="#">United Nations Environment Program</a></u></p> <p>The UNEP World Conservation Monitoring Centre provides information for policy and action to conserve the living world. Programs concentrate on species, forests, protected areas, marine, mountains and fresh waters, plus habitats affected by climate change such as polar regions. The relationship between trade and the environment and the wider aspects of biodiversity assessment is also addressed.</p>	<p><a href="http://www.unep-wcmc.org">http://www.unep-wcmc.org</a></p>

## Initiatives, Activities and Organisations

<p><u><a href="#">United Nations Global Compact</a></u></p> <p>The United Nations Global Compact is an international initiative that brings together companies with UN agencies, labour organisations and civil society to support ten principles covering human rights, labour, environment and anti-corruption.</p>	<p><a href="http://www.unglobalcompact.org">http://www.unglobalcompact.org</a></p>
<p><u><a href="#">United Nations Universal Declaration of Human Rights</a></u></p> <p>On December 10, 1948 the General Assembly of the United Nations adopted and proclaimed the Universal Declaration of Human Rights.</p>	<p><a href="http://www.un.org/rights">http://www.un.org/rights</a></p>
<p><u><a href="#">World Bank Operational Directive on Involuntary Resettlement</a></u></p> <p>The World Bank directive involuntary resettlement states that project planning must avoid and minimise involuntary resettlement, and that if people lose their homes or livelihoods as a result of Bank-financed projects, they should have their standard of living improved, or at least restored.</p>	<p><a href="http://www.ifc.org/ifcext/enviro.nsf/Content/ESRP/\$FILE/OD430_InvoluntaryResettlement.pdf">http://www.ifc.org/ifcext/enviro.nsf/Content/ESRP/\$FILE/OD430_InvoluntaryResettlement.pdf</a></p>
<p><u><a href="#">World Business Council for Sustainable Development</a></u></p> <p>The World Business Council for Sustainable Development (WBCSD) is a coalition of 175 international companies united by a shared commitment to sustainable development. Its mission is to provide business leadership as a catalyst for change towards sustainable development and to promote the role of eco-efficiency, innovation and corporate social responsibility.</p>	<p><a href="http://www.wbcsd.ch">http://www.wbcsd.ch</a></p>
<p><u><a href="#">World Conservation Union (IUCN)</a></u></p> <p>The World Conservation Union is the world's largest conservation network bringing together government agencies, non-government organisations, scientists and experts from 181 countries in a worldwide partnership. The Union's mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.</p>	<p><a href="http://www.iucn.org">http://www.iucn.org</a></p>
<p><u><a href="#">World Health Organisation</a></u></p> <p>The World Health Organisation is the United Nations' specialised agency for health. Established in 1948, its objective is the attainment by all peoples of the highest possible level of health. Health is defined in WHO's Constitution as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.</p>	<p><a href="http://www.who.int">http://www.who.int</a></p>

## Performance at a Glance

Performance at a glance is intended to provide you with a quick overview of our performance over the reporting period. See the following for:

- a [Message from the CEO](#)
- our [Targets Scorecard](#)
- [Customer Sector Group Reviews](#)
- a summary of our internal and external [Recognition](#)
- a summary of key sustainability and environmental data in [Data Tables](#).

For detail on our performance, please see the Our Performance sections in [Governance](#), [Health](#), [Safety](#), [Environment](#), [Community](#) and [Socio-economic](#).

## Message from the Chief Executive Officer

At BHP Billiton we recognise that integrating sound principles governing safety, business conduct, social, environmental and economic activities into business practice is both good for society and good for our business. Excellence in these areas provides the opportunity for competitive advantage and the development of a reputation as the partner of choice. Our objective is to earn and maintain this reputation.

During the past year, we have achieved very strong outcomes against our operating and health, safety, environmental and community (HSEC) targets. On behalf of the Board and the management team, I extend my thanks to not only our employees and contractors but also their spouses, partners and families for helping our company to achieve these results. The nature of our business means it takes a strong team effort to achieve our goals, and we recognise and greatly value this support.

In my message to you last year I reported with great sadness that seventeen of our employees or contractors lost their lives while at work. Evaluation of these events, as well as of all other accidents and incidents, indicated that we do not need fundamentally new systems. What we must do is improve our operating discipline by ensuring that the systems we have are followed and understood by all and that we learn from our experiences and share these across the organisation.

I am very pleased to report that strong progress has been made in this regard. We have identified desirable HSEC leadership attributes for line managers and strong performance in this area is now a prerequisite for promotion. Our Fatal Risk Control Protocols have been implemented and we continue to focus on the importance of sharing knowledge. Despite our efforts, however, three of our colleagues lost their lives at work during this fiscal year. All of us are affected by these events and by the impact on family, friends and associates. It makes our resolve even stronger to provide a workplace that consistently delivers Zero Harm — we will not be satisfied until we achieve this objective.

From an environmental perspective, we maintained our progress in reducing the greenhouse intensity of our operations. Since establishing our current five-year reduction target to reduce the intensity of our production by five per cent, we have achieved a 10 per cent reduction. While water intensity reduced compared to last year, there is still an overall increase to date of five per cent against the 2001/02 baseline. In the year ahead, we will endeavour to improve performance in this area.

We continued to meet our commitment to spend one per cent of our pre-tax profit on a three year rolling average on community programs, contributing US\$57.4 million to our local communities. In health we have been successful in reducing the number of new cases of occupational illness by 36 per cent when compared to the 2002/03 baseline.

In June 2005 we welcomed WMC Resources Ltd to the BHP Billiton Group and look forward to reporting on the activities of former WMC assets in future reports. We acknowledge the concerns of some stakeholders about the inclusion of uranium in our portfolio, and we will bring our strong product stewardship experience to this commodity as we have done with our other businesses. I also encourage you to read our [position](#) on uranium, available from our website.

Pleasingly, I can again report that we have received recognition for our performance in public reporting, community relationships and sustainable development. We are particularly proud to have been selected as the 'Company of the Year' at the Business in the Community Awards in the UK. These are the premier awards in the UK that support and encourage corporate social responsibility. We are the first company in the extractive industries to receive the award and are the first recipient acknowledged for its global activities.



Chip Goodyear

Our Full Report on our website has again been prepared in accordance with the Global Reporting Initiative 2002 Sustainability Reporting Guidelines and represents a balanced and reasonable representation of our organisation's economic, environmental and social performance. We remain committed to the UN Global Compact, and you can read an update on our progress against the Compact's ten principles within this report.

During the year we revised our previous HSEC Policy, Management Standards and performance targets. As a result, our HSEC Policy was broadened to become our Sustainable Development Policy, which I believe marks the next step change in our approach to sustainable development.

I would welcome any feedback you have in relation to this report and look forward to reporting our progress again next year as we continue to focus on creating value for our shareholders and stakeholders.







*Chip Goodyear*  
**Chief Executive Officer**






## HSEC Targets Scorecard

(Baseline 1 July 2001 to 30 June 2002 for reduction targets except where stated otherwise)

### Overall performance against target:





	Target exceeded or ahead of schedule
	Target achieved (≥ 95%) or on track
	Target behind schedule
	Target not achieved

### Performance change since last reporting period:

	Performance tracking steadily
	Performance has improved
	Performance has declined





### Zero Harm

2004/05

Zero fatalities		Three fatalities in controlled activities <sup>1</sup> (FY04:17)
Zero significant environmental incidents (i.e. rated 3 and above on the <a href="#">BHP Billiton Consequence Severity Table</a> )		Three Level 3 environmental incidents (FY04: 2)
No transgressions within the Group's activities of the principles embodied within the UN Universal Declaration of Human Rights		None identified (FY04: none)
<b>Legal Compliance</b> Zero fines and prosecutions <sup>2</sup>		Seven fines greater than US\$1000. Total fines paid US\$20 836 (FY04: US\$209 420)





### Management Systems

2004/05

All sites to undertake annual self-assessments against the BHP Billiton HSEC Management Standards and have plans to achieve conformance with the Standards by 30 June 2005		100 per cent of required self assessments were completed at operating sites (FY04: 100 per cent)
		An overall conformance of 3.9 out of 5 has been achieved, compared to our conformance target of greater than 4 (FY04: 3.7 out of 5)
All sites <sup>3</sup> to maintain ISO 14001 Certification		All sites requiring ISO 14001 are certified or have been recommended for certification by their ISO auditor
<b>Risk Management</b> Risk registers to be in place and maintained at all sites <sup>3</sup> and within BHP Billiton businesses and Corporate offices		Risk registers are in place and maintained at all required sites, businesses and Corporate offices


## Health

2004/05

All sites <sup>3</sup> to implement a baseline survey on occupational exposure hazards and establish occupational hygiene monitoring and health surveillance programs		All required sites have now implemented baseline surveys (FY04: 98%)
Annual reduction in percentage of people potentially exposed above occupational exposure limits <sup>4</sup>		Potential occupational exposure to noise, if not for the use of personal protective equipment (PPE), reduced by 2 per cent (FY04: 4% increase)
		For other exposures when compared to the 2003/04 baseline, there has been an increase in the percentage of employees potentially exposed, if not for the use of PPE
20 per cent reduction in incidence of occupational disease by 30 June 2007		During the year the incidence of occupational illness reduced, resulting in an overall reduction to date of 36 per cent against the baseline 2002/03 (FY04: 15% reduction)






## Safety

2004/05

50 per cent reduction in Classified Injury Frequency Rate <sup>5</sup> (excluding first aid treatments) at sites by 30 June 2007		During the year our Classified Injury Frequency Rate reduced, resulting in an overall reduction to date of 42 per cent against the baseline (FY04: 26% reduction)
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## Environment

2004/05

<b>Energy and Greenhouse</b> All sites with emissions greater than 100 000 tonnes per year of carbon dioxide equivalent <sup>6</sup> are required to have and maintain energy conservation plans with specific targets		Energy conservation plans in place at all required sites and at 11 sites that were below the emissions threshold
All sites with emissions greater than 100 000 tonnes per year of carbon dioxide equivalent <sup>6</sup> are required to have and maintain greenhouse gas management programs		Greenhouse gas management programs in place at all required sites and at 12 sites that were below the emissions threshold (FY04: 11 sites)
Aggregate Group target for reduction in greenhouse gas emissions per unit of production of 5 per cent by 30 June 2007		During the year our greenhouse gas intensity reduced, resulting in an overall reduction to date of 10 per cent against the baseline (FY04: 9% reduction)
<b>Water</b> All sites with fresh water consumption greater than 500 ML per annum <sup>7</sup> to have and maintain water management plans		Water management plans in place at 97 per cent of required sites and at 26 sites that were below the usage threshold (FY04: 98%, 23 sites)
Aggregate Group target of 10 per cent reduction in fresh water consumption per unit of production by 30 June 2007		During the year our water intensity decreased, however there is still an overall increase to date of 5 per cent against the baseline (FY04: 10% increase)




## Environment

2004/05

<p><b>Waste</b> All sites <sup>3</sup> to have and maintain waste minimisation programs</p>		<p>Waste minimisation programs in place at 98 per cent of required sites and at 14 sites that were not required to meet this target (FY04: 97%, 10 sites)</p>
<p>Aggregate Group target of 20 per cent reduction in waste (excluding recycled and mining-related materials, such as waste rock, tailings, coal reject and slag) per unit of production by 30 June 2007</p>		<p>During the year our general waste intensity decreased, resulting in an overall decrease to date of 8 per cent against the baseline (FY04: 25% increase)</p>
		<p>During the year our hazardous waste intensity reduced, resulting in an overall reduction to date of 31 per cent against the baseline (FY04: 12% reduction)</p>
<p><b>Land management</b> All sites <sup>8</sup> to have and maintain land management plans to protect and enhance agreed beneficial uses</p>		<p>Land management plans in place at 98 per cent of required sites and at 21 sites that were not required to meet this target (FY04: 98%, 19 sites)</p>
<p><b>Product stewardship</b> Lifecycle assessments prepared for all major BHP Billiton minerals products <sup>9</sup> (incorporating participation in industry programs as appropriate)</p>		<p>Lifecycle assessments have been completed for all major minerals products. In addition, we have also commenced work on life cycle assessments of several minor minerals products</p>

## Community

2004/05

<p>All sites <sup>8</sup> to prepare public HSEC reports at a local level (including incidents, community complaints and relevant site-specific emissions) on an annual basis</p>		<p>HSEC reports were prepared by 100 per cent of required sites or businesses (FY04: 98%)</p>
<p>All sites <sup>8</sup> to have and maintain a community relations plan</p>		<p>Community relations plans in place at 98 per cent of required sites and at 22 sites that were not required to meet this target (FY04: 98%, 24 sites)</p>
<p>Aggregate contribution to community programs, including in-kind support, of a target of 1 per cent of pre-tax profits, calculated on a three-year rolling average</p>		<p>Expenditure totalled US\$57.4 million, equivalent to 1.0 per cent of pre-tax profits on a three-year rolling average (FY04: US\$46.5 million, 1.3%)</p>

1. Controlled activities are work-related activities where BHP Billiton directly supervises and enforces HSEC standards.
2. Prosecutions included are those that have been determined during the year and resulted in fines.
3. Includes 63 sites in total and excludes exploration and development projects, sites being divested, closed sites and Corporate offices.
4. Target modified to reflect adoption of BHP Billiton exposure standards (see [Health, Our Performance](#)).
5. A classified injury is any workplace injury that has resulted in the person not returning to their unrestricted normal duties after the day on which the injury was received.
6. Forty sites have emissions greater than 100 000 tonnes per annum of carbon dioxide equivalent and, combined, account for 96 per cent of the Group's greenhouse gas emissions.
7. Thirty-nine sites have fresh water consumption greater than 500 ML per annum and, combined, account for greater than 93 per cent of the Group's consumption.
8. Excludes petroleum platforms, exploration and development projects, closed sites and offices with no significant community or land management issues.
9. Excludes petroleum and diamonds.

## Customer Sector Group Reviews

We have adopted a business model based on customer-oriented groupings called Customer Sector Groups (CSGs). This structure reflects our focus on the needs of our customers.

Each of the CSGs is a substantial business in its own right, and several are leaders in their respective fields. They have autonomy to optimise their businesses, with clear accountabilities. Refer to the following for a summary of HSEC performance for each of our CSGs over the reporting period:

- [Aluminium](#)
- [Base Metals](#)
- [Carbon Steel Materials](#)
- [Diamonds and Specialty Products](#)
- [Energy Coal](#)
- [Petroleum](#)
- [Stainless Steel Materials](#)

## Aluminium

BHP Billiton is the western world's fourth largest producer of primary aluminium, with a total operating capacity in excess of one million tonnes of aluminium, approximately 9.5 million tonnes of bauxite and four million tonnes of alumina per annum.

The Aluminium CSG comprises sites in South America, Southern Africa and Australia. These include:

- Primary aluminium smelters - Hillside Aluminium (South Africa), Bayside Aluminium (South Africa), Mozal (Mozambique), Alumar (Brazil), Valesul (Brazil)
- alumina refineries- Worsley (Australia), Paranam (Suriname), Alumar (Brazil)
- bauxite mines - MRN Trombetas (Brazil), Lelydorp III (Suriname), Boddington (Australia).



**Hillside**  
Hillside aluminium smelter, South Africa

The Aluminium CSG services key market segments such as the automotive sector, the construction industry and the packaging sector.

## HSEC Overview 2005

Key aspects of the Aluminium CSG HSEC performance for the reporting period 2004/05:

- In June 2005 an employee at our Mozal Smelter was fatally injured when he was struck by a mobile crane.
- We achieved a 21 per cent reduction in Classified Injury Frequency Rate and a 50 per cent improvement in Total Recordable Injury Frequency Rate.
- Behaviour based programs across all sites were enhanced with a drive to report near miss significant incidents and take appropriate action to rectify, reduce risk and raise awareness.
- No significant environmental incidents were reported at controlled sites during 2004/05.
- All controlled sites maintained their ISO 14001 certification.
- Good progress was made with the rollout of health programs, designed to identify and reduce employee exposure.
- Rollout of contractor management training at all sites has progressed well, addressing an important HSEC improvement opportunity at all sites.

## HSEC Outlook

Looking ahead, the primary HSEC focus for the Aluminium CSG will be as follows:

- The fatal injury at our Mozal Smelter has highlighted the importance of continued focus on Fatal Risk Control Protocol application and analysis and action of high potential incidents.
- Behaviours impacting on recordable injuries will continue to receive focus.
- A Zero Waste environmental management program which commenced in 2004/05 will be rolled out to all sites in the coming year.
- Community projects will continue with the focus on positive partnerships with the communities in which we operate. Programs will be designed to impact overall HSEC needs as well as capacity building.

## Base Metals

BHP Billiton is one of the world's top producers of copper and a leading producer of uranium, silver, gold, lead and zinc. With the acquisition of WMC Resources Ltd, Base Metals also became the world's fourth largest uranium producer. We operate two mines in Australia (Cannington, Queensland, and Olympic Dam, South Australia), two in northern Chile (Cerro Colorado and Escondida), and one in Peru (Tintaya), with a joint venture interest in the Antamina mine in Peru. The Spence copper project in Chile will come on line in 2006.



**Cerro Colorado**  
Cerro Colorado copper operations in the Atacama Desert, Chile

### HSEC Overview 2005

Key aspects of the HSEC performance of Base Metals for the reporting period 2004/2005:

- We had no fatalities; our classified injury frequency rate was reduced by 13 per cent, and our expansion projects all achieved their 2005 safety targets.
- We achieved our target of zero significant environmental incidents.
- One significant community incident occurred at Tintaya when a mob invaded the property, setting fires and looting and vandalising the facilities.
- Escondida received the National Safety Award of the Chilean National Geological and Mining Service.
- Potential environmental/community incidents were identified at Cerro Colorado and action plans were implemented to resolve the concerns.

### HSEC Outlook

Looking ahead, the primary HSEC focus for Base Metals will be:

- continued improvement of safety performance
- integration of the Olympic Dam mine with the Base Metals business, and the identification and transfer of their best practices
- continued improvement in the use of environmental and community monitoring data to anticipate and prevent potential incidents
- proactive participation in multilateral community initiatives like the Tintaya Dialogue Table, Framework Agreement, and Environment Commission
- improved sharing of best practices through regional and global networks and communities of practice.

## Carbon Steel Materials

Carbon Steel Materials is a leading supplier of raw materials and services to the international steel industry, producing and marketing a full range of steel-making raw materials — iron ore, iron pellets, coking coal and manganese ore and alloys. With operations in Australia, South Africa and Brazil, Carbon Steel Materials is currently the world's largest supplier of seaborne coking coal and manganese and the third largest supplier of iron ore.

### HSEC Overview 2005

Key aspects of the HSEC performance of Carbon Steel Materials for the reporting period 2004/2005:

- During December 2004 an employee of Hotazel Manganese Mines (South Africa) was fatally injured when the vehicle he was driving left the road and rolled over approximately 25 kilometres from the township of Kuruman.
- We achieved a 32 per cent reduction in the Classified Injury Frequency Rate.
- We implemented the Fatal Risk Control Protocols across all sites.
- A number of our sites received recognition for their performance in sustainable development:
  - BHP Billiton Mitsubishi Alliance (BMA) Blackwater Mine (Queensland, Australia) was awarded the Minerals Council of Australia 2004 National Safety and Health Innovation Award for its engineering solution to significantly reduce the risk of 'crushing' incidents to operators of Vehicle Loading Cranes
  - WA Iron Ore received the WA Government annual 'Golden Gecko' award for environmental excellence for Dust Research and Measurement work at Port Hedland
  - BMA Crinum Mine was awarded both the Queensland Central Region Award and the overall State Chief Inspector's Safety Management Award by the Minister of Mines and Energy and the Chief Inspector of Mines.



**TEMCO**  
TEMCO ferroalloy smelter in Tasmania, Australia

### HSEC Outlook

Looking ahead, the primary HSEC focus for Carbon Steel Materials will be:

- compliance with the Company's HSEC key performance indicators, including reducing Total Recordable Injury Frequency Rate, implementing the revised HSEC Management Standards, and continuing focus on behavioural based safety systems
- progressing plans towards compliance with the Company's Closure Standard by FY07
- developing Fatigue Management Plans across the operations
- reviewing baseline occupational hygiene data and ongoing monitoring programs.

## Diamonds and Specialty Products

The Diamonds and Specialty Products (D&SP) group encompasses diamonds, titanium minerals, fertiliser products, exploration and technology. The EKATI Diamond Mine in the Northwest Territories of Canada is one of the world's largest gem quality producers. Richards Bay Minerals in South Africa is a major producer of titanium slag, high purity pig iron, rutile and zircon. D&SP also acquired world-class assets through the acquisition of WMC Resources Ltd, such as Queensland Fertiliser Operations (QFO - recently renamed Southern Cross Fertilisers) in Australia and Corridor Sands titanium project in Mozambique. Major expansions also occurred in Exploration offices in China, Russia, Mongolia and Africa, as well as increased activities in Technology in the developing countries.



**EKATI Diamond Mine**  
Winter aerial, Koala North, Koala

### HSEC Overview 2005

Key aspects of the HSEC performance of Diamonds and Specialty Products for the reporting period 2004/05:

- We achieved zero fatalities since the BHP Billiton merger.
- We achieved a 33 per cent reduction in Classified Injury Frequency rate over 2004/05.
- We implemented Behavioural-based Safety programs across D&SP.
- All Technology Laboratories achieved ISO 14001 certification.
- The [EKATI Diamond Mine](#) has consistently been named among [Canada's Top 100 employers](#).
- Our incident reporting and close-out of action items matured.

### HSEC Outlook

Looking ahead, the primary HSEC focus for Diamonds and Specialty Products will be to:

- Continue to strive towards Zero Harm – especially no fatalities
- Continue Classified Injury Frequency rate reduction with commencement of underground operations at EKATI, acquisition of QFO phosphate operations and Exploration's presence in new terrain
- Embed behavioural-based safety programs
- Be proactive in environmental management, particularly water management at EKATI
- Continue reduction in energy use at EKATI through its Energy Smart program, which seeks energy saving ideas from employees, evaluates and then implements the suggestions.



## Energy Coal

Energy Coal is one of the world's largest producers and marketers of export thermal coal which is primarily used in power generation. Energy Coal assets stretch across the globe - Australia, the United States, South Africa and South America. With our unique blend of export and domestic customers we aim to play a significant role in satisfying the worldwide demand for this commodity.

Our global footprint and our multi-source supply strategy underpin our commitment and capability to delivering to customer requirements.

### HSEC Overview 2005

Key aspects of the HSEC performance of Energy Coal for the reporting period 2004/05:

- Tragically, in October at Ingwe's Douglas Mine (South Africa), one of our colleagues lost his life at work.
- Our overall safety performance that failed to meet expectations. Our Classified Injury Frequency Rate increased by seven per cent against a target of a 20 per cent reduction. This result comprised of a 17 per cent reduction at New Mexico Coal; a 10 per cent reduction at Mt Arthur Coal and a 20 increase increase at our Ingwe operations. The apparent increase at Ingwe was due to a combination of more stringent reporting requirements, as well as some deterioration in safety performance at some of the Ingwe sites.
- Performance against our leading targets was encouraging. We achieved 121 per cent of our target for workplace safety observations for the year, which amounted to some 60 000 observations across the CSG. Each observation presents an excellent opportunity to influence people's behaviours and ensure safe conditions exist in the workplace.
- There has been satisfactory results with the implementation of the Fatal Risk Control Protocols. Self assessments show compliance of 96 per cent across the CSG, compared to a target of 95 per cent.
- We achieved the target on implementing our health, environment and community plans.
- Klipspruit's (South Africa) achieved three million workhours without a classified injury. While there have been many highlights and awards in the current reporting year that deserve recognition, this is a remarkable achievement made possible by the engagement of the entire Klipspruit team, employees and contractors alike, by a very committed leadership group.



**Cerrejón Coal**  
Puerto Bolivar, one of the largest ports in the world

### HSEC Outlook

Looking ahead, the primary HSEC focus for Energy Coal will be:

- Maintaining a strong focus on HSEC improvement across the CSG to ensure that we continue our journey towards Zero Harm
- Developing our four HSEC pillars of Fatality Prevention, Behavioural Alignment, Leadership Development and Risk Management
- Embedding the effort from the implementation of the Fatal Risk Control Protocols in order to achieve a fatality-free year.
- Continuing to implement our health, environmental and community plans.

## Petroleum

BHP Billiton Petroleum is a significant oil and gas exploration and production business. Our principal activities are oil and natural gas production, exploration and development in Australia, the US, the UK, Algeria, Trinidad and Tobago and Pakistan. We also have significant exploration interests in the Gulf of Mexico, Maritime Canada, Brazil, South Africa, Brunei Darussalam, Australia, the UK, Pakistan and Algeria. We are currently developing the Atlantis and Neptune fields in the Gulf of Mexico and the North West Shelf fifth LNG train in Australia.



**Liverpool Bay**  
Lennox satellite platform at Liverpool Bay, UK

### HSEC Overview 2005

Key aspects of the HSEC performance of Petroleum for the reporting period 2004/05:

- We had no fatalities or Level 3 Environmental Significant Incidents.
- We continued our improvement in Classified Injury Frequency Rate, reducing by 27 per cent.
- Our actual loss of containment incidents increased from three in 2003/04 to eight in 2004/05. This increase was due to increased drilling activity and project commissioning work
- We made good progress on the implementation of the Fatal Risk Control Protocols, the HSEC Standards and Behavioural-based Safety systems and in meeting the Company's HSEC Targets.
- Our Liverpool Bay Asset received a prestigious 'Big Tick' from the UK non-government organisation, [Business in the Community](#) (BITC). The 'Big Tick' is awarded to companies that demonstrate a high standard of excellence in the way they organise and integrate responsible business practices into their mainstream operations, and can show a positive impact both on society and the business. The judges praised the Liverpool Bay Asset for its responsible approach to community investment and the care taken not to create a community dependent on the Asset's support.

### HSEC Outlook

Looking ahead, the primary HSEC focus for Petroleum will be:

- improving the quality of implementation of existing HSEC systems and programs to address:
  - common Significant Incident trends of electrical and hazardous material incidents
  - common Significant Incident underlying trends of non-compliance with procedures and lack of risk awareness
- IT Training and competency assessment processes
- raising awareness on relevant HSEC issues; for example, Contractor HSE Management and Electrical Safety
- increasing focus on measuring the effectiveness of our Community Development programs and social performance.

## Stainless Steel Materials

The Stainless Steel Materials CSG primarily services the stainless steel industry through a wide range of high quality nickel products. In addition, the group is a major marketer of ferrochrome and supplies nickel and cobalt to other markets including the specialty alloy, foundry, chemicals and refractory materials industries.

Stainless Steel Materials nickel operations include the Cerro Matoso ferronickel mine and smelter in Colombia, Yabulu Refinery in North Queensland, and more recently, the Nickel West assets, formerly part of WMC Resources Ltd, and located in Western Australia. These assets include the Mt Keith and Leinster operations, the Kalgoorlie Nickel Smelter, Kambalda Concentrator and the Kwinana Nickel Refinery.



**Cerro Matoso**  
Cerro Matoso nickel mining and smelting operation in Colombia

### HSEC Overview 2005

Key aspects of the HSEC performance of Stainless Steel Materials for the reporting period 2004/05:

- Our record low Classified Injury Frequency Rate, representing a 35 per cent reduction on 2003/04.
- We have implemented the use of the forward energy model diagnostic tool to assess site safety attitudes and behaviours to assist in identifying potential future safety performance on-site. As a result of using this model, site management and the workforce have the opportunity to take proactive, preventative action.
- Process Hazard Analysis has proved effective in reviewing operational procedures across a range of activities and in providing key opportunities for appropriate safety intervention.
- Safety leadership is the key driver for sustained performance.

### HSEC Outlook

Looking ahead, the primary HSEC focus for Stainless Steel Materials will be to:

- Implement a comprehensive safety alignment program at the newly acquired Nickel West operational assets in Western Australia, following a recent HSEC diagnostic review
- Maintain our continued vigilance in proper management and education of our workforce about the presence of potentially harmful compounds in many of our nickel operations. This follows the REACH regulatory initiative on chemicals in the European Union that resulted in the re-classification of some nickel compounds as Category 1 carcinogens, Category two mutagens and reproductive toxicants
- Implement DuPont safety programs at all sites to increase the effectiveness of our coaching processes for frontline supervisors and workers, by focusing on developing appropriate behaviour in order to drive safety improvements through the operations.

## Recognition

While we are driven by outcomes, not awards, recognition helps to maintain our momentum and communicate the success of our activities to our stakeholders.

In 2005, we were again pleased to receive public recognition for our performance in public reporting, community relationship and sustainable development ([read more](#)).

In addition, many of our operations received recognition for excellence at a local or regional level.

Each year, the BHP Billiton Employee HSEC Awards encourage and recognise those employees and their teams who openly embody the values expressed in our Charter and go beyond what is required in their day-to-day jobs to care for their fellow employees, the community and the environment ([read more](#)).

## External Recognition

While we are driven by outcomes, not awards, external recognition helps to maintain our momentum and communicate the success of our activities to our stakeholders. The table below summarises the external recognition we have received at a Corporate level during the reporting period 2004/05. In addition, many of our operations received recognition for excellence at a local or regional level.

Recognition	Description
Company of the Year 2005 - UK Business in the Community Awards	<p>Our commitment to responsible business practice was recognised with the Company of the Year Award 2005 at the Business in the Community (BITC) National Awards for Excellence.</p> <p>Business in the Community is a unique movement in the UK of 800 member companies. Its purpose is to inspire, challenge, engage and support business in continually improving its positive impact on society. Together its member companies employ over 15.7 million people across 200 countries. BHP Billiton is the first company in the extractive industries to receive the award and is the first recipient recognised for its global activities.</p> <p><a href="#">More</a></p>
Runner up, Best Sustainability Report 2004 - Association of Certified Chartered Accountants (ACCA) Australia and New Zealand	<p>The awards aim to:</p> <ul style="list-style-type: none"> <li>● reward and recognise organisations that report and disclose environmental, social or full sustainability information</li> <li>● encourage the uptake of environmental, social and sustainability reporting</li> <li>● raise awareness about corporate transparency.</li> </ul> <p><a href="#">More</a></p>
2005 Australasian Reporting Awards - Award winner Environmental Reporting Award	<p>The Australasian Reporting Awards have been held continuously since introduced in 1951. Their aim is to encourage organisations to strive for excellence in reporting to their shareholders.</p> <p><a href="#">More</a></p>
Top 20 Ranking - The Global Reporters 2004 Survey of Corporate Sustainability Reporting	<p>The Global Reporters 2004 Survey is SustainAbility's sixth benchmark survey of corporate non-financial reporting with UNEP and their first in partnership with Standard &amp; Poor's.</p> <p><a href="#">More</a></p>
Dow Jones Sustainability Indices - Sustainability Leader for the Mining Sector	<p>Accounting for issues such as corporate governance, climate change, supply chain standards, and labor practices, the annual review of the DJSI family is based on a thorough assessment of corporate economic, environmental and social performance. Its results will influence the investment decisions of asset managers in 14 countries who have licensed the DJSI family as benchmarks and underlying for a variety of sustainability-driven portfolios – including mutual funds, segregated accounts, structured products, as well as an exchange traded fund that is listed on Euronext. Total assets under management in DJSI based investment vehicles currently amount to USD 4.1 billion.</p> <p><a href="#">More</a></p>

## Employee HSEC Awards

The BHP Billiton Employee HSEC Awards encourage and recognise those employees and their teams who openly embody the values expressed in our Charter and go beyond what is required in their day-to-day jobs to care for their fellow employees, the community and the environment.

The Awards also provide a platform for sharing creativity and best practice. A wealth of knowledge is gathered through the entry submission process and this is published across the Company to bring business benefits.

Awards are presented in the four categories of Health, Safety, Environment and Community, together with an award for Individual Excellence, the recipient of which is personally selected by the Chair of the Judging Panel, The Rt Hon Sir Ninian Stephen (former Governor General of Australia). Each category of nominations is assessed by a separate judging panel for each category, comprising one Company representative and four experts from the non-government, government and academic sectors.

This year, more than 260 nominations were received from around the world. The judges selected a shortlist of finalists in each category. From these, the recipients of Excellence, Highly Commended and Merit Awards were chosen.

In recognition of their initiative, each Excellence award and Highly Commended award recipient will be presented with a specially designed sculpture, and each Merit award recipient will receive a certificate. The finalists each nominated a charity or not-for-profit organisation to share in their award. These organisations will receive a donation of US\$7500 (Excellence Award), US\$3750 (Highly Commended) or US\$1500 (Merit). All the recipients are to be congratulated for the high standard of their contributions.

We also thank the judges who participated in the assessment of entries and acknowledge their contribution to the Awards process.

The finalists in this year's Awards are presented below, together with a brief description of their project. The Award recipients will be listed following their announcement at the HSEC Awards presentation to take place on 23 November 2005.

- [Individual Excellence Award Short-Listed Nominees](#)
- [Health Awards Finalists](#)
- [Safety Awards Finalists](#)
- [Environment Awards Finalists](#)
- [Community Awards Finalists](#)

### Individual Excellence Award Short-Listed Nominees

To be personally selected by the Chair of the Judging Panel, The Rt Hon Sir Ninian Stephen  
Emmanuel Dube

*Aluminium, Bayside Aluminium Smelter, Kwa-Zulu Natal, South Africa*

Alcido Mousse

*Aluminium, Mozal, Maputo, Mozambique*

Ed Pinceratto

*Petroleum, Bass Strait Asset, Australia*

David Ritchie

*Diamonds and Specialty Products, EKATI Diamond Mine, Yellowknife, North West Territories, Canada*

Arturo Gerardo Uribe Aguilera

*Base Metals, Minera Escondida, Second Region, Chile*

## Health Awards Finalists

- Larissa Pinto Barbosa for [Baby Teeth Program](#)  
*Carbon Steel Materials, Samarco Mineração, Brazil*
- Eliseu Canuma for [Mozal HIV/AIDS Program](#)  
*Aluminium, Mozal, Maputo, Mozambique*
- Dale Bradford (team representative) for [‘Your Health Matters’ Wellness Program](#)  
*Petroleum, Glomar CR Luigs Offshore Drill Ship, Worldwide Drilling, Louisiana, USA*
- Noelle Emmett (team representative) for [Worsley Waist Reduction Program](#)  
*Aluminium, Worsley Alumina, Western Australia*
- Keith Griffin (team representative) for [Development Capital Projects Health and Wellness Program](#)  
*Aluminium, Worsley Alumina, Western Australia*
- Ash Goodwin (team representative) for [Wagon Vibrator Program](#)  
*Carbon Steel Materials, BMA Coal - Hay Point Services, Queensland, Australia*
- Linda Kissane (team representative) for [Respiratory Health Management Program](#)  
*Aluminium, Aluminium Southern Africa, KwaZulu-Natal, South Africa*
- Paula Northam for [Health Assist Program](#)  
*Carbon Steel Materials, TEMCO, Tasmania, Australia*
- David Todd (team representative) for [Project 0.5](#)  
*Carbon Steel Materials, Iron Ore Pilbara Operations, Western Australia*
- Bobbie Walker (team representative) for [Proactive Injury Prevention Health Program](#)  
*Base Metals, Cannington silver, lead and zinc mine, Queensland, Australia*

## Safety Awards Finalists

- Mike Borchart (team representative) for [Valve Lifting Frame Project](#)  
*Aluminium, Worsley Alumina, Western Australia*
- Scott Carson (team representative) for [Berth Warning System](#)  
*Carbon Steel Materials, BMA Coal – Hay Point Services, Queensland, Australia*
- Yogen Chetty (team representative) for [HEART: Hillside Eliminating Accidents and Risks Together](#)  
*Aluminium, Hillside Aluminium Smelter, KwaZulu-Natal, South Africa*
- Jeff Clifton (team representative) for [Dragline Tub High Voltage Cable Plug Innovation Project](#)  
*Carbon Steel Materials, Blackwater Mine, Queensland, Australia*
- Noel Harden (team representative) for [Load Haul Dump Operators Cabin Project](#)  
*Carbon Steel Materials, Illawarra Coal, New South Wales, Australia*
- Steynberg van Rensburg (team representative) for [Electronic Permit System Project](#)  
*Carbon Steel Materials, Metalloys Meyerton, Gauteng, South Africa*
- Steve Maddison (team representative) for [Ohanet Oil and Gas Development Project](#)  
*Petroleum, Ohanet Oil and Gas Development, Wilaya de Ouargla, Algeria*
- Nelly Magnan (team representative) for [Zero Harm Enrolment Project](#)  
*Base Metals, Minera Escondida, Second Region, Chile*
- Ross Naumann (team representative) for [China CBM Exploration Campaign 2004](#)  
*Petroleum, China Coal Bed Methane Project 2004, Mongolia, China*
- Tom Raleigh (team representative) for [Tyre Handler Proximity Protection](#)  
*Carbon Steel Materials, Norwich Park Mine, Queensland, Australia*

## Environment Awards Finalists

- Mónica Arrieta (team representative) for [Water Efficient Use and Savings Program](#)  
*Stainless Steel Materials, Cerro Matoso, Montelíbano, Colombia*
- William Cornes (team representative) for [Clean Air Task Force Beltwash Stations](#)  
*Carbon Steel Materials, Nelson Point/Finucane Island, Western Australia, Australia*
- James Glasston (team representative) for [Flue Dust Recycling Project](#)  
*Base Metals, San Manuel Southwest Copper, Arizona, United States*
- Chris Hanks (team representative) for [Naonayaotit Traditional Knowledge Project](#)  
*Diamonds and Specialty Products, EKATI Diamond Mine, Yellowknife, North West Territories, Canada*
- Hendrik Louw (team representative) for [Hillside Aluminium Waste Program](#)  
*Aluminium, Hillside Aluminium Smelter, KwaZulu-Natal, South Africa*
- Gordon Maclean (team representative) for [Tailings Flow Control Reduces Water Consumption](#)  
*Carbon Steel Materials, Goonyella Riverside Mine, Queensland, Australia*
- Jamie McCorkell (team representative) for [Hay Point Foreshore Development and Restoration Project](#)  
*Carbon Steel Materials, BMA Coal - Hay Point Services, Queensland, Australia*
- Kim Norman (team representative) for [Point of Ayr Land Management Program](#)  
*Petroleum, Liverpool Bay Oil and Gas Project, Wales, United Kingdom*
- Juan Reinaga (team representative) for [Operations Energy Campaign](#)  
*Base Metals, Minera Escondida, Second Region, Chile*
- Adri Salim (team representative) for [BHP Kendilo Coal Closure Project](#)  
*Energy Coal, PT BHP Kendilo Coal, Petangis, Indonesia*

## Community Awards Finalists

- Sergio Molina Berrios (team representative) for [Corporate Social Responsibility Fund](#)  
*Base Metals, Minera Escondida Foundation, Second Region, Chile*
- Clóvis Bastos de Oliveira (team representative) for [Safety Campaign - Community Boats](#)  
*Aluminium, Mineração Rio do Norte (MRN), Oriximiná, Brazil*
- Juan Alvarez Guzman (team representative) for [Minera Escondida Foundation School](#)  
*Base Metals, Minera Escondida Foundation, Second Region, Chile*
- Frans-Jozef Jaspers (team representative) for [SME Development Program](#)  
*Aluminium, Mozal, Maputo, Mozambique*
- Michael Jose (team representative) for [BHP Billiton Iron Ore Aboriginal Education Partnerships](#)  
*Carbon Steel Materials, Iron Ore - Nelson Point, Point Hedland, Australia*
- Mark Kelly (team representative) for [QNI 'Adopt a School' Program](#)  
*Stainless Steel Materials, QNI Yabulu Refinery, Queensland, Australia*
- Humera Malik (team representative) for [Changing Lifestyles - Sustainable Livelihoods of Women in Johi](#)  
*Petroleum, Zamzama Gas Project, Islamabad, Pakistan*
- Sheldon Narine (team representative) for [La Brea Village Agricultural Project](#)  
*Petroleum, Angostura Asset, Trinidad and Tobago, West Indies*
- Salvador Traquino (team representative) for [Community Livestock Breeding Project](#)  
*Aluminium, Mozal, Maputo, Mozambique*
- Venecia Van Loggerenberg (team representative) for [Unizul Science Centre](#)  
*Aluminium, Bayside and Hillside Smelters, KwaZulu-Natal, South Africa*



## Data Tables

The following provide an overview of our key data:

- [Key Sustainability Data Summary](#) – provides key sustainability data for the Group in one table for comparison since the 2001/02 reporting period
- [Environmental Data Summary](#) – provides environmental data, available down to the individual asset level, for the current reporting period.

## Key Sustainability Data Summary

### Key Sustainability Data Summary

	Units	2001/02	2002/03	2003/04	2004/05
<b>Health</b>					
Number of new cases of <a href="#">occupational illnesses</a>	Total number	N/A	226	197	152

<b>Safety</b>					
Number of <a href="#">fatalities at our controlled operations</a>	Total number	13	3	17	3
<a href="#">Classified Injury Frequency Rate</a>	See <a href="#">CIFR</a>	6.7	5.4	5.0	3.9

	Units	2001/02	2002/03	2003/04	2004/05
<b>Environment<sup>1</sup></b>					
<b>Land use</b>					
<a href="#">Land newly disturbed</a>	hectares	4 500	3 540	5 620	4 940
<a href="#">Land rehabilitated</a>	hectares	2 210	1 790	2 060	1 850
<a href="#">Land requiring rehabilitation<sup>2</sup></a>	hectares	82 910	77 160	65 250	73 330
<b>Resource Consumption</b>					
<a href="#">Fresh water consumption</a>	<a href="#">Megalitres</a>	120 800	132 630	153 000	153 170
<a href="#">Energy Used</a>	<a href="#">Petajoules</a>	265	292	327	309
<b>Emissions</b>					
<a href="#">Greenhouse gases</a>	'000 tonnes <a href="#">CO<sub>2</sub>-equivalent</a>	46 660	47 070	51 960	52 110
<a href="#">Oxides of sulphur</a>	tonnes	41 080	42 280	48 240	50 540
<a href="#">Oxides of nitrogen</a>	tonnes	44 240	49 640	54 600	57 120
<a href="#">Fluoride</a>	tonnes	1 680	910	900	950
<b>Waste<sup>3</sup></b>					
<a href="#">General waste disposed to landfill</a>	tonnes	99 300	115 280	124 990	154 820
<a href="#">Hazardous waste disposed to landfill</a>	tonnes	56 800	79 940	59 100	68 100

	Units	2001/02	2002/03	2003/04	2004/05
<b>Community</b>					
<u>Community contributions</u>	US\$ million	40.3	42	46.5	57.4
	% pre-tax profit <sup>4</sup>	1.4	1.4	1.3	1.0
<b>Socio-economic</b>					
<u>Total number of full-time employees</u>	Total number	51 000	34 800	35 070	36 468
<u>Employee turnover rate</u>	%	N/A	5	6	2
<u>Full-time employees that are female</u>	%	9	8	9	12
Total <u>Value Add</u>	US\$ million	N/A	12 466	14 085	15 927
<b>Financial</b>					
<u>Group turnover<sup>5</sup></u>	US\$ million	15 228	17 506	24 943	31 804
<u>Earnings before interest and tax<sup>5,6</sup></u>	US\$ million	3 102	3 481	5 488	9 330

N/A – Data not available.

Figures in italics indicate that this figure has been adjusted since it was previously reported.

1. Figures restated to facilitate year-to-year comparison of performance without BHP Steel, which was demerged in July 2002.
2. Assumes immediate closure of all operations.
3. Excludes recycled materials and mining related materials, such as waste rock, tailings, coal reject and slag. Hazardous waste includes waste oil.
4. % pre-tax profits calculated on a 3-year rolling average.
5. From continuing operations, including the Group's share of joint ventures and associates.
6. Excluding exceptional items.

## Environmental Data Summary

Data in these tables are aggregate figures based on-site data reported by BHP Billiton's managed businesses for the financial year 2004/05. Totals may differ due to rounding of data

View Environmental Data Summaries for: [Aluminium](#) [Base Metals](#) [Carbon Steel Materials](#) [Stainless Steel Materials](#) [Energy Coal](#) [Petroleum](#) [Diamonds & Specialty Products](#)

View Environmental Data Summaries for: [Land](#) [Water](#) [Waste](#)

### Environmental Data Summary

	<a href="#">Aluminium</a>	<a href="#">Base Metals</a>	<a href="#">Carbon Steel Materials</a>	<a href="#">Stainless Steel Materials</a>	<a href="#">Energy Coal</a>	<a href="#">Petroleum</a>	<a href="#">Diamonds &amp; Specialty Products</a>	<b>BHP Billiton Total</b>
<b>Accidental Discharges (litres)</b>								
Hydrocarbons <sup>1</sup>	500	1,818	80,914	2,870	600	13,376	21,360	121,440
Other materials	526,700	31,021	3,075,333	52,200	78,974,080	19,086	50,446	82,728,870
<b>Land (hectares)</b>								
Total footprint <sup>2</sup>	567,940	62,310	492,140	100,560	168,380	530	332,440	1,725,110
Newly disturbed in the reporting period	640	160	2,310	540	1,090	0	200	4,940
Rehabilitated in the reporting period	200	130	470	80	910	30	30	1,850
Land requiring rehabilitation <sup>3</sup>	2,770	9,530	42,610	1,860	14,760	40	1,760	73,330
Land available for rehabilitation	150	5,720	2,060	60	5,790	40	1,760	15,580

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total
<b>Water Consumption (megalitres)<sup>4</sup></b>								
Fresh water	14,810	81,180	35,840	12,410	8,350	310	180	153,080
Recycled water	2,130	39,950	42,740	60,690	16,240	0	5,000	166,760
<b>Energy Use (petajoules<sup>5</sup>)</b>								
Coal and Coke	35.8	0.0	17.4	26.1	0.0	0.0	0.0	79.4
Purchased electricity	72.7	11.5	16.2	18.2	3.8	0.1	0.0	122.6
Natural gas	14.7	2.2	1.4	7.4	0.0	18.6	0.0	44.4
Distillate & Others	9.3	9.0	20.4	8.5	9.0	2.8	3.5	62.5
Total	132.6	22.8	55.5	60.3	12.8	21.4	3.5	308.9
<b>Greenhouse Gas Emissions (000 tonnes CO2-e<sup>6</sup>)</b>								
Carbon dioxide	24,300	2,370	6,980	7,440	1,670	1,440	250	44,450
Methane	0	0	4,478	0	1,837	160	0	6,480
Perfluorocarbons (PFCs)	924	0	0	0	0	0	0	924
Total	25,220	2,370	11,460	7,440	3,510	1,600	250	51,850
<b>Other Gaseous Emissions (tonnes)</b>								
Oxides of sulphur	38,620	370	1,950	8,560	320	490	160	50,480
Oxides of nitrogen	5,790	8,320	18,510	6,230	7,930	6,560	3,780	57,120
Fluoride	970	0	0	0	0	0	0	970

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total
<b>Waste (various units)</b>								
Waste water & effluent discharged (megalitres)	1,680	21,110	14,460	6,850	10,000	890	9,070	64,060
Waste oil discharged to landfills (kilolitres <sup>7</sup> )	340	10	0	0	40	20	0	410
Hazardous mineral waste disposed (tonnes)	6,841,230	11,728,060	10,273,560	773,850	2,400	0	0	29,619,100
Other hazardous waste disposed to landfill (tonnes)	14,550	19,950	3,670	26,460	1,720	860	10	67,230
Non-hazardous mineral waste disposed (tonnes)	125,840	98,830,150	21,556,860	6,071,370	20,357,290	0	4,835,890	151,777,420
General waste disposed to landfill (tonnes)	7,430	71,410	47,130	8,070	5,370	15,090	250	154,750

1. Includes hydrocarbons released to secondary containment facilities and subsequently recovered.
2. Includes onshore exploration leases, but exclude offshore exploration leases.
3. This value includes the area to be rehabilitated while the project is operational, not the total area that will require rehabilitation at the end of project life.
4. One megalitre is equal to 10<sup>6</sup> litres.
5. One petajoules is equal to 10<sup>15</sup> joules.
6. CO<sub>2</sub>-e = Carbon dioxide equivalent (the basis of comparing the warming effect of greenhouse gases such as carbon dioxide, methane, perfluorocarbons, etc.)
7. One kilolitre is equal to 10<sup>3</sup> litres.
8. The BHP Billiton Total figure is inclusive of data from our closed Beenup site in Western Australia.

## Sustainability at BHP Billiton

At BHP Billiton as our Charter states, we have 'an overriding commitment to health, safety, environmental responsibility and sustainable development.' For further details on what sustainable development means in the context of BHP Billiton, see:

- [Sustainable Development at BHP Billiton](#), which outlines our overall strategic approach to sustainable development, including the business case and our vision
- [Our Sustainability Challenges](#) for those issues that may have a significant impact on our business
- [Engaging Stakeholders](#) for an overview of our stakeholders and associated dialogue processes that are central to our approach to sustainable development.

## Sustainable Development at BHP Billiton

The most commonly stated definition of sustainable development is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. (Source: World Commission on Environment and Development [Brundtland Commission], 1987)

For BHP Billiton, sustainable development is about ensuring our business remains viable and contributes lasting benefits to society through the consideration of social, environmental, ethical and economic aspects in all that we do.

Line managers therefore have ultimate accountability for ensuring our businesses contribute to sustainable development, and move towards Zero Harm, through the implementation of processes such as our HSEC Management Standards and Guide to Business Conduct.

For example, while a particular mine site or petroleum development may not be sustainable because the reserves will be depleted over time, the mine can still make a valuable contribution to a society's overall pursuit of sustainable development. The project creates employment, provides the opportunity for training and skills enhancement, pays taxes and royalties that can contribute to government services such as education and health care and provides the opportunity for support and spin-off industries.

Mineral and petroleum extraction also contribute products that are essential to all modern societies and economies. Without materials generated by the extractive sector, basic needs such as shelter, transport and energy would not be met.

The extractive process can therefore be seen as transforming a form of natural capital — mineral resources — into social capital — infrastructure, skills and the like — that can then contribute to further development.

The proposition that the value of our products outweighs any environmental or social impacts is, however, not acceptable. We have established a strategic approach to sustainable development that looks not only at what we need to do at a business level but also involves participation in a number of initiatives to better understand how we can minimise our impacts, while maximising our broader contributions to society.

Read:

- the [Business Case](#) that we apply in progressing sustainable Development
- [Our Approach to Sustainable Development](#) for details on our vision, strategy for sustainable development and how we measure the progress of our contributions to sustainability.



## The Business Case

Without a profitable business, we are simply unable to contribute to the broader goals of sustainability. We recognise, however, that our bottom line performance is dependent on ensuring access to resources and securing and maintaining our licence to operate and grow. Therefore maximising the bottom line is about recognising the value protection and value add that can be achieved through enhanced performance in HSEC aspects. Delivery of this enhanced performance is a core expectation we have of our management teams. We term this our sustainability value add and recognise the value it can bring to our business through:

### **Reduced business risk and enhanced business opportunities**

By understanding and managing risk we can provide greater certainty for our shareholders, our employees, our customers and suppliers, and the communities in which we operate. We can be better informed, more decisive and pursue growth opportunities with increased confidence. The aim is for risk management to become embedded in all our critical business systems and processes so that we identify the risks and manage them on a consistent and holistic basis before events occur that might affect us or our stakeholders.

### **Gaining and maintaining our licence to operate and grow**

Access to resources is crucial to the sustainability of our business. Fundamental to achieving access to resources is effectively addressing heightened political and societal expectations related to the environmental and social aspects of our business.

### **Improved operational performance and efficiency**

Many key operational performance indicators are inextricably linked to sustainability performance. For example, improving energy efficiencies reduces both costs and greenhouse gases. Increasing plant life reduces maintenance cycles, thus reducing requirements for consumables and replacement items. Reducing wastes immediately eliminates operational costs. Through the application of innovation and business improvement methodologies, not only can operational efficiency and performance gains be made but so too can sustainability gains.

### **Improved attraction and retention of our workforce**

Our workforce is an essential element of our business and being able to attract and retain top talent is fundamental to our success. Maintaining a healthy and safe workplace is a universal value to all employees. Effective employee development and training programs, attractive remuneration packages, addressing work-life balance, and providing a fair and non-discriminatory work environment all contribute to employee attraction and retention. In addition, our approach to sustainable development and the knowledge that there is an alignment between our Company values and personal values has also been shown to be a contributor to employee attraction and satisfaction.

### **Maintained security of operations**

Asset security is a critical element which can be significantly impacted by the nature of relationships with host communities. Trusting and supportive relationships can lead to reduced security risks, whereas distrustful relationships can lead to costly heightened security risks. This is particularly critical for our operations in parts of the world with politically unstable environments.

### **Enhanced brand recognition and reputation**

The benefits of enhanced brand recognition and reputation are many but often difficult to quantify. Understanding what our stakeholders perceive as responsible behaviour, meeting these expectations and achieving recognition from financial institutions, investors and customers can deliver value. For example, enhanced reputation may foster an increased belief that the Company has the capacity and capabilities to deliver on its commitments. This can promote shareholders' faith in proposed investments, communities' faith in community development plans, governments' faith in successful delivery of projects, and business partners' faith that we are reliable and competent in all that we do.

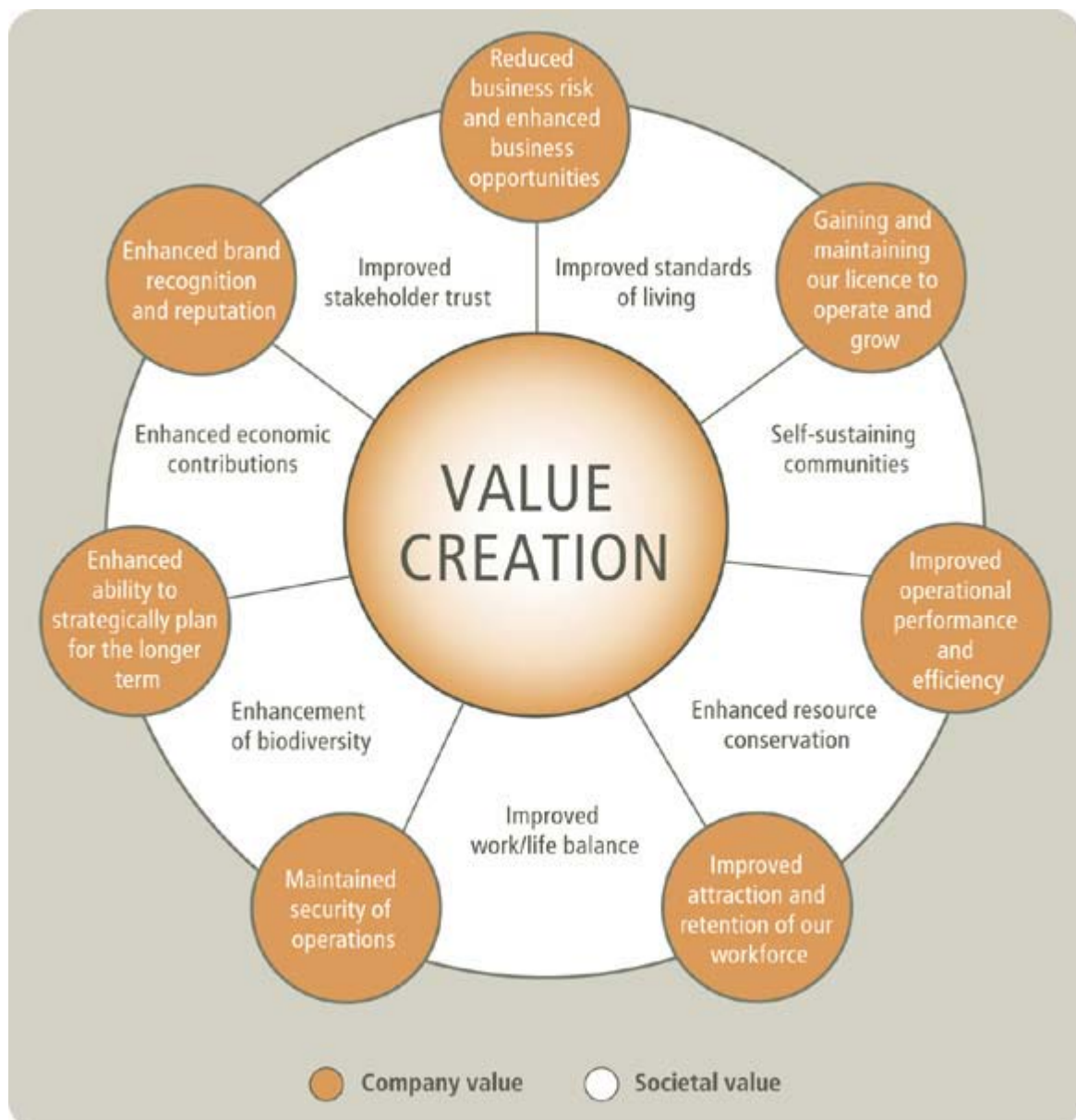
## Enhanced ability to strategically plan for the longer term

By anticipating and understanding trends in society, such as new regulations, heightened societal expectations and improved scientific knowledge, and assessing these against our business models, we can improve our ability to proactively plan for the longer term. This may include entry into emerging markets, revision of product mixes or influence upon operational technologies.

## Beyond the Business Case

Beyond the business case described above, there are also many clear societal benefits that flow from our ability to integrate aspects of sustainability into our business. These benefits include, but are not limited to, contributing to improved standards of living and self-sustaining communities.

The diagram below illustrates the many facets of value creation at BHP Billiton.



## Our Approach

The Company's commitment to sustainable development has evolved over our long history of operational experience and through lessons learned along the way. Working through complex issues associated with our operations has highlighted environmental and social performance as a critical success factor for the Company. We are well aware of the costs of getting it wrong but, more importantly, we recognise the value that can be created by getting it right. Consequently, we adopt a holistic approach to business strategy, seeking to realise value for all our stakeholders through sustainable business philosophy.

This section details our vision for sustainable development and the strategic approach we have adopted to contribute to sustainability.

[Governance](#) outlines the systems and processes we have to guide our businesses in their journey to sustainable development.

The business basis of our approach to sustainable development is outlined in [The Business Case](#).

See the following for further details on our approach to sustainable development:

- [Our Vision](#) of what sustainable development means to BHP Billiton
- [Our Strategy](#) for working towards sustainable development
- [Measuring Progress](#) of our journey towards sustainable development.

## Our Vision

At BHP Billiton, our vision for sustainable development is to be the company of choice — creating sustainable value for shareholders, employees, contractors, suppliers, customers, business partners and host communities. Central to our vision is our aspirational goal of Zero Harm to people and the environment.

In simple terms,

Zero Harm means:

- we aspire to create a workplace that is injury, illness and incident free. We seek to minimise and where possible eliminate our environmental impacts over time.

Company of choice means:

- being selected by shareholders as a valued investment, based on strong financial performance and sound governance processes .
- being preferred by employees for providing a safe, healthy and equitable workplace and caring about the communities in which we live.
- being preferred by host communities for our contribution to sustainable community wellbeing.
- being preferred by our business partners — customers, suppliers, contractors, governments and joint venture partners — as a reliable partner in delivering sustainable value.

This emphasis on sustainable value means we have the willingness to invest for the future while ensuring we deliver value in the shorter term.

## Our Strategy

Our sustainable development strategy comprises two dimensions – business dimensions and sustainability dimensions – that together contribute to a single bottom-line performance. Business dimensions represent traditional contributors to a financially successful and competitive business, as without a profitable business we are unable to contribute to the broader goals of sustainability. Our bottom-line performance is however dependent upon ensuring access to resources and securing and maintaining a licence to operate and grow. This highlights the criticality of the value protection and value add that can be achieved through enhanced performance in non-financial dimensions – or sustainability dimensions.

## BHP Billiton business dimensions

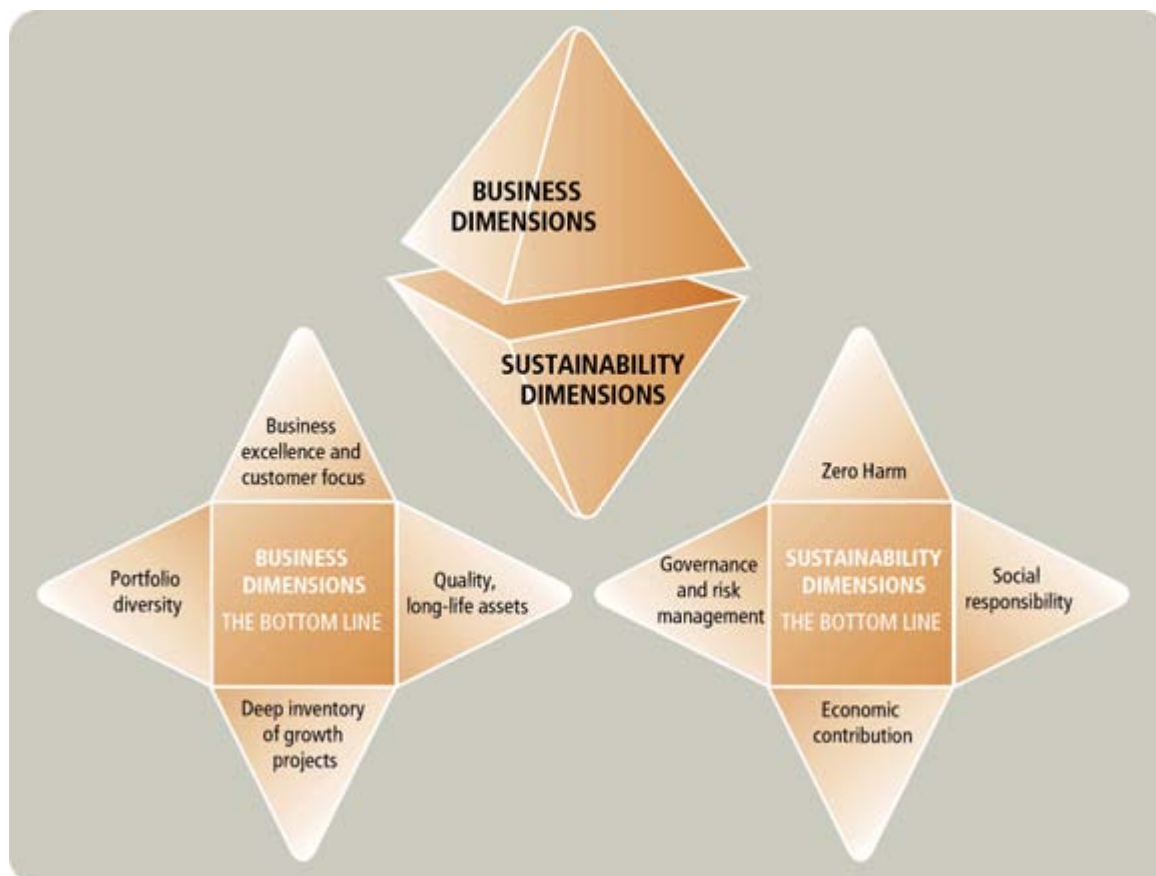
- business excellence and customer focus
- portfolio diversity
- deep inventory of growth projects across all CSGs, including greenfield and brownfield projects as well as appropriate merger and acquisition activities
- quality, long-life assets.

## BHP Billiton sustainability dimensions

- aspiring towards Zero Harm to people, host communities and the environment
- ensuring effective governance and risk management processes are in place
- recognising the need to be socially responsible and contribute to sustainable community development
- ensuring the broader economic contributions of our operations are effectively injected into the regions where we operate.

Maximising bottom line performance is therefore about recognising the value-protection and value add to be achieved through performance in non-financial dimensions. Integral to which is excellence in HSEC performance.

A useful metaphor we apply to our sustainable development strategy is illustrated below. Together, our strategic dimensions combine to form a structure similar to that of a natural diamond. An inherently stable structure, with the strength in each dimension contributing equally to an even stronger, stable and more valuable whole, and a robust bottom line, the diamond is symbolic of our approach to sustainable development.



## Measuring Progress

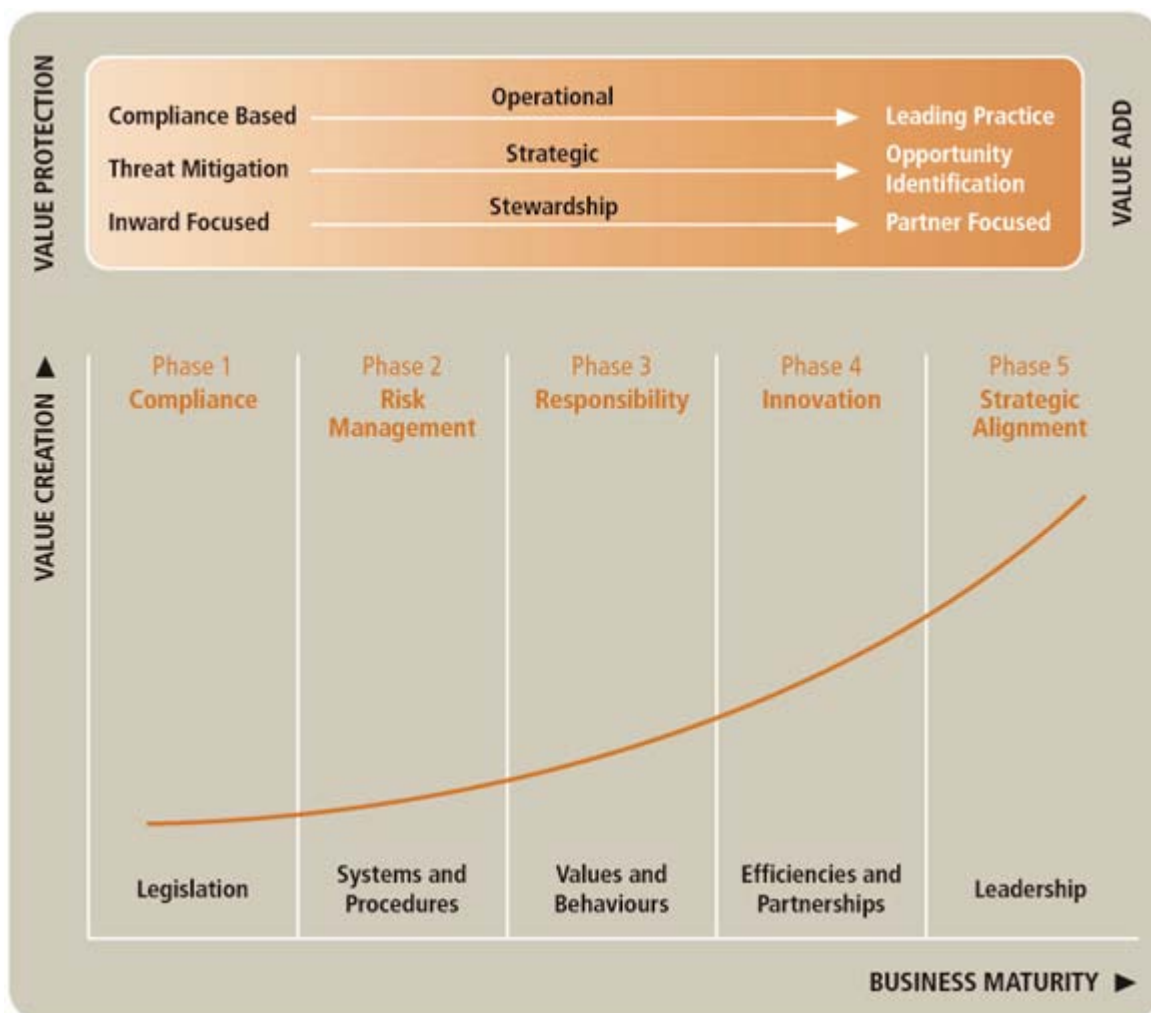
Our Sustainable Development Road Map is a strategy map that provides a new, contextual framework for how we measure our progress on our journey towards sustainable development.

We will be encouraging our managers to place their decisions in the context of this Road Map and question how they can better improve the sustainability performance of their operations.

The Road Map seeks to illustrate that there are three contexts to consider when making decisions that influence our ability to contribute to sustainable development. At the operational level, we will be encouraging our managers to increasingly seek out leading practices across the HSEC dimensions. On a strategic level, we will be encouraging management teams to identify opportunities that drive sustainable value creation. At the commodity level, we will be encouraging our businesses to demonstrate stewardship by building partnerships across the lifecycles of our products to deliver broader business and societal returns.

We recognise that there may not always be a need for operations to excel in all aspects of sustainability, and therefore encourage an approach whereby operations strive for excellence in areas where they perceive the greatest relevance to their stakeholders and business. While each stage in maturity is distinct, it is recognised that the requirements of the previous stage must be maintained and built upon in order to progress in maturity.

Mature sustainable development is about strong leadership and foresight. We see this as leading to the strategic alignment of opportunities – for example, converting hazardous manganese sludges and dusts into pellets that can be made into manganese alloys.



# BHP Billiton Sustainable Development Road Map

	<b>Maturity phases</b>	<b>Indicative milestones</b>
1.	<p><b>Compliance</b></p> <p>What are our mandatory obligations? Are we meeting them?</p>	<ul style="list-style-type: none"> <li>● Compliance system in place for health, safety, environmental, social, ethical and economic performance</li> <li>● Demonstrated compliance with relevant laws</li> </ul>
2.	<p><b>Risk Management</b></p> <p>Where are our exposures? How can they be managed and minimised?  We establish systems, measure, benchmark and review our performance and develop strategies to continually improve performance.</p>	<ul style="list-style-type: none"> <li>● Risks identified, assessed, prioritised and managed</li> <li>● Risk-based management systems are in place</li> <li>● Strategies to improve performance identified and implementation plans developed</li> <li>● Stakeholder engagement process implemented</li> <li>● Non-financial performance measurement and reporting systems implemented</li> </ul>
3.	<p><b>Responsibility</b></p> <p>Is sustainability part of the way our business lives and breathes?  We develop a culture where strategic thinking and continuous improvement is internalised so that quality, efficiency and innovation become business as usual.</p>	<ul style="list-style-type: none"> <li>● Health, safety, environmental, social, economic and ethical aspects are integral to business planning</li> <li>● Sustainability reports verified by a third party</li> <li>● We advocate the benefits of sustainability to our industry and supply chain</li> <li>● We advocate responsible business practice</li> </ul>
4.	<p><b>Innovation</b></p> <p>What are the strategic business opportunities arising from our achievements?  We benefit from actions taken to reduce our environmental and social impact by leveraging strategic, innovation or market advantages.</p>	<ul style="list-style-type: none"> <li>● Socially responsible investment attracted</li> <li>● Spin-off technology or other business opportunity implemented</li> <li>● Market access or penetration increased</li> <li>● Business or products repositioned in marketplace</li> </ul>
5.	<p><b>Strategic alignment</b></p> <p>How can we integrate aspects of sustainability into our business?  We are positioned to adapt to the rapidly changing marketplace and are ready to exploit new opportunities or to set future market realities.</p>	<ul style="list-style-type: none"> <li>● Production systems are closed loop</li> <li>● Productivity gains made</li> <li>● Proactive in identifying opportunities</li> <li>● Business is renowned as a leader, partner of choice</li> </ul>

## Our Sustainability Challenges

Our sustainability challenges are those issues that we believe may have a material impact on our ability to be a successful business.

In determining those issues of materiality we have utilised a number of processes, which included:

- an analysis of the non-financial risks at the Customer Sector Group (CSG) level as identified through our [Enterprise-Wide Risk Management](#) system
- an analysis of the non-financial risks associated with our CSG business strategies
- an analysis of NGO and other stakeholder dialogue and concerns
- an analysis of queries from socially responsible investment analysts
- an analysis of BHP Billiton's performance versus industry peers in key sustainability indices, such as the [Dow Jones Sustainability Index](#) and the Business in the Community [Corporate Responsibility Index](#)
- results from our Company-wide HSEC Audits and Self Assessments.

A workshop was convened with representatives from each of our Customer Sector Groups and key functional areas to identify, evaluate and prioritise issues with the potential to affect shareholder and stakeholder value. To support unbiased decision-making, a Decision Matrix was used as a tool to identify and rank those factors with the potential to impact value creation. The matrix utilised is illustrated below.

### BHP Billiton Decision Matrix for Determining our Sustainability Challenges

Value to BHP Billiton

High

Low


Low

High

Value to Stakeholders

Those issues that were rated as high in value to both BHP Billiton and our stakeholders were then presented to our [Forum on Corporate Responsibility](#) for debate and consideration. This resulted in a consolidated list of the top five sustainability challenges for BHP Billiton. The challenges are not in order of importance and require parallel action:

- [Fatal Risks](#)
- [Occupational and Community Health](#)
- [Greenhouse Gas Emissions](#)
- [Access to Resources](#)
- [Sustainable Community Development and Closure](#)

## Fatal Risks

The safety of our employees and the communities in which we operate is fundamental to our business. Our goal is Zero Harm.

Despite implementation of safety standards and systems being mandatory at our operations, significant incidents and, in some instances, fatal accidents continue to occur. This is a cause of major concern to us, and we are totally committed to eliminating these incidents from our businesses.

Our challenge is to fully implement and optimise the safety management standards we have developed. We need to ensure that all our employees and contractors understand, rigorously apply, and fully comply with these standards.

See the following for:

- details on [Our Approach](#) to this challenge
- an understanding of [Our Drivers](#).

## Our Approach

Across the organisation we manage safety risks through our risk-based [HSEC Management Standards](#) and other dedicated safety systems. Our safety strategy is based on three principles:

- leadership effectiveness
- behaviours and awareness
- rigorous standards and systems for managing risks and ensuring full compliance.

These all focus on our people and systems, with two key objectives:

- ensuring that our practices, procedures, conditions, equipment and behaviour all contribute towards creating a workplace where it is possible to work without adverse impact on people, the environment or the community
- developing our people to make the right decisions as they go about their day-to-day work.

### **Leadership**

The need to address at-risk behaviours and increase safety awareness is integral to achieving Zero Harm in safety, as outlined in '[Our Future State](#)', the Company's vision for its safety performance. Effective safety leadership is crucial to the success of our safety programs. We therefore hold line management accountable for the safety of our operations. In this regard we have implemented an [Operating Discipline](#) program.

### **Behaviour**

Behavioural-based safety is the process of involving our people in defining the ways they are most likely to be injured and asking them to observe co-workers; and engaging them in a discussion that reinforces safe behaviours and identifies ways the job can be done more safely.

### **Standards**

A review of our past fatalities and significant incidents resulted in the identification of a series of key fatal risks to our people – risks that require the development of sound systems to eliminate fatalities and incidents that could, in slightly different circumstances, cause fatalities. Consequently the [Fatal Risk Control Protocols](#) were established in 2003. The Protocols were developed through workgroups made up of individuals from across BHP Billiton with extensive experience in operations. The Protocols establish minimum performance expectations for managing these risk areas at leading practice levels.

The Fatal Risk Control Protocols are self-audited annually to ensure compliance against the Protocols and that any at-risk practice is identified and managed.



To proactively manage safety performance we use lead indicators as a metric to drive and measure activities that control and prevent injury, damage or loss. When measured and monitored effectively, they provide data to enable effective intervention to address or reverse a negative trend before it results in injury, damage or loss.

We therefore encourage near miss reporting to increase awareness and focus about key fatal risks and provide the impetus for our employees and contractors to review their operation for similar risks and implement preventative actions. Near miss reporting is also useful as a learning tool, providing real and valuable information for use in toolbox talks, safety communications, training programs and risk assessments.

## Our Drivers

We recognise that our employees and contractors have a right to a safe work environment and that they have families and dependants whose lives can be devastated by losing a loved one. As well as doing the right thing by our workforce, our mission of achieving Zero Harm is simply good business. We need to be able to attract and retain talented people to work with us, and good people are attracted by high standards and performance.

To obtain and maintain a licence to operate, we must be seen by our host communities as a company that protects and cares for its people. We must also be able to continue operating within increasingly stringent regulatory frameworks.

In financial terms we are a very successful organisation, but until we eliminate fatalities from our operations we will not achieve our objective of being the best company. We recognise that it is the best companies that people want to welcome into their communities and work with, buy from and invest in.

## Occupational and Community Health

Zero Harm and the value of our people are central to the success of our business. Effective management of the health of our people is therefore essential to not only reduce the potential impact of work on the individual but also to improve quality of life through both work-based and community health programs. This means we must promote an environment that contributes to our employees being both fit for work and fit for life.

Our work with the communities in which we operate is focused on establishing programs that address health issues of significance to the community, as they may also impact our workforce and their dependants.

In addition, in considering our role in addressing community health issues of global significance, we have embarked on programs that extend beyond the communities in which we operate; and we are among the leaders in fostering new partnerships in this area.

Our challenge is therefore to ensure that our health programs are continually evolving in order to maintain our journey towards Zero Harm, recognising and influencing those factors that impact upon our employees, their families and our communities.

Refer to the following for:

- details on [Our Approach](#) to this challenge
- an understanding of [Our Drivers](#).

### Our Approach

In general we seek to apply a holistic approach to the management of health, targeting health impacts at work, at home and in the broader community. For further detail on our approach and performance see our [Health](#) section.

### ***Employee Exposure***

Throughout the Company we continue to develop and refine standardised procedures for managing occupational exposure levels and for measuring and reporting exposure. We have increased the networking capability of our professionals in these areas by formalising global networks and increasing communication and knowledge transfer.

We have targets to reduce exposure and occupational illness so we can concentrate our attention on key areas to reduce the potential for long-term harm to the workforce.

Through focused initiatives we develop and apply best practice exposure reduction measures. For example, the Diesel Particulate Initiative has been highly successful in our underground mines. The guideline manual developed for this initiative was keenly sought by other companies and regulatory authorities to assist them in addressing this issue. For more information, refer to our case study [Illawarra Coal develops program to manage employee exposure to diesel exhaust](#).

### ***Fit for Work/Fit for Life***

The Company-wide Fit for Work/Fit for Life guidelines have been developed for managing issues such as drug and alcohol abuse, fatigue management, occupational rehabilitation, health promotion, job and task analysis and stress management and have been distributed throughout the Company. These guidelines are supported by a strong global network of health professionals to integrate the processes throughout the organisation.

## **Community Health**

Health continues to be central to our community programs. Many of our operations are in regions where the three most significant global infectious diseases (HIV/AIDS, malaria and tuberculosis) have significant impact. We continue to support major programs on malaria to reduce the burden of this disease in Africa and assist in research to find new malaria drugs. Refer to our Health case study on our [long-running health program at Cerrejón](#) for an example of this approach.

## **Global Involvement**

We continue to look for opportunities to support activities that offer health benefits that extend beyond the communities in which we operate. In respect of HIV/AIDS we have channeled this into the search for more effective treatment for the disease. We are providing funding to support the formation of a consortium to progress the development of a promising immune therapy treatment given as a vaccine. This treatment has the potential to revolutionise the ability for southern Africa to cope with the numbers of people needing simple, effective, deliverable treatment for the disease.

## **Our Drivers**

The effective management of the health of our employees, contractors and communities is integral to ensuring:

- we maintain operational performance and efficiency by having a workforce that is able to work productively
- we continue to attract and retain a workforce by establishing a reputation for a healthy workplace where the broader health needs of employees are also considered
- we continue to gain access to resources through improving our capacity to work in areas where there are health risks and demonstrating that this capacity contributes more broadly to the improved health of the communities where we operate.

## Greenhouse Gas Emissions

BHP Billiton is both a user and producer of fossil fuel energy products that create greenhouse gas emissions. Scientific evidence suggests that greenhouse gas emissions associated with fossil fuel consumption and other human activity are contributing to global warming. Global warming may be associated with an increasing frequency of extreme weather conditions that could have a significant impact on the environment and the quality of human life.

Looking forward over the next two decades, global demand for minerals and energy is anticipated to continue to grow, with the strongest growth in developing countries. Some of the least greenhouse gas intensive routes will grow the quickest over the next 20 years. Access to affordable energy, minerals and metals is a critical component of poverty alleviation and social and economic development and, therefore, will remain central to society.

Our challenge as a member of global society is to help meet the world's minerals and energy needs while mitigating the potential impact of greenhouse gas emissions on the climate. Our focus is both on controlling the emissions that we produce at our sites around the world and on seeking ways to reduce the emissions produced by our customers when they consume our products.

See the following for:

- details on [Our Approach](#) to this challenge
- an understanding of [Our Drivers](#)
- [An External View](#) on the challenge.

### Our Approach

In 1995, we were one of the first participants in the Australian Greenhouse Challenge program, which was designed to encourage reductions in greenhouse gas emissions. We started measuring our greenhouse gas emissions in 1993 and have publicly reported our greenhouse gas emissions data since then.

Our philosophy is that what we measure we can improve, and so we set a target of reducing the greenhouse intensity of our operations by 10 per cent between 1995 and 2000. Greenhouse gas intensity is measured by emissions per unit of production, including the purchase of electricity, at operated sites.

We exceeded our original target, achieving a 12 per cent improvement. In 2002 we extended the target to a further five per cent over the years 2002 to 2007. Again, this has been exceeded. In 2007, a new target will take effect.

In addition to targeted reduction of greenhouse gas emissions at our sites, we require that all sites that emit over 100 000 tonnes of CO<sub>2</sub>-e have greenhouse gas and energy conservation management plans.

Furthermore, as part of the investment evaluation process, we require carbon to be priced into our investment decisions for any project that will emit more than 100 000 tonnes of CO<sub>2</sub>-e. Our price series for carbon are revised annually and have appropriately high and low ranges to reflect the uncertainty associated with forecasting the price of carbon credits. The price series are also intended for use in strategy development.

In addition to controlling emissions associated with production at our sites and evaluating the potential impact of future regulation of carbon, we also undertake activities to address the current and future needs of our customers in regards to greenhouse gas emissions associated with the consumption of our products.

In this regard, we have identified emissions trading as an area of opportunity. Our Energy Marketing group has been selling coal bundled with Certified Emission Reduction units (raised via clean development mechanism projects) to our coal customers in Europe. This is allowing us to develop knowledge and skills in emissions trading and is enabling us to continue to better package the fuel supply requirements of our customers.

Another area of increasing priority is research, development and demonstration of low emissions technologies. This includes [Coal Bed Methane research](#) and capture of methane in ventilation air, as well as support for external research such as the US [FutureGen](#) project, [COAL21](#), the Australian [Cooperative Research Centre for Greenhouse Gas Technologies](#) and the [CRC for Coal in Sustainable Development](#).

For further information refer to:

- BHP Billiton [Climate Change Position Statement](#) for an overview of our climate change policy
- [Climate Change Related Activities and Priorities](#)
- address by Chip Goodyear, Chief Executive Officer, BHP Billiton, to 19th World Energy Congress, Sydney, Australia, September 2004: [Delivering Sustainability In An Energy Company](#)
- address by Jon Dudas, Chief Commercial Officer, BHP Billiton Energy Coal, to Coaltrans Conference, Barcelona, Spain, October 2004, [Strategies For Supplier In A Carbon Constrained World](#).

## Our Drivers

There are a number of drivers of our climate change policy and actions.

Our customers, particularly in Europe, are impacted by regulation of their greenhouse gas emissions and we can create value by responding to their needs. We will continue to explore ways to assist them to reduce their emissions footprint.

In addition, we must continue to be proactive in setting and achieving internal emission intensity reduction targets, in order to respond constructively to community expectations and government regulation.

To deliver long-term growth in shareholder value, we must continue to strategically plan for market shifts, threats and opportunities. As a result of climate change, we expect that the market share for gas as a fuel for power generation will grow, given its lower greenhouse gas intensity, its proximity to markets and the desire of our customers to diversify their fuel supplies. There are a wide range of possible changes to energy markets, and analysis and actions to take account of these is one driver of our strategy. Failure to respond to customer needs and anticipate regulatory change will ultimately impact on the demand for our products and the costs of doing business.

Finally, the communities in which we operate and where we sell our products are concerned about the impacts of climate change within their national borders and globally. To earn their respect and attract and retain employees, we must be a responsible company.

## An External View

'Many resources companies' forecasts are extrapolations that do not take account of a carbon constrained future. It is important that companies like BHP Billiton look beyond the current resources boom and test strategy in a truly carbon constrained scenario. For example, it is important to consider trends such as dematerialisation, where lighter and less resource intensive products will be the norm. It is also essential that business leaders not rely on technology being a "silver bullet" which will eventually solve the greenhouse gas problem and as a reason for deferring thinking and action to find solutions today.'

