# BHP Billiton: Environmental Considerations in Gaining and Maintaining our Licence to Operate

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## Structure driven by customer needs



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## Deep inventory of growth projects



## Strategic Framework

"Our core 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."





## Value Proposition: Why is Sustainable Development important to BHP Billiton?

#### A future state has been articulated for all of our key stakeholders

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Stakeholders	Past	Future
Employees	Minimal current value ascribed to SD credentials in recruitment	Competitive advantage from SD credentials in recruitment
	Safety culture is embedded in behaviour	SD culture is embedded in behaviour
Shareholders	Small but increasing percentage of shareholders concerned about SD credentials	Majority of shareholders see SD performance as critical
	Limited value for SD performance	Substantive value derived from SD performance
Customers	Current decisions almost exclusively made on price/quality/supply availability	Price premium on products or preferred supplier status (volume preference), longer term contracts secured
	Exception: Canada Mark Diamonds	All mines SD certified
Local Communities	Local support / licence to operate is strong in some areas but not consistent	Local communities provide strong & consistent support for our business
	e.g. Cerro Matoso in Colombia	
NGOs	Tentative recognition of SD performance e.g. Tintaya, Suriname	BHPB is awarded projects in preference to others. Widespread advocacy for BHP Billiton (e.g. WMC acquisition)
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## HSEC Governance - our HSEC systems and documents



## Our Key Challenges

#### SAFETY

Eliminating Fatalities Contractor Engagement



#### ENVIRONMENT

- Climate Change
- Biodiversity and sensitive areas
- Water Management
- Product Stewardship

#### HEALTH

- HIV/AIDS
- Malaria
- Workplace Exposures



#### COMMUNITY

- Sustainable Community Development
- Closure
- Human Rights

Integrate, manage and measure

## Climate Change

- 1. Increase understanding of life-cycle emissions of our products
- production activities
- customers' consumption of our fossil fuel products
- other parts of the life-cycle of our products
- full and open public reporting of our emission profile
- 2. Improve management of energy and greenhouse gas emissions from production
- Business Excellence
- Group targets
- Site based plans and targets
- Carbon pricing carbon pricing sensitivity analysis
- Market trading
- Project-based emissions reductions







## Climate Change

- 3. Working with customers, communities and employees to reduce emissions and support internal emissions reduction projects
- Support R&D in low emissions technologies
- Capital funding for internal energy projects
- Support employees and local communities to reduce emissions

#### 4. Progressing climate change policy within our sphere of influence

- Policies to accelerate technological change
- Market-based mechanisms





#### Eliminate Reduce Substitute Mitigate

## Environment: Energy Excellence Program

#### **Objective**

• to identify initiatives and develop and implement processes that ensure energy efficiency and energy source substitution opportunities are integrated into everything we do.

#### EKATI Energy Smart (Canada)

- saved 2 200 000L diesel to date (C\$2 million savings)
- achieved through cross functional support, suggestion scheme, recognition and regular communications



#### Cerro Matoso (Colombia)

- recognised US\$ 783 644 savings from furnace optimisation
- applied Business Excellence and Six Sigma methodologies – including operator coaching





Inspire, innovate and lead

## Water Management: Water efficiency at Olympic Dam

- Challenge
- Water source: Great Artesian Basin (GAB)
- responsible use of GAB water is a key concern for some of our stakeholders
- Solution
- Identify major users: > 90% used in 3 main processing areas
- Optimising water recovery and recycling and substitute poor-quality local groundwater in some areas

#### Benefits

- 3.9 ML/day water saving to date
- Further savings planned
- Employee engagement in solution
- GAB water is being used efficiently
- Supports future growth of operation



## Water: Bore capping at Olympic Dam

- Challenge
- Reduce loss of water associated with agricultural use of the GAB (> 95% of water in the distribution drains is lost to seepage and evaporation)
- Solution
- · Convert open soil drains used to water stock to efficient pipes, tanks and troughs
- Benefits
- 34ML/day savings significantly reduced demand on the GAB
- Water saving in excess of Olympic Dam's total usage



