



**Conservation Council  
of South Australia Inc**

**CCSA Discussion Paper**

**July 2007**

**Missing In Action:  
BHP-Billiton's Environmental  
Impact Statement:  
The Unanswered Questions**



Minera Escondida: Source: [http://BHP-Billiton.com/bbContentRepository/Reports/Reporte\\_Sustentabilidad\\_2004.pdf](http://BHP-Billiton.com/bbContentRepository/Reports/Reporte_Sustentabilidad_2004.pdf)

## **Executive Summary:**

The Conservation Council of South Australia (CCSA) is South Australia's peak environmental NGO. With over 55 member groups, collectively representing over 60,000 people, CCSA is actively working for a healthier environment.

CCSA is currently seriously concerned by BHP-Billiton's (BHP-B) proposed expansion of the Olympic Dam mine site at Roxby Downs in the north of the State, which according to the current proposal, will become the largest open cut mine in the Southern Hemisphere.

BHP-B claim that the company and the project can be seen as environmentally responsible. SA Premier Mike Rann meanwhile has given a commitment to "*the strictest environmental conditions for existing uranium mines*".

CCSA do not currently share the confidence of the company, or the state government, that this will be the case however. As this stage, CCSA believe BHP-B's Environmental Impact Statement (EIS) is "missing in action" and is seriously deficient. Accordingly, CCSA has produced this discussion paper drawing attention to questions we consider are unanswered, in the interests of an open and transparent EIS process, that will be, and will be seen to be, vigorous and independent, thorough and efficient.

CCSA *believe* at a minimum the company should now make the following basic information public to ensure an open and transparent decision making process that can properly assess the costs and benefits of the proposal. CCSA expect the SA government will adhere to its commitments and ensure best practice standards be applied and that BHP-B will in addition to agreeing to fulfil these standards, will also ensure it adheres to the principles it signed on to in 1998 as part of the Global Mining Initiative and the [Mining, Minerals and Sustainable Development \(MMSD\) study \(www.iied.org/mmsd/\)](http://www.iied.org/mmsd/) (see Appendix 1).

## **Summary of Recommendations:**

### **Recommendation 1:**

**Repeal of the Roxby Downs (*Indenture Ratification*) Act 1982**

### **Recommendation 2:**

**BHP-Billiton to provide essential project data for the following areas:**

- Energy Use and Greenhouse Gas (GHG) Emissions
- Water Supply and Desalination Plant Issues and Potential Marine Impacts
- Radioactive Mine Wastes, Solid and Liquid Tailings
- Improved Radiation Health Monitoring
- Facing Up To Indigenous Social and Cultural Issues

**Recommendation 1:  
REPEAL OF THE ROXBY *DOWNNS (INDENTURE RATIFICATION) ACT*  
1982**

CCSA believe BHP-B should be prepared to play by the same set of rules as any other miner or developer in SA and therefore should be able to operate without the legal privileges contained within the Roxby Downs (Indenture Ratification) Act. These would otherwise override a range of key laws and standards in SA, including the *Environment Protection Act*, the *Natural Resource Management Act*, the *Freedom of Information Act* and the *Aboriginal Heritage Act*.

CCSA believe BHP-B has a corporate responsibility to ensure that the Olympic Dam Mine expansion will meet the most stringent environmental requirements and will be world's best practice. As such, it would be appropriate for the company to ask the State Government to repeal the *Roxby Downs (Indenture Ratification) Act 1982*.

CCSA believe that if BHP-B is not causing environmental harm, it should be willing to fully comply with the *Environment Protection Act*. BHP-B should be prepared to pay for its current extraction of Great Artesian Basin water, just like other GAB user.

**Recommendation 2:  
BHP BILLITON TO PROVIDE ESSENTIAL PROJECT DATA**

CCSA believe that it is essential that the following basic data on the mine expansion proposal must be assessable as part of the EIS, thus enabling the best scientific analysis of the impacts, costs and benefits of the project to be undertaken.