**Greg Bourne, CEO, WWF Australia**

2005/06

## BHP Billiton Climate Change Related Activities and Priorities for 2005/06

Business	General Activities include:	R&D Activities include:	R&D Activities include:	Priorities for FY06 include:
<p><b>Corporate</b></p>	<p>A new Company target related to energy and greenhouse gas is being designed and will be effective starting FY2007</p> <p>Carbon Pricing Protocol (used to shadow price carbon in investment analysis) is revised annually in light of international developments in the carbon market and government policy</p>	<p>Participation in the <a href="#">Energy Futures Forum</a> - a 2-year project led by the CSIRO to develop 50-year energy scenarios for Australia</p> <p>Assistance provided to Government of Australia in developing an energy efficiency opportunities assessment tool using business excellence model</p> <p>Greenhouse gas inventory data collection and analysis</p> <p>Monitoring of GHG intensity target and site-based energy conservation and GHG management plans</p>	<p>Support for BHP Billiton participation in the <a href="#">Australian Low Emissions Technology Demonstration Fund</a></p>	<p>Preparation for new energy/greenhouse gas target</p> <p>Monitoring global developments in climate change policy and science including promoting the understanding of strategic implications of greenhouse gas emissions</p>
<p><b>Aluminum</b></p>	<p>Focus has been on improving the GHG efficiency of operations including anode effects, unit power consumption, power efficiency and anode consumption management</p> <p>GHG benchmarking with International Aluminium Institute</p> <p>Investigation into viability of higher accuracy monitoring of perfluorocarbons (PFCs).</p>	<p>Examination of internal Clean Development Mechanism (CDM) opportunities undertaken</p>	<p>Industry lifecycle research and analysis</p> <p>Participation in development of best practice module</p>	<p>Understand Clean Development Mechanism (CDM)/ trading opportunities</p> <p>Continue research into closed loop concept model including role of recycling</p> <p>Continue to improve the energy efficiency of existing operations</p> <p>Work with <a href="#">International Aluminium Institute</a> to identify sectoral opportunities to address climate change</p>

Business	General Activities include:	R&D Activities include:	Priorities for FY06 include:	
Carbon Steel Materials	<p>Monitoring policy and market-related developments</p> <p>Focus is on improving energy efficiency of operations to reduce greenhouse gas emissions</p>	<p>Illawarra Coal, Australia - Coal Seam Gas Utilisation Project - continues to abate 2-3 Mt CO<sub>2</sub>-e per annum</p> <p>Research at Illawarra Coal for the capture of methane in mine ventilation air</p>	<p>'Diesohol' - a diesel fuel alternative consisting of a blend of diesel and a sugar-based alcohol - was trialled at BMA, Australia</p>	<p>Continue to monitor climate change risk</p> <p>Continue to improve energy efficiency of operations and follow through on 'Diesohol' trial, commissioning of Illawarra methane capture project</p>
Energy Coal	<p>Our marketing function is selling coal bundled with Certified Emission Reduction units (raised via CDM credits)/European Union Allowances; this activity involves developing expertise and knowledge of emerging carbon markets including risks and opportunities in both developed and developing country contexts</p> <p>Climate change scenarios considered in long-term supply demand model used for price assumptions as well as in strategy development work</p>	<p>Policy and Advisory work:</p> <p><a href="#">COAL21</a> - an internationally recognised program under the auspices of the Australian Coal Association designed to reduce greenhouse gas emissions from coal-based electricity generation</p> <p><a href="#">Carbon Sequestration Leadership Forum</a> (CSLF) - BHP Billiton has participated in the Australian delegation to this US-led forum for international coordination of carbon capture and storage policy and research development</p> <p><a href="#">Coal Industry Advisory Board</a> (CIAB) advises the International Energy Agency on coal issues related to Zero Emission Technologies (ZET)</p>	<p>Zero Emission Coal Technology research and development includes: commitment to participate in <a href="#">FutureGen</a> project, <a href="#">Coal21</a>, Queensland Centre for Low Emissions Technologies and <a href="#">Australian Cooperative Research Centre for Coal in Sustainable Development</a></p>	<p>Maximise the value-add potential of credits trading position</p> <p>Invest further in clean coal technologies research</p> <p>Continue strategy work, mitigating risk and seeking opportunities</p>

Business	General Activities include:		R&D Activities include:	Priorities for FY06 include:
<b>Petroleum</b>	<p>Developing Energy strategy with climate change scenarios embedded in thinking</p> <p>Enhancing the understanding of the BHP Billiton supply-demand balance for energy across all businesses, our exposure to energy costs and prices across the Company and how an integrated approach to managing energy across the portfolio could deliver value</p>	<p>Strategy has been put into place to effectively manage Petroleum's obligations under the UK national greenhouse gas allocation plan as per obligations under the European Union Emissions Trading System</p> <p>Development of Coal Bed Methane business projects underway in Australia, China and North America</p>	<p>Advanced planning for Australia's first CO2 injection and storage pilot project led by the <a href="#">Cooperative Research Centre for Greenhouse Gas Technologies</a> (CRC CO2)</p>	<p>Follow through on ongoing strategic work and CO2 injection and storage pilot project</p> <p>Energy Coal/Petroleum Group seeking to develop an 8 MW trial project to test zero emissions power from coal bed methane in Australia</p>
<b>Stainless Steel Materials</b>	<p>Monitoring policy and market-related developments</p> <p>Participation in EU industry bodies concerned with climate change related policies and actions including <a href="#">Eurometaux</a></p> <p>Energy efficiency and other greenhouse gas reducing measures including switching from coal to gas at the Yabulu Refinery in Queensland, Australia</p>		<p>Research into product lifecycle profile of nickel and cobalt products (CSIRO) including: lifecycle analysis of nickel and stainless steel including end product use comparisons</p> <p>Research into nickel extraction technologies with reduced greenhouse profiles</p> <p>Participation in the <a href="#">University of Queensland Sustainable Minerals Institute</a></p>	<p>Continue lifecycle analysis</p> <p>Gain better understanding of the opportunities presented by climate change for the business (including Clean Development Mechanism (CDM), lifecycle opportunities and influence of policy formation)</p>



## Access to Resources

Access to resources is fundamental to the sustainability of our business. Our challenge is to achieve access to the resources relevant to our scope of operations while addressing heightened political and societal expectations related to obtaining and maintaining a 'licence to operate'.

### Human Rights

We must identify, understand and manage requirements associated with the fact that prospective developments are increasingly in developing and/or sensitive regions where there are competing environmental, social, racial, political and economic pressures.

Resource extraction often competes with agriculture and other human activities for access to land and water resources. The mineral resources we seek are often located in developing countries where land is the basis of subsistence agricultural activities for already marginalised communities. They also are often in desert countries where water is critical to the survival of communities. These needs must be recognised and managed appropriately.

Not only must we be aware of the direct human rights impacts we may have as a result of our operations, we must also recognise our role in promoting human rights within our supply chain, with our business partners and more broadly within the regions where we operate.

### Biodiversity

We must be mindful of the environmental values of potential resource developments. We must systematically identify, assess and manage the biodiversity values that may be potentially affected by our activities.

See the following for:

- details on [Our Approach](#) to this challenge
- an understanding of [Our Drivers](#).

## Our Approach

### ***Management Systems***

Our Sustainable Development Policy and HSEC Management Standards are structured around establishing systems and processes to manage risks and issues, including those relating to our relationships with our internal and external stakeholders, human rights and the environment, including biodiversity.

We require our sites to assess their exposure to potential human rights issues and develop management plans to address key exposures through our human rights self assessment process.

Our operations must develop and implement a community relations plan to ensure important stakeholder issues are identified and managed.

Sites are also required to have and maintain land management plans to identify, protect and enhance agreed beneficial land uses, including the consideration of biodiversity values.

### ***Investment Tollgating***

Internal tollgating and assessment tools, including formal risk and impact assessments, are utilised to identify environmental and social risks and issues associated with accessing resources and to ensure they are appropriately managed. The requirements of our tollgating processes increase as the project stage matures. For example, at the Concept stage of a project we require projects to have undertaken risk assessments to identify and outline management measures for HSEC, including human rights and biodiversity. At the Feasibility stage of a project we require detailed environmental and social impact assessments to be undertaken, incorporating the outcomes of environmental and social baseline studies and consequent mitigation measures.

For further details refer to [Investment Processes](#).

## **Stakeholder Engagement**

We seek proactive engagement by stakeholders and work with them to identify and manage their issues and concerns. (For details on our approach to engagement refer to [Our Stakeholders](#).) Specifically, we have publicly committed to a number of policy positions in conjunction with our key stakeholders. These include:

- in conjunction with the [International Council on Mining and Metals](#) and the World Conservation Union, an undertaking not to explore or mine in World Heritage properties and a commitment to take all possible steps to ensure that operations are not incompatible with the outstanding universal values of World Heritage properties
- our policy on riverine tailings developed in conjunction with our [Forum on Corporate Responsibility](#) states we will not commit to a new mining project that disposes of waste rock or tailings into a river
- our policy on deep sea tailings placement, developed in conjunction with our [Forum on Corporate Responsibility](#), states 'BHP Billiton has decided not to pursue Deep Sea Tailings Placement (DSTP) as a potential tailing disposal option for any of its current prospects. The Company also believes that given the very specific circumstances where DSTP could be considered appropriate, it is unlikely that the technology will be pursued in any of our future developments.'
- our [Black Economic Empowerment and Employment Equity](#) policies underpin our commitment to accelerating development and fostering entrepreneurship of historically disadvantaged groups in South Africa.

Overall, our operations are progressively and more comprehensively engaging key stakeholders (especially non-government groups and organisations) in addressing issues of mutual concern, and are doing it at an earlier stage of the project-planning process.

## **Our Drivers**

Appropriately identifying and effectively managing issues about access to resources is essential if we are to:

- obtain and maintain a licence to operate
- improve access to new business opportunities
- keep ahead of regulations and reduce regulatory intervention
- enhance and protect our reputation
- differentiate ourselves from our competitors.

These are key to our sustainability as a business and our ability to deliver long-term share growth and shareholder value.

## Sustainable Community Development and Closure

We believe our business plays a valuable transformational role in society today and will continue to do so into the future.

We have the potential to transform the natural capital contained within the earth's orebodies into physical capital through the products manufactured from the raw materials we extract and into human capital through our education, training and development opportunities; and we also have the capacity to build social capital, through the people networks established as a result of our business.

We rely heavily on having a supportive community around us, and we work hard to develop strong relationships with employees, contractors, suppliers, all levels of government, social institutions and the people who live in our host communities.

Closure is an important phase in the lifecycle of our operations. Eventually all sites reach a point where it is no longer economic to continue to extract the natural resources. Additionally, by the very nature of our business, there is often some environmental disturbance as a result of our operations which requires rehabilitation either prior to or after the announcement of closure.

Timely and comprehensive planning for closure and beyond is therefore a key component of our ability to contribute to sustainable development. Good closure planning assesses a wide range of risks and involves addressing environmental, social and financial aspects of closure for the long-term.

Our challenge is to maximise the benefits to communities during the operational phase of the asset so that we leave a lasting positive legacy after closure.

See the following for:

- details on [Our Approach](#) to this challenge
- an understanding of [Our Drivers](#).

## Our Approach

### **Communities**

Our businesses all operate programs to create benefits, both in the short and long-term, for the communities in which they operate. Since 2002, the Company has met its target to spend one per cent of pre-tax profits (on a rolling three-year average) on voluntary community programs. In this way, our communities have been able to share in our financial success over recent years.

Our approach to community development is to move from an historical position of limited community consultation and a paternalistic style, to more participative engagement. The people best placed to respond to local needs and concerns, and hence manage community development, are the people who live in our host communities, therefore management teams at our operations have accountability for their community initiatives.

To assist sites develop and implement community programs we have Company-wide guidelines, which provide a set of principles to facilitate a consistent approach to community development and support for community activities. Principles include valuing the knowledge and opinion that resides within communities and working with them to develop meaningful programs, investing in programs where our contribution can be leveraged through support from other bodies, and building local capacities so that community members are empowered to take control of their own development processes.

We also have a community relations network across the Company, and this will be augmented in the coming year to improve knowledge sharing and to identify and transfer best practice. We are also increasing our efforts in relation to professional development for community relations professionals (refer to our case study, [Looking to look through the eyes of others](#)) and measuring the effectiveness of community programs.

## **Employees**

As many of our operations are located in rural and remote areas, our employees are often junior sports coaches, emergency services volunteers, members of local councils or members of not-for-profit committees.

To support our employees who actively contribute to their communities, we have developed the BHP Billiton Matched Giving Program. This program has been extensively trialed over the past few years with a range of sites across our businesses and has been well received by employees. The program is unique in that it provides a cash contribution to match an employee's donation or their volunteering activity or fundraising efforts. In this way, employees can direct some of the Company's community funding towards organisations that they personally support. This program will be rolled out across the Company in the next year.

There continues to be discussion within the resources sector as to whether it is better to establish a community around a mine site or to create fly-in, fly-out operations. There are advantages and disadvantages to both approaches. Establishing a community offers employees and their families stability for the life of the mine, but the disruption to the community on mine closure is significant. Fly-in, fly-out operations mean that the impact on families is reduced at mine closure but that during operations employees are absent from their families for extended periods of time.

Across our operations there are examples of both situations. Our approach is to continue to look for solutions best for both employees and the business, and to train and develop our people to ensure they are well equipped on closure of an operation to apply for other jobs, either within or outside the Company.

## **Closure**

The closure of an operation affects the community on many levels. BHP Billiton operates in many different countries throughout the world, and sustainable closure issues are complex. Environmental legal frameworks worldwide are varied, and each operation has its own unique set of environmental, social and land-use issues that affect closure planning.

In line with our commitment to Zero Harm, BHP Billiton officially adopted a [Closure Standard](#) in July 2005. This new standard applies to all investment opportunities and controlled operations and strives to leave a responsible legacy that outlasts the operation itself and ensures a positive future for our host communities.

The Closure Standard mandates compliance with relevant legislative and regulatory requirements and goes the additional step to tie closure planning to a set of objectives which support our Charter.

Closure planning is required throughout the lifecycle of the operation, starting with exploration and development of a property and continuing as long as necessary. There is value in integrating closure planning from the very beginning with current operations and mine planning. Additionally, there is value in the timely and efficient execution of closure according to well-considered plans and schedules. These benefits will become more apparent as closure risks are better understood with the process outlined in our Closure Standard.

Further information is detailed in [Closure](#), in our environmental performance section.

## Our Drivers

As stated in the BHP Billiton Charter, one of the indicators of success is that 'the communities in which we operate value our citizenship'. Sustainable community development ensures communities benefit throughout all phases of the life of an operation – through development, operation and closure.

A stable, healthy and supportive society enables businesses to operate effectively. By contributing to the social fabric of the communities where we operate, we are also creating an environment in which the Company can grow.

With many new projects located in developing countries, it is increasingly important for us to be able to demonstrate to key stakeholders, including governments, that we have a good track record in making a sustainable contribution to the environment and community, as well as providing economic benefits.

An increasingly important aspect for consideration by prospective employees is the social responsibility credentials of a company. In order to attract and retain the best employees, we need to be able to engage employees in our community efforts and provide opportunities for them to be proud of their Company.

## Engaging Stakeholders

Every day we interact with numerous people from varied backgrounds. We are committed to maintaining and promoting dialogue with our stakeholders and remaining responsive to the global community's concerns and aspirations.

We recognise the importance of trust to relationship building. Consequently, being accountable is paramount, and we seek to be transparent with our communications and documentation. Our Charter, Sustainable Development Policy, HSEC Management Standards and Guide to Business Conduct, all promote a commitment to acting with honesty, integrity and fairness in all our activities.

In line with our Policy commitment to continual improvement, we constantly aim for a greater level of engagement and interaction with stakeholders, particularly with the communities in which we operate.

See the following for details on:

- [Identifying Stakeholders](#) – how we identify our stakeholders
- [Our Approach to Dialogue](#) – our processes for undertaking dialogue and addressing stakeholder grievances
- [Our Stakeholders](#) – who are our stakeholders, what are their interests and concerns, and what are our dialogue mechanisms
- [Building Global Links](#) – international initiatives and commitments we participate in
- [Report Dialogue](#) – how we seek specific feedback to this report.

Also see our [Community](#) section for details of our performance and case studies relating to engagement with stakeholders over the reporting period.

## Identifying Our Stakeholders

Key stakeholders are generally identified as people who are adversely or positively impacted by our operations, those who have an interest in what we do, or those who have an influence on what we do.

Our [HSEC Management Standard 7](#) requires that 'Effective, transparent and open communication and consultation is maintained with stakeholders associated with Company activities. Stakeholders are encouraged to participate in and contribute to sustainable development through HSEC performance improvement initiatives.'

Consequently we require the identification and consideration of stakeholders, their expectations and their concerns for all operational activities, across the lifecycle of operations. Importantly, we also require sites to specifically consider any minority groups (such as indigenous groups), and any social and cultural differences that may be critical to stakeholder engagement.

A regular review process is also a central requirement of stakeholder identification, to ensure that all appropriate groups and individuals are effectively identified and suitably engaged.

For an overview of BHP Billiton's main stakeholders, see [Our Stakeholders](#).

## Our Approach to Dialogue

Maintaining constructive stakeholder relationships is a critical part of our journey towards sustainable development.

The relationships we build can be compared to the crafting of a rope, as illustrated in the figure below.

The core of the rope consists of those stakeholders with whom we engage regularly — employees and contractors, local and indigenous communities, shareholders and customers. The rope's sheath comprises those who are important influencers but with whom we do not have such regular contact — investment community, business partners, community organisations, unions, non-government organisations, suppliers, governments, media and industry associations.

The information we receive from stakeholders helps refine the management of our activities and their potential impacts, in line with the goals set out in our Charter. Lessons from individual relationships are also shared with others, in effect strengthening our relationship with all stakeholders. All these aspects therefore contribute to enhancing the integrity of the rope.

### BHP Billiton Stakeholder Relationships



Our approach to stakeholder engagement is directed by the requirements of our [HSEC Management Standard 7](#), with the intent being 'Effective, transparent and open communication and consultation is maintained with stakeholders associated with BHP Billiton activities. Stakeholders are encouraged to participate in and contribute to sustainable development through HSEC performance improvement initiatives.'

Specifically, HSEC Management Standard 7 requires:

- systems to [identify stakeholders](#)
- consideration of local, social and cultural contexts in engagement mechanisms
- regular communication on HSEC matters, risks, plans and performance
- employee and contractor participation in the development, implementation and review of HSEC initiatives and programs
- regular management of the effectiveness of communication, consultation and participation processes.



Additionally, mechanisms to address grievances and concerns should also be established. Sites are required to maintain a register of concerns, complaints and relevant external communications. We require concerns and complaints to be investigated as incidents, using our standard investigation processes, and outcomes and actions are reported back to relevant stakeholders. Further details on our approach to employee grievances are discussed in [Grievance Procedures](#) in employee relations.

Refer to [Our Stakeholders](#) for a detailed discussion on who our stakeholders are and how we engage with them.

## Our Stakeholders

Our key stakeholders are many and varied and include:

- some 36 000 employees and a similar number of contractors
- local and Indigenous communities, most of which are located in rural and remote areas neighbouring our operations
- a diverse shareholder base
- customers, typically other large organisations
- the global investment community, both mainstream financial analysts and Socially Responsible Investment (SRI) analysts
- business partners, including those organisations with which we have joint ventures
- community organisations that represent local and indigenous communities near our operations
- unions who are concerned about upholding workers' rights and interests
- non-government organisations
- suppliers that range from businesses local to our operations to large international suppliers
- governments – local, national and international
- all types of media
- industry associations, including commodity-specific and sector-specific associations at national and international levels.

For each of the above groups, we have endeavoured to present who they are, their interests and concerns, and the key mechanisms we use to engage them in dialogue.

You can also download a summary copy of this information in [BHP Billiton's Stakeholder Relationships](#).

## Employees and Contractors

### Who are they?

BHP Billiton has some 36 000 employees and a similar number of contractors in more than 25 countries. Each, in their own way, acts as an ambassador for the Company. In supporting them to be effective in this role, as stated in our Charter and our Sustainable Development Policy, we aim to be 'forthright in our communications' and 'engage with and support our employees, contractors ...in sharing responsibility for meeting our requirements'.

### Interests and Concerns

Employees and contractors have a broad range of interests and concerns, commencing with the health and safety of themselves and their fellow workers, to more general working conditions. Career opportunities and aspirations as well as learning and training opportunities are also central to maintaining satisfied employees and contractors.

As many of our workforce live in towns near to our operations, many of their broader concerns are directly aligned with those of neighbouring communities. These include local employment, business creation and social infrastructure and such programs as schooling and health care. Additionally, in many remote communities, quality of housing is an aspect key to employee attraction and retention.

### Dialogue

Specifically, our approach to internal communication aims to:

- inform employees of, and share with them, the Company's business strategy, objectives, policies, cultures and values
- enhance the sharing of information across the business
- provide consistency and avoid duplication
- provide a framework for all Company communication to protect and strengthen the BHP Billiton brand with all stakeholders.

The challenges to achieving effective communication can be significant: our large global footprint, a diversity of businesses, various time zones and different cultures, languages and needs.

To meet our aims and address the challenges, we employ a two-pronged approach to our internal communications strategy:

- Keep everyone informed by targeted information through mass channels, including email, intranet, corporate newsletters and general communications, HSEC or Sustainability reports and presentations, and communication guidelines and toolkits.
- Achieve alignment through face-to-face channels, including regular performance reviews, employee surveys, direct communication with immediate supervision and management, knowledge-sharing networks, communities of practice, conferences and workshops and general training.

A centralised communications resource (Investor Relations & Communications) provides global communication on areas of Company-wide importance and significance. It also develops appropriate resources and tools for other communication areas that can be used and tailored at the discretion of each CSG, operation or office's communication and management team. The function is also responsible for facilitating the cross-sharing of information between CSGs and offices.

Each CSG and operation is responsible for communications at a localised level. This results in messages targeted to the relevant audiences, reduced email through cascading of information, rather than an 'everyone gets everything' approach, and cost savings as the onus moves to the operations/offices to implement communication strategies in the most suitable manner available.

At the site level, in line with [HSEC Management Standard 7](#), sites are required to ensure processes are in place to enable stakeholders, including employees and contractors, to participate in and commit to HSEC performance improvement initiatives. This may include processes such as committees representing both worker and management interests in HSEC matters.

Details of all significant incidents and their investigation findings are collated and circulated to relevant line managers and HSEC personnel on a weekly basis. The incidents are then stored on our Significant Incident intranet site for reference.

Company-wide Communities of Practice (CoPs) also exist to address specific HSEC concerns or deepen knowledge about specific HSEC topics. CoPs play an important role in helping employees to effectively share and steward their knowledge, and our people are encouraged to join them.

We are committed to effective performance management, through regular formal and informal feedback and review, and open communication. Performance management involves:

- recognising and acknowledging excellent performance to motivate employees and encourage further achievement
- identifying the cause of poor performance and taking appropriate corrective action
- eliminating inappropriate behaviours from the workplace.

Each employee should receive a formal performance appraisal from their manager at least annually. Incentive rewards paid by the Company are aligned to the relative performance of the business, assets and individuals.

As we look ahead, the challenges to employee and contractor communications include improving mechanisms to share learnings across the business and adopting better mechanisms for seeking feedback and measuring the effectiveness of communication strategies.

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Local and Indigenous Communities

### Who are they?

Most of our operations are located in rural and remote areas of the countries in which we operate; hence, we have a broad spectrum of local and indigenous community concerns of which we need to be mindful.

### Interests and Concerns

The impact our business has on local communities varies considerably depending on the location, size and nature of the operation. For example, our offshore petroleum platforms have minimal direct impact on people, whereas the existence of larger land-based minerals operations can result in changes to economies, culture, population, employment opportunities, infrastructure, and noise and traffic levels. All of these have the potential to change people's lives in some way.

Results from stakeholder perception surveys rate local employment and business creation, support for social infrastructure and programs, a desire for improved community engagement mechanisms and improved environmental performance as the most important interests and concerns of communities.

### Dialogue

Our strategy is to engage our communities in our business where possible and establish an open communication channel where all parties feel they have the right to participate in discussions.

Our HSEC Management Standard 7 requires all operations to have systems in place to identify and work with stakeholders and to develop strategies to address their concerns and expectations. Sites are also required to record, register and address any complaints or concerns lodged by stakeholders.

Each of our operations is required to have a community relations plan, a component of which must be a formal mechanism to engage with people in their local communities. Examples of engagement methods include community consultation and engagement groups, newsletters and targeted communications, including site-based and corporate HSEC reports.

In some instances, members of the community are invited to participate in HSEC audits of their local operations, such as at the Minerva Gasfield Development in Victoria, Australia.

We are continually trying to improve the processes we use to engage people to ensure that we are fully aware of their concerns and so that our communities understand the way we do business. One method our Tintaya operation is using to address its neighbours' concerns about possible environmental damage is to involve community members in our environmental monitoring. Through training, they are gaining a better understanding of the mining operation and our environmental procedures; and they are assisting us to ensure the mine maintains its environmental integrity (see [2004 BHP Billiton Employee HSEC Awards – Community](#)).

Stakeholder perception surveys are tools that provide us with a valuable insight into how key stakeholders view us. The surveys provide a greater understanding about community priorities and concerns and a means to track performance against one of our Charter success measures – that 'communities in which we operate value our citizenship'.

As with society in general, we are sensitive to loss of culture and heritage and take great care in preserving traditional culture in areas around the world where we operate. An example of the type of project we undertake is the ongoing 'Pirmal' Project in Western Australia, a purpose-built place for the storage, management and protection of sacred Aboriginal cultural artefacts (see [2004 BHP Billiton Employee HSEC Awards – Community](#)).

Further information on our approach and performance with regards to community relations can be viewed in our section on [Community](#).

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Shareholders

### Who are they?

Our shareholder base is diverse. The majority of shares in the Company are held in Australia, Europe and North America, with other significant holdings in South Africa.

### Interests and Concerns

Shareholders are broadly interested in ensuring that financial returns occur as a result of suitable Company performance and governance. Increasingly, long-term performance is becoming more of a focus, hence a greater desire to better understand governance mechanisms and the non-financial risks and mitigation measures of the organisation.

### Dialogue

Shareholders are invited to attend the Annual General Meetings where they can question directors on matters relating to the Company's performance. Shareholders can also elect to receive regular printed and electronic communications. Presentations given at appropriate intervals to representatives of the investment community are also available to all shareholders and supported by internet broadcast or open conference call.

Refer to our [Investors and Media](#) section on our Company website for further details.

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Customers

### Who are they?

Our customers are typically other large organisations.

### Interests and Concerns

Product quality, cost and delivery are the major concerns of customers.

### Dialogue

Our business model is based on customer-oriented groupings (Customer Sector Groups), which are supported by marketing offices located in The Hague and Singapore. Our Marketing Group is in regular contact with customers, providing technical support on occasion to assist with product utilisation, either in terms of process efficiency or product handling; and product information, including material safety data sheets; and facilitating visits to our operating sites and technology exchanges with our operating sites.

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Investment Community

### Who are they?

These stakeholders include both mainstream financial analysts and [Socially Responsible Investment](#) (SRI) analysts. These analysts are located globally.

### Interests and Concerns

The interests of our investment community are closely aligned to those of our shareholders in that they are broadly interested in ensuring that financial returns occur as a result of suitable Company performance and governance. Increasingly, long-term performance is becoming more of a focus, hence a greater desire to better understand governance mechanisms and the non-financial risks and mitigation measures of the organisation.

### Dialogue

Our Investor Relations & Communications group is responsible for communicating with mainstream investment organisations. Typically, this involves briefing analysts on key issues.

Our Sustainable Development and Community Relations group is responsible for communicating with SRI analysts. The publication of our Sustainability Report is a cornerstone of this activity. In addition we hold an annual briefing for SRI analysts.

### ***Socially Responsible Investors***

During the year, we continued to participate in key external benchmarking initiatives by the SRI sector that seek to measure the Company's sustainable development performance against others in our sector.

Participating in such programs has a dual benefit. Not only do they enable fund managers to screen funds on the basis of Company systems and performance that support sustainability, but they also provide an external opinion on our sustainability performance in relation to others in our sector. They provide a useful tool internally to demonstrate where we are performing well and where we need to improve and, furthermore, they assist with supporting the business case for sustainability. The premise is that companies that manage their non-financial risks well also perform better in the long-term.

The following sections outline our performance over the period in some of the key benchmarking programs:

- [FTSE4Good Index](#)
- [Dow Jones Sustainability Index](#)
- [Australian SAM Sustainability Index \(AuSSI\)](#)
- [Business in the Community – Corporate Responsibility Index](#)
- [Johannesburg Stock Exchange SRI Index](#)
- [Carbon Disclosure Project](#)

### ***FTSE4Good Index***

Launched in 2001, the [FTSE4Good Index series](#) has been designed to measure the performance of companies that meet globally recognised corporate responsibility standards and to facilitate investment in those companies. The series covers four markets: US, Global, UK and Europe. Each market consists of both a benchmark and a tradable index. Over the period, we maintained our inclusion in the UK FTSE4Good Index.





## **Dow Jones Sustainability World Indexes**

The [Dow Jones Sustainability World Indexes](#) (DJSI) consist of more than 300 companies that represent the top 10 per cent of the leading sustainability companies in 60 industry groups in the 34 countries covered by the biggest 2500 companies in the Dow Jones Global Indexes. Following the recent results of the 2005 assessment, we have maintained inclusion within the DJSI and ranked as Supersector Leader for Basic Resources within the Dow Jones STOXX, and Sustainability Leader for Mining in both the DJSI World and DJSI STOXX. For further information, see our [2005 assessment](#).



## **Australian SAM Sustainability Index (AuSSI)**

The AuSSI was launched in February 2005 as Australia's first index to measure the financial performance of the country's sustainability leaders. It comprises the top 40 per cent in terms of sustainability, out of 184 companies listed on the Australian Stock Exchange. Based on the methodology of SAM, it applies the same research criteria as the Dow Jones Sustainability Indexes for which SAM selects sustainability leaders on a worldwide scale. BHP Billiton is listed as an [industry leader for the Mining and Metals sector](#).

## **Business in the Community - Corporate Responsibility Index**

Originally established in 2002 in the UK by [Business in the Community](#), the Corporate Responsibility Index was developed to ensure a systematic approach to managing, measuring and reporting upon the various impacts that companies have upon society and their environment. The index works as a management tool for companies to see how their corporate responsibility activities are integrated into their mainstream business operations.



In 2004, we ranked 14th overall, an improvement from 20th in 2003, with a score of 93%. In the Australian release of the index, utilising the same questionnaire and scoring system, we ranked third overall.

View our [2004 Corporate Responsibility Index Feedback Report](#) (PDF 104 Kb) for further information.

In 2005, we were selected as the 'Company of the Year' at the Business in the Community Awards in the UK. These are the premier awards in the UK that support and encourage corporate social responsibility. We are the first company in the extractive industries to receive the award and are the first recipient acknowledged for its global activities.

## **Johannesburg Stock Exchange SRI Index**

The [JSE Socially Responsible Investment Index](#) was launched in 2004. This was the culmination of an extensive consultation and development process which the JSE has guided over the past year as a means of helping to focus the debate on triple bottom line practices in South Africa. We maintained inclusion within the index.

## **Carbon Disclosure Project**

The [Carbon Disclosure Project](#) is an institutional investors' survey of FT500 Global Index companies regarding risks and opportunities presented by climate change. Our [2004 survey response](#) was assessed, and we were included in the 2004 Climate Leadership Index, comprising the 50 'best in-class' responses. The Carbon Disclosure Project report noted that we were the sole company in the metals and mining sector to be actively integrating carbon shadow prices into investment decisions involving investments with emissions over 100 000 tonnes of CO<sub>2</sub> equivalent per year.

## Business Partners

### Who are they?

Our business partners include those organisations with which we have joint ventures.

### Interests and Concerns

Our business partners are generally interested in being assured that suitable governance mechanisms are in place to ensure financial returns are delivered while mitigating non-financial risks sufficiently.

### Dialogue

We communicate regularly with our business partners and share knowledge and programs through joint venture boards and operating committees as well as reports and presentations, including annual financial and HSEC reports. Joint Venture Partners have also participated in our HSEC audit programs.

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Community Organisations

### Who are they?

Community organisations are generally established to represent the local and indigenous communities near our operations.

### Interests and Concerns

Community organisations are concerned with ensuring that any potential environmental and social impacts associated with our operations are mitigated and that opportunities presented by our operations are optimised; for example, ensuring sustainable community development opportunities can be maintained post mine closure.

### Dialogue

In conjunction with developing community relations plans, sites are required to develop suitable engagement mechanisms with their host communities. Generally this results in community engagement forums and community consultation groups.

The majority of our community support is through local foundations, which currently exist in Chile, Peru, South Africa, Colombia and Mozambique. We also have a Corporate Community Program that focuses on Australian and international partnerships and projects.

For further details on our approach and performance with regards to community relations, refer to our section on [Community](#).

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Unions

### Who are they?

Unions represent employees at a number of our sites at local, national and international levels.

### Interests and Concerns

The primary purpose of unions is to uphold workers' rights and interests.

### Dialogue

We recognise the right of employees at all our operations to freely choose to join labour unions. Prospective employees are made aware of employment arrangements prior to joining the Company.

We communicate with unions as required on topical and general issues, such as changes to Company policies.

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Non-Government Organisations

### Who are they?

Non-government organisations (NGOs) with which we typically engage include environmental, social and human rights organisations at both local and international levels.

### Interests and Concerns

NGOs have a broad-ranging interest in our operations and their performance. This may include the social and environmental performance of existing, proposed or closed operations. Additionally there is increasing interest in our broader policy positions on issues such as climate change and human rights.

### Dialogue

Each of our operations is required to identify its relevant local NGOs and include mechanisms for engagement with them within the site's community relations plan.

At the Corporate level, we regularly engage with relevant national and international organisations. A number of major international NGOs are represented on our Forum on Corporate Responsibility.

#### ***Forum on Corporate Responsibility***

The BHP Billiton Forum on Corporate Responsibility (FCR) brings together representatives of our senior management team, the leaders of several key NGOs, and community opinion leaders to discuss and debate social and environmental matters relevant to the Company.

The Forum meets twice a year. Mike Salamon, Group President, Non-Ferrous Metals, BHP Billiton, is Chairman and Holly Lindsay, BHP Billiton's Vice President Public Policy and Business Conduct, is Secretary.

Forum members have an opportunity to provide advice and to challenge the views of our senior management on broad sustainable development issues. The Company is not bound by the advice of the FCR, and the FCR does not necessarily endorse the Company's decisions. The Forum provides a means for direct and open dialogue about issues of interest to the wider community.

During the year the Forum has discussed a range of diverse topics, including climate change, certification and product stewardship, and free prior informed consent. Formal feedback from our external members indicates that the Forum has evolved into a solid relationship, based on mutual trust, open exchange of issues and ideas and a shared framework of interests.

See our [Forum on Corporate Responsibility Member Profiles](#).

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Forum on Corporate Responsibility Member Profiles

### External members

**Dr Marcelo de Andrade**, *Doctor of Medicine*

**Chairman, Pró-Natura**

Marcelo founded Pró-Natura, the first international environmental organisation based in the southern hemisphere that manages sustainable development and conservation projects funded by international organisations, governments and the private sector in South and Central America, Africa and Asia.



Pró-Natura was founded in Brazil and is active in 36 countries. Marcelo also founded the Pioneer Society, a communications group dedicated to innovative promotion of the successes of sustainable development, and the Social Capital Group, a consulting company dedicated to managing social and environmental issues and impacts brought about by large oil/gas, mining, forestry and infrastructure projects. He co-founded Terra Capital Fund, the first venture capital fund dedicated to investing exclusively in private sector biodiversity businesses; Axial Bank/Azial Par, the first financial institution in South America dedicated to investing and promoting investments in the sustainable development sector; and Eco Carbon, the first company to specialise in engineering aspects of forestry and agricultural carbon sinks. Marcelo is also involved with International Sustainable Finance and Sustainable Development Holdings and remains active in rowing, mountaineering and running following his eight-year membership of Brazil's Olympic rowing team and his leadership of the first expedition to the top of Mount Aconcagua in the Andes Mountains in 1985.

**Greg Bourne** *BSc (Hons)*

**Chief Executive Officer, WWF-Australia**

WWF-Australia is part of the WWF International Network and is a not-for-profit organisation committed to find solutions to challenges facing the natural environment in Australia and the Asia-Pacific. Before taking up his current position as CEO of WWF-Australia in October 2004, Greg had a distinguished international business career at BP. His roles at BP included Regional President - Australasia, Regional Director - Latin America, and Director - Scotland, as well as earlier positions at BP with a petroleum exploration focus. In 1988 he was seconded to the UK Prime Minister's Policy Unit at 10 Downing Street as the Special Advisor on Energy and Transport. Greg has been Chair of the Sustainable Energy Authority of Victoria, is a member of the Victorian Sustainability Advisory Council and until recently was Chair of the Environment and Natural Resource Management Sector Advisory Council for CSIRO. He was awarded the Australian Centenary Medal for services to the environment.



David Butcher *BVSc, MRCVS*

**Chief Executive Officer, Greening Australia, NSW**

David was appointed to his current position with Greening Australia in 2004. He is a practicing veterinarian and has worked in many fields of veterinary science. He was responsible for the construction and operation of the Western Plains Zoo, while working for the Zoological Parks Board of NSW. He became Assistant Director of Taronga Zoo, joined the RSPCA NSW as Director and then became CEO of WWF–Australia, a position he held for the 10 years to 2004. Through an innovative blend of practical experience, science, community engagement and commitment Greening Australia addresses issues like salinity, declining water quality, soil degradation, climate change and biodiversity loss.



James Ensor *BEC, BAppSc, GradDipJournalism*

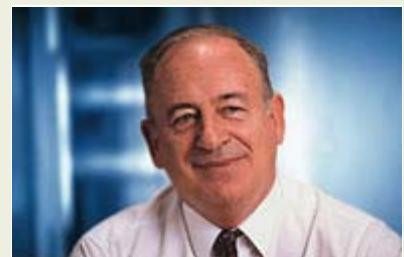
**Director of Public Policy & Outreach, Oxfam Community Aid Abroad**

James has responsibility for the national and global advocacy and community outreach programs of Oxfam Community Aid Abroad (OCAA). These programs include the agency's Community Leadership Program and Corporate Community Leadership Program and its International Youth Parliament. Since joining the organisation in 1997 James has also had responsibility for the management of a range of Oxfam's overseas development projects. Prior to joining OCAA, James spent seven years with the Central Land Council in the Northern Territory, a statutory authority established under the Aboriginal Land Rights (Northern Territory) Act, representing the interests of the indigenous landowners of central Australia.



Graham Evans *AO, MA, MIPP (John Hopkins), DipEd*

Graham is currently Chairman of the Victorian Competition and Efficiency Commission. He retired from his role as Vice President, Government and Community Relations of BHP Billiton in 2003. From 1996 to 2002, he was Group General Manager, later Vice President, External Affairs, BHP Billiton. Prior to joining the Company in 1995, he served in a number of senior positions in the Commonwealth Public Service, including Secretary to the Departments of Transport, Transport and Communications, Primary Industries and Energy, and Resources and Energy. He was also Principal Private Secretary to the Prime Minister from 1983 to 1986. Graham has previously served as a Director of Foster's Brewing Group, Australia Post, Telecom and AIDC. He was awarded the Order of Australia in 1995.



## Andrew Hewett

### **Executive Director, Oxfam Community Aid Abroad**

Andrew was appointed to his current position with Oxfam Community Aid Abroad (OCAA) in October 2001, having worked with OCAA since 1991. He initially established the agency's advocacy program, with increasing focus on lobbying governments, public education and campaigning on social justice and development issues. Over the years, his responsibilities expanded to include OCAA's domestic program and the coordination of Oxfam International's response to the crisis in Timor from 1999 to 2001. Andrew is a member of the Executive Committee of the Australian Council for Overseas Aid (ACFOA), the peak council of non-government overseas development agencies. He has visited OCAA programs in East Timor, Mozambique, El Salvador, India, Cambodia, Bangladesh, South Africa and Sri Lanka.



## Mokhethi Moshoeshe *BA (Law)*

### **Director, African Institute of Corporate Citizenship**

Mokhethi is founding director of the African Institute of Corporate Citizenship (AICC) and co-founder of the Institute for Social and Ethical Accounting and Auditing South Africa. Before founding the AICC, Mokhethi was the Executive Director of the Southern African Grantmakers' Association from June 1997. He pioneered the first community foundations in South Africa. He developed the Prodder NGO directory and Prodder Newsletter for the Human Sciences Research Council. Mokhethi serves on a number of governing boards, including PetroSA Development Trust, Desmond Tutu Education Trust, PLANACT and Boys Town. He is a member of the USAID regional advisory panel for the Southern African Development Community and of the International Learning Forum on the United Nations Global Compact.





## Michael Rae *BSc*

### **Senior Policy Officer – Business and Industry, WWF – Australia**

Michael is employed in the conservation department of World Wide Fund for Nature (WWF) and is involved in sustainability policy development and advocacy, both in Australia and globally. He has been a WWF advocate at a number of international conferences, including mining, climate change, international trade and forests. Michael heads the WWF Mineral Resources Unit, charged with leading WWF's international work on mining. He has worked for Australian non-government environment organisations for the past 20 years, first for the Total Environment Centre, then the Wilderness Society in Sydney, Brisbane and Melbourne, then the Australian Conservation Foundation and, since 1989, WWF.



## The Rt Hon Sir Ninian Stephen *LLB*

Sir Ninian served as Governor-General of Australia from 1982 to 1989. He began practising as a solicitor in 1949 and from 1952 was a barrister, principally in commercial, equity, taxation and constitutional areas. He was appointed Queen's Counsel in 1966, appointed to the Victorian Supreme Court bench in 1970, and in March 1972 appointed a Justice of the High Court of Australia. He retired from the High Court in 1982 to take up the appointment as Governor-General. He has been Special Ambassador for the Environment 1989–92 and Chairman of the Constitutional Centenary Foundation, the Antarctic Foundation, the National Library of Australia, the Australian Citizenship Council, the Australian Blood and Blood Products Review and the Australian Banking Industry Ombudsman Council. In 1992, Sir Ninian was appointed as Chairman of the Talks on Northern Ireland. He was Judge of the International Criminal Tribunal for the former Yugoslavia 1993–97, Commonwealth of Nations Special Envoy to Bangladesh 1994, Chairman of the UN Expert Group on Cambodia 1998–99, Chairman of the Gene Technology Community Consultative Committee and is a member of the Ethics Commission of the International Olympic Committee.



## BHP Billiton members

**Philip Aiken** *BE (Chemical), Harvard Business School  
Advanced Management Program*

### **Group President, Energy, BHP Billiton**

Philip was appointed to his current position as Group President Energy (consisting of Energy Coal and Petroleum) with BHP Billiton in March 2004. Prior to this appointment, he was President and Chief Executive Officer, BHP Billiton Petroleum. Before joining the Company in 1997, he was the Managing Director of BTR Nylex and prior to that held a number of senior positions with the BOC Group. In addition to his responsibilities as Group President, Energy, Philip is a member of the BHP Billiton Office of the Chief Executive and the Executive Committee. He is also a Director of Robert Walters Plc and Vice Chairman of the World Energy Council.



**Charles (Chip) Goodyear** *BSc, MBA, FCPA*

### **Chief Executive Officer, BHP Billiton**

Chip was appointed Chief Executive Officer of BHP Billiton Limited and BHP Billiton Plc in January 2003. He has been a Director since November 2001. He previously held the positions of Chief Development Officer and Chief Financial Officer of BHP Billiton Limited and BHP Billiton Plc. Chip joined the Company as Chief Financial Officer in 1999, prior to which he had extensive financial, corporate restructuring and merger and acquisition experience in the United States, including roles as President of Goodyear Capital Corporation and Executive Vice President and Chief Financial Officer of Freeport-McMoRan Inc.



**Robert (Bob) Kirkby** *BE Civil (Hons)*

### **Group President, Carbon Steel Materials, BHP Billiton**

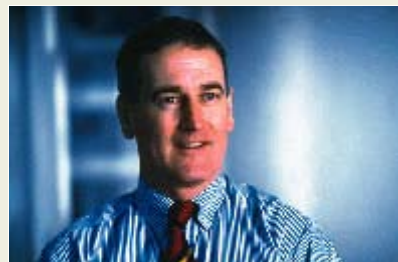
Bob is Group President of BHP Billiton's Carbon Steel Materials Customer Sector Group, an industry leader in the supply of raw materials to the global steel industry. He is a member of the BHP Billiton Office of the Chief Executive, Executive Committee and Operating Committee. Bob is Chairman of Samarco, a BHP Billiton/CVRD Brazilian-based company; a Director of Samancor, a BHP Billiton/Anglo American South African-based company; Chairman of BHP Mitsui Coal; and alternating Chairman of the BHP Billiton Mitsubishi Alliance. He joined Utah Development Corporation's Bowen Basin Coal operations as a Mining Engineer in 1978 and has worked extensively in the iron ore, coal and steel industries.



Tony Lennox *BE Mining (Hons)*

**Vice President Health, Safety and Environment, BHP Billiton**

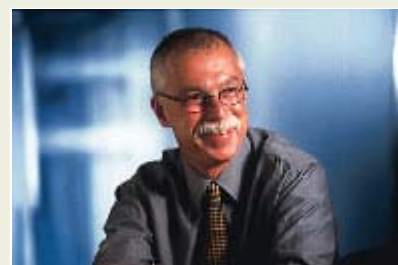
Tony is BHP Billiton's Corporate Vice President Health, Safety and Environment. He was appointed to the role in January 2004 and prior to this was President of the Company's Cannington operation, known as the world's largest and lowest-cost mine producer of silver. Tony joined BHP Billiton in 1994 with extensive project development and operating experience and has up until his current role been in operational line management roles. He has extensive knowledge of the coal and base metals mining industry and experience in operational safety leadership.



Miklos (Mike) Salamon *BSc (Mining Eng), MBA*

**Chair of the FCR  
Group President, Non-Ferrous Metals, BHP Billiton**

Mike is Group President, Non-Ferrous Metals (consisting of Aluminium, Base Metals and Stainless Steel Materials), BHP Billiton Group and has been an executive Director of BHP Billiton Limited and BHP Billiton Plc since February 2003. He is also a member of the Office of the Chief Executive and the Executive Committee and Chairman of the Operating Committee. He is Chairman of WMC Resources Ltd (effective 3 June 2005) and Samancor and a Director of Richards Bay Minerals, Cerro Matoso and Escondida. From July 2001 to March 2004, Mike was Chief Minerals Executive and President & CEO, Aluminium. From July 1997 to June 2001, Mike was an executive Director of Billiton Plc with responsibilities for nickel, chrome, manganese, stainless steel and titanium. He was formerly Executive Chairman of Samancor, Managing Director of Trans-Natal Coal Corporation and Chairman of Columbus.



Ian Wood *BSc (Env Sc) (Hons)*

**Vice President Sustainable Development and  
Community Relations, BHP Billiton**

In his current role, Ian manages BHP Billiton's department responsible for developing the Company's strategic response to global community relations issues, including the sustainable development agenda, corporate social responsibility, and public reporting on the Company's sustainable development performance. In September 2002, he attended the World Summit on Sustainable Development as a member of the Australian Government delegation. Prior to taking on his current role, he was responsible for the provision of technical support to the Company's minerals businesses with particular emphasis on the Asia-Pacific region. From 1992 to 1995, he held the position of Manager Environment with Ok Tedi Mining Limited in Papua New Guinea. Before joining BHP Billiton, Ian had extensive site-based experience in the minerals industry.



**Qualification Abbreviations**

**AO** Officer of the Order of Australia

**BA** Bachelor of Arts

**BAppSc** Bachelor of Applied Science

**BE** Bachelor of Engineering

**BEc** Bachelor of Economics

**BSc** Bachelor of Science

**BVSc** Bachelor of Veterinary Science

**DipEd** Diploma of Education

**F CPA** Fellow Australian Society of Certified Practising Accountants

**GradDipJournalism** Graduate Diploma of Journalism

**LLB** Bachelor of Laws

**MA** Master of Arts

**MBA** Master of Business Administration

**MIPP** Master in International Public Policy

**MRCVS** Member Royal College of Veterinary Surgeons

## Suppliers

### Who are they?

Our suppliers include businesses local to our operations, as well as large international suppliers in specialised equipment.

### Interests and Concerns

Our suppliers are interested in our supply agreements and payment processes, as well as the standards we require of our suppliers.

### Dialogue

All contract work within our organisation is to be assigned to a BHP Billiton manager or supervisor as the single point of accountability. This ensures that regular reporting and communications are maintained between the Company and our suppliers.

In accordance with our [HSEC Management Standards](#), suppliers must identify potential HSEC risks associated with their operations and minimise any adverse consequences of these risks.

Where possible, we seek to utilise local suppliers and support these suppliers in enhancing community development opportunities.

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Governments

### Who are they?

We engage with governments (including regulators) across local, national and international levels.

### Interests and Concerns

Governments are interested in our operations from a number of perspectives. We work with host governments that participate in the Extractive Industries Transparency Initiative regarding disclosure of payments of taxes and policies. Policy formulation often intersects with aspects of our operations. Governments have mechanisms of regulation that cover a range of aspects within our operations, particularly environmental and social aspects.

### Dialogue

We respect the authority of governments. Our operations are required to work within relevant legislative frameworks at the local, national and international levels.

We seek to have an open and constructive relationship with governments and regularly share information and opinions on issues that affect the Company. This communication is essential to informed decision-making by both government officials and BHP Billiton.

### **Public Policy**

The Company maintains a position of impartiality with respect to party politics. Accordingly, we do not contribute funds to any political party, politician or candidate for public office in any country. We do, however, attend selected events such as political party conventions for the purpose of better understanding the implications of policy development on business operations. Employees are free to participate in political activities as individuals and, if there is any doubt, they are asked to ensure that it is clear they are representing their personal views and not those of the Company.

The Company participates in public debate of policy issues that affect us in the countries in which we operate. Relevant issues are discussed with government officials, and we sometimes provide written advice about the likely impact of proposed policies on the Company. A summary of government relations issues over the reporting period is provided in the following table.

## Current Government Relations Issues

Global	Extractive Industries Transparency Initiative regarding disclosure of payments of taxes and policies; investment performance standards; climate change policies; fiscal regimes applicable to the resources sector; harmonisation of competition policy; trade policy liberalisation
Australia	Uranium mining policy; infrastructure access and regulation; implementation of International Financial Reporting Standards; environmental policy; fiscal and general taxation regimes
Chile	Fiscal regime
European Union	New EU regulatory framework for chemicals (REACH) proposals; Takeover Code Article 11; climate change policy including emissions trading regime
South Africa	Mineral and Petroleum Resources Development Act; Black Economic Empowerment Scorecard
United States	Harmonisation of competition policy; energy policy including supply of LNG
United Kingdom	Takeover Code Article 11; climate change policy

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Media

### Who are they?

The media include representatives of print, radio and visual media.

### Interests and Concerns

Members of the media are generally interested in newsworthy items associated with our financial or non-financial performance.

### Dialogue

Our Investor Relations & Communications group oversees communication with the media. Communication methods include media releases, presentations, briefings and interviews.

Download a summary of all [BHP Billiton Stakeholder Relationships](#).



## Industry Associations

### Who are they?

Industry associations include commodity-specific associations (for example, International Aluminium Institute) as well as sector-specific associations at national and international levels (such as the International Council on Mining and Metals).

### Interests and Concerns

Industry associations are generally interested in a broad range of issues relating to the sector or a specific commodity. For example, they may advocate on key policy aspects relevant to the sector, which may be as diverse as environmental legislation, and establishing common safety standards, through to promotion of leading practice such as community relations.

### Dialogue

We are committed to proactive involvement in a number of initiatives that contribute to improving the sustainability of the industry. Our individual businesses are also actively engaged through their sectoral organisations at national and international levels.

Some of the principal industry associations we are involved in at the commodity level include:

- International Aluminium Institute and Australian Aluminium Council
- Nickel Development Institute, International Nickel Study Group, Nickel Producers Environmental Research Association, Cobalt Development Institute, International Chromium Development Association and European Metals Association
- International Petroleum Industry Environmental Conservation Association Exploration and Production Forum, Australian Petroleum Production and Exploration Association, Australian Gas Association and UK Offshore Operators Association
- World Coal Institute, Coal Institute Advisory Board and Australian Coal Association
- International Lead Zinc Study Group, International Lead and Zinc Research Organisation, International Lead Management Centre, Global Forum for the Lead Producing Industry, Lead Development Association International, Silver Research Consortium, and Advanced Lead Acid Battery Consortium
- Asian Copper Council, European Copper Institute, Copper Development Association, International Copper Association, and International Copper Study Group.

See below for further details on our activities with the following organisations:

- [International Council on Mining & Metals](#)
- [World Business Council for Sustainable Development](#)

### ***International Council on Mining & Metals***

We have continued to be active in the work program of the [International Council on Mining & Metals](#) (ICMM).

The ICMM was established in 2001 as a global leadership body on sustainable development. ICMM members believe that the mining, minerals and metals industry acting collectively can best ensure continued access to land, capital and markets as well as build trust and respect by demonstrating the ability to contribute successfully to sustainable development. ICMM members offer strategic industry leadership towards achieving continuous improvements in sustainable development performance in the industry. ICMM provides a common platform for the industry to share challenges and responsibilities as well as to engage

key constituencies on issues of common concern at the international level, based on the science and principles of sustainable development. ICMM's mission is underpinned by a commitment to good governance and transparent decision-making processes within the organisation.

The ICMM has made substantial progress during the year on a range of projects. The release of the Global Reporting Initiative Mining and Metals Sector Supplement is particularly noteworthy as it has been used as the basis for the preparation of this report. All other ICMM members have also committed to use the supplement as a basis for their reporting. View a summary of ICMM's work program and achievements during 2004 [here](#).

### ***World Business Council for Sustainable Development***

We have maintained our membership of the [World Business Council for Sustainable Development](#) (WBCSD).

The WBCSD is a coalition of 175 international companies united by a shared commitment to sustainable development. The WBCSD has a global network of 50 national and regional business councils and partner organisations located in more than 35 countries. Its mission is to provide business leadership as a catalyst for change towards sustainable development and to promote the role of eco-efficiency, innovation and corporate social responsibility.

For the third year running, we have been a participant in the WBCSD Young Managers Team. The Young Managers Team is a program designed to provide a learning experience and networking opportunity for approximately 20 young high potential employees, interested in sustainable development and drawn from across a range of job functions, businesses and sectors.

The Young Managers Team 2005 includes participants from Japan, North and South Africa, South America, Australia and Europe and from a wide range of commercial sectors and functions. The focus of the program is to help move sustainability out of its specialist box into the mainstream by communicating beyond traditional boundaries.

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

## Building Global Links

The major externally developed voluntary initiatives that we are involved in, or are progressively implementing (the date in brackets indicates the year in which we commenced our involvement) include:

- Australian Minerals Industry Code for Environmental Management (1996), now 'Enduring Value'
- Global Reporting Initiative (2002) and the Minerals Sector Supplement
- International Council on Mining and Metals Sustainable Development Framework (2003)
- ISO 14001 Environmental Management Systems (2002)
- Mining Certification Evaluation Project – Australian Regional Initiative (2002)
- UN Global Compact (2002)
- UN Universal Declaration of Human Rights (2001)
- US-UK Voluntary Principles on Security and Human Rights (2003)
- World Bank Operational Directive on Involuntary Resettlement (2003).

We are actively involved in the Mining Certification Evaluation Project to evaluate whether an independent certification process of environmental and social performance can be applied to the mining sector. The research and development exercise is led by the World Wide Fund for Nature with participation from a working group comprising representatives of mining companies, NGOs, trade unions, government agencies, financial and accounting organisations and research institutions.

The aim of the project is to build consensus on measurable and auditable standards for site-based performance. For further background on the project, refer to our 2004 report for the case study, [Mining Certification Evaluation Project](#). During the year, the criteria were firmed, and draft audit protocols were trialled and refined at five mine sites around the world. The final report of the project will be released late 2005. The work will provide useful input to further evaluation of the merit and potential application of mine certification schemes.

We also collaborate with governments, NGOs and academic institutions worldwide to undertake and support research on improving HSEC performance. See below for further details on our activities with the following organisations:

- [Global Reporting Initiative](#)
- [UN Global Compact](#)

Also refer to [Our Stakeholders – Industry Associations](#) for further details on specific initiatives we are undertaking through our relationships with the International Council on Mining & Metals and World Business Council for Sustainable Development.

## Global Reporting Initiative

The Global Reporting Initiative (GRI) is a multi-stakeholder process developing and disseminating globally applicable sustainability reporting guidelines. Established in 1997, GRI became an independent institution in 2002 and is an official collaborating centre of the United Nations Environment Programme (UNEP) and works in collaboration with the UN Global Compact.

The core guidelines are for voluntary use by organisations for reporting on the economic, environmental and social dimensions of their activities, products and services. The GRI incorporates the active participation of representatives from business, accountancy, investment, environmental, human rights, research and labour organisations from around the world. We are an organisational stakeholder of the GRI and provide some limited funding to assist in the promotion of the organisation's objectives.

This year we have again produced our Sustainability Report in accordance with the [Global Reporting Initiative \(GRI\) 2002 Sustainability Reporting Guidelines](#); however, we have also adopted the Mining and Metals Sector Supplement.

The Supplement was developed by a multi-stakeholder working group convened by the International Council on Mining and Metals and the GRI. The working group was made up of 20 individuals representing companies, the financial sector, labour unions, international organisations, and social and environmental

organisations. The Supplement assists mining and metals companies to report effectively to key stakeholders by providing additional indicators of particular relevance to industry. The Supplement also provides greater clarity around existing GRI indicators to ensure relevance to the sector and its key stakeholders.

Reporting in accordance with the core GRI Guidelines and Mining and Minerals Sector Supplement is an evolving process, as our reporting systems continue to enhance the information reported. Due to the size and complexity of our business, judgements have had to be made regarding the extent of the information that can be presented in relation to each GRI indicator.

To see how and where we have addressed the GRI Indicators, refer to our [GRI Navigator](#).

## UN Global Compact

The [UN Global Compact](#) is an international initiative that brings together companies with UN agencies, labour organisations and civil society to support ten principles covering human rights, labour, environment and anti-corruption.

Through the power of collective action, the Global Compact seeks to advance responsible corporate citizenship so that business can be part of the solution to the challenges of globalisation. In this way, the private sector can help realise the vision of UN Secretary General Kofi Annan of a more sustainable and inclusive global economy.

With regard to the Global Compact's core values in the area of labour standards, while we fully recognise the right of our employees to freely associate and join trade unions, at a number of locations we have a mix of collective and individual arrangements. Prospective employees are made aware of employment arrangements prior to joining the Company. At all times, our businesses comply with local employment law requirements and treat employees in accordance with the values expressed in our Charter. For further details, refer to our section on [Freedom of Association](#).

To see our progress during 2005 against the Global Compact's ten principles, refer to our [Global Compact Progress Assessment](#).

A copy of our [letter to the United Nations](#) is available on our website.

## Report Dialogue

Each year, we seek feedback from stakeholders to ascertain whether the content of the Report is relevant to their needs, assess the effectiveness of the Report and identify opportunities for improvement. This year we altered our engagement approach away from an independent survey to an interactive workshop format. Stakeholders who participated included representatives from the SRI sector, NGOs, academia, government, industry and Company employees.

Feedback was sought initially prior to the workshop through a brief survey, then during the workshop through a facilitated discussion, reflecting on survey results.

The Report was acknowledged as comprehensive, clearly communicating Company performance and sustainable development issues. The use of specific targets in the performance scorecard and the description of progress towards their achievement was noted as particularly useful.

All three formats – summary, online and full report – were seen to serve a specific purpose for various user groups and were still regarded as necessary in meeting the needs of all our stakeholders.

The sustainability challenges and dilemmas section was generally rated as being a critical component of the report, giving the audience an indication of honesty and providing information on how the challenges are measured at site level and how they filter up through the Company. While all sections rated above average, overall, the Performance Summaries received the lowest average score.

The key opportunities for improvement included:

- **Providing more detail on the sustainability challenges and dilemmas.** Many stakeholders cited difficulties in understanding how the Company is grappling with and learning from its sustainability challenges. A clearer link between the challenges faced by the Company and its overall vision was sought, as well as more information on the process and criteria used to select the sustainability challenges.
- **Providing commentary on the HSEC Scorecard.** While the scorecard was considered very useful, stakeholders considered it could be improved by providing a comment on how we feel about our performance, whether we consider it acceptable and what we propose to do to improve performance.
- **Expanding the information contained within the Performance Summaries,** in order to facilitate better analysis by the investment community.
- **Broadening case studies from site-level.** Stakeholders were keen to include case studies that demonstrate HSEC issues and challenges experienced at senior management and Board level, so they could better understand how issues filter up through the organisation, at what level they are managed and through what process.
- **Improving the online report layout.** With the information contained in the Report expanding in previous years, stakeholders are keen to be able to identify sections of most relevance to them and, within sections, to quickly identify what has been modified from previous reports.

We have attempted to address many of these points in this year's report and look forward to your further [Feedback](#) to see how we have progressed against these recommendations.

## Governance - Our Approach

At BHP Billiton we believe that to maintain our position as one of the world's leading companies, we must commit to the highest standards of governance. Our approach to governance is predicated on the belief that there is a demonstrable link between high quality governance and business performance.

While this section focuses on those governance processes we have in place to implement our commitment to sustainable development, we also have a suite of corporate governance processes that manage the broader affairs of the Company. The [Corporate Governance Statement](#) outlines the key principles and practices of the BHP Billiton Group. Our financial [Annual Report](#) also provides details in this regard.

This section outlines our approach to sustainable development governance which comprises:

- a dedicated organisational [Structure and Responsibilities](#)
- a clear [Hierarchy of Systems and Documents](#)
- a number of [Key Management Processes](#), central to integrating sustainability into our decision-making.

## Structure and Responsibilities

Our organisation for sustainable development is characterised by the following key features:

- The Sustainability Committee of the Board provides assurance on HSEC matters across the Group.
- Line management has primary responsibility and accountability for HSEC performance.
- The HSEC function provides advice and guidance directly, and through a series of networks across the business.
- Clear links between remuneration and HSEC performance.
- The HSEC function advocates best practices and commercially effective global solutions.

At every level of the organisation, our line managers are responsible for HSEC matters. Although they are supported by functional personnel who provide specialist advice and support in managing all aspects of HSEC, ultimate responsibility rests with the general and senior management teams. Executive remuneration is directly linked to the financial and non-financial performance of the Company. Non-financial performance indicators include health, safety, environment and community targets.

The diagram below illustrates this organisational structure.

See below for further details on the following responsibilities:

- [Sustainability Committee of the Board](#) (formerly HSE Committee)
- [Risk Management and Audit Committee](#)
- [Global Ethics Panel](#)
- [Executive Management](#)
- [HSEC Forum](#)
- [Corporate HSEC](#)
- [HSEC Networks](#)

### ***Sustainable Development Organisational Structure***



\*Includes the Office of the Chief Executive, Executive Committee and Operating Committee.

## Sustainability Committee of the Board (formerly HSE Committee)

The Company's peak HSEC governance body during the reporting period was the HSE Committee, a subcommittee of the Board. Membership comprised two executive Directors; a non-executive Director (Committee Chair); the Vice President Health, Safety and Environment (HSE); and recognised international experts in the fields of health, safety and the environment. For profiles of HSE Committee members see [HSE Committee of the Board Membership](#).

The Committee had two key purposes:

- to advise the Group Boards of the effectiveness of the HSE management systems and strategies in place for delivering the BHP Billiton objective of Zero Harm
- to provide independent HSE advice to BHP Billiton on specific issues and exposures.

Towards the end of the reporting period the structure and role of the HSE Committee of the Board was reviewed resulting in a recommendation to restructure the Committee to the Sustainability Committee of the Board. The role of the Sustainability Committee will be to assist the Board in gaining assurance that the appropriate systems are in place to deal with the health, safety, environmental and community risks faced by the Group. In so doing, the Committee will focus on:

- evaluating the effectiveness of the Group's policies and systems for identifying and managing the health, safety, environment and community risks that are material to the achievement of the Corporate Objective
- assessing the policies and systems within the Group for ensuring compliance with health, safety, environment and community regulatory requirements
- assessing the performance of the Group having regard to the impact of health, safety, environment and community decisions and actions on employees, communities and third parties, and on the reputation of BHP Billiton
- evaluation and oversight on behalf of the Board of the quality and integrity of sustainability reporting to external stakeholders.

Executive members and external advisors will no longer sit as members of the Committee but may participate in Committee work at the discretion of the non-executive Director members. At the time of release of this Report, the new members of the Committee had not been appointed. We look forward to reporting on the outcomes of this new structure in the coming year.

While not a governance body, the [Forum on Corporate Responsibility](#) brings together representatives of our senior management team, the leaders of several key non-government organisations and community opinion leaders to discuss and debate social and environmental matters relevant to the Company.

## Risk Management and Audit Committee

The purpose of the Committee is to assist the Board to fulfil their corporate governance and oversight responsibilities in relation to financial reporting, internal control structure, risk management systems and the internal and external audit functions. In this role they oversee the Global Ethics Panel.

## Global Ethics Panel

The Global Ethics Panel promotes the effective implementation of our Guide to Business Conduct. Further detail on the function of the Global Ethics Panel is discussed in [Business Conduct](#).

## Executive Management

Executive management comprises of the BHP Billiton Office of the Chief Executive, Executive Committee and the Operating Committee.

The Office of the Chief Executive includes the heads of Non-Ferrous Materials, Carbon Steel Materials, Energy, legal, marketing and finance. The Office of the Chief Executive is responsible for sustainability policy across the Group.



The Executive Committee includes the heads of the Customer Sector Groups (CSGs), legal, marketing and finance. The Executive Committee have a communication and influencing role across the Group.

The Operating Committee comprises of the heads of our key operating divisions, marketing, finance and human resources. The Operating Committee are responsible for ensuring the implementation of the HSEC Management Standards across our operations. HSEC issues are included in the agenda for each meeting.

## HSEC Forum

The HSEC Forum is the peak functional group and includes Corporate representatives and HSEC functional heads from each CSG. The Forum is chaired by the Vice President HSE and sets the direction for the HSEC function, identifies priority issues, measures HSEC performance and builds consensus for the way forward.

## Corporate HSEC

Core HSEC governance functions are provided from the Corporate Centre, with the majority of staff embedded in the Customer Sector Groups. A critical component of the HSEC governance function provided by Corporate is the HSEC audit program, specifically designed to ensure our Charter, Sustainable Development Policy and HSEC Management Standards are effectively implemented across the Group.

## HSEC Networks

Across the Company, various specialist networks have been formed to foster the sharing of knowledge. Each network consists of people from across the business who apply what they know around topics of common interest. Five specialist HSEC Networks have been established to manage the development of HSEC practices and the response to issues of Company-wide significance. The networks include:

- Community Relations Network
- Environment Network
- Occupational Hygiene Network
- Safety Network
- Fatal Risk Control Protocol Network.

## HSE Committee of the Board Membership

**David Brink** *MSc Eng (Mining), DCom (hc)*

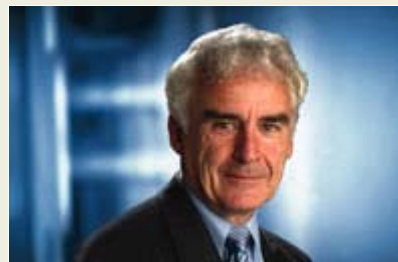
### **Chair of the HSE Committee of the Board**

David is a Director of BHP Billiton and, prior to the DLC merger, was a Director of Billiton Plc. He holds an RSA Mine Managers' Certificate of Competency (Metalliferous) and an RSA Mine Surveyors' Certificate of Competency. David started his career in deep-level mining in 1962 and moved on to manage a shaft sinking, tunneling and exploration contracting company in 1970, with operations mainly in South Africa and Australasia. Since 1983, David has been involved in construction and heavy engineering and, from 1994, in pulp and paper, life assurance, banking and transportation as a non-executive Director.



**Jim Galvin** *BSc, BE, PhD, CPEng, CPMIn, FIEA, FAusIMM*

Jim graduated from the University of Sydney and joined Mining Operations group at the South African Chamber of Mines Research Organisation where he obtained his PhD in Rock Mechanics. Upon returning to Australia, he worked in a range of operational roles from miner to mine manager. In 1988, he was awarded a Churchill Fellowship related to motivating and managing change in traditional industries. Jim has been Professor of Mining Engineering at the University of New South Wales since 1992 and was Head of School from 1995 to 2002. He is a member of a range of industry and government bodies and consults internationally in areas that include mine design and stability, risk management, accident investigation, and health, safety and environment.



**Charles (Chip) Goodyear** *BSc, MBA, FCPA*

Chip was appointed Chief Executive Officer of BHP Billiton Limited and BHP Billiton Plc in January 2003. He has been a Director since November 2001. He previously held the positions of Chief Development Officer and Chief Financial Officer of BHP Billiton Limited and BHP Billiton Plc. Chip joined the Company as Chief Financial Officer in 1999, prior to which he had extensive financial, corporate restructuring and merger and acquisition experience in the United States, including roles as President of Goodyear Capital Corporation and Executive Vice President and Chief Financial Officer of Freeport-McMoRan Inc.



## Tony Lennox *BE Mining (Hons)*

Tony is BHP Billiton's Corporate Vice President Health, Safety and Environment. He was appointed to the role in January 2004 and prior to this was President of the Company's Cannington operation, known as the world's largest and lowest-cost mine producer of silver. Tony joined BHP Billiton in 1994 with extensive project development and operating experience and has up until his current role been in operational line management roles. He has extensive knowledge of the coal and base metals mining industry and experience in operational safety leadership.



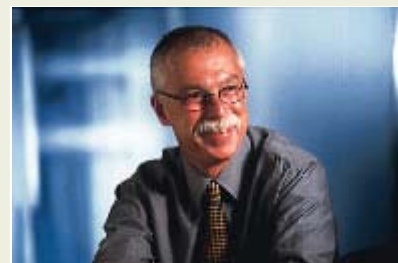
## Jimmy L Perkins *BA, PhD, CIH*

Jimmy has been in academia since 1981 and is currently Professor at the University of Texas School of Public Health. He has taught health and hygiene courses for universities, private corporations and government agencies. In addition, Jimmy has had consulting agreements with a wide range of industries, including aluminium, iron, specialty metal products, petrochemicals and educational facilities. His research has involved assessment of worker exposures and health risks, protection of workers from skin exposures to chemicals, and a wide range of environmental health issues.



## Miklos (Mike) Salamon *BSc (Mining Eng), MBA*

Mike is Group President, Non-Ferrous Metals (consisting of Aluminium, Base Metals and Stainless Steel Materials), BHP Billiton Group and has been an executive Director of BHP Billiton Limited and BHP Billiton Plc since February 2003. He is also a member of the Office of the Chief Executive and Executive Committee and Chairman of the Operating Committee. He is Chairman of WMC Resources Ltd (effective 3 June 2005) and Samancor and a Director of Richards Bay Minerals, Cerro Matoso and Escondida. From July 2001 to March 2004, Mike was Chief Minerals Executive and President and CEO, Aluminium. From July 1997 to June 2001, Mike was an executive Director of Billiton Plc with responsibilities for nickel, chrome, manganese, stainless steel and titanium. He was formerly Executive Chairman of Samancor, Managing Director of Trans-Natal Coal Corporation and Chairman of Columbus.

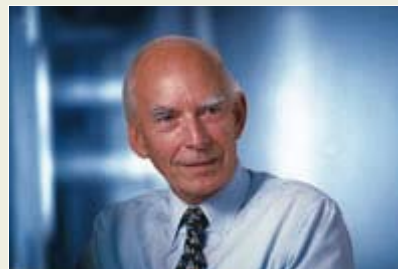


**Dr David Slater** *CB, BSc, PhD, CChem, CEng, FRSC, FIChemE*



David was educated at the University College of Wales and Ohio State University and initially taught chemical engineering at Imperial College, London. Following that, he has had extensive experience in safety and environmental risk management, both in consultancy and in UK regulatory agencies. Through the 1970s and 1980s, as founder of Technica, he led the pioneering application of risk assessment techniques to the offshore and petrochemical industries. As Her Majesty's Chief Inspector of Pollution and Director of the Environment Agency, he had a leading role, through the 1990s, in developing and implementing risk-based pollution control legislation in the UK and Europe. He is currently a Director of the regulatory strategy organisation Cambrensis and holds a Royal Academy of Engineering Professorship at the University of Manchester. David advises Cardiff University and, as an adjunct Professor at King's College, London, is involved with the Kings Risk Forum.

**Ed Spence** *CEng, FIEE*



Ed is Managing Director of Integral Safety Ltd in the UK. His clients include the UK Health and Safety Executive and the federal Australian and Norwegian equivalents as well as several major oil and minerals companies. He retired as HSE Manager for BP Exploration (Europe) some eight years ago to start his own consultancy. Ed was previously Engineering Development Manager for BP Exploration. He is a chartered engineer and a Fellow of the Institution of Electrical Engineers and lectures part-time to the MSc course in Safety Engineering at Aberdeen (Scotland) University. Ed's focuses are inherently safer design and regression of incident causation to the deep underlying causes rather than the more obvious ones.

## Qualification Abbreviations

**BA** Bachelor of Arts

**BE** Bachelor of Engineering

**BEc** Bachelor of Economics

**BSc** Bachelor of Science

**CChem** Chartered Chemist

**CEng** Chartered Engineer

**CIH** Certified Industrial Hygienist

**CPEng** Chartered Professional Engineer

**DCom (hc)** Doctorate Commerce (honora causa)

**FAusIMM** Fellow Australasian Institute of Mining and Metallurgy

**FCPA** Fellow Australian Society of Certified Practising Accountants

**FIChemE** Fellow of the Institution of Chemical Engineers

**FIEAust** Fellow Institution of Engineers, Australia

**FRSC** Fellow of the Royal Society of Chemistry

**MBA** Master of Business Administration

**MSc** Master of Science

**PhD** Doctor of Philosophy

# BHP BILLITON CHARTER

WE ARE BHP BILLITON, A LEADING GLOBAL RESOURCES COMPANY.

**Our purpose is to create long-term value through the discovery, development and conversion of natural resources, and the provision of innovative customer and market-focused solutions.**

**To prosper and achieve real growth, we must:**

- actively manage and build our portfolio of high-quality assets and services,
- continue the drive towards a high-performance organisation in which every individual accepts responsibility and is rewarded for results,
- earn the trust of employees, customers, suppliers, communities and shareholders by being forthright in our communications and consistently delivering on commitments.

**We value:**

- **Safety and the Environment** – An overriding commitment to health, safety, environmental responsibility and sustainable development.
- **Integrity** – Including doing what we say we will do.
- **High Performance** – The excitement and fulfilment of achieving superior business results and stretching our capabilities.
- **Win-Win Relationships** – Having relationships which focus on the creation of value for all parties.
- **The Courage to Lead Change** – Accepting the responsibility to inspire and deliver positive change in the face of adversity.
- **Respect for Each Other** – The embracing of diversity, enriched by openness, sharing, trust, teamwork and involvement.

**We are successful in creating value when:**

- our shareholders are realising a superior return on their investment
- our customers and suppliers are benefiting from our business relationships
- the communities in which we operate value our citizenship
- every employee starts each day with a sense of purpose and ends each day with a sense of accomplishment.



Chip Goodyear  
Chief Executive Officer

October 2004



## OUR APPROACH TO HEALTH, SAFETY, ENVIRONMENT AND THE COMMUNITY

# BHP BILLITON'S SUSTAINABLE DEVELOPMENT POLICY

**At BHP Billiton our objective is to be the company of choice – creating sustainable value for our shareholders, employees, contractors, suppliers, customers, business partners and host communities.**

**We aspire to Zero Harm to people, our host communities and the environment and strive to achieve leading industry practice. Sound principles to govern safety, business conduct, social, environmental and economic activities are integral to the way we do business.**

**Wherever we operate we will develop, implement and maintain management systems for sustainable development that drive continual improvement and ensure we:**

- do not compromise our safety values, and seek ways to promote and improve the health of our workforce and the community
- identify, assess and manage risks to employees, contractors, the environment and our host communities
- uphold ethical business practices and meet or, where less stringent than our standards, exceed applicable legal and other requirements
- understand, promote and uphold fundamental human rights within our sphere of influence, respecting the traditional rights of Indigenous peoples and valuing cultural heritage
- encourage a diverse workforce and provide a work environment in which everyone is treated fairly, with respect and can realise their full potential
- set and achieve targets that promote efficient use of resources and include reducing and preventing pollution
- enhance biodiversity protection by assessing and considering ecological values and land-use aspects in investment, operational and closure activities
- engage regularly, openly and honestly with people affected by our operations, and take their views and concerns into account in our decision-making
- develop partnerships that foster the sustainable development of our host communities, enhance economic benefits from our operations and contribute to poverty alleviation
- work with those involved through the lifecycles of our products and by-products to promote their responsible use and management
- regularly review our performance and publicly report our progress.

**In implementing this Policy, we will engage with and support our employees, contractors, suppliers, customers, business partners and host communities in sharing responsibility for meeting our requirements.**

**We will be successful when we achieve our targets towards Zero Harm, are valued by our host communities, and provide lasting social, environmental and economic benefits to society.**



Chip Goodyear  
Chief Executive Officer

September 2005



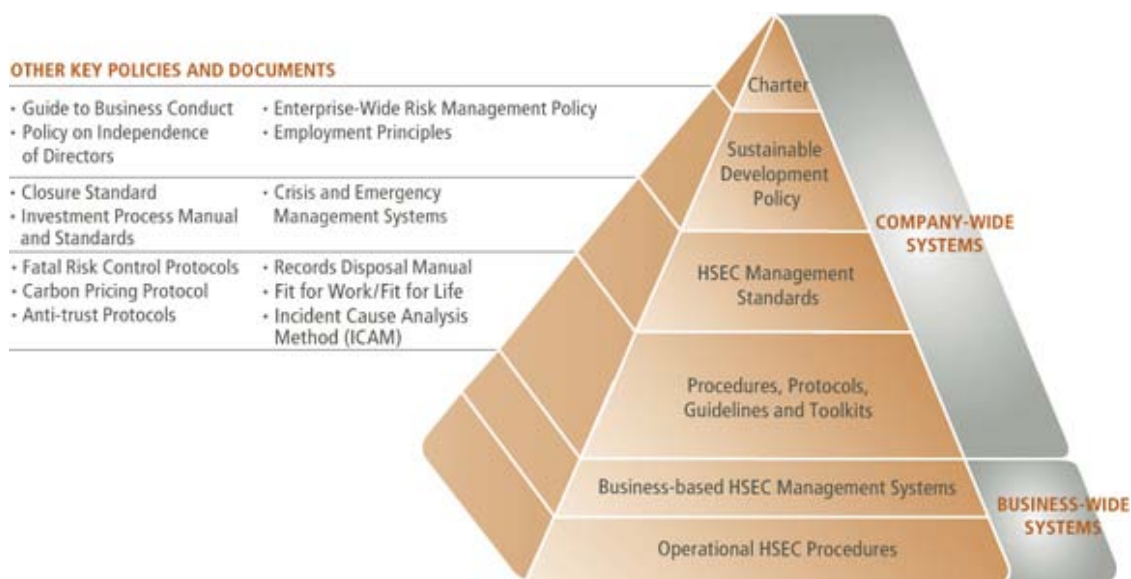
## Hierarchy of Systems and Documents

Sustainable development is a global concept – yet implementation tends to have most meaning and relevance in local situations. As a result our focus is on establishing management systems that can be consistently applied at local levels, while meeting broad governance requirements that we have specified at the Company-wide level. We put sustainable development into practice through the effective implementation of our HSEC management system.

The BHP Billiton HSEC management system is hierarchical, where documents and systems must meet and support the requirements of those at higher levels. We are aiming for some of our management systems to be certified. For example, in line with our HSEC target, all our major operating sites have now achieved and are required to maintain ISO 14001 certification. Additionally, some of our sites are now working towards certification of their safety management systems to OHSAS 18001. A number of our sites are also certified to the ISO 9000 standards for quality management systems.

The diagram below illustrates our HSEC management system, and other related Company policies and documents.

### ***BHP Billiton Hierarchy of Systems and Documents***



See below for further details on the key aspects of our management system hierarchy:

- [Company Charter](#)
- [Sustainable Development Policy](#)
- [HSEC Management Standards](#)
- [Company-Wide Procedures, Protocols, Guidelines and Toolkits](#).

In addition to the above hierarchy, there are a number of other management processes, which although managed by areas external to the HSEC function, are integral to our ability to contribute to sustainable development. Refer to [Key Management Processes](#) for further detail on how we contribute to sustainability through key business processes such as business conduct, risk management, audit and investment.

## Company Charter

Central to our business is our [Company Charter](#), which states our 'overriding commitment to health, safety, environmental responsibility and sustainable development'. Honesty and transparency are core to this commitment and, importantly, the Charter also recognises that 'to prosper and achieve real growth we must ...earn the trust of employees, customers, suppliers, communities and shareholders by being forthright in our communications and consistently delivering on commitments'.

# Sustainable Development Policy

Supporting the values of our Charter is our [Sustainable Development Policy](#). While we strive to deliver strong financial returns to shareholders, we fully recognise and deliver on our wider responsibilities to our stakeholders – as the Policy states 'our objective is to be the company of choice – creating sustainable value for our shareholders, employees, contractors, suppliers, customers, business partners and host communities.' Integral to this is our aspiration to Zero Harm.

Previously the HSEC Policy, our new Sustainable Development Policy was an output of a review process over the reporting period resulting from our maturing approach to sustainable development. This is further detailed in [Management Systems Review](#).

Knowing that much of our success as a global company depends on how effectively we work with our employees, contractors and the communities in which we operate, we see the Policy as being central to our future success. While our Policy broadly aligns with a number of international conventions such as the UN Universal Declaration of Human Rights, it also requires that we meet or, where less stringent than our standards, exceed applicable legal and other requirements. As such, the Policy recognises that where governments implement international conventions, such as those of the International Labour Organisation, we will comply.

The Policy underpins our management systems worldwide and sets the foundation from which we operate. Wherever we operate, sustainable development aspects are addressed in our decision-making processes, alongside other business considerations.

See our [Policy Guide](#) for a more detailed explanation on the rationale behind our Policy objectives.

## HSEC Management Standards

The BHP Billiton HSEC Management Standards form the basis for the development and application of HSEC management systems at all levels in the Company, and represent a key process through which we drive our contribution to sustainable development.

The following outlines the [Purpose and Application](#) of these Standards, as well as providing a summary of their [Coverage](#).

### ***Purpose and Application***

The objectives of the Standards are to:

- support the implementation of the Charter, the Sustainable Development Policy and the Guide to Business Conduct across BHP Billiton
- provide a risk-based HSEC management system framework, consistent with:
  - the BHP Billiton Enterprise-Wide Risk Management Policy
  - ISO 14001
  - OHSAS 18001
  - SA 8000
  - other international policies, standards and management practices to which BHP Billiton has committed, including the:
    - UN Global Compact
    - UN Universal Declaration of Human Rights
    - International Council on Mining & Metals (ICMM) Sustainable Development Framework
    - World Bank Operational Directive on Involuntary Resettlement
    - US-UK Voluntary Principles on Security and Human Rights
    - other regional commitments



- set out and formalise the expectations for progressive development and implementation of more specific and detailed HSEC management systems at all levels of BHP Billiton
- provide auditable criteria, against which HSEC management systems across BHP Billiton can be measured
- provide a basis from which to drive continual improvement towards leading industry practice.

The Standards are required to be reviewed at least every three years. Over the reporting period, we undertook a review to ensure that the Standards remain consistent with current national and international developments and continue to be relevant and appropriate for the level of HSEC maturity of the organisation. This is further detailed in [Our Performance: Management Systems Review](#).

The Standards cover all operational aspects and activities that have the potential to affect HSEC either positively or negatively. The terminology 'Health, Safety, Environment and Community' (or HSEC) has been used throughout the Standards to highlight four key components of sustainable development.

These are:

- **Health** – promoting and improving the health of the company's workforce and host communities
- **Safety** – ensuring that safety values are not compromised, and providing a workplace where people are able to work without being injured
- **Environment** – promoting the efficient use of resources, reducing and preventing pollution and enhancing biodiversity protection
- **Community** –
  - internal community – engaging regularly with employees and contractors, where everyone is treated fairly and with respect and can realise their full potential; upholding ethical business practices, and encouraging a diverse workforce
  - external community – engaging regularly with those affected by BHP Billiton operations, enhancing economic benefits and contributing to sustainable community development
  - human rights – understanding, promoting and upholding fundamental human rights within BHP Billiton's sphere of influence.

The Standards cover the entire lifecycle of operations, from exploration and planning through to operation and closure (decommissioning, remediation and rehabilitation).

The Standards apply to all BHP Billiton sites and operations throughout the world. These include facilities and activities (from exploration through to closure and rehabilitation) that are owned or operated by us, development projects, mergers, acquisitions and divestments, and major activities by contractors on our sites or under our management. Where we have no operational responsibility but have an equity stake, or significant BHP Billiton assets are involved, we make the Standards available to the operator so that comparable HSEC standards can be applied.

Our HSEC Management Standards include a requirement for an auditing process to check that our Charter, Sustainable Development Policy and Standards are being applied and to verify performance. The audits are designed to address the degree of implementation of our HSEC management systems and their effectiveness in meeting the Group's needs and those of the business being audited. During any year, those sites not scheduled for a Corporate HSEC audit must complete a self assessment against the Standards and prepare performance improvement plans to progress to full conformance with the Standards. This is further detailed in our section on [Audit](#).

## Coverage

There are 15 HSEC Management Standards, each with a number of performance requirements which provide the detail by which our sites establish systems and processes to meet the intent of each standard. A summary of the Standards and their intent statements is provided below. You can also view and download our full [HSEC Management Standards](#) and their associated performance requirements.