Before: open drain



After bore capping



## Water: Escondida Chile

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## Escondida Mine





## Escondida Water





## Escondida Water Management

- Water requirements now met from groundwater sources adjacent to the Andes and desalination
- Strategy required to address long term security of supply and reduce environmental impacts
- Water management program includes:
  - Reducing use in processing applications
  - Optimising recovery of water from tailings dams
  - Optimising extraction from existing groundwater resources
  - Construction of seawater desalination (500l/s, 170 km pipeline, 3000m elevation).



## Escondida's Coloso Desalination Plant, Chile





## Escondida's Coloso Desalination Plant, Chile





## **Biodiversity Approach**

- In our Sustainable Development Policy we have made a commitment to "enhance biodiversity protection by assessing and considering ecological values and land-use aspects in investment, operational and closure activities".
- We are a signatory to the ICMM Sustainable Development Framework Principles. Under Principle 7, we are required to: "contribute to conservation of biodiversity and integrated approaches to land use planning :
  - Respect legally designated protected areas.
  - Disseminate scientific data and promote practices and experiences in biodiversity assessment and management.
  - Support the development and implementation of scientifically sound, inclusive and transparent procedures for integrated approaches to land use planning, biodiversity, conservation and mining."
- In conjunction with ICMM and IUCN we have committed not to explore or mine in World Heritage properties



## Case Study – Arid Recovery

- The Olympic Dam operation is a partner in Arid Recovery, an initiative dedicated to the restoration of arid zone ecosystems.
- Established in 1997, the project is centred around a fenced reserve from which all feral cats, rabbits and foxes have been eradicated.
- The reserve covers 86 square kilometres adjacent to the mine. Partners in the initiative include the South Australian Department of Environment and Heritage, the University of Adelaide and the local community through Friends of Arid Recovery.
- The reserve has allowed the regeneration of native vegetation and the re-introduction of four locally extinct mammals, the Greater Stick-nest Rat, the Burrowing Bettong, the Greater Bilby and the Western Barred Bandicoot.



## Case Study – Suriname

- The Bakhuis bauxite concession covers 2800 km2 of largely undisturbed tract of tropical rainforest and lies adjacent to the Central Suriname Nature Reserve, a designated World Heritage Site and rainforest wilderness. Social and Environmental Impact Assessments are underway.
- Together with other field observations, 34 medium and large terrestrial mammals were identified, and further species are anticipated. Of these, four species of cat were observed, of which Jaguar and Puma are abundant.
- Camera trapping has added immensely to the understanding of the species richness and abundance of the Bakhuis fauna, and allows comparison with other locations in the Guianas and Amazonia.
- Information provides a sound basis for prediction of potential impacts and development of management strategies.





## Marketplace: Stewardship

Reduce harm that may come to people and the environment from our commodities

#### **Green Lead Project**







#### FOCUS

Uranium Stewardship Working Group

- radiation exposure
- nuclear proliferation
- waste management



#### FOCUS

- Develop international approach to best practice lead management throughout life cycle
- Reduce harm from lead exposure

## Marketplace: Stewardship

Council for Responsible Jewellery Practices and Cyanide Code Council





GOLD

#### FOCUS

- blood/conflict diamonds
- cyanide contamination in gold operations

"As an early adopter to the Council for Responsible Jewellery Practices, BHP Billiton's efforts have, for the first time, brought together key stakeholders from every sector of the supply chain from mine to retail.

These companion efforts have very quickly become the defining sustainability initiatives for businesses throughout this supply chain."

> Matthew A. Runci - Chairman of the Board, Council for Responsible Jewellery Practices President & CEO, Jewellers of America



## Conclusion

- The concept of Licence to Operate is fundamental to BHP Billiton's long term success.
- Challenges are significant but so are the opportunities for leadership, differentiation and competitive advantage.



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