This should cover the full scale of the proposed project for production – ie up to 1 million tonnes of copper per year - rather than any stage 1, or stage 2 increments.

**Energy Use and Greenhouse Gas (GHG) Emissions**

CCSA believe BHP-B should provide a complete annual and total project greenhouse gas (GHG) inventory, in accordance with Australian Greenhouse Office methodologies. This should include all of the scope 1, 2 and 3 emissions including direct and indirect emissions associated with electricity transmission losses and outsourced activities etc.

BHP-B should list the GHG emissions factors used to calculate the GHG emissions associated with the electricity, fuel use and transmission losses.

BHP-B should describe the impact of this mine expansion on South Australia's stationary energy GHG emissions and the states total GHG emissions.

CCSA believe BHP-B must describe what impact the proposed expansion will have in terms of SA achieving its Kyoto based target of not more than 108% of 1990 state emissions between 2008-2012 and/or the recent *Climate Change and GHG Emission Acts*' legislated commitment to a 60% absolute emissions reduction target by 2050.

Specifically, BHP-B must explain how it can proceed with the proposed mine expansion without placing the State's greenhouse objectives at risk by massively contributing to an increase in GHGs.

To enable accurate an assessment to be undertaken it is essential that the following energy usage data be provided:

- Electricity use of the mining operations in MWh/year
- Electricity use of the desalination plant (all stages) in MWh/year
- Electricity use of the water pumping (all stages) in MWh/year
- Ecological analysis of impacts on cuttlefish aggregations
- Ecological analysis of impacts of hyper-salinisation
- Release of all hydrological modelling and studies regarding the breeding grounds and habitat of commercial species, and endangered species/
- Diesel fuel usage in litres/year including for the construction period
- GHG emissions from explosives usage per year tonnes CO<sup>2</sup>-e/year
- LP Gas/ Natural Gas in litres/year

Sources of any electricity provided to the mine site from the grid (by percentage of total electricity use) that would be used for each of the mining, desalination plant and pumping operations. For example,

- How much of the total requirement will be purchased as accredited GreenPower Renewable Energy (which includes the Renewable Energy Certificates to minimise double accounting)?
- How much is to be from lower emission sources, such as purchased through a specific contract for lower emission natural gas based electricity, and/or from modern combined cycle gas plants?
- How much (if any) will be from standard grid electricity?

CCSA believe it would be appropriate for BHP-B to provide a statement on the quality of any low emission energy, including its accreditation standard and whether it is a total product or a mixed product.

Diesel fuel use and use of explosives are greenhouse intensive fuels and would be included in the inventory for their direct emission (scope 1) and indirect emission (scope 3) components, for both the construction and operations periods of the mine expansion. If fuel use in trucks was an outsourced operation, BHP-B should still advise of the full emissions as scope 3 in their inventory and describe how fuel emissions will be managed.

Should there be other large-scale indirect emissions (scope 3) for activities such as using cement to bind tailings, these emissions should be quantified. Proposed actions to curb emissions would be fully described, and how these would differ from no action. Full details of any greenhouse offsets (such as from re-vegetation), renewable energy and their associated accreditation standards should also be provided.

## **Water Supply and Desalination Plant Issues and Potential Marine Impacts**

BHP-Billiton should commit to protect the Great Artesian Basin and the unique and fragile Mound Springs from the potential adverse impacts of continued water extraction for the Roxby uranium mine. BHP-B should commit to closing Borefield A within the Mound Spring arc as soon as possible, and then to cap and then wind back current extractions from Borefield B - which directly threatens the ecology of the Hermit Hill springs. These desert springs are listed as an endangered ecological community under Commonwealth law.