## Summary of our 15 HSEC Management Standards

### **Standard 1 Leadership and Accountability**

*Intent: Directors, managers, employees and contractors understand their accountabilities and demonstrate leadership and commitment to sustainable development and Zero Harm through effective HSEC management.*

### **Standard 2 Legal Requirements, Commitments and Document Control**

*Intent: Relevant legal, regulatory and other HSEC requirements are identified, accessible, understood and complied with and an effective HSEC document control system is in place.*

### **Standard 3 Risk and Change Management**

*Intent: HSEC hazards are identified, and associated risks assessed and managed. Planned and unplanned changes are identified and managed.*

### **Standard 4 Planning, Goals and Targets**

*Intent: Sustainable development is an integral part of business planning with HSEC goals and targets established to drive continual improvement in performance.*

### **Standard 5 Awareness, Competence and Behaviour**

*Intent: Employees, contractors and visitors are aware of relevant HSEC requirements, hazards, risks and controls, are competent to conduct their activities and behave in a responsible manner.*

### **Standard 6 Health and Hygiene**

*Intent: Employees and contractors are assessed for their fitness for work and, along with visitors, are protected from health hazards associated with Company operations. Community health issues relevant to Company operations are identified and effectively managed.*

### **Standard 7 Communication, Consultation and Participation**

*Intent: Effective, transparent and open communication and consultation is maintained with stakeholders associated with Company activities. Stakeholders are encouraged to participate in and contribute to sustainable development through HSEC performance improvement initiatives.*

### **Standard 8 Business Conduct, Human Rights and Community Development**

*Intent: Activities and operations are conducted in an ethical manner that supports fundamental human rights and respects traditional rights, values and cultural heritage. Opportunities are sought for contributing to sustainable community development.*

### **Standard 9 Design, Construction and Commissioning**

*Intent: Management of HSEC risks and opportunities is an integral part of all projects through design, approval, procurement, construction and commissioning.*

### **Standard 10 Operations and Maintenance**

*Intent: All plant and equipment is operated, maintained, inspected and tested using systems and procedures that manage HSEC risks.*

### **Standard 11 Suppliers, Contractors and Partners**

*Intent: The contracting of services, the purchase, hire or lease of equipment and materials, and activities with partners, are carried out so as to minimise any adverse HSEC consequences and, where possible, to enhance community development opportunities.*

### **Standard 12 Stewardship**

*Intent: The lifecycle HSEC impacts associated with resources, materials, processes and products are minimised and managed.*

### **Standard 13 Incident Reporting and Investigation**

*Intent: HSEC incidents, including near misses, are reported, investigated and analysed. Corrective and preventive actions are taken and lessons shared.*

### **Standard 14 Crisis and Emergency Management**

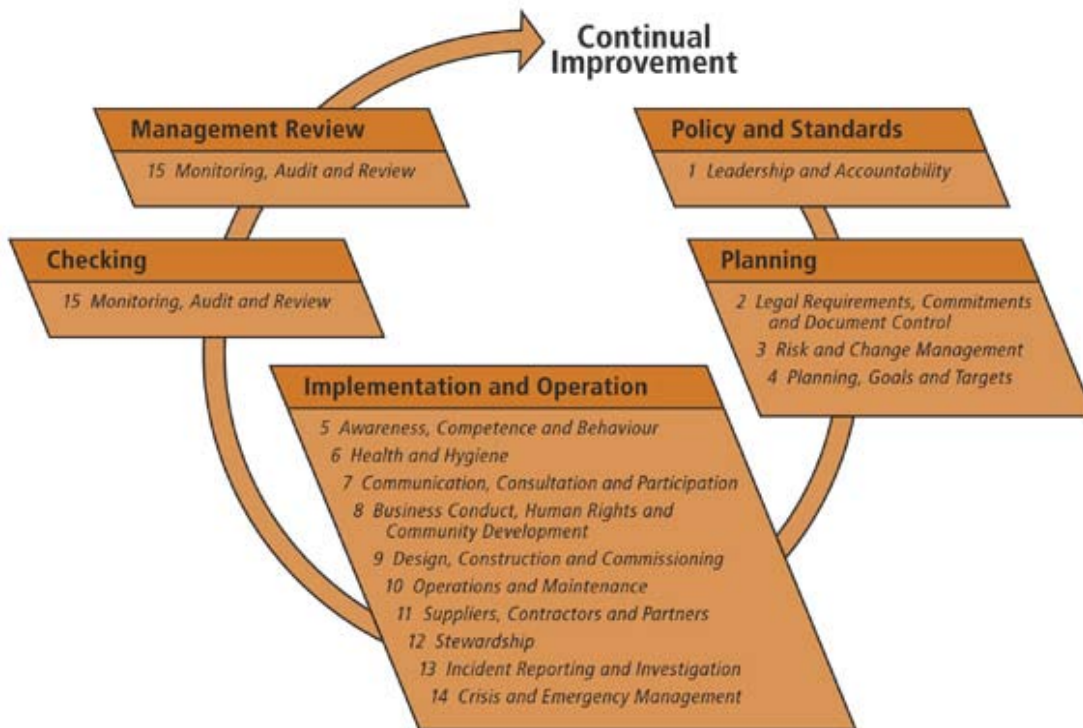
*Intent: Procedures and resources are in place to effectively respond to crisis and emergency situations.*

### **Standard 15 Monitoring, Audit and Review**

*Intent: HSEC performance and systems are monitored, audited and reviewed to identify trends, measure progress, assess conformance and drive continual improvement.*

The framework for the Management Standards is based on the Plan-Do-Check-Act model common to many management systems. The figure below illustrates how the standards fit into this model.

### HSEC Management Standards Continual Improvement Model



As illustrated, all aspects of performance are incorporated into the Management Standards, including accountabilities; risk assessment and management; business planning and target setting for improvement; communication, training and awareness; emergency response; and performance monitoring, auditing, and management review.

While the Standards require the establishment of reporting processes based on key risks, they also require that environmental and occupational accident and illness reporting processes are designed to comply with the relevant laws in the regions where we operate.

All sites are required to have consultation and communication processes for both internal and external stakeholders. Internally, we require sites to establish processes that comprise management, employee and contractor representation to address and review HSEC issues. Similarly, externally we require systems to identify and work with communities and other stakeholders. These processes are further detailed in [Engaging Stakeholders](#).

Management Standard 11 requires operations to evaluate the social and environmental performance of our contractors, suppliers and partners, including such issues as human rights records and previous environmental incidents. Further detail on our approach to the supply chain can be read at [Our Approach: Suppliers](#).

Through Management Standard 12 on Stewardship, we cover the consumption end of our material lifecycle. Refer to [Stewardship](#) for further information.

Management Standard 14 on Crisis and Emergency Management outlines our expectations with regards to the establishment of systems and processes to deal with potential emergency scenarios and the consequent mitigation of any related HSEC impacts.

To ensure that our HSEC management requirements are embedded into significant investment decisions, we have established an investment process that covers a range of investment types and establishes the process by which all investments are to be reviewed and authorised. This is further detailed in [Investment Processes](#).

## Company-Wide Procedures, Protocols, Guidelines and Toolkits

Company-wide Procedures and Protocols are mandatory to all BHP Billiton sites, operations and controlled activities. These documents address specific areas where it is important that activities are conducted consistently across the Company and cover such areas as corporate performance reporting, fatal risk control protocols, and incident investigation.

Company-wide Guidelines are advisory only and guide our businesses on effective implementation of the HSEC Management Standards. Company-wide Toolkits provide preferred methods for meeting the requirements of the HSEC Management Standards and Company-wide Procedures, Protocols and Guidelines. They are not mandatory.

## Key Management Processes

Wherever we operate, HSEC aspects are addressed in our decision-making processes, alongside other business considerations. This means that while we strive to deliver strong financial returns to shareholders, we fully recognise and deliver on our wider responsibilities to our stakeholders. Excellence in HSEC management is good business.

We have established a number of key management processes across our Company to ensure there is a common approach to the consideration of HSEC in our business decisions. Further detail on these management processes can be read at:

- [Business Conduct](#)
- [Risk Management](#)
- [Investment Processes](#)
- [Audit](#)
- [Stewardship](#)

## Business Conduct

The [BHP Billiton Guide to Business Conduct](#) is founded on our [Charter](#). The Charter states that the Company cares as much about how results are obtained as it does about delivering good results. How the Company achieves results is important because:

- good behaviour enhances the Company's 'licence to operate' and facilitates the sustainable expansion of our business
- communities value companies who value them
- suppliers value customers who honour commitments
- customers value honesty and integrity
- shareholders value companies that set and live up to high standards
- employees value companies where they trust the integrity of their colleagues and management.

The Guide to Business Conduct applies to all our workforce regardless of their specific job or location. It provides employees and contractors with direction and advice on carrying out business and interacting with governments, communities and business partners. This includes clear guidelines on general workplace behaviour as well as our policies, standards and guidelines on a wide range of ethical issues including conflict of interest, financial inducements and bribery, insider trading and political contributions.

The Guide and its principles are cascaded through the organisation, with managers and supervisors held accountable for not only their actions but also the actions of their staff. This starts at the most senior level of the Company, with the CEO requesting annual confirmation from his direct reports that they and their direct reports have read the Guide and have discussed its contents.

Internal performance requirements regarding business conduct are included in our [HSEC Management Standards](#). Distribution of the Guide to employees and contractors, as well as presentation and discussion of its principles, is monitored and reported through the Company's HSEC [audit](#) program. In addition to the English version, the Guide is available in seven other languages commonly used at our sites around the world.

Resolution of business conduct issues is encouraged at the local level. If this is not possible, the issue can be raised with regional points of contact or telephone Business Conduct Helplines based in southern Africa (Johannesburg), Europe (London), Australasia (Melbourne), North America (Houston) and South America (Santiago, Chile). Helpline advisers have received training on business conduct issues. BHP Billiton does not track the phone number or location of callers to the Helpline. A confidential email address is also increasingly used. For issues related to fraud or bribery, the fraud hotline is contacted. Employees can escalate issues to the Global Ethics Panel. For further details, see Global Ethics Panel.

## ***Global Ethics Panel***

The Global Ethics Panel includes business representatives and corporate representatives from relevant functional areas — Group Audit Services, Human Resources and Legal — and two external representatives. John Fast, Chief Legal Counsel and Head of External Affairs, holds the position of Chairman. Our external representatives are Dr Simon Longstaff, Executive Director, St James Ethics Centre, and Graham Evans, current Chairman of the Victorian Competition and Efficiency Commission, former chairman of the Global Ethics Panel and former Head of External Affairs at BHP Billiton.

In addition to providing a high-level point of contact for employees, the Global Ethics Panel reviews on a quarterly basis all business conduct cases that have been raised through the Helpline or email system. It also assesses emerging policy issues and recommends to the Board appropriate changes to the Guide.

## ***Anti-Trust Protocols***

Anti-trust laws apply to virtually all industries and to every level of business and are designed to prohibit a variety of practices that restrain trade.

BHP Billiton has adopted Anti-trust Protocols that set out and confirm the minimum Anti-trust compliance standards expected of all Company personnel regardless of their specific job or location. The Protocols reflect the Group's ongoing commitment to its Guide to Business Conduct and corporate governance policies.

BHP Billiton decides and implements its own commercial strategy as regards production decisions, setting of prices and negotiating other terms of trade with its customers. It must not engage in any of the foregoing activities in concert with, or as result of, bilateral or multilateral contacts with its competitors, either directly or indirectly.

The Anti-trust Protocols are presented in three parts. The first is a short summary guide, entitled Do's & Don'ts, which is intended as a quick reference guide in point form. The second and third parts comprise the detailed BHP Billiton Anti-trust Protocols - Group Principles and Technical Benchmarking respectively. The summary Do's & Don'ts document is derived from the latter two documents.

Given the complexity surrounding international anti-trust compliance, with regulations constantly evolving and differing from jurisdiction to jurisdiction, BHP Billiton has established a panel of both internal and external experts to deal with any anti-trust issues facing any employee, officer or representative of the Group.

## **Risk Management**

HSEC Management Standard 3 on Risk and Change Management outlines our approach to HSEC risk identification and management across our businesses. It requires that HSEC risks and opportunities are assessed, prioritised and managed, taking account of probability and potential consequence severity in order to prioritise and assign appropriate management and mitigation measures. We require all our operations to ensure these risks are recorded and maintained in a risk register, which is regularly reviewed and updated.

We have developed an HSEC Risk Management Guideline to further support our operations in implementing the requirements of our Management Standards. The [BHP Billiton HSEC Consequence Severity Table](#) is a central component of this risk management guideline. The Consequence Severity Table is utilised in determining the level of significance of actual or potential HSEC incidents and risk.

When a consequence severity is rated at 4 or above for health and safety and at 3 or above for environment or community, we classify the risk or incident as significant. For incidents, this triggers the need for reporting of the incident at the Corporate level and the formation of an independently led investigation team. For risks, we require thorough consideration of management and mitigation measures, taking into account consideration of the risk probability and exposure.

Significant HSEC risks for our businesses are incorporated into our Enterprise-Wide Risk Management strategy, as detailed below.

## ***Enterprise-Wide Risk Management***

Supporting the risk basis of the Management Standards is our Enterprise-Wide Risk Management (EWRM) strategy. This strategy embeds risk management processes into all our critical business systems, allowing us to adopt a precautionary approach to business management. When critical decisions are being made, managers are required to look beyond the obvious risks and recognise all sources of uncertainty, including issues related to health, safety, environment and community.

The embedding of risk management processes is taking place at all levels of the organisation, so that risks associated with changes or investments can be systematically identified and managed in a comprehensive and integrated way. Particularly, EWRM requires managers to understand the risks associated with the activities under their control and to manage them accordingly, and this acts to stimulate and reinforce accountability. The context of all our risk management activities is always the achievement of our business plan and strategic objectives. Because there is a continuous focus on the events and issues that might affect how and when those strategic objectives are achieved, we are building resilience into our business at all levels.

An advanced EWRM framework has been developed to steer implementation, comprising policy, standards and guidelines that set exacting standards for management. The consideration of HSEC risk is integral to this framework. Each asset and business has gone through an objective process of risk assessment and has evaluated its current risk management approach and systems against a standard. The risk assessments have highlighted where further control action is required, and this is now being taken. Where gaps in the system of risk management were identified, a risk management plan has been prepared and is being implemented.

Corporate governance requirements are satisfied by the assessment of progress in risk management plans and in improvements in risk control, which is reported to business-level risk management and audit committees that in turn report to the Risk Management and Audit Committee of the Board. For further details on the Risk Management and Audit Committee of the Board, refer to the [Corporate Governance](#) section on our Company website.

To coordinate all risk management activities, risk management 'champions' have been appointed at each operational location or function. They work as a Community of Practice, sharing information about initiatives and best practice.

A central element of the EWRM strategy is leveraging risk management information. The Company-adopted system assigns risks, controls and actions to accountable managers and enables management to track and report progress on all risk control activity. This system is also being used to 'roll-up' risk issues so that the Company can see all its major residual risks, along with opportunities for greater value creation through strategic risk management. The system is being used specifically to roll-up HSEC risks to obtain such a Company-wide perspective.

The ultimate aim of the Company's EWRM strategy is to embed risk management in all we do, so that it truly becomes everyone's responsibility.

[View our Enterprise-Wide Risk Management Policy.](#)

## BHP Billiton HSEC Consequence Severity Table

HSEC Severity Level	Impact Type				
	Health and Safety	Natural Environment	Community Relations and Cultural Heritage	Government / Reputation / Media	Legal
7	> 500 fatalities or very serious irreversible injury to 5000 persons	Very significant impact on highly value species, habitat or eco system.	Irreparable damage to highly valued items of great cultural significance or complete breakdown of social order.	Prolonged international condemnation.	Potential jail terms for executives and or very high fines for company. Prolonged, multiple litigation.
6	>50 fatalities, or very serious irreversible injury to >500 persons.	Significant impact on highly valued species, habitat, or ecosystem.	Irreparable damage to highly valued items of cultural significance or breakdown of social order.	International multi-NGO and media condemnation.	Very significant fines and prosecutions. Multiple litigation.
5	Multiple fatalities, or significant irreversible effects to >50 persons.	Very serious, long-term environmental impairment of ecosystem function.	Very serious widespread social impacts. Irreparable amage to highly valued items.	Serious public or media outcry (international coverage).	Significant prosecution and fines. Very serious litigation, including class actions.
4	Single fatality and/or severe irreversible disability (>30%) to one or more persons.	Serious medium term environmental effects.	On-going serious social issues. Significant damage to structures/ items of cultural significance.	Significant adverse national media/ public/ NGO attention.	Major breach of regulation. Major litigation.
3	Moderate irreversible disability or impairment (<30%) to one or more persons.	Moderate, short-term effects but not affecting ecosystem function.	Ongoing social issues. Permanent damage to items of cultural significance.	Attention from media and/or heightened concern by local community. Criticism by NGOs.	Serious breach of regulation with investigation or report to authority with prosecution and/or moderate fine possible.
2	Objective but reversible disability requiring hospitalisation.	Minor effects on biological or physical environment.	Minor medium-term social impacts on local population. Mostly repairable.	Minor, adverse local public or media attention and complaints.	Minor legal issues, non-compliances and breaches of regulation.
1	No medical treatment required.	Limited damage to minimal area of low significance.	Low-level repairable damage to commonplace structures.	Public concern restricted to local complaints.	Low-level legal issue.



## Investment Processes

New investments are essential for the Company to deliver on our strategic and financial objectives and to shape the organisation to best respond to the changing external environment. We clearly recognise, however, the potential risks and opportunities new investments pose to our commitment to sustainable development, and consequently have integrated the consideration of HSEC into our investment processes and decision-making.

Our investment system is based on a common approach across the organisation, using consistent processes, terminology, standards, tools and techniques. The system structure is sufficiently flexible to allow individual CSGs to deal with their specific circumstances and dovetail into the specific requirements of our investment process. Our investment system applies to capital investments, mergers, acquisitions and divestments, and bid-type investments. For other investment types, such as joint ventures, service and long-term purchase agreements, guidance as to how these investments should be reviewed as part of the investment system must be sought.

The Investment Review Committee (IRC) operates under powers delegated by the Office of the Chief Executive. The role of the IRC is to oversee the management approval processes for major investments. Those processes are designed to ensure that investments are aligned to the Group's agreed strategies and values; that risks are identified and evaluated, that investments are fully optimised to produce the maximum shareholder value within an acceptable risk framework, and that appropriate risk management strategies are pursued. The IRC oversees investment processes across the organisation and coordinates the Independent Peer Review and endorsement of major investments.

A tollgating process is utilised to ensure investments meet the requirements of our investment standards prior to progressing to the next stage of development. There are five phases to project development to which there are clearly aligned HSEC requirements that must be addressed, consistent with our Sustainable Development Policy and HSEC Management Standards requirements. These are outlined in the following table.

## Summary of BHP Billiton HSEC Requirements for Project Tollgating

Project Phase	Objectives	Summary HSEC Requirements
<b>Concept</b>	<ul style="list-style-type: none"> <li>● Identify major project options</li> <li>● Determine potential value</li> <li>● Identify potential fatal flaws and major risks</li> <li>● Define further work requirements</li> </ul>	<ul style="list-style-type: none"> <li>● Develop preliminary HSEC risk assessment, identify potential fatal flaws or major risks</li> <li>● Develop conceptual HSEC Management and Monitoring Plan</li> <li>● Identify statutory requirements</li> <li>● Scope project environmental and social impact assessment (E&amp;SIA)</li> <li>● Identify any significant closure issues</li> <li>● Identify stakeholders</li> <li>● Identify any socio-economic issues</li> </ul>
<b>Pre-feasibility</b>	<ul style="list-style-type: none"> <li>● Select preferred project option</li> <li>● Ensure viability</li> <li>● Ensure no fatal flaws</li> </ul>	<ul style="list-style-type: none"> <li>● Detailed HSEC risk assessment, including control measures</li> <li>● Update legal requirements and commitments register</li> <li>● Commence environmental and social baseline studies</li> <li>● Prepare preliminary Environmental and Social Impact Assessment</li> <li>● Develop HSEC Management and Monitoring Plan</li> <li>● Develop conceptual closure plan</li> <li>● Develop community relations / development plan</li> </ul>
<b>Feasibility</b>	<ul style="list-style-type: none"> <li>● Optimise lifecycle costing</li> <li>● Finalise scope, schedule and KPIs</li> <li>● Establish project execution plan</li> <li>● Obtain funding approval</li> </ul>	<ul style="list-style-type: none"> <li>● Review and update HSEC risk assessment, including control measures</li> <li>● Update legal requirements and commitments register</li> <li>● Complete Environmental and Social Impact Assessment, ensure mitigation measures in project design</li> <li>● Review and update HSEC Management and Monitoring Plan</li> <li>● Complete and cost closure plan</li> <li>● Review and update community relations/development plan</li> </ul>
<b>Execution</b>	<ul style="list-style-type: none"> <li>● Deliver the asset consistent with business and project KPIs</li> </ul>	<p>Maintain HSEC management system developed throughout project development stages, consistent with the requirements of the HSEC Management Standards and the Sustainable Development Policy</p>
<b>Operation</b>	<ul style="list-style-type: none"> <li>● Operate and evaluate the asset to ensure performance to specification</li> <li>● Plan for exit and/or closure</li> </ul>	

Independent Peer Reviews are integral to the assessment and approval of investments. They are undertaken by a cross-functional team of experts, one of which is an HSEC professional, independent of the investment proponents and generally from within the Company, who review the investment prior to the required tollgates. These reviews provide assurance that investment opportunities are robust and have undergone independent, rigorous and consistent reviews. They are essential, not only for satisfying our governance requirements, but also for providing the opportunity to add further value by drawing on the experience of the Independent Peer Review team.

## Audit

Our HSEC Management Standards include a requirement for an auditing process to check that our Charter, Sustainable Development Policy and HSEC Management Standards are being applied, and to verify performance. The audits are designed to address the degree of implementation of our HSEC management systems and their effectiveness in meeting the Group's needs and those of the business being audited. Recommendations for improvement are made as required.

The HSEC Audit Protocol is based on the HSEC Management Standards and systems and performance management principles. The audit program is a triennial peer review process, with audit teams drawn from the HSEC function, operations personnel and external sources. It provides an objective view of site activities and systems and assists site managers through the identification of gaps in HSEC management programs. These gaps are addressed through monitored Performance Improvement Plans. The process provides assurance to the Group and the Board that the HSEC Management Standards are being implemented and identifies leading practices that can be shared across the Company.

During any year, those sites not scheduled for a Corporate HSEC audit must complete a self assessment against the Standards and prepare Performance Improvement Plans to progress to full conformance with the Standards.

The audit process is proving invaluable in accelerating the rate of improvement in all aspects of HSEC management through the identification and communication of leading practices. Refer to [Our Performance: Audit and Self Assessment](#) to view the results of our HSEC audit and self assessment process for the reporting period.

The review of the operation of our internal control systems, including the HSEC auditing process, is one of the roles of the Risk Management and Audit Committee, which is a committee of the Board. The Committee's responsibilities also include overseeing the appointment of the Vice President Risk Assessment and Assurance ( who is responsible for the Company's risk assessment, internal audit and insurance activities) and evaluating his or her performance. For further details on the Risk Management and Audit Committee of the Board refer to the [Corporate Governance](#) section on our Company website.

## Stewardship

Stewardship is a principle that suggests that all involved in the lifecycle of a product should take responsibility for the impacts to human health and the natural environment that result from the production, use and disposal of the product. Those primarily involved in the lifecycle of a minerals product typically include the mining operation, the primary and secondary minerals processing facilities, manufacturers, retailers, consumers and governments. While the physical and chemical nature of metals ensures their infinite recyclability, we are working with commodity organisations to address lifecycle and product-stewardship considerations.

The Company has had an HSEC Management Standard dealing with product stewardship since the establishment of the Standards in 2001. The intent, as stated in Management Standard 12, is to promote 'The lifecycle HSEC impacts associated with resources, materials, processes and products are minimised and managed.'

In addition, we set and achieved a Company-wide target that lifecycle assessments (LCA) be prepared for all major minerals products by 30 June 2004. The LCA studies were conducted through research institutes and academia and in conjunction with commodity and industry associations such as the [International Aluminium Institute](#), the [International Copper Association](#) and the [Nickel Development Institute](#).

The global [Green Lead™ project](#), as reported in our 2002 and 2003 HSEC Reports, is an initiative of the lead industry. Our Base Metals CSG is actively involved, primarily through the Cannington silver/lead/zinc operation in north Queensland, which initiated the project. The vision of the Green Lead™ project is to independently certify that producers are applying best practice to all aspects of the product lifecycle – mining, processing, transporting, treating, manufacturing, storing, using and recycling. A group of foundation project partners, representing industry stakeholders involved in mining, smelting, manufacturing and recycling, is implementing the project.

In addition, our Diamonds business is a member of the Kimberley Process Certification Scheme, an international diamond certification scheme aimed at halting the trade in 'conflict diamonds'.

Consumer health is also of growing importance to us, and we are involved with industry associations in progressing initiatives in this area. For example, we are currently working with the Nickel Development Institute in relation to the proposed EU Chemical Policy, which will require industry to demonstrate that 'chemicals' (which includes metal in this context) are safely produced and managed through their lifecycles.

For an update on our stewardship initiatives over the reporting period, refer to [Our Performance: Stewardship](#).

## Governance - Our Performance

Refer to the following for a discussion on the performance and key initiatives related to our sustainable development governance systems over the reporting period:

- [Risk Management](#)
- [Management Systems Review](#) - incorporating the review of our former HSEC Policy, Management Standards and targets
- [Business Conduct](#)
- [Audit and Self Assessment](#)
- [Stewardship](#)

For details on our governance systems for sustainable development, refer to [Our Approach](#).

## Risk Management

Risk registers were in place and maintained at all required sites, businesses and Corporate offices over the reporting period in line with our HSEC target.

In addition, over the reporting period, an HSEC risk assessment project was established, which will continue over the coming year. The project was the result of an analysis of historic incidents and accidents that suggested that HSEC risk assessment tools and techniques may not be adequately understood or applied consistently across our operations.

The project will build upon our existing approach to risk assessment and incorporate our Enterprise-Wide Risk Management processes, in order to drive a step change in risk assessment through:

- improved guidance in the application of various risk assessment techniques ranging from informal risk assessment through to Formal Safety Assessment
- HSEC Risk assessment training
- the establishment of a network of appropriate resources.

In addition, the project will also focus upon catastrophic risk management and related identification and assessment techniques.

## Management Systems Review

See below for details on the review processes of our management systems undertaken during the reporting period:

- [HSEC Policy Review](#)
- [HSEC Management Standards Review](#)
- [HSEC Targets Review](#)
- [Documentation and Guidelines Review](#)

### HSEC Policy Review

Over the reporting period, in response to internal and external requests for better clarity about our approach to sustainable development, we have been working on a sustainable development strategy. A cross-functional steering group was established to drive this process, involving representatives from each of our CSGs, HSEC, supply, human resources and business evaluation and economics functions. This initial work was also presented for debate and consideration by our [Forum on Corporate Responsibility](#).

Emerging from this work was the recognition that it was appropriate to now expand the scope of our HSEC Policy to incorporate some of the broader considerations of sustainable development.

The revised Policy was endorsed by our [HSEC Forum](#), Forum on Corporate Responsibility and Operating Committee and approved by the Office of the Chief Executive.

The revised Policy has been designed to better articulate sustainability in the context of BHP Billiton, maintaining an emphasis on HSEC while clarifying commitment to some broader aspects such as biodiversity, human rights, ethical business practices and economic contributions. Importantly, our Sustainable Development Policy clearly sets our vision for sustainable development at BHP Billiton to be the company of choice – creating sustainable value for our shareholders, employees, contractors, suppliers, customers, business partners and host communities. Central to this vision, we have maintained our aspirational goal of Zero Harm to people and the environment.

View our [Sustainable Development Policy](#).

### HSEC Management Standards Review

It is a requirement of our HSEC Management Standards that they are reviewed at least every three years and revised as required. Consequently, a review process was undertaken during the reporting period to ensure that the Standards remain consistent with current national and international developments, and continue to be relevant and appropriate for the level of HSEC maturity of the organisation. Specific areas addressed during the review included:

- removing redundancy and clarifying performance requirements
- ensuring that the Standards were consistent with the International Standards Organisation revision of ISO 14001:2004
- incorporating reference to Version 2 of the [Fatal Risk Control Protocols](#) and the [Closure Standard](#)
- ensuring consistency with the ICMM Sustainable Development Framework and associated Minerals Council of Australia 'Enduring Value' framework
- incorporating reference to external codes to which the Company has committed since Version 2 of the Standards in 2002
- ensuring the Standards supported the new Sustainable Development Policy.

View our [revised HSEC Management Standards](#).

## HSEC Targets Review

In recognition that many of our HSEC targets were complete or reaching completion, and in line with the review processes for the Policy and Management Standards, we commenced a review of the Company-wide HSEC targets during the reporting period. A review team was formed by members from across our CSGs and key functional areas.

The review process was based upon an analysis of past performance against targets, leading practice targets among peer companies, and a consideration of the objectives specified in our Sustainable Development Policy. As a result of these analyses, a number of potential targets were proposed and debated by the review team, following which they were presented to the HSEC Forum for consideration. An iterative process was adopted. At the time of reporting the review process was nearing completion. Sites will not be required to work towards the revised targets until the commencement of the financial year 2006/07, thus enabling the effective allocation of resources and budgeting.

## Documentation and Guidelines Review

Over the year, we made further progress preparing and revising our HSEC documentation to support sites in implementing the requirements of the Sustainable Development Policy, HSEC Management Standards and Fatal Risk Control Protocols. The following documents were either revised and reissued or developed during the reporting period.

### ***Reissued Documents and Guidelines***

- Fatal Risk Control Protocols
- Site-based HSEC Reporting Guideline (and Templates)
- Hearing Conservation Guideline
- Health Exposure Assessment Guideline
- HSEC Risk Management Guideline
- High Voltage Isolation and Switching Guideline
- Light Vehicles Guideline
- Excavation Activities Involving Surface and/or Ground Penetration
- Respiratory Protection Program.

### ***New Documents and Guidelines***

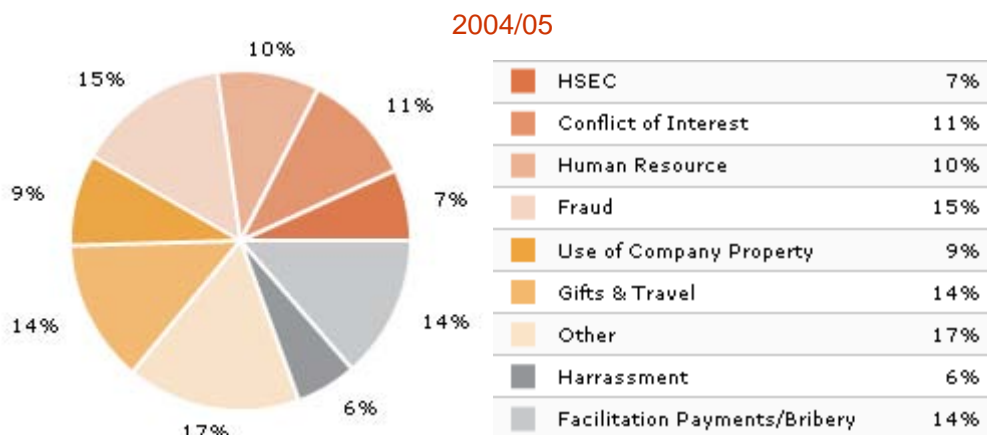
- Diving Operations Procedure
- Fit for Work/Fit for Life initiative, consisting of the following:
  - Drug and Alcohol Programs Guideline
  - Employee Assistance Programs Guideline
  - Health Promotion Programs Guideline
  - Medical Assistance Programs Guideline
  - Occupational Rehabilitation Programs Guideline
  - Travel Health Programs Guideline
  - Ergonomic Analysis
- Fatigue Management Programs Guideline
  - Fatigue Management Toolkit
  - Fatigue Impairment Assessment and Intervention Toolkit
  - Fatigue Education Programs Toolkit
- Preferred Airlines Guideline
- Fatal Risk Control Protocol Self Assessment and Consolidation Toolkit



## Business Conduct

There were 103 substantive enquiries to the Business Conduct Helpline and fraud hotline systems in the year to 30 June 2005. This represents a 29 per cent increase from the previous year when 80 enquires were recorded. This increase in the number of enquiries may be attributed to a greater awareness of the business conduct system and processes. Of the total number of enquiries, 82 were to the Business Conduct Helpline or email address. A breakdown of the categories of enquiries and the geographic origin of enquiries are presented in the chart below.

### *Business Conduct and Fraud Hotline Categories of Enquiries*



The most common issues related to fraud, facilitation payments and bribery, gifts and travel, conflict of interest, employment-related issues and use of company resources. In terms of geographic origin of business conduct enquiries, about 60 per cent of calls originated from Australia, where the system is managed and where the Global Ethics Panel is primarily based. A further 17 per cent of enquiries emanated from southern Africa and 10 per cent each from North and South America.

All business conduct cases and their treatment were reported (with appropriate management of confidential information) to the Global Ethics Panel. The management of several cases involved one or more members of the Global Ethics Panel during the resolution process.

All fraud-related cases were reported to Group Audit Services, which in turn reports to the Risk Management and Audit Committee of the Board. During the year a formal set of guidelines was established for business conduct investigations. These include principles that every investigation should be independent, confidential and , thorough and that the results and follow-up action should be reported to the Global Ethics Panel.

The annual Business Conduct report was delivered to the Board in November 2004. The Board has taken a decision to extend the trial of the external independent helpline system that was put in place in October 2003 in southern Africa. This trial was initiated in light of international developments regarding corporate governance and independent whistle-blowing systems. The trial provides staff with an external free-call phone number to call as an alternative to the internal BHP Billiton Business Conduct Helpline or the fraud hotline. The external service provider reports any calls requiring follow-up immediately to the BHP Billiton Business Conduct representative for action. In the year to 30 June 2005 there were five enquires sourced from this service requiring follow-up (included in the total number of enquiries shown above).

We recognise that there is a continuous need to reinforce and refresh business conduct principles. This is supported by a strong commitment from the most senior management levels of the Company to ensure the principles of the Guide to Business Conduct are understood and practised.

A key part of the assurance process for business conduct is an annual email request by the Chief Executive Officer to his direct reports to ensure that the Guide to Business Conduct is rolled out and understood. This request is then cascaded through the Company. Internal performance requirements for business conduct are fully integrated in the HSEC Management Standards under Standard 8. Questions regarding business conduct are included in the HSEC audit and self assessment, which has helped to quantify the extent to which employees and contractors are aware of the Guide to Business Conduct. In addition, an assessment of the roll-out is made at offices. This has indicated a substantive level of roll-out activity in BHP Billiton offices around the world.

Communication of the Guide is facilitated with posters, a printed summary version of the Guide, electronic information and other communication tools. In addition to the rollout and assurance activities identified above, the Chief Executive Officer highlighted the priority of this document to all employees of former WMC assets and they were provided with a copy of the Guide to Business Conduct in June 2005.

The Global Ethics Panel commissioned an in-house benchmarking analysis in 2005 to examine peer company corporate ethics systems, to ensure that BHP Billiton has leading practices in this area. In reviewing this analysis, we have decided to continue with the same structure and management of the system; however, effort will be made to use existing resources more effectively; for example, communication tools, such as eLearning, will be explored.

For an example of policy in action, refer to our case study, [Business conduct and the supply relationship](#).

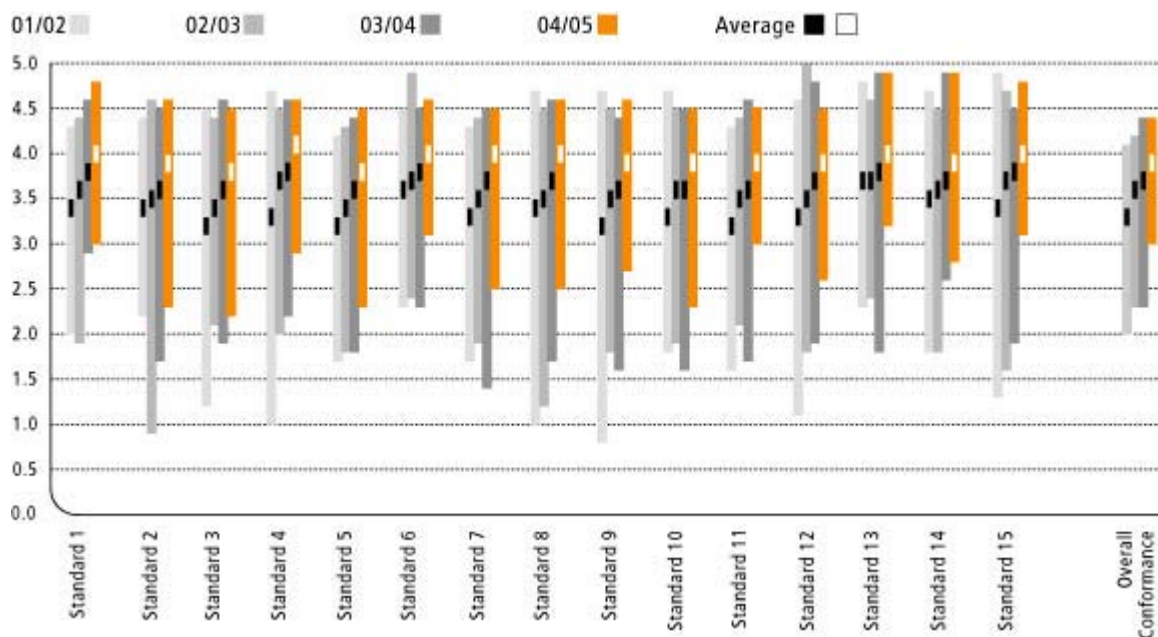
## Audit and Self Assessment

Twelve HSEC audits were conducted during the reporting period to assess the level of implementation of the HSEC Management Standards. Four of these were to complete the first three-year cycle, and eight were to revisit sites that had scored less than 3.5 (out of 5) in the first round of audits and had shown only marginal improvement in self assessments conducted since the audits. The program involved 60 personnel from both HSEC functional roles and operational roles and four external auditors, including an independent member of the HSEC Committee of the Board. This brings to 91 the number of site audits conducted since the program commenced in September 2001, with 248 BHP Billiton and 20 external auditors involved.

As in previous years, operating sites not audited during the year were required to undertake self assessments against the Standards. The results from these 66 self assessments have been combined with the audit results to give the range and average level of conformance for each of the Standards shown in the diagram below. This shows an overall conformance of 3.9 out of 5 (compared to 3.7 out of 5 for the last reporting period) against our target of full conformance (a score of greater than 4 out of 5) with the Standards by 30 June 2005.

The audit and self assessment process is assisting sites to accelerate the rate of implementation of the HSEC Management Standards through identifying and communicating leading practices. With the revision of the HSEC Standards this year, the Audit and Self Assessment protocols are also being revised; and learnings from the first triennial audit cycle are being taken into account in the process. The next cycle of audits to be conducted against the revised HSEC Standards will commence in October 2005.

### **Audit and Self Assessment Conformance Scores against each of the HSEC Management Standards 2001/02 to 2004/05**



In 2004, the [Minerals Council of Australia](#) rolled out 'Enduring Value – The Australian Minerals Industry Framework for Sustainable Development', designed to underpin the ICMM Sustainable Development Framework and replace, in time, the former Code for Environmental Management, which we have reported against in previous years. To assist in the transition to Enduring Value, the Board of the Minerals Council of Australia no longer requires reporting of conformance against the Code and instead has replaced it with a series of indicators drawn from the Global Reporting Initiative. Refer to our [GRI Navigator](#) to see how these have been addressed.

## Stewardship

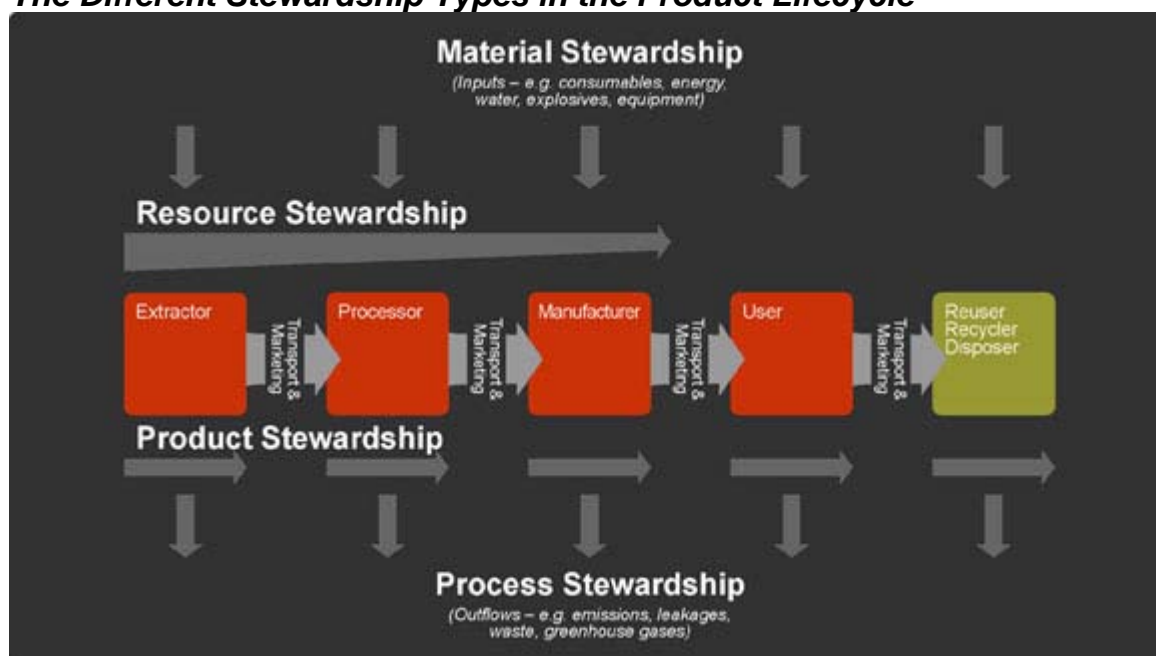
As indicated in the 2004 HSEC Report, we have had a focused project underway looking at product stewardship. Over the past year we have been working to refine our understanding of stewardship and how we can better integrate it into our operations.

We recognise that there are four types of stewardship in the lifecycle of our products:

- Material stewardship refers to the different materials utilised to produce the product as the product moves through its lifecycle. These include consumables ranging from tyres and fuel to water and energy. Material stewardship is about understanding and managing these materials (or inputs) in order to minimise harm to people and/or the environment.
- Product stewardship is about understanding and managing our specific products or commodities in order to minimise harm to people and/or the environment, as a result of exposure to the particular product/commodity. This is a shared responsibility with all others in the lifecycle of our product/commodity.
- Resource stewardship is about ensuring we maximise the value of the resource (e.g. an ore deposit) for both current and future generations.
- Process stewardship refers to different processes that are applied to the product (e.g. extraction, smelting) as the product moves through its lifecycle and that have the potential to generate outputs (other than just the product). These could include greenhouse gases, waste and other emissions. Process stewardship is about understanding and managing these processes (or outputs) in order to minimise harm to people and/or the environment.

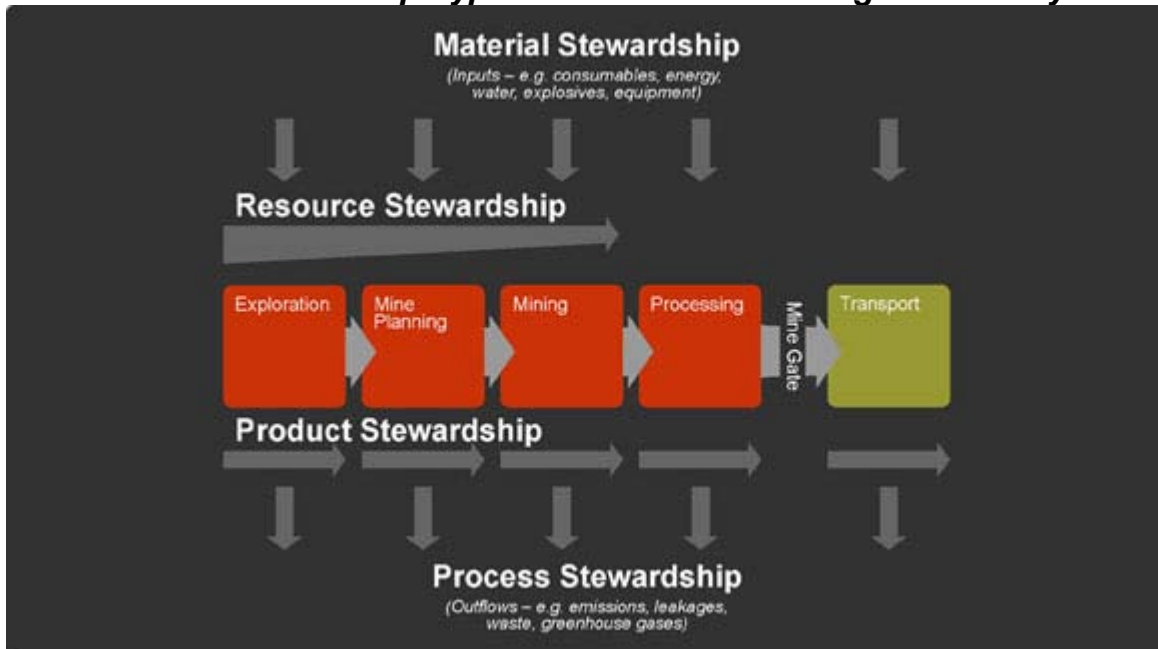
The lifecycle of our products varies depending on the nature of the product. For the majority of our products the lifecycle comprises the resource extractor (i.e. a BHP Billiton mine or oil field), a processor (note that for some products, such as nickel and aluminium, we are both the extractor and processor), a manufacturer and a user. At the end of the lifecycle the product is either reused, recycled or disposed of. The diagram below illustrates a generalised lifecycle for a product, illustrating the four types of stewardship discussed above. While material, process and product stewardship apply across the lifecycle, resource stewardship is most prominent in the early stages of the lifecycle. Common to all parts of the lifecycle are the transport and marketing functions, both playing an critical role in stewardship.

### The Different Stewardship Types in the Product Lifecycle



The same model can be expanded upon for each individual stages within the overall product lifecycle. The following diagram illustrates the product lifecycle for a company in the extractive stage of the overall lifecycle. The diagram highlights how the same principles of stewardship apply within the extractive stage as activities move from exploration through to mining then ore processing and ultimately transportation from the mine gate to the processing stage.

### ***The Different Stewardship Types in the Extractive Stage of a Lifecycle***



Applying these stewardship principles, we have been actively involved in several product stewardship initiatives, including:

- Nickel – working with the [Nickel Development Institute](#) to implement practical product stewardship guidelines
- Copper- active participation with the [International Copper Association](#) in developing definitions, principles and projects under the 'Copper Stewardship' program
- Lead – continuing to play an active role in the [Green Lead TM project](#) which was initiated at our Cannington operation and now involves a consortium of mining, smelting, battery manufacturing, governments, non government organisations, inter-government organisation, automotive industry and recycling industry.
- Diamonds and gold – BHP Billiton was an original signatory to the Early Adopters Program initiated by stakeholders in the gold and diamond lifecycle. The program has now developed into the [Council for Responsible Jewellery Practices](#), which is aimed at reinforcing confidence in the gold and diamond supply chain. In addition, our Diamonds business is a member of the Kimberley Process Certification Scheme, an international diamond certification scheme aimed at halting the trade in 'conflict diamonds'.

In addition, in line with our target to have undertaken lifecycle assessments for all major mineral products, we have also commenced work on the lifecycle assessments of other products, including, for example , manganese powder and manganese metal.

Consumer health is also of growing importance to us, and we continue to work with our industry associations to progress initiatives in this area. For example, we are currently working closely with the Nickel Development Institute in relation to the proposed EU Chemical Policy, which will require industry to demonstrate that 'chemicals' (which include metals in this context) are safely produced and managed through their lifecycles.

## Health - Our Approach

The health and wellbeing of people are central to the success of our business and, accordingly, understanding the potential for health risks and establishing suitable mitigation measures are integral to the success of our journey towards Zero Harm.

Health risks continue to be an area where we are attempting to reduce potential short and long-term impacts. These health risks are diverse in the areas in which we operate, and are not only related to work processes. Significant community-based health risks exist in our business and we continue to contribute to the management of these issues on both a local and global basis.

Some of the potential health risks present in the organisation include:

- inherent occupational health risks associated with the nature of our operations, such as noise, dust, hazardous materials and gases, and vibration
- communicable diseases present in some of the countries in which we operate, including HIV/AIDs and mosquito-borne diseases
- travel-related risks
- ergonomic exposures relating to work requirements
- general suitability for job criteria and fitness for work.

Fitness for work issues are an important area of employee health, and we have undertaken a great deal of work to advance this area within the Company. One aspect is to ensure that health matters do not impact on the safety of the workplace, exemplified by the development of drug and alcohol and fatigue management programs at our operations.

To ensure we adopt a holistic approach to employee health, we have combined our Fit for Work program with a series of Fit for Life initiatives that include injury management, employee counselling and health promotion.

For details on our approach to the management of these aspects, refer to [Employee Health](#) and [Community Health](#).

## Employee Health

This section discusses our approach to managing employee health at our operations. See below for further details:

- [Our Model for Reducing Employee Health Exposures](#)
- [Personal Protective Equipment](#)
- [Exposure Standards](#)
- [Hygiene Knowledge Base](#)
- [Fit for Work/Fit for Life](#)

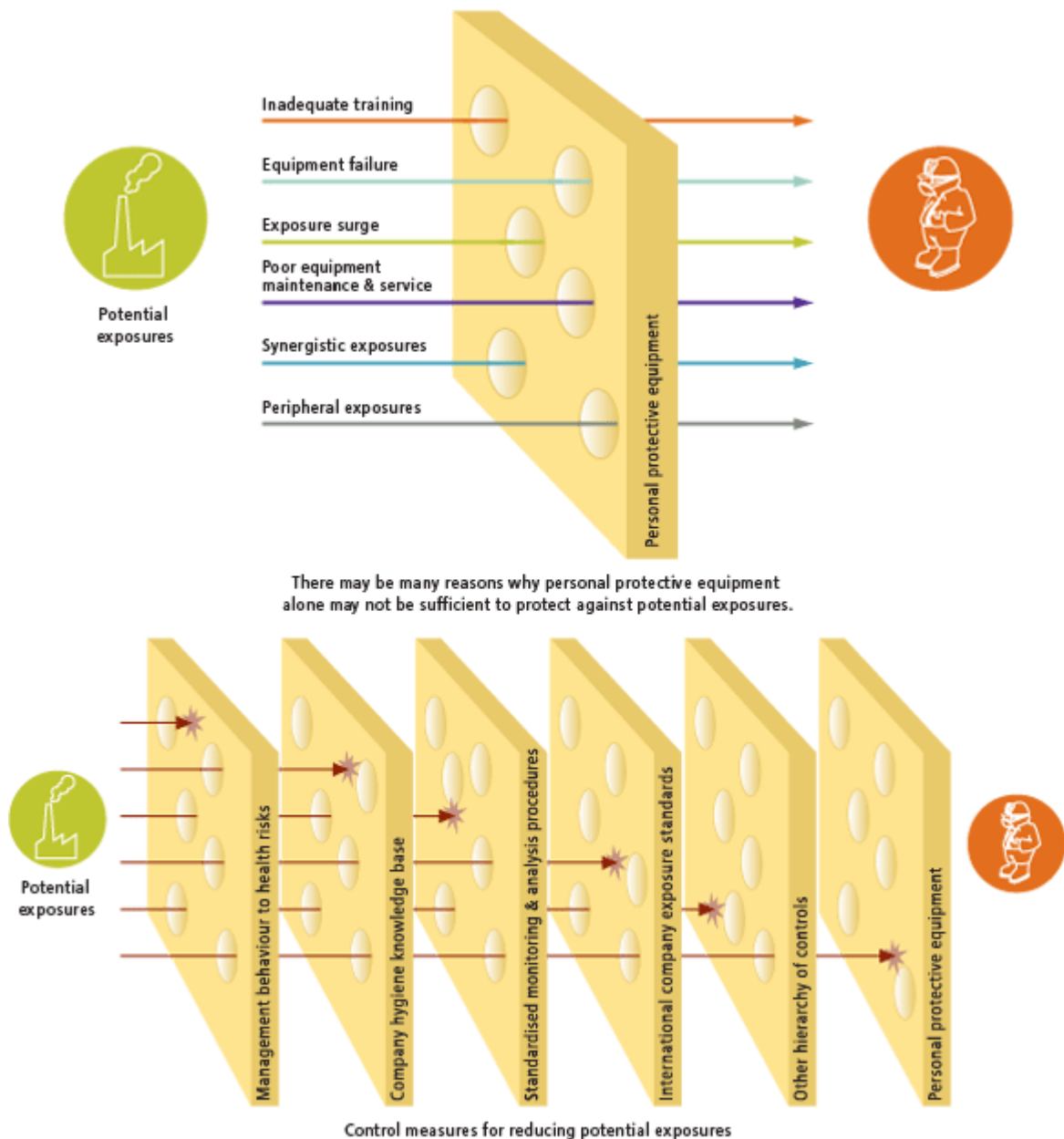
Refer to [Our Performance](#) for details on our health performance over the reporting period.

## Our Model for Reducing Employee Health Exposures

Our approach to employee health recognises that more than personal protective equipment (PPE) is required for adequate employee protection.

A useful tool to illustrate this is the Swiss Cheese Model, derived from the original concept coined by James Reason and shown in the diagram below. Each hole in the cheese is symbolic of a potential pathway to employee exposure. We therefore need to establish a number of measures to reduce any potential for exposure. Use of PPE without the associated knowledge and expertise will create an environment where many potential exposures could occur. Consequently, our health initiatives are aimed at a number of areas of health management.

### Swiss Cheese Model – Reducing Employee Health Exposures





## Personal Protective Equipment (PPE)

The use of PPE continues to be important while we search for ways to reduce exposures in the Company. The Personal Protective Equipment Compliance Auditing Guideline and Respiratory Protection Guideline assist sites to ensure there are standard processes for PPE compliance across the organisation.

## Exposure Standards

Occupational exposure limits have been standardised across the Company since 2003, which ensures consistent reporting on exposure. There is a Company-wide standard method for assessing exposure, and this is being applied to a computer-based program that will be available to all operations.

Position statements for ten key exposures throughout the Company will be completed in the near term, and these will provide further detail to professionals on how these should be managed. Many of these exposures have the potential to cause cancer, and therefore it is vitally important that we ensure that we manage them at a leading practice level.

## Hygiene Knowledge Base

We have successfully commenced a graduate training program for Occupational Hygienists with Deakin University (Victoria, Australia). The first intake occurred during 2005. Through our involvement in the graduate program, we are seeking not only to ensure course work is reflective of leading developments in hygiene practice, but also to expose graduates to our operations with the intent of attracting appropriately qualified occupational hygienists in the future. We will continue to monitor the success of the program, with the view to increasing the number of positions available.

The Company-based occupational hygiene network continues to develop and facilitate learning by sharing knowledge across the organisation. Face-to-face meetings occur in all regions of the world. The engagement of this network has proved important for specific initiatives across our global operations. The [Diesel Particulate Initiative](#) was advanced through this group, and all underground operations were visited during the year to implement this important work in exposure reduction.

## Fit for Work/Fit for Life

Fit for Work/Fit for Life is a Company-wide initiative that was launched during the year to assist our drive towards Zero Harm. The initiative seeks to promote a consistent approach to the management of health issues in the work environment. The initiative recognises that many health issues not only have the potential to impact on our safety performance, but also can cause community issues and consequently impact on our ability to contribute to sustainable development.

The initiative is intended to provide guidance to sites in developing site-based health management programs covering:

- drug and alcohol use
- fatigue management
- medical assessment
- travel health
- ergonomic analysis
- occupational rehabilitation
- health promotion
- employee assistance.

By taking a holistic approach to health management, the initiative intends to ensure:

- we do not adversely impact the safety of our employees
- employees are physically capable of performing all activities required of them
- medical assessments are undertaken where work requirements change
- family members are also involved in educational health programs.

Refer to [Our Performance: Employee Health](#) to review our progress in employee health management.

## Community Health

As members of the community, our employees and contractors can be impacted significantly by communicable diseases. Our focus in community health is, therefore, directed towards the prevention and treatment of the three major infectious diseases which impact many of our operations.

A summary of our approach to these is discussed below with details on our progress provided in [Our Performance](#).

### HIV/AIDS

In the communities where our operations are located in South Africa and Mozambique, the incidence of HIV/AIDS is among the highest in the world. We have a responsibility to manage the impact of the disease in order to care for our employees, protect the viability of our operations and support the wellbeing and development of our host communities.

For many years, we have adopted a proactive approach to managing the disease within our workplaces. This has included conducting education programs, ensuring employees and dependants have appropriate access to medical care, and reducing hostel-type accommodation for employees, which is known to be a risk factor for the disease. We have also increased our support to community facilities that assist in managing the disease and its consequences. We are now seeking ways to support initiatives that will help manage the disease in the wider population.

### Tuberculosis (TB)

In the Northwest Territories of Canada, TB is a significant issue among the Inuit population, which as a consequence has an impact on our EKATI Diamond Mine operation. In an effort to limit development of the disease, we have embarked on a screening program to detect latent TB infection in our workforce and the local community.

The initiative at EKATI is an attempt to limit the development of the disease in our employees and their dependants and in the local Inuit population generally. By detecting the infection in a person before it becomes active, it is possible that a course of treatment will reduce the chances of active TB developing and infection of others occurring. This will have the benefit over time of reducing the incidence of TB in the community.

### Malaria

Along with TB and HIV/AIDS, malaria is one of the major infectious diseases responsible for significant illness and mortality around the world. For the Company, malaria is a significant health issue in southern Mozambique and northern Brazil where our operations are located. The disease can impact on the ability of these regions to provide sustainable workforces. The health of employees can also affect productivity and safety.

We are supporting the [Medicines for Malaria Venture](#), which has been established through the World Health Organisation with the aim of developing affordable anti-malarial drugs for people in the disease-endemic countries. We are among the first small group of global companies invited to become corporate supporters of the Medicines for Malaria Venture. Our plan to provide financial support to this worthwhile initiative over the next three years further extends our involvement in the fight against malaria on a global scale.

## Health - Our Performance

Supporting our aspiration for Zero Harm, our Sustainable Development Policy sets the objective for us to 'seek ways to promote and improve the health of our workforce and the community'. Details on our progress towards this goal during this reporting period can be read at:

- [Occupational Exposures](#)
- [Occupational Illnesses](#)
- [Personal Protective Equipment Compliance](#)
- [Health Fines](#)
- [Community Health](#)

To understand the systems we put in place to manage our health performance, see [Our Approach](#). For examples of policy in action, read our [Case Studies](#).

## Occupational Exposures

The control of employee exposures and a reduction of occupational illnesses are the thrust of our approach to occupational health management. Our aim, consistent with the 'hierarchy of control' approach, is to remove or avoid hazards through engineering or design solutions wherever possible.

The 'hierarchy of control' approach uses methods to decrease the exposure source itself or to minimise the potential amount of employee contact. Personal protective equipment (PPE) is utilised where this approach is yet to be implemented or is not currently feasible.

While we seek to eliminate or minimise hazards wherever possible, it is equally important to fully understand the nature of our occupational exposure hazards where they do occur. To date therefore, our occupational health targets have been focused on establishing baseline data of occupational exposure hazards and the consequent establishment of occupational hygiene monitoring and health surveillance programs.

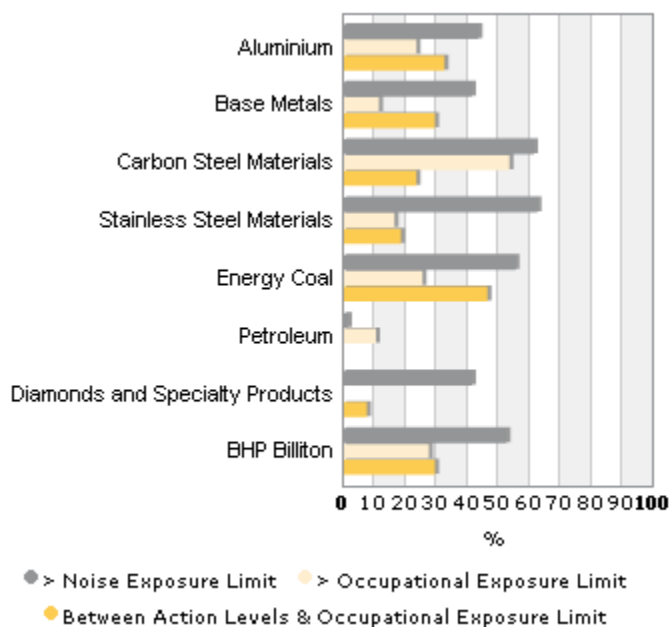
Where engineering controls are not practicable, we make every effort to protect all employees potentially exposed from any adverse health effect through the use of PPE. It should be noted that all exposures monitored are potential exposures, and do not take into consideration the use of PPE where utilised to mitigate exposure.

The drive within the Company is to progressively reduce exposures over time. The graph below illustrates potential employee exposures, if not for the use of PPE, recorded during the reporting period.

### Percentage of Employees in Potential Exposures\*

2004/05

\*i.e., would be exposed if not wearing PPE



As the graph illustrates, we focus on three distinct categories for our exposure measurement data. These are:

- potential exposure of employees above the occupational exposure limit (OEL) for noise (85 dBA 8-hour time-weighted average)
- potential exposure of employees above action levels (50 per cent of the OEL exposure limit) but below the OEL for other exposures
- potential exposure of employees above the OEL for other exposures.

We have established the requirement for reporting potential exposures above action levels but below occupational exposure limits to give us an understanding of the potential for harm and to enable us to establish proactive plans to mitigate exposures. At levels above the occupational exposure limits, it is understood that harmful effects on health may eventually occur in a proportion of individuals if they are not adequately protected. While all operations provide PPE and other measures to reduce exposure, the reporting on employees in this category gives the Company a clear understanding of the exposures that need to be reduced to further minimise the chance of adverse health outcomes. The reporting of these two categories allows the tracking of our efforts to reduce on-site exposures over time and consequently reduce the incidence of occupational illness.

When compared to the previous period, potential exposures to noise, if not for the use of PPE, have decreased by two per cent across the Company from the previous year. Our focus will be to continue to improve these figures by maintaining a focus on controls to noise exposure that can be implemented.

For other exposures, the exposure data is set against our Company-wide [Exposure Standards](#). Our exposure standards in many cases are more stringent than local regulations and reporting processes and set a lower baseline target throughout the Company. For other exposures, when compared to the 2003/04 baseline, there has been an increase in the percentage of employees potentially exposed, if not for the use of PPE, in both the 50 to 100 per cent of OEL and above 100 per cent of OEL levels. There will be a concerted effort to reduce these exposures over time. In the interim it will be important that our Personal Protective Equipment ( PPE ) programs are of the highest quality to ensure employees are protected against these potential exposures.

One of the key areas in this regard relates to potential exposures to diesel exhaust particulates in our underground mines. Recently a consensus has emerged that diesel exhaust exposure is now considered carcinogenic by many world regulatory bodies. Our Illawarra Coal operation has been leading the development of a program to manage employee exposure to diesel exhaust which is now being driven more broadly across the organisation. Refer to our case study, [Illawarra Coal develops program to manage employee exposure to diesel exhaust](#).

Other principal exposures include those related to dust, heat, vibration and welding fumes. Vibration exposures mainly occur in drivers of earth moving equipment and in the longer term may result in back injury or pain. In addition to other health and safety modifications, we have been working to reduce vibration exposures as part of our strategic alliance with Caterpillar, our major earth moving equipment supplier. See our case study, [Alliances with Toyota and Caterpillar are reducing sourcing costs while delivering vehicle safety features](#).

In line with our current health target, occupational exposure baselines have been established and occupational hygiene programs are being implemented. Over the reporting period we reviewed our health targets to further focus on reducing the number of people potentially exposed above the occupational exposure limit. Refer to [HSEC Targets Review](#).

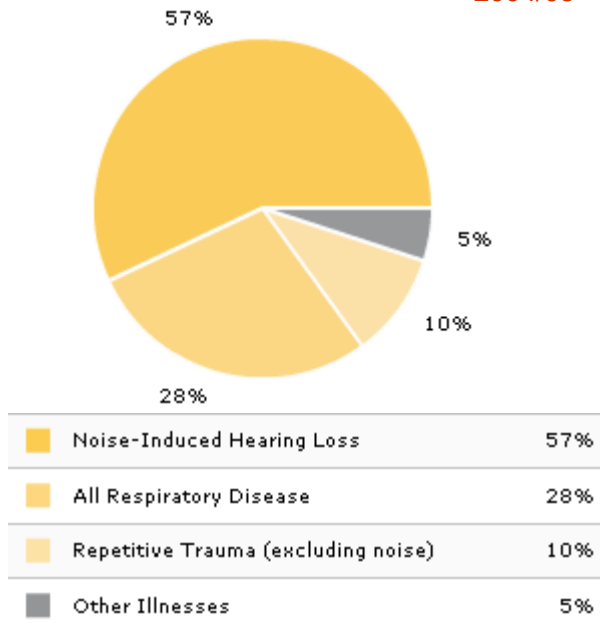
A number of our operations have been progressing initiatives to better understand and reduce occupational exposures. Refer to the following for examples of policy in action:

- [Aluminium CSG implements comprehensive occupational health management strategy](#) outlines the occupational health management strategy being implemented across our Aluminium assets to enable a comprehensive and systematic identification and management of occupational health risks.
- [Wagon Vibrator Program at Hay Point Services](#) – an Employee HSEC Award finalist demonstrates a good approach to using hierarchy of control through the implementation of an engineering solution to a previous high injury potential manual handling activity.

## Occupational Illnesses

### New Illnesses by Type

2004/05

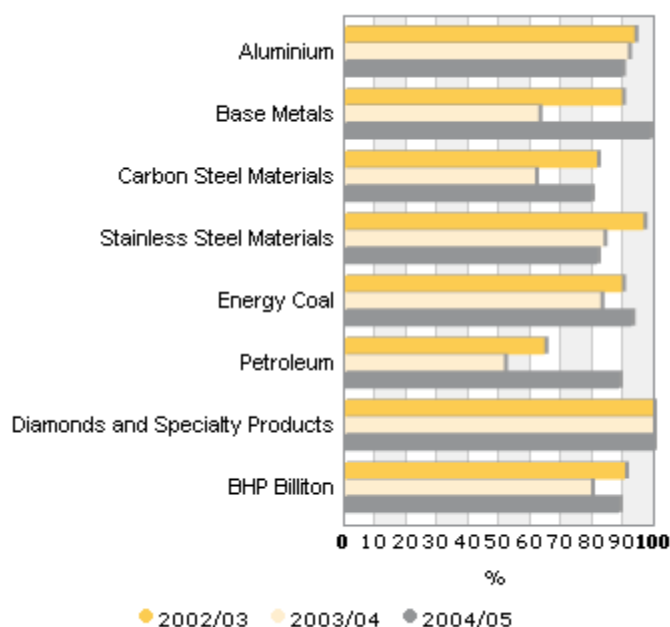


During the year, 152 new cases of occupational illness were reported throughout the Company, a reduction from 197 last year, resulting in an overall reduction to date of 36 per cent against the baseline numbers for 2002/03. The breakdown of these new illnesses is illustrated in the graph above. The improved figures include a reduction in the number of cases of noise-induced hearing loss, which had increased in the previous year. The 36 per cent reduction in new cases of occupational illness has us currently exceeding the 20 per cent reduction target across the Company by June 2007.

The medical surveillance program requires a standardised approach to diagnosis and consequently has resulted in an increased awareness of conditions and therefore better diagnostic programs. As shown in the graph below, 89 per cent of employees requiring medical examinations completed those examinations during the period, compared to 80 per cent in the previous reporting period.

## **Employees Who Completed Medical Examination (as % Employees Requiring Medical Examination)**

2002/03 to 2004/05



A key initiative released during the reporting period was our Fit for Work/Fit for Life initiative. The initiative seeks to promote a consistent approach to the management of health issues in the work environment by taking a holistic approach to the health management of our employees. Further details on this initiative are available in [Our Approach](#).

For examples of policy in action, refer to our case study, [Fit for Work / Fit for Life initiative helps sites to manage health issues in the workplace](#), as well as the following Employee HSEC Award finalists:

- ['Your Health Matters' Wellness Program](#) in our Petroleum CSG - an approach to employee wellbeing on a deepwater drill ship
- Worsley Alumina [Development Capital Projects Health and Wellness Program](#) - an employee, contractor and family wellness program
- Cannington [Proactive Injury Prevention Health Program](#) - a focused strain and sprain reduction program.

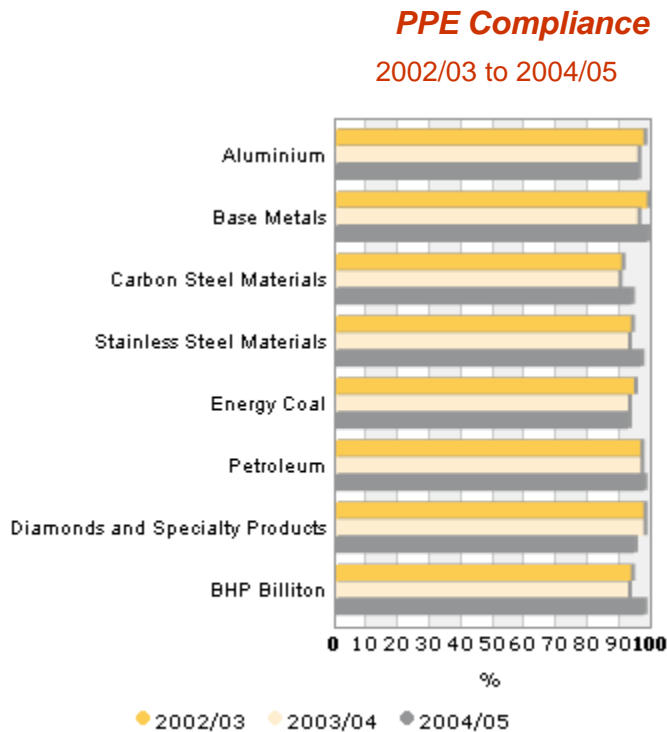


## Personal Protective Equipment Compliance

While the elimination of exposure risks is our key driver, often this is not readily possible or feasible, and personal protective equipment (PPE) is used.

At the end of the reporting period, the status of overall PPE compliance in the Company was 98 per cent, compared to 93 per cent in the previous reporting period, as shown in the graph below.

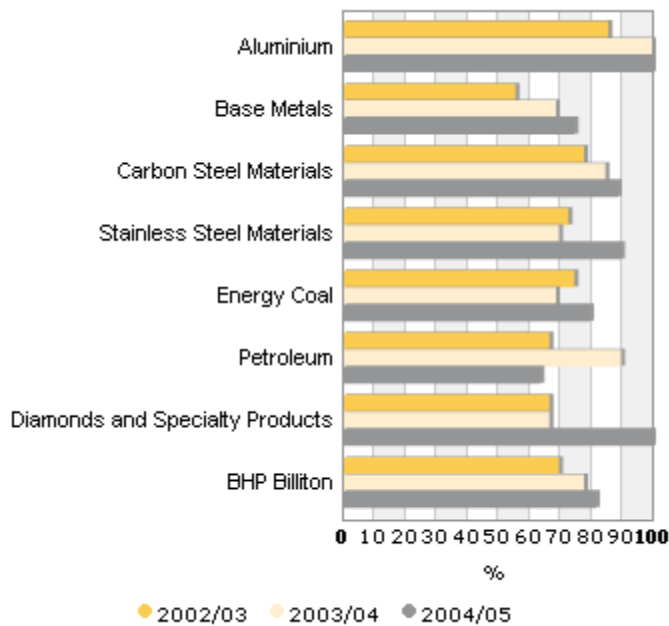
This is an area where we continually seek improvement and are encouraging operations to implement formal audit programs of PPE compliance. To read about some of our initiatives, refer to the PPE discussion in [Our Approach](#).



It was encouraging that there was an increase in PPE compliance, and there was continued improvement in the number of operations that have formal audit programs in place for PPE compliance. This increased from 78 per cent in the previous period to 82 per cent, as shown in the graph below.

### **Formal Audit Programs for PPE Compliance**

2002/03 to 2004/05



## Health Fines

Regrettably, we did not meet our goal this year of zero health fines or prosecutions. The table below outlines the health fines for this period.

### Health Fines 2004/05

Site	Customer Sector Group	Description	Fine (US\$)
Escondida	Base Metals	A fine was paid to the Antofagasta Regional Health Authority resulting from the sanitary investigation into possible food-transmitted illnesses and deficiencies detected in Villa San Lorezo camp.	2 600
<b>Total</b>			<b>2 600</b>

## Community Health

During the year we progressed our support of the Medicines for Malaria Venture to develop new anti-malarial medication. Malaria is a significant health issue for us in southern Mozambique and northern Brazil where our operations are located, and many other areas where we have development activities. The Medicines for Malaria Venture, established through the World Health Organisation, aims to provide affordable anti-malarial drugs to people in disease-endemic countries. We have continued our strong support for the malaria eradication program in Southern Africa by collaborating in an extensive spraying program.

In addition, the study in EKATI to limit the spread of TB is in the final stages of approval prior to full implementation. In the Northwest Territories of Canada, TB is a significant issue among the Inuit population, which as a consequence has an impact on our EKATI Diamond Mine operation. Our TB program is a screening program aimed at detecting latent TB infection, thereby enabling a course of treatment to reduce the chances of active TB developing and infection of others occurring. For more details refer to our 2004 case study, [EKATI screening program](#).

We have also progressed a project during the year supporting the development of a new treatment for HIV/AIDS that may be applicable to the African subcontinent. The Company has provided significant funding to develop a clinical trial on this treatment, which is given as an injectable therapeutic vaccine. We are assisting to recruit other organisations to provide further funding and develop the early stages of the clinical trial program.

If this treatment proves successful, it will potentially provide an approach to the epidemic that can be delivered to a wider number of the affected population and not have the significant compliance issues and costs associated with antiretroviral medication. This is further detailed in our case study, [Supporting the development of advancements in HIV/AIDS treatments](#). In addition, refer to the summary of good work being done at our aluminium smelter in Mozambique with their [awareness and education campaign](#).

In addition, a number of other community health initiatives were progressed through the reporting period at our sites. For an example of policy in action, refer to our case study, [A long-running health program at Cerréjon](#).

## Health Case Studies

The following case studies present examples of health issues, initiatives, projects and programs across the Group that highlight some of the sustainability opportunities and challenges faced by our operations. Case studies are also presented for the areas of [safety](#), [environment](#), [community](#) and [socio-economic](#).

[View](#) all case studies

### Health Case Studies

<p>A long-running health program at Cerrejón is helping to improve the quality of life in host communities</p>	<p>The Cerrejón coal operation (BHP Billiton 33.3% ownership) is located in northeast Colombia, South America. As part of an ongoing effort to improve the quality of life in the Indigenous and non-Indigenous communities, Cerrejón conducts an extensive health program that greatly benefits the 8500 people who reside within the operation's area of influence. The program has been maintained and expanded over more than 20 years.</p> <p><a href="#">More</a></p>
<p>Supporting the development of advancements in HIV/AIDS treatments</p>	<p>The management of HIV/AIDS continues to be a critical global health issue. While the prevalence of the disease in the African subcontinent is still increasing, there are also a number of other countries where incidence is increasing and potentially could lead to significant public health challenges.</p> <p><a href="#">More</a></p>
<p>Fit for Work/Fit for Life initiative helps sites to manage health issues in the workplace</p>	<p>Our Fit for Work/Fit for Life initiative promotes a consistent approach to managing employee health issues across the Company. The aim is to ensure our employees are capable of performing all activities required of them and that they are not put at risk while undertaking their jobs.</p> <p><a href="#">More</a></p>
<p>Aluminium CSG implements comprehensive occupational health management strategy</p>	<p>It is recognised that there are a number of health risks associated with the aluminium industry that must be controlled in order to ensure the health and safety of our employees and contractors. To improve the identification and management of these risks, an occupational health management strategy is being implemented across our Aluminium assets.</p> <p><a href="#">More</a></p>
<p>Illawarra Coal develops program to manage employee exposure to diesel exhaust</p>	<p>Our Illawarra Coal operation (New South Wales, Australia) has been undertaking extensive research into diesel exhaust particulate, following studies that showed that exposure to diesel particulate has the potential to cause serious health effects.</p> <p><a href="#">More</a></p>

## Health Case Studies

**A long-running health program at Cerrejón is helping to improve the quality of life in host communities**

**Health**



Vaccination program



The Cerrejón coal operation (BHP Billiton 33.3% ownership) is located within La Guajira Peninsular in northeast Colombia, South America. As part of an ongoing effort to improve the quality of life in the Indigenous and non-Indigenous communities, Cerrejón conducts an extensive health program that greatly benefits the 8500 people who reside within the operation's area of influence. The program has been maintained and expanded over more than 20 years.

### La Guajira

La Guajira comprises three different zones. The upper (north) zone, where the coal port of Puerto Bolivar is located, is generally semi-desert with sparse vegetation. The middle zone is a mixture of desert and some forest. The south zone is less dry and more fertile, with agricultural and cattle-raising regions, and is the area where our coal mining operations are located.

The north is mostly populated by Wayuu people, the most numerous of Colombia's Indigenous groups. The centre and south are mostly populated by non-Indigenous and half-caste people. The Wayuu belong to some 23 clans and preserve their language, wayuunaiki, which is spoken by nearly 200 000 people.

For years, La Guajira has been burdened by poor health services, with health institutions lacking economic resources, medical personnel, equipment and coverage. In some instances, obstacles to progress have arisen because of difficult relationships between state institutions, compounded by the remoteness of communities.

### The Cerrejón Health Program

The health program is one of Cerrejón's major social management activities in the municipalities of Hatonuevo, Albania, Maicao, and Uribia (the Indigenous capital of Colombia). It is made possible through the joint participation of local hospitals and state health departments.

Health brigades are one of the key activities operating under the health program and a fundamental component of its prevention and promotion strategy. Their effectiveness is due to collaboration between mayoralties, state health departments and communities.

Regional health-related organisations and medical professionals volunteer to provide general and specialised attention in dentistry, vaccination, gynaecology and immunisation services. They offer their services to the Wayuu people on a monthly basis. The use of a medical/dental mobile unit allows the brigades to reach outlying rancherías (communities) where the Wayuu live, most of which are located along the 150-kilometre railway line that links the Cerrejón mine with Puerto Bolivar. Patients of the brigades are mainly children, pregnant women, older people and the handicapped.

The level of vaccination coverage in La Guajira has increased 95 per cent since the inception of the health brigades, according to data provided by the departmental Board of Health. In Albania, the municipality closest to the mine, vaccination teams supported by Cerrejón attained coverage of 100 per cent during 2004.



Health brigades in action

The most representative and important health brigade program takes place in Albania, with 1500 patients receiving general and specialised medical care annually at no cost.

The Mayoress of Albania, Oneida Pinto, has stated that, 'Albania, being a town near Cerrejón, has been favored every year with a health brigade.

This year we have already had our health brigade and the population participated actively because the program is well-known. The municipality has been benefited by the visits made by various physicians that form these health brigades. Through the program, Cerrejón can see the needs of the health sector in Albania and determine the health infrastructure

required for those needing medical care. For this reason, Cerrejón built a functional emergency room that allows dynamic medical care. As well, Cerrejón not only contributes to the urban area but also aids the native communities who are part of the municipality. Cerrejón must continue with this significant activity, working hand in hand with municipal administrations in each zone of its area of influence '.



Health brigades in action

The Cerrejón health program and health brigades are effectively contributing to community development, reflected in people gradually changing from having a passive attitude about health subjects to being proactive. Previously visiting the doctor only in extreme cases, they now ask for the brigades and, together with Cerrejón and the state health departments, help plan the schedules and services provided.

## Prevention and Promotion

Through the health program, people are learning the benefits of remedial and preventative treatment and lifestyle habits.

In 2004, Cerrejón launched an education campaign to help prevent the spread of HIV/AIDS, developed with the state health departments of La Guajira and its municipalities. So far, the campaign has reached 25 000 people. Using the theme 'The Solution is Prevention – For a Healthy Guajira', the campaign has helped increase the level of HIV/AIDS diagnosis, with most people in La Guajira now acknowledging the importance of prevention. Rates of the disease in the region over the last decade had been increasing in line with national figures; however, in 2003/04 official data by the Social Protection Ministry and the state health department showed a slight decline in HIV-positive cases.

Cerrejón has also supported widespread vaccination against yellow fever in the communities of Albania, Barrancas and Hatonuevo, helping to prevent an epidemic in La Guajira last year. After the vaccination program, the state health departments, with the support of Cerrejón, conducted an educational campaign on risk factors and how to handle them. Subsequently, the risk of contracting yellow fever has moved from high to low in the communities covered.

With illnesses such as cancer, the health program has transformed the perception of the value of preventive medicine. The communities, especially Wayuu leaders, have asked for ongoing public education on the benefits of prevention, such as through cytology tests, which are important for early diagnosis and the opportune treatment of cancer cases.



HIV/AIDS prevention program

## Improving Local Health Facilities

While the Cerrejón health program is primarily based on prevention and promotion, hospital facilities and health centres have also been improved to ensure better service to the community. For example, support has been provided to the health centre at Media Luna, which caters to some 800 Indigenous people located near Puerto Bolívar. Cerrejón has facilitated the provision of physician and laboratory services and the delivery of medicines.

Cerrejón has also provided significant funding to assist the Ministry of Social Protection of Colombia in improving the emergency facilities of hospitals and health centres in Uribia and Albania. Hospital Nuestra Señora del Pilar in Barrancas is also being assisted to enable it to provide high-level medical services.

This infrastructure development program is designed to be sustainable. Training is being provided to the management and staff of the health centres, particularly the Barrancas hospital. Cerrejón is participating on management committees to strengthen management capacity and facilitate self-sufficiency in the long term.

## A Program for the People

The health program works directly in improving people's living standards and quality of life within the framework of sustainable development, as required by the Cerrejón HSEC policy. An external public opinion study has shown a strong level of community acceptance and satisfaction with the program, particularly the health brigades.

The program is an example of positive interaction between a private company, government, institutions and, in particular, the community as an active agent of its own development. This effort is sustainable and has an organised structure with mechanisms for the participation of other health-related institutions. Considered best practice, the Cerrejón health program has been officially incorporated into regional and local government health programs.



## Health Case Studies

### Supporting the development of advancements in HIV/AIDS treatments

Health



Fernando Gove providing counselling at the Hope Centre, near Mozal Operations, Mozambique

The management of HIV/AIDS continues to be a critical global health issue. While the prevalence of the disease in the African subcontinent is still increasing, there are also a number of other countries where incidence is increasing and potentially could lead to significant public health challenges. These countries include China and India, where population numbers provide the environment for a potential pandemic that could be of a greater size than that in sub-Saharan Africa.

## HIV/AIDS Management Programs

In our African operations we have long-standing programs to minimise the potential impact of HIV/AIDS on our employees and their dependants. We also promote a number of community-based programs that deal with the management of those impacted by the disease. Most of our operations in the region offer voluntary testing and counselling programs to employees, under the strictest confidentiality; in general, these programs are being increasingly utilised. From the testing programs, it is estimated that currently about 15 per cent of our employees in these operations are HIV positive, compared to about 30 per cent of contractors.

Voluntary testing programs for employees are supported by universal medical insurance, which offers access to appropriate treatment methods for the disease. In many cases, treatment programs offered to employees are overseen by specialist external resources, again acting in strictest confidence, which ensure that the employee receives a fully coordinated management program for the disease and that the process for management keeps pace with new developments in medical science. These resources are fully funded, either through the insurance arrangements or as a separate entity.

Our involvement in community programs has focused on those providing assistance to people directly and indirectly impacted by the disease. This includes the operation of hostels to assist in the management of those suffering the illness and the support of others impacted as a consequence. Recently, a hostel of this type was developed at one of our mine sites from a building that was once used to house groups of male workers, a practice that was known to increase the risk of HIV/AIDS. As Company policy is to minimise the use of this type of housing in preference to a locally employed stable workforce, the need for such accommodation was reduced and could be put to use in a positive way to assist management of the pandemic.

Our Company Charter expresses our commitment to the communities in which we operate. It is known that, although treatment for HIV/AIDS may be accessible to those with employment that provides medical care directly or through insurance, there is a great proportion of the population affected who have less access to treatment. The scale of the HIV/AIDS epidemic in sub-Saharan Africa makes it difficult for public health infrastructure to deliver the complicated treatment required for managing the disease. In many regions, resources are overwhelmed by the requirements.

There is a critical need to find simpler and more deliverable treatment mechanisms to be applied to populations in this predicament. While southern Africa provides the most urgent challenge in this respect, it is feasible that other nations such as China and India may also need such an approach to mass treatment.

## Immune Therapy with Potential

An Australian company, Virax, has developed an immune therapy for HIV/AIDS that is given as an injection, similarly to a vaccine. While the search for a preventive vaccine for the disease has been disappointing, this treatment has shown some potential to fight the virus in those who are infected and potentially reduce progression of the disease. The benefit of this treatment is that it would only need to be given on an infrequent basis and would be administered under direct observation, ensuring that the person received correct therapy. If this type of treatment proves to be successful, it will offer a solution to the significant infrastructure issues hampering the management of HIV/AIDS epidemics in developing countries.

We have been supporting Virax in an investigation of the potential to run a clinical trial of their product in South Africa. There is great interest amongst regulatory and health authorities in the country to conduct this trial. Further to the initial support given to Virax, funding has been provided to assist in developing an outline of the clinical trial and in seeking further financial support to conduct the program. The focus for further support has been on the corporate community, in the hope that a consortium may be formed to progress this important initiative. Consequent to this, we have committed to significant cornerstone funding to the program if all requirements can be met.

With the development of this initiative, we believe that we are providing an holistic approach to the management of HIV/AIDS that reflects all facets of our Company Charter.

## Health Case Studies

**Fit for Work/Fit for Life initiative helps sites to manage health issues in the workplace**

**Health**



Cannington personnel warming up before starting their shift

Our Fit for Work/Fit for Life initiative comprises guidelines and toolkits to promote a consistent approach to managing employee health issues across the Company. Designed to help sites establish health management programs, the guidelines and toolkits cover drug and alcohol issues, employee assistance, health promotion, medical assessment, occupational rehabilitation, travel health, ergonomic analysis and fatigue management. The aim is to ensure our employees are capable of performing all activities required of them and that they are not put at risk while undertaking their jobs. Here are examples of the initiative being put into action at some of our operations.

### Carbon Steel Materials, BHP Billiton Mitsubishi Alliance (BMA), central Queensland, Australia

Two overnight radio programs are helping shift workers at BMA's coal mines to combat fatigue and keep safety in focus.

Following employee suggestions, BMA Saraji mine approached local commercial radio broadcaster 4HI with a sponsorship concept that resulted in 'BMA Miner's Overnite'. The live program, from midnight to 6.00 am, presents reminders about mine safety; and shift workers and their families and friends can request songs and send in messages to be broadcast. Other BMA mines soon joined in, with each mine being allocated a month in which they can specify a theme based on their own safety priorities.

Shift workers in the Moranbah community have the choice of listening to the program or tuning into their own 'BMA Nite Show' on Community Radio 4RFM. This pre-recorded program also presents safety messages but with a twist: volunteer DJs include employees from BMA mines. BMA provided funding for 4RFM to employ a part-time manager to help the station work towards its goal of self-sufficiency and assist the volunteers to establish the program.

Sue Kotara of 4RFM says, 'Most of the volunteers at 4RFM are either husbands, wives, children or neighbours of shift workers, so it seemed a natural progression that we wanted to contribute to what we saw as family and safety issues within our community as a mining town. Our ongoing policy is to entertain and inform and keep everyone awake on night shift with an easy listening format'.

Rennie Jansen, a BMA shift worker and station volunteer, says, 'The music allows me to keep my focus on the job at hand and the safety messages keep us alert at all times'.

## Energy Coal, Mt Arthur Coal, New South Wales, Australia

A formal risk assessment at Mt Arthur Coal recognised fatigue as a potential hazard, particularly since employees moved to a 12-hour day and night-rotating roster. A program of education and information was seen as essential.

A Fatigue Risk Management Project was initiated, managed by a team from across the operation. They analysed the operation's fatigue risks and reviewed causes and effects of fatigue and risk management processes. This led to the development of Fatigue Risk Management Guidelines covering education, recognising signs of fatigue, preventing fatigue and managing issues.

Education sessions were conducted for all employees, focusing on lifestyle issues, fatigue prevention and responsibilities in managing fatigue as a workplace risk. Emphasis was placed on reporting fatigue issues as a step in identifying risks.

It was recognised that a major issue for employees is getting adequate rest and sleep to be fit for work and the role that families play in this. Family education sessions were held, with presentations on sleep, fatigue and lifestyle and the screening of a video that features employees showing a range of tasks and work environments to demonstrate why preparation for work is of prime importance. Fatigue management education was also incorporated into the induction process.

A project review showed there was still work to be done regarding adequate preparation for work and identifying other barriers that may impact on fitness for work. Counselling is being provided for employees experiencing problems in this regard, and other strategies and programs are being developed. The Fatigue Risk Management Program will continue to be reviewed and refined as the needs of employees and the business change.

## Aluminium, Worsley Alumina, southwest Western Australia

Worsley has developed a Waist Reduction Program for shift workers at the refinery as part of a program to improve employees' long-term health and fitness.

Research has shown that a high level of abdominal fat increases sleep apnoea, which can reduce productivity and increase the risk of work-related injuries. As well as targeting obesity and 'pot bellies', the program encompassed related issues such as exercise, effects of alcohol, nutrition, food preparation, motivation, fatigue and goal setting.

The primary goal of the program is to reduce body fat and improve the fitness levels of the 16 volunteer participants. It was designed with the assistance of an on-site occupational health and safety officer and consultant exercise physiologist.

An assessment and multi-stage fitness test is followed by lectures, participation in the program and follow-up tests. As a management initiative to support commitment to the program, participants can spend 30 minutes of each shift in the on-site fitness and rehabilitation centre.

After 12 weeks, the 16 participants in the initial program achieved a combined weight loss of 87 kilograms, an average of around 5.4 kilograms per person. The combined reduction in body fat was 165 millimetres, an average of 10.3 millimetres per person. The multi-stage fitness test showed a significant increase in the level of aerobic fitness and agility, with an average increase of 18 stages out of the possible 217, or an average 8.5 per cent increase.



BMA shift worker Rennie Jansen volunteers as a DJ on 4RFM's popular 'BMA Nite Show'

For Worsley, the overall benefits from the Waist Reduction Program include improvements in health and fitness levels, working efficiency and the ability to cope with shift work, all potentially leading to improved safety performance.

## Base Metals, Cannington silver/lead/zinc operation, northwest Queensland, Australia

Our Cannington operation is focusing on reducing soft tissue injury through its comprehensive Strainbusters program.

During 2002 and 2003, strain, sprain and other musculoskeletal injuries were approaching 50 per cent of all work injuries. The associated cost in personal pain and suffering, lost productivity, medical treatment and worker's compensation expenses further highlighted the need for improvement.



Worsley's Darren Guy (L) and James Green clock up the kilometres in the waist reduction challenge

A pilot program in 2002 had shown success, and in early 2004 site occupational therapist Bobbie Walker updated and expanded it to encompass additional ergonomics and health initiatives and the participation of all employees. The aim was to achieve a 50 per cent reduction in sprain and strain injuries per year.

The program has been designed to cover risk factors related to sprains and strains, taking into account the different tasks and working environments. While individual assessments form its core, the program includes a vibration monitoring project, weight loss initiatives, hydration management education, fitness and strength programs, manual handling training, workplace stretching programs and an ergonomics task force.

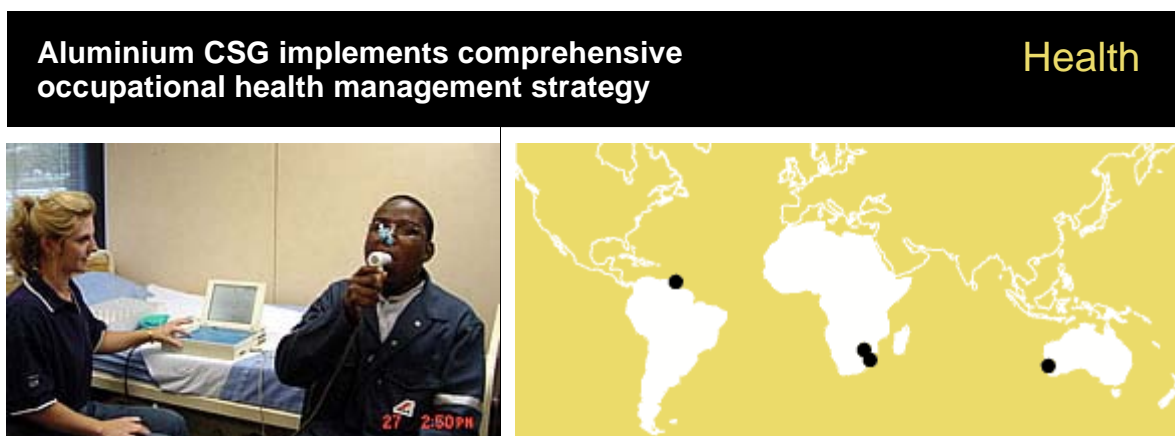
Important links are the site's pre-employment processes, ensuring potential employees have the physical capacity to perform their job, and the early and proactive rehabilitation of injuries to prevent recurrence.

The first year of the program has indicated its potential to achieve the target, with the rate of injuries due to strains and sprains falling from 16 injuries per quarter to between 8 and 10 injuries per quarter. Based on the principle of continuous improvement, Strainbusters is a sustainable program that can help improve health and safety at Cannington throughout 2005 and beyond.



Cannington occupational therapist Bobbie Walker assesses the manual handling technique of Site Services Coordinator Dave Brockwell

## Health Case Studies



Lung function testing at Mozal

People are essential to the success of our business. Understanding and mitigating the impact of occupational exposures on our workforce is integral to our journey towards Zero Harm. Within our Aluminium CSG, it is recognised that there are a number of health risks associated with the aluminium industry that must be controlled in order to ensure the health and safety of our employees and contractors. To improve the identification and management of these risks in a comprehensive and systematic manner, an occupational health management strategy is being implemented across our Aluminium assets.

### Context

The key factor in our strategy is that we must promote an environment that contributes to our employees and contractors being fit for work and fit for life. In line with this, our health management program identifies and builds on best practice that exists within the Aluminium CSG.

Our aim is to ensure the sustainability of the program through an ongoing risk assessment and management process, occupational health professional networking, and the commitment of our asset and CSG leaders to manage and resource the tasks within the program.

### Objectives

The objectives of the program are to:

- adopt common standards and methodologies for exposure assessment and medical evaluation
- establish a baseline health risk profile through systematic assessment of exposures and evaluation of employee health
- implement internationally referenced standards and methodologies, consistent with industry best practice and aligned with the Company's requirements
- implement a strategy to minimise health and business risk
- establish a review process to ensure continuous improvement.

This approach ensures that our health program is comprehensive, is based on international best practice and is sustainable.

## Respiratory Health Focus

As respiratory health issues are known to be associated with exposure to irritants in aluminium smelting, particular focus was given to this aspect during the initial phase of the program. Progress to date includes:

- increased awareness of respiratory health responsibilities through regular feedback to management and employee and contractor work groups, individual interviews with employees and managers, and training initiatives
- the development of a standard medical protocol for respiratory health management and its implementation across our aluminium smelters
- a peer review of program protocol by international experts in occupational asthma in the aluminium industry (medical tests of respiratory health, diagnostic criteria and respiratory protection programs are referenced to international standards)
- an independent audit of the quality of spirometry (measurement of lung capacity) practices
- a review of the respiratory protection program to allow improvement plans to be developed, which are currently being implemented through the introduction of improved respirator filters, fit testing, respirator servicing and training.



Respirator kit testing at Bayside

At the conclusion of the first year of development and implementation of the respiratory program, our aluminium smelters in southern Africa — Mozal, Hillside and Bayside — hosted an International Respiratory Health Management Conference. International researchers and practitioners in the management of respiratory health in the aluminium industry participated in the conference, reviewing local practices and sharing their international experience and expertise.

Professor Tom O'Donnell is Emeritus Professor, University of Otago, New Zealand, and former Chairman of the Health Committee of the International Aluminium Institute. Professor O'Donnell participated in the conference workshop and was involved in reviewing the respiratory program. He provided the following assessment.

'The process of developing successfully this program for implementation among the diverse workforce populations at BHP Billiton aluminium industry plants has been impressive. Specific objective criteria have been assembled consistent with best practice guidelines of the American and European Respiratory Societies. These are for use, firstly to minimise the incidence of occupational asthma among the workforce through careful pre-employment exclusion of applicants in whom characteristics statistically more commonly associated with occupational asthma and secondly, to facilitate the prompt early diagnosis and management of incipient occupational asthma through regular workforce respiratory screening.

'The successful introduction of this program was due significantly to the involvement of the various "grass roots" plant physicians in developing the protocols rather than an imposition of some external document. Their enthusiastic acceptance of responsibility under the convener Linda Kissane ensured "buy in". A smooth introduction was achieved for the management and the overall workforce of various cultures in KwaZulu-Natal and Mozambique.



Respirator servicing at Mozal

'Those involved assessed relevant publications through scientific journals and communicated with international authorities in this field. The protocols and criteria (particularly the objective ones) are expressed in a specific, straightforward manner so that they are readily transparent to potential employees and their families, those already in employment, management and administrative staff, contractors and health professionals. They provide a clear basis for legally sound decision-making.

'I attended a health workshop at Richards Bay in November 2004. I was impressed by the enthusiasm and confidence in the project among the health professional and representatives from various sections of the plants. I was struck by the confidence for success in meeting the challenge summed up as "Can we lick this Occupational Asthma? Yes we can!"

'I consider that this project development has been of very high quality and provides striking evidence of the strategy towards health issues so strongly expressed by BHP Billiton among its workforce. It will be received with commendation and followed with interest throughout the Industry.'

Dr Clifford Smith is a consultant pulmonologist responsible for the review and final diagnosis of respiratory cases from our three aluminium smelters in southern Africa. Dr Smith also participated in the conference workshop and reviewed the program. He provided the following testimonial.

'I have been involved with BHP Billiton for approximately 18 months in the capacity of consultant pulmonologist.

'Patients referred for opinions have complex issues relating to diagnoses, the role of occupational dust exposure and smoking. The smelters in southern Africa have not always used standard and similar methods of pre-employment screening and monitoring of patients. Diagnostic and therapeutic interventions likewise may differ in each smelter depending on individual experience and preference.

'I would strongly commend the efforts of Linda Kissane to standardise the respiratory health programs at the smelters. It allows for good medical practice with easy application by medical and associated personnel at all the plants.

'Careful peer (both industrial and medical) review approaches apply to numerous medical issues. These include pre-employment screening of employees, monitoring programs, practical issues as to placement of patients, and associated medical management issues. Doctors would have an easy reference for diagnostic and management problems. This would promote consistency and excellence in respiratory health management in an industrial setting'.



Special respirator for people with beards

## Next Challenges

The next steps in our strategy are to:

- develop standard protocols for key health processes
- progress implementation of the respiratory health program with particular emphasis on case management and exposure prevention
- develop pitch exposure risk profiles, implement control strategies and investigate medical surveillance requirements
- implement a medical screening process for contractors and develop contractor exposure profiles
- continue to focus on the prevention of hearing loss by limiting noise exposure
- implement a strategy for injury case management and rehabilitation.



## Health Case Studies

### Illawarra Coal develops program to manage employee exposure to diesel exhaust

Health



Hank Pinkster (R) assisting Brian Davies (L) and Sean McGinn with the measurement of diesel engine emissions

As discussed in last year's HSEC Report, our Illawarra Coal operation, located near Wollongong in New South Wales, Australia, has been undertaking extensive research into diesel exhaust particulate, following studies that showed that exposure to diesel particulate has the potential to cause serious health effects. The work on programs to minimise the exposure of our employees to diesel exhaust has continued, and an effective program now exists.

## Background

Since the publication in 1988 of research data by the US National Institute of Occupational Safety and Health (NIOSH) regarding the potential carcinogenic effects of diesel particulate, the scientific community has been evaluating available data and undertaking new studies into the health effects of this contaminant. Recently a consensus has emerged, and diesel exhaust exposure is now considered carcinogenic by many world regulatory bodies.

## Strategy to Minimise Employee Exposure to Diesel Particulate

Experience has demonstrated that no single solution presents for the control of exposure to diesel particulate. Rather, the use of measures at all levels of the control hierarchy, including improved fuels, mine ventilation, better engine maintenance, better operating techniques and, in some instances, exhaust filters, are required to effectively manage this issue.

In June 2004, the BHP Billiton HSEC Forum unanimously endorsed a strategy to minimise employee exposure to diesel particulate. The Diesel Exhaust Initiative within the Company has focused on taking to sites the immediately deliverable improvements learned from Illawarra Coal and our contacts in the Canadian metalliferous mining industry. These include:

- methods for the site mechanical maintenance team to best manage engines to minimise both gaseous and particulate emissions
- processes for matching vehicle emissions to the mine ventilation to minimise exposure
- the use of the correct fuels and lubricants to achieve cleaner, more complete combustion and reduce emissions
- techniques to measure and assess worker exposure.

The Manager Rehabilitation Infrastructure at Illawarra Coal, Hank Pinkster, says, 'Illawarra Coal's involvement with diesel particulate was originally as a research project to gather information on an emerging issue, but now we see the control of diesel emissions as part of our Zero Harm program. There are positive benefits not only in terms of workforce health but also in productivity'.

By the end of June 2005, all our underground mine sites had been visited by an expert team. Key members of this team were Brian Davies, who has been involved in the research at Illawarra Coal from its outset and has recently been awarded a PhD for this work, and Sean McGinn, an expert in the control of diesel emissions in the Canadian metalliferous mining industry. During these visits, the team presented information on diesel particulate; provided educational material to site management, operators, safety professionals and maintenance people; conducted testing of engines; and assisted in the development of diesel exhaust management plans.

A key part of the Diesel Exhaust Initiative has been the association with the Mine Operations Network, which works within the Company's Operating Excellence Framework. The network has regular workshops and field days at which the diesel emissions specialists from Illawarra Coal and Canada have presented information on diesel emission management techniques. Activities include measurement of emissions and practical demonstrations of the effects of simple maintenance techniques, such as replacement of air filters and engine timing.

Following a presentation at a seminar on sustainable development hosted by the Tasmanian Minerals Council, the Council's Executive Director, Terry Long, said, 'The talk was illuminating. Site people were very interested. You've given people here both an interest in the subject and directions to lots of information. I'm sure we'll be hearing more about diesel particulates in coming years'.

## Developments in Exhaust Sampling Equipment

Methods for the collection and analysis of diesel particulate are available to accurately determine personal exposure of workers. Equipment to measure the gaseous components of diesel exhaust has been available for some time; however, currently available equipment to directly measure particulate emissions is cumbersome and expensive. The diesel particulate analyser used by Illawarra Coal is set up in a mobile trailer that is not suitable for underground use.

In the United States, the NIOSH has developed a prototype hand-held instrument, which can measure the particulate concentration in the raw exhaust in less than a minute. In order to progress the prototype to commercial production, data is needed to validate and calibrate the prototype against existing instruments. To this end, prototypes have been loaned to the Company and the necessary data is being collected during the site visits.

Arrangements are in place between NIOSH and SKC Inc, a leading manufacturer of air sampling equipment, to produce a commercial instrument. This will allow maintenance mechanics to test and tune engines to minimise particulate emissions as a routine part of vehicle maintenance. Immediate in-service testing of engines will allow out-of-tune engines to be identified, taken from service and re-tuned.

## Diesel Emissions Management Manual

The collective knowledge has been compiled in a Diesel Emissions Management Manual. The manual is a collaborative effort between experts from Illawarra Coal and the Canadian metalliferous mining industry and other specialists. The content covers health effects, monitoring methods, engine selection, fuel quality, mine ventilation, maintenance, exhaust filtration and allied emission controls, operator practices, education, and personal protective equipment and includes a list of suppliers.

The manual is available in hard copy and on our internal Mining Operation Network Community of Practice intranet site. It has attracted a high level of interest and has been made available to regulators in Australia and South Africa and to other mining companies and organisations in Australia, South Africa and North America.

## Safety - Our Approach

The safety of our employees, contractors and the communities in which we operate is an integral part of our business. Our goal is Zero Harm.

To this end, we seek to create a mindset and an environment where people believe it is possible to work injury free – regardless of where they are in the world, what role they undertake or in which business they work.

Across the organisation we manage safety through our risk-based HSEC Management Standards. Our line managers are accountable for the implementation of these Standards and responsible for ensuring that supporting systems and procedures are in place. We are confident that our Standards and associated systems are the right ones, and have directed our efforts towards the effective and consistent implementation of these across the organisation. We call this Operating Discipline.

Our safety focus areas are:

- Fatal Risk Control Protocols
- Catastrophic Risk Management
- Visible Leadership
- Behavioural/Awareness Processes
- Leading Indicators
- Contractor Management
- Near Miss Reporting.

See the following for details on our approach to safety management:

- [Our Safety Improvement Road Map](#)
- [Fatal Risk Control Protocols](#)
- [Leadership, Behaviour and Awareness](#)
- [Leading Indicators](#)
- [Near Miss and Significant Incident Reporting.](#)

See [Safety: Our Performance](#) for a summary of our safety performance for the reporting period.

## Our Safety Improvement Road Map

Decision-making and thinking for safety in the organisation is directed by 'Our Future State' (PDF 726 Kb), which sets the vision for BHP Billiton as an organisation in which:

- The safety of our people is a value which is not compromised.
- Safety excellence is recognised as good business.
- Leaders at all levels are safety role models.
- Effective safety leadership is a prerequisite for promotion.
- People are aware of the hazards and risks in their workplace and act accordingly.
- Compliance with safety standards and procedures is absolute.
- 'At risk' behaviours are not acceptable and are addressed when observed.
- Effective skills to lead and work safely are developed through ongoing training and mentoring.
- Repeat incidents are evidence of an out of control operation..



The Safety Improvement Road Map (see below diagram) remains our guide to safety excellence. The diagram illustrates that, as the maturity of our organisation increases, our safety improvement initiatives become all-encompassing. The most mature organisations understand that the behaviours of their people are the key to their success.

**Safety Improvement Road Map**



Learnings from our fatalities identified gaps in the consistent application of the Future State principles across the organisation. A substantial review, including a deeper analysis of the fatalities occurring since the merger between BHP and Billiton (2001), was undertaken to assess how to re-establish a stable progression towards Zero Harm.

Key learnings for the organisation were:

- Low injury frequency rates do not mean low fatality rates – we cannot, and should not, draw any comfort from low injury rates in terms of our capacity to eliminate fatalities.
- Injury reduction programs alone will not prevent fatalities – a complementary focused effort is required on fatal risk. This is why we have implemented the Fatal Risk Control Protocols.
- Our fatalities often have similar underlying causes.
- High near miss reporting often correlates with declining injuries or fatalities – our ability to take heed of the signals from near miss events is crucial to our efforts in eliminating fatalities.
- Leadership visibility in the field is vital – our current state of safety maturity relies heavily on leadership energy to deliver improved performance.
- Effective contractor management is essential.
- Hazard identification and risk awareness are fundamental to success.

## Fatal Risk Control Protocols

A review of our past fatalities and significant incidents identified a series of key fatal risks to our people – risks that require the development of sound practices to eliminate fatalities and incidents that could, in different circumstances, cause fatalities.

As a result, the [Fatal Risk Control Protocols](#) (FRCPs) (PDF 1,100 Kb) were established in 2003.

The Protocols were developed by work groups comprising individuals from across BHP Billiton with extensive experience in operations. Their goal was to establish minimum performance expectations for managing these risk areas at leading practice levels. Following the initial release of the Protocols, a series of review workshops were also held across the Company. Identifying the need for an additional Protocol to cover the risks associated with lifting operations was an outcome of these workshops.

The existence of the Protocols does not presume coverage of all risks faced by our operations. The HSEC Management Standards provide the management framework for these other risks.

The Protocols cover the potential for fatal risks arising from activities associated with:

- Light Vehicles
- Surface Mobile Equipment
- Underground Mobile Equipment
- Underground Ground Control
- Hazardous Materials Management
- Molten Materials Management
- Equipment Safeguarding
- Isolation
- Working at Heights
- Lifting Operations.

Each Protocol has a common format that outlines its reason for inclusion and sets out implementation requirements that cover plant and equipment, procedural and people requirements.

The focus for sites has been on embedding the FRCPs. Initiatives designed to support this include:

- developing an assessment and tracking tool
- establishing a dedicated FRCP intranet site and Communities of Practice for each Protocol
- allocating dedicated resources to support selected Protocols
- conducting workshops in key regional operating areas involving site and business representatives

More recently, we have appointed Global FRCP facilitators.

For details on the implementation of the Protocols and the activities of our Global FRCP facilitators, see [Our Performance: Fatal Risk Control Protocols](#).

## Leadership, Behaviour and Awareness

The need to address at-risk behaviours and increase safety awareness is integral to achieving Zero Harm in safety, as outlined in Our Future State. Effective safety leadership is crucial to the success of our safety programs. We therefore hold line management accountable for the safety of our operations.

Behavioural-based safety is the process of involving our people in defining the ways they are most likely to be injured and asking them to observe co-workers and engage them in discussion that reinforces safe behaviours and identifies ways the job can be done more safely.

The behavioural-based safety process has greatest impact when everyone on site conducts safety observations. Research has proven that the observer develops a far greater awareness of hazards and risks than those being observed. Two other critical factors are that a positive discussion occurs on the job as part of every safety observation and that management uses the feedback from these discussions to eliminate barriers to safe behaviour.

We recommend that our sites employ the following principles in developing behavioural-based safety programs:

- Sustainable behaviour change, and subsequent culture change, requires change in employee behaviour at all levels.
- Behaviours are markers of attitudes and beliefs and are amenable to change through observation, feedback and the removal of barriers to safe behaviour.
- The changes sought for safety culture improvement are often those that are required for general Company cultural change.
- Employee participation and ownership of the process is essential.

We aim to increase safe behaviour and decrease at-risk behaviour by involving our leadership, employees and contractors. We seek to understand where and why at-risk behaviours occur. Blame has no place in a behavioural-based safety program.

Our HSEC Management Standards require the implementation of behavioural-based safety programs across our operations.

By observing employees going about their daily tasks and then engaging them in two-way communication, focusing on the safety aspects of the job, we have started gathering information about at-risk behaviours that exist in the workplace. By engaging workers in the process, such practices are highlighted; and solutions are often volunteered from the employees themselves.

We recognise, however, that due to varying levels of maturity across the organisation, there is still progress to be made in entrenching safe behaviour observations before we can derive meaningful leading indicators from them.

## Leading Indicators

The majority of sites have introduced leading indicators to support the measurement and tracking of their critical safety interventions.

A leading indicator is a metric used to drive and measure activities carried out to prevent and control injury, damage or loss. When measured and monitored effectively, they provide data to enable effective intervention to address or reverse a negative trend before it results in injury, damage or loss.

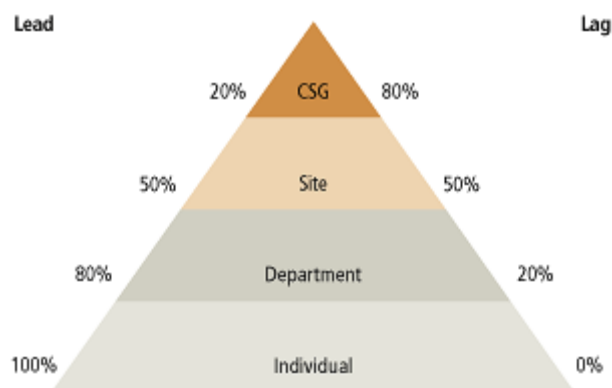
A guideline document and presentation have been developed to help increase knowledge, create discussion and promote the wider use of leading indicators as a driver to safety improvement across the Company.

Injury statistics or other lagging indicators provide an overall estimate of the progress required to achieve our vision of Zero Harm, but they do not measure the effective implementation of safety programs, proactive action plans and preventative activities in place. If lagging indicators are used as the only index of safety achievement (or failure), they can do more harm than good, as people are not empowered to take control of safety and to develop an effective organisational safety climate. It is important that we use a mix of leading and lagging indicators to measure overall safety effectiveness and performance.

The diagram below provides an indicative breakdown of leading and lagging indicators being promoted at various levels of the organisation. The ratios are illustrative only and can be modified to suit circumstances.

The use of a greater proportion of leading indicators at individual and department levels reinforces personal involvement and improves the perceptions individuals and work teams have about their control and management of injuries. Key to this has been our introduction of near miss reporting – this is detailed in [Our Performance: Near Miss and Significant Incident Reporting](#).

### **Breakdown of Lead and Lag Indicators Being Promoted Across the Company**



### **Sample of Leading Indicators used by BHP Billiton**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>● field visits conducted</li> <li>● observations/ Audits/ Inspections conducted versus planned</li> <li>● face time in field versus planned</li> <li>● number of safety contacts</li> <li>● safety communications conducted</li> <li>● implementation of site safety action plan</li> <li>● implementation of Fatal Risk Control Protocols</li> <li>● implementation of action plans resulting from HSEC audit findings</li> <li>● percentage of Incidents investigated</li> </ul> | <ul style="list-style-type: none"> <li>● number of positive rewards and recognition given</li> <li>● number of near misses reported</li> <li>● number of repeat incidents</li> <li>● percentage of Job Safety Analyses (JSA) completed for critical activities</li> <li>● percentage of safe behaviours observed</li> <li>● percentage of actions implemented from observations</li> <li>● percentage of Significant Incidents reviewed and closed out from circulation lists</li> <li>● percentage of hazards rectified</li> <li>● ratio of near misses to accidents reported</li> </ul> |
|---|---|



## Near Miss and Significant Incident Reporting

Our approach to near miss and significant incident reporting was founded following a comprehensive review of our past fatal incidents, from which four key learnings emerged:

- Low injury frequency rates do not mean low fatality rates.
- High near miss reporting often correlates with declining injuries or fatalities.
- Injury reduction programs alone will not prevent fatalities – a complementary focused effort is required on fatal risk.
- Hazard identification and risk awareness are fundamental to success.

We recognised that a key factor to improvement was the ability to learn from significant near miss incidents (a safety incident rated four or above in the [BHP Billiton Consequence Severity Table](#)) and apply corrective interventions before the same underlying causes manifest as more serious incidents.

In addition, we have a significant incident reporting requirement across the Company. When a trend of similar incidents, whether internal or external to the Company, is identified and common learning points are evident, a Repeat Significant Incident Alert is compiled. These alerts are distributed broadly across the Company and provide a succinct summary of the events and common learnings. In addition, these alerts contain links to further information and act as a catalyst for safety toolbox talks, contributing to raised safety awareness.

See [Our Performance: Near Miss and Significant Incident Reporting](#) for further details.

## Safety - Our Performance

Details on our safety performance during this reporting period can be viewed at:

- [Fatalities](#) — reports on fatal incidents that occurred during the reporting and identifies strategies to eliminate further fatalities
- [Classified Injury Frequency Rate](#) — reports on the number of classified injuries per million work hours
- [Near Miss and Significant Incident Reporting](#) — explains our indicators and our strategy for promoting, encouraging and recognising high levels of near miss and significant incident reporting as a positive and healthy indicator of our focus on safety
- [Safety Fines](#) — outlines the safety fines for this period
- [Fatal Risk Control Protocols](#) — outlines our progress in implementing and reviewing the protocols across the organisation
- [Leadership – Our Operating Discipline](#) — describes how responsibilities and accountabilities of line management turn our Policies and Standards into practice
- [Contractor Management](#) — outlines the processes we have in place to ensure that the standards and procedures adopted by our contractors are consistent with our Standards

Further details on our approach to safety management can be viewed at [Our Approach: Safety](#). For examples of policy in action, refer to our [Case Studies](#).

## Fatalities

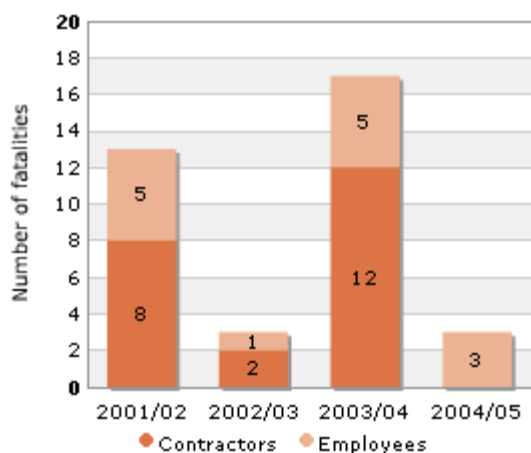
Despite a significant improvement in our overall safety efforts, we are saddened to report that three fatal incidents occurred during the reporting period as part of our [controlled activities](#). This is compared to seventeen in the previous period. Each of these incidents has been thoroughly investigated, utilising our Incident Cause Analysis Method (ICAM), with lessons learned being shared across the organisation. A summary of fatalities that occurred during controlled activities is shown in the table below.

### Fatalities at Our Controlled Operations 2004/05

Site/Customer Sector Group	Date of Incident	Nature of Incident	Learnings
Hotazel Manganese Mine Carbon Steel Materials	15 December 2004	Fatal injuries were sustained when an employee fell asleep at the wheel of a vehicle, resulting in the vehicle leaving the road and rolling over several times.	The fatigue element of journey management must be reinforced. Subtle changes must also be considered when reassessing tasks. Tools and equipment to conduct effective pre-start checks must be made available. Rollover protection in mini-buses is effective.
Douglas Colliery Energy Coal	10 October 2004	Fatal crush injuries were sustained after an underground vehicle was inadvertently operated while the towing attachments were being adjusted.	The risk associated with conducting routine tasks is often under-estimated. Tasks are not always conducted according to an existing procedure. Deviation from procedures may indicate the need to reassess the risks and for a higher level of approval to carry out the task.
Mozal Aluminium	29 June 2005	Fatal injuries were sustained after an employee was struck by a seven tonne mobile crane.	Controls identified through risk assessment must always be implemented. Subtle changes to tasks must always be considered and managed. Contractors must be integrated into the management, operation and culture of the site.

### Fatalities at Our Controlled Operations

2001/02 to 2004/05



In addition, over the reporting period we conducted a comprehensive review of our past fatal incidents to identify strategies to further eliminate fatalities from our operations. The results of this are discussed in [Our Performance: Near Miss and Significant Incident Reporting](#).

We remain determined to eliminate fatalities from our organisation and will continue to implement the strategies that we have in place, as we are confident that their thorough implementation will support the elimination of fatalities.

We also monitor significant incidents that result from activities related to our business but not directly within our management control. Included in this category are, for example, incidents that occur at operations we have an interest in but do not manage, injuries suffered by an employee travelling from their residence to work, or an injury that is solely the result of an employee undertaking personal activities. During the reporting period, three fatalities within this category were reported, down from six in the previous period. Of these, two were at joint venture operations managed by our partners and one occurred at our site but was not associated with our work activities.

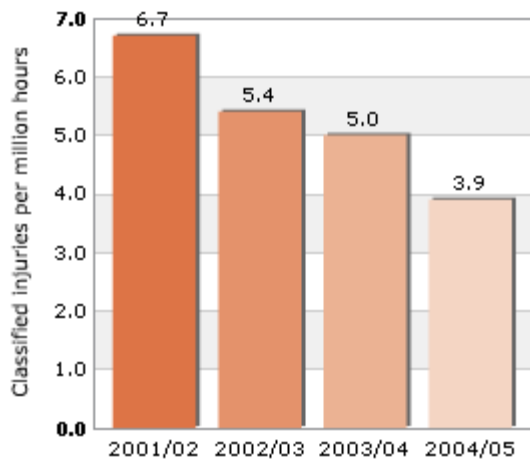
## Classified Injury Frequency Rate

A classified injury is any workplace injury that results in the person not returning to their unrestricted normal duties after the day on which the injury was received. The Classified Injury Frequency Rate (CIFR) is the number of classified injuries per million work hours.

The results of the various HSEC initiatives, together with efforts and initiatives by each operation, have resulted in a 22 per cent reduction in the CIFR from 5.0 last year to 3.9 this year. This remains in line with our stated target of a 50 per cent reduction in the CIFR by 30 June 2007, representing a 42 per cent reduction against the 2001/02 base line.

### Classified Injury Frequency Rate

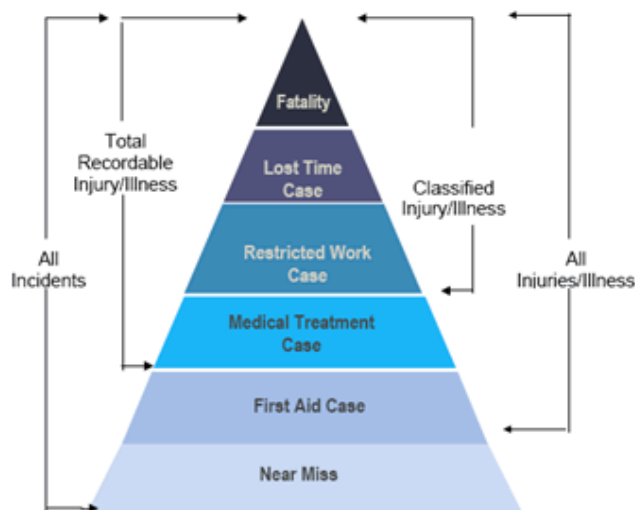
2001/02 to 2004/05



As part of our drive for Zero Harm, we have commenced reporting the Total Recordable Injury Frequency Rate (TRIFR) alongside CIFR.

TRIFR is the evolution of CIFR and reflects that as we become stronger in our belief that fatalities and serious injuries are preventable, we will look at the less serious injuries that still affect our people. The diagram below defines the difference between the two metrics. We will be reporting on this next year.

### Safety Metrics Hierarchy



## Safety Fines

This year, regrettably, we did not meet our goal of zero safety fines or prosecutions. The table below outlines the safety fines for this period.

### Safety Fines 2004/05

Site	Customer Sector Group	Description	Fine (US\$)
Pinto Valley	<b>Base Metals</b>	A citation written from Mines Health and Safety Administration for examination of berms resulted in a US\$60 fine. A complete property survey was conducted, and all inadequate berms were repaired.	60
San Juan Mine	<b>Energy Coal</b>	A total of 56 safety citations with payment of US\$17 076 were made. Five of these were greater than US\$1000.	17 076
<b>Total</b>			<b>17,136</b>

## Near Miss and Significant Incident Reporting

Our improvement strategy has promoted, encouraged and recognised high levels of significant near miss reporting as a positive and healthy indicator of:

- shortcomings in the application of our systems and procedures
- high safety awareness of potential hazards and risks in the workplace
- invaluable free lessons to assist in the prevention of fatalities
- openness, trust and transparency of reporting
- increased safety maturity.

Encouraging near miss reporting also serves to increase awareness and focus around key fatal risks, and provides the impetus for our employees and contractors to review their operations for similar risks and implement preventative actions.

Near miss reporting is also useful as a learning tool, providing real and valuable information for use in tool-box talks, safety communications, training programs and risk assessments.

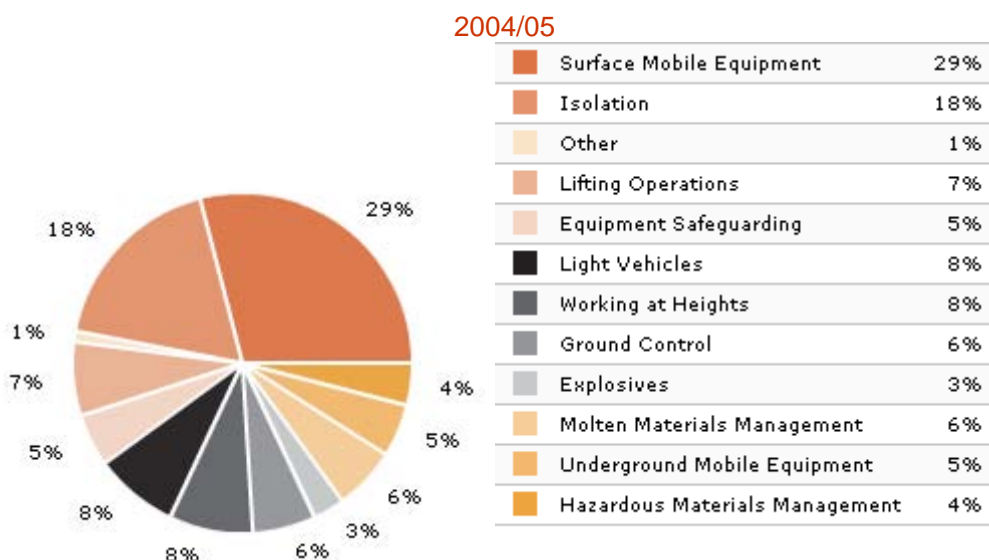
An example of how we are putting this policy into practice can be read in our case study, [Behavioural based accident prevention process at Cerrejon](#).

In line with our approach we require the following of our sites:

- An ICAM analysis to be conducted for every significant incident or near miss reported.
- Learning opportunities identified as a result of the analysis are to be shared with all our employees and contractors.
- The effective implementation of corrective actions resulting from these incidents to be tracked and measured as a key indicator under the [Operating Discipline](#) program.

We have seen a substantial improvement in the reporting of near miss incidents across the operations, and we believe that this has been a contributing factor to our improvement in fatality rates. Our analysis of significant incidents indicates that the main areas for improvement are in Surface Mobile Equipment and Isolation, and that these activities continue to attract diligence, compliance and focus.

### Near Misses and Significant Safety Incidents Reported by Fatal Risk Control Protocol Type



## Fatal Risk Control Protocols

The due date for the implementation of the requirements of the Fatal Risk Control Protocols (FRCPs) coincided with the end of our financial year. The FRCPs have been implemented across the organisation, as determined by our self assessment tool.

In line with our goal to operate excellently, the requirements of the FRCPs are continually reviewed and improved. In January 2005, Issue 2 of the FRCPs was released with a new protocol on lifting operations. This followed feedback from regional workshops with our operations that highlighted gaps in the first issue of the Protocols. Implementation of Protocol 10 – Lifting Operations, which was introduced during the reporting year, is required by July 2006.

In addition, our operations requested assistance to ensure alignment with the requirements of these FRCPs. Based on the success of having a dedicated resource for the Light Vehicle FRCP, a FRCP facilitator was appointed for each of the ten FRCPs, as well as an additional facilitator for the Isolation FRCP in South America.

The FRCP facilitators are subject matter experts from within our employee ranks. They are instrumental in providing guidelines and in acting as conduits for the sharing of leading practices within the organisation.

Since the appointment of the FRCP facilitators all the Protocols, including that newly released for Lifting Operations, have networks or Communities of Practices which are in the process of growing in membership and activity.

Significant incidents are being analysed for trends and opportunities for improvement by the individual FRCP Facilitators. The FRCP Facilitators have visited sites in South America, Australia and South Africa during the reporting period, familiarising themselves with leading practices and identifying potential areas of improvement. They are also working on establishing guidelines to aid the implementation of the FRCPs.

Already we have received positive feedback on the value of having these dedicated Facilitators as resources to the business, and there is an increase in the number of requests for assistance. With this additional focus we expect that the continued implementation of the FRCPs will be expedited and opportunities to share leading practices will increase. This, in turn, will support the focus on the elimination of fatalities.

Additional work is also underway to ensure that the various FRCPs are complemented by specific Guidelines, designed to aid compliance with their requirements.

Further detail on the progress of the FRCPs is included in our case study [Fatal Risk Control Protocols updated and Issue 2 released to improve understanding and effectiveness.](#)



## Leadership - Our Operating Discipline

In recent years we have reviewed our safety program and systems. In each case, our systems have been found to be as good as the best available, and in many cases, better. Evaluation of our safety performance in 2003/04 indicated, however, that we must improve our operating discipline. We do not need new systems, but we do need to increase our efforts to ensure the systems in place are understood and adhered to by all.

We introduced the Operating Discipline initiative to focus on the responsibilities and accountabilities of line management with regards to turning our Policies and Standards into practice. In particular, it seeks to focus on the following three key aspects of [Our Future State](#):

- Compliance with safety standards and procedures is absolute
- Effective skills to lead and work safely are developed through ongoing training and mentoring
- Repeat incidents are evidence of an out of control operation.

The following were initiated during the reporting period:

- Asset Leader Reviews were undertaken across a representative sample of our operations to identify desirable HSEC leadership attributes for line managers. This work was done in association with Group Human Resources in order to integrate the findings into the Leadership model for the organisation.
- Regional Training Leaders were appointed to ensure that there is a coordinated approach to the delivery of HSEC-focused training programs across the organisation. The Regional Training Leaders are located in Australia, South Africa and South America. The Fatal Risk Control Protocol facilitators are also part of this focus.
- New performance scorecard components were introduced for line managers, focusing on regular communications, near miss reporting and the completion of action items associated with incident close outs.

A program called Maintaining Safety Focus was introduced across the organisation to help maintain the focus on safety and to foster the transfer of knowledge and learning. The program required each Customer Sector Group to select a topical significant incident from within their own area of work and re-examine it as if it were a fatality. The intent of this process was to ensure that all learnings from incidents are implemented and that awareness of contributing factors is created in order to avoid a repeat similar incident.

One of these topical significant incidents is subsequently selected for further presentation to the HSE Committee of the Board and then distributed to employees via the HSEC monthly report. This involvement of employees from across the organisation in reviewing significant incidents and the attention they receive up to Board level has assisted in cementing the approach we have to ensuring that learnings from previous incidents are not repeated.

## Contractor Management

Managing contractors and their activities more effectively at our operations is a key focus of our safety management systems. Our objective is to ensure that standards and procedures adopted by the contractors are consistent with our Standards.

A training course has been designed to provide BHP Billiton personnel responsible for supervising contractors with the skills and knowledge to effectively manage them. Designed as a 'Train the Trainer' course, it specifically provides:

- skills in applying HSEC systems to contract management
- awareness of the significance of leadership, communication and human behaviour in influencing contract safety outcomes
- the ability and competence to facilitate the contractor safety management course themselves.

Courses have been conducted in Australia, South America and South Africa. Wherever possible the courses are delivered in the language of the relevant country.

The course is offered as ten modules covering:

1. Responsibilities for BHP Billiton, contractor companies and employees in the safety management of contractor personnel
2. Hazard analysis
3. Site tender inspections and work method statements
4. Access controls and inductions
5. Clearances and isolations
6. Job risk assessment
7. Site specific safety inspections and observations
8. Non-conformance investigation and reporting
9. Reviewing contractor performance
10. Leadership behaviours.

Contractor management is further supported by a Contracting Checklist that has been included as a requirement of our Contractor Management Guidelines.

To understand how some of our sites are addressing the challenge of contractor management, see our case study [Pakistan Asset Team develops HSEC starter pack to help contractors meet our Standards](#).

## Safety Case Studies

The following case studies present examples of safety issues, initiatives, projects and programs across the Group that highlight some of the sustainability opportunities and challenges faced by our operations. Case studies are also presented for the areas of [health](#), [environment](#), [community](#) and [socio-economic](#).

[View](#) all case studies.

### Safety Case Studies

<p>Alliances with Toyota and Caterpillar are reducing sourcing costs while delivering vehicle safety features</p>	<p>We have developed long-term strategic alliances with suppliers Toyota and Caterpillar with a view to lowering the total cost of our fleets of site vehicles and earthmoving equipment, while focusing on enhancing equipment features in order to reduce HSEC risks and help us achieve our goal of Zero Harm.</p> <p><a href="#">More</a></p>
<p>Pakistan Asset Team develops HSEC starter pack to help contractors meet our Standards</p>	<p>For our Zamzama gas project, the Pakistan Asset Team has developed an HSEC starter pack for contractors to reinforce our efforts to achieve Zero Harm in our contractor activities.</p> <p><a href="#">More</a></p>
<p>Best practice processes support crisis and emergency management across the Company</p>	<p>Our global Crisis and Emergency Management Program (CEMP) ensures that all CSGs maintain the appropriate capabilities to enable an effective and timely response to incidents at all levels and severity.</p> <p><a href="#">More</a></p>
<p>'Slamming' for safety at New Mexico Coal</p>	<p>Our New Mexico Coal operation in the USA initiated a behavioural-based safety leadership program in 2002 to drive improvement in safety performance, which had been static for several years.</p> <p><a href="#">More</a></p>
<p>Cerrejón initiatives are helping to promote a safe driving culture in La Guajira</p>	<p>Cerrejón coal operation (BHP Billiton 33.3% ownership) in north-east Colombia, South America, has developed a land transportation safety program to help the operation's transport contractors apply best practices.</p> <p><a href="#">More</a></p>
<p>Behavioural-based accident prevention process implemented at Cerrejón</p>	<p>In 1996, a behavioural-based accident prevention process was introduced at the Cerrejón coal operation (BHP Billiton 33.3% ownership) in northeast Colombia, South America. Since its introduction, the process has been undergoing continual improvement to improve safety performance.</p> <p><a href="#">More</a></p>
<p>Fatal Risk Control Protocols updated and Issue 2 released to improve understanding and effectiveness</p>	<p>The BHP Billiton Fatal Risk Control Protocols (FRCPs) have been updated and re-released with improvements and refinements. The effective implementation of the FRCPs forms an integral part of our safety strategy and our efforts to eliminate fatalities from our operations.</p> <p><a href="#">More</a></p>
<p>Bleederless longwall ventilation at San Juan Underground Mine manages risk of fire and explosion</p>	<p>To manage mine ventilation risks, San Juan Coal Company (SJCC) in our New Mexico Coal operations in the USA has developed and implemented an innovative bleederless system.</p> <p><a href="#">More</a></p>

## Safety Case Studies

**Alliances with Toyota and Caterpillar are reducing sourcing costs while delivering vehicle safety features**

**Safety**



Caterpillar's Work Area Visibility Enhancement System (WAVES) helps to reduce collisions

The Company has developed long-term strategic alliances with suppliers Toyota and Caterpillar with a view to lowering the total cost of our fleets of site vehicles and earthmoving equipment, while focusing on enhancing equipment features in order to reduce HSEC risks and help us achieve our goal of Zero Harm.

### Toyota Alliance

In early 2002, our Strategic Sourcing group began a project with a goal to establish preferred suppliers to meet our light to medium sized motor vehicle fleet requirements. The basic premise of the project was to lower the total cost of ownership of our vehicle fleet in Australia, subject to meeting or exceeding required standards of vehicle safety and performance.

The project, which continues to be managed by our Australian Region Supply group, led to an alliance with Toyota Motor Corporation Australia. Since the agreement was signed, we have purchased fleets of Hilux, Commuter, Prado, Landcruiser and sundry passenger vehicles, all delivered, serviced and maintained by the Toyota dealer network. However, the alliance has had a far greater effect on the way our two organisations do business.

#### ***Applying the Kaizen Principle***

The objective of reducing 'total cost of ownership' is in hand but always subject to what Toyota calls Kaizen: the principle of 'continuously driving for innovation and evolution'. It is the second half of the project objective – meeting or exceeding required standards of vehicle safety and performance – that continues to challenge the BHP Billiton and Toyota staff.

This challenge is about 'forming a long-term vision, meeting challenges with courage and creativity to realise our dreams'. The introduction of the BHP Billiton Fatal Risk Control Protocols in April 2003 has increased the focus of both partners on how to eliminate or reduce the risk to drivers of light vehicles.

The alliance has vastly improved the quantity and quality of communication between the two organisations. Regular stakeholder meetings, quarterly reviews, and site visits (including Toyota engineers) have helped communicate our ongoing vehicle requirements, and much of this information is passed on to Toyota Motor Corporation (Japan) to aid in the continuous improvement of current models and for future model planning.

## **Safety**

Toyota also recognises that the reputation BHP Billiton has earned as a benchmark for vehicle safety best practice in the mining industry means that meeting our current needs will reflect on the not-too-distant future needs of many of their other fleet customers.

The recent release of the 2005 Hilux utilities, Hiace vans and Commuter buses is an example of the results of meeting the safety and performance challenge through the application of Kaizen. Extensive development has gone into body structures, frames and other areas to improve occupant safety, while input from customers has led to numerous safety features and accessories being added to vehicles to be sold in Australia, including:

- standard driver and passenger SRS air bags on all models (Hilux, Hiace and Commuter)
- optional ABS on most models (not available on Hilux Workmate only)
- 3-point, locking retractor seat belts on all outer seats of Hilux and Hiace and all 14 Commuter seats
- driver's seatbelt warning lamp (Hilux, Hiace and Commuter)
- airbag-compatible bull bars and nudge bars (Hilux, Hiace and Commuter).

The philosophies of the Toyota Way and the alliance between our two organisations have been instrumental in the specification and launch of these new models. In line with the original 2002 objective, these vehicles will go a long way towards meeting or exceeding required standards of vehicle safety and performance.

Alan Porich, Divisional Manager National Sales, Toyota Motor Corporation Australia, says, 'I believe the partnership between Toyota Australia and BHP Billiton has strengthened over the years as a result of the mutual challenge to continuously improve. The benefits of the relationship, however, are not restricted to the immediate boundaries of our two companies. Further Toyota product improvements as a result of input through BHP Billiton could also prove beneficial to the greater Australian mining industry'.

## **Caterpillar Alliance**

As reported last year, in early 2003 the Company and Caterpillar committed to an initial five-year strategic alliance with the aim of saving costs and reducing HSEC risks associated with the operation of earthmoving equipment (EME). Caterpillar was selected as the primary supplier to meet our needs for the global sourcing of EME and related parts and services.

Through continuous improvement process projects and R&D initiatives, combined alliance teams are delivering long-term, sustainable solutions to HSEC risks associated with EME. To date, 30 alliance projects have been completed and there are another 26 active projects at sites. Of the completed projects, seven are specifically HSEC-related. These are to improve dozer access, reduce the impact of whole-body dozer vibration and improve fire prevention at BMA; improve operator awareness and collision avoidance at Escondida; and reduce cab noise in drills and improve haul truck visibility at Ingwe. The outcomes are being communicated globally to enable project replication.

### ***HSEC and Sustainable Development benefits arising from the Alliance***

Initiatives to ensure compliance with our Fatal Risk Control Protocols include the provision of options such as:

- high-intensity discharge lighting to improve visibility during hours of darkness
- Three-point seat belts for additional operator restraint and neck support after the completion of trials at various mine sites
- equipment lockout systems fitted to new CAT models being released in 2005
- semi-active suspension seats to reduce vertical vibrations affecting the operator
- heated rear-view mirrors in arctic conditions to prevent build-up of snow and ice
- availability of access systems such as angled stairways, fitted walkways and fenders over the wheels to reduce the risk of slippery surfaces.

Another initiative involves the use of training simulators to develop operator skills without risking their health and safety.

With the support of the Company's HSEC and asset management teams, focus areas for projects were identified, including:

- developing and evaluating vehicle collision detection systems
- reducing and monitoring operator fatigue
- improving ergonomic issues such as whole-body vibration, visibility, comfort and noise affecting both operators and those nearby
- developing powered access systems
- reducing fuel burn, lubricant consumption and engine emissions
- improving fire prevention systems and improving operator visibility on the machines

### ***Fire Prevention Project***

Our BMA coal operation based in Queensland, Australia, has been working with Caterpillar and the regional dealer, Hastings Deering, to improve fire prevention measures on haul trucks and replicate these across other types of EME. Over the last five years, more than 200 incidents of fires have been recorded on mobile equipment across BMA, with 37 of these being directly related to haul trucks.

The project team developed risk mitigation strategies to reduce the risk of fires from mechanical or electrical ignition sources by 75 per cent. The team's full documentation of solutions and recommendations will enable the project to be replicated at other assets and will assist the development of new products by Caterpillar. The solutions include:

- protective covers, shields and sheathing
- inspection strategies
- hose ratings
- improved design such as brushless alternators and fuel rails.

### ***Collision Detection System Project***

We have jointly been developing and testing technologies with the potential to assist in collision detection between vehicles, structures and humans. Caterpillar has developed a camera system – Work Area Visibility Enhancement System (WAVES) – that is in the final stages of testing, including at two BHP Billiton mines, which will significantly assist in enhancing visibility around equipment. The next stages involve incorporating technology such as radar, radio frequency, GPS or other developing technologies into a combined collision detection system.

Phil Kelliher, Caterpillar's Global Manager for the BHP Billiton Alliance, believes that the close working relationship formed through the Alliance will benefit all participants. He says, 'The Collision Detection Forum is a great example of cross-functional, cross-asset and cross-organisation teamwork developing solutions to some of BHP Billiton's major EME challenges while at the same time helping Caterpillar and our dealers design and maintain a safer product offering'.

## Safety Case Studies

### Pakistan Asset Team develops HSEC starter pack to help contractors meet our Standards

Safety



Contractor HSEC starter pack materials



For our Zamzama gas project, the Pakistan Asset Team has developed an HSEC starter pack for contractors to reinforce our efforts to achieve Zero Harm in our contractor activities, an area vulnerable to HSEC-related incidents. The initiative has realised a number of benefits, including better working relationships with our contractors and greater awareness by them of HSEC issues and our requirements.

## Building Local Capacity

We are committed to building the capacity of local communities by engaging suitable enterprises as suppliers to the Company. For example, during the construction phase for the extended well test and Phase 1 expansion at Zamzama, numerous contracts were placed with Pakistani companies. In the execution of full field development, the engagement of local enterprises was a priority. A significant proportion of the major plant equipment was also built in local fabrication yards. Now, in the operations phase, the facility continues to provide ongoing work for local contractors.

## Contractor HSEC Starter Pack

The HSEC starter pack forms part of the contractor management program and was developed to ensure appropriate training and awareness prior to initiation of work. HSEC management is a relatively new concept for most Pakistani companies, presenting real HSEC risks to our operations. The Zamzama operation, for instance, is located in the remote district of Dadu, some 500 kilometres north of Karachi. In response to this major concern, the pack was developed to dovetail into the existing management of contractors' systems and to more rigorously ensure that the Company's requirements are understood and addressed.

The starter pack comprises a range of HSEC-related written and visual communication tools, including:

- Future State Zero Harm poster
- Zero Harm before Production presentation
- HSEC Management Standards
- UN Universal Declaration of Human Rights
- Fatal Risk Control Protocols
- Guide to Business Conduct
- Substance Abuse Policy
- Safety Observation Card System
- Zamzama Gas Plant Safety Handbook
- contractor safety notices on operations, specific equipment and mobilisation

- HSEC document hierarchy
- interactive video and DVD modules covering:
  - hand-held grinders
  - falls and falling objects
  - manual handling
  - rigging and lifting
  - crane operations and cargo handling
  - working at heights
  - injuries to fingers and hands
  - safety awareness posters.

All the material has been produced in the Pakistan national language, Urdu, as well as in English.

## Program Outline

As the Pakistani Asset Team utilises many contractors, there is a need to increase HSEC awareness and competency and to promote and instil the BHP Billiton HSEC culture. The HSEC starter pack was developed to address the gap between our Company Standards and the prevailing contractor mindset to HSEC issues within Pakistan.

It is an education package that brings together the Company's Our Future State objective to reinforce the principle of Zero Harm before production and profit, while providing contractors with information and tools on our HSEC requirements.

The pack has been developed after gathering information through interviews with local contractors, including management and workforce representatives. The major issues arising from these discussions were the low level of literacy and the lack of understanding of safety risks and related impacts on health and the environment.

## Process

The pack was launched in August 2004 and subsequently rolled out to most of our existing contractors as well as to all new contractors.

The pack is not simply handed over to the contractor. At the contract signing stage, a formal briefing session is undertaken by the HSEC and contracts departments. At the completion of this orientation, the pack is handed over and the contractor's senior management signs an agreement of the conditions and a commitment to roll out the information within their own organisations.

The process is open and transparent, encouraging candid communication between both parties. The intent is to share the Company's knowledge and safety lessons from our worldwide operations to ensure a safer place to work and live.

The process is dynamic, and communication and feedback is maintained between the parties, in addition to the standard HSEC audits and inspections. Feedback is requested one month after the roll out of the pack. The contractors are actively encouraged to discuss their requirements and any deficiencies in the system. For example, recent feedback identified the need to provide additional information on electrical related hazards, focusing on isolations and work practices and procedures. This matter is being addressed.



HSEC induction being conducted for ECC, a contractor company



## Outcomes

Key outcomes from the HSEC starter pack to date include:

- reinforcement of our commitment to Zero Harm
- development of better working relationships with contractors
- open communication and information sharing leading to contractors discussing their HSEC weaknesses rather than hiding them
- strengthening of contractor HSEC knowledge
- embedding of the BHP Billiton HSEC culture within the Pakistani workforce
- improved resource planning and provision of contractor workforces
- improved understanding by contractors of the Company's HSEC requirements
- increased reporting of unsafe acts by contractors via our safety observations card system and subsequent actions to reduce hazards within the workplace
- increased reporting by lower-educated and junior contractor employees who are not generally empowered to speak out against senior management or to stop the job
- the continued good progress with HSEC implementation and performance, including 3-month and 12-month rolling Classified Injury Frequency Rate (CIFR) of zero for employees and contractors.

ECC Pty Ltd is maintenance contractor at our Islamabad office and staff house. Mr Muhammad Altaf Awan, the maintenance engineer, says, 'We have more than 20 years of experience in maintaining the offices and residences of both national and international companies; however, no one has ever before put in such extensive efforts in promoting contractor awareness towards safety and the environment. We feel proud of being a contractor to such a safety-conscious company and have passed all the learning to our other sites'.

The Manager of KMC Oil Tools Limited, Mr Zahid Butt, has stated, 'We feel no shame in admitting that we have learnt from the information included in the pack and have updated some of our own working methodologies and guidelines. The normal culture from the owners, both internationally and nationally, is to demand the highest HSE performance during the execution of the job; however, it is the first time that the required standards and expected level of HSE compliance has been laid down by an owner [BHP Billiton], with the contractor being asked to follow. The pack not only shows BHP Billiton's candid approach towards knowledge sharing but also endorses its slogan of Zero Harm before production and profit. We do not hesitate in acknowledging that BHP Billiton practices what it says'.

## Safety Case Studies

### Best practice processes support crisis and emergency management across the Company

Safety



Emergency Communications Centre



Under our HSEC Management Standard 14, all sites are required to have procedures and resources in place to effectively respond to crisis and emergency situations. They are assisted to meet this requirement through our global Crisis and Emergency Management Program (CEMP). A core component of this program is the operation of the London-based Emergency Communications Centre (ECC). Through the ECC and the global Asset Protection Team, the CEMP ensures that all CSGs maintain the appropriate capabilities to enable an effective and timely response to incidents at all levels and severity. The CEMP helps to maintain a safe and secure environment for our staff, assets and operations throughout the company.

## Crisis and Emergency Management Program (CEMP)

Through its standardised procedures and practices developed from best practice concepts and processes, the CEMP provides a global framework for the crisis and emergency response capability for the Company. The CEMP ensures that wherever an employee is located throughout BHP Billiton, a crisis management system exists, which, while flexible enough to adapt to the unique requirements of our respective assets and operations, shares a commonality of terminology and processes that transcends the challenges of working within a global environment. The CEMP has responded to a wide variety of incidents, some of which include the September 11 terror attacks in 2001, the Istanbul Swissôtel hostage situation, an oil spill at Douglas Platform (Liverpool Bay), a grenade attack in Islamabad and the 2004 Asian Tsunami Disaster.

The ECC is the 'key to the door' for emergency response throughout the Company. Operating on a 24/7 basis, it serves as the central point of notification for incidents, as well as performing a key communications role throughout any emergency or incident as it occurs. It is supported throughout the Company through regional asset protection managers located in London, Houston and Melbourne.

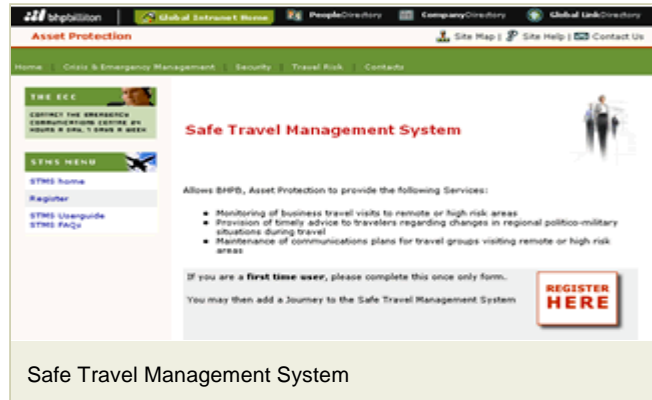
The CEMP is based around a tiered system where the level of response is determined by the degree of severity of the incident and potential impact on life, property and business operations. Upon being advised of an incident and the mobilisation of relevant incident management teams, the ECC notifies the appropriate emergency management team and, subject to the real and potential degree of severity of the incident (based on the BHP Billiton severity rating scale as utilised by the Enterprise-Wide Risk Management System), activates higher-level CEM teams.

### ***Mobilisation of Response Teams***

The ECC monitors political, security and environmental situations worldwide, with special focus on countries of interest to the Company. If an incident is detected that might place an asset or traveller at risk, the ECC is able to contact staff, ensure their safety and pass on any relevant health or security alerts. If an incident warrants mobilisation of respective teams, the Centre alerts duty team members via an automated call-out system. Member responses can be logged, and within ten minutes the relevant team leader can be advised of the team's progress and estimated time of arrival.

## Safe Travel Management

An intranet-based Safe Travel Management System (STMS), administered by the ECC, has been developed for travel to remote areas and 'high-risk' countries. Assistance is provided to produce an emergency response plan, which is registered on the STMS and available to travellers and the ECC should assistance be required. Given the changing dynamic of the global environment, staff travelling overseas (whether the location is high-risk or not) are encouraged to register with the STMS to provide greater accuracy in accounting for staff in the event of an incident (for example, the Asian tsunami and the London bombings).



## Safety

Travellers to remote areas and other high-risk destinations make daily safety-check calls to the ECC to enable the Company to verify their safety and pass on messages. If a safety-check call is not received on time, the Centre seeks to contact the traveller, other members of the party and in-country hosts.

## Crisis Management Exercise — Worsley Alumina Refinery

Under HSEC Management Standard 14, the crisis and emergency management procedures and resources in place at our sites are routinely tested, including the carrying out of simulated incidents and disasters. For example, a full-scale exercise was conducted at our Worsley Alumina Refinery, Western Australia, in October 2004. The scenario for the Worsley exercise was a simulated crane-lifting incident involving a number of fatalities and injuries and an evacuation of the affected areas. The ECC initiated a call-out of the Worsley incident management team, which responded with the site's field response team.



The field response team preparing to enter a 'hazardous' area for search and rescue

Key objectives of the exercise were to:

- ensure the continued preparedness of the Worsley incident management and support teams in response to an emergency through the testing of its procedures, protocols and communications with internal and external audiences
- ensure that participants were able to develop proactive strategic responses across all fields of exposure
- test the effectiveness of the customised incident management team manual and role descriptions.

## Exercise Review

The following elements were key to managing the response:

- ensuring that communications hardware and links are appropriate to needs and cover the identified gaps
- ensuring that protocols regarding next of kin adequately provide the desired level of support and record keeping
- ensuring a strategy is in place for communicating the Worsley position to all internal and external stakeholders simultaneously and consistently

- developing consistent procedures across the organisation to train and fully brief all support teams and backup personnel, and to ensure the dissemination of consistent information
- ensuring that support teams and field operations provide accurate and up-to-date information to the incident management team control room
- ensuring that the media strategy protects Worsley's public image regarding employees, next of kin, assets, and the like
- ensuring all participants are kept up to date with the latest incident status and communications strategy.



The field response team carrying a 'patient' to safety for further treatment

## Learnings

The exercise report concluded that Worsley is at the leading edge of crisis and emergency management. The report stated that:

- Incident management team members demonstrated a clear understanding of the BHP Billiton Crisis and Emergency Management process, plans, procedures and job functions as they related to an escalating incident.
- The direction, control and mobilisation of resources were generally of a high standard.
- The strategic responses were effectively implemented, with information being exchanged in a calm manner.
- Consolidating incident management team roles and customisation of the manual and role descriptions significantly assisted the team's response.
- Once a telephone response team was established and provided with the relevant information, responses to stakeholder's calls were of a high standard.
- A number of critical gaps in resources and responses were identified and were dealt with by the team members concerned.
- The field response team coped well with the difficult scenario and liaised effectively with the incident management team.
- The incident management team control room was set up quickly and effectively.



The 'patient' with his 'burn wounds' visible

## Looking Forward

Through disseminating learning outcomes from activities such as those conducted at Worsley and real-time incidents, and the continued enhancement of the functionality and capabilities of the global ECC, the CEMP will continue to provide the highest levels of emergency response and support to the Company's staff and assets.

## Safety Case Studies

### 'Slamming' for safety at New Mexico Coal

Safety



New Mexico Coal operation

Our New Mexico Coal operation in the USA initiated a behavioural-based safety leadership program in 2002. Led by the full management team, the program was developed with the aim of driving improvement in safety performance, which had been static for several years. In order to achieve Zero Harm, it was determined that the safety culture at New Mexico Coal needed a change. Training of the entire workforce was planned and completed.

## Background

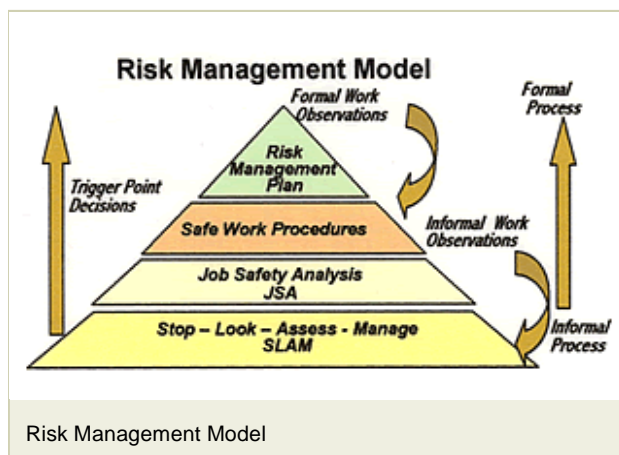
As a way to change the safety culture at New Mexico Coal, a cross-section of our employees and an external consultant selected five distinct behaviours that are critical to making a step improvement in the safety performance. These behaviours are:

- walk the talk
- work as a team
- plan the work
- accept accountabilities
- active involvement.

These behaviours are required at all levels in the organisation and are key components of the safety leadership training program, which was initiated in 2002 and continues on a quarterly basis.

The foundation of our safety leadership program is that all work is planned using risk assessment. This principle includes the concept of caring for each other enough to want to reduce potential harm to zero. The underpinning element of the risk assessment process (as illustrated below) is the SLAM tool, which stands for Stop, Look, Assess and Manage. It is an informal planning process that incorporates risk assessment at the lowest level.

On the job (and off), our employees are faced with various types of risks associated with their assigned tasks. The decisions they make on how to perform the tasks determine the level of risks to which they will be exposed. Prior to commencing any work, or during the work activity, all employees are required to pause for five minutes and SLAM the job or task at hand.



## The SLAM Process

**STOP** — This is the first step in the SLAM process. All tasks must start with an assessment of risks. The employee must STOP and consider the work to be done and determine how they, or others, might be injured or how equipment could be damaged. The surroundings, environment, equipment, tools, skills, assistance, procedures and regulations must also be taken into consideration.

**LOOK** — After stopping, the employee must LOOK for energies or specific hazards created through the interaction of the human, the machine and the environment. This review includes ergonomic and health hazards in the workplace that have the potential to cause accidents and injuries.

**ASSESS** — The employee must then ASSESS the risks and rate them according to the risk matrix. Based on the hazards identified in the LOOK phase, the employee assesses the consequences and the likelihood of their occurrence and determines the level of risk to which he or she will be exposed in performing the task.

**MANAGE** — The employee must then MANAGE all risks to as low a level as reasonably possible (ALARP) with current and/or additional controls. Consequences can be reduced by 'removing, reducing or guarding'. The likelihood of occurrence can be reduced through job planning with risk assessment, effective tools and processes and continual situational assessments. Controls to be applied to each and every risk are elimination of hazards, substitution or redesign, training, plans and personal protective equipment.

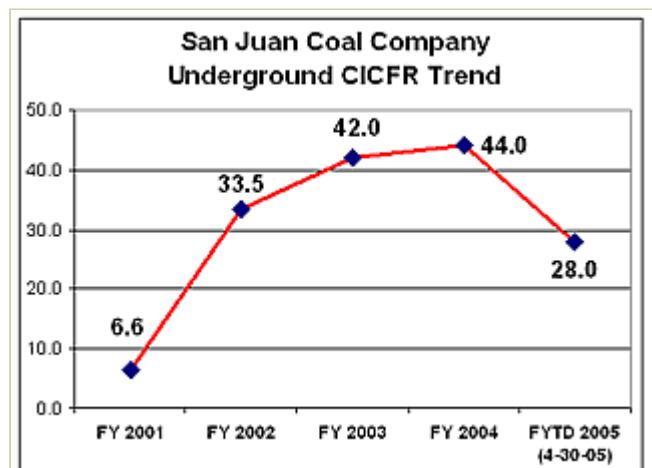
## Outcomes

The use of the SLAM process has allowed our employees to take greater ownership of safe production. More importantly, it has started to build a culture of solid risk assessment and work planning into all work activities, with a view to reducing accidents and injuries.

The San Juan Underground Mine, for example, has started to realise the benefits of SLAMMING the job. The Classified Injury Case Frequency Rate (CICFR) rate for the underground operation to date has dropped 36 per cent, compared to financial year 2004. With the full participation of all our employees in SLAMMING every job and task, and living the five distinct behaviours, New Mexico Coal can improve the potential to achieve Zero Harm.

Ned R. Begay Jr. (Miner 1) is one employee who values the use of SLAM. He says, 'SLAM, it provides us with the skills we need to do our job right. If there is a safe way to do it, it helps us to look at those ways to do our job. I have family I care about and I like coming home to them. I don't know what they'd do if I got hurt or, God forbid, never came home. So it's important to reduce the likelihood of getting injured. I believe it's something we can control if we plan our jobs out and control and reduce the risks'.

In 2004, US Mine Safety and Health Administration (MSHA) inspectors were at the New Mexico operations for a total of 305 inspector days. During this time, MSHA observed firsthand how our employees were SLAMMING their tasks. As an indication of the integrity and value of the SLAM process, we were informed that in October 2004 the MSHA had introduced a similar risk management methodology to their employees and others in the mining industry. Their methodology, also called SLAM, was launched with the logo below.



San Juan Coal Company Underground CICFR Trend

While the intentions of both processes are the same, there is a slight difference in wording. The letters in the MSHA tool stand for Stop, Look, Analyze and Manage. The Administration has also incorporated an associated process — RISKS — to be used in conjunction with their SLAM. The acronym stands for Remember (to look for changes), Identify (all potential risks), Share (what you find and include others impacted by the job and the risks), Know (what others on the job site are doing) and Safety (is everyone's job).

John Arrington, Supervisor and Coal Mine Safety and Health Inspector with MSHA in Aztec, New Mexico, says 'I'm glad to see BHP Billiton take a proactive approach in protecting the health and safety of the miners. Our goal is the same in using SLAM and that is to reduce accidents and injuries. It's another important training aid that involves everyone to share the responsibility to work safely'.

We are proud that the MSHA has introduced the SLAM process to its employees and to the rest of the US mining industry. The validation of SLAM through adoption by the Administration has reinforced the integrity and value of the process to our employees and its importance to how we work at New Mexico Coal.



## Safety Case Studies

### Cerrejón initiatives are helping to promote a safe driving culture in La Guajira

Safety



Buses at one of the passenger pick-up stations which are designed for safe passenger loading. Housekeeping is an important aspect of the safety program

In the remote Colombian region of La Guajira in the northeast of the country, where the Cerrejón coal operation (BHP Billiton 33.3% ownership) is located, the community generally has little regard for safety when driving on national highways. This poor safety culture is sustained by low levels of driver education and the scarce presence of authorities. Cerrejón has developed a land transportation safety program to help the operation's transport contractors apply best practices.

## Land Transportation Safety Program

Cerrejón's land transportation division administers the transportation of 3350 employees and 320 contractors who travel across national highways, totalling 12 000 kilometres of driving per day. During this process, drivers and passengers of buses, trucks and other vehicles face many risks, most of which are beyond the drivers' control, such as the lack of safety awareness by other drivers.

Despite the scale and complexity of our transportation activities, over the 12-month period from 22 March 2004 to 21 March 2005, there were no accidents that caused disabling or work-restricting injuries.

This achievement was attained basically through the implementation of the following programs, which were put into practice with Cerrejón's stewardship.

**Sleep and fatigue management program** — This program seeks to prevent accidents resulting from fatigue or sleep deprivation. The main challenge is to overcome the lack of motivation and concentration of the drivers. During the planning of the program, the sleep and rest conditions of drivers were investigated through home visits by social workers. It was found that the key factor for improvement was to obtain support from the families to increase the quality of rest. Furthermore, to help ensure that drivers remain awake while on duty, shift schedules were reviewed and inspections are being carried out.

**Behavioural-based safety program for drivers** — The main objective of this program is to change, in a systematic and progressive manner, employee at-risk behavior into safe behavior and thus continuously improve safety performance. The key to the success of the program is to gain employee participation and involvement, and the way to do this is through strengthening the drivers' group identity and pride. Supervisors provide day-to-day guidance through group sessions, with ongoing support from psychologists (provided by the contractor), who contact drivers and supervisors individually and in small groups to mould their driving habits and safety awareness. The program then combines



Pit service route bus driver with safety gear implemented under the land transportation safety program



recognition, incentive and disciplinary measures, searching for group identity through teamwork in order to comply with Cerrejón's safety goals. This helps overcome issues associated with high employee rotation, low group motivation and the feeling of powerlessness arising from unsafe driving habits by third parties.

**Structured inspections and observation programs** — Inspections and observations of areas, roads and vehicles and their maintenance are conducted regularly, and the results are reviewed at monthly meetings. A critical aspect of these programs is to develop in the bus drivers a sense of ownership of these programs so that they feel responsible for taking care of the equipment and accountable for the entire driving process. Empowerment has been increased by the contractor supervisor working through the observation and inspection program with the drivers and showing them the importance of these activities.

**Programs for the control of structured inspections and observations** — Checks are undertaken to verify the quality and effectiveness of the inspection and observations programs. These programs, aimed at instilling best safety practices, are complemented by other activities in support of safety initiatives by the authorities, such as participation in road safety campaigns, particularly during periods when the accident rate is typically high.

At the same time as these programs are being implemented, we are helping our contractors to improve their transportation safety culture. Of the 320 land transportation contractor employees working at Cerrejón, 269 (84 per cent) are drivers. Each year, a total of 1.2 million trips are made by Cerrejón personnel, equating to 4.3 million kilometres. Over the last 30 months (950 days), there were more than 9 million work hours of exposure to potential accidents without a single lost-time or work-restricting injury.

These safety achievements were obtained through three key success factors: safety leadership through the coaching of transportation contractors in safety awareness programs, contractor coordination with local Guajira municipal authorities to provide defensive driving courses aimed at external drivers such as taxi drivers and other stakeholders, and the commitment of contractor management.

The results are outstanding, particularly considering that many of the associated risks are not under the direct control of our land transportation division. A major factor in the outcome has been that the land transportation safety program has been developed according to the specific local needs of the Cerrejón operation, with the following initiatives being implemented.

- changes in shifts for drivers, especially those traveling to the most distant villages
- additional drivers are being assigned for longer routes and scheduled to drive long and short routes alternatively
- help in providing training to drivers to increase safe behaviour and reduce at-risk behavior through the behavioural-based safety program
- support for drivers through the sleep and fatigue management program, with caravan contacts during operation hours, radio messages at dawn for motivation, bulletin board messages, home visits and family integration activities
- a monthly speed control program, with critical point cards and the participation of drivers in a safety week promotion
- road accident prevention campaigns, initiated by Cerrejón and organised by drivers
- active participation in campaigning with local authorities to improve safety on national highways, including traffic accident simulation exercises.

An additional initiative is our collaboration on safety with our major transportation contractor, one of Colombia's biggest transportation companies, which has 50 years of experience in public transport operations and provides services on national and international routes. The company has implemented many of our safety programs at its operations with excellent results.

This range of initiatives under our land transportation safety program reflects our ongoing efforts to identify and manage risks associated with driving, taking into consideration the criticality of the transportation services to our operation and the opportunity to implement improvements.

Stakeholders are expressing satisfaction with the results being achieved by the safety program. The secretary and principal member of the Cerrejón Parity Committee, Gewel Brito, has stated, 'I know the safety program and I think it is quite good. We, the users of this [transport] service have felt quite at ease on the trips we make from our residences to our workplace and vice versa. The program provides the means so that we can be mobilised in the best manner; for example, I have been traveling for 14 years without any incident. This shows the safety program is good. Currently I deem it is effective, and every day we notice

that transportation managers care about improvements in the provision of the service, with the upgrading of emergency plans in all buses. I think you must continue with publishing emergency plans until all users become knowledgeable about safety procedures'.

Our aim is to protect the safety of all employees and contractors, in line with our HSEC policy commitments and requirements. The safety program is adaptable to other sites and can be easily modified to suit local customs, culture and operational needs.

## Safety Case Studies

### Behavioural-based accident prevention process implemented at Cerrejón

Safety



Conducting behavioural observations is an integral element of Cerrejón's accident prevention process

In 1996, a behavioural-based accident prevention process was introduced at the Cerrejón coal operation (BHP Billiton 33.3% ownership) in north-east Colombia, South America. Implementation across all operational areas was completed in 1999. Since its introduction, the process has been undergoing continual improvement to improve safety performance.

## Behavioural-Based Accident Prevention Process

The main objective of the behavioural-based accident prevention process (known locally by its Spanish abbreviation as the PPABC) is to change, in a systematic and progressive manner, employee at-risk behaviour into safe behaviour and to continually improve safety performance. Employee participation is the fundamental driver of the process; our employees own and coordinate its implementation and day-to-day activities, with the support of supervisors and management.

The process begins with the identification of critical behaviours (those that have the greatest probability of causing incidents) through a survey conducted by line employees. Afterwards, these employees work out the best solution to prevent and control the critical behaviours identified. Then they initiate 'peer-to-peer' observations to collect data about the quantity and frequency of safe and at-risk behaviours and provide feedback to colleagues about their behaviour. Finally, employees conduct statistical analyses of the data collected to develop and implement continuous improvement plans and activities.

To facilitate implementation of the PPABC, which required site-wide participation, a training program was developed and put in place for the 3000 employees and supervisors working at Cerrejón at the time. Each person attended training sessions of at least 12 hours on the fundamentals of the process and its observation aspects. To achieve this, a 'train-the-trainer' program was conducted, with some employees in every operational unit gaining qualification as PPABC trainers. Additionally, in 2004, refresher training on PPABC fundamentals and observations was conducted for the employees, and there are plans to repeat this in 2006/07. Currently, on a daily basis, every operational unit conducts planned observations and, monthly, the leaders of each area meet to analyse the results and develop action plans for the improvement of safety performance.



Monthly feedback review meeting

## Results since Implementation

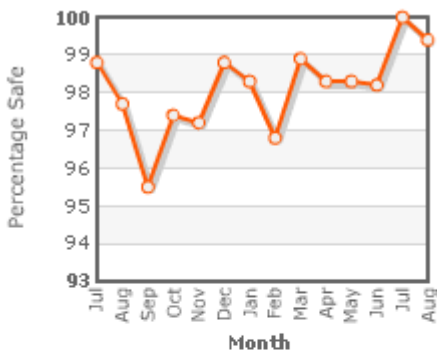
Implementing the process was managed with the support of the Safety Department and the leadership of line department managers and superintendents. All operational areas have shown an improvement in effectiveness in the prevention of incidents, breaking all the barriers that are characteristic of processes that require behaviour changes in people.

Achievements, improvements and initiatives since implementation of the PPABC include:

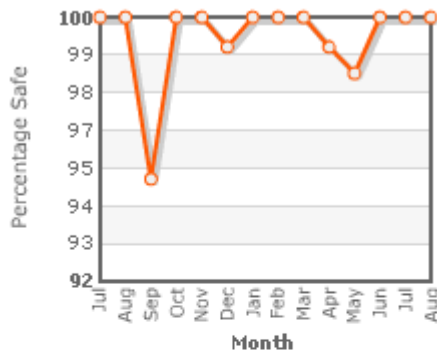
- the progressive and systematic reduction of accidents
- active employee participation in PPABC training, peer observations, data analyses and other related activities
- an improved safety culture among line employees
- monthly statistical analysis and follow-up of the level of safe behaviours in each operational area (see graphs below)
- improvement in physical conditions at worksites (see table below).

## Examples of Monthly Statistical Analysis of the Level of Safe Behaviours in Each Operational Area at Cerrejón

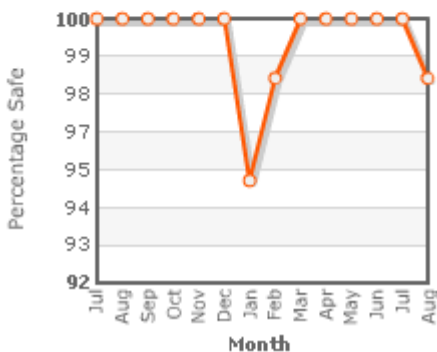
**Body Position**



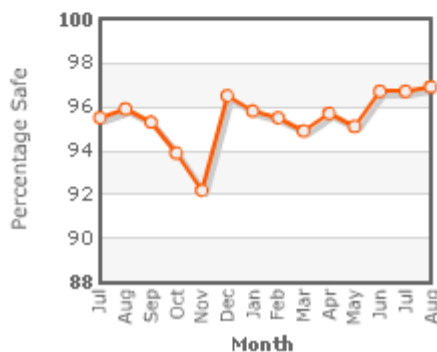
**Equipment Movement**

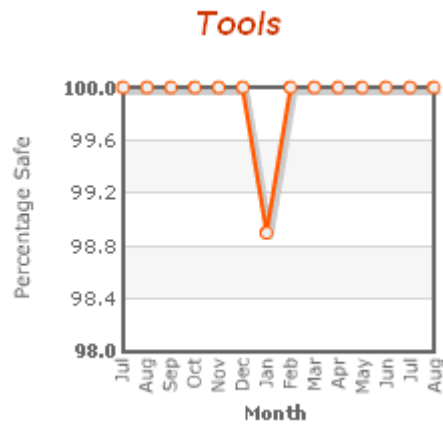
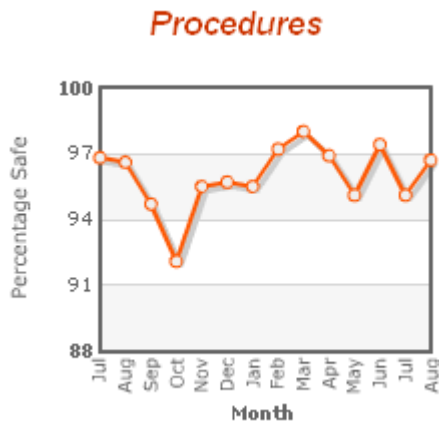


**Housekeeping**



**Personal Protective Equipment**





## Examples of Worksite Condition Improvement in Cerrejón's Maintenance Department

Risk Conduct	Condition Causing Behaviour	Solution	% Follow-up
Working around oil spillage areas	Inadequate oil collecting cart	Oil reuse proposal being analysed	A technician has designed a cart for oil collection
Use of truck air filters as work benches	There are not enough work benches available	Design of a proper model. Ensure the benches are kept in the hangars.	100%
Working on a bench with holes on the top	Change of bench tops	The contractor company will be requested to replace bench tops with steel ones.	100%
Working in a rush to avoid excessive exposure to the sunlight	Uncovered workplace	Analyse the situation and apply measures for proper work placement.	Workplace was relocated
Working without protective glasses in some activities	Need to be changing glasses permanently (far sight/near sight glasses)	Workers will be invited to a meeting where the use of progressive lenses will be introduced and encouraged	The company decided to provide progressive lens glasses as standard gear for workers with this problem
Use of inadequate tools	Insufficient/broken bench clamps	Provide work benches with their respective clamps/maintain the existing clamps	100%
Not wearing safety glasses	Glasses get foggy because of the heat in the working area	Ceiling structure was redesigned for better ventilation	100%
Working on 240 - tonne trucks without blocking the tyres	Wheel stops were too far away from the workplace	A cart was designed for the transportation of the wheel stops	100%

## Best Practice Methodology

The PPABC methodology implemented at Cerrejón is based on industry-accepted research and has proved to be an effective tool for improving safety and increasing employee participation in safety-related activities.

Deemed as 'best practice' in the field of safety, one of the main advantages of the PPABC is its flexibility, making it adaptable to any process or business. Its design was adapted to suit the specific needs at Cerrejón, keeping in mind the size of the operation and the variety of activities conducted, including mining, maintenance, rebuild shops, coal plants, railroad operation, port operation and maintenance, and community relationship programs.

The PPABC facilitates compliance with Cerrejón's HSEC Policy and our commitment to:

- identify, assess and manage risks
- strive to achieve industry best practices.

The PPABC is aligned with our Zero Harm target, adding further weight to accomplishing its objectives and the positive impact it can have on the safe behaviour of line employees and, in the long term, on the site's safety culture.

The process is highly participative, being developed and implemented by the employees. They coordinate all the main activities, such as training, observations, data analysis, meetings and safety talks. Across Cerrejón, 1500 behavioural job observations are conducted and analysed by employees every month. The results are shared with the employees of every operational unit and posted on the different bulletin boards.

Because the PPABC is implemented, shared and sustained by employees, it can help improve the safety culture and, with the ongoing support of management, can be easily sustained over time.

Rafael Pérez is a heavy equipment operator at Cerrejón. He says, 'The PPABC program does help us to have safe behaviour and to reduce accidents and incidents in the operation. It helps us through feedback made by our fellow workers making observations, identifying what might be wrong due to errors or lack of knowledge. It is effective, because since this process started the accidents' index has been reduced considerably, and it does help us to have accident-free production as a standard. The major suggestion for this process to keep on working is that all employees commit themselves to its performance, from administrative staff to operative personnel, as a fundamental basis of the process'.



Providing positive feedback

The PPABC is driving cultural change at Cerrejón by motivating employees to develop and maintain a safe working environment. Instead of measuring unsafe acts and conditions, as traditional approaches do, PPABC continuously measures and conducts analysis of safe behaviors, establishing new and challenging safe behaviour targets.

## Safety Case Studies

### Fatal Risk Control Protocols updated and Issue 2 released to improve understanding and effectiveness

Safety



Wayne Cordwell, Cannington's Process Shift Superintendent, conducts a safety briefing for a site visitor

The BHP Billiton Fatal Risk Control Protocols (FRCPs), initially introduced across the Company in April 2003, have been updated and re-released with improvements and refinements resulting from three workshops conducted last year. Concurrent with the re-release, a toolbox of communications materials has been made available to assist in communicating the updated FRCPs. Global facilitators for each of the key risk areas have been appointed to assist and support sites with the effective implementation of the Protocols. The effective implementation of the FRCPs forms an integral part of our safety strategy and the elimination of fatalities from our operations. There are indications that implementation is having a positive effect, with fatalities almost certainly being avoided at several incidents due to the requirements of the Protocols being in place.

### Issue 2 of the FRCPs

As reported in last year's HSEC Report, participants in workshops held during 2004 in South Africa, South America and Australia reviewed the initial version of the FRCPs with the aim of clarifying the wording of the document to improve understanding and ease of use and to ensure the areas of risk were being appropriately addressed.

As a result of decisions made at the workshops, improvements were made to the wording of the document and an additional FRCP on Lifting Operations was developed. There are now ten FRCPs covering Light Vehicles, Surface Mobile Equipment, Underground Mobile Equipment, Underground Ground Control, Hazardous Materials Management, Molten Materials Management, Equipment Safeguarding, Isolation, Working at Heights and Lifting Operations.

To introduce the changes to all sites, a toolbox of communications was prepared, with the following materials included:

- a revised hardcover booklet detailing the FRCPs, including the newly published Protocol on Lifting Operations. English and Spanish versions of the booklet have been produced
- a brochure outlining how the FRCPs work and providing details on their background, structure, application and requirements
- a PowerPoint presentation explaining the FRCPs and covering context, application, intent statements, facilitation, implementation and examples of success, with speaker notes provided to assist presenters with the key messages
- a dot-point toolbox talk covering the key messages for the re-release of the FRCPs
- a correlation table summarising the differences between Issue 1 and Issue 2 of the FRCPs
- an information article on the re-release published on the Company intranet and in the internal newsletter and made available for adapting to local intranet sites and newsletters

- reference to other FRCP communication tools available within the Company
- a flyer announcing the newly appointed FRCP facilitators, including their photographs and a brief description of their individual backgrounds, new FRCP responsibility and contact details.

Other materials such as posters produced by individual sites have also been made available on the intranet for adaptation by other sites.

## Global FRCP Facilitators

The newly appointed team of full-time FRCP facilitators will support sites in implementing the requirements of the Protocols. Drawn from operations across the Company, each facilitator is an expert in one of the ten key risk areas covered by the Protocols and is available to assist sites globally. There was unanimous support at the workshops for the appointment of the team, following confirmation of the value that sites had derived from the earlier appointment of a facilitator for the implementation of the FRCP on Light Vehicles.

The facilitators will act as the nominated key contacts for the Protocols; establish FRCP networks and communities to enable the sharing of leading practice; provide support, advice and direction to sites regarding implementation of Protocol requirements; and develop supporting material and guidelines to assist with implementation and understanding of the Protocols.

Tokkie Badenhorst is the newly appointed global FRCP facilitator for Lifting Operations. He says, 'There is a wealth of information, experience and leading practices at all levels and sites in our global organisation and it is important to unlock this information and share it. All the FRCP facilitators are well experienced so they are able to assist one another on most Protocols to ensure that a solid support and assistance network is formed to allow for efficient and effective facilitation. There is a lot of pressure to achieve zero fatalities. We have to ensure that the part we play in this is aligned with this goal. I look forward to opening doors, breaking down barriers and building relationships in the quest for Zero Harm '.

## The Protocols in Action — Saving Lives

A number of incidents since the introduction of the FRCPs have demonstrated the potential of the Protocols to help avoid fatalities, such as in the following three examples. Note these incidents were all followed by full investigations and corrective actions, with key learnings being documented and shared across the Company. These synopses serve to indicate the contribution of the FRCPs to helping to save lives.

### ***Optimum Colliery, South Africa***

While clearing mine spoil into a pit, a bulldozer turned parallel with the edge, slid 20 metres down the embankment, collided with a rock and overturned. The operator suffered only minor injuries and was able to walk away from the incident. Following medical checks in hospital, he resumed his normal duties on his next shift. The protection afforded by the bulldozer's rollover safety frame and correct use of a 3-point safety belt helped save the operator's life.



Damaged bulldozer at Optimum Colliery

### ***BHP Billiton Maatschappij, Suriname***

With his vision obscured by a cloud of dust caused by a passing truck, the driver of a pick-up collided with a barricade of tyres set up between a service road and the haul road of the mine. The vehicle overturned and landed on its roof. The incident caused significant damage to the pick-up. The driver was taken to hospital for observation and was found to have suffered no injuries. Correctly wearing his safety belt saved the driver from injury or death.





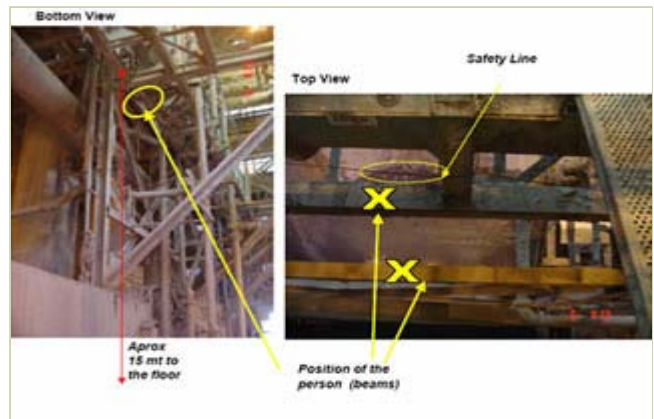
Overtuned pick-up at BHP Billiton Maatschappij, Suriname

### **Escondida Copper Mine, Chile**

While disassembling a work platform at a height of 15 metres, a contractor lost his balance and fell. He was saved from crashing to the ground by his safety harness, which kept him suspended in the air. He was immediately rescued by his workmates and taken to the medical clinic for examination. Because of the safety harness he suffered no injuries.

The examples above clearly demonstrate the value of observing the applicable FRCPs for Surface Mobile Equipment, Light Vehicles and Working at Heights.

All ten of our FRCPs establish minimum performance expectations for managing fatal risks at a level that is leading practice. Each of our sites is required to achieve full implementation of the Protocols by the end of June 2005, with additional requirements introduced in Issue 2 to be implemented by 30 June 2006.



Details of work platform incident at Escondida

## Safety Case Studies

### Bleederless longwall ventilation at San Juan Underground Mine manages risk of fire and explosion

Safety



Mechanised drainage unit removes excess methane from the caved area (gob) behind the longwall

For more than 20 years, the San Juan Coal Company (SJCC) in our New Mexico Coal Operations in the USA has fuelled the San Juan Generating Station with up to 6.3 million tonnes of coal annually. As the original open-cut mining became too costly, it was decided to replace it with an underground longwall mining system, which commenced operation in 2002. Early in the feasibility study for the new mine, it was recognised that mine ventilation was going to be one of the most challenging parts of the mine design. Historical experience from surface mining at SJCC indicated that the coal had a tendency towards spontaneous combustion. To manage mine ventilation risks, an innovative bleederless system was developed and implemented.

### The Challenge

Coal is a combustible material. If it absorbs oxygen from the air, heat can be generated, creating the potential for spontaneous combustion. Indications of spontaneous combustion of reserves to be mined underground at SJCC were confirmed by drill-hole samples. In addition, the coal seam and surrounding strata is a reservoir for methane gas. The existence of these conditions is problematic because the oxygen in normal air, the methane and the possible spontaneous combustion of the coal (an ignition source) are all the ingredients for fire and explosion. To manage the risk in the new underground mine to an acceptable level, various ventilation systems were evaluated, including bleeder and bleederless systems. An enhanced bleederless system proved to be safest.

The most common ventilation systems in the USA are bleeder systems. In concept, they are special air courses that force air into and around the perimeters of gobs (mined-out spaces) to dilute gases to allowable concentrations, before being exhausted from the mine. However, the air forced into the gob also contains up to 21 per cent oxygen and could stimulate a spontaneous combustion event, with obvious risks. As such, bleeder systems were rejected.

Bleederless longwall ventilation systems are more attractive from a risk management perspective. These systems focus on isolating the gob from atmospheric oxygen and allowing it to become oxygen deficient and therefore inert, even when high levels of methane exist. Only the gases produced by the gob as a result of barometric pressure variation must be mitigated at the longwall. However, even a traditional bleederless system may not prevent potentially explosive compositions of methane and oxygen immediately behind the longwall face, particularly behind newly constructed seals. Something more is required to manage risk to its lowest level. The answer lies in understanding the fundamentals of the danger.

## The Plan

It is well understood that various combinations of methane and oxygen can make an explosive mixture that can be ignited by very small sources of energy. Atmospheric mixtures with too much or too little of either gas are not explosive. The challenge is to enable a transition from normal air to nearly pure methane behind the longwall without being exposed to the hazard of explosion. Because the methane evolution is largely beyond control, the focus is on controlling oxygen. By forcing the oxygen concentration from 21 per cent to below 11 per cent, before methane levels rise above 5 per cent, the explosion hazard can be eliminated, as indicated in the following graph.

This oxygen suppression can be achieved by injecting pure nitrogen gas behind the longwall at the headgate and allowing the pressure difference across the face to disperse the nitrogen to all vulnerable areas. Nitrogen is inert and composes 78 per cent of the air we breathe every day.

Nitrogen injection also helps mitigate another hazard, the introduction of oxygen to the gob during periods of rising barometric pressure, when the bubble of gob gas is shrinking. At this time, additional nitrogen is injected to provide compensation volume for the barometric shrinkage. As a final step, gob vent boreholes are a means of expelling gas volumes created by continuing methane evolution and periods of falling barometric pressure (increasing gas volume).

The nitrogen gas used by SJCC is sourced from a nearby plant, which was specifically constructed near the mine to supply nitrogen for emergency purposes and to serve the owner's other customers in the surrounding area, such as pipeline operators, oil and gas producers and microchip manufacturers.

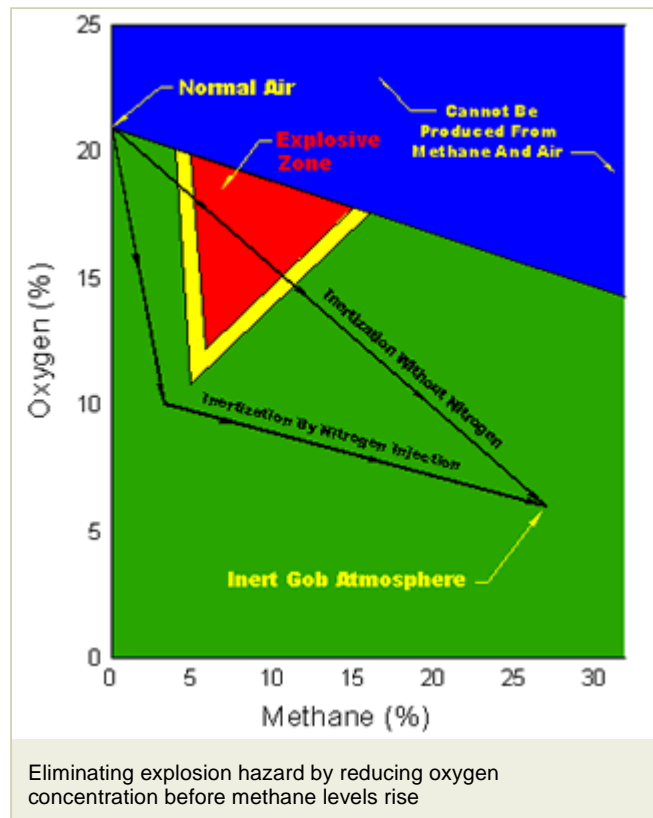
## The Implementation

SJCC started longwall operations in October 2002. Since then, three longwall panels have been mined, producing over 13.6 million tonnes of coal. The bleederless longwall ventilation plan, with nitrogen injection and gob vent boreholes, has been used without any serious events in the gob or on the face.

The typical SJCC longwall plan calls for a seal to be constructed in crosscuts adjacent to each gob passed by a longwall mine. Each seal is equipped with piping to inject and control nitrogen flow. By progressively sealing a gob as it is created and then injecting nitrogen to depress the oxygen concentration, the hazard of explosion and spontaneous combustion in the gob is greatly diminished.

The success of the sealing and injection is confirmed through continuous sampling of key locations, using the tube bundle system and electrochemical sensors, as well as by periodic examinations by mine personnel. During these examinations, handheld meters with pumps are used to confirm air quality readings behind seals, and bag samples are drawn for further confirmation through gas chromatograph analysis.

The tube bundle system, mentioned above, consists of sample tubes that can be applied throughout the mine to sample atmospheres wherever they are of concern. The tube bundle constantly monitors the gas compositions to alert operators to any potential change of environmental conditions. Although common in Australian mines, SJCC's tube bundle, consisting of 30 sample tubes, is the first modern system of its type in the USA. All of the monitoring systems are coordinated in a central control room that is staffed at all times during mining operations.



As described above, during periods of rising barometric pressure, additional nitrogen injection prevents oxygen being introduced into the gob and minimises the risk of spontaneous combustion. During periods of falling barometric pressure, a fleet of six mechanised drainage units is available to evacuate gas from as many as 14 boreholes from the surface into the gob.

Each mechanised drainage unit resembling a space exploration rover, features state-of-the-art technology, including solar panels for power supply, remote-control operation, and radio data telemetry. The gas (a mixture of methane, nitrogen and oxygen) can be captured in a pipeline for commercial use or vented into the atmosphere as a last option.

As a proactive step, SJCC is also using in-seam drilling to capture methane in advance of mining. At present, nine in-seam holes have been completed, with individual lengths up to approximately 1400 metres (4600 feet). In-seam drilling has several benefits, including reduced methane exposure during development and longwall mining, improved pre-drainage of water, limitation of greenhouse gas emissions through the ventilation system, and production of a more commercially attractive gas composition. A direct consequence is improved productivity, cost and safety.

## Environment - Our Approach

Our approach to environmental management is incorporated in our [Charter](#), which states that we have an overriding commitment to health, safety, environmental responsibility and sustainable development. This is expressed further in our [Sustainable Development Policy](#), which states that we will:

- strive to achieve leading industry practice
- meet or, where less stringent than our standards, exceed applicable legal and other requirements
- set and achieve targets that include promoting the efficient use of resources and the prevention of pollution
- enhance biodiversity protection and consider ecological values and land-use aspects in our decisions.

In addition, we adhere to the [HSEC Management Standards](#) that form the basis for our management systems at all levels. They cover the entire lifecycle of operations, including decommissioning, closure and rehabilitation.

We own and operate a diverse range of businesses in different countries and ecosystems around the world. These businesses, by their nature, have the potential to affect the environment. This can occur in a variety of ways, including:

- emissions of greenhouse gases and other gases and particulates, such as carbon dioxide and oxides of sulphur and nitrogen, associated with combustion and smelting processes; fluorides from aluminium smelting; and particulates from ore handling
- water usage and reductions in water quality as a result of salinity or acid rock drainage due to the particular ore body characteristics at some of our sites or from the handling, use and production of hazardous materials
- impacts on land associated with land disturbance, land-use changes and habitat removal
- alterations to biodiversity within terrestrial, fresh water and marine environments, either directly or indirectly as a result of our operations
- indirect impacts encompassing any of the above as a result of the products and services we purchase, lease or provide.

Refer to the following for details on our approach to environmental management:

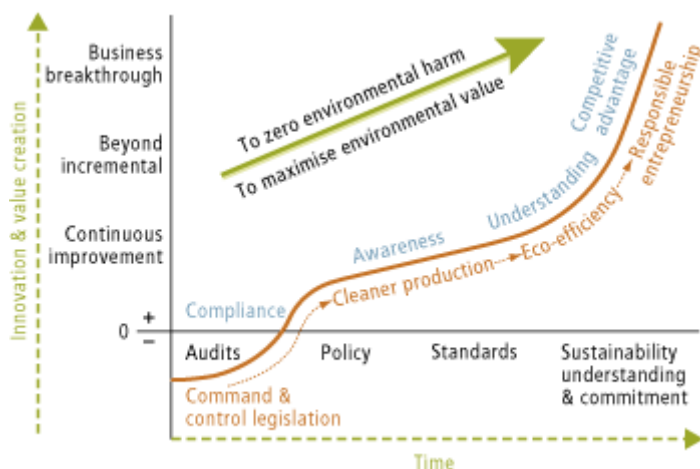
- [Environmental Management](#)
- [Closure Planning](#)
- [Climate Change](#)
- [Biodiversity](#)
- [Resource Conservation](#)
- [Tailings and Waste Rock](#)
- [Emissions Management](#)

See [Our Performance: Environment](#) for a summary of our performance over the reporting period.

## Environmental Management

In line with our [Policy](#) objectives, we strive for continual improvement in our practices and performance, with the key driver for environmental management being our aspirational goal of Zero Harm to the environment. Supporting this aspiration, the [HSEC Management Standards](#) have been established to provide the direction and the basis for environmental management system implementation across the company. The strategy we have developed to meet our environmental goals and objectives is illustrated in the diagram below.

### Our Environmental Management Strategy



Embedding environmental considerations in our businesses through the appropriate valuation of environmental costs and benefits is fundamental to this environmental strategy. We seek to raise the organisation's awareness and understanding of the economic and competitive opportunities presented by good environmental performance. Improvements in eco-efficiency and product stewardship are equally important in the way forward.

The environment strategy map illustrates that, as we move up the curve, our environmental footprint is reduced, allowing for competitive advantage through the establishment of responsible entrepreneurship. This may involve engaging our customers and suppliers in ways to reduce their environmental footprint, thereby strengthening our business partnerships and consequently improving business performance across our value chain.

A key component in understanding the potential impacts is to systematically assess significant environmental risks and issues. Potential environmental risks and issues are taken into full consideration in our [Investment](#) processes for approving new ventures and expansion of current operations. An [Enterprise-Wide Risk Management Strategy](#) ensures that risks are systematically identified and managed, backed by HSEC Risk Management Guidelines.

Environmental management during the reporting year remained focused on three areas:

- management processes and programs
- external environmental issues, including emerging new regulation, land access, water policy and climate change
- operation-level environmental issues, such as water management, tailings, hydrocarbon management and closure issues, which could have a significant effect on the Company because of their potential to impact the environment and to adversely affect our reputation.

## Environmental Management Systems

Our overall environmental objectives are defined within our Sustainable Development Policy. These include ensuring that we:

- 'set and achieve targets that promote efficient use of resources and include reducing and preventing pollution', and
- 'enhance biodiversity protection by assessing and considering ecological values and land-use aspects in investment, operational and closure activities'.

The HSEC Management Standards form the basis for our approach to environmental management systems and meeting the aspirations of our Policy. The Standards have been designed to be aligned to the requirements of ISO 14001 and consequently provide a risk-based approach to environmental management.

In addition to the HSEC Management Standards, we require our operational sites to achieve certification of ISO 14001 Environmental Management Systems. While we generally do not require certification at exploration and development projects, sites being divested, closed sites or our Corporate offices, a number of these sites have chosen to progress with certification.

## Emergency Preparedness and Response

In line with HSEC Management Standard 14, Crisis and Emergency Management, all our businesses and sites have emergency response procedures in place to deal with a wide range of possible crisis and emergency scenarios, such as oil and chemical spills, failure of water ponds and dams, fires, and explosion, chemical and other potential incidents. The procedures describe the actions to be taken and the allocation of responsibilities. They typically contain communication protocols, control procedures, and media and stakeholder management procedures, including escalation communication requirements.

Sites and businesses periodically conduct emergency scenario simulations and drills. Emergency preparedness and response activities are coordinated and maintained at a Company-wide level through our Crisis Management Group. See our case study [Best practice processes support crisis and emergency management across the Company](#).

## Environment Network

We have established a network of the environmental professionals and other interested employees within the Company. The intent of the network is to act as a conduit for the sharing and learning of information and leading practices. To further facilitate professional exchange of information, we are establishing online Communities of Practice to improve our Company-wide approach to environmental management in the areas of tailings, water, greenhouse gas, closure and biodiversity management.

## Closure Planning

Closing an operation poses risks and opportunities that need to be identified, assessed and managed. To this end we have a Company-wide Closure Standard that applies to all BHP Billiton investment opportunities and controlled operations. The [Closure Standard](#) (PDF 598 Kb) seeks to ensure our operations leave a lasting positive legacy that outlives the operation and ensures a positive future for our host communities.

The Closure Standard mandates compliance with relevant legislative and regulatory requirements and goes the additional step to tie closure planning to a set of objectives which support our [Sustainable Development Policy](#) in aspiring to:

- protect and enhance the reputation of BHP Billiton as a responsible corporate citizen
- ensure that stakeholders' needs, concerns and aspirations are taken into account when considering closure
- limit or mitigate adverse environmental effects, including taking into account biodiversity
- help protect indigenous values
- avoid or minimise costs and long-term liabilities to BHP Billiton and our stakeholders including the government and host communities.

Many of our operations have existing closure plans that have been developed to satisfy regulatory or internal needs. Under the Closure Standard, however, each asset will review existing plans and make adjustments as required to meet the new requirements. This review will include a rigorous assessment of site specific closure risks and opportunities, identification of risk management actions and development of reasonable and accurate closure cost estimates.

Training and information sharing is a key component to improving closure planning across the Company. Networks, both internal and external to the Company, have been set up to share information and discuss common and leading closure practices.

A fundamental aspect of the planning process is the development of a post-mining plan. Understanding stakeholder needs, aspirations and concerns, particularly those of regulators and local communities, is a critical dimension to this process. Whether or not a property will require ongoing care, maintenance and monitoring will also feature in the long-term closure plan and the ultimate end land-use. It is anticipated that, as we better understand closure issues, closure planning will be discussed more regularly with our stakeholders.

Closure planning occurs throughout the lifecycle of the operation, starting with exploration and development of a property and continuing as long as necessary. There is value in integrating closure planning from the inception of mine planning and operations. Additionally, there is value in the timely and efficient execution of closure according to well considered plans and schedules. These benefits will become more apparent as closure risks are better understood with the process outlined in the Closure Standard.



## Climate Change

We are working on activities related to climate change risks and opportunities in a number of ways. These include reducing the greenhouse gas (GHG) intensity of our operations in line with a target, requiring sites to develop GHG management and energy conservation plans, pricing carbon in investment decision-making, funding research and development activities and collaborating with customers.

Greenhouse gas management programs and energy conservation plans have been developed at all of our sites with annual emissions greater than 100 000 tonnes of CO<sub>2</sub> equivalent.

In 2002, we set a target to achieve an improvement in the greenhouse gas intensity of our operations' emissions (including emissions from purchased electricity) per unit of production of five per cent over the period to 30 June 2007. To date, we are ahead of schedule on this target.

We have developed relationships with counterparts in the carbon credit market that have allowed the inclusion of carbon credits in our sales of greenhouse gas intensive products into Europe. Interest may be forthcoming in this regard in Japan.

We are working with our customers to improve energy efficiency in the downstream consumption of our Energy Coal products as well as promoting activities to help deliver low or zero-emission coal technologies. This is through programs like [FutureGen](#) in the United States and [COAL21](#) in Australia.

Carbon pricing sensitivity analysis is considered in our decisions on new projects and investments that would emit more than 100 000 tonnes of CO<sub>2</sub> equivalent per annum. This analysis includes a range of prices for developed and developing countries over an extended period of time. In addition, our Energy Coal CSG has included the potential implications of greenhouse gas emissions regulation in its base case supply and demand forecasts and in its business strategy. This is due to the importance of such regulation in relation to the future demand for coal.

For a better understanding of our challenges in this area, refer to our sustainability challenge on [Greenhouse Gas Emissions](#).

## Biodiversity

Biodiversity loss due to competing land use is an issue of global concern, and we are committed to actively enhancing our contribution to biodiversity protection. A number of our sites operate in or near areas recognised as having high biodiversity values, underscoring the importance of biodiversity conservation.

We seek to recognise and manage the values of biodiversity that may be adversely affected by our activities. While indicators specific to the resource sector are still in the early stages of development, we continue to refine our approach to biodiversity management, including the development of appropriate biodiversity management plans.

Without systematic assessment and management, from exploration through to post-closure land use, there are potential risks that biodiversity values and impacts will not be recognised. The majority of our sites have embedded biodiversity considerations into their overall environmental management system, and many are actively engaged in biodiversity-related programs. For example, our Worsley Alumina operation in Western Australia is developing an enhanced wildlife corridor through the Saddleback Timber Reserve and the George Forest Block. In addition some sites, such as Escondida (Chile), form partnerships with academia and research institutes to improve biodiversity outcomes.

For details on our performance during the reporting period, see [Our Performance: Biodiversity](#).

## Resource Conservation

Beyond ore and petroleum resource use, our major use of resources is in the land, energy and water sectors.

We clear land to access resources and to allow the construction of processing and refining operations and associated infrastructure. Our operations aim to minimise disturbance and to rehabilitate land as soon as it is not required for access. To this end, we require our sites to have land management plans in place to identify and protect beneficial land uses.

A number of energy sources are used to operate mobile and fixed plant at mining and petroleum operations; to operate milling, smelting and refining operations; to generate electricity; and to transport product. We therefore also require energy management plans at our operations.

We used water in mining, smelting, refining and petroleum processes. Access to clean water is an issue of growing international importance and a key challenge for sustainable development. Our activities are often located in remote arid environments where the demand for fresh water is high. In recognition of this, we are developing a water strategy and have set a target for all sites with a fresh water consumption greater than 500 megalitres per year to have water management plans.

We similarly have a focus on waste reduction, requiring waste minimisation programs to be in place.

Targets for the reduction of freshwater usage and waste generation have also been set; and performance against these, and our broader performance with regards to resource use, can be read in [Our Performance: Resource Use](#).

## Tailings and Waste Rock

Large quantities of tailings and waste rock are generated in mining and processing operations. We place strict controls on tailings management, heap leach processing and waste rock stockpile construction. Where possible, opportunities for backfilling and reuse are utilised.

We will not commit to a new mining project that disposes of waste rock or tailings into a river. This position does not apply to the disposal of waste rock and tailings materials in conventional waste rock dumps or tailings dams, which may be constructed within the catchment of a river system where such structures are designed to retain and store the waste materials. It also does not apply to the discharge of water from tailings dams or waste rock dumps that is of a quality acceptable for downstream beneficial uses.

In addition, we have decided not to pursue Deep Sea Tailing Placement (DSTP) as a potential tailing disposal option for any of our current prospects. We also believe that, given the very specific circumstances where DSTP could be considered appropriate, it is unlikely that the technology will be pursued in any of our future developments.

A summary of the activities relating to tailings and waste rock for the reporting period can be read in [Our Performance: Resource Use](#).

## Emissions Management

The key air emissions generated by the Company's activities include greenhouse gas emissions, oxides of sulphur and nitrogen, ozone-depleting substances and fluoride.

Primary greenhouse gases of concern to us are carbon dioxide (a product of energy use and the use of fluxes) and methane (which occurs at coal mines and from oil and gas production facilities). Less significant are emissions of perfluorocarbons associated with our Aluminium CSG.

Oxides of sulphur (SOx) and fluoride emissions are generated chiefly from smelting operations and can have an adverse effect on human health. The latter can also affect vegetation and thus enter the food-chain.

Oxides of nitrogen (NOx) emissions are produced by the combustion of fuels and potentially can have an adverse impact on the environment.

Dust can typically be generated by activities such as earthworks, excavation, blasting, transportation and product processing and can be exacerbated by dry climatic conditions and winds. Measures to control dust are important aspects of both operational and environmental management systems at our sites.

We are committed to reducing our air emissions by putting in place sound engineering and operating practices. Greenhouse gas management programs are in place at all required sites (greater than 100 000 tonnes per year of carbon dioxide equivalent).

See the following for details on our environmental emissions performance:

- [Greenhouse Gases](#)
- [Ozone-Depleting Substances](#)
- [Oxides of Sulphur](#)
- [Oxides of Nitrogen](#)
- [Fluoride](#).

## Environment - Our Performance

Refer to the following sections for details on our environmental performance over the reporting period:

- [Environmental Management Systems](#)
- [Environmental Incidents](#)
- [Environmental Fines](#)
- [Environmental Spending](#)
- [Rehabilitation, Remediation and Closure](#)
- [Biodiversity](#)
- [Resource Use](#) — covering land, energy, water and waste
- [Emissions](#) — covering greenhouse gases, ozone-depleting substances, oxides of sulphur and nitrogen, and fluoride.

The following should be noted when reviewing the environmental data from the current reporting period:

- We sold our Samancor Chrome business in South Africa, effective at 1 June 2005. Environmental performance for this business is included to the point of divestment and will not be reported in next year's data set.
- Environmental data from operations of the recently acquired WMC Resources Ltd has not been included; this data will be captured and reported on during the coming year. It is expected that these operations will make a significant contribution to the Group's emissions, in particular for oxides of sulphur and oxides of nitrogen, and the Group's water consumption.

See [Our Approach: Environment](#) for further details on environmental management. For examples of policy in action, refer to our [Case Studies](#).

## Environmental Management Systems

During the reporting period, we continued to strengthen environmental management systems across our operations. All our operations required to be certified, are certified to the ISO 14001 for Environmental Management Systems. While we generally do not require certification at exploration and development projects, sites being divested, closed sites or Corporate offices, a number of such sites have chosen to progress with certification, including our technology laboratories in Newcastle and Johannesburg. With the introduction of the new version of ISO 14001 during the reporting period, operations reviewed their environmental management systems and made or are making modifications where necessary.

In addition, as part of the [HSEC Management Standards Review](#), we incorporated requirements in line with the new ISO 14001 Standard into the Management Standards. We established a number of new environmental targets as part of our overall [HSEC Targets Review](#) to drive the continual improvement of environmental performance across the organisation.

During the year, we reviewed and improved our environmental incident reporting process, enabling better capture of incident information. Development of an HSEC Guideline on the storage and handling of flammable and combustible liquids also commenced during the reporting year.

The key issues that will drive our strategic priorities for the coming year include the development of a Company-wide water strategy, further implementation of the Company-wide Closure Standard and finalisation of the next set of Company-wide environmental targets.

## Environmental Incidents

The reporting and follow up of significant HSEC incidents is a crucial part of our approach to HSEC management. The [BHP Billiton HSEC Consequence Severity Table](#) is used to determine the significance of actual or potential incidents. A significant incident is an occurrence that has resulted in or had the potential to cause significant harm. Such an incident is rated at Level 3 or above on the BHP Billiton HSEC Consequence Severity Table.

Three significant environmental incidents occurred at our Ingwe Coal operations in South Africa during the reporting period:

- At the Middelburg coal operation, excess poor-quality mine-affected water decanted from the E6 Decant Control Dam into the Spookspruit River. The spillage was stopped and the water level controlled by pumping to a mined-out area. The pumping system has since been upgraded, storm water diversions have been constructed, and improved Standard Operating Procedures developed. This incident and the consequent actions resulting from the investigation are further detailed in our case study [Middelburg Mine implements corrective action plan following spillage into Spookspruit River](#).
- The Optimum Colliery Eikeboom Section, poor-quality water spilled from a control dam after excessive rainfall. The water was released into the Coetzerspruit water course. Corrective actions included constructing a new control dam with increased capacity, installing a lime treatment plant and instituting additional inspections of the overall water management system.
- A decant of saline water from the rehabilitated Zevenfontein section of the Optimum Colliery, along with a contribution from an adjacent underground closed mine was reported. The decant flowed into the Klein Olifants River via the Zevenfonteinspruit water course. Controls are currently being put in place, including pumping the decant water to an evaporation pond.

As a result of the above incidents and several less significant water-related incidents over the past year at our Ingwe Coal operations, an independent water storage and risk review was undertaken. Included in the review were both Ingwe operating and closed mines. The review examined water exposure risks, whether adequate facilities and controls (operating procedures) are in place, whether existing controls are adhered to and regularly reviewed, and whether the corrective actions identified by the incident investigations are on track to be completed. The results of this review are being implemented across Ingwe.

Following on from the significant environmental incident at our now closed Selbaie base metals mine in Canada which was identified in the previous reporting period, we have undertaken additional work to better understand and mitigate against any further release of acid water seepage into the receiving environment. This progress is detailed in our case study [Selbaie mine develops environmental program for the long term](#).

## Accidental Discharges

Accidental discharges of hydrocarbons to either land or water totalled 121 440 litres for the reporting period, a small decrease from 129 080 litres reported in the previous year.

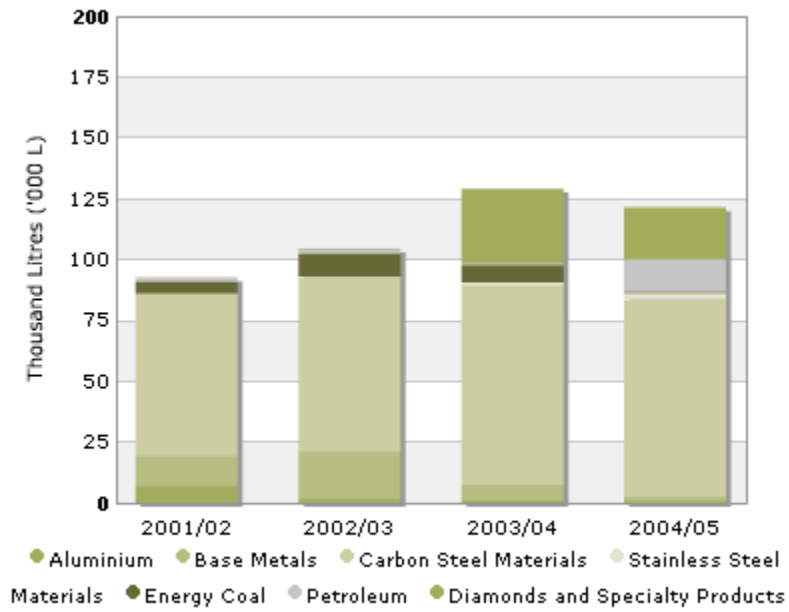
The majority of accidental hydrocarbon discharges are to land, with the main cause of the accidental discharges being failure of hydraulic and oil hoses on machinery. At the mine sites we are capturing improved data on the number of these small spills that occur within the pit boundaries, in particular at our Carbon Steel Materials iron ore mines. In our Petroleum CSG actual loss of containment incidents increased during the reporting period due to increased drilling activity and project commissioning work.

During the reporting period Company-wide Guidelines for the storage and handling of flammable and combustible liquids commenced development. In addition, a major fuel supplier audited hydrocarbon storage facilities as part of its supply program. The results of these reviews are communicated to the relevant sites. Other initiatives include a 'drips and leaks program' at several operations. Additionally a number of operations reported upgrades of fittings at unloading facilities to reduce minor spillage that can occur during delivery.



## Accidental Discharges of Hydrocarbons

2001/02 to 2004/05



## Environmental Fines

Environmental fines totalled US\$1100, a reduction from the previous year's total of US\$3300; we did not, however, meet our target of zero fines and prosecutions. Where a fine occurs our sites are required to ensure a full investigation is undertaken in line with our Incident Cause and Analysis Methodology (ICAM) tool for incident investigation. Our fines are summarised in the table below.

### Environmental Fines 2004/05

Site	Customer Sector Group	Description	Fine (US\$)
<b>Appin Colliery</b>	Carbon Steel Materials	Fine incurred for dust being emitted to atmosphere by a street sweeper while operating. An investigation determined that the machine was in good working order but not being operated effectively and efficiently. An experienced operator was since appointed.	<b>1100</b>
<b>Total</b>			<b>1100</b>

## Environmental Spending

Over the reporting period environmental expenditure for the Group totalled US\$267 million. This compares with US\$207 million spent in the previous year. In particular, an increase in site rehabilitation spending was noted at Base Metals closed sites.

The table below summarises the environmental spending of our CSGs, allocated to the categories of Research and Development, Site Rehabilitation, Environmental Monitoring and Other expenditure, such as environmental impact assessment and training. Research and Development spending includes collaborative work undertaken with academic institutions to improve environmental management at our operations, as well as product improvement initiatives.

These costs exclude expenditures associated with the capital cost, operation and maintenance of pollution control equipment and the like.

### Environmental Spending Estimates 2004/05

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & SP	BHP Billiton Total <sup>4</sup>
Research and Development	883	508	3 320	7	2 107	99	1 920	8 845
Site Rehabilitation <sup>1</sup>	2 272	73 654	17 528	3 007	64 137	129	672	161 592
Environmental Monitoring <sup>2</sup>	2 487	4 833	4 381	907	1 247	248	8 192	22 549
Others <sup>3</sup>	5 187	8 624	29 849	6 330	10 078	6 916	6 453	73 733
Total	10 829	87 619	55 078	10 252	77 568	7 392	17 237	266 719

**Unit: Thousand US Dollars (\$US '000)**

1. Spending associated with ongoing current or progressive rehabilitation, excluding provisions for closure
2. Spending associated with environmental monitoring activities such as air and water monitoring
3. Other spending including costs related to environmental management such as environmental impact assessment and training
4. The BHP Billiton Total figure is inclusive of data from our closed Beenup site in Western Australia

## Rehabilitation, Remediation and Closure

Comprehensive planning for closure and beyond is an important aspect in the lifecycle of our operations. The cost of implementing closure plans in the future has the potential to affect cash flow for assets and incremental investments, accounting provisions, residual liabilities and access to future resources. Our [Closure Standard](#) has been developed in response to these issues.

The Closure Standard contains mandatory requirements including estimating expected cost and financial provisioning for closure. Provision is made for the reclamation and closure of the Group's mining and processing facilities along with the decommissioning of offshore oil platforms and infrastructure associated with petroleum activities. See [Closure Standard Update](#) for specific information on our implementation progress.

The Group's activities are subject to various national, regional, and local laws and regulations governing the protection of the environment. Furthermore, the Group has a policy of ensuring that reclamation is planned and financed from the early stages of any operation. Provision is made for the reclamation of the BHP Billiton Group's mining and processing facilities along with the decommissioning of oil platforms and infrastructure associated with petroleum activities.

These reclamation and decommissioning expenditures are mostly expected to be paid over the next 30 years. The provisions for reclamation and decommissioning are derived by discounting the expected expenditures to their net present value. The estimated total site rehabilitation cost (undiscounted and in today's dollars) to be incurred in the future arising from operations to date, and including amounts already provided for, is US\$6284 million (FY2004: US\$5402 million).

At 30 June 2005, US\$2475 million (FY2004: US\$1702 million) was provided for reclamation and decommissioning costs relating to operating sites in the provision for site rehabilitation. In addition, the Group has certain obligations associated with maintaining and/or remediating closed sites. At 30 June 2005, US\$1109 million (FY2004: \$1081 million), was provided for closed sites. The amounts provided in relation to closed sites are reviewed at least annually based upon the facts and circumstances available at the time and the provisions are updated accordingly. Adjustments to the provisions in relation to these closed sites are recognised in profit and loss during the period in which the adjustments are made with US\$121 million included as an exceptional item in the current year (FY2004: US\$534 million, FY2003: US\$ nil). The main closed site to which this total amount (US\$1109 million) relates is Southwest Copper in the US and this is described in further detail below, together with a brief description of other closed sites.

### *Southwest Copper, Arizona, US*

The Southwest Copper operations comprised several mining and smelting operations and associated facilities, much of which had been operating for many years prior to the Group acquiring the operation in 1996. In 1999 the facilities were effectively placed on a care and maintenance basis, pending evaluation of various alternative strategies to realise maximum value from the respective assets. The Group announced the closure of the San Manuel mining facilities, and the San Manuel plant facilities in 2002 and 2003 respectively.

A comprehensive review of closure plans conducted in the prior year indicated (a) higher short-term closure costs, due to changes in the nature of closure work required in relation to certain facilities, particularly tailings dams and waste and leach dumps; (b) a need for costs, such as water management and environmental monitoring, to continue for a longer period; and, (c) an increase in the residual value of certain assets. The closure provisions for Southwest Copper, including amounts in relation to Pinal Creek litigation, totalled US\$731 million at 30 June 2005 (2004: US\$771 million).

In relation to Pinal Creek, BHP Copper Inc ('BHP Copper') is involved in litigation concerning groundwater contamination resulting from historic mining operations near the Pinal Creek/Miami Wash area located in the State of Arizona.

## Other Closed Sites

The closure provisions for other closed sites total US\$378 million at 30 June 2005 (FY2004: US\$310 million). The key sites covered by this amount are described briefly below.

- Newcastle Steelworks - the Group closed its Newcastle Steelworks in 1999 and retains responsibility for certain sediment in the Hunter River adjacent the former steelworks site, together with certain other site remediation activities in the Newcastle area.
- Island Copper – the Group ceased operations at its Island Copper mine in December 1995 and has responsibility for various site reclamation activities, including the long-term treatment of the pit lake and water management.
- Selbaie copper mine – the Group closed its Selbaie copper mine in January 2004 and has responsibility for site reclamation and remediation activities.
- Rio Algom – the Group has responsibility for long-term remediation costs for various mines and processing facilities in Canada and the US operated by Rio Algom Ltd prior to its acquisition by the former Billiton Plc in October 2000.
- Ingwe Collieries – the Group has responsibility for site reclamation and remediation activities, including the long-term management of water leaving mining properties, for closed mines within the Ingwe operations.
- Roane – the Group ceased operations at Roane Alloys in 1982. A review of the closure plans during the year identified a need for additional remediation costs.

Closure provisions for other closed sites have been increased in the current period mainly due to refinements of closure plans at the Selbaie copper mine, Ingwe Collieries, Roane Alloys and several other smaller sites. These increases resulted from a number of causes, including (a) a reassessment during the period of water management issues; and, (b) a comprehensive risk valuation completed during the period in relation to sites which closed during the last two years where closure activities have now commenced. For further details refer to the [Annual Financial Report](#).

## Closure Standard Update

BHP Billiton officially adopted the Closure Standard during the reporting period. The Closure Standard mandates compliance with relevant legislative and regulatory requirements and goes the additional step to tie closure planning to a set of objectives which support BHP Billiton's Charter and Sustainable Development Policy.

Many BHP Billiton operations have existing closure plans that have been developed to satisfy regulatory or internal needs. Under the Closure Standard, however, each asset will review existing plans and make adjustments as required to meet the new requirements. This review will take place over the next two years and will include a rigorous assessment of site-specific closure risks, identification of risk management actions and development of reasonable and accurate closure cost estimates. Currently, 94 per cent of sites required to have closure plans, reported to have closure plans in place.

Over the reporting period, a number of actions were taken in support of improved closure planning:

- The position of Global Practice Leader – Closure and Rehabilitation was created to coordinate implementation of the Closure Standard throughout the company.
- Web-based networks, both internal and external to the Company, have been set up to share information and discuss common and best closure practices.
- A series of training workshops was initiated at the sites to build understanding and capacity with regards to the requirements of the new Closure Standard.

For further background on the Closure Standard, see [Environment: Our Approach](#).

## Biodiversity

Our Sustainable Development Policy states that we will 'enhance biodiversity protection by assessing and considering ecological values and land-use aspects in investment, operational and closure activities'.

Over the reporting period:

- Eight sites reported having biodiversity plans in place.
- Eleven sites reported operating adjacent to areas designated as protected areas by government authorities or national legislation. These sites include Coermotibo operations at Billiton Maatschappij Suriname (Wane Reserve, Suriname) and the Point of Ayr Terminal (at our Liverpool Bay petroleum asset in the UK) which lies at the outer reaches of the Dee Estuary, recognised nationally as a Site of Special Scientific Interest, at European level as a Special Protection Area for birds and as an internationally important wetland (Ramsar).
- Forty sites reported engaging in biodiversity-related activities (excluding ongoing rehabilitation). For example, at our EKATI diamond operation (Canada), ongoing monitoring and research programs are in progress to determine the impact of mining on the biodiversity of the mining lease area. At the Samarco Iron Ore operations (Brazil), fauna monitoring is being conducted for the diversity of birds, bees and mammals; and the release of endangered species is being tracked in areas preserved by the Company. In addition, at the Blackwater coal operation (Australia) a vegetation and habitat diversity assessment was completed.
- Sixteen sites contributed to biodiversity-related research and development with expenditure totalling US\$1.04 million. For example, at Escondida (Chile), an Andean flamingo research program is underway to develop management tools and conduct research into artificial nests, home range and predation. Richards Bay Minerals (South Africa) funds university research into the succession of fauna and flora in rehabilitated areas, as well as recording biodiversity in previously unmined areas.
- Substantial funds were also contributed to other biodiversity initiatives including contributions to the Revive our Wetlands program with Conservation Volunteers Australia, a grey nurse shark project with the Melbourne Aquarium and the Waterways Conservation Program with Zoos Victoria for platypus research and waterways conservation.
- Thirty-four sites reported that biodiversity aspects are currently incorporated into closure plans. For example, at the Sariji coal operation (Australia), closure will entail the establishment of wildlife corridors linking rehabilitation with remnant vegetation communities. In addition, our [Closure Standard](#) now requires the formal consideration of biodiversity aspects in Closure Plans.
- Approximately 650 000 hectares of land are managed in biodiversity-rich habitats; 332 400 hectares of this is associated with the Artic tundra of the entire EKATI mine lease.

For further examples of policy in action, refer to our case study [Recognising and managing the impacts of our operations on biodiversity values](#).

## Resource Use

Our Policy states that we will 'set and achieve targets that promote efficient use of resources'. The following discuss our performance with regards to this commitment in the areas of:

- [Land](#)
- [Energy](#)
- [Water](#)
- [Waste](#).

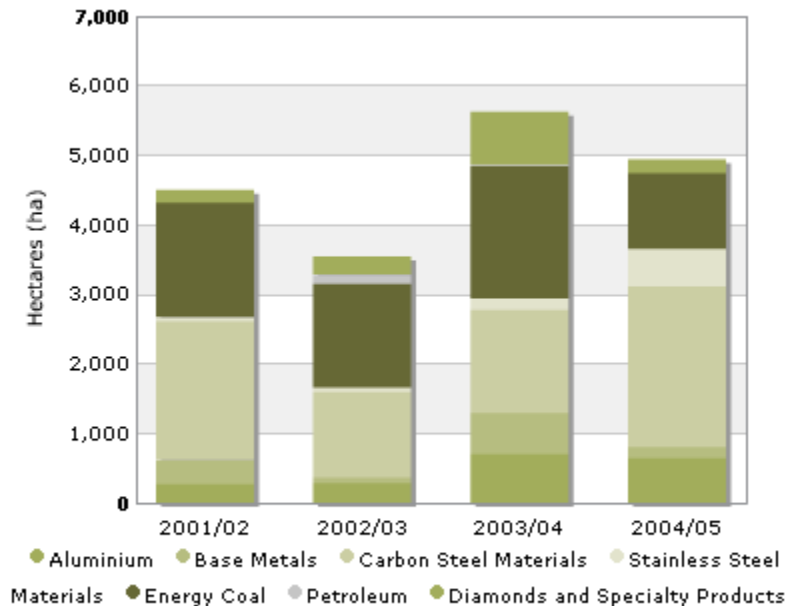
### Land

Our sites are required to have land management plans in place to guide decisions on land use in order to protect and manage the land to meet agreed beneficial uses. A broad range of issues are addressed in these plans such as ecosystem and biodiversity management, erosion control, feral animals, weeds and fire management. In addition, our sites are actively seeking the best options for rehabilitating disturbed land and determining post-closure land use, consistent with agreed closure criteria.

As demonstrated in the graph below, the amount of land newly disturbed over the reporting period fell by 12 per cent compared with the previous period. Land rehabilitated fell by 10 per cent. The reduction in land rehabilitated was due to less rehabilitation activities in our Carbon Steel Materials CSG, in particular as a result of a dedicated rehabilitation effort undertaken during the previous reporting period. The amount of land requiring rehabilitation increased over the reporting period. Of the land requiring rehabilitation (for operational disturbance, not the total area requiring rehabilitation at closure), 21 per cent is available to be rehabilitated, a small decrease from last year.

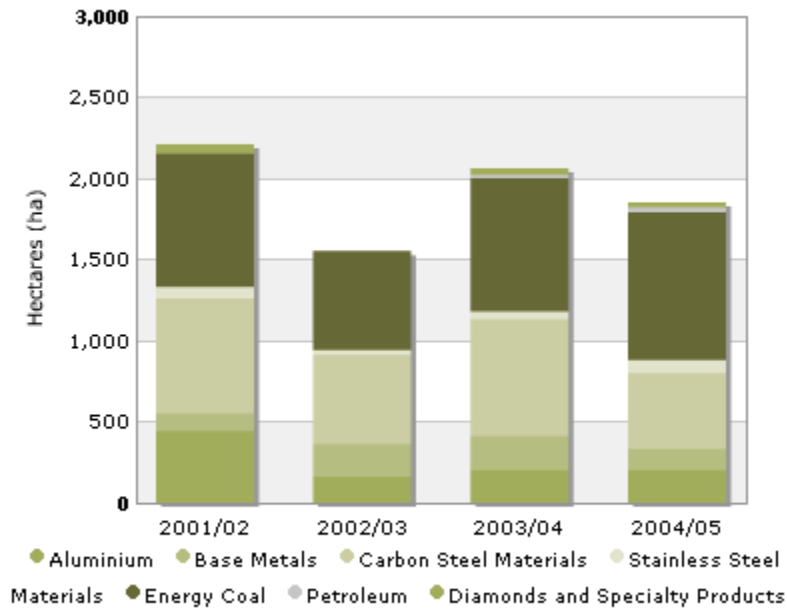
#### *Land Newly Disturbed*

2001/02 to 2004/05



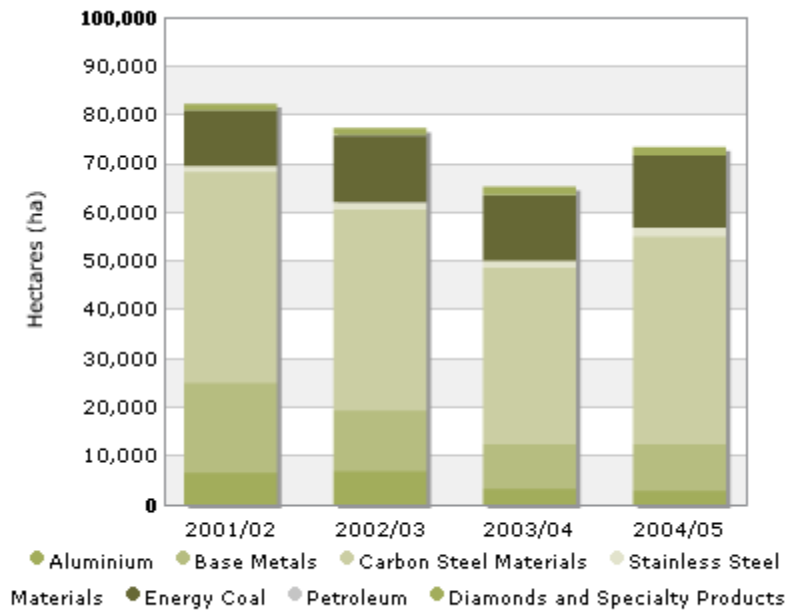
## Land Rehabilitated

2001/02 to 2004/05



## Land Requiring Rehabilitation

2001/02 to 2004/05





The total footprint of land owned, leased and/or managed by our operations was 1.73 million hectares, of which one per cent was for infrastructure (buildings and offices, processing plants, roads and rails), two per cent for mining, four per cent for supporting infrastructure, and four per cent for on-going exploration. Approximately 26 per cent of land is intended for future operation/expansion, 40 per cent is designated as buffer zones and areas not intended/planned for operation, and the remaining 23 per cent is for other purposes. In addition, our Exploration group holds approximately 29 million hectares of exploration rights, leases and permits.

Details of land use performance by the CSGs are presented in the [Environmental Data Summary](#).

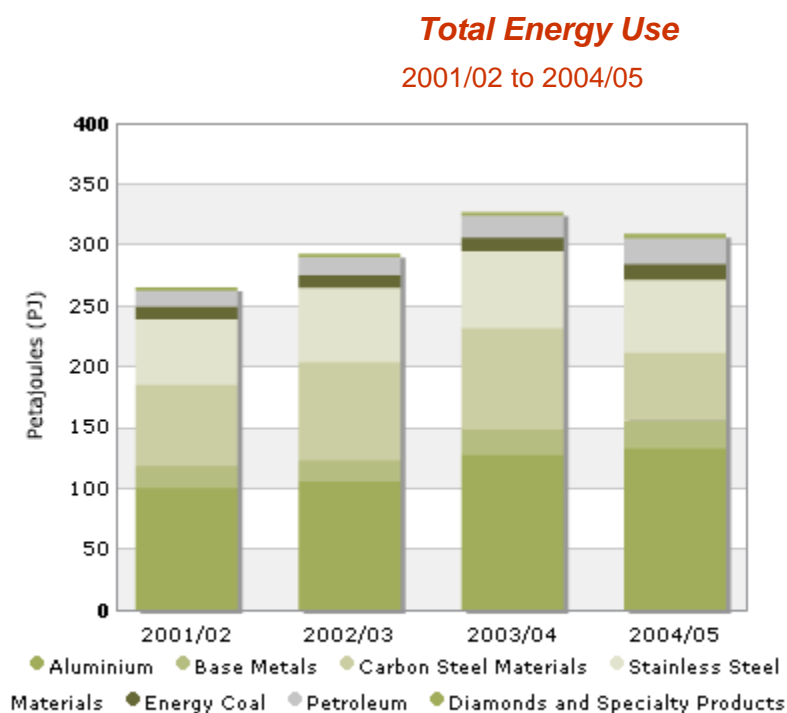
For an example of policy in action, refer to our case study on [Land rehabilitation programs at Cerrejon and Mt Arthur Coal](#).

## Energy

Our target was for all sites with greenhouse gas emissions greater than 100 000 tonnes of carbon dioxide equivalent per annum to have energy conservation plans with specific targets. This was achieved. It should be noted that 40 sites have emissions greater than this figure, accounting for 99 per cent of the Group's greenhouse gas emissions.

Our energy consumption decreased from 327 petajoules in the previous reporting period to 309 petajoules. This decrease in energy consumption was mainly due to cessation of production at our Boodarie Iron operation in Western Australia. The Aluminium, Carbon Steel Materials and Stainless Steel Materials CSGs are the major consumers of energy, as presented in the graph below.

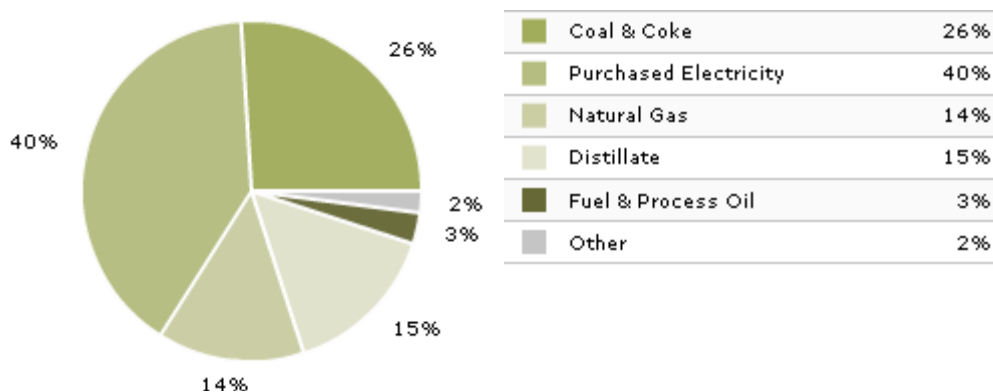
Details of energy performance by the CSGs are presented in the [Environmental Data Summary](#).



Shown below is a breakdown of the Company's energy use by fuel type. Purchased electricity and coal and coke are the major energy types used, with natural gas the next most used fuel. Renewable energy from hydroelectricity accounts for two per cent of total energy and is included in the purchased electricity category.

### Energy Use by Type

2004/05



The energy intensity index <sup>1</sup> is used to track our energy consumption performance.

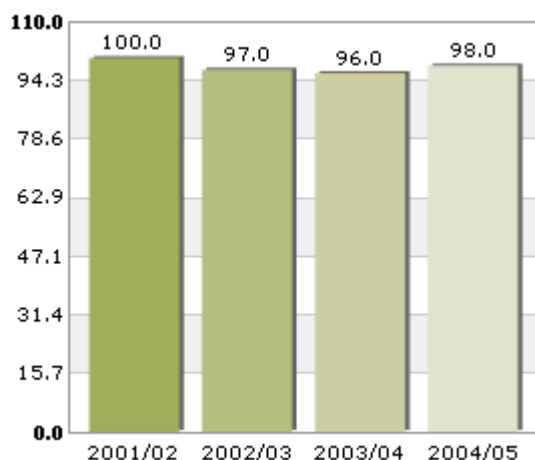
During the year, our energy intensity index increased, resulting in an overall reduction of our intensity index to date of two per cent against the baseline, as shown in the graph below. The increase was against the trend of the previous three years and was primarily due to increased energy intensities in our Carbon Steel Materials, Energy Coal, and Diamonds and Specialty Products CSGs.

Initiatives reported by operations to improve energy efficiency included process improvements, improved metering, and monitoring and awareness programs.

Our Operating Excellence team is developing an energy management assessment tool to help sites to improve energy efficiency. The energy assessment tool was trialled at Cerro Matoso in Colombia and is expected to progress to testing in Australia and South Africa. Should the testing prove successful, demonstrating that the tool is capable of delivering good business outcomes for a wide range of operations, it will then become available to all sites as an aid to improve energy efficiency.

### Energy Intensity Index

2001/02 to 2004/05



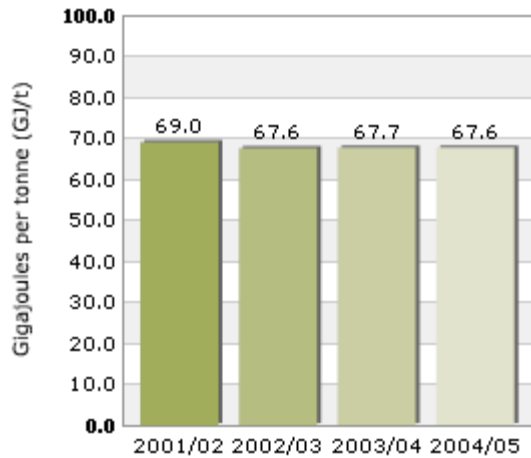
For details on energy consumption of some of our products, see our [Energy Intensity of Selected Products](#).

## ***Energy Intensity of Selected Products***

As the graphs below show, there has been a reduction in petroleum and copper energy intensities. Energy intensity in our Queensland coal operations has continued to increase; this is because our mines are operating in progressively deeper coal seams that require more energy per unit of production.

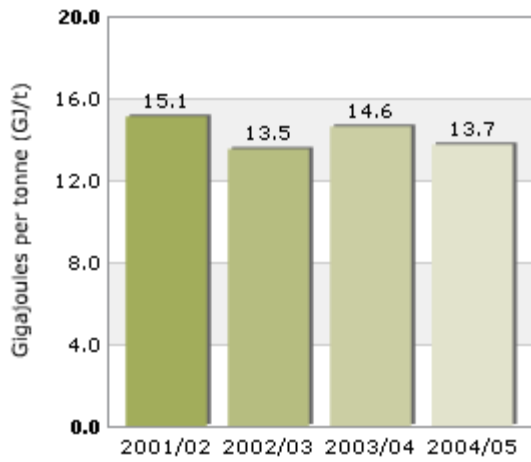
### ***Energy Intensity of Selected Products - Aluminium***

2001/02 to 2004/05



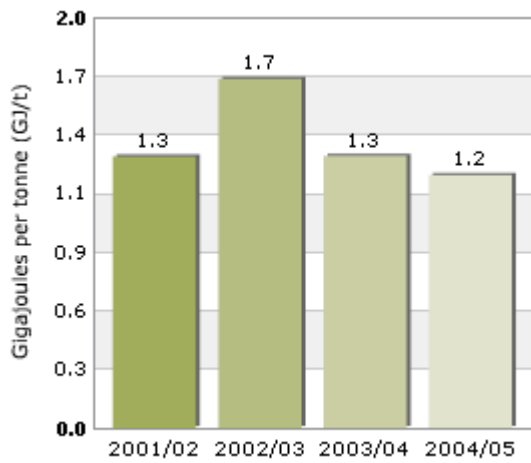
### **Energy Intensity of Selected Products - Copper**

2001/02 to 2004/05



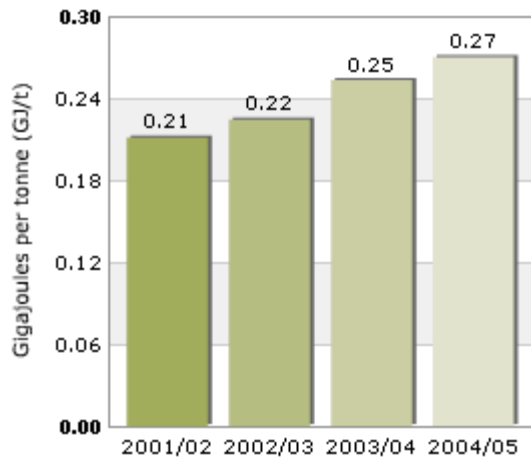
### **Energy Intensity of Selected Products - Petroleum Products**

2001/02 to 2004/05



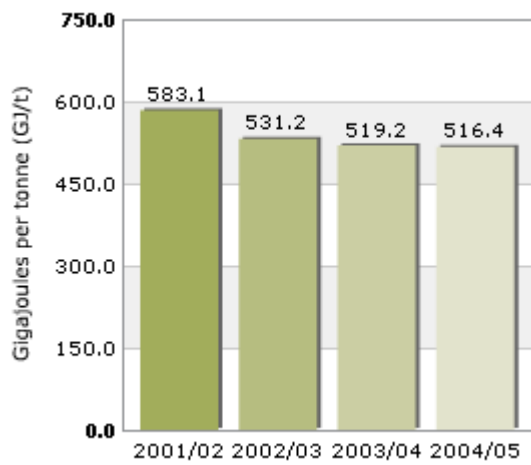
### **Energy Intensity of Selected Products - Queensland Coal**

2001/02 to 2004/05



### **Energy Intensity of Selected Products - Queensland Nickel**

2001/02 to 2004/05



## Water

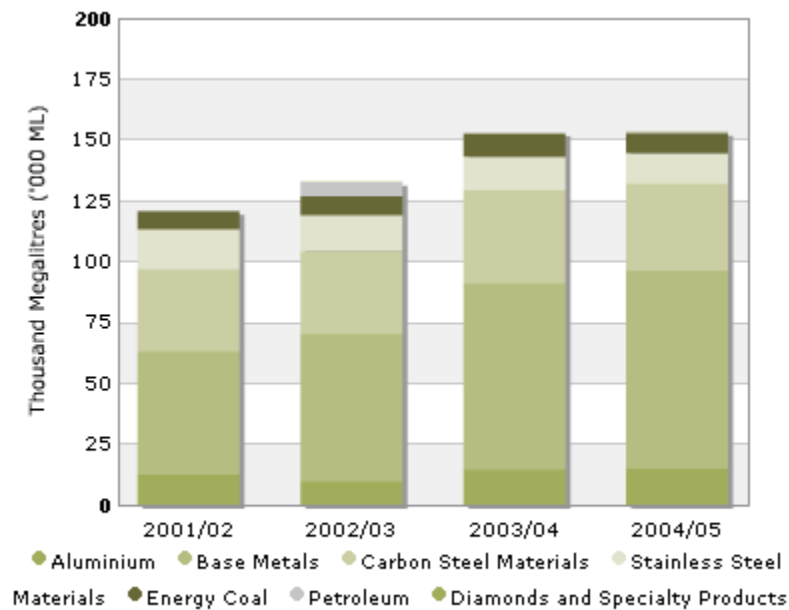
Water management plans are required and are in place at all of our sites with fresh water consumption greater than 500 megalitres per annum, with the exception of one operation. Twenty-six sites with fresh water consumption below this threshold also reported having water management plans in place. Initiatives to reduce fresh water consumption were wide ranging including improved metering, water balance assessments, increased recycling and reuse of mine water and grey water, increased use of storm water inputs and implementing training and awareness programs.

Total fresh water consumption amounted to 153 170 megalitres, similar to the 153 020 megalitres reported in the previous reporting period, as shown in the graph below. Stainless Steel and Carbon Steel Materials CSGs continue to be the major consumers of fresh water.

Fresh water consumed by the CSGs is presented in the [Environmental Data Summary](#).

### **Fresh Water Consumption**

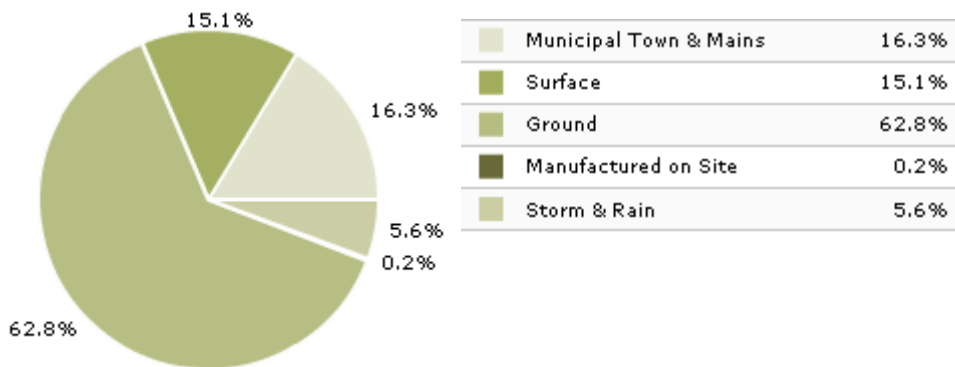
2001/02 to 2004/05



Sources of fresh water for our operations are mainly ground and surface water, as shown in the graph below.

### Sources of Fresh Water

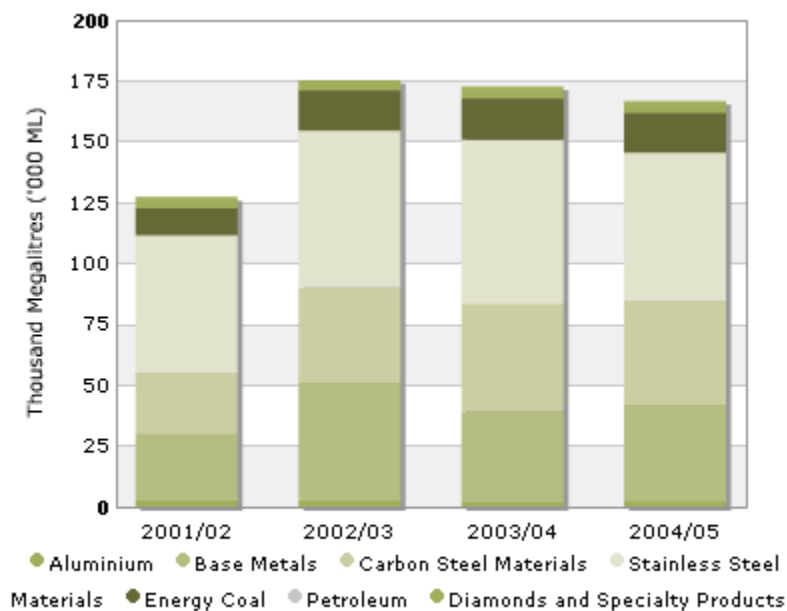
2004/05



The use of recycled water fell slightly compared to last year, as presented in the graph below.

### Recycled Water Use

2001/02 to 2004/05



Major contributors to the use of recycled water are Stainless Steel Materials, Carbon Steel Materials and Base Metals CSGs.

The ratio of fresh water to recycled water used during the reporting period (48 per cent to 52 per cent) increased marginally from the previous year (47 per cent to 53 per cent), as shown in the following graph.

### Fresh and Recycled Water Use

2004/05



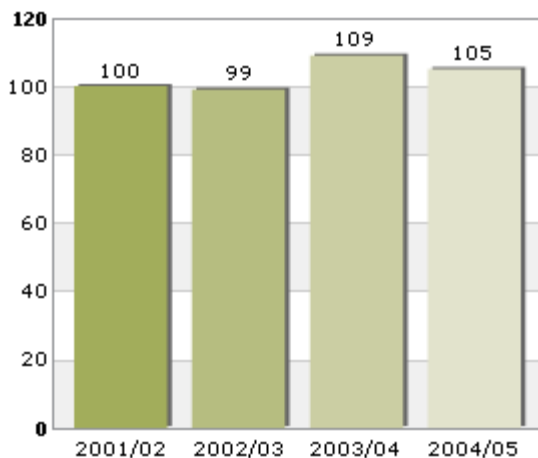
Our fresh water intensity index <sup>1</sup> is shown in the graph below. For the reporting period, our fresh water intensity decreased compared to the previous period; however, there is still an overall increase to date of five per cent against the 001/02 baseline.

An example of significant reductions in water consumption was achieved by our Cerro Matoso operation in Colombia. Through a range of programs including domestic wastewater reuse and awareness training, a 59 per cent reduction in fresh water intake and a 50 per cent reduction in potable water consumption has been achieved since 2001. This in turn has led to the elimination of two discharges into a local stream.

For further examples of policy in action, refer to our case study [Working towards our water target](#).

### Fresh Water Intensity Index

2001/02 to 2004/05



See our [Water Intensity of Selected Products](#) for further details on water intensity by product type.

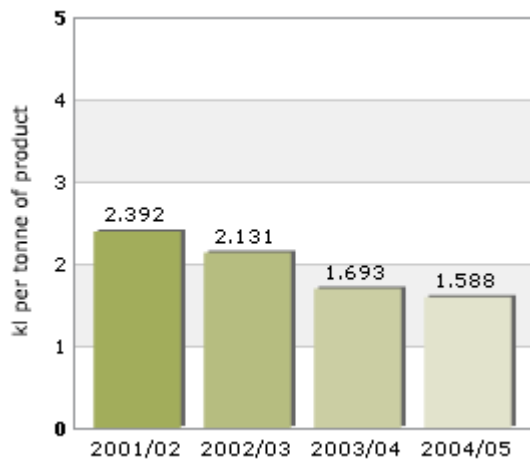


## Water Intensity of Selected Products

As the graphs below show, reductions in fresh water intensity were evident for all the products. Aluminium smelting has continued to reduce fresh water intensity over the past five years, mainly due to maintaining similar overall (base load) fresh water consumption while increasing production. Fresh water intensity for copper production reduced, due to improved water recoveries, particularly at the Escondida mine (Chile), and increasing production without increasing the base load.

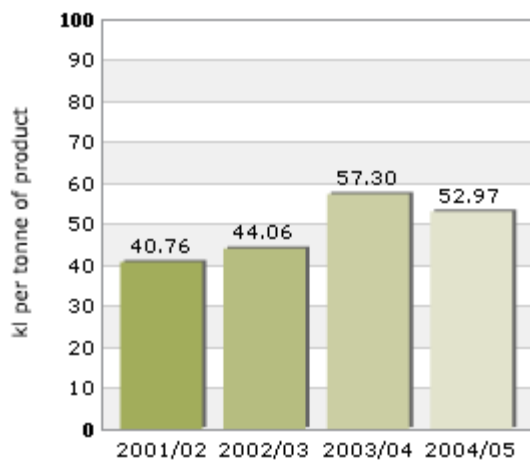
### Fresh Water Intensity of Selected Products - Aluminium

2001/02 to 2004/05



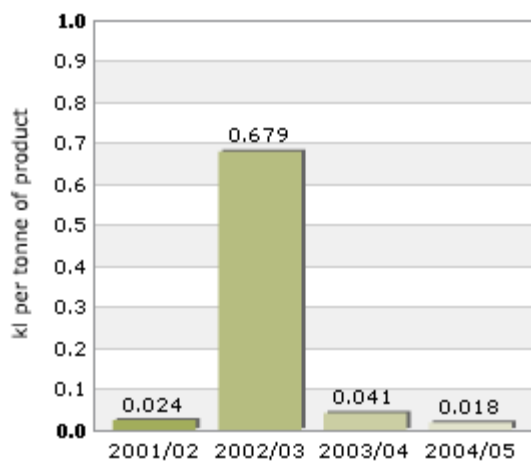
### Fresh Water Intensity of Selected Products - Copper

2001/02 to 2004/05



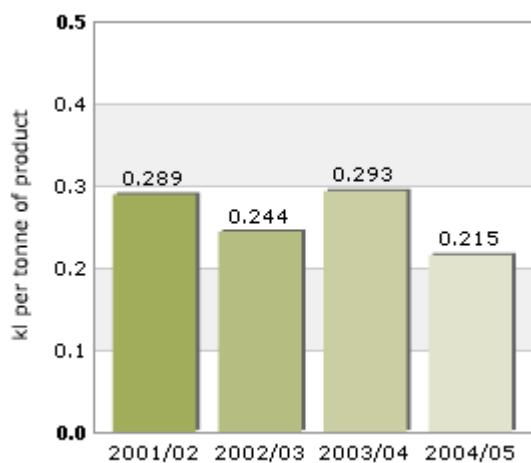
### **Fresh Water Intensity of Selected Products - Petroleum Products**

2001/02 to 2004/05



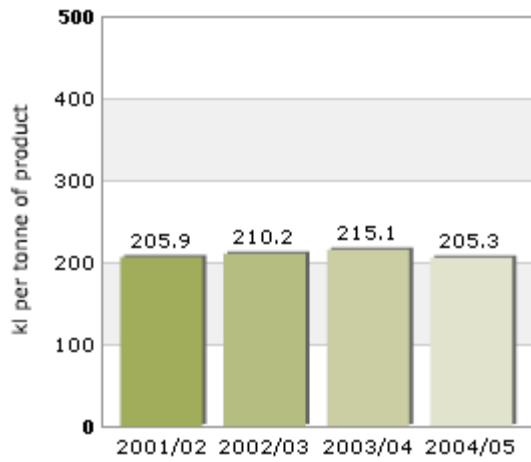
### **Fresh Water Intensity of Selected Products - Queensland Coal**

2001/02 to 2004/05



## Fresh Water Intensity of Selected Products - Queensland Nickel

2001/02 to 2004/05



## Waste

Waste management practices continued to improve across our operations. Waste minimisation programs are in place at 98 per cent of required sites. Some examples of improved waste management are:

- Our Worsley Alumina operation ( Australia) has introduced a standard for bin types across the refinery. All types of waste and recyclables are separated and placed in bins that are designated by colour according to content-type. Key performance indicators for percentage recyclables contained in general waste are to be introduced and will be monitored through ongoing quarterly waste audits.
- The Samarco Iron ore plant (Brazil) is reducing the amount of organic residue sent to landfill by the processing and using this material in areas undergoing rehabilitation.
- The Hillside aluminium smelter in South Africa launched a major waste awareness campaign. With the assistance of local crafters, the 'Diamonds in the Desert' campaign set up exhibits at the smelter and in the community to promote the message of waste avoidance and reduction.

Wastes are generated at various stages throughout resource extraction and processing. Wastes include those associated with mineral/petroleum extraction such as waste rock, tailings and drilling muds, processing wastes of a hazardous nature, through to general or domestic wastes. These waste types are described in the following sections.

We have refined our reporting of wastes in line with the requirements of the [Global Reporting Initiative](#) Pilot Mining and Metals Sector Supplement. One such requirement is the reporting of the percentage of products derived from secondary materials, excluding internal recycling. Most of our activities relate to resource extraction and primary processing, and during the reporting period only a negligible amount of product was derived from secondary materials, for example scrap metal. For further details on our waste management performance, see below:

- [Overburden, Waste Rock and Mineral Residues](#)
- [Hazardous Waste](#)
- [General Waste](#)
- [Wastewater and Effluent Discharge](#)

### ***Overburden, Waste Rock and Mineral Residues***

We have broadened the range of mineral waste data captured in the reporting period.

In mining processes, 1116 million bank cubic metres (bcms) of overburden and 68 million bcms of waste rock were moved over the period.

Mineral residues include tailings, sludges and slags from mineral processing and also drilling muds and cuttings from petroleum operations. 152 million tonnes of non-hazardous mineral residue was disposed of, while 30 million tonnes of hazardous mineral residue was disposed of. Hazardous mineral residue includes those mineral residues classified as hazardous in some regulatory jurisdictions or due to their leaching characteristics and includes certain tailings, sludges and slags. Mineral residues are placed in engineered structures, providing both physical and chemical stability.

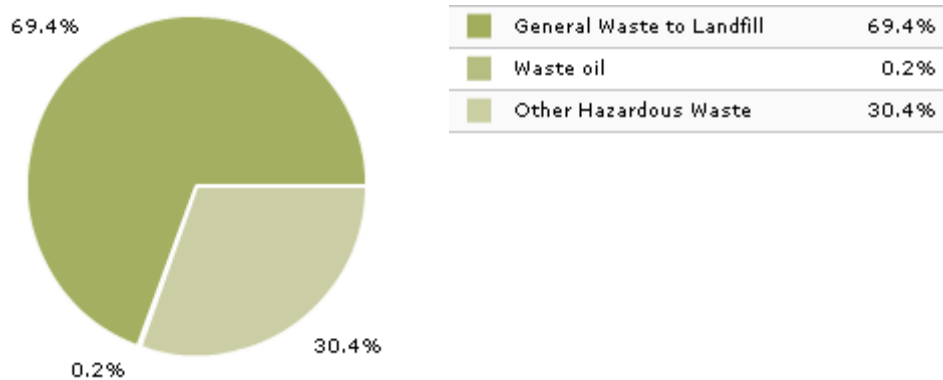
We aim to maximise the reuse of materials where possible (for example, backfilling) and to minimise the footprint of the disposal facilities. We undertake regular monitoring of tailings and waste storage areas as part of our management controls.

## Hazardous Waste

Hazardous waste is categorised into waste oil and other hazardous waste but does not include hazardous mineral residue. Hazardous waste includes materials contaminated with hydrocarbons, chemical waste, spent pot linings and hazardous baghouse dust, which is generally consistent with the classifications for hazardous waste under the Basel Convention. Hazardous waste comprise around 30 per cent of total waste disposed, as shown in the chart below.

### Waste Disposed

2004/05 (excluding mineral processing waste)



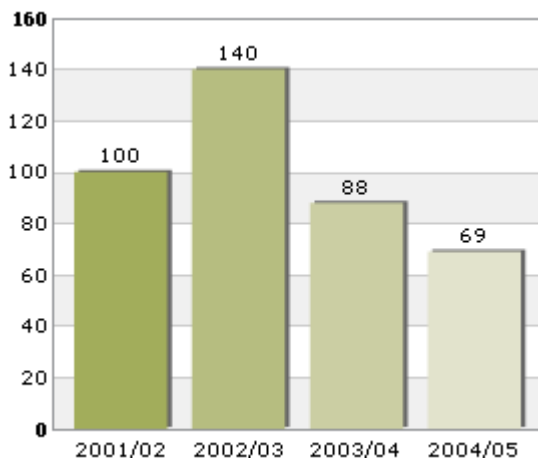
Of the waste oil generated, the majority was either re-used as fuel for energy recovery on site or sent for recycling, reuse or burning off site.

During the period 67 710 tonnes of hazardous waste were disposed of. This compares with 59 100 tonnes for 2003/4. The increase is due to several closed sites undergoing demolition and cleanup within the Base Metals CSG, balanced by reductions associated with the Manganese sites and the Petroleum CSGs.

Our hazardous waste intensity index <sup>1</sup> reduced over the reporting period, resulting in an overall reduction of our intensity index to date of 31 per cent against our baseline. The intensity index excludes exploration and development projects, sites being divested, closed sites and offices.

### Hazardous Waste Intensity Index

2001/02 to 2004/05



Operations continue to implement programs to improve hazardous waste management. For example, the San Manuel Copper Smelter currently undergoing decommissioning has been able to turn 1200 tonnes of metal contaminated flue dust and 3600 tonnes of low-grade copper concentrate into a recyclable product.

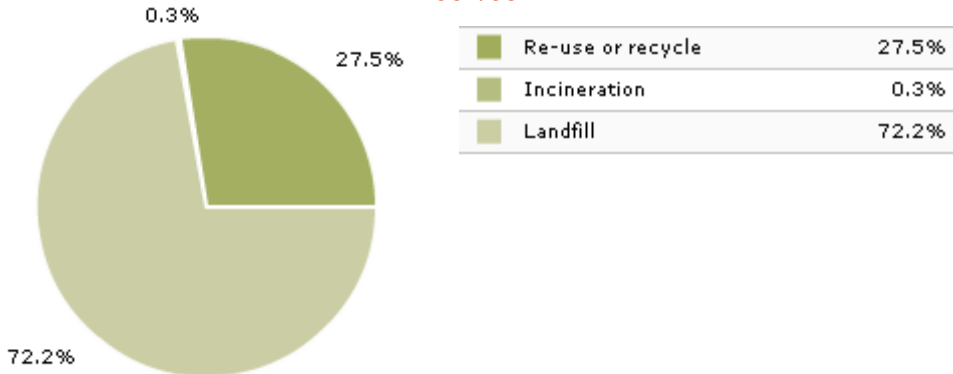
By employing physical and chemical engineering, the flue dust was blended with the copper concentrate (accumulated on-site and also not recyclable of itself) to form a product with recoverable copper levels. Thus, the disposal of 4800 tonnes of hazardous waste was avoided and approximately 1200 tonnes of copper will be recycled.

## General Waste

General waste or domestic waste types include paper, cardboard, and building and construction material. Our operations generated 214 270 tonnes of general waste in the reporting period, of which 28 per cent was recycled, reused, or composted and 72 per cent was disposed to landfill; only 590 tonnes (less than one per cent) was incinerated. The graph below shows the methods of general waste disposal.

### General Waste Disposal Methods

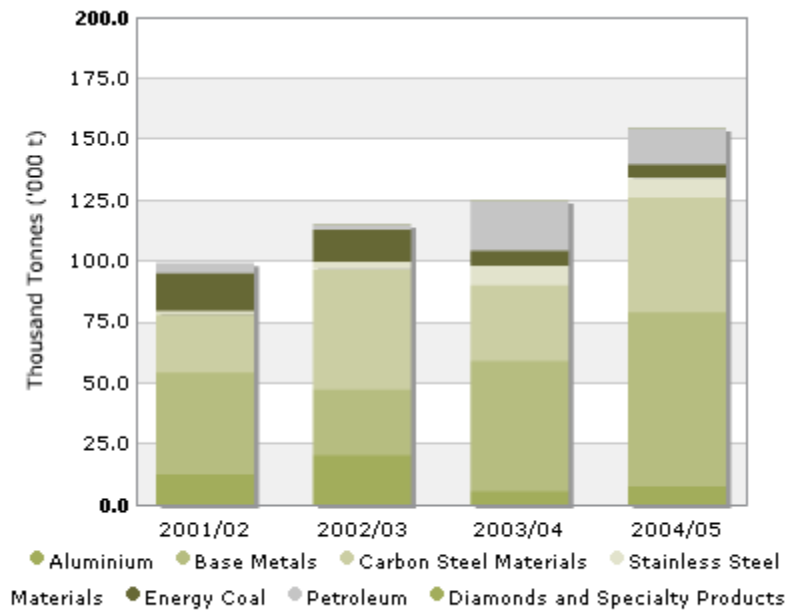
2004/05



Our general waste disposed to landfill increased from 124 990 tonnes in the previous reporting period to 154 820 tonnes, as illustrated in the graph below. This increase was due to a rise in general waste associated with increased production at the Base Metals and Carbon Steel Materials CSGs. A reduction in general waste disposal was reported at our Petroleum CSG.

### General Waste Disposed to Landfill

2001/02 to 2004/05



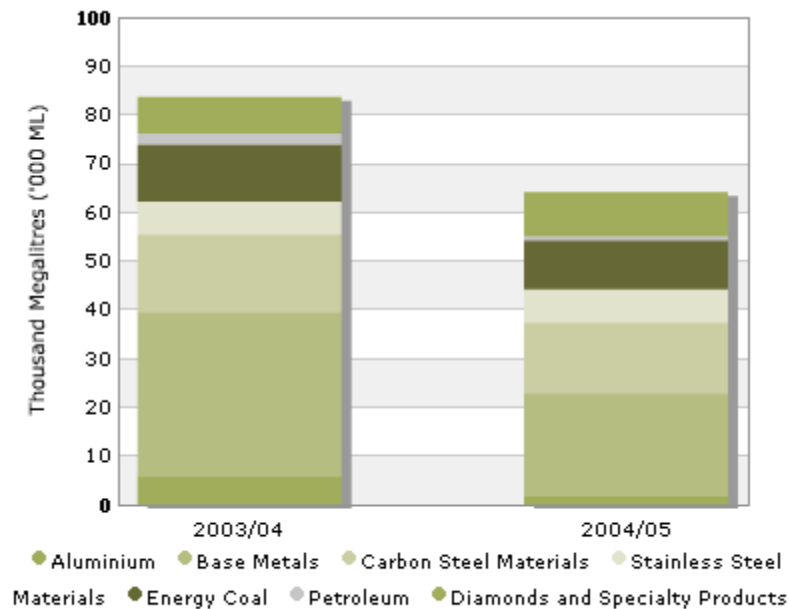
Despite this increase, our general waste intensity index <sup>1</sup> decreased, resulting in an overall decrease of our intensity index (not shown) to date of eight per cent against the baseline.

## Wastewater and Effluent Discharge

The quantity of wastewater and effluent discharged by the CSGs is presented in the chart below and in the [Environmental Data Summary](#). The total amount of wastewater and effluent discharged to various end points was 64 090 megalitres compared to 83 630 megalitres in the previous reporting period. This decrease is due to less discharge by the Aluminium and Petroleum CSGs.

### Wastewater and Effluent Discharged

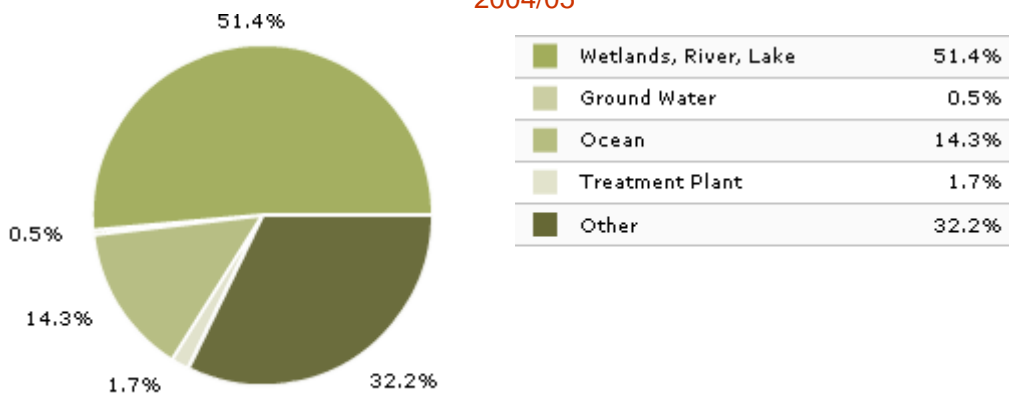
2003/04 and 2004/05



While most wastewater and effluent was discharged to rivers, lakes and wetlands as shown in the chart below, in line with our Policy commitments we seek to ensure that any potential impacts resulting from this discharge are managed and minimised over time. The 'Other' category includes evaporation, seepage, irrigation, and wastewater sent off-site for other uses.

### Wastewater and Effluent Discharged

2004/05

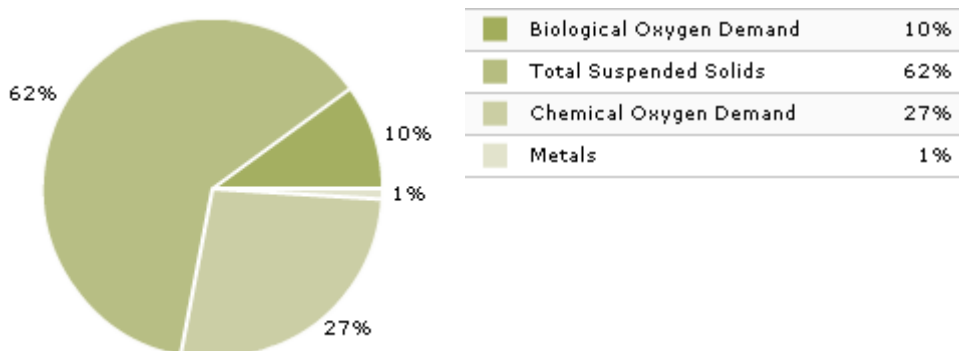




In addition to reporting quantity, we also require our sites to report on key constituents of discharged wastewater and effluent. The reportable key constituents include biological oxygen demand, chemical oxygen demand, total suspended solids and key metals discharged. Key constituents in the wastewater and effluent discharge totalled 986 tonnes and are presented in the graph below. The quantities of these key constituents were derived by estimation, calculation, measurement, or a combination of the three methods. It should be noted that any potential environmental impacts associated with these data can only be inferred when considered in relation to the specific receiving environment and associated mass and concentration discharge levels.

### Key Constituents in the Wastewater and Effluent Discharged by Mass

2004/05



### Other Consumables

Due to the diversity of our operations, we seek to report only consumables of significant quantities. Over the reporting period we consumed (excluding fuels, which are reported in [Energy](#)):

- 812 610 tonnes of acid
- 377 730 tonnes of caustic soda
- 481 930 tonnes of explosives
- 38 920 tonnes of purchased gas other than natural gas
- 453 470 tonnes of other materials (lime, stone dust, magnetite and others).

1. Intensity Index - The intensity index has been developed as a Company-wide performance indicator on environmental parameters, such as energy use, greenhouse gas emissions and fresh water consumption. The 'index' concept allows performance from different business groups or sites, all of which may have different operating conditions and product mixes, to be added together to form an overall indicator per unit of production. The baseline year for the intensity indices is BHP Billiton's Fiscal Year 2001/02 and, as such, has a value of 100 for that year.

## Emissions

Environmental emissions are an inevitable part of our operations; however, in line with our commitment to continual improvement we require our sites to ensure that emissions are identified and managed to reduce potential impacts over time.

The following details our performance with regards to the significant environmental emissions across our businesses of:

- [Greenhouse Gases](#)
- [Ozone Depleting Substances](#)
- [Oxides of Sulphur](#)
- [Oxides of Nitrogen](#)
- [Fluoride](#)

For examples of policy in action, see our case studies on the [Worsley Alumina Air Emissions Impact Assessment Project](#) and [Managing dust suppression issues at our operations](#).

## Greenhouse Gases

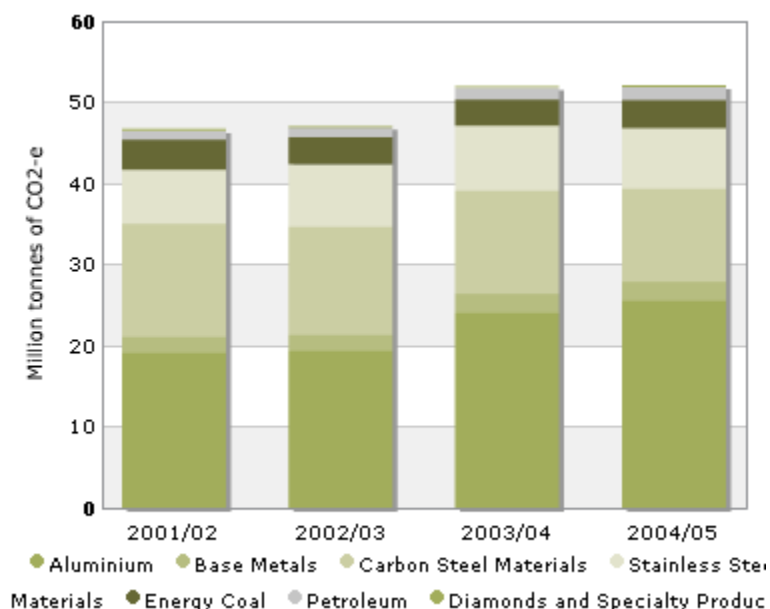
We achieved our target for all sites with greenhouse gas emissions greater than 100 000 tonnes of carbon dioxide equivalent per annum to have greenhouse gas management programs. It should be noted that 40 sites have emissions greater than 100 000 tonnes per annum, accounting for 96 per cent of the Group's greenhouse gas emissions.

Our total greenhouse gas emissions amounted to 52 million tonnes of carbon dioxide equivalent, a similar level to that reported in the previous reporting period. Major contributions were from Aluminium smelters, Stainless Steel Materials metallurgical plants and fugitive methane emissions from coal mines. The cessation of production at our Boodarie Iron facility (Australia) contributed to reduced greenhouse gas emissions.

The graph below shows the Company's greenhouse gas emissions trend over four years by CSG. The sources of these emissions are presented in the subsequent graph.

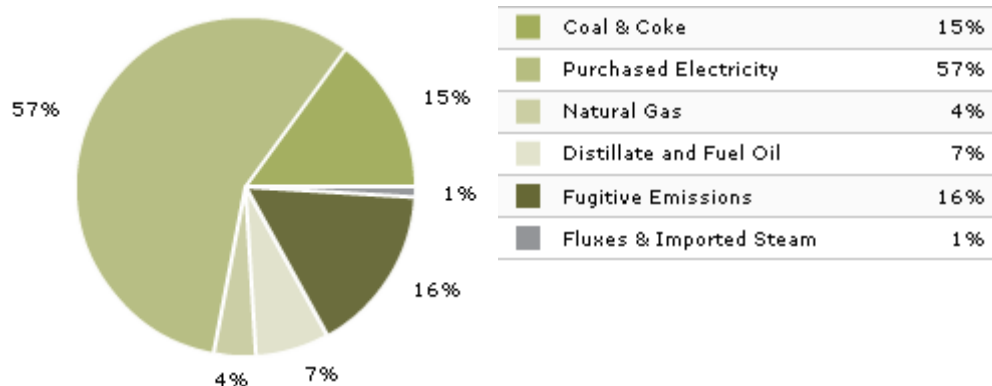
### Greenhouse Gas Emissions

2001/02 to 2004/05



## Sources of Greenhouse Gas Emissions

2004/05



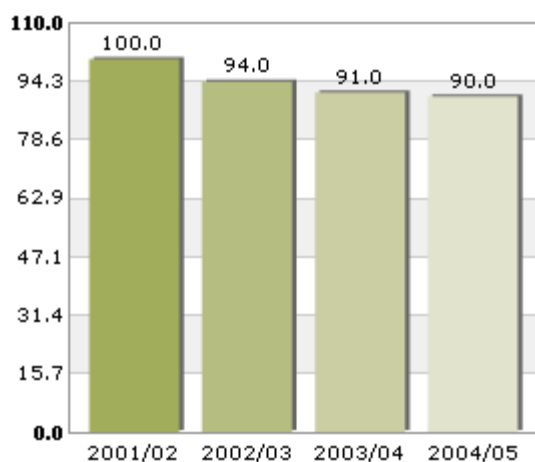
The greenhouse gas intensity index <sup>1</sup> is used to monitor our performance against our target. The graph below shows our greenhouse gas intensity index for the past four years. During the year our greenhouse gas intensity reduced, resulting in an overall reduction of our intensity index to date of 10 per cent against the 2001/02 baseline. Our performance is significantly ahead of schedule to achieve our greenhouse gas target of an aggregate Group reduction in greenhouse gas emissions per unit of production of five per cent by 30 June 2007.

An estimate of 390 million tonnes (340 million tonnes on an equity basis) of carbon dioxide equivalent are emitted as a result of our products being used. This figure is estimated based on standard conversion rates for 2004/05 production levels. Several parameters are estimates from our purchasers and this figure is thus not verifiable.

See our case study [Worsley Alumina reduces its greenhouse gas emissions](#) for information on some of the ways we are seeking to reduce our greenhouse gas emissions.

## Greenhouse Intensity Index

2001/02 to 2004/05

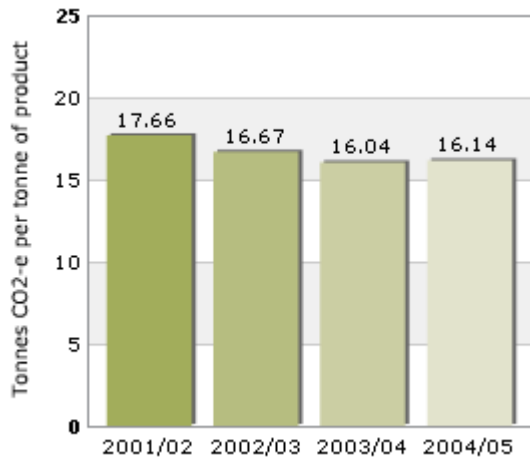


## Greenhouse Gas Intensity of Selected Products

The graphs below show that there have been reductions in greenhouse gas intensities for copper and petroleum products, attributable to reduced energy used per unit of production, as well as using more natural gas and less coal for electricity generation. Intensities for aluminium smelting and nickel refining have remained steady. The greenhouse gas intensity of Queensland coal continues to increase due to the progressive mining of deeper seams requiring increased energy use per unit of production.

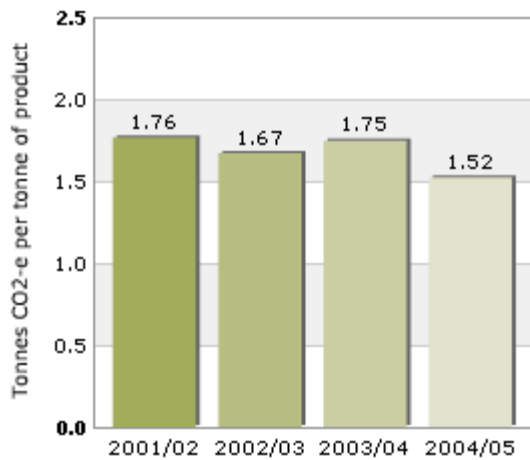
### Greenhouse Gas Intensity of Selected Products - Aluminium

2001/02 to 2004/05



### Greenhouse Gas Intensity of Selected Products - Copper

2001/02 to 2004/05



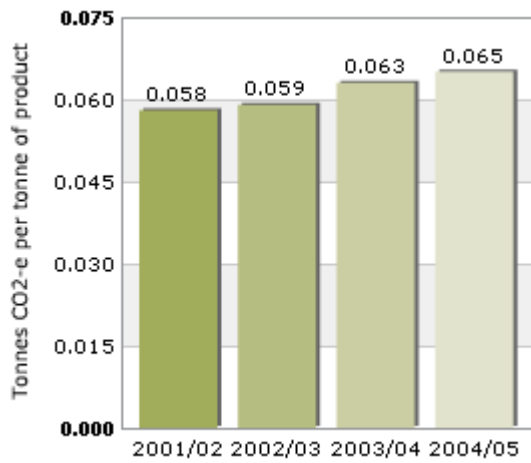
### **Greenhouse Gas Intensity of Selected Products - Petroleum Products**

2001/02 to 2004/05



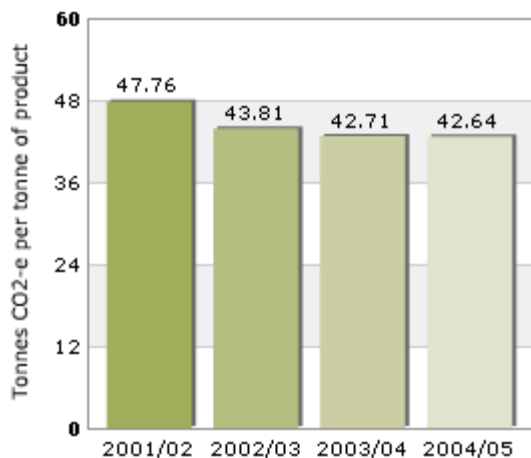
### **Greenhouse Gas Intensity of Selected Products - Queensland Coal**

2001/02 to 2004/05



## Greenhouse Gas Intensity of Selected Products - Queensland Nickel

2001/02 to 2004/05



1. Intensity Index - The intensity index has been developed as a Company-wide performance indicator on environmental parameters, such as energy use, greenhouse gas emissions and fresh water consumption. The 'index' concept allows performance from different business groups or sites, all of which may have different operating conditions and product mixes, to be added together to form an overall indicator per unit of production. The baseline year for the intensity indices is BHP Billiton's Fiscal Year 2001/02 and, as such, has a value of 100 for that year.

## Ozone-Depleting Substances

The amount of ozone-depleting substances discharged or leaked to air increased from 0.35 tonne of chlorofluorocarbon (CFC) equivalent in the previous reporting period to 0.42 tonne CFC equivalent in the current reporting period. This was mainly due to a leak in the refrigeration and air conditioning system at a petroleum site (which has since been corrected). We continue to phase out the use of ozone-depleting substances across our operations in compliance with legislative requirements.

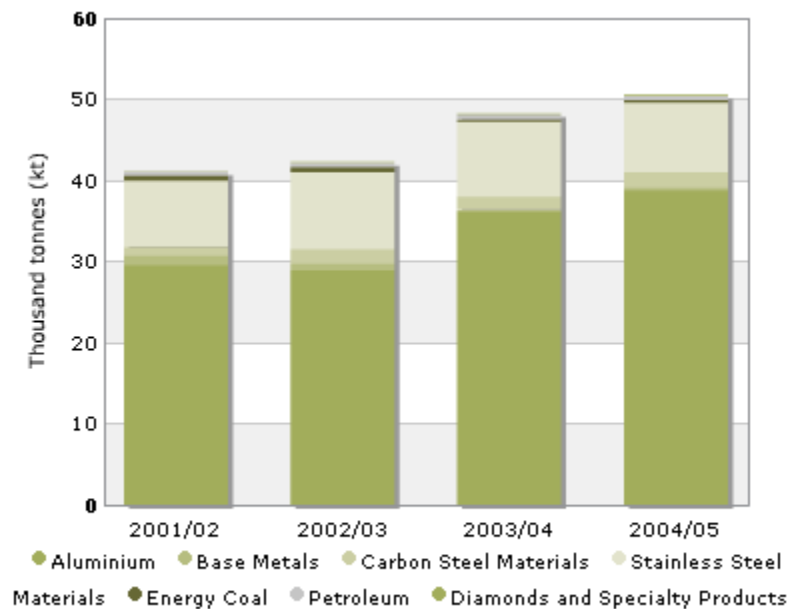
## Oxides of Sulphur

Emissions of oxides of sulphur (SO<sub>x</sub>) to air increased from 48 240 tonnes in the previous reporting period to 50 540 tonnes as shown in the graph below. The increase was largely due to higher emissions as the result of increased aluminium production.

A breakdown of SO<sub>x</sub> emissions by the CSGs is presented in the [Environmental Data Summary](#).

### SO<sub>x</sub> Emissions to Air

2001/02 to 2004/05



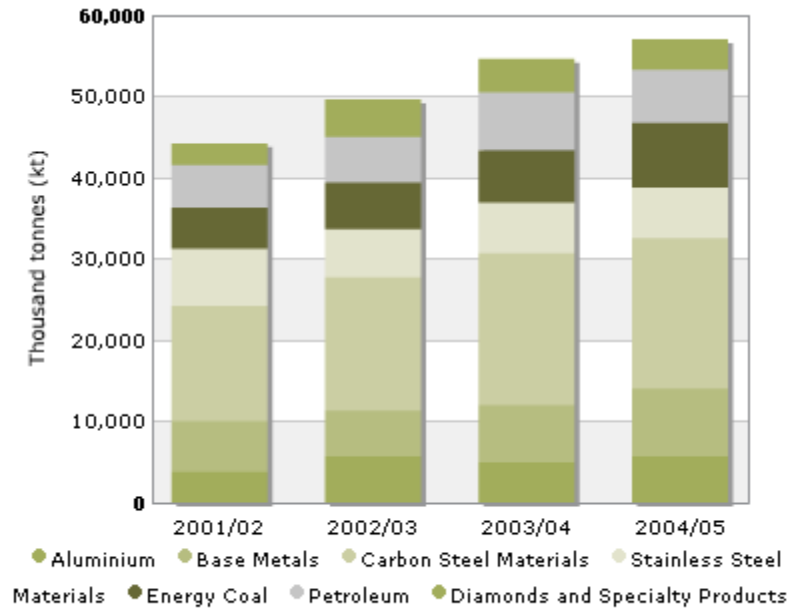
## Oxides of Nitrogen

As shown in the chart below, oxides of nitrogen (NO<sub>x</sub>) emissions increased from 54 600 tonnes in the previous reporting period to 57 120 tonnes. The increase was due to higher fossil fuel consumption across the Company associated with higher production levels.

A breakdown of NO<sub>x</sub> emissions by the CSGs is presented in the [Environmental Data Summary](#).

### *NO<sub>x</sub> Emissions to Air*

2001/02 to 2004/05



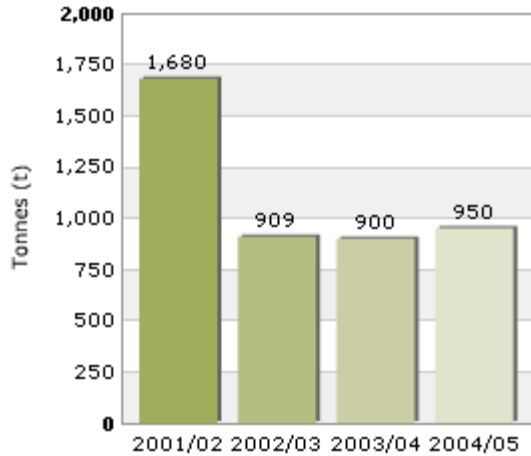


## Fluoride

Fluoride emissions from our aluminium smelters increased from 900 tonnes in the previous reporting period to 950 tonnes, as shown in the graph below. This increase was due to higher emissions as the result of higher aluminium production. The Aluminium CSG continues to make improvements to reduce these emissions, such as through reducing process instability via improved process control systems and work practices.

### *Fluoride Emissions to Air*

2001/02 to 2004/05



## Environment Case Studies

The following case studies present examples of environmental issues, initiatives, projects and programs across the Group that highlight some of the sustainability opportunities and challenges faced by our operations. Case studies are also presented for the areas of [health](#), [safety](#), [community](#) and [socio-economic](#).

[View](#) all case studies.

### Environment Case Studies

<p>Working towards our water target</p>	<p>The use of water resources is of increasing importance. Many Company initiatives have been implemented to effectively manage fresh water consumption.</p> <p><a href="#">More</a></p>
<p>Selbaie Mine develops environmental program for the long term</p>	<p>The Selbaie zinc mine (Canada) ceased operations in January 2004 and rehabilitation of the mine site has been progressing since 2000.</p> <p><a href="#">More</a></p>
<p>The Worsley Alumina Air Emissions Impact Assessment Project</p>	<p>The Worsley Bauxite-Alumina Project is a Joint Venture involving BHP Billiton (86 per cent), Japan Alumina Associates (10 per cent) and Sojitz (4 per cent) and consists of a bauxite mine, an alumina refinery and port facility located in the southwest of Western Australia. In the late 1990s, air quality had become a sensitive issue for the local community. In 2003, a plan was initiated to improve air quality at the refinery.</p> <p><a href="#">More</a></p>
<p>Land rehabilitation programs at Cerrejón and Mt Arthur Coal show the value of mine closure planning</p>	<p>The rehabilitation of land disturbed for mining and other uses is an important issue for the Company. Our sites actively seek the best options to rehabilitate disturbed land and to ascertain the best options for post-mining land use.</p> <p><a href="#">More</a></p>
<p>Middelburg Mine implements corrective action plan following spillage into the Spookspruit River</p>	<p>During 2004, our Middelburg coal operation (South Africa) spilled excess water spilled from a pollution control storage facility into the Spookspruit River. This was recorded as a significant environmental incident in line with our reporting process. A corrective action plan to prevent further spillage has been developed and is being implemented.</p> <p><a href="#">More</a></p>
<p>Worsley Alumina reduces its greenhouse gas emissions</p>	<p>In the period 1996 to 2004 Worsley Alumina reduced its greenhouse gas emissions by some half a million tonnes of CO<sub>2</sub>-e, compared to what they would otherwise have been. This has been achieved by undertaking a variety of projects, including sourcing energy requirements from a gas-fired cogeneration plant. Over the same period, Worsley also reduced its greenhouse gas intensity by around 12 per cent.</p> <p><a href="#">More</a></p>
<p>Recognising and managing the impacts of our operations on biodiversity values</p>	<p>Biodiversity management is an important aspect of sustainable development. The majority of our sites incorporate biodiversity considerations into their overall environmental management systems and, in partnership with relevant stakeholders, they are involved in a wide range of biodiversity projects and initiatives.</p> <p><a href="#">More</a></p>
<p>Managing dust suppression issues at our operations</p>	<p>Dust is a significant environmental aspect associated with all our mining operations. Measures to control dust are important aspects of both operational and environmental management systems at our mines and a key part of land-use planning.</p> <p><a href="#">More</a></p>

## Environment Case Studies

### Working towards our water target

### Environment



Jamie McCorkell, Senior Engineer - Environment and Community, tests water quality at BMA Hay Point Services coal port, Australia.

The use of water resources is of increasing importance. Our sites with fresh water consumption greater than 500 megalitres all have water management plans in place, in line with our corporate target. These plans require sites to identify water sources, water consumption and opportunities to reduce water usage. A number of sites with consumption below this figure have also instituted water management plans. In addition, we have set an aggregate Group target of 10 per cent reduction in fresh water consumption per unit of production by 30 June 2007. To help achieve these targets, many initiatives have been implemented to effectively manage fresh water consumption, including the following.

### Carbon Steel Materials, South Walker Creek coal mine, Queensland, Australia

Water conservation in central Queensland is critical after several years of below-average rainfall. South Walker Creek has few on-site catchment areas and draws water from a local borefield with limited capacity.

A water conservation program has been implemented to reduce the drawdown rate on the borefield. This has involved integrated mine planning, pipeline infrastructure, construction of additional dams and water-truck dust suppression initiatives. A water management model has been developed, detailing dams, pipelines and pumps critical to the water strategy.

Water catchments and recycling infrastructure have been constructed. Dam and mine pit levels are regularly inspected, and extra pumps have been installed so water is recycled effectively. The water-truck fill point has been modified and the access road sealed to reduce watering requirements. At the processing plant, the tailings line to the new tailings dam was installed with improved density gauges to screen for solids. This designed to reduce water usage and, therefore, evaporation losses from the tailings dam.

An important aspect of the program has been raising awareness of water conservation issues on site. Detailed water tracking and reporting mechanisms have been developed, and performance outcomes are presented at monthly meetings. Program information has also been regularly conveyed to the community through a consultative process and half-yearly reports to stakeholders.

Through the program, water usage from the borefield has been reduced from over 120 megalitres per month to less than 40 megalitres per month. A key has been the involvement of many parties championing many small projects. The program is ongoing, with further investigation of on-site groundwater use and the installation of a more efficient rejects dewatering process.

## Base Metals, Antamina, Peru, South America

The Huarmey forestation project at Antamina has taken excess water from the ore concentrate slurry dewatering process and used it to irrigate 170 hectares in the desert, transforming it into a thriving plantation.

Preparations began in 2001 with conditioning of the ground and the installation of irrigation systems and wind screens. More than 188 000 trees were planted and a green area was born. The plantation is progressing well, with some trees up to five metres tall. Insects are controlled naturally, without the use of pesticides.

The surplus water is treated to remove dissolved and suspended metals in compliance with best practice standards. It is filtered again before being sent to an irrigation reservoir from where it is conveyed by gravity to the plantation and distributed through a micro-spray and dripping system. To demonstrate the quality of the treated water, a one-hectare test plot was established within the plantation. Fruit trees were planted and a herd of black-belly sheep introduced, with positive results. Vegetables are also grown and used in daily meals for Antamina employees.

The plantation includes threatened native tree species and has become a shelter for birds, reptiles and mammals. It also has potential for the production of lumber, decorative trees, flowers, firewood, forage, honey, pollen and fruits.

After four years, as well as optimising the water resource to convert arid land into forest, the Huarmey project generated more than 120 jobs for local people during the installation of the irrigation system and planting of trees. Currently, irrigation maintenance projects provide jobs for 25 local workers. The project has also provided a green area for research, transfer of knowledge and recreation.

The forestation project has a potential life of another 18 years until Antamina's closure plan is implemented and the dewatering process is decommissioned, after which the project will be wound down by harvesting the trees and mulching all other vegetation.



Huarmey forestation project

## Aluminium, Boddington bauxite mine, Western Australia

In 2003, Boddington formed a team to develop and implement water conservation strategies. The team aimed for a 10 per cent reduction in water use, with the primary objective of demonstrating 'a measurable reduction in water consumption per unit of production within 12 months'.

Having established a charter based on the Company's business improvement methodology (Operating Excellence), the team formulated a system to measure and evaluate water consumption including identifying high-usage areas.

A campaign was developed to engage employees and stimulate discussion and innovation. Focusing on awareness, knowledge, attitudes and behaviour, the campaign was planned in five phases.

**Create awareness and interest** — A logo and catchy slogan ('Slow the Flow') were created for site-wide promotion.

**Persuade and motivate** — Employees could win prizes for completing questionnaires and surveys.

**Educate and provide tools** — 'Showbags' containing tips for reducing water use at home and work were distributed to employees.

**Stimulate action** — Employees were encouraged to contribute water-saving ideas for inclusion in action plans.

**Maintain behaviour** — Progress was promoted through posters and newsletters, and more 'showbags' were distributed.

The community was involved through activities such as a 'waterwise' gardens competition, including an Open Day on which the winner's garden was opened for public viewing. The local school was also assisted to become a 'waterwise' school.

After 12 months, the team achieved its primary goal, reducing water consumption from 34.5 litres per tonne of aluminium produced to 31.43 litres per tonne (just 1 per cent short of the ambitious 10 per cent target). The employee engagement campaign is continuing, with the focus on further cutting consumption by setting new action items, such as reducing the amount of water used for haulroad dust suppression.



Water conservation 'showbag'

## Energy Coal, Cerrejón, Colombia, South America

In 1999, some 1.2 million cubic metres of water stored at Cerrejón became acidified, resulting in a low pH that was outside standards. Any spill had the potential to harm the ecological balance of flora and fauna in the discharge zone.

When the use of alkaline materials as a neutraliser proved impractical, a site project team developed a pervious anaerobic filter with limestone as the treatment medium. With the filter installed at the outlet pump, the stored water pH was converted to an outflow pH of 4.7, above the minimum pH of 4.2 required for appropriate water quality. When the outflow mixed with fresh water, a neutral pH was obtained.

Over the following three years, the project allowed the reuse at the mine of all 1.2 million cubic metres of the treated acidic waters. This accounts for 60 per cent of the total requirement for road watering and other mining activities at Cerrejón and avoided the need to pump water from the Rancheria River. Furthermore, the solution mitigated the risk of environmental harm as well as the possibility of sanctions and fines from government environmental authorities had any spillage of unsuitable stored waters occurred.

The solution is testament to the creativity of the project team, as there was no previous experience with this type of project in the country. Numerous alternatives were evaluated before arriving at the solution, which utilises recycled materials and limestone produced at the mine, affording significant savings.



Suppressing dust on a haulroad with reused water at Cerrejón



Sewage lagoons at the Cerrejón mine

## Environment Case Studies

### Selbaie Mine develops environmental program for the long term

### Environment



East Sector - mine waste rock pile reclamation in progress - July 2004

The Selbaie zinc mine, located about 140 kilometres north of La Sarre in Quebec, Canada, operated from 1981 to January 2004. The mine site consists of 575 hectares of disturbed area in which environmental control systems have been constructed to manage water impacted by the 33 million tonnes of mineralised waste rock excavated during operations. Rehabilitation of the mine site has been progressing since 2000. Dissolved zinc, iron and copper were discovered in 2003 in seepage escaping to the fresh water diversion ditches and to the environment from an area east of the waste rock pile and, in 2004, from an area west of the low-grade ore stockpile. Action plans have been put in place to contain and treat the seepage and to regularly inspect and maintain the seepage containment system. This report provides an update on progress at Selbaie since last year's HSEC Report.

## Background

Selbaie tailings and mine waste materials contain sulphide minerals that can oxidise to form acidity and dissolved metals, mainly iron, zinc and copper. The escape of acidic water is believed to have occurred over a number of years during spring snowmelt, when the release was not visible under the snow and ice, and in heavy rainstorms.

Sampling of the East Sector in 2003 and the West Sector in 2004 identified poor water quality in the fresh water diversions. Both affected areas are in low, flat low-lying swampy peat bogs. Investigations found that acidic run-off had escaped undetected into the clean water diversions from the east waste rockpile and west low-grade ore pile, affecting South Creek and North Creek up to the outlet to the Wawagosic River. While these seepages have been occurring for a number of years, sampling in July and November 2004 confirmed there has been no significant adverse effect in the Wawagosic River.



Selbaie near the end of operations, 2003

## Action Plans for Control

The objectives were to construct systems to prevent the further escape of acidic water and metals, to clean up the affected areas, and to monitor recovery in downstream waters.

For both sites, action plans were presented to the Quebec (provincial) and Canadian (federal) governments with control strategies that included diverting seepage and preventing release to the environment, expanding acidic water collection capacity, excavating peat and ice in affected areas, improving ditching, and pumping. The East Sector controls were completed over the winter and spring of 2004/05 with final peat bog removal; the West Sector controls have largely been completed over 2004 to 2005, with final work planned for the 2005 summer.



Selbaie after demolition, November 2004

## East Sector Restored

For the East Sector, completion of the seepage control measures, followed by water treatment in the fresh water diversion ditch over a number of months, increased the pH and removed (precipitated) metals from the water before it left the mine site. With the success of these measures, treatment is no longer needed. Since June 2004, zinc levels have returned to normal at the outfall of the diversion ditch.

## Progress at the West Sector

For the West Sector, measures have included ditching and pumping to divert water from the affected area to the water treatment plant and excavating frozen peat. These controls were successfully completed over winter and spring from January to April 2005.

Difficult conditions in the low-lying areas require additional steps to ensure containment of acidic flow during heavy storm and run-off events. Collection ditches need cleaning out and armoring for additional erosion protection after the spring run-off to ensure long-term performance. Additional backup pumping systems are being installed.



West Sector – removal of frozen contaminated peat for disposal and treatment in open pit – February 2005

## Monitoring the Recovery

Aquatic sampling is being used to evaluate the biological effects and the recovery of the land and water in the affected areas. Sampling was carried out in July 2004 to assess streams below the East and West Sectors that flow to the Wawagosic River. Results showed elevated zinc levels along the full length of the affected streams to the confluence of the creeks with the larger Wawagosic River. No fish were observed or captured in the affected area, indicating poor water quality conditions in the upper part of the streams. No significant adverse effects were found in the Wawagosic River. Selbaie will continue to monitor the recovery of these affected water courses.



While the recovery of water quality in both streams along their full length will take an estimated three to four years, the results of the latest water quality sampling show significant improvement. In the meantime, ditches and pumping systems will continue to collect the water from the affected areas for treatment as long as is necessary. Sediments in the streams will continue to show elevated zinc and copper concentrations; and some areas may not return to pristine levels; however, the levels are not expected to prevent the return of fish and organisms that live in the sediments.

## Government Approvals

Throughout the restoration project there has been a continued emphasis on maintaining good communication and transparency with the provincial and federal governments. The objectives throughout the project have been to take all reasonable measures to contain or treat acidity in the streams and to study the effects and recovery in the environment. Regular meetings have been held with the Provincial Ministry of Environment and Federal Department of Environment to inspect the sites, obtain remediation approvals and review the progress of the remediation controls.



East Sector – joint sampling with the Federal Department of Environment at the final discharge – September 2004

## Environment Case Studies

### The Worsley Alumina Air Emissions Impact Assessment Project

### Environment



Aerial photograph of the Worsley refinery, located 150 km southeast of Perth, Western Australia

The Worsley Bauxite-Alumina Project is a Joint Venture involving BHP Billiton (86 per cent), Japan Alumina Associates (10 per cent) and Sojitz (4 per cent) and consists of a bauxite mine, an alumina refinery and a port facility located in the south-west of Western Australia. In the late 1990s air quality had become a sensitive issue for the community located near the Wagerup alumina refinery some 40 kilometres north of Worsley. The issue raised concerns among government, Worsley's workforce and the surrounding community about air emissions from the Worsley refinery. These concerns were heightened when the liquor burner was commissioned at Worsley in 2000. In March 2002, the liquor burner was shut down following concerns from the workforce and two neighbouring residents. In 2003, Worsley initiated a plan to improve air quality at the refinery, involving the workforce, the community and key government agencies. As well as installing new pollution control systems, an Air Emissions Impact Assessment (AEIA) project based on air emissions sampling and analysis, air dispersion modelling, health risk assessment, stakeholder consultation and peer review was undertaken.

### About the Refinery

The Worsley Alumina refinery employs about 1300 staff and contractors and produces approximately 3.27 million tonnes of alumina each year. It is surrounded by state forest reserve, water supply catchments and land owned by the Joint Venture. The residence nearest to the refinery is eight kilometres away. The township of Collie is 15 kilometres away. The refinery is currently being expanded to increase production to 3.5 million tonnes per annum, and Worsley has submitted an Environmental Review and Management Program to the Environmental Protection Authority to further expand the refinery to 4.4 million tonnes of alumina per year.

The refinery utilises the common Bayer refining process to extract alumina from bauxite and is serviced by its own 110-megawatt coal and 115-megawatt gas-fired power stations. A range of atmospheric emissions is generated, including volatile organic compounds (VOCs), odours and particulates from the process area, sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and particulates from the power stations, and also fugitive dust emissions from open areas around the refinery.

### About the AEIA Project

In 2003 Worsley embarked on a transparent program to assess air emissions originating from the refinery and determine the level of risk they posed to the health of the workforce and the surrounding community. A panel comprising experts in air emission sampling and analysis, air dispersion modelling and health risk assessment was set up to develop the scope of work for the project. A peer review group, including Dr Peter Mannins (CSIRO—Atmospheric Research Division), Len Ferrari (past president of the Clean Air Society of Australia and New Zealand) and Phil Weinstein (University of Western Australia), was formed to provide advice and direction at all stages of the project, including the peer review of all technical reports.

The major goal of the AEIA project is to 'Determine the extent of risk, if any, of emissions from the Worsley refinery on the health of the workforce and the health and amenity of the local community through a process that includes effective community involvement'.

The specific aims of the project are to:

- establish acceptable sampling and analysis methods
- establish an acceptable emissions inventory
- determine the effectiveness of emission control systems in the liquor burner and digestion facility
- determine ambient air quality resulting from the emissions
- conduct health risk assessment of the effects of emissions on air quality
- involve local community and regulators in the AEIA Project
- communicate results of the project to the regulators and community
- provide outputs for impact assessment of the proposed expansion.

An emissions inventory was constructed from measurements at the major points of source across the refinery. A total of 260 substances have been identified to date. SO<sub>2</sub>, NO<sub>x</sub>, carbon dioxide and particulate emissions account for over 99 per cent of the emissions. VOCs, which are the major source of odorous emissions, had an estimated emission rate of 267 tonnes per annum.

A regenerative thermal oxidiser has been installed in the liquor burner to control the odorous VOCs. A wet scrubber has also been installed to remove halogen compounds. Post-commissioning air emissions testing indicates that VOC emissions from the liquor burner have been reduced by 99 per cent and odour by 95 per cent.

An ambient air quality survey was undertaken within the refinery lease area and surrounding community. Sampling was carried out using specialised passive samplers to determine the concentration of VOCs in the workplace environment and neighbouring residential areas. The results showed the VOC concentrations were very low and all well below the air quality standards and occupational exposure standards.

The emissions inventory was used to provide an air dispersion model for the refinery lease area and surrounding airshed. Importantly, the model included the existing air quality situation and also the predicted air quality for a range of substances under the Worsley expansion plan. The model also took into account cumulative contributions from the existing power stations in the area. The predictions were then used for the health risk assessment, which was undertaken on the basis of three scenarios:

- the refinery as it is currently operating
- the refinery as it will be operating under the 4.4 Mt/annum expansion
- the expansion scenario including cumulative emissions from other sources.

The air dispersion modelling and an initial screening assessment identified 196 substances with concentrations less than the toxicological concern level. A total of 64 substances were subjected to the health risk assessment. Overall, the assessment concluded 'that there is a good degree of confidence that the emissions from the Worsley expansion are very unlikely to cause direct acute or chronic health effects on the surrounding population'.

At the start of the project, a Worsley–Government Coordination Group was set up to review the development and implementation of the project. The group meets quarterly, observes a process of open dialogue and, importantly, keeps stakeholders informed on progress. In 2004, Worsley held technical workshops on air emission sampling and analysis, air dispersion modelling and health risk assessment. Up to 40 people participated in each of the three workshops, which were well attended by representatives from Worsley, government and air quality consultants.

The refinery community liaison committee meets every one or two months and provides an open forum for discussion on air quality issues. Worsley has made several presentations to this group about the AEIA Project. The workforce is kept informed through bulletins on the intranet and in the Worsley newsletter. The annual meeting attended by all employees and contractors is also an effective forum for communicating progress on air quality issues.

The emissions inventory, updated air dispersion model and health risk assessment are supporting documentation for the Environmental Review and Management Program, which was presented to the Environment Protection Authority in April 2005 as part of the Worsley expansion submission.

## Outcome

The process developed by Worsley for the AEIA Project has to date mitigated community and workforce concern over the air quality issue. This positive outcome can be linked to the commitment of the Worsley executive management and the ongoing engagement of the regulators, workforce and community throughout the project. Worsley believes this process could be applied to other projects where there is potential for a high level of workforce and community concern.

## Environment Case Studies

### Land rehabilitation programs at Cerrejón and Mt Arthur Coal show the value of mine closure planning

### Environment



Senior Environmental Coordinator Ralph Northey inspects recent revegetation at Mt Arthur Coal

The rehabilitation of land disturbed for mining and other uses is an important issue for the Company. A key aspect of the mine planning process is the development of a post-mining plan. Mining practices can then be developed with the final land use in mind, in line with our Closure Standard, which presents principles and procedures for planning, providing for and executing closure, together with a set of requirements to ensure that closure plans achieve Company standards. Our sites actively seek the best options to rehabilitate disturbed land and to ascertain the best options for post-mining land use. Among the rehabilitation initiatives being implemented across the Company are the following at our Cerrejón and Mt Arthur Coal operations.

### Energy Coal, Cerrejón, Colombia, South America

At the Cerrejón coal operation in La Guajira state in Colombia, South America, a rehabilitation program is in place as part of the site's environmental management plan. Cerrejón is an open-cut mine that produces more than 25 million tonnes of coal annually and disposes of more than 160 million cubic metres of overburden to backfills and dumps. The goal of the program is to reclaim disturbed lands (mine, dumps and facilities) in such a manner that their natural structures, dynamics and ecological functions are sustainable, with similar landforms to those prior to the start of mining operations.

The team that runs this process comprises 65 people, including employees and contractors. It is led by the Safety and Environmental Support Department, which provides ongoing assistance to the mining and support equipment operational groups and collaborates in the planning of land clearing and soil removal. The team works with annual targets for all activities of an agricultural and biological nature.

The program, which started in 1990, has involved operations and research activities applied to soil management, plant adaptation and revegetation in semi-arid conditions. Developed completely in-house, the program uses modified and adapted technologies, optimising the environmental and biological conditions to achieve the best possible use of local natural resources (soil, native species, rainfall and people).

By the end of 2004, over 2100 hectares of land had been rehabilitated representing 25 per cent of the total land disturbed during Cerrejón's operations. More than one million trees have been planted during this period. The rehabilitated area is showing strong signs of recovery, with an increase in the diversity of fauna and flora species.

Key components of the program include:

- developing a knowledge database for the management of more than 35 native arboreal species
- using animal power for the preparation of soil on sloping terrain
- using low-density sowing and planting methods for both seeds and trees
- no use of irrigation or fertilisation, despite adverse environmental conditions
- controlling water erosion.

From 15 years of continual improvement has evolved a proven operational methodology, with its corresponding procedures, standards and guidelines, for carrying out a land rehabilitation program. This program is the first developed in Colombia in a specific context over such an extensive area and has been acknowledged as a significant advancement by national academic and scientific communities.

Corporación Autónoma Regional de La Guajira (Corpoguajira) is the regional authority for overseeing environmental programs such as the land rehabilitation program at Cerrejón. Manuel Ramírez, coordinator of control, follow-up and monitoring of permits, has known of the program since its commencement and acknowledges its effectiveness. He says, 'Of course it is effective, because the planting of trees returns the natural balance of disturbed areas. A significant issue is that native or traditional species such as Empui and Guayacán do return. It is an example not only for Colombia but for the world. Hopefully the Cerrejón land rehabilitation program can become an example to be followed anywhere where there exists this type of activity of open mining. It shows a significant effort on the part of Cerrejón'.



A section of reclaimed land at Cerrejón



Using animal power for the preparation of soil at Cerrejón

The research infrastructure and methodology of the Cerrejón land rehabilitation program have generated standard procedures that are adaptable to other sites and areas, with a high level of performance that guarantees its permanence in a sustainable way.

## Energy Coal, Mt Arthur Coal, New South Wales, Australia

Mt Arthur Coal is a large open-cut coal mine located less than five kilometres from the town of Muswellbrook in the Upper Hunter region of New South Wales, Australia. Surrounding the mine are rural properties, horse studs, vineyards, olive groves and residential suburbs. Integrating operations in a sympathetic manner with nearby neighbours is a key philosophy of the operation, as demonstrated by the focus on rehabilitation and land management.

Under the land management plan for the mine, in 2003/04 a total of 190 hectares of land was rehabilitated, which represented approximately 35 per cent of the 550 hectares of land that was available to be rehabilitated. Since then, in excess of 200 hectares of disturbed land has been rehabilitated, a record for the operation.

The rehabilitation program is linked into the overall regional habitat management plan. Developed by the Department of Primary Industries, the plan aims to integrate remnant native vegetation with the rehabilitated mine areas to form district-wide wildlife corridors. Revegetation is being coordinated to include the re-establishment of native forest on the rehabilitated land to blend with the native vegetation in the adjoining natural terrain.

The majority of the land at Mt Arthur Coal had been cleared for farming prior to mining commencing. A benefit of the current rehabilitation program, linked to the regional plan, is that it is contributing to an overall increase in the area of native vegetation and habitat in the planned wildlife corridors.

Also under the land management plan, a bund (embankment) is being constructed from overburden on the boundary of the mine site. At 40 to 50 metres in height, the bund is designed to create a visual screen between the town of Muswellbrook and the mining operation. Shortly after the placement of the overburden, the bund is being vegetated with a combination of pasture grass and native trees so that it blends in with the surrounding rural landscape.

Commenting on the project, a member of the local Community Consultative Committee said, 'I was sceptical at the design phase about how effective the bund would be, but it has turned out to be remarkably effective and a good lesson in what can be achieved by good planning'.

As Mt Arthur Coal continues operating over its many years of remaining mine life, rehabilitation of disturbed land will be ongoing, in accordance with the regional habitat management plan and the Company's Closure Standard.

## Environment Case Studies

### Middelburg Mine implements corrective action plan following spillage into the Spookspruit River

Environment



Middelburg coal operation, South Africa

Our Middelburg coal operation is located in Mpumalanga Province, South Africa. During the months of August and September 2004, excess water spilled from the E6 decant dam (pollution control storage facility) into the Spookspruit River on the north section of the mine. This was recorded as a significant environmental incident in line with our Company reporting process. It is estimated that between 30 000 to 50 000 cubic metres of affected water was spilled into the river. Downstream monitoring indicated that the impact of the spillage was limited to a two-kilometre stretch of the Spookspruit, with no related impact on flora and fauna. A corrective action plan to prevent further spillage has been developed and is being implemented.

### The E6 Decant Dam

The E6 decant dam is situated along the northern periphery of the Hartebeesfontein mining area. E1 to E6 were access ramps to the mine workings in this area. The E6 ramp was situated on the northern periphery of the mining area, within the 1 in :50 year floodline of the Spookspruit. The North Plant is situated to the west of the area. Associated with the North Plant are five affected-water dams, which are primarily utilised by the processing department.

### Events leading up to the incident

Due to higher-than-average rainfall in 1996, floods filled the mined-out voids of the Hartebeesfontein mining area, resulting in the first spill from the E6 area. In 1999, to contain the flow and minimise possible seepage, a slurry cut-off trench and wall were constructed from cement and clays. Attapulgite clay was added to the slurry to counter any impact from the spilled water's low pH on the slurry mixture.

In 2001, the Dam 5 liming plant was commissioned to adjust the pH of the E6 decant water so that it could be discharged into Dam 5 and recycled for processing to the North Plant; however, due to continual spillage of surplus water at Dam 5, the decant water was pumped to the E4 final void.

During 2001, disposal of slurry into the ramp and final void of E3 commenced. Consumption of process water by the North Plant increased, and there was also an increased feed of fine coal to the plant, leading to an increase in the volume of slurry being pumped to E3. These factors led to increased volumes of decant water at E6.

Significantly higher-than-normal rainfall occurred through the first three months of 2004. In May, an additional pump was installed at E6 to manage the increase in decant emanating from the dam but in late August the volume of decant water exceeded the capacity of the pump and the spillage occurred. Monitoring of the Spookspruit downstream indicated that the impact of the spillage was limited to a two-kilometre stretch of the river, with no related impact on flora or fauna. Historical water quality information indicated that the Spookspruit had been subjected to the impacts of surrounding mining activities over the many years since mining started in the region.



No spillage is presently taking place from E6, though there has been some limited seepage through the dam wall as a result of the high water level.

## Key Findings

A mine team consisting of the HSEC manager, environmental officer, maintenance control engineer and the pit pumping foreman conducted an in-depth investigation, based on the BHP Billiton Incident Cause Analysis Methodology (ICAM), to determine the root cause of the incident.

### **Basic Cause**

In planning to manage the water levels in the E6 decant dam, not enough consideration was given to the impact of change in the area. For example, during periods of excessive rainfall, the volume of decant in the dam can increase to approximately 7 megalitres per day, an amount that cannot be utilised by the North Section of the mine, resulting in a surplus of affected water.

In addition, the implementation of long-term water management measures detailed in the environmental management program had been postponed due to budgetary constraints.

### **Contributing Factors**

The risk of spillage was identified but not managed adequately. Control measures that had been implemented (the construction of the slurry trench and the pump system) were designed to manage the water levels in the E6 decant dam based on the situation in 2001.

The risk assessment was not reviewed and updated to include the impact that change would have on the decant volume emanating from E6. Change factors include increased water consumption of the plant, increased volume of slurry disposed of in E3, and the above-average rainfall that was experienced from January to March 2004.

No safe operating procedure (operations manual) was in place to manage the level of the E6 in such a way as to ensure that the level did not exceed the height of the slurry trench core. Such a procedure would have ensured that the pump system was optimised to create sufficient capacity in the dam to limit possible seepage or spillage to the Spookspruit and to accommodate excessive rainfall events.

There was no clear allocation of responsibility for the prevention of spillage. Dam levels were inspected by the Middelburg HSE Department, while the Pump Section of the Mining Department managed the E6 pumping system, primarily focusing on the dewatering of active mining cuts. This led to inefficiencies in the pump systems and a lack of urgency in reacting to environmental emergencies.

## Corrective Action Plan

The following corrective actions have been undertaken or are in the process of being implemented:

- A standard operating procedure has been developed to control the water level and pump systems at the E6 decant dam.
- Four additional pumps have been installed to stop spillage.
- E3 slurry disposal has been diverted to the H1 ramp.
- The pump column from the E6 decant dam to the E4 final void has been upgraded.
- The Dam 5 liming plant has been recommissioned and connected with the E6 decant dam.
- Seepage control measures at both the E6 decant dam and Dam 5 are being investigated.
- Boreholes are to be drilled into the mined-out area to establish the interconnection between the E6 decant dam and Dams 3, 4 and 5.
- Detailed risk assessments are to be conducted on all identified decant positions at Middelburg Mine and Boschmanskrans.
- Clean water diversion features upstream of the E6 decant dam are to be optimised to ensure storm water run-off is diverted around the dam.

The responsibility of all relevant stakeholders to manage the facility is clearly listed in the standard operating procedure. In addition, any future changes, such as to rainfall levels, will be subjected to the mine's Management of Change procedure, which includes detailed risk assessments of the changing situation.

As well as these measures, planning is under way to optimise the reuse of mine-affected water generated in the Hartebeesfontein mined-out area, and a long-term management strategy for the E6 decant dam is being developed.

## Environment Case Studies

### Worsley Alumina reduces its greenhouse gas emissions

### Environment



Worsley Alumina Refinery



The Worsley Bauxite-Alumina Project is a Joint Venture involving BHP Billiton (86 per cent), Japan Alumina Associates (10 per cent) and Sojitz (4 per cent) and consists of a bauxite mine, an alumina refinery and a port facility located in the southwest of Western Australia. In the period 1996 to 2004 Worsley reduced its greenhouse gas emissions by more than half a million tonnes of CO<sub>2</sub>-e, compared to what they would otherwise have been. This has been achieved by undertaking a variety of projects, including sourcing energy requirements from a gas-fired cogeneration plant and heat recovery. Over the same period, Worsley also reduced its greenhouse gas intensity by around 12 per cent.

## Background

Worsley Alumina has had a strong focus on greenhouse gas abatement for almost a decade. In 1996, Worsley became a signatory to the Greenhouse Challenge program of the Commonwealth Government of Australia's Greenhouse Office (AGO). Participation in this program is voluntary, and participants are required to calculate and report annually their greenhouse gas emissions.

In the 2001/02 reporting year BHP Billiton introduced a target for all sites with greenhouse gas emissions greater than 100 000 tonnes of carbon dioxide equivalent per annum to have greenhouse gas management programs.

In recent years the refinery has undergone significant expansion. In July 2005 a project to further increase alumina production from 3.5 million tonnes to 4.4 million tonnes a year was announced. The latter is subject to Government and Corporate approval.

## Greenhouse Gas Reduction Initiatives

Worsley has initiated a greenhouse gas emissions reduction program that has resulted in significant avoidance and reduction of emissions. The program involved various abatement actions, the most significant of which was sourcing expanded energy requirements from a gas-fired cogeneration plant.

## Abatement Actions - 1996 to 2004

Action	Number of Actions	Actual tonnes of CO <sub>2</sub> -e Savings (Full Year)
<b>Lighting upgrades</b> <ul style="list-style-type: none"> <li>Removing unnecessary fluorescent tubes from the main office led to lower maintenance costs and an estimated reduction of 290 t/a CO<sub>2</sub>.</li> <li>Improving the external lighting system to become more energy efficient has delivered an estimated efficiency gain of 270 tonnes of CO<sub>2</sub>.</li> </ul>	2	560
<b>Fuel switching</b> <ul style="list-style-type: none"> <li>When sourcing the power needs for major expansion projects, Worsley has used gas-fired rather than coal-fired generation as a means of limiting greenhouse gas emissions and achieved an estimated reduction of 433 000 tonnes of CO<sub>2</sub>.</li> </ul>	2	433 000
<b>Converting fixed speed drives to variable speed drives</b> <ul style="list-style-type: none"> <li>The energy loss occurring across the control valves was avoided by using a variable speed pump drive to control flow rather than a control valve. This efficiency gain represents an estimated 1553 tonnes of CO<sub>2</sub>.</li> </ul>	1	1 553
<b>Air-conditioning</b> <ul style="list-style-type: none"> <li>The air conditioning system in Facility 303 (office training area) was replaced with a more energy efficient system with an estimated reduction of 20 t/a C</li> </ul>	1	20
<b>Heat recovery</b> <ul style="list-style-type: none"> <li>Heat transfer improvements, which have involved the installation of additional vessels and heaters and the rerouting of indirect steam heater condensate to the powerhouse, an estimated reduction of 44 370 tonnes of CO<sub>2</sub>.</li> <li>Previously cooling water was used to indirectly lower the temperature of the alumina at the discharge end of the calciner cooler. A heat exchange system was installed and a process liquor stream is now heated in place of cooling water, enabling around 80 per cent of this energy to be recovered. This efficiency gain represents an estimated saving of 33 280 tonnes of CO<sub>2</sub>.</li> </ul>	2	77 650
<b>Improved energy efficiency</b> <ul style="list-style-type: none"> <li>A larger more energy-efficient calciner was installed rather than retrofitting of heat recovery cyclones to the calciners. This efficiency gain represents an estimated 3256 tonnes of CO<sub>2</sub>.</li> </ul>	1	3 256
<b>TOTAL</b>	<b>9</b>	<b>516 039</b>

## Current Abatement Measures

In line with BHP Billiton Corporate requirements, Worsley has further developed its greenhouse activities into a greenhouse gas and energy conservation plan which includes a commitment to reducing greenhouse intensity by five per cent over the period 2002 to 2007.

Worsley is using a range of energy efficiency, fuel substitution and offset mechanisms to achieve reduction in its greenhouse emissions, including:

- **Energy efficiency improvements:** While Worsley remains a relatively energy efficient operation, further options for improvements are being investigated, including improved efficiency of coal-fired boilers, recycling of heat energy from calcination and indirect heating of desilication slurry.
- **Fuel substitution:** When considering the power needs for major expansion projects, Worsley has used gas-fired rather than coal-fired generation as a means of limiting greenhouse gas emissions. Other fuel substitution measures being considered are converting mobile fleets to LPG, burning of up to five per cent waste wood (renewable) in the coal-fired cogeneration facility, and use of solar lighting where practicable.
- **Offset mechanisms:** Worsley supports the development of terrestrial carbon sinks as an effective greenhouse gas abatement strategy. The joint venture owns around 10 000 hectares of forested land, in addition to cleared farm land, and is committed to maintaining this land as a CO<sub>2</sub> sink. Worsley plans to expand this sink through its revegetation programme and by establishing a timber plantation.

## Gas-Fired cogeneration: Stage 2 Expansion

As part of an expansion at the refinery in 2000, Worsley Alumina installed a natural- gas-fired cogeneration facility on site. This major expansion designed to produce 3.1 Mt/a of alumina. By sourcing the expanded production energy requirements from a gas-fired cogeneration plant, an estimated saving of 386 000 tonnes of CO<sub>2</sub> has been achieved, compared with the coal-fired alternative.

The coal and gas-fired facilities at Worsley cogenerate electricity and steam, with thermal efficiencies of 81 per cent and 77 per cent respectively.

At the refinery, coal is burned in the boilers, generating steam which drives the turbines to generate electricity and then to provide heat to the Bayer process.

Electricity is supplied to the refinery, and small amounts are exported to the south-west interconnected system operated by Western Power Corporation. The gas-fired cogeneration plant burns natural gas in gas turbines to generate hot gases that drive a turbine to generate electricity and then enter a heat recovery steam generator to produce steam that is supplied to the refinery process.

The coal-fired generation facility receives condensate (containing some heat) returned from the refinery process, resulting in a significant energy saving compared with raising steam from fresh water. Cogeneration combined with condensate return enables the refinery energy supply facilities to operate at a very high efficiency compared with conventional electricity generation facilities.



Worsley's gas-fired cogeneration plant

## Gas-Fired Cogeneration: Worsley Bauxite-Alumina Expansion Project

The Worsley proposal to further increase production to 4.4 Mt/a will require:

- an expansion of mining operations into new areas as well as an increase in the rate of mining
- extension of ore transportation facilities to cater for movement of raw bauxite from new mining areas to the existing overland conveyor
- changes to the existing overland conveyor operations to cater for the increase in raw bauxite material being transported to the refinery
- refinery modifications that include additional process facilities and additional power generating and steam raising facilities.

Assessing the greenhouse gas implications is a critical element of the expansion project. Activities or aspects of the proposed expansion that result in emissions of greenhouse gases include:

- combustion of coal and natural gas predominantly in steam raising facilities and calciners
- combustion of fuel in mining fleet and other mobile equipment
- clearing of vegetation for project operations.

The proposed expansion will result in an increase in greenhouse emissions by up to 1.1 million tonnes per annum (Mt/a) for a worst case scenario using coal to fire the required steam and electricity facility.

Worsley has approval from the Western Australian Government to increase alumina production from 2 Mt/a to 3.5 Mt/a and cap greenhouse gas emissions to 3.15 Mt/a CO<sub>2</sub>-e. The joint venture is considering a range of options to meet the increased power requirements, including coal-fired cogeneration and gas-fired cogeneration.

Greenhouse gas emissions have been estimated for the coal-fired boiler expansion option as the base case. At 4.4 Mt/a alumina production, project greenhouse gases are estimated to be 3.72 Mt/a CO<sub>2</sub>-e. The coal-fired cogeneration facility would represent the single largest project source at 2.36 Mt/a (62 per cent).

Should gas prove feasible to expand electricity and steam raising facilities, project emissions will remain within the currently approved limits for the 3.5 Mt/a production rate of 3.15 Mt/a CO<sub>2</sub>-e.

Environment Manager Gerry Rayner said on a world scale, the Worsley refinery remained a relatively energy-efficient facility, achieving an estimated energy usage of 10 832 megajoules per tonne (MJ/t) of alumina. This represented better energy efficiency than the weighted world average of 11 644 MJ/t.

'By ensuring that Worsley remains among the more energy-efficient alumina refineries in the world, we will be able to minimise greenhouse gas emissions,' he said.

'We can do this through a combination of adoption of best practice technologies, operation of thermally efficient cogeneration facilities to meet project energy demand and continuous improvement in project energy efficiency.'

## Environment Case Studies

### Recognising and managing the impacts of our operations on biodiversity values

### Environment



Hay Point Beach near Sarina, Queensland



Biodiversity management is an important aspect of sustainable development. Our responsibility is to recognise and manage the values of biodiversity that may be adversely affected by our operations. To this end, we are refining our approach to biodiversity management, including developing appropriate biodiversity management plans. The majority of our sites incorporate biodiversity considerations into their overall environmental management systems. In partnership with relevant stakeholders, they are involved in a wide range of biodiversity projects and initiatives.

### Carbon Steel Materials, Hay Point coal terminal, central Queensland, Australia

The Hay Point terminal, located near Sarina on the central Queensland coast, handles and despatches coal from the mines operated by BHP Billiton Mitsubishi Alliance (BMA). An ongoing challenge is sustainably operating a facility adjacent to the the Great Barrier Reef Marine Park World Heritage area.

On their own initiative, Hay Point Services employees began cleaning general community rubbish from the beach and foreshore. Their activities have evolved into the Hay Point Foreshore Development Project, a community partnership with the environmental group Green Corps, Sarina Landcare Catchment Management Association (SLCMA) and Sarina Shire Council.

The project site is an 18-hectare buffer zone within terminal land. Based on a master vegetation plan, the project aims to protect and revegetate the zone and provide habitat for native species of plants and animals, while still allowing public access. A five-year implementation plan is being developed to ensure restoration works and public access points do not adversely impact flora and fauna.

The point and foreshore are significant in terms of regional biodiversity, with extensive mangrove forest and dune vegetation ecosystems. These provide habitat for many birds and animals, including migratory species. The beach is a nesting site for marine turtles including the vulnerable green turtle (*chelonia mydas*) and flatback turtle (*natator depressus*).

The turtles' mating and nesting occur from October to January. Around March, the hatchlings emerge and navigate their way to the water. As bright foreshore lighting may inhibit their endeavours, the project team has installed 'turtle friendly' lights in the area.

Saskia von Fahland, coordinator of the SLCMA, says, 'The Sarina Green Corps team gained a variety of on-ground skills and experiences throughout the project, from weed control and revegetation to the construction of pedestrian tracks and sand ladders [to provide public access to the beach and nesting areas and prevent entry by vehicles]. The Hay Point rehabilitation project has the potential for ongoing rehabilitation and maintenance as well as enhancing existing pedestrian tracks and installation of interpretive signage'.

These combined efforts resulted in the Hay Point Services team winning the state Beach Spirit Award conducted by the Keep Australia Beautiful Council. The award recognises coastal communities that face difficult times but which show outstanding commitment to solving problems by turning them into opportunities.

In recognition of the biodiversity values of the area, the project site has been included on Queensland's Land for Wildlife register.

## Stainless Steel Materials, QNI Yabulu Refinery, northern Queensland, Australia

QNI Yabulu Refinery in north Queensland is now a wildlife release site, as part of a partnership program with North Queensland Wildlife Care (NQWC) Inc.

NQWC is a volunteer organisation that cares for sick, injured and orphaned native Australian fauna and assists with their rehabilitation and release. In late 2004, they contacted QNI to discuss the use of the environmental buffer zone around the refinery as a release site for rehabilitated wallabies, possums and bandicoots.

The buffer zone supports many species of plants and animals and several distinct ecosystems have been identified, including sand dunes, mangroves and salt flats, open forest, and eucalypt and melaleuca woodlands.

The president of NQWC, Jim Pollock, says, 'The large buffer zone around the refinery is an ideal environment for us to release our animals. It is important for the animals' future welfare that we try to release them away from roads and residential development. The space and variety of native vegetation available at Yabulu makes it a great release site for us'.

With nearly 2500 hectares of land, QNI is one of the largest remaining landholdings close to the city of Townsville, making it well suited as a release site.

To consolidate the partnership, QNI is providing funding of A\$15 000 over three years to enable NQWC to upgrade safety equipment and clothing for wildlife handlers, produce posters and pamphlets about wildlife care for distribution to local schools and purchase additional cages for transporting injured animals.



Possum released back into the wild

## Petroleum, Liverpool Bay, north Wales, United Kingdom

Our Point of Ayr oil and gas terminal, part of our Liverpool Bay asset, is located at the outer reaches of the Dee Estuary, an important wetland area designated as a Site of Special Scientific Interest (SSSI). The local Talacre dune system also has SSSI protected status.

Our conservation plan covers more than 120 hectares of land surrounding the terminal. Conservation work is aimed at important bird species that visit the area. An underground irrigation scheme, new lakes and altered grazing patterns have created enhanced conditions for birdlife to thrive. The area of dunes is managed for the long-term preservation of their key natural features; management includes dunes protection work, restricted vehicle access and improved pedestrian access, and information provision. A team of rangers ensures the area benefits from year-round wardening. A landscaping scheme incorporating over 40 000 trees and shrubs adds diversity to the natural environment while helping to reduce the visual impact of the terminal.



We encourage our employees and the community to make the most of their local countryside and to actively support nature conservation. Activities include participation in Wales Biodiversity Week and International Coastal Clean-up Day and a program of organised events that includes the following.

**Natterjack toad nights** - The natterjack toad, which disappeared from the area in the 1960s, was re-introduced in 1997 and the population has been increasing since. Two events are conducted each year; breeding pools and adult toads are observed and explanations given about the work involved in practical habitat management and breeding surveys.

**Gronant little tern colony watch** - The little tern colony in Gronant is the last remaining breeding colony in Wales. Little Terns prefer beach areas to lay their eggs and can be disturbed by visitors. We joined forces with the Royal Society for Protection of Birds to install a remote camera system to enable visitors to view the colony without going onto the site.

**Flintshire schools environmental photography competition** - 'Nature on the Wildside' was staged with the local education authority to encourage young people to appreciate their local environment and find new ways to explore nature. The photographs were exhibited at our offices and published in a calendar. The event proved so successful that schools have asked that it be run again next year.

Commenting on our conservation program, Laura Whyte, Flintshire Biodiversity Officer, said, 'BHP Billiton's work at Talacre site is of great benefit to Flintshire's biodiversity on many levels. They have recently been involved in a dune slack restoration and beach nourishment scheme that has made the Gronant/Talacre dune system into one of the leading sites for dune restoration in Britain. Their awareness and educational work has been very impressive, and successful. BHP Billiton has had representation at all of Flintshire's major biodiversity events, always providing interesting and educational activities for the public'.

## Environment Case Studies

### Managing dust suppression issues at our operations

### Environment



Environmental Officer Rachel Williams adjusts a low frequency microwave moisture analyser at Nelson Point, Port Hedland

Dust is a significant environmental aspect associated with all our mining operations. Dust can typically be generated by activities such as earthworks, excavation, blasting, transportation and product processing and can be exacerbated by dry climatic conditions and winds. Measures to control dust are important aspects of both operational and environmental management systems at our mines and a key part of land-use planning. We are continually addressing and managing the challenges associated with dust, as demonstrated at the following two sites.

### Carbon Steel Materials, Saraji coal mine, central Queensland, Australia

Saraji open-cut coal mine is operated by the BHP Billiton Mitsubishi Alliance (BMA) in the Bowen Basin of central Queensland. The site has developed a dust-suppression initiative that has resulted in improved dragline productivity and accelerated evaporative pitwater disposal.

The regional climate ranges from drought to flood, with annual rainfall varying from 200 mm to 1400 mm. Annual evaporation, however, is up to three times higher, contributing to a generally dry and dusty working environment. Draglines at the mine dig the overburden material that has been blasted. Being mostly dry, its movement can generate dust, which can impede the visibility of the dragline operators, reduce earthworks productivity, and impact on the environment.

The access ramps and open pits provide a large catchment area for rainfall runoff. This, together with drainage from saline aquifers associated with the coal seam, provides an excess of mildly saline water, which needs to be managed carefully. This water is generally pumped over the highwall into intermediate dams and then pumped to a central storage facility for use as process water and for dust suppression using water carts.

The idea behind the initiative came after a dusty night when dragline operator Ken Knuth pointed out to his supervisor that the dewatering pipeline ran past the dragline digging area. Ken wondered whether the piped water could be used to suppress dust.

A test device built by the pump crew and placed in the pipeline proved effective in suppressing dust but could not distribute the water accurately or very far. The pump crew approached the environmental team, as water management is high on the site's environmental risk register. The environmental team happened to be working with local equipment suppliers on a spray facility to suppress dust on an old tailings dam and also reduce the site's overall saline water inventory. A high-capacity, full-circle 'big gun' irrigation spray was being adapted for the purpose.

## ***'Big Guns' for Keeping Down Dragline Dust***

The possibility of adapting the specialised 'big gun' spray for dragline dust reduction was floated. A mobile stand for the spray was constructed and a trial was conducted. Using a pit pump, the gun was set up to spray pitwater onto a selected area. Initial results were positive, with 32 litres per second being sprayed in the selected area with good dust suppression.

The most suitable 'big gun' spray was then selected. Somewhat like a garden sprinkler in its specified arc of delivery, the spray can be easily set to cover the working area of the dragline, without endangering the integrity of the highwall. The prototype stand was modified to improve its stability and ease of use. Two sprays were purchased and anodised and powder-coated to protect them against the salts in the pitwater.

The site has also installed an on-line weather system for continuously monitoring, recording and reporting local conditions to improve decision-making. The system, which operates 24 hours a day, seven days a week, has been operating successfully over an extended period of time.

The dust suppression project has had excellent results, enhancing dragline operator visibility, work conditions and operational efficiency and providing an environmentally sound method of disposing of the mildly saline pitwater. The success demonstrates the value of an innovative idea being brought to reality through a collaborative team effort.

## **Carbon Steel Materials, BHP Billiton Iron Ore, Western Australia**

BHP Billiton Iron Ore (BHPBIO) has a prominent presence in the Pilbara region of northwest Western Australia, with operations located in the towns of Port Hedland, Newman and at various satellite ore bodies.

BHPBIO is undergoing an exciting period of growth. In late 2003, a feasibility study was initiated to ensure that growth is planned and managed in a way that maximises opportunities for the business, our employees and our host communities, while at the same time minimising any negative effects associated with change.

A key aspect of the feasibility study is a comprehensive environmental and social impact assessment and community involvement program. One of the major issues raised during this process has been the impact of dust on the downtown area of Port Hedland. Despite a considerable increase in iron ore tonnages, our on-site and off-site dust reduction measures have prevented any proportional increase in dust arising from our operations; however, dust remains an amenity issue for those residing and working in the downtown area. While there is recognition that Port Hedland and its environment are inherently dusty, dust is still identified as a day-to-day nuisance.

### ***Dust reduction Initiatives as part of Process Redesign Planning***

In planning the business process redesign, our environmental strategy includes a review of our dust management program for the entire operation. The main source of dust is seen to be from the Nelson Point and Finucane Island operations.

No additional Company ore berths are proposed to be built at the port nor will any further stockpile developments occur closer to or in the downtown area. We are investigating the feasibility of relocating crushing and screening facilities away from the port to the mines (dust control measures are incorporated into the feasibility study for the construction of the proposed mine facilities).

A dust monitoring program is in place, managed by a Clean Air Task Force. Continuous improvement initiatives at the port operations have included installing optical real-time air samplers to plant areas across Nelson Point and Finucane Island, installing low-frequency microwave moisture analysers, installing bulk ore conditioning sprays, and continuing previous management programs including belt washing stations. Ore moisture conditioning has been significant in mitigating dust emissions and has also reduced the need for water reticulation during product handling and stockpiling.

Through the Port Hedland Greenscape Project, we have been increasing vegetation in the downtown area to further improve dust control and enhance the aesthetics of the area.

We have developed a community education and awareness program on dust controls and management and have undertaken a consultation process with neighbouring residents to identify further strategies to address the amenity impacts of iron ore dust.

A significant contributor to the dust issues is land use, primarily due to historical land-use planning that has allowed industry to be located adjacent to residential areas. We are supporting a collaborative approach to solving these issues. This includes undertaking a planning exercise with residents neighbouring the operations to identify future uses for the area, with a view to reducing residential use and increasing cultural, historical and tourism uses. We are also working with the State Government to develop a strategic plan for land use in Port Hedland.

We are committed to reducing dust levels from our operations and will continue to consult with the community regarding our growth strategy and dust management plans.

## Community - Our Approach

The importance of establishing good relations with host communities continues to grow, particularly in countries where external factors outside the Company's control have the potential to impact on our operations.

The diversity of locations, languages and cultures that frame our interactions with communities also adds a further layer of complexity, which presents ongoing challenges.

The role of community relations practitioners within our businesses continues to expand to ensure communities are informed about our operations and that opportunities are available for communities to express their views and opinions and to engage in decision-making in aspects of our business that relate to them.

Measuring, evaluating and reporting of our social performance are areas where we see potential for improvement and we are currently undertaking initiatives to address this.

Priority community relations issues are:

- upholding the human rights of our employees and contractors, our suppliers and the people in the communities in which we operate
- conducting all international business ethically, including interactions with governments, communities and business partners, as well as issues of workplace behaviour, equal employment opportunity, conflict of interest, financial inducements and bribery, insider trading and political contributions (see also HSEC governance)
- acknowledging and respecting all communities that are potentially impacted by our operations or live nearby, and ensuring they have access to employment opportunities within the Company
- implementing responsible and sustainable community development, where the challenge is to assist people to achieve an enhanced quality of life without compromising their values, culture or heritage and without creating dependency on our activities
- measuring the effectiveness of our community programs from the perspectives of all key stakeholders.

The following outline our approach to:

- [Community Relations](#)
- [Community Programs](#)
- [Human Rights](#)

## Community Relations

The [HSEC Management Standards](#) provide the overall framework for consideration of the community aspects at our operations. HSEC Management Standard 7 forms the basis of our approach to communication, consultation and participation with stakeholders, with the intent being 'Effective, transparent and open communication and consultation is maintained with stakeholders associated with Company activities. Stakeholders are encouraged to participate in and contribute to sustainable development through HSEC performance improvement initiatives.' Further detail on our approach is available at [Engaging Stakeholders](#).

All sites are required to have community relations plans in place to address the social and community elements of the HSEC Management Standards, although each operation will have a different emphasis, depending on their site-specific circumstances. For example, one operation may emphasise community consultation, another operation human rights and another community risk assessment.

Other elements outside the HSEC Management Standards — for example, media relations plans — may also be included in the plan, depending on the situation. An HSEC Guideline is in place to provide direction for sites in the preparation of a community relations plan.

## Indigenous Culture and Heritage

The Company recognises and respects the importance of Indigenous peoples' culture, heritage and traditional rights and supports the identification, recording, management and protection of indigenous cultural heritage sites.

Indigenous cultural heritage is broadly defined to include matters that are significant to either Indigenous peoples or under legislation, such as dreaming, ceremonial, sacred and burial sites; archaeological sites where evidence of the past occupation and use by Indigenous peoples can be found; more contemporary historic sites; and traditional knowledge.

We recognise that Indigenous peoples have a vital role to play in identifying and properly managing cultural heritage, especially where it could be affected by our activities.

At our operations and projects we undertake early consultations and assessments with Indigenous peoples to ascertain whether our proposed activities are likely to impact cultural heritage values and, in conjunction with Indigenous peoples and relevant authorities, how best to plan and undertake those activities to avoid or minimise such impacts.

Our preference, wherever possible, is to avoid disturbance to significant sites as well as to ensure that Indigenous people have access to them. We also actively seek to utilise traditional knowledge in the development of site-based practices such as environmental management plans.

## Community Relations Capacity Building

We have two main processes in place for building the capacity of our site-based community relations professionals. These include:

- Global Community Network – The community relations network aims to facilitate and encourage communication between Company professionals with community responsibilities. There are around 200 network members who are encouraged to actively use the network as a forum for discussion and sharing of leading practices.
- Professional development opportunities such as the pilot community techniques course run in Maminya, Chile in 2005. Read more in our case study [Learning to look through the eyes of others](#).

## Community Programs

Community programs are operated locally at our operations and also provincially and nationally by the Corporate function of the Company.

At our operations, the asset manager and/or local community relations professionals are responsible for managing their community support programs. Sites around the world operate their local community programs in different ways. Some sites have a formal decision-making committee to receive proposals from community organisations and determine which of these is appropriate to support. These committees generally comprise employees and management, and often involve community representation.

Further details on our community programs are included in our [Community Programs Report, 'Yesterday, Today, Tomorrow'](#).

## Corporate Foundations

Where BHP Billiton's presence in a country is significant, we often provide support for provincial or national programs in addition to local activities. In many of these instances, community foundations have been established. These foundations comprise external representation to ensure a full understanding of the community's needs and an ability to identify appropriate projects to address the issues.

Examples of foundations currently operating include:

- **The Minera Escondida Foundation** in Chile has a founding mission to contribute to improving the quality of life of low-income groups, principally in Antofagasta and the Second Region but also nationally.
- **The Tintaya Foundation** in Peru is an independent non-profit organisation created with the support of our Tintaya copper operation. The main purpose of the Foundation is to promote and improve self-management and participation processes in the communities within Tintaya's area of influence, thus contributing to their sustainable development.
- **The San Isidro Foundation** in Colombia is an independent body supported by our Cerro Matoso nickel operation. The Foundation aims to improve the quality of life of the communities within the business's area of influence by focusing its efforts on building a robust local economy that will continue to develop and thrive beyond the life of the Cerro Matoso operation.
- **The Montelíbano Educational Foundation** in Colombia focuses on education provision for Cerro Matoso employees and their families and also provides places for students from the surrounding communities.
- **The BHP Billiton Development Trust** in South Africa implements, coordinates and manages the Company's corporate sustainable development initiatives and those of our operations, such as Samancor Manganese, Ingwe Coal and BHP Billiton Aluminium, which participate in the Trust.
- **The Mozal Community Development Trust** in Mozambique was created in August 2002 by the shareholders of Mozal to fulfil the corporate social responsibilities of the Mozal smelter. Support focuses on five key development areas defined by the Board of Trustees, namely small business development, education and training, health and environment, sport and culture, and community infrastructure. Read more in our case study [Mozal, a model for integrating sustainability into resource projects](#).

## Community Program Principles

Because the Company operates in many different countries and cultures, we do not administer our community programs under one set of guidelines. However, consideration is generally given to the following principles:

- **Sustainability.** Initiatives that will be sustainable beyond the life of the project are preferred, and we are careful to avoid creating dependency on our support. For example, by building an organisation's capacity through training and development, the community benefit can be long lasting and have flow-on benefits long after the program has been completed.

- **Community participation and engagement.** It is critical that the selection and delivery of community programs is a participative process. Community ownership of development programs is one of the keys to their success.
- **Long-term relationships.** We are aware that any good working relationship takes time, so rather than getting involved in one-off commitments we generally look to develop longer-term relationships with not-for-profit organisations. This enables a rapport to be established between the organisations and provides an opportunity to explore creative opportunities for the organisations to assist each other, such as through the sharing of skills and knowledge.
- **Specific projects.** We try to avoid providing general funding where there is no clear identification of how the money is to be spent. Specific projects with agreed objectives assist evaluation and enable the success of the project to be measured.
- **Leverage.** Projects that leverage our support by attracting additional resources such as government funding are considered favourably. In many cases, capacity building projects or start-up projects will fall into this category.
- **Employee involvement.** The involvement of our employees in the delivery of community programs adds another important dimension. It enables them to gain a better understanding of the contribution the Company is making to the community, giving them a sense of pride.
- **Reporting and evaluation.** It is essential that not-for-profit partners are transparent, have good governance structures in place, can develop indicators that clearly demonstrate the outcomes of their programs and are open to independent evaluation of their programs. In this way, we can measure the success of individual programs and convey the value of our involvement to our shareholders and other community stakeholders.

Although not-for-profit organisations require cash to deliver their programs, we recognise that other forms of assistance are highly valued and many of these can be provided at a relatively small cost to the Company. Where we can, we offer in-kind assistance such as the use of meeting facilities, access to communication networks and business related expertise and skills



## Human Rights

The BHP Billiton Sustainable Development Policy states that 'Wherever we operate we will ...ensure we understand, promote and uphold fundamental human rights within our sphere of influence, respecting the traditional rights of Indigenous peoples and valuing cultural heritage'.

In addition we have made a number of voluntary public commitments to human rights including:

- [UN Universal Declaration on Human Rights](#)
- [UN Global Compact](#)
- [World Bank Operational Directive on Involuntary Resettlement](#)
- [US-UK Voluntary Principles on Security and Human Rights](#).

Integral to meeting these commitments are our [HSEC Management Standards](#), which require that human rights aspects (encompassed by the 'C' component) are considered on a risk basis by our operations and integrated into business planning and review processes as appropriate. Specifically HSEC Management Standard 8 directs the considerations that need to be made with regards to human rights.

We have produced an HSEC Guideline on Human Rights and a Human Rights Self Assessment toolkit to support our sites in understanding these requirements. The Human Rights Self Assessment toolkit is intended to assist sites in appraising their human rights exposures and developing plans to manage these as appropriate.

## Land Compensation

Our approach to land compensation, especially for major projects, is undertaken on a case-by-case basis.

Firstly, consideration is given to what land we need; our possible impacts on that land, both short and long term; the present and past use of the land; and the effects that our use may have on existing land owners and occupiers. We include consideration for both peoples with recognised legal interests in land, as well as those that do not have such an interest. For example, Indigenous peoples may not have a recognised legal interest but nonetheless are connected to the land by tradition and custom. These peoples may also be leading a traditional lifestyle and be dependent, to a greater or lesser extent, on the land for their existence.

Secondly, our approach takes into account relevant legislative requirements, industry practices, standards or norms that may exist within a country or region, and special circumstances that may apply. In some countries and jurisdictions, legislation prescribes in some detail who has to be paid, the amount, what it is for and how it is calculated. In other jurisdictions compensation may be by negotiation with the affected parties; for example, in Australia where Native Title rights and interests may be impacted by a resource project. In this situation legislation also provides, if required by any party, mediation and arbitration processes to achieve an outcome.

Finally, consideration is given to the views of land owners and occupiers as to the form that compensation may take, for example, whether cash, in-kind or a mix of both. Our strong preference is to try to have a substantial portion of any compensation payments dedicated to sustainable socio-economic projects or programs that will leave tangible and long-term benefits to the community or peoples receiving the compensation. In this situation we also try to ensure that benefits are provided to as many people as possible who may be entitled to them. Where substantial sums of money are involved we work to put in place appropriate governance structures so that these monies are managed in a responsible, transparent and accountable manner.

## Community - Our Performance

Details on our community performance during this reporting period can be reviewed at:

- [Community Relations](#) reviews how we have performed with regards to community planning, public reporting and stakeholder engagement
- [Community Programs](#) looks at our community programs and contributions for the reporting period
- [Human Rights](#) discusses how we have progressed in implementing our commitments to uphold fundamental human rights.

For details on the management of community aspects refer to [Community: Our Approach](#). For examples of policy in action refer to our [Case Studies](#).

## Community Relations

Our HSEC Management Standard 7 forms the basis of our approach to communication, consultation and participation with stakeholders. The intent is 'Effective, transparent and open communication and consultation is maintained with stakeholders associated with Company activities. Stakeholders are encouraged to participate in and contribute to sustainable development through HSEC performance improvement initiatives.' See [Our Approach: Community Relations](#) for further details.

### Community Planning

In line with our HSEC Target, 98 per cent of sites required to have community relations plans have operational plans in place or are covered by a regional plan developed by the business group. This is the same result as for the last reporting period, with one site yet to formalise its community relations plan.

Following the review of the HSEC Management Standards, the requirement for community relations plans has now become an integral requirement of HSEC Management Standard 7.

### Stakeholder Engagement

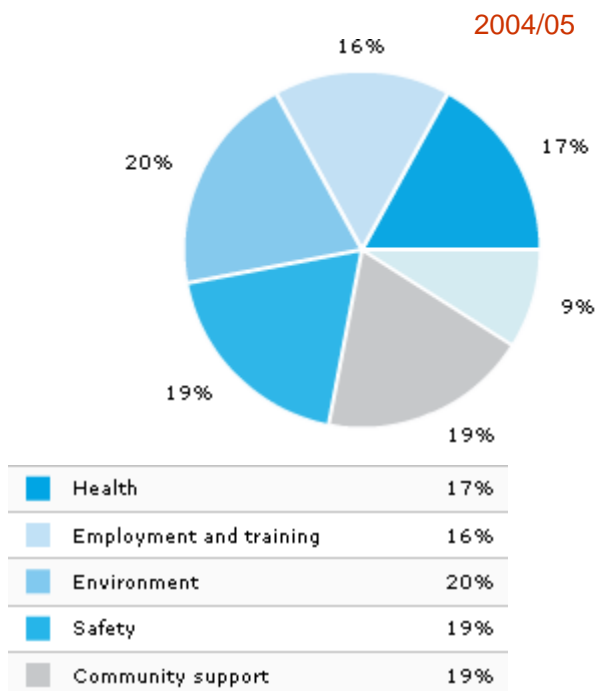
A total of 78 of our sites have a formal stakeholder consultation process in place, one more than in the previous reporting period. These processes range from site visits and open public meetings to the involvement of representatives on advisory groups.

Examples of formalised consultative groups that are operated by our businesses include:

Business	Country	Consultation	Frequency of meeting
<b>Mozal</b>	Mozambique	Interested and Affected Parties Public Meeting	Bi-annual
<b>Tintaya</b>	Peru	Dialogue Table with five neighbouring communities	Fortnightly
<b>Cerro Colorado</b>	Chile	Work meetings with communities	Three-monthly
<b>Iron Ore Western Australia</b>	Australia	Company Community Interaction Forum	Bi-monthly
<b>Metalloys</b>	South Africa	Vaal Triangle Parties affected by air pollution	Three-monthly
<b>Cerro Matoso</b>	Colombia	Zonal Leaders' Assembly	Annual
<b>Rietspruit Mine</b>	South Africa	Rietspruit Community Development Forum	Weekly
<b>Optimum Colliery</b>	South Africa	Local Economic Development Forum	Quarterly
<b>EKATI Diamond Mine</b>	Canada	Meeting with indigenous groups about Impact and Benefit Agreements (IBA), environment agencies, Yellowknife residents	Annual
<b>Trinidad and Tobago asset</b>	Trinidad and Tobago	Round table discussions with Mayaro/Guayaguayare and Tobago/Toco communities	Monthly

The range of topics discussed during these stakeholder consultation processes covers all areas of sustainable development – health, safety, environment and community related issues as shown in the graph below.

### Topics Discussed During Stakeholder Consultations



Issues discussed in the 'Other' category (illustrated in the above graph) include mine planning, growth projects and site closure plans, security, human rights and land issues, use of traditional knowledge in environmental monitoring, communication, general sustainable development discussions, and social and cultural development.

During the year, 23 operations undertook general stakeholder perception surveys to better understand their performance from their stakeholders' perspective, and 27 operations undertook employee satisfaction surveys.

## Public Reporting

This year, 100 per cent of sites required to prepare public HSEC or sustainability reports have produced them or they are included in business level reports, which meets our target. This compares to 98 per cent of sites last reporting period.

In line with the review of our HSEC Management Standards, the requirement for sites to produce annual public sustainability reports has now been integrated into the Standards.

[View](#) our operations' reports.

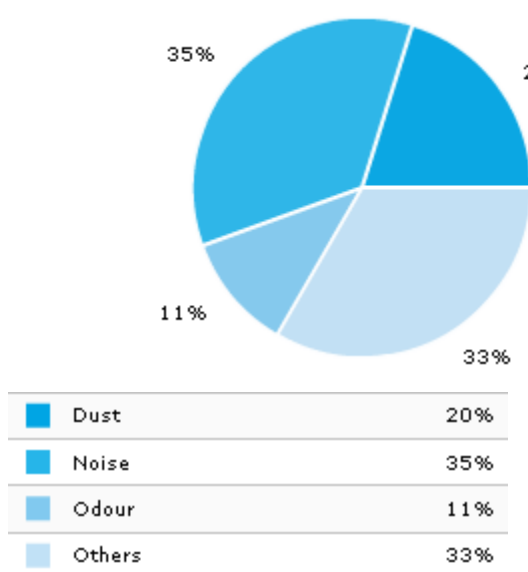
## Community Complaints

All sites are required to have community complaints registers in place to record and track the management of community concerns.

During the year, 42 of our sites received a total of 509 complaints. The percentage of dust-related complaints dropped from 35 per cent in 2004 to 20 per cent in 2005. There was, however, an increase in the proportion of noise-related issues from 22 per cent in 2004 to 35 per cent in 2005. Many sites recorded a reduction in complaints, but Illawarra Coal in New South Wales, Australia, received 142 noise-related complaints, which is a significant proportion of the total. During 2005 the move to full production by the new Dendrobium coal mine in an area that is largely residential led to an increase in rail and road traffic. Illawarra Coal is working collaboratively with the community through its Community Consultative Committee and Rail Noise Focus Group to address stakeholders' concerns regarding this issue.

### Community Complaints by Category

2004/05



## Community Relations Capacity Building

We continue to look for opportunities to build the capacity of the community relations profession. In February 2005 we ran a pilot training course in Maminya, Chile (near Cerro Colorado) that targeted community development techniques. Oxfam Australia formulated and delivered the course, taking into account some of the specific needs identified by our practitioners. Participants included community relations practitioners from our South American operations, and excellent feedback was received. Additional programs will be offered on a regional basis in the coming year. For details, see our case study, [Looking through the eyes of others](#).

We are also formalising and strengthening the structure of our Global Community Network and will establish Communities of Practice to seek an improvement in our community performance. Specific areas of interest for the Communities of Practice are the assessment, selection and evaluation of community development programs; initiatives to increase the competencies of individual community practitioners and capacity of the function as a whole; and methods to determine our overall socio-economic contribution.

## Community Programs

Community programs are operated locally at our operations and also provincially and nationally by the Corporate function of the Company. See further details at [Our Approach: Community Programs](#).

### Community Contributions

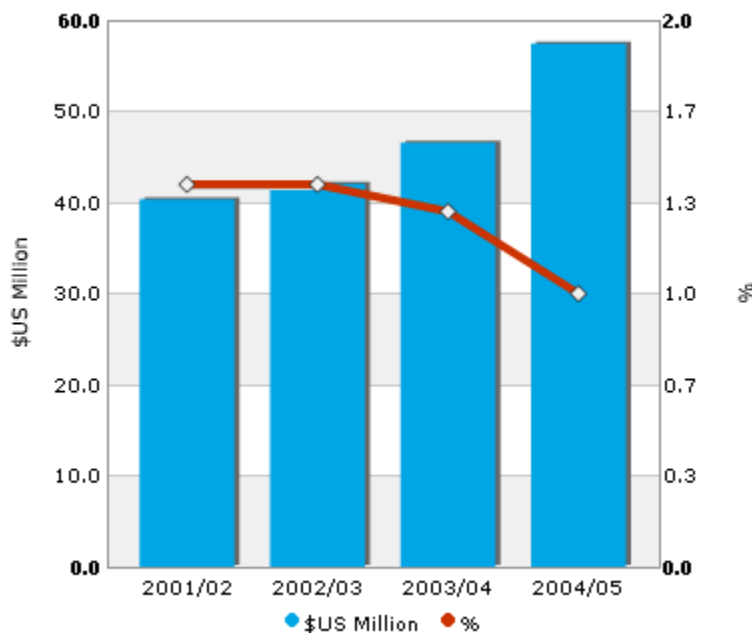
The Company supports community initiatives in the locations where it operates. During 2004/05, our voluntary contributions to community programs totalled US\$57.4 million, comprising cash, in-kind support and administration costs. This amount equates to 1.0 per cent of pre-tax profit (three-year rolling average), which meets our target of one per cent. This compares to contributions of US\$46.5 million, or 1.3 per cent of pre-tax profit over our last reporting period. Although this percentage has decreased from 1.3 per cent in the last reporting period, the actual value of this investment is a significant increase from US\$46.5 million, due to the increased Company profit.

The amount includes the BHP Billiton component of our voluntary contribution to community programs at joint venture operations but does not include payments to communities that form part of mandatory licensing agreements.

Our voluntary contributions have been steadily increasing in line with profits over the past four years, and in this way our host communities have been sharing in the financial success of the Company.

### Community Contributions

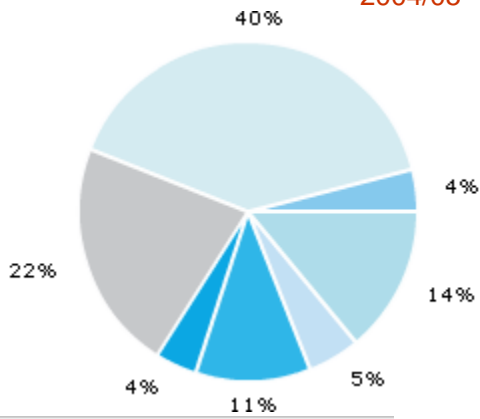
2001/02 to 2004/05



The distribution of our funding by category, by geographic region and by locality are presented in the graphs below.

### Community Contributions by Program Category

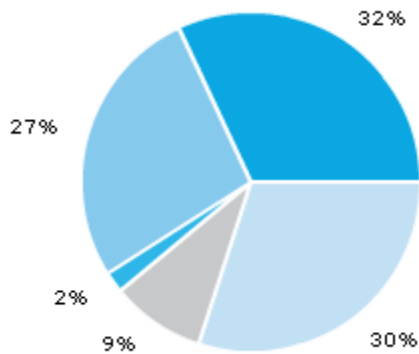
2004/05



Arts	4%
Community Welfare	40%
Education	22%
Environment	4%
Health	11%
Sport and Recreation	5%

### Community Contributions by Geographic Region

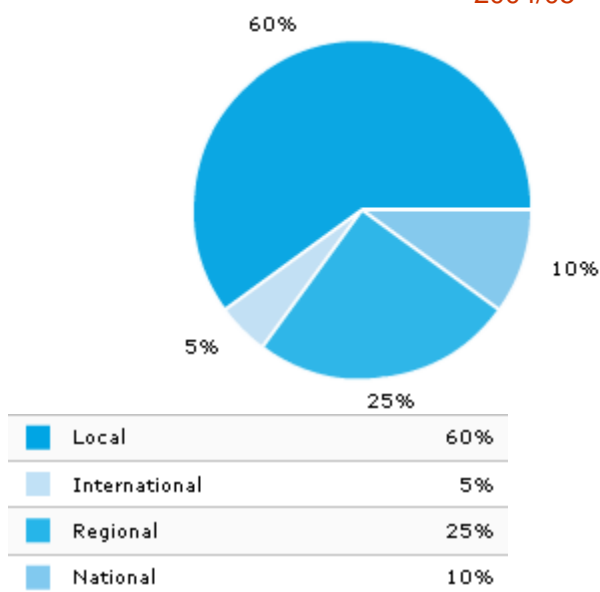
2004/05



Australia and Asia	32%
Africa	27%
Europe (incl. UK)	2%
North America	9%
South America	30%

## Distribution of Community Contributions

2004/05



During the 2005 review of the Company's community targets, the Company's executive management and the HSEC function reaffirmed their commitment to our target to contribute one per cent of pre-tax profit to community programs. However, it was also acknowledged that the current methodology used to calculate the one per cent target has been problematic in its implementation.

For the past three years, the target has been calculated using an average of the pre-tax profit from the current financial year and the previous two years. The three-year average was introduced to reduce the variation of the actual value of the target from one year to the next. While using the average has achieved the desired result in this regard, including the current financial year's profit in the calculation has meant that the actual target is not known until the end of the financial year, after the profit has been determined. It has therefore been difficult to track our performance against this target during the year.

To assist in the monitoring of this target and ensure our practitioners and their stakeholders have adequate time to consult and plan their community programs, it has been decided to change the method of calculating the target.

For the 2005/06 financial year onwards, the calculation will use the pre-tax profit from the previous three years. The target will be known at the beginning of the company's budgeting cycle so it will be better integrated into business planning, and we will be able to monitor progress against the target more accurately during the year and plan our community development activities accordingly.

## Evaluation of Community Programs

With significant financial resources being channelled into community programs, we are investigating different instruments to determine their effectiveness.

We are currently trialling at some sites an evaluation process involving facilitated face-to-face engagement with representatives from four key stakeholder groups - the relevant site, local government, the community and social partner organisations. Early indications are positive; if it continues to demonstrate value, the evaluation tool will be finalised and made available with an implementation guide for use on a voluntary self-assessment basis by our businesses. The process will also provide another avenue for learnings in the community programs area to be shared across the Company.



## Employee Matched Giving Program and Tsunami Contributions

In 2004/05, the Employee Matched Giving Program operated in South Africa, the United Kingdom, Canada and Australia. During the year, the Program was rolled out to a number of new sites, including all Iron Ore operations in Western Australia and the London and Melbourne Corporate offices.

The program aims to strengthen local communities by supporting and encouraging employees who volunteer, fundraise or donate to not-for-profit organisations. Through the Matched Giving Program we are able to support those not-for-profit community organisations our employees support through their volunteering efforts, fundraising or personal cash donations. The BHP Billiton Matched Giving Program means that BHP Billiton increases employee community contributions, by giving a 'matching' amount to the not-for-profit organisations its employees support.

During 2004/05, BHP Billiton contributed US\$ 358 000 to over 400 not-for-profit organisations to match its employees' cash, volunteering and fundraising activities (excluding tsunami donations). In the next year, all BHP Billiton managed operations will have the opportunity to participate in the Matched Giving Program as it is rolled out globally.

In addition to the formal Matched Giving Program, the Company also offered to match contributions made by any employee in response to the Asian earthquake and tsunami disaster in January 2005. Overall, the total amount contributed by our employees was US\$444 100. This was in addition to the US\$1 021 100 contributed by the Company (including the matching of employee contributions), resulting in an overall contribution of US\$1 465 200 for tsunami relief efforts. For more details on our support for tsunami victims, refer to our case study [Tsunami tragedy touches the hearts of our employees](#)

## Human Rights

The [BHP Billiton Sustainable Development Policy](#) states that 'Wherever we operate we will ...ensure we ... understand, promote and uphold fundamental human rights within our sphere of influence, respecting the traditional rights of Indigenous peoples and valuing cultural heritage'. See further details at [Our Approach: Human Rights](#).

### Human Rights Self Assessment

A Human Rights Self Assessment toolkit is used by sites to assist them in appraising their potential exposure to human rights issues. Use of the toolkit is consistent with the Company's target of ensuring there are no transgressions of the principles contained within the [UN Universal Declaration of Human Rights](#). Thirty-five sites (or 40 per cent) have reported that they have completed the Human Rights Self Assessment.

We continue to recognise that this is a key area requiring improvement, and the toolkit has been reviewed to determine how better to integrate it with our risk management processes. A stakeholder dialogue forum was conducted to test whether this was an effective way forward. The outcome was resoundingly positive, and we have since drafted a revised self assessment that we will trial in the coming year.

A guide to, and supporting presentation on, human rights has also been developed and is available to our sites to assist in educating our people about their roles and responsibilities. During 2004/05, 25 sites reported that they had undertaken some form of human rights training. The training was delivered to 5500 employees and 7179 contractors. Thirty sites currently have cultural awareness programs in place.

Thirty-two of our sites report that they have security forces operating, and 19 of these sites have advised that these forces have undertaken human rights training.

Our Tintaya operation in Peru reported a significant community incident on 24 May 2005 when a group of 2000 people from the Province of Espinar invaded the mine site, causing the operation to shutdown for 25 days. Policemen defended the Company's private property. Some minor injuries were sustained by both community members and police, and these were treated at the Tintaya hospital.

This action affected not only Tintaya but also, because of the shutdown, economic activity in the province. BHP Billiton received widespread support and recognition for the manner in which the incident was managed. For further details see our case study [Tintaya resolves to restore community consultative processes following violent protest](#).

Importantly, as part of the [HSEC Management Standards review](#), we sought to further clarify the requirements of HSEC Management Standard 8, 'Business Conduct, Human Rights and Community Development'. The revised standard now clearly requires:

- the assessment and prioritisation of human rights issues as they apply to our sphere of influence
- training of employees and contractors with regards to our human rights commitments
- systems to abide by the [US-UK Voluntary Principles on Security and Human Rights](#)
- resettlement plans, where required, consistent with the [World Bank Operational Directive on Involuntary Resettlement](#).

As a result of these clarifications, we expect to see increased usage of the self assessment toolkit and the provision of training moving forward.

## Resettlements

Seven sites have reported resettlements in the past year, mainly due to expansions of the operations and land acquisition and, in the case of Tintaya, as a result of a resolution to a long-standing community issue: Tintaya (Peru) – 80 families were resettled, all of them voluntarily according to the principles of the Dialogue Table and with the accompaniment of the NGOs that participate in the Dialogue Table; Cerro Matoso (Colombia) – 26 families; Middelburg (South Africa) – one family; ZAC (South Africa) resettled two families that resided at the site earmarked for infrastructure for a new project. The two families agreed to voluntary resettle and the local tribal chief was part of the consultation process, allocating the alternative settlement areas; Klipspruit (South Africa)– 27 families; and one permittee resettled at Navajo Mine (US). It is a requirement where resettlements have occurred, that these are undertaken consistent with our commitment to the World Bank Operational Directive on Involuntary Resettlement.

Samancor Manganese (South Africa) reported that, while no resettlements have taken place due to Ferrometals operations, 830 stands of land have been allocated to individual families to give them access to basic services.

## Community Case Studies

The following case studies present examples of community issues, initiatives, projects and programs across the Group that highlight some of the sustainability opportunities and challenges faced by our operations. Case studies are also presented for the areas of [health](#), [safety](#), [environment](#) and [socio-economic](#).

[View](#) all case studies.

### Community Case Studies

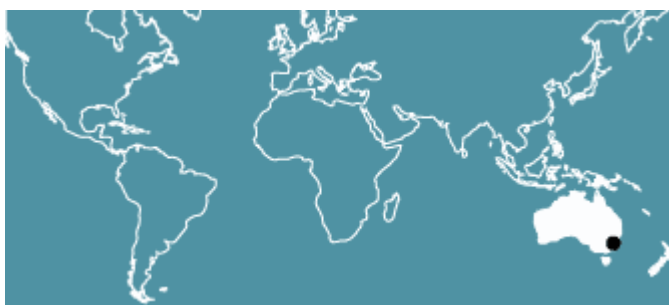
<p>Integrated Mine Planning Process gives stakeholders a say in underground coal mining decisions in the Illawarra</p>	<p>Our Illawarra Coal operation (Australia) has developed a new mine planning process to provide for sustainable coal mining in the Illawarra region near Sydney. This case study presents further information on the process and its implementation.</p> <p><a href="#">More</a></p>
<p>Community engagement program facilitates oil field developments in the environmentally and socially sensitive Exmouth Sub-basin</p>	<p>The Exmouth Sub-basin oil field development projects in Western Australia are located near the Ningaloo Marine Park, one of the state's premier biodiversity conservation areas and a high-profile tourism location. A range of stakeholder engagement methods has been used to support environmental assessments and approvals for exploration, appraisal and development activities in the region.</p> <p><a href="#">More</a></p>
<p>Tintaya resolves to restore community consultative processes following violent protest</p>	<p>The Tintaya copper mine (Peru) has had a history of community unrest. In recent years, the Company has sought to improve relationships with the mine's host communities, but progress was interrupted during a week in May 2005. Efforts are continuing to restore and improve the broken dialogue.</p> <p><a href="#">More</a></p>
<p>As it recovers from a major earthquake, Cerro Colorado prioritises aid to neighbouring communities</p>	<p>A major earthquake occurred in northern Chile in June 2005. Our Cerro Colorado copper mine is located just a few kilometres from the epicentre and both the mine and surrounding areas experienced significant damage. In the days and weeks following the incident, Cerro Colorado gave high priority to providing much-needed aid to the surrounding desert communities, in addition to returning the mine to operation.</p> <p><a href="#">More</a></p>
<p>Learning to look through the eyes of others</p>	<p>In early 2005, in a remote desert community in northern Chile, 20 of our community professionals from operations and projects throughout South America took part in the first offering of a course aimed at improving their knowledge, skills and competencies in working with communities to achieve their development objectives. The course was designed by Oxfam Community Aid Abroad and conducted with Company support.</p> <p><a href="#">More</a></p>

<p>The Pilbara LNG site selection study uses community engagement to identify a site of low environmental and social sensitivity</p>	<p>The Pilbara LNG site selection study was undertaken as part of the Company's pre-feasibility study into the development of a land-based liquefied natural gas (LNG) plant and export facilities on the Pilbara coast of Western Australia. The challenge was to show that a transparent, comprehensive and unbiased consultation process could protect the State's marine and coastal environment, deliver environmentally, economically and socially sustainable solutions and benefit industry, government and the wider community.</p> <p><a href="#">More</a></p>
<p>Consultation the key to positive community engagement in the Angostura oil and gas project in Trinidad and Tobago</p>	<p>By consulting with the community in order to understand and address local needs, and by initiating programs that help build capabilities of local people and enterprises, strong relationships are being developed, to the benefit of the community and the Company.</p> <p><a href="#">More</a></p>
<p>Kalahari Diamonds utilises broad media mix to communicate with community and other stakeholders</p>	<p>Prior to commencing exploration in Botswana, the Company initiated a broad program to consult with the community and other stakeholders. Due to the complexity of local languages and low literacy levels in some areas, a range of communication formats and media has been utilised to help ensure the widest range of stakeholders is informed about the exploration processes and program.</p> <p><a href="#">More</a></p>
<p>PNG Sustainable Development Program continues to perform well</p>	<p>The PNG Sustainable Development Program was established in early 2002, following BHP Billiton's decision to withdraw from its shareholding in Ok Tedi Mining Limited. Since that time the program has made strong progress developing and delivering projects in the Western Province and Papua New Guinea generally.</p> <p><a href="#">More</a></p>
<p>Cerrejón continues to make good progress with its community relations programs</p>	<p>The Cerrejón coal operation in the La Guajira department, Colombia, is owned in equal parts by a consortium comprising BHP Billiton, Anglo American and Glencore. During the year, the Company has addressed a number of issues raised by community groups and has made good progress in advancing its community programs.</p> <p><a href="#">More</a></p>
<p>Consultation program aims to foster community understanding of Cabrillo Port project</p>	<p>As part of the planning and approvals process to develop the Cabrillo Port project, a floating, liquefied natural gas (LNG) receiving facility in southern California, we are conducting an extensive consultation program with community and other key stakeholders.</p> <p><a href="#">More</a></p>
<p>Tsunami tragedy touches the hearts of our employees</p>	<p>As people struggled to comprehend the magnitude of the devastation of the December 2004 tsunami, an unprecedented disaster relief effort was mounted. BHP Billiton employees opened their hearts and contributed to relief appeals around the globe.</p> <p><a href="#">More</a></p>

## Community Case Studies

### Integrated Mine Planning Process gives stakeholders a say in underground coal mining decisions in the Illawarra

Community



Marhynes waterhole on the Georges River

As reported in our HSEC Report last year, our Illawarra Coal operation in New South Wales, Australia, has developed a new mine planning process to provide for sustainable coal mining in the Illawarra region near Sydney. Mine plans that are sensitive to surface features are needed to reduce environmental and community impacts and ensure the continuing ability to extract valuable coking coal reserves that are used for the steel industry in Australia and overseas. This case study presents further information on the process and its implementation.

## Introduction

Illawarra Coal's underground coal mines are located within areas that contain a diverse range of land uses and major infrastructure features (for example, large suburban areas, water supply and catchment areas, bushland, agricultural land, gas pipelines, power lines, highways, railway lines, roads, bridges and water supply infrastructure). While coal mining has been a feature of the Illawarra region for more than 150 years, both the demographics and expectations of local communities and regulators have changed in recent times.

Greater environmental awareness, increasing stakeholder expectations and an increasingly demanding legislative framework in relation to impacts of underground mining present significant challenges for Illawarra Coal. As a result, Illawarra Coal recognises the importance of working closely with government and communities in the region to address stakeholder issues (such as the impacts from mining on natural features) in the planning and management of mining activities. This has been formalised by the development of an Integrated Mine Planning Process (IMPP), which has been used in the planning for our future mining area, the Douglas Project.

## Development of the IMPP

Development and implementation of the IMPP was identified as a key strategy to address stakeholder issues, such as the impacts of mining on rivers. The process integrates stakeholder engagement and environmental impact assessment into the mine planning process. This enables future mine plans to be developed on the balanced consideration of all relevant factors, including stakeholder expectations, environmental impact, geology, resource utilisation, operational constraints and economic feasibility.

Previously, stakeholder engagement was undertaken later in the mine planning process, giving us less flexibility in amending mine plans to address stakeholder concerns. By engaging earlier in the process there is a better opportunity to amend mine plans, assess the impacts of mine plans and thereby develop mine plans that have more thoroughly assessed potential impacts and stakeholder concerns.

The IMPP illustrates how a mine plan is developed from the initial stage of identifying surface features. Previously, surface features were identified well after the mine plan was finalised. With the IMPP, surface features are identified and then a number of mine plan options are developed and stakeholder input sought. This leads to the selection of a preferred mine plan. Management plans are then developed with stakeholder input and included as part of the application to regulatory agencies. Once the application is submitted, the stakeholders can direct comments and concerns directly to the agencies concerned. See chart outlining the [IMPP process](#) (DOC 120 Kb).

## IMPP at the Douglas Project

The IMPP has been used to develop the mine layout for the Douglas Project. To begin this process, a preliminary mine plan has been used in discussions with landholders whose properties could be affected by mine subsidence. From these initial discussions, it was clear there was strong community concern about potential subsidence impacts on the Nepean River.

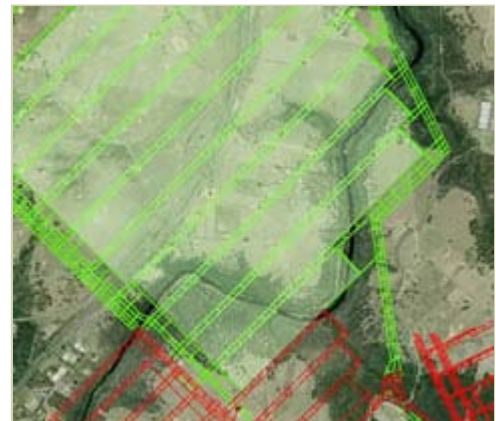
In order to fully understand the expectations of the community, a comprehensive consultation process was conducted, which included further meetings with individual landholders and a series of stakeholder workshops. The community representatives emphasised that they were concerned about the prospect of longwall mining under the Nepean River. This was particularly the case with landholders who live close to the river. A team of Illawarra Coal personnel developed several alternative plans that did not involve directly mining under the river. Feedback on these plans was then sought from the community at a series of workshops, so the final plan of the IMPP could be developed.

It was critical for the Company that the alternative mine layouts minimised impacts to the river while ensuring coal supply and employment. This process has taken several months, resulting in a final preferred layout being chosen that does not have longwall mining directly beneath the Nepean River. The accompanying diagrams illustrate the original mine plan for discussion and the final layout chosen.

The new plan sees the first longwall block positioned, at its closest, some 50 metres away from the cliff line of the river. The decision to mine further away from the river reflects Illawarra Coal's commitment to the process of community and stakeholder consultation and to achieving a sustainable coal mining operation.

With the completion of Step 4 in the IMPP, the next important phase in the application process begins: the preparation of a detailed Environmental Impact Statement and Infrastructure Management Plans, Subsidence Management Plan and Property Subsidence Management Plans. Illawarra Coal is committed to working with all key stakeholders as these plans are prepared.

We acknowledge that in order to implement the IMPP successfully, long lead times (e.g. many years) are required. In some instances the long lead times are not available, so we are dealing with stakeholder issues in shorter time frames than is preferred. However, we are striving to refine the process and are working towards developing plans well ahead of mining in all areas.



Plan for discussion



Final layout

## Community Case Studies

### Community engagement program facilitates oil field developments in the environmentally and socially sensitive Exmouth Sub-basin

Community



BHP Billiton Petroleum's Exmouth Sub-basin community reference group members gather to discuss the Pyrenees project

The proposed Exmouth Sub-basin oil field development projects in Western Australia are located near the Ningaloo Marine Park, one of the state's premier biodiversity conservation areas and a high-profile tourism location. The main feature of the area is Ningaloo Reef, Australia's longest fringing barrier reef and home to a world-class collection of marine life. A range of stakeholder engagement methods have been utilised to support environmental assessments and approvals for exploration, appraisal and development activities in the region. Key initiatives include the establishment of a dedicated Exmouth Sub-basin external affairs team and community reference groups in the local town of Exmouth as well as in Perth. The success of these measures has allowed the projects to progress through early stages of development with community support and acceptance.

## Background

Over the past two years, our Petroleum group's Australia Operated Asset Team has successfully discovered mid-sized accumulations of oil off the north-west coast of Western Australia. The accumulations will form the base for two proposed offshore field developments, the Stybarrow and Pyrenees projects, for which separate floating, production, storage and offloading facilities (FPSOs) are proposed.

The oil fields are in relatively deep water (200 to 800 metres) around 30 to 40 kilometres off the coast of North West Cape. The nearest town, Exmouth, has a population of approximately 3000, with fishing and tourism being important industries.

Ningaloo Reef extends southward from North West Cape for some 250 kilometres. In generally pristine condition, the highly biodiverse reef environment is home to more than 200 species of coral, 600 species of mollusc and 500 species of fish. Since 1987, the reef has been protected by the Ningaloo Marine Park whose waters are also noted for the presence of large marine fauna, including seasonal aggregations of the whale shark, the world's largest fish, and migratory whales, in particular the humpback whale.

Because of the area's natural features, Ningaloo Reef attracts more than 100 000 tourists annually. Most of their activities involve nature-based pursuits such as swimming, snorkeling, diving and fishing. Important tourism industries have developed as a result, with attractions such as swimming with the whale sharks contributing significantly to the regional economy.

## The Community Engagement Program

The Stybarrow and Pyrenees proposed projects are in early stages of development and are currently undergoing commercial and technical appraisal. In parallel with these appraisals, environmental and social impact assessment and approval processes have commenced in order to assess the potential effects of the



developments. The information will also be used in presentations to seek government and community response on the acceptability of the proposals. In support of this, a community engagement program was established and has been implemented since the start of development activity.

The program has been developed in line with the Company's policy of engaging with communities and building relationships based on honesty, openness, mutual trust and involvement. The program is managed by the Exmouth Sub-basin external affairs team, which is comprised of a project manager, external affairs advisor and environmental advisor. The team is responsible for planning and implementing all the consultation and engagement activities in support of the projects.

A key aspect of the team's capability is that senior project management personnel have direct knowledge of the variety and nature of community issues and so can respond effectively through direct action or by facilitating decision-making processes.

The establishment of community reference groups (CRGs) in Exmouth and Perth has been a key component of the engagement program. Participants in the CRGs come from a variety of community groups and agencies and represent a broad range of interests. Regular attendees include representatives from government departments responsible for fisheries, conservation and marine transport; a variety of conservation non-government organisations (NGOs); local government; and the local Indigenous community.

CRG meetings are held periodically, with topics for discussion based on providing regular updates on project activities and addressing issues of concern raised by stakeholders. For example, during the preparation of the Stybarrow environmental impact statement, topics included the existing environment at the site, oil-spill risk and response, shipping-related issues, cumulative impacts and environment-related facility design features. During the meetings, the Company's approach to these issues has been described in detail and stakeholders have been provided with the opportunity to raise concerns and question.

Anne Preest, who represents the Gnulli Indigenous group on the Exmouth CRG, says, 'I believe that BHP Billiton has made every effort and given our community opportunities to be involved continually, including presentations with a structured overview and the use of printed resources, enabling our CRG to understand the concept on each topic being presented. A great learning experience held in a friendly, safe environment'.

## An Effective and Beneficial Process

Decisions that have been influenced by community representatives through the CRG meetings include the initiation of a range of studies to provide more information on environmental characteristics and potential effects, the choice of a double-hulled and disconnectable FPSO, the re-injection of surplus gas back into the well to reduce greenhouse gas emissions, and the re-injection of produced water back into the well to avoid discharge to the ocean.

The issues raised by stakeholders are predominantly environment-related, and as such the input of the conservation NGOs is of particular importance. In Western Australia, these groups are largely volunteer-based, cover a large range of activities and generally operate with limited resources. Recognising this, with the agreement of the NGOs, the Company provided support to enable the appointment of a conservation liaison officer to act on their behalf and provide a resource for NGO communication on the projects.

The conservation liaison officer attends all the Perth CRG meetings and will work closely with NGOs during the projects' development phase to ensure that all project activities and issues are widely communicated and that any NGO comments and concerns are fed back to the Company. A key responsibility of the conservation liaison officer is to prepare submissions on project environmental approval documents on behalf of the conservation NGOs.

In addition to attending the CRG meetings, community representatives have been able to familiarise themselves with proposed project activities by visiting the Griffin Venture, the Company's operating FPSO. A number of CRG members were flown out by helicopter and taken on a tour of the facility, during which they were given an explanation of the production and operation processes and could see first-hand how an FPSO works.

Interactions with the CRGs to date have been very constructive in helping to build positive and productive relationships. The high level of communication fostered through the community engagement program will continue throughout development activities in the region and afterwards. Our commitment to regular communication will continue for as long as the Company is an active member of the Exmouth community and has a presence in the Exmouth Sub-basin.

## Community Case Studies

### Tintaya resolves to restore community consultative processes following violent protest

Community



Members of the Front for the Defence of the Interests of Espinar, marching to Tintaya to present their demands

The Tintaya copper mine, located near the town of Yauri, capital of the Espinar province of Peru, has had a history of community unrest stemming back many years to when the project was owned and operated by the State. In recent years, the Company has sought to improve relationships with the mine's host communities and has worked with local and international non-government organisations (NGOs) to establish formal dialogue processes and agreements regarding community benefits. This good progress was interrupted during the week of 22 May, when a mob armed with rocks, slings and firebombs forced entry to the mine property, attacked police and workers, set fires, and looted and vandalised the facilities, causing the mine to shut down until safe working conditions could be restored. Operations recommenced on 19 June, and efforts are continuing to restore and improve the broken dialogue.

## Background

Tintaya was established in the 1980s when the Peruvian government expropriated approximately 2400 hectares of land from local communities to develop a copper mine. The mine began operating as a government corporation in 1985.

Magma Copper Company acquired the operation in 1994 under the country's privatisation process, and BHP Billiton purchased Magma in 1996.

Over the years, some community members have expressed ongoing concerns about the mine. Since 2000, grievances from previous years have been brought to the surface by community groups and some NGOs.

## The Dialogue Process

Tintaya has signed two separate community development agreements, one in September 2003 with the authorities and community groups of the province of Espinar and the other in December 2004 with the five communities closest to the mine.

The violent protests revolved around demands for a reformulation of the first agreement, known as the Framework Agreement ('Convenio Marco' in Spanish) to increase funding more than tenfold. A commitment was made in 2003 to contribute three per cent of Tintaya's annual pre-tax profits to sustainable projects and infrastructure in Espinar (compared with the BHP Billiton global target of one per cent), with a guaranteed minimum yearly sum of US\$1.5 million. In the first year of the agreement, the actual sum committed was US\$1.9 million. The participating institutions and communities agreed that this was fair and reasonable, and a Coordination Committee ('Comité de Concertación' in Spanish) was formed to review community needs and to prioritise and facilitate the projects funded under the agreement.

The second agreement, signed with five nearby communities in December 2004, had its origins in a community consultative process known as the Dialogue Table, which was initiated in February 2002. This

process was defined as 'a voluntary cooperative process, of dialogue and free participation, opened by diverse stakeholders, to find solutions to the existing problems and development opportunities in the area of influence of BHP Billiton Tintaya's operations, i.e., the Espinar province'. The agreement provided for replacement of community land that had been purchased or expropriated, establishment of a three-year development fund for the communities, and ongoing joint environmental monitoring.

## The May 2005 Protests

Those who organised the protests claimed that:

- US\$1.5 million is an inadequate sum, and the Company should agree to a reformulation of the existing agreement so as to increase its annual commitment to US\$20 million, in addition to paving a regional highway, at a cost of more than US\$100 million, and building a hospital
- the interest groups they represent should be given control of the funds, displacing the elected authorities of the province
- the mine is causing massive contamination, and this justifies the organisers' financial demands.

The Company believes that the individuals who initiated the protests do not have a legitimate claim to represent the interests of the local communities and are part of a broader political agenda in Peru.

When the violence erupted, a decision was made to suspend operations and evacuate non-essential personnel from the site. The police presence at the site was strengthened, and the Company immediately regained full control of the property without further violence.

With the sponsorship of the Ministry of Energy and Mines, a mediating commission was formed that included representatives of the central and regional governments, Oxfam America, and the Catholic Church. This resulted in the forming of two separate dialogue processes, one between the province and the central government, and the other between the province and the Company. As part of the dialogue with the Company, two commissions were formed: one to evaluate possible improvements to the Framework Agreement, and the other to address environmental concerns.

Operations recommenced at the mine on June 19, when the Company was satisfied it was safe for employees to return to work.

## Broad Support for Tintaya and the Dialogue Process

Following the protests, the Company received expressions of support from a broad range of parties, including the local and international NGOs who have been either directly involved in, or have been observing, the dialogue process.

On 29 May, an announcement headed 'Dialogue Not Violence — Agreements Not Impositions' appeared in the major Lima newspaper, La República. Published independently and without the involvement of the Company, it was signed by 51 prominent individuals from Peruvian civil society, government and industry, and five institutions including mining companies and NGOs. The three Oxfam organisations that are active in Peru, from the USA, Great Britain and Spain, signed jointly as Oxfam International.

The announcement read:

- Concerning the events that happened in Espinar where the Tintaya mine is located, we express our deepest rejection of the acts of violence that occurred, and we object to the idea that the way to understanding between Peruvians is through fear and the abrogating of agreements freely entered into, taking advantage of the expectations of the people.
- We fully back the dialogue process that the mining company BHP Billiton began in the year 2002 with the provincial municipality of Yauri, 37 social organisations and the 5 agricultural communities around the mining deposit.
- Marking a milestone in mining's relationship with the communities, agreements were signed, environmental oversight and monitoring mechanisms were established, the transfer of funds was agreed upon, and lands were allocated.
- The mechanisms to modify or improve the agreements, and the way to apply them, are clearly defined. For that reason, we call for a return to the path of dialogue on the basis of transparent and well-defined conversations, which the company itself, acting in good faith, has under no circumstances refused.

- We are aware of the climate of mistrust that reigns in our country, continually fed by negative and biased perceptions. We recognise also that all of us must unite so that the social responsibility of our acts may serve to improve the living conditions of our people and the recognition of their rights.
- Despite the polarisation of these conflicts, we reaffirm our commitment to building a culture of dialogue between all Peruvians, correcting in every one of us attitudes and visions of the past, and affirming peace, integration and sustainable development.

Tintaya is committed to continued participation in the Dialogue Table consultative process, to respect for the spirit and intent of the Espinar Framework Agreement, and to the fulfilment of its social responsibilities in the province of Espinar.

## Community Case Studies

### Cerro Colorado prioritises aid to neighbouring communities

Community



Cerro Colorado mine workers helping to assemble temporary housing for families in need

At 6:44 in the evening of 13 June 2005, a major earthquake occurred in northern Chile. The quake registered 7.9 on the Richter scale and lasted for fifty seconds. Our Cerro Colorado copper mine was located just a few kilometres from the epicentre, and both the mine and surrounding areas experienced significant damage. Workers at the mine faced major challenges to restore power and road access to the site and to repair widespread damage so that the operations could resume. It took 18 days of night-and-day effort before the mine could restart at partial capacity, and returning to full production was expected to take almost three months. In the days and weeks following the incident, Cerro Colorado gave high priority to providing much-needed aid to the surrounding desert communities. Its workers, managers and contractors played an important role in relieving the suffering of those who were made homeless by the quake.

## Background

Cerro Colorado is located in Chile's Atacama Desert, at 2600 m above sea level, in what is known as the First Region, the country's northernmost region. Of approximately 430 000 inhabitants in the region, some 13 000 live in the ten widely-scattered Andean communities that make up the mine's area of influence. These communities are mostly populated by Indigenous people of Aymara descent, and the mine's nearest neighbour is the village of Mamiña. The most populous nearby town is Pozo Almonte, on the Pan-American Highway 60 km away.

## The Damage

Across the region, the 13 June earthquake caused 11 deaths, hundreds of injuries and considerable damage to homes, schools, churches, roads and irrigation systems. More than 6000 people were left homeless at the beginning of the Chilean winter, when temperatures can drop below 4°C during the cold desert nights.

There were only three minor injuries among the 1200 workers who were at Cerro Colorado at the time. In Mamiña, however, three people had more serious injuries.

Rockslides cut off Mamiña, a number of other communities, and the mine itself from the outside. The rockslide on the road along the side of the steep mountain slope known as 'Cuesta Duplijza' was especially serious because it blocked the main access to both Mamiña and the mine and because the steep terrain will make the road extremely difficult to repair.

Food and fuel supplies could not be brought into the mine or the communities, and power from the national grid was lost. Most of the mine's facilities and infrastructure received only superficial damage, but one of the ore-crushing plants suffered structural damage that would require significant repairs and keep it out of service for several months.

## The Recovery and Relief Effort

The three injured people from Mamiña were transferred that night to Cerro Colorado's medical facilities, where their condition was stabilised so that they could be evacuated to hospital in a helicopter chartered by the mine. The workers of Cerro Colorado and its contractor companies began at once to restore road access and power to Mamiña and other communities. Until that could be done, and normal conditions re-established, the mine provided food, water and fuel to the communities from its own supplies. The Spence Project, another BHP Billiton copper mine currently under construction near Antofagasta, Chile, provided further relief by sending equipment as well as staff to work with government officials to re-open the roads.

Cerro Colorado and BHP Billiton also donated 200 emergency housing units, and mine workers volunteered long hours to clean up damage and to help assemble the temporary housing for the families rendered homeless. One such family was that of Matías Mamani and Antonia Castro, whose adobe house in Pozo Almonte was completely destroyed by the earthquake. They and their seven children received one of the donated housing units.

'I am very grateful for the help that was provided by the people of the Company, because now we at least have a place to sleep. They are not officially responsible for us but they were worried about our situation,' said Matías.

It was not only the beneficiaries who valued the work. The workers themselves found it personally satisfying to be able to help. 'This experience was very enriching for me and for everybody who participated. We are neighbours of these people and for that reason it was our responsibility to help them in every way we could, and we did it,' said Eduardo Lara, a manager at the mine who was one of the people who led the voluntary work.

Cerro Colorado supported local authorities with clean-up equipment, transport vehicles, and the use of a high-altitude helicopter rented by the Company. It also committed additional funding and resources to the rebuilding effort. It has pledged to work with government authorities and agencies to participate in that rebuilding, with a focus on sustainable development projects.

## Challenges

As this report was being prepared, the mine continued to operate at partial capacity, repairs were in progress, and the community rebuilding process was under way with the joint support of the government, the Company and the communities themselves.

A major challenge, for both mine and community, is to ensure that the rebuilding is done in a way that reduces the risk of major damage occurring in the case of another earthquake of similar proportions, while preserving the cultural identity of these small Andean villages.



Mine workers cleaning up the damage in the earthquake's aftermath

## Community Case Studies

### Learning to look through the eyes of others

### Community



Company community professionals taking part in our first community development course.

'The habit of looking at community work as a PR activity is so strongly embedded in us, it's hard to change that in ourselves, let alone our managers.'

**Rick Leysner, CSR and External Affairs manager, BHP Billiton Maatschappij, Suriname.**

For four days in February 2005, in a remote desert community in northern Chile, 20 of our community professionals from operations and projects throughout South America took part in the first offering of a course aimed at improving their knowledge, skills and competencies in working with communities to achieve their development objectives. The course was designed by Oxfam Community Aid Abroad and conducted with Company support.

## Background

The decision to offer a training course targeting community development techniques was based on a number of factors, not the least of which was the increasing expectation that our community relations professionals should play an active role in participative community development in regions where we operate.

We also understand that if we are going to participate in this development work, it is critical that the practitioners have a high level of skill in order for the work to be successful; however, we are faced with the reality that many of our practitioners come from technical backgrounds other than the social sciences. While many of them work intuitively, we recognise that their effectiveness can be greatly enhanced by using a more technical approach. An internal survey in 2004 also identified that our community relations professionals are thirsty for knowledge in this area and keen to understand what constitutes leading practice. A course of this type was thought to be an excellent step in addressing some of these issues.

## The Course

Tony Kelly and Ingrid Burkett, trainers from Oxfam's Australian Community Programs Unit and both experienced development practitioners, formulated the course during 2004, taking into account some of the specific needs identified by our practitioners in the internal survey. One of their primary goals throughout the program was to demonstrate to the group the difference between a 'public affairs' approach, which is built on a 'business' perspective on issues, and a true 'community development' approach, which requires the community relations professional to represent the community's voice and advocate to the Company on the community's behalf.



Oxfam Community Aid Abroad Australia agreed to assist with the development of this course because it believes that the private sector has an increasingly critical influence on human development, particularly in the developing world, and that interaction with the sector can be an important strategy for improving people's human rights and alleviating poverty.

The five-module workbook was translated into Spanish for the pilot course, which was conducted in Mamiña in Region 1, Chile, near our Cerro Colorado operation. Tony Kelly and Ingrid Burkett delivered the training with input from Carlos Ling from Oxfam's office in Guatemala.

Mamiña is located high above a valley, surrounded by desert landscape. The residents are descendants of the Aymara and Quechua peoples and retain many of their ancestral customs and traditions. Farming in the region is still done in the traditional Andean style, with staircase terraces, where mostly vegetables, alfalfa and fruit are grown.

Conducting the course in a small town close to one of our operations enabled participants to experience the local culture and provided residents with an opportunity to showcase their community during evening functions.

## Feedback

Feedback on the course from participants and from the trainers has been exceptionally positive. The inclusion of practitioners from the same geographic region meant that cultural and language barriers were reduced and participants could relate to many of the situations under discussion.

Due to the relevance of the information covered and the interactive learning environment created by the trainers, participants were clearly engaged during sessions presented on community dialogue methodologies and community organisational structures. The most valuable aspect of the course, however, was the opportunity for participants to apply their new knowledge and skills on specific case study material through small group discussions and role playing. In a very secure and supportive environment, everyone was given the chance to test their understanding of the course work and apply their new knowledge to an example of a situation with which they were familiar.

The following are comments from some of our participants on the value of the course.

'...acquiring new methodologies and tools allows us to improve the quality of our work with communities, especially in our dialogue and involvement with them.'

**Aldo Garcia, Cerro Colorado, Chile.**

'The course has allowed me to systematise that which I usually do in an intuitive way.'

**Cecilia Soto, Antamina, Peru.**

'Our learnings will enable us to come closer together with people in our communities through dialogue . . . which will allow us to capture their concerns and their dreams.'

**David Vasquez, Antamina, Peru.**

'... a very enriching experience which allowed me to acquire tools to achieve better participatory development both with external communities as well as our line managers.'

**Lisette Valdebenito, Cerro Colorado, Chile.**

'I now understand that we are community members working for the Company.'

**Manuel Escalante, Minera Escondida Foundation, Chile.**

'... to improve dialogue between the community and Company, to increase participation of affected parties, to sow confidence and then to harvest confidence.'

**Petri Salopera, Minera Escondida Foundation, Chile**

'One thing that will immediately change is the procedure of selecting community projects for Company support. This was very much a one-way street: "We know what is good for you".'

**Rick Leysner, BHP Billiton Maatschappij, Suriname.**

'I feel better equipped to adequately understand and represent a community's position to the Company. I keep reminding myself "to see through the eyes of the community".'

**Teresa Henry, Cannington, Australia.**

## Applying the Learnings

The challenge for the participants now is to continue to apply their knowledge and skills back in their own communities, with the aim of enhancing community engagement and improving the outcomes for the people who are impacted by our businesses.

While energised, motivated and recommitted to their roles through the training, everyone remained realistic about the complexity of the work and the responsibility of their position.

It was apparent that, through sharing and learning from each other's experiences, the individuals within the group began to develop a personal and professional bond that, if fostered, will ensure the continuation of the learnings beyond the course itself.

For Oxfam, the course was part of the multi-faceted approach the organisation takes to the private sector. It was an opportunity to engage in a practical way with the company using the lessons Oxfam has learned and adapted from working directly with communities. 'We hope this course will prove useful in assisting employees to gain appropriate community engagement skills and in helping the company meet internationally accepted human rights and social obligations', said James Ensor, Director of Public Policy, Oxfam Australia.

## Community Case Studies

**The Pilbara LNG site selection study uses community engagement to identify a site of low environmental and social sensitivity**

Community



Artist's impression of the site selected for the Pilbara LNG plant

The Pilbara LNG site selection study was undertaken as part of the Company's pre-feasibility study into the development of a land-based Liquefied Natural Gas (LNG) plant and export facilities on the Pilbara coast of Western Australia. The challenge was to show that a transparent, comprehensive and unbiased consultation process could protect the State's marine and coastal environment, deliver environmentally, economically and socially sustainable solutions and benefit industry, government and the wider community. We set out to demonstrate how the Company Charter and the principles of environmental responsibility, safety, stakeholder engagement and sustainability can be applied to an individual project and how an innovative approach can set a new benchmark.

### Site Selection Study Methodology

The site selection study represented leading practice in methodology because it:

- purposefully avoided any consideration of project economics in the initial site selection process so as not to bias the conclusion towards economically attractive locations
- required the Company to undertake an extensive and genuine consultative process with an extensive range of stakeholders
- involved conservation non-government organisations (NGOs) in a meaningful and ongoing manner
- included the engagement of an independent focus group to contribute to the site selection process and undertake a reality test of key findings
- included a 'whole-of-life' analysis of the project, from construction through operation to decommissioning
- delivered a strong focus on workforce safety and community risk, including issues that could ultimately preserve or cost lives
- developed a qualitative colour-coded ranking system for each criterion that subsequently facilitated the ranking of sites in terms of least overall environmental and social impact and risk to workforce and community
- required the Company to approach the process from a completely unprejudiced stance, with no preconceptions of a preferred site, and to not influence the site selection procedure or methodology
- embedded in the process the Company's Charter for 'win-win' relationships and the creation of value for all parties
- was unanimously judged to be innovative and an industry 'first' in an independent peer review conducted by academics from Curtin and Macquarie Universities

- was conducted in a transparent manner and involved the Company putting its trust in the stakeholders, giving them a voice, listening to them and obtaining their support.

## Challenges

Selecting a suitable site presented the following challenges.

**Application of the BHP Billiton Charter** - The Charter expresses an overriding commitment to health, safety, environmental responsibility and sustainable development.

**Physical environment** - A site had to be identified within a vast and environmentally sensitive and complex area that is exposed to cyclones and floods on a seasonal basis. The Pilbara coast, marine environment and offshore islands are recognised as having high environmental value. These values are reflected in an extensive network of existing and proposed conservation areas including Ningaloo Marine Park, Barrow Island Nature Reserve, Great Sandy Islands Nature Reserve, Montebello Islands Marine Park (proposed) and Dampier Archipelago Marine Park. Parts of the coast, particularly in the vicinity of Dampier, are also rich in indigenous cultural heritage. Selecting a location for an LNG plant therefore required careful consideration of the natural environment, both in terms of protected and unprotected areas of conservation significance.

**Overcoming traditions** - The Company saw an opportunity for an innovative approach to site selection methodology by seeking wide stakeholder input before consideration of site costs.

**Working with limited data** - A rigorous methodology had to be designed and implemented by maximising existing data sets and consulting widely with recognised experts.

**Avoiding 'elite capture' and creating expectations** - The challenge in community consultation is to avoid the process being captured by one region, community, stakeholder group or individual and creating expectations that cannot be delivered.

## Independent Focus Group

Integral to the process was the formation of the Pilbara LNG Independent Focus Group, which was comprised of key community members recommended by others, including representatives from the Pilbara indigenous community, the communities of Onslow and Karratha, conservation NGOs and an authority on the regional environment.

To demonstrate the Company's faith in the process, more than 930 decisions were made by the collective study team with no executive override. These were also reviewed and changed by the focus group without executive override.

The entire team working on the site selection study project, including the project engineers, had a shared appreciation of all the issues and came to recognise the value of community consultation in the process.

At the conclusion of the site selection process, the Company met with stakeholders and explained how and why the site had been selected.

A member of the focus group has stated that 'BHP Billiton's decision to create an independent focus group provided an unprecedented opportunity for direct engagement with their key stakeholders throughout the site selection process. The site that was ultimately selected delivers the best outcome from an environmental, social and economic perspective, creating a win-win outcome for all involved in the process'.

## Site Selection

The study ranked the Onslow industrial area as the preferred site for the Pilbara LNG plant on the basis of environmental, social, health and safety risk criteria ratings. The Company's subsequent cost analysis also ranked the area as the preferred location. A pre-feasibility study on this site is now being conducted.

Through direct and meaningful community and stakeholder dialogue in the decision-making process, the Company has been able to obtain wide acceptance of the project. Two months after the announcement of the preferred site, a survey of Onslow residents found that the site selected was preferred by a majority of respondents. Ninety per cent of respondents believed the project would benefit the region through the provision of jobs, infrastructure and services.

## Outcome

The Western Australian Environmental Protection Authority has endorsed the site and the selection process, indicating it was a rigorous and public process that resulted in the choice of a site with the least potential for environmental impact.

The site selection has also been endorsed by two public figures. The Greens member of the Western Australian Legislative Council, Mr Robin Chapple, has expressed support for the selected site as 'suitable economically and environmentally' and one that would 'bring many benefits to the region' (ABC radio news bulletin, 4 September 2004). The Shire of Ashburton President, Mr Greg Musgrave, also supported the decision, saying, 'There is significant community support for BHP Billiton's proposed liquefied natural gas project near Onslow. The Onslow Shire Council expects the proposal will benefit the region.' (ABC North West WA Radio news bulletin, 3 September 2004).

The Pilbara LNG site selection study has successfully identified a site that is considered to be the least sensitive from an environmental, social, health and safety risk perspective and has provided the Company with an opportunity to contribute to the sustainability of the local and regional community. We are continuing to conduct a comprehensive consultation and information program with key stakeholders.

## Community Case Studies

### Consultation the key to positive community engagement in the Angostura oil and gas project in Trinidad and Tobago

Community



Sheldon Narine (R), our Community Affairs Officer at Trinidad and Tobago, in discussion with a member of the Mayaro/Guayaguayare community

A key to our ability to operate and grow as a company is a commitment to engage effectively with the communities in which we work. When we began developing the Angostura oil and gas operation in the Mayaro/Guayaguayare region of Trinidad and Tobago, there was a sense of frustration in the local community. Given the long history of the energy sector in their area, they felt the returns to the community had been too small. By consulting with the community in order to understand and address local needs, and by initiating programs that help build capabilities of local people and enterprises, strong relationships are being developed, to the benefit of the community and the Company.

## The Project

The Company is a 45 per cent shareholder and operator of the Angostura integrated oil and gas development. The Greater Angostura Field is located offshore from Trinidad and Tobago, West Indies. From the offshore facility, the oil is piped to an onshore storage and marine loading facilities (tank farms) in the Mayaro/Guayaguayare region of southeast Trinidad. Project development began in 2002, construction commenced in 2003 and the first oil was produced in January 2005.

## Community Background

The village where our tank farms are situated has a population of approximately 10 000. It has historically been economically and socially marginalised compared to other regions in the country. The region has a long history of oil and gas development but, although much of the country's petroleum wealth is derived from the area, it has by and large been neglected, and its economy and basic infrastructure is weak. The region has widespread poverty, high unemployment (24 per cent compared with the national average of 9 per cent), and low academic performance.

### **Demographic Profile**

In the table below, demographic data from the Central Statistical Office (CSO) household survey of 1997/98 (latest available data) illustrates the underdevelopment of Mayaro/Guayaguayare.

Nariva/Mayaro is the area within which Mayaro/Guayaguayare falls. For comparison, figures are also given for Port of Spain, the nation's capital; Chaguanas, a fast-developing urban city; Trinidad; and BHP Billiton's other two communities of focus — St Andrews/St David and Tobago.

Of the country's 16 administrative areas, Nariva/Mayaro has the lowest per capita monthly household income, more children per household than the national average, and the second-lowest percentage

distribution of water piped to dwellings. It also has a lower percentage of households with personal computers than any other area. These data suggest that the people of Mayaro/Guayaguayare are the most economically marginalised in Trinidad and Tobago.

### Comparative demographic data

Area	% distribution of households	Av. number of children per household	Per capita monthly household income (TT\$)	% households with water piped to dwelling	% households with personal computer
Nariva/Mayaro	2.68	1.7	666.22	44.44	1.59
Trinidad and Tobago	100	1.39	1176.02	69.37	5.32
Port-of-Spain	4.72	0.94	1646.48	89.19	8.11
Chaguanas	5.23	1.23	1412.24	92.68	4.07
St Andrew/St David	2.68	1.61	796.85	37.39	1.74
Tobago	6.25	1.49	1359.89	69.39	4.08
Trinidad	93.75	1.38	1163.59	69.37	5.40

Source: Central Statistical Office, Household Budget Survey 1997/1998, Volume II Household Income and Expenditure

## The Early Days

Our consultations revealed that the Mayaro/Guayaguayare community felt that companies had exploited the resources in the area but did not make a sustainable contribution to the community. Local people saw infrastructure built and money spent in the community but, as the industry is not labour intensive, were offered minimal employment opportunities. Assets such as sporting grounds were donated to the community but, with no provision for maintenance, they fell into disrepair. The community generalised all energy companies as uncaring monoliths, who failed to deliver on their commitments.

This history led to local calls for assistance, particularly from the Mayaro/Guayaguayare Unemployed and Concerned Citizens Organisation (MGUCCO), which has been in existence for 20 years and is recognised as the unofficial trade union for the area. The MGUCCO has staged public protests demanding that job opportunities be provided for local people. However, the capability of the community to organise itself has been limited by a lack of 'can do' spirit and a strong sense of dependency on handouts.

Several local non-government organisations have been formed in the past, but these have been constrained by both a dependency syndrome and a laissez faire attitude among community members, reflected in non-attendance at meetings and reliance on a handful of proactive community members.

It is against this background that BHP Billiton entered the community in 2002.

## Engagement through Consultation

To earn the trust and respect of the local community, we began by conducting bi-weekly meetings at the Guayaguayare community centre. These commenced in April 2003, during the construction phase of the project, and continued for 20 consecutive months. It was the first time that an energy company had sat around the table with the local community on a continuous basis.

A neutral consultant was hired to chair the meetings; and Company project team representatives, external affairs members and other key staff regularly attended. Community representatives included MGUCCO executive members from seven villages — Union, Radix, Mafeking, Mayaro, Newlands, Guayaguayare and Grand Lagoon. We also invited our subcontractors to the table to answer questions, resolve issues and discuss future employment needs.

A key event occurred when an MGUCCO member joined the Company as employment liaison officer, serving as a link between the subcontractors and the seven branches of the MGUCCO.

The Company also earned goodwill from the community for the following significant outcomes.

- persevering with the round table process even when things got heated and uncomfortable — not one meeting was cancelled
- using a 'win-win' approach so both the community and the Company benefited
- conducting the meetings at a convenient location for the community in Guayaguayare, which is a three-hour drive from our offices in Port of Spain; this was very important to residents
- having minutes taken at the meetings and following through on action items
- having Company decision-makers at the meetings
- respecting the community, moving at their pace and being patient with their lack of understanding on some issues
- hiring locally — on average, 60 per cent of the workforce have been people from the area. During the peak labour period, the project hired 795 local people
- implementing more than 61 community projects in the area during the period
- being open to complaints and issues facing the residents of the area
- challenging the community and MGUCCO to grow and develop.

In commenting on our relationship with the community, Greg Galera, Executive Member MGUCCO, said, 'This is a unique and peculiar community, yet BHP Billiton stuck it out, resolving issues which were not always in their favour. Sometimes we were downright nasty, but they were always ready to engage in problem solving'.

The consultation process has been complemented by initiation of a range of projects based on our assessment of local needs. We are committed to maximising local involvement in development of the Greater Angostura Field, encouraging the establishment of partnerships and other collaborations between international suppliers and resident organisations to support infrastructure development, and enhancing opportunities for local Trinidad and Tobago enterprises.



## Community Case Studies

### Kalahari Diamonds utilises broad media mix to communicate with community and other stakeholders

Community



Kalahari Diamonds Limited is a joint venture operation in which BHP Billiton is a 20 per cent shareholder. As reported in our 2003 HSEC Report, Kalahari Diamonds holds prospecting licences in Botswana, southern Africa, including areas of the Kalahari Game Reserve. Prior to commencing exploration on the ground, in 2002 the company initiated a program to consult with the community and other stakeholders. Due to the complexity of local languages and low literacy levels in some areas, a range of communication formats and media has been utilised to help ensure the widest range of stakeholders is informed about the exploration processes and program.

### Consultation Program

Kalahari Diamonds commenced its consultation program in 2002 with the aim of communicating information about its exploration processes and program to host communities and other stakeholders. Among the key audiences for the program are the indigenous San people who live in the central Kalahari desert region. Other stakeholders include government and other official organisations, conservation groups, NGOs (including those actively involved with San groups), tribal chiefs, communities and interested individuals.

The consultation program has included conducting formal and informal meetings including one-on-one discussions, general community meetings and kgotlas, a traditional form of assembly involving those affected by a particular matter or issue. Other activities have included publishing notices in regional and local newspapers and distributing information to rural schools, clinics, shops, police stations and cattle posts. In areas around the company's exploration activities, posters and signs are displayed to inform communities and the San people, as well as park rangers, passing tourists, scientists and other visitors to those areas.

Some people have expressed concerns that, because of the complexity of local languages, communications by Kalahari Diamonds with communities may not be effective. There is no basis for these concerns. The company produces its written communications in Setswana and English, both of which are used throughout Botswana. Setswana is the official language of the country and generally used by the people in the company's host communities. As illiteracy is still present in communities, photographs and other illustrative forms are used as complementary communication tools. Members of local communities have also been employed to assist in the consultation program and have proved particularly helpful in areas where literacy levels are low.

### Leading Practice

Although we are a minority partner in the venture and are not the operator, we recognise that we have an important role to play as a shareholder, in accordance with our Company Charter and Sustainable Development Policy. We do not proceed with any activity that is in breach of our values.

Not all of the area of land covered by exploration leases held by Kalahari Diamonds is to be explored and much exploration involves no on-the-ground activities. Desktop studies are used together with airborne exploration surveys utilising our Falcon™ system, which enables high-resolution gravity gradiometer surveys to be performed from a light plane without any ground disturbance.

Following extensive consultation with the San people and other stakeholders, airborne surveys were conducted in the central Kalahari in the latter part of 2004 and will continue in 2005. Subsequent to further consultation with these stakeholders, localised ground-based follow-up has been conducted in parts of the eastern region of the central Kalahari. These surveys are limited to tightly focused areas of interest, minimising the potential for disruption to local communities and the environment. Consultation with the San people and other stakeholders is ongoing.

The HSEC policy of Kalahari Diamonds reflects international leading practice and follows our HSEC guidelines and those of the World Bank. Key requirements of their policy include consultation with affected communities, respect for the traditional rights of Indigenous peoples and care for the environment and cultural heritage. We are confident the company will continue to engage with its stakeholders responsibly and in a timely manner.

## Community Case Studies

### PNG Sustainable Development Program continues to perform well

Community



Typical village setting, Western Province, Papua New Guinea

The PNG Sustainable Development Program was established in early 2002, following BHP Billiton's decision to withdraw from its shareholding in Ok Tedi Mining Limited. Since that time the program has made strong progress developing and delivering projects in the Western Province and Papua New Guinea generally.

## Background

In the late 1990s BHP Billiton became increasingly concerned about the potential for further environmental impacts from the continued operation of the Ok Tedi mine in Papua New Guinea. In an attempt to minimise the risk of these impacts occurring we developed an early closure strategy that would significantly reduce the potential for further impacts. The proposal was not, however, acceptable to the Papua New Guinea Government on the basis that the early closure of the mine would have significant socio-economic impacts.

BHP Billiton therefore chose to withdraw from its shareholding in Ok Tedi Mining Limited (OTML) in a manner that ensured the dividends associated with its shareholding would be applied to community development programs. Safeguards were also put in place to ensure that provisions were made for mine closure and that environmental controls, such as dredging in the Lower Ok Tedi River, either remained in place or a more appropriate strategy was implemented should one be found.

## PNG Sustainable Development Program

The PNG Sustainable Development Program (PNGSDP) was established in February 2002. BHP Billiton's entire shareholding in OTML (52% of the company) was transferred to the PNGSDP and the new company has received all dividends that would otherwise have flowed to BHP Billiton. The PNGSDP is tasked with applying dividends from our former shareholding to community development in the Western Province and Papua New Guinea generally.

Over the past year the PNGSDP has gone from strength to strength. The management team (all Papua New Guinean) is fully operational and good progress has been made in developing and delivering projects.

The PNGSDP has three main areas of responsibility:

- delivery of sustainable development services
- continued good governance of the Ok Tedi mine
- management of a Long Term Fund to support development long after the eventual closure of the mine.

The Board of Directors has confirmed its view that the PNGSDP can make its most effective contribution through the support of income-generating activities in Western Province and Papua New Guinea more generally.

Income-generating projects in agriculture (rubber in Western Province), infrastructure (sustainable power generation and road rehabilitation in another two provinces) and micro-finance have commenced. Others in agriculture (especially oil palm and rubber), agro-forestry, sustainable power, transport and communications are under further investigation and negotiations with potential development partners have commenced.

The model favoured by the PNGSDP for the delivery of income-generating projects has been called the 'nucleus estate-outgrower model'. The concept is that an established, profitable enterprise is funded by the PNGSD to expand from its core activities to support sustainable business opportunities for local rural communities. The model leverages off the existing skills base and infrastructure of the existing enterprise.

OTML has continued to perform well from a financial perspective; and as at 31 December 2004, the PNGSDP had received a total of US\$135.1 million in dividends from its shareholding. Two-thirds of the income received from OTML is held in the Long Term Fund for development programs after mine closure. The remaining third is available for application to development programs in Western Province and Papua New Guinea generally.

## Community Case Studies

### Cerrejón continues to make good progress with its community relations programs

Community



The Head of Cerrejón's Communities and Land Division, Luz Sarmiento (centre), after accepting the 'Gold Karratza' in Maicao, La Guajira, on 16 December 2004

The Cerrejón coal operation in the La Guajira department, Colombia, is owned in equal parts by a consortium comprising BHP Billiton, Anglo American and Glencore. During the year, the Company has addressed a number of issues raised by community groups and has made good progress in advancing its community programs.

## Tabaco

As reported in case studies in our 2003 and 2004 HSEC Reports, the processes associated with the relocation of the community of Tabaco have resulted in some outstanding issues. By way of background, Tabaco is located within the Cerrejón mining lease, in the municipal area of Hatonuevo. The relocation process commenced in 1997 when Exxon (mine operator at the time) commenced negotiations with landowners in Tabaco regarding the acquisition of their properties. The acquisition was required in order to allow expansion of the Cerrejón operations. The negotiations involved extensive consultation with the landowners or their representatives over several years. By 1999, Exxon had successfully negotiated purchase agreements with the majority of the landowners, and formal expropriation arrangements were required for only 18 of the original 213 lots.

Since the expropriations, Cerrejón has worked to reach agreement with the 18 landowners. To date, settlement arrangements have been made with all but seven of the landowners. These landowners are free to accept an open offer from Cerrejón that values their land at several times the value established through the formal expropriation process.

Cerrejón has also donated a ten-hectare parcel of land to the Municipality of Hatonuevo to enable the construction of houses for the families that did not settle with the company. Works are now under way to construct the infrastructure for this development. A community program has commenced to establish social development programs for all the former residents of Tabaco.

An important element of Cerrejón's community programs revolves around the creation of employment opportunities for local residents. Particular attention is being given to the local Wayuu indigenous community. A total of 363 Wayuu community members are employed either directly by Cerrejón or its contractors.

## Tamaquitos

Cerrejón is not seeking to purchase land in the vicinity of the community of Tamaquitos as has been suggested by some community members. Located outside the mining lease and approximately five kilometres from the active mine area, Tamaquitos is not directly affected by mining-related activities or environmental issues such as noise or dust.

In the event that there is potential for disruption to traditional transport routes, Cerrejón will work with the regional and local institutions to make alternative arrangements.

## Proposed Rancheria River Diversion

Some stakeholders have expressed concerns about Cerrejón's proposal to divert a section of the Rancheria River to enable further expansion of its operations. Environmental and social impact assessment studies have been initiated, and the results will enable a decision to be made regarding the acceptability of the proposed diversion. The diversion will only proceed if the studies conclude that the environmental and social impacts can be effectively mitigated.

### ***Community of Portete***

In April 2004 a massacre occurred in the coastal community of Portete in the north of Colombia. Approximately 15 people were confirmed dead and others were reported missing. According to reports in the national press, the incident was related to a dispute between paramilitary criminals and drug traffickers. Following the massacre, around 97 families fled to the community of Media Luna adjacent to Cerrejón's port facility, where they received humanitarian assistance from the Company. The Company also assisted with the repatriation of the community members after the military ensured it was safe for them to return. The Company has received a letter of thanks from the Mayor of the district for the support that was provided.

## Leading Practice Guidelines on Security and Human Rights

As reported previously, Cerrejón has committed to implement the US–UK Voluntary Principles on Security and Human Rights. As part of this commitment, Cerrejón has conducted a series of workshops for military and police units active in the area. To date, more than 500 soldiers, policemen and security guards have received training on humanitarian law and human rights.

### ***Award for Support to the Wayuu Ethnic Group***

On 16 December 2004, Cerrejón received the 'Gold Karratza' award for its contribution to the development of the Wayuu ethnic group. The Company was acknowledged for its support in the region through health programs, training provided for the social development of the Wayuu community in La Guajira and associated educational and cultural activities.

The 'Gold Karratza' is the highest distinction awarded in the Wayuu culture and is traditionally granted to male children in the process of becoming adolescents as an incentive to adopt leadership responsibilities in their communities. The award was presented during the inauguration ceremony of the 'Life Project' Wayuu Clinic, which was organised by the Wayuu Association of Councils of Traditional Authorities of La Guajira.

## Community Case Studies

### Consultation program aims to foster community understanding of Cabrillo Port project

Community



L to R: BHP Billiton's Kathi Hann, Vaughan Humphreys and David Shelton with a community representative at a Cabrillo Port public hearing

In September 2003, we filed our applications for a deepwater port licence and land lease for the Cabrillo Port project in southern California on the west coast of the USA. The plan is to develop a floating, liquefied natural gas (LNG) receiving facility that will transfer shipped cargoes of LNG, store it at the port's offshore facilities and convert it back to natural gas for delivery via pipelines to the existing distribution system onshore. As part of the planning and approvals process, we are conducting an extensive consultation program with community and other key stakeholders.

## Background

Over the last two years, LNG has been gaining a higher profile as a potential remedy to the USA's increasing energy demands in the face of declining domestic gas production. Many environmentalists and NGOs prefer the fuel as an alternative to oil and coal because of its clean-burning, more efficient properties.

## The Project and Approval Process

The proposed Cabrillo Port project is to be located more than 14 miles offshore from Ventura County in southern California, beyond the western horizon from the shoreline. The proposed location is designed to minimise disruption to onshore activities, populations and the environment while enhancing safety by operating in a remote area far offshore.

Cabrillo Port is unique in that it will be a specially designed LNG receiving terminal for southern California. There is presently no such facility on the West Coast, and LNG represents only a small fraction of the energy supplied to the USA, which has had abundant supplies of natural gas from local sources. In comparison, Japan has nearly two dozen LNG receiving terminals and Asia, Africa, Europe and the Middle East have been shipping or receiving LNG since the 1960s. LNG has been shipped to the East Coast of the USA since the 1970s.

Before the project can move forward, the United States Coast Guard (USCG) and the California State Lands Commission (CSLC) must grant permits for a deepwater port licence and a land lease for the pipelines connecting the port to the distribution system onshore, which is operated by Southern California Gas Company. Numerous other permits are required but are dependent upon these initial approvals.

As part of this permitting process, the USCG and CSLC have commissioned an independent third party to conduct a thorough Environmental Impact Statement (EIS) and Environmental Impact Report (EIR). Both the National Environmental Policy Act and the California Environmental Quality Act require this review. Public meetings to discuss issues that should be covered in the EIS/EIR were held in March 2004 in Oxnard and Malibu, the two main coastal communities near to the proposed site. The following October, a draft of the EIS/EIR was submitted for public review and a further round of hearings was held to discuss the project with the public. A final draft of the EIR/EIS is expected later this year.

## The Consultation Program

LNG is currently a relatively small part of the energy supply mix in the USA, and there is still little knowledge of it among the general population. To familiarise people with the product and the project, we are undertaking an extensive consultation program in the area and surrounding locales with various stakeholders, including elected and regulatory officials, non-government organisations (NGOs) such as environmental and conservation groups, community-based organisations, small local groups and individuals.

We have participated in numerous presentations, meetings and other forums throughout Ventura County and elsewhere in southern California to discuss the proposal, listen to community concerns and answer questions about the project. In the 12 months to April 2005, seven public hearings and open houses, hosted by the USCG and CSLC, have been held in Oxnard, Malibu and Santa Clarita. Several hundred people and organisations have participated in this process.

Public comment has focused primarily on safety and environmental issues, the need for LNG supplies and the potential economic and social impacts of the project.

While some stakeholders have expressed concern about the proposed development, a number of community leaders have expressed strong support for LNG and Cabrillo Port in particular. Tom Cady, retired Assistant Police Chief, Oxnard City Police Department, has said, 'Finally, federal and state regulators have determined what we already know: that LNG is safe. Out of all the proposed LNG facilities, Cabrillo Port provides the strongest commitment to ensure public safety and protect our local community'.

Steve Caplan, former Captain of the Oxnard City Fire Department has acknowledged that 'Cabrillo Port is fully committed to working with federal, state and local public safety officials here in Oxnard and all the Ventura County communities, to ensure that the safety of our families and loved ones is of utmost priority'. Commenting on social issues, Hank Lacayo, State President, Congress of California Seniors, stated, 'California needs new energy supplies such as LNG to keep prices in check and home heating and cooling costs low'.

We support open, constructive and reasoned dialogue about the project. A transparent consultation process can help our host communities and the state to fully understand the potential for Port Cabrillo to provide clean, safe, reliable energy to meet the growing energy needs of Ventura County and California, today and into the future.



## Community Case Studies

### Tsunami tragedy touches the hearts of our employees

Community



Caitlen Baker and Luren Paunich enjoying the Australia Day Port Festival in Port Hedland, where funds were raised for tsunami disaster relief

For weeks after 26 December 2004, the world's media were saturated with images of the aftermath of the powerful earthquake and tsunami that destroyed communities, took the lives of thousands of people and made thousands more homeless across the Asian region. As people struggled to comprehend the magnitude of the devastation, an unprecedented disaster relief effort was mounted. BHP Billiton employees opened their hearts and contributed to relief appeals around the globe.

### The Initial Response

While early emergency efforts were getting under way, the Company announced a corporate donation of US\$500 000 to two tsunami appeals. The funds were evenly divided between relief efforts in two of the hardest-hit regions, India and Indonesia. Our chosen agencies were UNICEF in Indonesia and World Vision in India, with both agencies receiving US\$250 000.

UNICEF Australia Chief Executive Carolyn Hardy welcomed the contribution, saying, 'This is an extraordinarily generous donation. UNICEF's number one priority is the health, wellbeing and protection of children. BHP Billiton's donation will assist in making sure the needs of these children are met'.

World Vision used some of its donation to save lives in the aftermath of the disaster, providing emergency food, water and temporary shelter for the survivors. Since then, their work has been focused on longer-term community and social rehabilitation by helping to rebuild schools, repair hospitals and restore livelihoods.

World Vision Chief Executive Officer Tim Costello said, 'World Vision has put in place a comprehensive list of recovery activities, including the rehabilitation of farmland, the restoration and diversification of crops, the regeneration of natural fisheries and marine habitats, the re-establishment of vital infrastructure and the rebuilding of small businesses to provide services to recovering populations'.

In addition to the initial donation, our businesses in Indonesia — PT BHP Billiton Indonesia, the Maruwai project and PT Gag Nickel and BHP Billiton Corporate — donated more than US\$22 000 to the Minister of Energy's appeal for emergency relief in that country.

### Doubling our Employees' Efforts

In the second week following the disaster, the Company announced it would match personal donations made by BHP Billiton employees to tsunami appeals. Many employees were informed of this gesture when they returned to work from their Christmas holidays and were very supportive of the matching program, as reflected in the following comments.

'I'm very happy about this Company's attitude regarding this donation. The same opinion is shared by my management team. It's beyond my expectations. Attitudes like these make us very proud as employees working for BHP Billiton.' Carlos Mesquita, Mozal, Mozambique.

'It is important to know that our Company cares as much as we do.' Peter Baker, BMA, Australia.

'I am so delighted. You have made my day! I am so proud of what the Company has done/is doing; I will donate some more to one of the three charities mentioned in yesterday's email.' James McDonald, Liverpool Bay Asset, United Kingdom.

'I am very proud to work for a company that takes its social responsibility as seriously as BHP Billiton.' Michiel Hovers, Energy Coal Marketing, Netherlands.

'This is a fantastic gesture on BHP Billiton's part. Thank you for making me feel proud of working for a community-orientated company.' Luke Miocevich, Griffin Venture, Western Australia.

## More than One Way to Give

While most people contributed donations individually to their preferred organisations, some of our operations came up with other ways to facilitate employee giving.

At Hunter Valley Coal and West Cliff Colliery in New South Wales, Australia, employees elected to contribute collectively through their union, the Construction, Forestry, Mining and Energy Union (CFMEU), which offered to administer the fundraising effort.

At the EKATI diamond operation in Canada, one employee sent out a message to all other departments at the mine in the Northwest Territories and the operation's other offices in Vancouver, Kelowna, Yellowknife and Antwerp, challenging them to beat the efforts of his department. A total of US\$26 000 was raised in the spirit of competition.

BHP Billiton Iron Ore in Western Australia set up an appeal account at a local bank, which made it easy for employees from the Pilbara region to donate. Boodarie Iron also contributed to the appeal by sponsoring three screenings of the movie 'The Incredibles', raising close to US\$2000.

On 26 January 2005, the celebration of Australia Day provided an opportunity for many annual fundraising activities around the country to focus on collecting for the tsunami appeals. At Port Hedland in Western Australia, fundraising volunteers and stallholders at the traditional Australia Day Port Festival raised US\$4500.

In the small community of Alyangula in the Northern Territory, a 'door knock' for the Red Cross appeal raised over US\$4000. In typical outback fashion, the hat was also passed around at the Australia Day Cricket Match on the Alyangula town oval and the community donated US\$600.

One of the more interesting approaches was at Yabulu Nickel Refinery in Queensland, Australia, where employees were encouraged to 'donate' a leave day from their wages. This effectively meant that the employee lost a leave day from their entitlement, with the corresponding pay being donated to the appeal. The payroll staff rose to the challenge of managing the paperwork, and the site raised over US\$27 000 in what was a clever and effective fundraising project.

## Our Total Contribution

Overall, the total amount contributed by our employees was US\$444 100, and the Company has matched this amount. BHP Billiton contributed the following amounts to different organisations to match employee donations:

- Oxfam \$155 010
- Red Cross \$121 637
- World Vision \$97 656
- UNICEF \$31 904
- Other \$37 893

A separate donation of US\$55 000 was also made by the Company to World Vision through a major concert event held as part of the tsunami appeal.

Together with the initial donation of US\$500 000 to World Vision and UNICEF plus US\$22 000 donated by BHP Billiton businesses in Indonesia, the donations made by employees and the matching amount contributed by BHP Billiton, our overall contribution to tsunami disaster relief appeals was US\$1 465 200.

## Socio-Economic - Our Approach

The socio-economic aspects of our operations relate to how we manage our people and contribute to the economies within which we operate. Our priorities are:

- Our relationships with our employees and contractors: development of our leaders; diversity, including indigenous employment; training; remuneration and other benefits of our employees.
- Our economic contribution to society: the payments we make to governments, including taxes and royalties, and the added value we provide as a result of our operations and their broader contributions through aspects such as payments to suppliers and employees.

For details on our approach to the management of these aspects, see:

- [Employee Relations](#)
- [Supply](#)
- [Economic Contributions](#).

See [Our Performance: Socio Economic](#) for details on our performance over the reporting period.

## Employee Relations

Employee relations at BHP Billiton is the responsibility of local and business unit management. Each business is required to:

- implement employment arrangements that deliver outcomes consistent with the BHP Billiton Charter, Sustainable Development Policy and Guide to Business Conduct
- build open and productive relationships with employees and provide processes to address workplace issues in an equitable manner
- ensure that employees have the opportunity to develop skills that allow them to contribute to business success and are recognised and rewarded for those results
- support fundamental human rights and freedom of association and ensure legal requirements governing employment are fully met
- respect local legislative requirements and other local standards and circumstances.

See our [Employment Principles](#), [Freedom of Association](#), [Child and Forced Labour](#), [Work/Life Balance](#), [Grievance Mechanisms](#) and [Managing Transition](#) for further details.

### Our Employment Principles

Our [Employment Principles](#) outline our approach to employment and our policies with regard to equality, recruitment, remuneration, performance management and employee development. These are detailed below:

- [Equality in Employment](#)
- [Remuneration and Rewards](#)
- [Performance Management](#)
- [Career and Employee Development](#)

#### ***Equality in Employment***

BHP Billiton recognises the benefits of diversity and regards diversity management as a sound business practice. BHP Billiton is committed to providing a workplace in which individual differences are valued and all employees have the opportunity to realise their potential and contribute to the achievement of business objectives. By effectively managing diversity, BHP Billiton aims to increase organisational efficiency and enhance the Company's competitive position.

BHP Billiton is committed to developing a diverse workforce and to providing a work environment in which everyone is treated fairly and with respect.

Employment with BHP Billiton must be offered and provided based on merit. All employees and applicants for employment should be treated and evaluated according to their job-related skills, qualifications, abilities, and aptitudes only.

Decisions based on attributes unrelated to job performance (for example, race, colour, sex, national origin, age, disability, personal associations, religion, political beliefs, union involvement, marital status, sexual orientation, pregnancy, family responsibilities) may constitute discrimination and are prohibited. Decisions relating to suppliers, customers, and other stakeholders should also be based on merit.

Harassment in any form is unacceptable. BHP Billiton regards actions that constitute harassment as serious misconduct.

Equality in employment issues are addressed in the BHP Billiton [Guide to Business Conduct](#).

We recognise however, that affirmative action may be required to address historical imbalances and past discrimination. For further details see [Employment Equity in South Africa](#) and [Indigenous Employment and Training](#).

## ***Remuneration and Rewards***

When developing and reviewing remuneration and rewards policies and practices, we recognise the need to ensure that:

- our total remuneration practices are aligned with the market conditions in the industries, countries and regions in which we operate
- our practices comply with any relevant law and the Company's standards of business conduct
- distinguishable differences in remuneration are aligned to the relative performance of the business, assets and individuals
- our employees see the link between the results they produce and the level of reward they achieve.

## ***Performance Management***

Performance Review is the process at BHP Billiton of reviewing an employee's performance during the preceding review period against agreed job goals. It is our goal to allow all employees to participate in at least one Performance Review per financial year. The review is typically conducted by the employee's immediate manager or supervisor.

The process is intended to:

- encourage two-way communication about job performance
- provide a method of evaluating overall job performance for input to remuneration
- identify factors that have affected performance and areas that need further development
- increase self-understanding and the ability to monitor and improve performance
- establish job goals for the next review period that are consistent with the overall business direction.

## ***Career and Employee Development***

BHP Billiton is committed to working with employees to develop career paths that will enable them to reach their full potential, achieve job satisfaction, and maximise their contribution to the Company. As part of this process, BHP Billiton provides employees with on-the-job experience and supports employees in advancing their education and training.

We are committed to providing competency-based learning and development solutions that are designed to assist employees to develop their technical, non-technical, leadership and management skills. The solutions may be delivered via internal or external training programs, or both.

Learning and development needs are identified from on-the-job performance and the specific needs of the business unit. In addition, needs are also identified from Career Review and Performance Review processes. Specific technical skills training (for example, for operators, trades/engineering employees, administrative or professional employees) and HSEC training are managed within the businesses. We are also implementing regional leadership development programs.

BHP Billiton also supports employee attendance at conferences, seminars, and the like, if such attendance will enhance the employee's job skills or otherwise benefit the Company.

Furthermore, BHP Billiton provides formal opportunities for employees to create career development plans, and employees may discuss career or job concerns with their supervisor or manager at any time.

## BHP Billiton Group Graduate Development Program

The Group Graduate Development Program is a three-year program run at a global level. In the first year, graduates attend a one-week Orientation Program in their region that focuses on the principles that guide the Company. In the second year, they attend a two-week Business Awareness Program to gain an in-depth knowledge of how the CSGs operate. In the final year, graduates attend a Global Awareness Program, which is designed to promote awareness and understanding of the global strategic and commercial environment within which BHP Billiton operates. This program is held in an emerging or developing market for the Company.

## Freedom of Association

We fully recognise the right of our employees to freely associate and join trade unions. We have a number of locations where we have a mix of collective and individually regulated employment arrangements, but this does not affect the rights of those employees to choose to belong to trade unions. Prospective employees are made aware of employment arrangements prior to joining the Company.

The Company's policy is to consult with employees on major organisational changes and ensure processes are in place at all locations to address any issues.

In line with our [Policy](#), wherever we operate we will 'meet, or where less stringent than our standards, exceed all applicable legal and other requirements' and work within the values of our [Charter](#). Hence we will 'continue the drive towards a high performance organisation in which every individual accepts responsibility and is rewarded for results' in order to create value for all our stakeholders.

## Child and Forced Labour

In line with our Policy commitment to the [UN Universal Declaration of Human Rights](#), we exclude the use of child labour and prohibit the use of forced labour at our operations. All sites are required to report the age of their youngest worker and the corresponding minimum working age in their jurisdiction.

## Work/Life Balance

Particular challenges arise from the global nature of our operations, which span all major time zones. Several options are available to assist employees in balancing the competing demands of their work and personal lives. By implementing policies and practices that help employees to balance these demands, we aim to achieve the goals of:

- increased productivity
- improved employee morale
- enhanced corporate image and positive public relations
- heightened employee commitment to work and to the organisation
- increased ability to attract and recruit the best employees
- achievement of workforce diversity objectives
- improved health and safety record due to fewer work-related incidents/accidents
- reductions in tardiness and absenteeism
- decreased turnover and, as a result, increased return on training and development investments.

BHP Billiton respects and supports employees' commitment to their families and recognises that employees have a wide range of personal obligations and that these obligations can have an impact on the ability to balance work and personal life demands.

## ***Employee Assistance Program***

BHP Billiton's Employee Assistance Programs (EAP) offer staff assistance with personal and work-related problems that can arise from time to time.

Employees have direct access to professional and independent counselling, through a service that is free, voluntary and confidential.

Counselling provides objective, skilled assistance with problem solving. Just talking through a problem with an independent person can help, or provide a referral if specialist advice is needed.

The types of problems BHP Billiton staff have accessed counselling support for include:

- marriage, family and relationships
- work situations
- changes in life
- alcohol and other drugs issues
- gambling issues.

The program is also available for consultation by managers and supervisors with respect to staff who could benefit from the program.

## **Grievance Mechanisms**

Our [Guide to Business Conduct](#) provides the overall framework if employees think a decision or action may be inconsistent with our Charter, policies or standards.

Wherever possible we encourage employees to first discuss issues with their immediate manager or supervisor. If an employee feels unable to do this, there are a number of other avenues for raising queries. These include:

- the next level of management
- the Human Resource, Legal or Group Audit Services representative for the business unit
- the manager responsible for the policy area concerned
- the regional BHP Billiton Business Conduct Helpline
- a member of the BHP Billiton Global Ethics Panel.

The course of action required to resolve a concern will depend on the nature of the issue and its severity. It may be possible to resolve a matter by involving only one person or the Helpline. However, some situations may require advice and input from additional sources such as legal advisors, auditors, etc. In all cases, confidentiality will be maintained to the highest degree possible.

Employees who raise genuine concerns will not be subject to retribution or disciplinary action.

## **Managing Transition**

From time to time it is inevitable that, in a company such as BHP Billiton, as a result of economic, technological, or structural changes redundancies may be required.

To be lawful, redundancies must not be harsh, unjust, or unreasonable. BHP Billiton must be able to demonstrate that such action is supported by a valid reason. All reasonable alternatives to redundancy should be considered. Options include retraining employees to assume new roles and providing opportunities for transfer to different business units.

Redundancies will always be managed consistent with the requirements of local legislation. In addition, BHP Billiton will generally provide further support in the form of monetary payment, counseling and ongoing career management.



## Supply

Our approach to the management of HSEC aspects within the supply chain is specified within [HSEC Management Standard 11](#), Suppliers, Contractors and Business Partners. We seek to ensure that 'the contracting of services, the purchase, hire or lease of equipment and materials, and activities with partners are carried out so as to minimise any adverse HSEC consequences and, where possible, to enhance community development opportunities.'

Managing contractors and their activities more effectively at our operations has been identified as a significant improvement opportunity for the Company. Our objective is to ensure that standards and procedures adopted by the contractors are consistent with the BHP Billiton standards. Some of the steps we have taken to move towards improved consistency in this area are:

- Suppliers and contractors are subject to a risk-based HSEC evaluation prior to contractual arrangements being established.
- Contracts include HSEC conditions of contract, which require contractors to implement systems consistent with our HSEC Management Standards.
- The contract work is to be assigned a BHP Billiton manager or supervisor as the single point of accountability.
- BHP Billiton line management is to allocate adequate time and resources to manage the day-to-day activities of the contract.
- Line management is to sign off on the work standards and how they are to be carried out and shall ensure via timely workplace inspections that the work is being carried out according to the agreed standards.
- Line management is to ensure that BHP Billiton's expectations are clearly and effectively communicated to all contractors and their respective organisation's leadership.
- Line management is to ensure that each contractor's on-site manager is introduced to the responsible BHP Billiton supervisor who has single-point accountability and that effective systems of communication are in place.

We recognise the value to local economies which can be delivered through our activities and consequently seek to encourage the development of local contractors and the use of local suppliers wherever possible.

Refer to [Our Performance: Supply](#) for a review of the past year.

## Economic Contributions

The socio-economic impact of the extractive industries sector can be significant and in recent years, there has been an increasingly intense debate and scrutiny of the broad sustainable development and socio-economic implications of the mining, minerals and petroleum sectors.

The [Mining, Minerals, and Sustainable Development \(MMSD\) Project](#) was the first in-depth review of the mining and minerals sector from the perspective of sustainable development undertaken with the support and engagement of mining companies (including BHP Billiton), mining communities, labour, the research community, and a broad range of stakeholders. Extensive attention was given to socio-economic issues in this study, including mineral wealth capture, distribution of mineral wealth, corruption, and social issues regarding local communities and mines. This project was completed in 2002, with a number of actions identified to assist in creating a 'vision for the future' for the sector in which mineral wealth would be spent transparently to support social and economic goals. From an industry perspective, one key outcome was the establishment of the [International Council on Mining & Metals](#), whose aim is to help enable the industry to make a positive contribution to sustainable development.

The MMSD project and was followed by the [Extractive Industries Review \(EIR\)](#), an initiative of the World Bank Group consisting of another independent review (this time of both the petroleum and minerals/mining sectors) involving extensive stakeholder engagement, including companies like BHP Billiton.

The aim of the EIR was to produce a set of recommendations that would guide involvement of the World Bank Group in the oil, gas and mining sectors. The project was undertaken in the context of the World Bank Group's overall mission of poverty reduction and the promotion of sustainable development. The implications of the report are important as the World Bank helps set international benchmark standards for the sustainable development performance of the sector. The EIR published its [findings](#) in 2003 and the World Bank Group provided a formal [Management Response](#) which indicated a number of priorities, including actions to ensure that extractive industry benefits reach the poor and that social risks are mitigated in the sector.

As a result of the MMSD and EIR projects, the mining and metals industry recognised that there was a role for a research project aimed at assisting mineral-rich countries to find practical solutions to the dilemmas they face in using their natural resources to achieve broad-based economic growth and sustainable development. The [Resource Endowment Project](#) aims to enhance industry's socio-economic contribution to the countries and communities where companies like BHP Billiton operate.

BHP Billiton recognises that our activities have significant socio-economic impacts. For further information on our activities to understand, measure and promote responsible and positive outcomes, refer to [Our Performance: Economic Contributions](#).

## Socio-Economic - Our Performance

See the following for details on our socio-economic performance over the reporting period:

- [Employee Relations](#)
- [Supply](#)
- [Economic Contributions](#).

For details on how we managed the socio-economic aspects of our business, see [Our Approach: Socio-Economic](#). For examples of policy in action see [Case Studies](#).

## Employee Relations

Refer to the following for detail on our employee relations performance over the reporting period:

- [Employee Profile](#)
- [Diversity](#)
- [Remuneration](#)
- [Freedom of Association](#)
- [Child and Forced Labour](#)

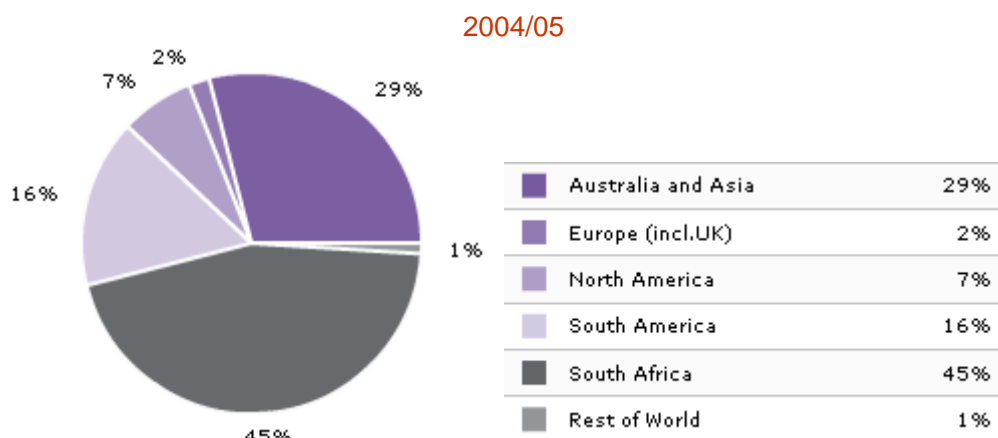
For further detail on how we manage employee relations aspects, refer to [Socio-economic: Our Approach](#).

### Employee Profile

During the year, the average number of permanent employees across the Company (including our owned and operated facilities as well as our share of unincorporated joint ventures) was around 36 470 compared to 35 070 reported in the previous period. This does not include approximately 3000 employees who have joined our Company as a result of the WMC acquisition.

A breakdown of employee numbers by region is presented in the graph below.

#### **Regional Geographic Breakdown of Total Number of Employees**



Approximately two per cent of employees were engaged on a part-time basis.

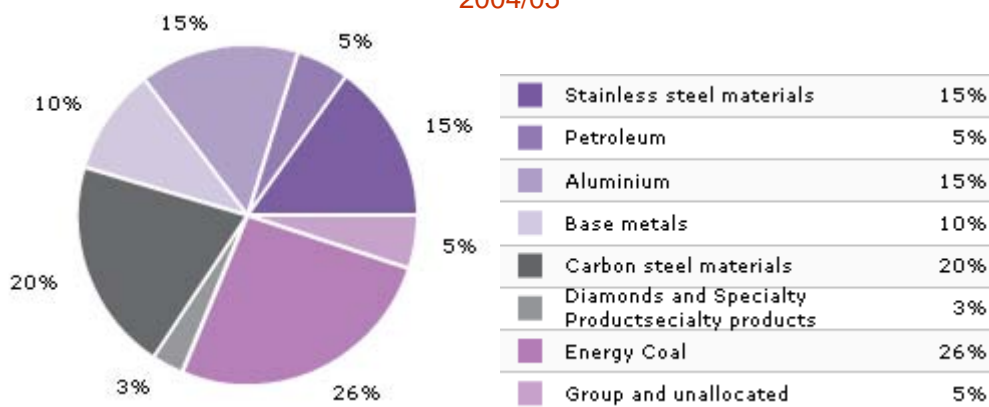
The average turnover rate of employees who were engaged at operated sites and corporate offices was two per cent.

A total of around 50 000 contractors were engaged at operated sites compared with 38 000 in the previous reporting period. This increase is primarily due to our construction activities at a number of our new projects.

A breakdown of employment by Customer Sector Group is presented below.

### Employment by CSG (Average)

2004/05



## Diversity

The Company is committed to developing a diverse workforce and to providing a work environment in which everyone is treated fairly and with respect and has the opportunity to contribute to business success and realise their potential. In real terms, this means harnessing the unique skills, experience and perspectives that each individual brings and recognising that these differences are important to our success.

Approximately seven per cent of our Company's management are women. In the year ending 30 June 2005, about 12 per cent of full-time employees at operated sites and offices were women. There were significant regional differences, with women representing about 9 per cent of full-time employees in Africa, 11 per cent in Australia, 18 per cent in North America and 7 per cent in South America. In our Corporate offices, women represented 46 per cent of full-time employees. While there are currently no female members of the Board, the Company Secretary is a woman, as is the President of Gas and Power.

The Company has identified some specific sites and countries where diversity issues are particularly sensitive. Examples of ongoing policies or programs undertaken to address employment diversity issues include [Employment Equity in South Africa](#), which ultimately aims to achieve representation at all levels in our businesses consistent with the demographic profile of South Africa, and targeted indigenous employment programs in the Pilbara region of Australia (Iron Ore), the Northwest Territories in Canada (EKATI), and New Mexico in the United States (New Mexico Coal). Further detail on our indigenous employment strategies is provided in [Indigenous Employment and Training](#).

### Employment Equity in South Africa

To address historical issues of South Africa, which resulted in the majority of South Africans being excluded from participating in the mainstream economy, BHP Billiton South Africa adopted an empowerment strategy of change. This empowerment strategy covers transformation at the levels of ownership, management, sustainable socio-economic development, procurement and employment equity. As part of this strategy, the Employment Equity Policy is aimed at redressing previous disadvantages, disempowerment and employment imbalances through accelerated development, training and education programs.

We have set targets to increase representation of those people who are included in what are classified as 'designated groups' by the South African Employment Equity Act. Designated groups include African, Coloured, Indian and disabled males and females and white females. Our target is to have 40 per cent representation of designated groups in positions ranging from Chief Operating Officer down to middle management level.

Current designated group representation across our South African management levels is as follows:

- 57 per cent representation at top management level (FY04: 43 per cent)
- 21 per cent representation at senior management level (FY04: 18 per cent)
- 32 per cent representation at middle management level (FY04: 32 per cent).

While we have made significant progress in transforming the management structures within our businesses, the external pool of skilled and experienced executives in our industry is fairly small. Our focus, therefore, is geared towards developing the pipeline of talent into the organisation. In this regard we have launched a number of initiatives to support our focus on the people development imperative.

In South Africa, BHP Billiton spends some R55 million per annum on training and development. This total represents 2.6 per cent of payroll and excludes amounts spent on bursaries (R7.3 million) and community education. Training courses comprise a number of small generic programs (for example, safety courses, induction programs and first aid courses) as well as a number of smaller asset-specific programs (for example, materials handling, fork lift operation, and rigging). In addition, there are several larger programs detailed below.

### **BHP Billiton Development Program**

This program, launched in May 2005 with an estimated cost of R20 million, aims to recruit and develop black females that hold a Bachelor's degree or national diploma with mathematics and science. BHP Billiton will select 40 graduates, the majority of these being black females. The women will undergo an 18-month program that includes commercial and industry specific training. They will contribute to projects in the BHP Billiton pipeline – providing real on-the-job work experience, and will be offered the opportunity to gain operational experience. Candidates who successfully complete the course will obtain a Masters degree in technology management and will join our Customer Sector Groups.

### **Learnership (Apprenticeship)/Inservice Trainee Programs**

All operations have learnership (or apprenticeship) programs that provide for technical and personal training for tradespeople (artisans) and technical university ('technikon') students. These courses are generally one to two years in duration, depending on a student's individual project. Tailored programs are designed at the assets, and there is no standard approach across the Customer Sector Groups.

## ***Indigenous Employment and Training***

We recognise indigenous employment and training as an important issue and, as has been reported in previous years, undertake a number of initiatives in this regard. Some of the key initiatives in place across the organisation include:

- BHP Billiton Iron Ore, Western Australia, the indigenous employment and training program has a target in place for a 12 per cent indigenous representation in employees by 2010. The program includes educational partnerships, to support local indigenous students, support for local indigenous business partnerships and traineeships. In addition, support is provided to contractors to help them meet the 12 per cent target.
- Groote Island Mining Company has approximately 20 per cent of its permanent workforce from indigenous descent. A specific employment strategy is in place in the Rehabilitation and Mine Services department which combines employment and training activities.
- EKATI, North-West territories of Canada, has a number of initiatives related to indigenous employment and training. The operation has almost reached its target for 31 per cent of Northern Aboriginal people employed either directly or indirectly. For further information refer to our case study [Ekati training program promotes sustainable new careers in the emerging Canadian underground diamond mining industry](#).
- New Mexico Coal operation in the United States has a legal obligation to ensure that positions at the Navajo Mine are filled with Navajo people, where a suitably qualified candidate is available. The operation has voluntarily extended this practice across the San Juna Coal Company and also for any New Mexico support services.

## Remuneration

Our approach to remuneration seeks to ensure that remuneration is aligned to market conditions relevant to the industry and country where we are operating and enables individuals to see the link between their performance and the level of reward they receive.

During the reporting period, all Company employees earned greater than the stipulated minimum wage in the countries where they worked.

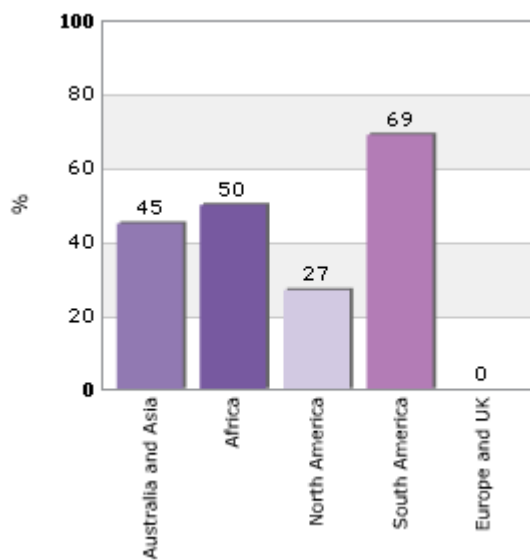
## Freedom of Association

In line with our commitments to uphold the [UN Universal Declaration on Human Rights](#) and our support for the [UN Global Compact](#), we fully recognise the right of our employees to freely associate and join trade unions.

The graph below provides a breakdown of the reported percentage of employees at operated sites and offices in each region who are covered by collective bargaining agreements. Over the reporting period, around 50 per cent of our workforce globally were covered by collective agreements.

### **Reported Percentage of Employees Covered by Collective Bargaining Agreements by Region**

2004/05



## Child and Forced Labour

All sites are required to report the age of their youngest worker and the corresponding minimum working age in their jurisdiction. Over the reporting period, the youngest employees were 16.5 years of age working as apprentices and administrative trainees in our Australian operations. In line with our [Policy](#) commitment, we do not employ forced labour.

## Supply

Our [Sustainable Development Policy](#) recognises that to progress our journey towards sustainable development, we must engage and encourage our stakeholders, including our suppliers, to share responsibility for meeting our requirements. To achieve this, as outlined in [HSEC Management Standard 11](#), consideration is given to creating business opportunities for local suppliers and contracts and supporting their ability to fulfill the requirements of these Standards.

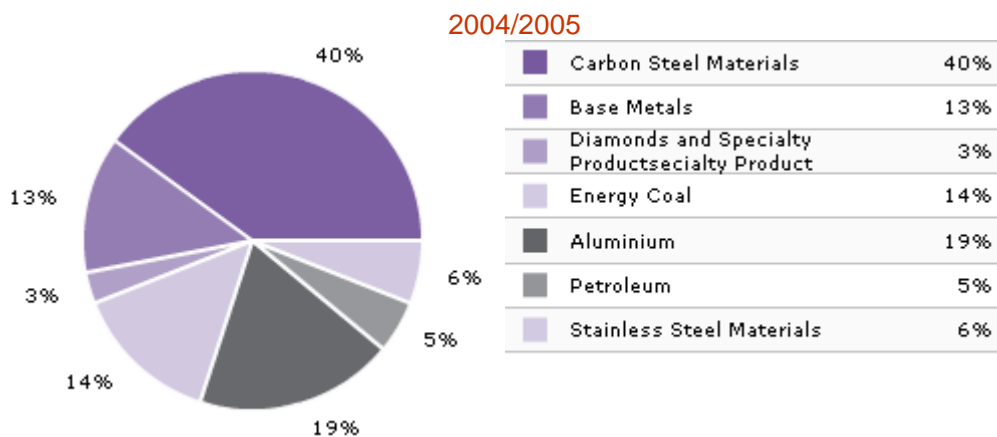
We have a number of initiatives to this end. In addition to the programs we are running at our [EKATI Diamon Mine](#) in Canada to provide business opportunities for indigenous suppliers, also refer to:

- [Black Economic Empowerment Procurement Policy implemented across our sites in southern Africa](#)
- [Escondida program supports the development of local suppliers](#)
- [Mozal – a model for integrating sustainability into resource projects.](#)

We are endeavouring to progressively improve our ability to report on the economic contributions we make through our engagement with suppliers. As our systems to capture these data improve, the accuracy of these data will also improve. Given this is our second year of capturing the following information, we are not yet able to provide year-on-year comparisons of trends.

Total supply spend during the reporting period was in the order of US\$9 billion. There was an increase in spend over the period due to production ramp-up, and an increasing number of capital projects coming on line.

### Total Global Spend on Goods and Services by Customer Sector Group



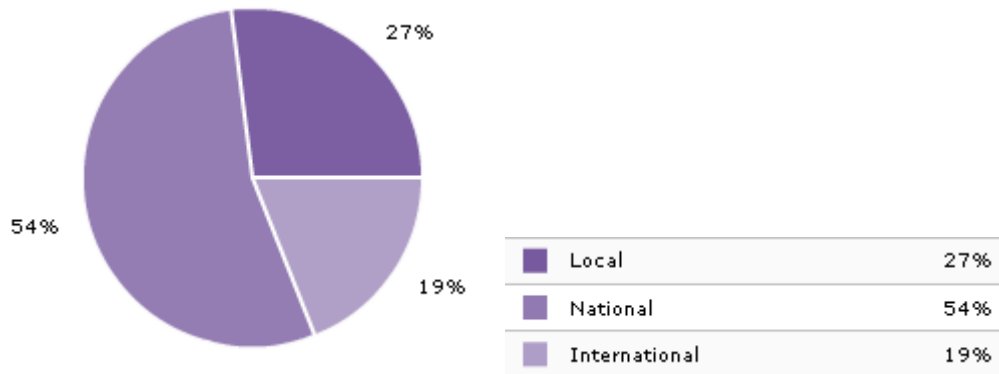
The diagram below provides an indication of the distribution of our supply spend at a local, national or international level by our businesses.

Our approach is to use local suppliers wherever possible. Over the reporting period, our distribution of spend with international suppliers reduced from 26 per cent in the previous year to 19 per cent in the current year, and the distribution of spend with both local and national suppliers was at 27 per cent and 54 per cent respectively. Local spend refers to spend within the communities where we operate and the regions, such as states and provinces, where our operations are located.



## Distribution of Supply Spend

2004/05



Over the reporting period, as part of the [HSEC Targets Review](#), we are implementing a target to improve the integration of environmental and social considerations into sourcing and supplier management processes. In conjunction with this, our Global Supply function is also progressing work on improving the capture of the non-financial benefits associated with our supply arrangements.

## Economic Contributions

The economic contribution we make to society is much more than the financial profits we derive. Our contribution includes the value that flows from the broader contributions of our operations, such as payments to our employees and suppliers, and disbursements to governments, including taxes and royalties.

The following provides an outline of:

- [Our Financial Performance](#)
- The broader economic contributions we make to society through our [Value Added](#).

## Our Financial Performance

The data in this section deal with the economic affairs of the BHP Billiton Group and cover both operated assets and our share of unincorporated joint ventures. Details on the financial definitions and additional performance information are available in the financial [Annual Reports](#).

Summary financial information for the Group is presented in the following table.

### Summary Financial Information for the BHP Billiton Group US\$ million (Year ending 30 June 2005)

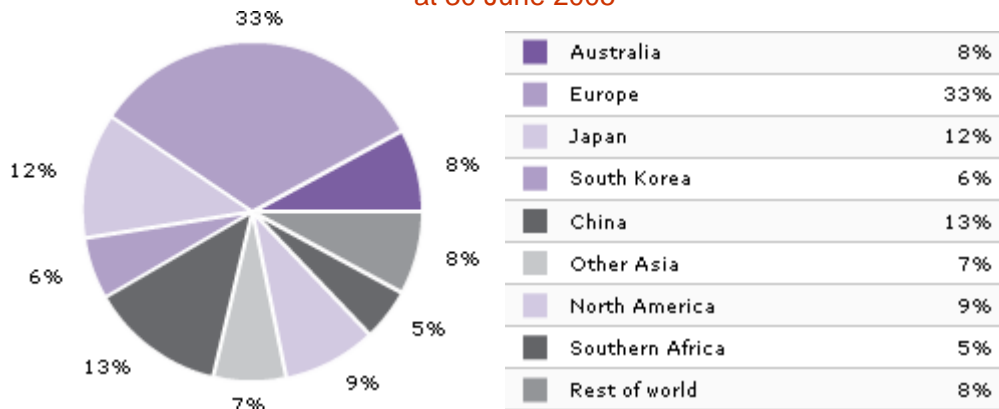
	2004/05	2003/04	2002/03	2001/02
Turnover <sup>1</sup>	31 804	24 943	17 506	15 228
EBIT <sup>1 2 3</sup>	9 330	5 488	3 481	3 102
Earnings before tax <sup>1 2</sup>	8 909	4 986	2 944	2 866
Attributable profit <sup>1 2</sup>	6 512	3 510	1 920	1 866
Net operating assets <sup>1</sup>	29 581	20 656	20 711	20 160
Taxation paid (net of refunds)	1 695	1 337	1 002	515
Government royalties paid or payable	629	421	352	294
Dividends paid or payable	1 695	1 617	900	784
R&D expenditure	33	19	40	30
EBITDA to interest cover (times) <sup>1 2 3 4</sup>	34.7	21.1	13.3	11.2
Debt to equity or gearing ratio <sup>5</sup>	35.7%	25.7%	31.7%	35.0%
Profit and loss account at end of year <sup>6</sup>	13 798	10 461	8 580	7 475

1. From continuing operations, including the Group's share of joint ventures and associates.
2. Excluding exceptional items.
3. EBIT is earnings before interest and tax. EBITDA is EBIT before depreciation, impairments and amortisation of both Group companies and Joint Ventures and Associates.
4. For this purpose, net interest includes capitalised interest and excludes the effect of discounting on provisions and exchange differences arising from net debt.
5. Gearing as at 30 June 2002 includes the Group's Steel business which was demerged in July 2002.
6. Movement in retained earnings is represented by movement in cumulative profit and loss accounts.

Refer to the graphs below for the Company's diversification by operating assets and by market (turnover) across geographic regions and a breakdown of earnings by Customer Sector Group

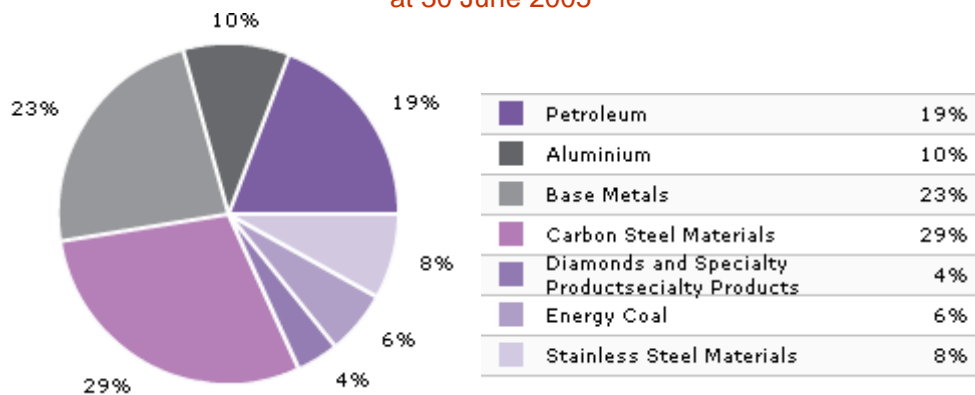
### Diversification by Market (Turnover)

at 30 June 2005



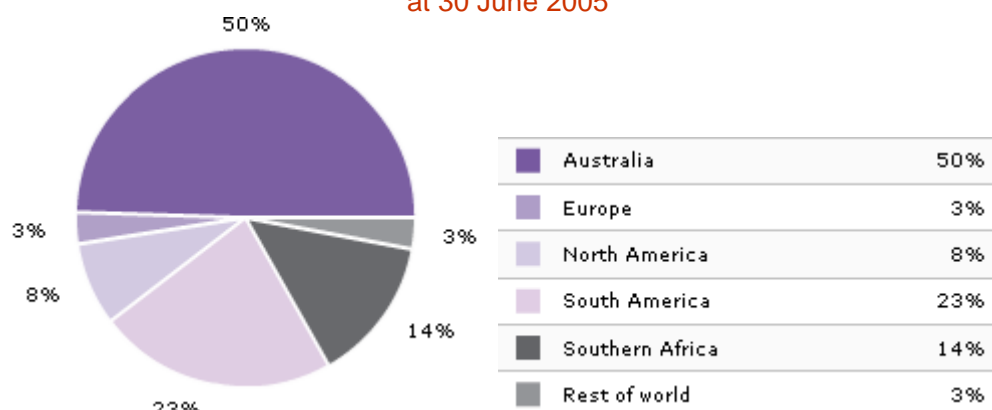
### CSG Earnings Before Interest and Tax (EBIT) Excluding Exceptional Items

at 30 June 2005



## Diversification by Geographic Region (Net Operating Assets)

at 30 June 2005



## Value Added

Value added, consistent with the definition used by the [Global Reporting Initiative](#), is total revenues less total cost of procurement. We expand on this definition by incorporating additional allocated expenditures such as those allocated to tax payments, employee payments, community contributions and shareholder dividends. Globally, in 2004/05 the Company spent in the order of US\$16 billion sustaining its businesses. The breakdown of this amount by category is presented below and shows expenditure by region to help to quantify the regional economic contributions of the Group.

### Total Allocated Expenditure by Category 2004/05 (US\$ million)<sup>1</sup>

	Income Tax, Resource Rent Tax and Royalties	Employee Payments, Goods and Services <sup>2</sup>	Community Contributions <sup>3</sup>	Shareholder Dividends <sup>4</sup>	Regional Totals
Africa	167	3184	15.3	157	3523
Australia and Asia	1474	5536	18.5	845	7873
Europe	235	277	1.3	420	933
North America	234	1005	17.3	1	1257
South America	674	1661	5.0	<1	2341
Total	2784	11663	57.4	1423	15927

1. The data in this table have been rounded. Unless otherwise stated the data cover operated assets and the Group's share of unincorporated joint ventures.
2. Goods and Services data only cover operated assets. Due to the way that we currently document the sourcing of all imported materials and services, we have not been able to allocate all expenditure on goods and services. (Note: these data have not been audited.)
3. Data cover both operated assets and our share of joint ventures.
4. Shareholder dividends are based on the location of shareholders as per the share register of members dated 30 June 2005 and total dividends payable in FY05.

## Total Allocated Expenditure by Category

2004/05

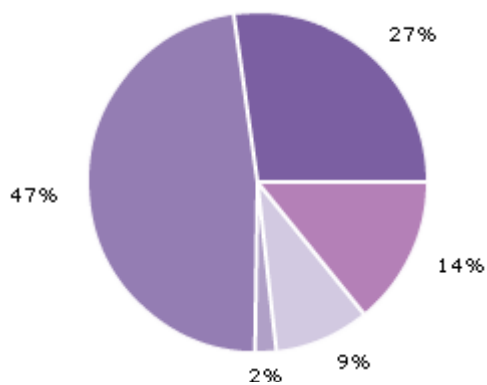


(US\$ million)

Shareholder Dividends	1,423.0
Community Contributions	57.4
Employee Payments, Goods and Services	11,663.0
Income Tax, Resource Rent Tax and Royalties(to come)	2,784.0

## Employee Payments, Goods and Services by Region

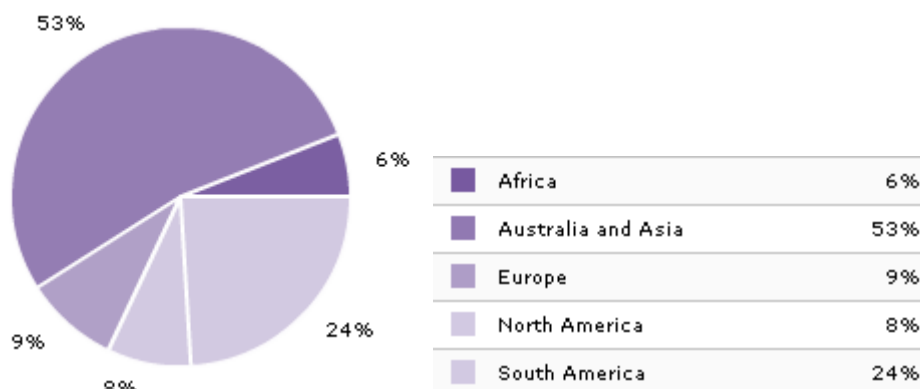
2004/05



Africa	27%
Australia and Asia	47%
Europe	2%
North America	9%
South America	14%

## Income Tax, Resource Rent Tax and Royalties by Region

2004/05



The [Extractive Industries Transparency Initiative](#) (EITI) is gaining momentum as an international initiative bringing together companies, investors, governments, the international financial institutions and civil society to improve disclosure and tracking of revenues in developing countries.

The second international EITI Conference was held in London in March 2005. The conference agreed to a set of criteria and guidelines for implementing countries and companies. There is strong recognition that revenue transparency in the extractive industries is an essential part of promoting good governance and enhancing access for resources to promote economic development. Citizens need clear information about revenues from natural resources to hold their governments accountable for the revenues that they collect.

BHP Billiton continues to support the EITI, and we are committed to working with our host governments that participate in this process and develop systems to report these payments. The government of Trinidad and Tobago is actively committed to implementing the EITI, and our petroleum asset in this country will report its payments in its annual [site-based sustainability report](#). In May 2005, the Peruvian Ministry of Energy and Mines issued a declaration marking Peru's launch of the EITI. BHP Billiton will work with the government of Peru to advance the initiative. The chart above presents relevant BHP Billiton payments on a regional basis.

During the reporting period, we continued to be actively involved in the International Council on Mining and Metal's Resource Endowment Project. The objective of this project is to follow up on the World Bank's Extractive Industries Review, including identifying policy actions, operational practices, and partnership arrangements which will deliver improved socio-economic outcomes in the mining sector. The project is not focusing on the theoretical debate between those who argue that mineral wealth is necessarily a curse for development and those who argue that it is a blessing. Instead, the research is seeking to identify underlying reasons for national and community successes and to pinpoint practical lessons for companies, governments and other stakeholders.

Initial findings of the project were reviewed at a November 2004 workshop involving key stakeholders including governments, labour, and NGOs and the World Bank. BHP Billiton is facilitating a case study on our Escondida mine in Chile which includes an assessment of the socio-economic impact of the mine on the region. The study will highlight some of the programs which have helped the mine make a positive contribution to the region. These include the effort to raise capacity of local suppliers (see our case study [Escondida program supports the development of local suppliers](#)), the establishment of links to educational institutions through joint research and development programs, and the development of social programs that have helped to build human and social capacities.

## Socio-Economic Case Studies

The following case studies present examples of socio-economic issues, initiatives, projects and programs across the Group that highlight some of the sustainability opportunities and challenges faced by our operations. Case studies are also presented for the areas of [health](#), [safety](#), [environment](#) and [community](#).

[View](#) all case studies.

### Socio-Economic Case Studies

<p>Black Economic Empowerment Procurement Policy implemented across our sites in South Africa</p>	<p>Black Economic Empowerment (BEE) legislation has been introduced in South Africa to address inequalities created by past history, particularly the exclusion of black people from participating in the country's economy. The Company has been responding to the legislation through the implementation of our BEE Procurement Policy.</p> <p><a href="#">More</a></p>
<p>Escondida program supports the development of local suppliers</p>	<p>Chile's Escondida copper mine is the world's largest supplier of copper and, as such, plays a significant role in the country's economy. In supporting its host community, Escondida has been working directly with contractors to enhance their management systems.</p> <p><a href="#">More</a></p>
<p>EKATI training program promotes sustainable new careers in the emerging Canadian underground diamond mining industry</p>	<p>At our EKATI Diamond Mine in Canada's Northwest Territories, a training program has been established for underground miners. The program is aimed at providing opportunities for Northern Aboriginal people to participate in the growing number of new jobs associated with underground diamond mining.</p> <p><a href="#">More</a></p>
<p>Mozal - a model for integrating sustainability into resource projects</p>	<p>BHP Billiton is committed to sustainable development, as articulated in our Charter, HSEC Policy and HSEC Management Standards. Over our long history, working through complex issues associated with our operations has highlighted that social and environmental performance is a critical factor in business success. Our aim, while creating value for all our stakeholders, is to enhance the societal benefit of our operations and to reduce their environmental impact.</p> <p><a href="#">More</a></p>
<p>Relationship building is key to managing socio-economic impacts of the Ravensthorpe Nickel Project</p>	<p>The Ravensthorpe Nickel Project is a A\$1.4 billion project on the southeast coast of Western Australia. A new mine and processing facility are being constructed to produce a mixed nickel-cobalt hydroxide product over approximately 25 years. Since pre-feasibility commenced in 2002, we have been addressing the local socio-economic issues that will arise from establishing such an operation within a small regional community.</p> <p><a href="#">More</a></p>
<p>Business conduct and the supply relationship</p>	<p>The BHP Billiton Guide to Business Conduct, founded on our Charter, establishes a set of principles to assist employees in making decisions that are consistent with the Company's corporate values and represent good business practice. A key element is ensuring that our suppliers understand and respect our business conduct standards and that they realise that compliance and ethics are non-negotiable.</p> <p><a href="#">More</a></p>

## Socio-Economic Case Studies

### Black Economic Empowerment Procurement Policy implemented across our sites in southern Africa

Socio Economic



Evelyn Simayile, Black Economic Empowerment Supply Unit, Johannesburg, South Africa

As reported in last year's HSEC Report, Black Economic Empowerment (BEE) legislation has been introduced in South Africa to address inequalities created by past history, particularly the exclusion of black people from participating in the country's economy. The Company has been responding to the legislation through the implementation of our BEE Procurement Policy, which was introduced in 2003, and the establishment of a central BEE Supply Unit. The Policy attempts to address the socio-economic imbalance by increasing the participation of previously disadvantaged groups. It has been rolled out throughout the country.

The BEE Procurement Policy ensures that a standard set of BEE definitions and classifications are applied in the region and details how BEE spending will be calculated. The full Policy is available on our [website](#).

Assets are now applying the Policy at site level and, in addition, the BEE Supply Unit is continuing to work closely with existing and potential BEE suppliers.

The objectives of the BEE Supply Unit are to:

- provide access by black suppliers to the Company's procurement activities
- ensure that all buying organisations within the Group have the support to successfully achieve legislated procurement targets.

The benefits of these objectives are being realised through increased understanding of the issues surrounding encouragement of BEE involvement and closer monitoring and reporting of the engagement of BEE suppliers.

### The BHP Billiton BEE Supply Approach

The Company promotes BEE spending principally in three ways.

**Transforming suppliers** - We initiate forums with existing suppliers in order to make them aware of the imperatives of our BEE Procurement Policy and gauge their plans for transformation to BEE supplier status.

**Targeting existing and new BEE suppliers** - We identify specific opportunities for the entry of BEE suppliers and, where necessary and appropriate, assist and develop these suppliers through our capacity building program (outlined below).

**Building capacity** - To promote BEE spending with a local flavour, we have become directly involved in establishing Business Development Centres close to our mining and smelting operations. These centres seek to promote local supply opportunities to small and medium enterprises and to provide enterprise development support to emerging and aspiring BEE suppliers.



The developmental assistance may encompass, among other things:

- provision of mentoring and training on the Company's tendering process
- assistance with negotiating financing arrangements with financial institutions
- providing early payment and assistance in acquiring materials
- splitting contracts into smaller components in order to provide opportunities for black suppliers.

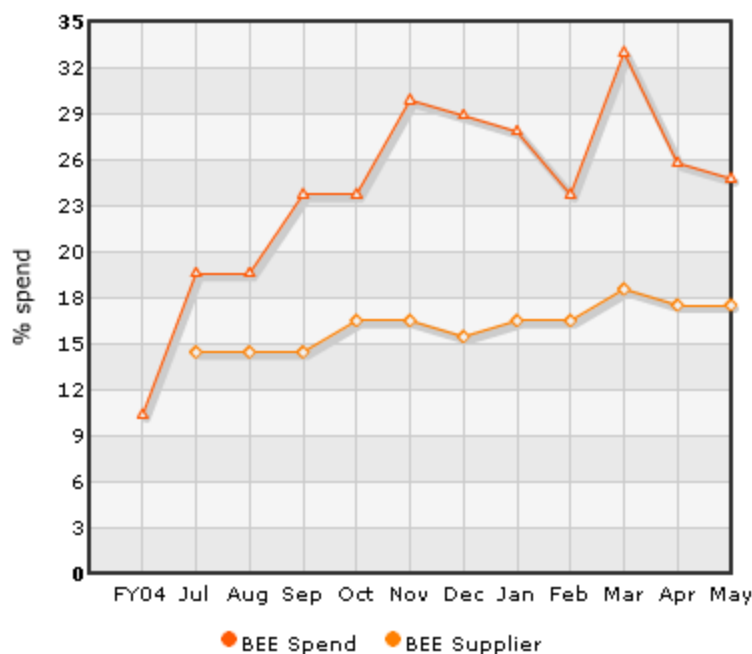
## Key Enablers

A standardised report is used by all the Company's CSGs for reporting BEE spending. All definitions used are as per our BEE Procurement Policy.

The BEE spend on accredited suppliers is reported on a monthly basis. BEE supplier status is verified and accredited by the South African Mining Preferential Procurement Forum, which is a collaboration of more than 25 mining companies with operations in South Africa.

Our BEE Supply Unit reports on over 530 suppliers. Figures show that BEE spending has been increasing over past years. The graph below illustrates the trend in BEE spending from 2003/04 (weighted average) to May 2005.

### *BEE Spend vs Supplier*



## BEE Supplier Development and Initiatives

The BEE Procurement Policy makes provision for BEE development and support. In line with this requirement, the BEE Supply Unit has embarked on a BEE supplier development project targeted at the development of small to medium BEE suppliers.

To implement the project, the Unit has entered into a memorandum of understanding with South African International Business Linkages (SAIBL), a USAID-funded NGO with experience in developing small, medium and micro enterprises. We provide 50 per cent of the funding for the training of BEE suppliers, and SAIBL provides 50 per cent.

SAIBL, which has a network of service operators, carries out an assessment of the training intervention required and then an evaluation of the quality of the training intervention and whether it meets the outcomes set.

The project is based on three phases: SAIBL evaluates the development needs of BEE suppliers; the scope of the training intervention is then determined and executed by a capable service provider; the success of intervention is evaluated and monitored by contract managers.

The primary constraint on increased BEE spending is the lack of BEE suppliers with appropriate capacity and capabilities, especially in local communities close to our operations. BEE supplier development seeks to address this supply-side constraint and facilitate access to supply opportunities. The project also seeks to eliminate the risk of business failure of incumbent suppliers and to mitigate quality and safety issues. This demonstrates a commitment to support the economic empowerment of the local community and contribute to a dynamic and competitive supplier environment.

## Socio-Economic Case Studies

### Escondida program supports the development of local suppliers

### Socio Economic



Leonardo López, Operations Manager of COMIN S.A., a supplier to our Escondida mine, receives certificates for ISO 14001 and OHSAS 18001 accreditation.

The Escondida copper mine in northern Chile is the world's largest supplier of copper and, as such, plays a significant role in the country's economy. As all mines have a finite life, mining companies have a responsibility to support their host communities with social and economic development that will last beyond the life of their mines. As reported in our HSEC Report last year, Escondida has been working directly with contractors to enhance their management systems, with the result that, by the end of 2004, 30 contractor companies had implemented international-standard HSEC management systems.

## Background

Escondida started operations in Chile in 1990 and has contributed significantly to the nation's economy through employment, the payment of taxes and the purchase of goods and services. The company has also supported its host communities through health and education programs and other initiatives.

Chile's copper sales (2004 figures) are equivalent to approximately 45 per cent of exports of goods and 15 per cent of its Gross Domestic Product (GDP) at current prices. Escondida accounts for about 22 per cent of the country's copper production and is listed among the top ten national companies.

Escondida recognises that mining companies have an important role to play in supporting local development beyond the lifetime of a mining operation. In 1999, Escondida implemented a supplier development program to help contractor companies improve the capacities and skills of their employees. This program is part of a wider regional development strategy to broaden and make more sustainable the economic base of the Antofagasta Region.

## Implementing HSEC Management Systems and Risk Controls

As a result of the effectiveness of a pilot initiative, Escondida, in conjunction with government agencies, developed a broader supplier development program to help its contractor companies to implement the 15 BHP Billiton HSEC Management Standards.

Thirty contractor companies have since implemented an HSEC risk control system across their operations, including the processes they apply in supplying Escondida. This has led to a substantial improvement in their management of operational aspects and activities that have the potential to affect the health and safety of people, the environment and the community, such as dust and gas emissions, noise and waste generation.

The program was conducted through the Supplier Development Program of the Chilean Government and is the largest project of its type implemented in the country. The program has assisted the participants to obtain ISO 14001 and OHSAS 18001 certification which has strengthened their HSEC management

programs and helped to improve their performance and competitiveness. Furthermore, it has led to increased compliance with regulatory and legal requirements and greater transparency in contractual relationships.

## Challenges and Outcomes

For Escondida, developing and implementing the supplier support program has presented the challenge of interacting with a multiplicity of organisations and people who have different work customs and cultures, in order to foster a culture of Zero Harm and respect for life. This has been achieved through a process of support and collaboration with contractor companies and government agencies.

A key aspect in the success of the program is that it was founded on the values defined in the BHP Billiton Charter, especially those related to safety and the environment, high performance, mutually beneficial relationships and the courage to lead change.

Among the main results achieved at contractor companies through the program are:

- implementation of HSEC management systems, including procedures and specific tools for identifying and managing HSEC risks
- reduction in the accident rate
- the development of HSEC risk inventories, with identification, assessment and controls tools
- more than 21 000 hours of training for contractor company managers and operational personnel
- an average score of 4.4 out of 5 in the auditing process applied to assess the level of implementation of the HSEC Management Standards (the BHP Billiton target for conformance is a score greater than 4 out of 5)
- 30 certifications to the international standards ISO 14001 and OHSAS 18001
- significant improvements in housekeeping practices and in the management and storage of dangerous substances and residues
- development of an internal team of HSEC auditors in each of the contractor companies
- formulation of a guideline for the implementation of HSEC management systems in contractor companies.

In summary, within the contractor companies there is a positive process of change occurring as they conform to Escondida's values, HSEC Standards and business practices.

The focus of risk management is delivering improved safety performance. The supplier support program was conducted from October 2003 to October 2004. During those 12 months, across all the companies participating in the program, there were 90 safety incidents (17 of which resulted in lost time). Following the program, in the seven months to the end of May 2005, there were 12 safety incidents (two of which resulted in lost time), with a significant reduction in the frequency rate. Efforts will continue to help in the drive towards Zero Harm.

The adoption of leading practice systems is also providing efficiencies in the supply process, allowing resources to be better allocated and better trained. With their increasing knowledge of HSEC processes and practices, contractor company managers and supervisors are leading the drive in HSEC improvements. Employees in turn are starting to work in line with HSEC policies and procedures, further promoting a culture of Zero Harm.

The supplier development program can have wider implications than helping to minimise HSEC incidents and liabilities at Escondida and for its suppliers. The cultural and behavioural changes at the contractor companies, combined with improved risk management and regulatory compliance, can lead to improved performance in terms of their environmental and community responsibilities — further increasing the potential for quality of life in the region to be enhanced.

## Socio-Economic Case Studies

**EKATI training program promotes sustainable new careers in the emerging Canadian underground diamond mining industry**

Socio Economic



Underground training course



At our EKATI Diamond Mine in Canada's Northwest Territories (NWT), a training program has been established for underground miners. The program is aimed at providing opportunities for Northern Aboriginal people to participate in the growing number of new jobs associated with underground diamond mining. As existing open pit operations move to underground mining, both at EKATI and other NWT diamond mining operations, new skills and new jobs are becoming available for which many of our Northern Aboriginal stakeholders have no previous experience.

### Underground Miners Training Program

Under this program, training is conducted at EKATI's Koala North Underground facility, which provides the essential elements required to simulate the future underground mining needs at the EKATI site. A comprehensive training curriculum has been formulated utilising tried and proven mining methods that conform to Company standards and NWT mining regulations. The program has been developed in conjunction with our Northern-based underground mining contractor, Kete Whii Procon (Procon), and is delivered by Procon's trainers, who are part of the underground operations team at EKATI.

To date, 33 people have entered the training course since its inception in early 2003. Of the 23 candidates who have successfully completed the program, 18 are still in our employ. A further eight are currently undergoing training. It is expected that, as more miners are trained through the program, word of mouth will filter through their communities, generating more interest in a possible career in underground mining. Evidence of this already exists, with strong levels of interest shown when trainee recruitment drives are conducted.

Tracy Williams, who last year graduated as the first woman underground trainee, says, 'It creates quite a bit of opportunity — a new field for people in the North. Who would have known I would have moved to Yellowknife to work underground. My long-term goal is to be a driller in underground'.

Trainee candidates are selected from the members of the Aboriginal parties to the Company's Impact Benefit Agreements (IBAs) and are guaranteed to be hired full-time upon successful completion of the training program. IBAs establish a mechanism for priority hiring, employee training and preferential business opportunities. To attract candidates, advertisements are placed in the local newspapers and presentations are made in the local communities to raise awareness of underground mining opportunities. Regular contact and recruiting drives are also conducted with Band Leaders in the various communities. A promotional video has been produced to further promote interest and the possibility of a new career and has been widely distributed to our stakeholders in the Northwest Territories.

## Training Site and in the Classroom

Each trainee receives eight weeks on site training consisting of approximately 80 per cent hands-on training in the field and 20 per cent classroom training, including one-on-one and computer-based training. Two qualified and highly experienced underground trainers provide all the hands-on and classroom training, and ensure all candidates are closely monitored and evaluated as they progress through the program.

Earl Durocher, a graduate trainee, says, 'It gives you the opportunity to try new equipment . . . something new and exciting in underground mining'.

On successful completion of the program, trainees are integrated into the regular underground mining crews at an entry-level position. For successful trainees who demonstrate good progress in skills development and strong workplace safety attitudes and behaviours, a post-training progression program has been initiated to ensure opportunities exist to further advance their mining career. Trainers continue to monitor all successful trainees for at least one year after graduation to assist in mentoring and follow-up training. They also consult with production supervisors to consider each individual's aptitude for further advancement.

Core materials for the Underground Miners Training Program have been acquired from Northlands College of Saskatchewan and the Saskatchewan Institute of Applied Sciences and Technology, which have developed a successful Northern Aboriginal training program over the past ten years. These materials have been modified to suit NWT mining and Workers Compensation Board mining regulations.

The program is divided into seven segments:

- Underground Mining: An Overview
- Introduction to Mine Safety
- Mine Ventilation
- Ground Control
- Manual Drilling
- Survival Mine Rescue and First Aid Training
- Equipment Training.

The program can accommodate four trainees per course, with two courses running back-to-back on a two weeks on/two weeks off schedule, potentially training 24 people annually. The number of trainees inducted is structured around operational requirements to control the rate of influx of inexperienced miners and to ensure ongoing employment opportunities are available to new trainees on completion of the program.

The benefits of the program are reflected in comments by other graduate trainees. 'It is giving people jobs,' says Jason Toms. 'After getting the job your self-confidence and self-esteem rise quite a lot'. Darcy Sangris agrees, saying, 'It creates capital for our community . . . more employment'.

All successful trainees are invited and encouraged to participate in the post-training program to further enhance their career in underground mining, while creating new vacancies at the entry level to allow for more trainees.

Graduate trainee Raymond Gon adds, 'Once we get more Northerners up here at the mine it will be good for us — all the Northerners across the North West Territories — to have job like this. I want to make a career of it, working, gaining more experience and knowledge. Once I move on and get older I can teach those young guys to follow our footsteps'.

By adopting this proactive approach to skills development, we believe we can continue to meet and exceed our commitment to providing sustainable employment and skills development to our Northern Aboriginal stakeholders and communities.

## Socio-Economic Case Studies

### Mozal - a model for integrating sustainability into resource projects

### Socio Economic



Local farmers sell their fresh produce at the Rhulani Market, established by the Mozal Community Development Trust

BHP Billiton is committed to sustainable development, as articulated in our Charter, HSEC Policy and HSEC Management Standards. Over our long history, working through complex issues associated with our operations has highlighted that social and environmental performance is a critical factor in business success. Our aim, while creating value for all our stakeholders, is to enhance the societal benefit of our operations and to reduce their environmental impact.

We recognise that the journey towards sustainable development is about engaging and partnering with our stakeholders to address the challenges associated with establishing resource projects and to jointly share the benefits of success.

The Mozal aluminium smelter project in Mozambique stands as a model for realising a sustainable long-term investment based on sound business principles that encompass the recognition and effective management of social and environmental responsibilities. This case study outlines the challenges faced in establishing the project and some of the initiatives implemented to underpin the sustainability of both the operation and the local community.

## Project Profile

The Mozal aluminium smelter project is located in the Maputo province in southern Mozambique. The feasibility study for the project commenced in November 1995. Designed as an advanced, cost-efficient plant, phase 1 of the project officially started in July 1998. At a budgeted cost of US\$1.18 billion, it was to be the first major development in Mozambique for 30 years and the country's largest private investment ever.

Phase 1 was successfully completed six months ahead of schedule and more than US\$120 million under budget. The first aluminium was cast in June 2000, and the first ingots were exported in August that year.

In June 2001, phase 2 of the project was given the go-ahead, with a construction budget of US\$860 million. The planned expansion of the smelter would double its capacity. It was completed in August 2003, seven months ahead of schedule and US\$195 million under budget.

During the two construction phases, the project contributed more than US\$160 million to the local economy, principally through the employment of Mozambican labour and the use of local contractors and suppliers. Since operations began, expenditure in the local economy has grown to over US\$140 million per annum.

Mozal is one of the largest smelters of its kind in the western world, producing more than 500 000 tonnes of aluminium per year. The operation currently employs more than 1100 people.

## The Challenges

From its earliest days, the project presented a number of significant challenges for the Company and our venture partners, Mitsubishi Corporation of Japan and the Industrial Development Corporation (IDC) of South Africa:

- Mozambique was one of the world's poorest countries, emerging from 17 years of civil war and making the difficult transition to a market-oriented economy.
- The country was hampered by fragile legal, financial and HSEC institutional structures and capacity.
- There were limited numbers of people with the training and skills required for the construction and operational phase.
- Malaria was widespread and debilitating to the local communities from which Mozal would draw most of its workforce and a threat to attracting expatriate managers and skilled workers.
- HIV/AIDS was prevalent, with infection rates exacerbated by the influx of construction workers from neighbouring South Africa.
- Public services were bureaucratic, poorly equipped and with limited capacity. Functions such as customs, immigration, public works, public health, port operations and police would be challenged to cope with the magnitude of the project.
- Infrastructure such as roads, water supply, sewerage and waste disposal was poorly developed and poorly maintained. There was limited access to appropriate, affordable housing.
- All suitable development sites were occupied by concentrations of medium to large communities that were informal in structure.
- Local commerce and industry were characterised by high prices and poor quality and service. There was limited capacity to satisfy the needs of a major, world-class project.

Acknowledging that all stakeholders had a role to play in achieving a successful and sustainable project, we adopted 'Together we make a difference' as the Mozal slogan.

## Mitigating Financial Risk

An initial step in the development of the project was to involve the International Finance Corporation (IFC) as a partner in phase 1. The IFC provided US\$120 million, its largest single investment in the non-financial sector. This not only helped to mitigate financial risk but also facilitated loan syndication and promoted the project internationally.

The IFC has robust environmental and social policies, procedures and guidelines drawn from the World Bank Group. Requirements for strict compliance gave assurances to other lenders and the host country that minimum standards relating to all social and environmental impacts would be achieved.

The following sections outline some of the health, safety, environment, community and socio-economic initiatives that Mozal has put in place as part of its contribution to sustainable development. Initiatives are developed and implemented by the operation and also, since 2000, through the Mozal Community Development Trust (MCDT).

## Health and Safety Initiatives

While caring for the health and wellbeing of our employees, we also recognised the opportunity to work with our host communities in setting up programs focused on significant community health matters.

### ***Malaria Prevention Programs***

A baseline malaria survey conducted in southern Mozambique in December 1999 showed infection rates in the area surrounding the Beluluane Industrial Park, in which Mozal is located, exceeded 85 per cent.

The MCDT conducted a spraying program within a ten-kilometre radius of the smelter and has contributed funds to the Lubombo Spatial Development Initiative, a joint venture between the governments of South Africa, Mozambique and Swaziland aimed at eradicating malaria in the region.



Vulnerable members of the local community have been sponsored to attend training courses in manufacturing treated mosquito bed-nets. Sewing machines, insecticides, netting material and consumables were provided by the MCDT, which also bought the initial batch of 1000 bed-nets.

The MCDT has also supported performances about malaria awareness by youth theatre groups and films on awareness and prevention by the National Institute of Communication. At local medical clinics, stocks of malaria treatment drugs have been supplemented through MCDT support programs.



MCDT malaria control unit

After three years of intensive effort, the infection rate in the Beluluane area has been reduced from 85 per cent to 18.6 per cent.

With a peak of more than 9000 employees during phase 1, the project introduced health measures to provide medical treatment for all workers and established a malaria diagnosis and treatment facility.

The large number of expatriate workers with no natural immunity to malaria posed a major challenge. Many thousands of cases were diagnosed and treated during phase 1. Based on these early learnings, the malaria management strategy focused on awareness, early diagnosis and prevention, resulting in malaria incidence being significantly reduced during phase 2.



Distributing bednets in the community

## ***HIV/AIDS Programs***

From 2001 to 2003, the MCDT sponsored the Total Control of Epidemic program, through which approximately 200 000 people in the local communities of Boane, Matola and Maputo were educated by a group of 100 field officers about the dangers of HIV/AIDS and how to prevent it.

Pivotal to the prevention of the disease are knowledge of status and the management of behaviour and health. Since 2001, Mozal has provided assistance for a Voluntary Counselling and Testing Centre (VCT) in Boane, managed on behalf of the Ministry of Health by a Danish NGO, Ajuda De Povos Para Povos (ADPP). Eleven satellite units of the VCT have been opened in Boane and Matola. Community leaders have been trained to manage the facilities and provide counselling services.



HIV/AIDS Voluntary Counselling and Testing Centre - opening day

The control of sexually transmitted diseases and opportunistic infections is an important strategy in the fight against HIV/AIDS. With the approval of provincial authorities, Mozal has supplemented the stock levels of appropriate drugs at local clinics.

## ***The Beluluane Public Health and Maternity Clinic***

The local public health clinic, operated by the District/Provincial Health Directorate of the Mozambican Ministry of Health, serves a community of about 18 000 people within a ten-kilometre radius of the smelter. The MCDT provided the clinic with doctors' facilities, a laboratory and three residences for staff, and constructed a maternity centre within the facility. More than 300 babies have been born since January 2003, with no fatalities.



Maternity facility at the Beluluane Clinic

Enfa Margarida, the maternity clinic matron, has said, 'Mozal's assistance in upgrading the Beluluane health clinic and building the maternity block has brought a lot of relief to local mothers who previously had to walk long distances for births'.

Initiatives further afield have included the provision of a mother and child health care facility within the Matola health clinic, which serves more than 300 000 people in the Matola municipality.

## ***Environmental Initiatives***

An important early decision was to focus on an integrated approach to the management of our social and environmental responsibilities. Comprehensive social and environmental impact assessments underwent rigorous review by the IFC and the Mozambique Ministry of Environmental Coordination (MICOA).

Subsequent environmental management programs provided the blueprint for the appropriate design of physical environmental aspects of the construction and operation of the plant, in line with our philosophy of Zero Harm to the environment.

Regular monitoring and auditing, both internally and by external bodies (IFC and MICOA), provided a basis for correcting deviations and implementing continuous improvement processes.

The environmental management programs included six-monthly public meetings with Interested and Affected Parties (I and AP) and bi-monthly meetings of an environmental task group to address issues arising from the project implementation. The task group comprised representatives from the environmental consultants, the contractor, key government ministries, large state-owned enterprises, district administration and community groups, and Mozal.

## Community Initiatives

In the Company Charter, an indicator of success is that our host communities value our presence. From the outset, community needs were identified and support programs put in place to achieve sustainable outcomes for the community.



Participants at a typical Interested and Affected Parties public meeting held in downtown Maputo

The Minister of Women and Social Welfare, Virgilia Matabele, has stated, 'We are pleased to note that Mozal, apart from its core business, has also been supporting the surrounding communities within the scope of its social corporate responsibilities. This is something that Mozal has been doing long before the government formally launched the Corporate Social Responsibility initiative. With Mozal's support, many Mozambican families have seen improvement in their lives'.

### ***Relocation of Communities***

The original site proposed for the smelter was densely populated and would have required the relocation of approximately 7500 people. The social impact assessment led to an alternative site being selected, requiring the resettlement of 80 families and the provision of agricultural land for 910 farmers. The land, allocated to Mozal by the Government of Mozambique, forms part of the Beluluane Industrial Park development.

A Resettlement Action Plan was drawn up in September 1998 by ACER Africa, a specialist resettlement consultant appointed by Mozal. The government, with support and financing from Mozal, managed the relocation process in accordance with the World Bank Operational Directive on Involuntary Resettlement. Formal monitoring of the program has indicated that the quality of life of all the affected people has improved.

### ***The Mozal Community Development Trust***

The MCDT was created by the Mozal Board in August 2000 with the specific mission of facilitating projects and programs to improve the quality of life of the communities surrounding the Beluluane Industrial Park. Development initiatives began in January 2001 with an initial annual budget of US\$2 million, which has been increasing since.

To achieve its mission, the MCDT defined four key policies.

- align development initiatives with those of national, provincial and local governments
- act as a catalyst and facilitator in establishing pilot projects that can be replicated (e.g. the IFC is funding the local replication of some projects)
- form partnerships with stakeholders to achieve sustainable results
- involve relevant stakeholders from all levels of government, non-government organisations (NGOs), communities and the private sector, as well as Mozal employees.

Approximately 200 projects and programs have been initiated by the MCDT, with expenditure exceeding US\$10 million.

## ***Educational Projects***

To overcome the lack of secondary education facilities in the region, the Nelson Mandela Secondary School was built, the first in the vicinity of Mozal. The project was a joint initiative, with Mozal providing the funding, the local communities providing ten-hectares of land and the government managing the school's construction and operation.

The school is in its second year of operation and accommodates 1800 students, with plans to expand the capacity to 2400 students. The total investment by Mozal will be around US\$1 million. The MCDT has donated 41 computers to the school.

The primary school closest to Mozal was operating in an abandoned house with no roof. A new school, constructed in two phases, includes seven new classrooms, an administration unit, three staff houses and sports facilities. Twelve other primary schools in the region have been significantly upgraded with improvements that include new classrooms, sports grounds and water and electricity reticulation.

To build teaching capacity in the region, each year the MCDT supports the training of 40 teachers in new teaching methodologies and national curricula.

Through the Look of Hope Project administered by the Ministry of Education, the MCDT donates 52 000 exercise books annually to disadvantaged children.

The MCDT is also funding new facilities at the Bilibiza Agricultural School in the northern province of Cabo Delgado, which has a population of over one million. As more than 80 per cent of the population depend on subsistence agriculture, the school can play a key role in helping to reduce poverty in the region.



Students enjoy improved facilities at the Beluluane Primary School



40 teachers from Boane district who received training

## **Community Theatre**

Health and safety messages presented to Mozal's employees have also been delivered to their families through the medium of industrial theatre in residential areas.

Emphasis is placed on health and safety at work and the support needed at home to help ensure employees are fit for work. More than 100 performances have been attended by over 30 000 people.

## **Public Safety**

A new police station has been built to improve the policing presence in the region. Four police vehicles have been supplied to improve mobility and response times. Mozal provides fuel and maintains the vehicles.

To mitigate risks associated with the increase in traffic since the project commenced, a road safety awareness campaign was initiated in conjunction with traffic police and local community leaders.



Community Theatre

## **Sports**

The MCDT works with the Ministry of Education and Culture, the Ministry of Youth and Sport and school directorates in promoting student participation in sports. Support includes the funding of sports federations to provide skills development specialists and the sponsorship of annual tournaments in all the major sports.

## **Culture**

The maintenance and development of local culture is supported by the MCDT through sponsorships of youth activities in sculpture, painting and clay handicrafts and the promotion of traditional dance and music. Funding is also provided to theatre groups, particularly those reaching outlying communities with messages related to HIV/AIDS, malaria and other social issues.



Annual beach volleyball tournament

## **Ongoing Community Interaction**

Interaction with the community is undertaken through numerous channels, among which the six-monthly Interested and Affected Parties meetings remain a cornerstone. These meetings have contributed to the building of positive relationships based on transparency and mutual trust.

Hafido Abacassamo, the Head of the Pollution Control Sector of MICOA, says, 'The I and AP meetings are very important because one can measure people's interest regarding issues and raise awareness about Mozal. The community was initially being driven by particular interest groups . . . but through openness people are more aware and better informed. From the questions and comments raised by the participants, Mozal can identify areas and issues on which it needs to focus'.

## Socio-Economic Initiatives

A stable, healthy and supportive society facilitates the effective operation of our business. By contributing to the social and economic fabric of our host communities, we create an environment in which the business can grow and in turn support sustainable development of the region.

### ***Workforce Training and Development***

To help ensure that Mozambican workers had the skills to execute their duties in a safe and productive manner, Mozal provided funding to establish local facilities for the training of mechanical and electrical maintenance and construction workers. Training at these centres, located in Maputo and Machava, has been conducted in conjunction with the Mozambique Department of Labour training section (INEPF).

The two facilities have been able to operate autonomously since 2004. The Maputo centre conducts courses in electrical and mechanical disciplines and the Machava centre provides training in bricklaying, plumbing, carpentry, painting and welding. Several Mozambican industries are recruiting graduate trainees from the courses and sending technical staff to the centres for training.

During the two establishment phases of the project, a total of 9846 Mozambicans received training in various construction disciplines, which resulted in over 70 per cent of the Mozal construction workforce being local.

Other initiatives by Mozal to enhance employee competency and promote career opportunities include an Operators Development Program, Supervisory Capacity Building Program, 'MY' Development Program (self-driven competency-based training), Assisted Education Program (degree and post-graduate education), and a Graduate Development Program (GDP).

Adelino Waya, a graduate in economics, was accepted for the GDP in 2003. She says, 'Since that time I have been training in the accounting field. My job description covers asset accounting, receivables payables and project management. In 2004, after one year of the GDP, I was appointed as an accountant at Mozal. It is really a big opportunity for me to keep learning at Mozal'.

Vanda Mutisse, a lawyer, was selected for the GDP in 2004. She says, 'I'm learning many things, not only professionally but also in academic terms. It is not easy to find a job without experience and this opportunity will be very useful. Two important things I've learned is to work as a team and to think safety first before doing anything'.

Overseas assignments are arranged for employees to prepare them for promotion. Two employees recently returned from a two-year assignment in Brazil, and five employees are currently on assignment in Brazil and South Africa.

Under the education support programs, three former bursars were recently employed as engineers and 19 bursars are currently supported at Mozambican universities in the disciplines of Information Technology, Engineering, Law and Economics. The 20 best Class 8 students from the Nelson Mandela Secondary School will be granted bursaries in the next academic year.

Presently, 93 per cent of the 1105 permanent staff at Mozal is Mozambican, and efforts are continuing to maximise the number of nationals in senior management positions and to employ more women. Eighty-five women are presently employed, of which 79 are Mozambican.

## ***Housing Project***

Developing a residential area within the vicinity of the smelter was identified as being of great importance, as many employees were having difficulty buying homes, which was affecting the stability and motivation of the workforce. Under the Beluluane Land Use Management Plan established by Mozal, a site was selected and 96 houses constructed. In the second stage, now in progress, another 96 houses are being built. Mozal manages the construction process, the procurement of materials and the training of local enterprises to provide services.

Eliseu Canuma, a Superintendent of Industrial Relations at Mozal, says, 'Entering the housing market in Mozambique for the first time is very difficult because there is no consistent housing policy in the country. The quality of the lives of the residents and that of the surrounding communities has visibly improved. Mozal is making a difference'.



Aerial view of National Housing Project Development

## ***Public Infrastructure***

Through the Mozal project, the region has been provided with significant public infrastructure, including roads and bridges, potable water supplies, electricity supplies, telephone services, sewage treatment works, housing units and general amenities buildings.

Mozal has also funded the construction of a smelter import/export quay and infrastructure at the Matola port and a modern landfill facility to handle all hazardous waste from industries in the region.

## ***Small and Medium Enterprise Development***

A key component of sustainable development is the success of Small and Medium Enterprises (SMEs). It became evident that special measures were needed to assist local SMEs to successfully compete for work and succeed in executing contracts without compromising Mozal's HSEC principles, schedule or quality objectives.

In partnership with the African Project Development Facility (a unit of the IFC) and the Mozambique Government's Centre for Promotion of Investment (CPI), the project embarked on an SME Empowerment and Linkage Program (SMEELP). Under the program, 25 work packages were created for exclusive tender by Mozambican SMEs. The program included training in tendering and contract execution, with technical and business mentoring being provided for the duration of each SME contract.

Francisco Oliveira, Chief Executive Officer of Omega Zona Franca in Maputo, says, 'Mozal has been important in the sense that it has enabled local companies to develop, in a fairly limited space of time, policies, procedures and management practices to suit Mozal's requirements and meet world best practice'.

## **Mozlink**

The SMEELP program has been extended under the name of Mozlink, which is also supported by the IFC and CPI. Through training and mentorship, Mozlink has helped to build local capacity and increase business in Mozambique.

Smelter operations now rely on more than 200 Mozambican suppliers. Local spending has exceeded 30 per cent of goods and services procurement (excluding major raw materials and electricity).

An SME Development Centre has been established to coach, train and expose SMEs to best practice in supplying goods and services to the smelter and to measure ongoing performance improvements by registered SMEs in the areas of safety, maintenance, and financial and HR management.

Rogério Samo Gudo, Managing Director of Escopil Internacional in Maputo, says, 'The impact of the Mozlink program in my company has been very positive. Through the training we have gained knowledge of how to improve our management system and become more cost-effective and efficient in order to add value to the client and increase the profits of the business. Mozal has presented our company with an SME Award. This achievement is a result of the strategies we have learned through Mozlink and the subsequent improvements in many aspects of safety. The Mozlink program is a first-class tool for those who are seeking competitiveness'.

A knowledge-sharing and linkage Internet site has been developed to provide information for SMEs about available packages, financing, best practice, tender procedures and quality standards. The site allows Mozal and other businesses to more easily locate SMEs. By way of example, the operation previously used household brooms imported from South Africa. A local supplier was identified and, following knowledge transfer and business development, Mozal now has a reliable, lower-cost supplier.

Juanita Darmono, the IFC's Oil and Mining Linkage Program Manager for Indonesia, made the following comments.

'I found the Mozal linkage program impressive in a number of respects. Firstly, the commitment and perseverance of the procurement team and leadership in applying linkage principles to all aspects of their business. The team demonstrated that a passionate belief in the inherent ability of local companies to succeed is a key success factor.

'Secondly, Mozal's foresight and ability to institutionalise linkages structurally and systemically through a steering committee, consisting of Mozal, CPI and other relevant government bodies, which meets monthly to review and share information on linkage progress and disciplined internal processes to promote local businesses.

'Thirdly, a solutions-oriented mindset. Together, passion, commitment and a disciplined application of management systems foster a spirit of finding workable solutions. This is a key organisational paradigm shift, which not all industrial companies have the willingness or ability to undertake. The learnings have tangible returns both to the local business community and the industrial company itself and a tremendous potential for replication.'



Mozal now relies on more than 200 Mozambican suppliers



Broom manufacturing In Mozambique



## ***Small Business Development***

A small and micro enterprise program has been established to train women in the region. For example, 80 women were trained in chicken raising and provided with 700 chicks and the equipment to begin a business. About 2000 chickens per month are now being produced and 650 eggs per day being sold. Another group of 20 women trained in carpet making and embroidery are now selling their products in Maputo.

Among other initiatives, 50 farmers have been trained in cashew nut production and provided with trees to begin their crops. Cashews are a profitable sources of revenue in Mozambique. To provide an outlet for families participating in income-earning activities, the MCDT has established the 80-stall Rhulani Market in the Beluluane area.

## ***Capacity Building in State Functions***

The following examples illustrate where Mozal, through provision of facilities, equipment, training and facilitation, has assisted state functions to improve service delivery.

- Customs processes have been streamlined at the Mozambique-South African border, with clearing times reduced from days to hours. A new customs building at Mozal is fully equipped to manage all exports from the operation.
- Transportation of abnormal loads has been improved to leading practice through training and mentoring by professional load transporters and the donation of three escort vehicles.
- Town planners from the Department of Public Works and Housing have received training in modern town planning methodologies.
- Comprehensive training has been provided to staff of the Ministry of Environmental Coordination on the operation of the hazardous waste facility.

## ***Engineering Development in Mozambique***

In October 2003, Mozal helped initiate a project aimed at raising the level of education of the country's engineers and technologists to international standards. International experts, relevant ministries, educational institutions and other companies are collaborating in a three-year pilot project to strengthen the engineering faculty at the University Eduardo Mondlane in Maputo.

A range of professional development courses has been introduced and a broad-based computer-aided design training facility established. A registration system for engineers is also being developed, based on world-class organisational practice. Mozal and BHP Billiton are investing approximately US\$300 000 in the project.

## ***Agricultural Programs***

An Agriculture Development Program (ADP), recommended by the IFC, was implemented over a four-year period commencing in 2000. The program was developed to benefit 650 farmers relocated from the Mozal site.

Prior to the program, annual yields of maize were 300 kilograms per family. The ADP has boosted yields five-fold, with a record average yield of 1900 kilograms in 2002. The farmers have since been assisted to diversify into other crops that are drought-resistant, such as beans, pumpkins, cassava and sweet potatoes, using seed supplied by the MCDT. Harvests reaped in 2004 indicate that the scheme has the potential to alleviate poverty during drought.

After severe floods in 2000 in the Boane District, a program was implemented to rehabilitate irrigation infrastructure, repair equipment, supply seed, improve access to markets and provide training and mentorship. The program has enabled the local farmers association to again supply produce to markets and catering companies.

In partnership with CARE International, the MCDT has constructed ten rural dams in the northern province of Nampula, helping to stabilise water supplies for agricultural development and domestic usage and to minimise damage from heavy rainfall.

## Mozal — Focusing on Sustainability, for the Business and the Community

Careful planning of the construction and operational phases of Mozal took into account all of the challenges posed when investing in Mozambique. Since commencement, the project has complied with the environmental and social requirements of the IFC.

Following phase 1, any gaps related to the values embodied in the BHP Billiton Charter and Zero Harm philosophy were addressed in phase 2.

Commitment from the joint venturers, the contractor and subcontractors and the Mozal operations teams across project implementation, operational functions and sustainability initiatives has delivered significant achievements:

- Both project implementation phases were completed well under budget and ahead of schedule.
- Following good HSEC performance during phase 1, considerably better performance was recorded during phase 2 and the organisation of operations.
- Harmonious industrial relations are exemplified by the phase 2 construction period, totalling 16 million work hours, when no days were lost due to industrial action.
- Operational performance has exceeded design and is running at benchmark levels.
- The region and the country have benefited from needs-based infrastructure, social and community upliftment projects.
- Ongoing projects and programs delivered by Mozal and the MCDT reinforce the principles of sustainable project implementation.

The IFC, in their publication 'The Environmental and Social Challenges of Private Sector Projects', stated that 'Mozal has set a precedent for future projects in Mozambique. It illustrates the clear advantages of incorporating environmental and social issues early in a project, and reflects the approach and procedures IFC has been refining and putting in place to deal with environmental and social issues'.

The Mozal experience demonstrates that, when establishing a major resource project, it makes good business sense to invest not only in the venture but also in the host community. Primary business objectives do not have to be sacrificed in the process. Risks can be mitigated through the collective efforts of the business, community, governments and their instrumentalities — for 'together we make a difference'.

## Socio-Economic Case Studies

### Relationship building is key to managing socio-economic impacts of the Ravensthorpe Nickel Project

Socio Economic



The pristine coast of south east Western Australia



The Ravensthorpe Nickel Project is a A\$1.4 billion project on the south-east coast of Western Australia, close to the towns of Ravensthorpe, Hopetoun and Esperance. A new mine and processing facility are being constructed to produce a mixed nickel-cobalt hydroxide product over approximately 25 years. The project is 100 per cent owned by BHP Billiton and managed by Ravensthorpe Nickel Operations (RNO).

Since pre-feasibility commenced in 2002, we have been addressing the local socio-economic issues that will arise from establishing such an operation within a small regional community. A commitment to building positive relationships with the community is an essential factor in this process.

### Locally Based Workforce

With the operations phase of the project having a long life of 25 years and the project being located on the coast, a rare opportunity has arisen to establish a locally based workforce rather than a fly-in/fly-out operation. An estimated 300 employees and hundreds more indirectly employed by the project, and their families, will become part of the local community.

Considerable effort has been focused on establishing a close and productive relationship with the Ravensthorpe and Esperance Shire Councils that will host the incoming employees and their families. We have also been collaborating with the Western Australian and Federal Governments in supporting the community by providing multi-user infrastructure, including residential land, upgraded water, power, roads, community services buildings and educational facilities within the townships.

The State Government is also upgrading the regional Port of Esperance, which will be used for the import of raw materials and export of product.

The project team has encouraged local and regional businesses to participate in the construction phase and has established online registration of business capability and contact details so that local goods and services are visible to larger contractors who are new to the region.

In addition, the project team has actively supported initiatives by three business chambers within the region that focus on helping members adapt their businesses to the longer-term service and maintenance requirements of a large mining and processing operation. This will facilitate increased capacity building within local businesses, broader skills capability and increased retention of younger people within the region, which will in turn enhance the sustainability of the local communities.

## Located in a Coastal Agricultural Region

The project is located in the farming district of Jerdacuttup, which is dotted with farms growing wheat, oats, canola and lupins and carrying sheep and cattle. Residents number fewer than 100, many from families who cleared the land from virgin bush to establish their farms; hence their ties to the land are very strong.

The district has a rich biodiversity of flora and fauna, most of which is endemic to the region, together with a pristine coastline.

A challenge for the Company has been to develop a mining operation within this community of farmers, retirees and summer tourists, who are naturally protective of their rural and regional lifestyle.



Broadacre farming

## Community Consultation and Involvement

Historically, community concerns for large resource projects have been addressed within the scope of an Environmental Impact Study; however, the project team recognised early on that locals were not confident that regulatory authorities would adequately address their concerns.

In response, we facilitated the establishment of two local committees to assist community participation in the decision-making process. The Community Liaison Committee (CLC) has a regional focus, while the Jerdacuttup RNO Working Group (JRWG) represents the project's near neighbours.

The JRWG is a member of the CLC, which aids the effectiveness of the two committees by enabling the JRWG, whose focus is narrowly project/ neighbour related, to be represented in discussion of broader issues while avoiding the danger of it being bogged down by having to deal with such matters.



Rich in biodiversity

### ***The Community Liaison Committee (CLC)***

The CLC was formed to help the wider regional community to adapt to the arrival of a major mining and processing operation.

The committee assists in reducing potential tensions that could be associated with the difference in disposable incomes between the mining and agricultural sectors and with large numbers of new families becoming permanent residents in what has been a very small community that has changed little for decades. The CLC also administers and evaluates sponsorship applications from the community and recommends to RNO how to allocate its annual sponsorship funds.

CLC membership comprises representatives of seven non-government organisations, two local governments and an independent academic from the University of Notre Dame, Western Australia.

An Associate Professor from the University of Western Australia with 20 years experience in community psychology assisted the CLC to establish its Guiding Principles and Objectives. The regular CLC meetings are facilitated by a member, on a rotation basis.

All members agree that it is an effective and useful body that is assisting the community to adapt positively to the forecast changes.

### ***The Jerdacuttup RNO Working Group (JRWG)***

The JRWG was formed to ensure that no social or environmental harm occurs as a result of the project's operations. The group was involved in establishing environmental and community baselines prior to the commencement of the project.

JRWG membership comprises seven farmers, a Jerdacuttup Primary School representative, two RNO representatives and an independent community advisor appointed by JRWG. Additionally, there are two alternate farm business representatives and an alternate local school representative. A vote by the community members determines the JRWG Chairperson.

The independent community advisor is funded by RNO for the JRWG. The advisor's role has been to review the social and environmental impact assessment work completed by RNO as part of the government approval process and its planning for the mining and processing operation. Advice is provided on the quality and the scope of the work in addressing the issues of the near neighbours to the project.

Additional studies and baselining work completed through the JRWG include trial blasting, air quality, farm values and groundwater, soil and vegetation programs. Several programs are still in progress, including a community health self-assessment, surface water flow predictions and an independent review of the proposed designs for the tailings storage facility and evaporation ponds.

## **Challenges Addressed**

In summary, the challenges for the Ravensthorpe Nickel Project have included:

- establishing a good reputation characterised by trust and openness
- working with more than one community committee
- responding to personal agendas pursued by members of community committees
- conveying to the community that the resources sector generally and the Company in particular is a responsible manager of the environment
- facilitating liaison between large state government agencies and small local governments in regional Western Australia
- securing partnering assistance from the Australian Government to deliver community infrastructure to rural and regional Western Australia.

The Ravensthorpe Nickel Project, with its proximity to the communities of Ravensthorpe, Hopetoun and Esperance, offers a significant opportunity to advance regional development in the southeast coastal region of Western Australia.

Once the construction phase has been completed, the locally based workforce has integrated with the wider community, and a new nickel business is operating as planned, the two community groups will continue to monitor the district environment (JRWG) and sponsorship of community projects (CLC) during the life of the project.

## Socio-Economic Case Studies

### Business conduct and the supply relationship

### Socio Economic



Mark Upson, trainer operator in mining, Cannington, briefs Rod Wright from Mitchells Transport on the Company's Guide to Business Conduct

The BHP Billiton Guide to Business Conduct, founded on our Charter, establishes a set of principles to assist employees in making decisions that are consistent with the Company's corporate values and represent good business practice. We are taking steps to ensure that our suppliers understand and respect our business conduct standards, and that they realise that compliance and ethics are non-negotiable. A key event in this regard was a Global Supplier Forum we hosted in February 2005, which included a session on the value of ethics and our expectations and requirements regarding ethics and business conduct in the supply relationship.

## Business Conduct

The Company Charter forms the foundation of our corporate culture and our principles of business conduct. It states that high standards of business conduct, including honesty and integrity, are required in all our dealings.

Our Guide to Business Conduct provides a basis for achieving the expected standards. We require systems to be in place at all our operations to ensure that employees and contractors are familiar with and abide by the requirements of the Guide.

Complementary to the Guide to Business Conduct is our Global Travel & Entertainment (T&E) Policy, which sets out broad guidelines in relation to gifts and entertainment offered by suppliers and for the management of travel and entertainment expenditure. This is particularly valuable and relevant for our Global Supply staff who interact with suppliers on a regular basis. The Global Supply function requires all gifts and entertainment offered to be declared on a register.

There is strong commitment at the highest levels of the Company that our business conduct principles are understood and practised not only by our employees and contractors but also by our suppliers.

We are putting processes in place to help ensure supplier compliance. For example, in supplier contracts and agreements, a clause specifies that the supplier organisation's employees, agents, contractors and subcontractors must comply with our Guide to Business Conduct in respect of business interactions with BHP Billiton.

The Guide is included in all tender packages put out to the market, and our online bidding marketplace rules state that we will structure online bidding events in a manner consistent with our Charter and Code of Business Conduct and that we will uphold applicable ethical standards.

## The Global Supplier Forum

A key event in introducing our business conduct guidelines to suppliers has been the Global Supplier Forum. Held in Melbourne, Australia, in February 2005, the forum attracted 145 delegates from 85 supplier companies. All the delegates were at senior management level in their organisations, with as many as one-third holding the title of Chairman, CEO, Managing Director or President.

The importance we placed on the forum was indicated by the level of speakers, who included our Chief Executive Officer, Chief Financial Officer, Company Secretary, CSG Presidents, Chief Commercial Officer, and our Vice Presidents of Global Supply, HSE, Public Policy & Business Conduct, and Operating Excellence.

As well as a session on the value of ethics, the agenda covered our vision, values and performance; a financial overview and the challenges ahead; governance; HSEC and supplier involvement in continuous improvement; CSG overviews and direction; supply management direction; business excellence; and individual supplier presentations.

There were three main objectives in conducting the Forum.

**Educating** — As many of our suppliers deal with us at local site level, the forum provided an opportunity to present them with a profile of our entire organisation and to highlight the benefits of having a global business view. Emphasis was placed on our growth plans and our requirements regarding ethics and business conduct.

**Delivering key messages** — Our business growth is supported by the performance of our suppliers. Accordingly, we choose to form relationships with suppliers who demonstrate excellence in continuous value improvement and business conduct.

**Networking** — The forum enabled our key suppliers and our executives and supply leaders to interact, facilitating the building of relationships that can foster continued business improvement.

The session on the value of ethics focused on the importance and value of good business conduct. During the session, we took the opportunity to assess how the delegates' organisations value ethics. Delegates were also asked why a high standard of ethics is important, marking a list of responses on a scale of 1 to 5 (1 being lowest and 5 highest). The average results were as follows:

- suppliers value customers who honour commitments: 4.4
- employees value companies where they trust their employer and colleagues: 4.3
- customers value honesty and integrity: 4.1
- communities value companies who value them: 3.7
- shareholders value companies that set and live up to high standards: 3.6.

This provided a setting for us to present our guiding principles for global supply. Our approach is to maximise our core competencies and to outsource as applicable. To optimise the supply process, we employ consistent processes and technologies globally. It was emphasised that we are committed to our business conduct guidelines and expect suppliers to support us by complying with the guidelines when dealing with our employees, in a spirit of mutual trust.

## The Next Steps

Feedback suggests that the information provided at the forum was considered very useful, with over 70 per cent of delegates saying their attendance was a good investment of time. Delegates were asked for written feedback on what their most significant learnings were. Comments included 'the opportunity and challenge to grow with BHP Billiton at the same time as delivering on their key values' and 'suppliers need to perform'. It was apparent that some delegates had not previously understood the Company's position on issues such as gifts, entertainment and travel expenses.

Our aim now is to maintain a perpetual focus on business conduct as an essential aspect of supplier relationships, including ensuring that new suppliers are fully informed and committed to complying with our business conduct standards and guidelines. To this end, further consultation and collaboration with suppliers is planned, together with more formal processes such as the existing inclusion of relevant clauses in all contracts and agreements and the development of a system of accountability for managing compliance with our business conduct principles and standards.