BHP-Billiton have proposed the world's third largest reverses osmosis desalination plant to provide the massive additional water supply for the mine expansion. CCSA believe the EIS should therefore include the following basic information:

- Total size of the desalination plant in GL/annum, including all stages for the mine, and the full additional water supply sought by the SA Government
- Total chemical use at the desalination plant, and the type, total loading and concentration of chemicals in the proposed marine discharge
- Total volume, loadings and concentration of proposed brine discharge to the marine environment

CCSA believe brine and chemical discharges from the proposed desalination plant at Point Lowry have the potential to cause material impacts on marine ecosystems and fisheries that depend on the marine ecosystems in the relatively sheltered and stable waters of the Upper Spencer Gulf.

BHP-B should provide peer reviewed scientific evidence on their own desalination studies, database and modelling, and the potential risks and impacts of their desalination plant on this fragile and exceptional marine ecosystem.

## **Radioactive Mine Wastes, Solid and Liquid Tailings**

CCSA has serious concerns on the long term management of the radioactive mine tailings waste, retaining approximately 80% of the radioactivity of the original ore. The tailings from milling of the ore are fine particles of long-lived, low level radioactive waste, readily prone to erosion by wind or by water, These must be controlled and isolated at the site for thousands, (if not hundreds of thousands) of years.

BHP-B must describe how it will prevent the migration of the milled tailings for the life of the mine, how it will decommission and rehabilitate the site at the end of the proposed mine life, including the requisite bond and funding provisions.

CCSA are concerned whether this radioactive waste can be properly managed so that it may be safely contained for the thousands of years that it remains a potential hazard to health and to the environment.

BHP-B should make the following Mine Tailings Data public:

- Total volume of liquid waste to be dealt with at the expanded mine site in GL/year
- Total evaporation capacity of proposed liquid tailings ponds at the mine site in GL/year
- Current leakage rates from existing liquid tailings and retention ponds
- Total hectares proposed for liquid tailings ponds at the expanded mine site, and how much of this area will be lined, and with what type of proposed liner
- Total estimate of leakage of liquid tailings to groundwater systems at the expanded mine site
- Total estimate of avifauna entrapments/deaths in liquid tailings/year and for what species
- Total area, height, structure and containment proposed for dry tailings at the expanded mine site.

The potential additional water supply use of at least 120 ML/day at the Olympic Dam operation is a huge amount of water. Building on the basic data described above, BHP-B must clarify on how much of this water will be discharged into liquid tailings ponds/year, and whether the ponds have the evaporation and other required capacities to prevent this acidic and polluted water from overflowing to the above ground environment, or leaking below ground, as well the risk to local groundwater.

BHP-B must advise on whether current liquid tailings ponds are still leaking, and would must details of how liquid tailings ponds will be lined to prevent further leakage and how any potential leakage would be monitored and intercepted.

CCSA are concerned that expansion of liquid tailings is likely to become an even greater fatal attraction for birdlife. Estimates on the impact and deathrate of aquatic birds and other fauna that may come into contact should be stated in the context of this increased size.

## **Improved Radiation Health Monitoring**

CCSA believe that BHP Billiton should adopt the recommendations of the European Committee on Radiation Risk (ECRR) to better protect nuclear industry and uranium mine workers and the public from the risks of ionising radiation exposure.

The ECRR recommended a total maximising ionising radiation permissible dose of 5 mSv a year for nuclear industry workers (currently 20 mSv a year) and a total maximum permissible dose of 0.1 mSv a year (currently 1.0 mSv a year) from all human practices, including uranium mining.

BHP-B should acknowledge that despite the best efforts to understand and prevent potential long term health impacts, uranium mining has the potential to create health problems for workers and local communities. Some risks may still not be fully understood at present, and may only become apparent in future decades. For this reason BHP-B would establish the most comprehensive health monitoring programs and registers for workers and local communities to establish and maintain data on their long-term health. This monitoring would extend into the future beyond current employment at the mine, and cover those living near the mine, so that if there is any difference in long term health statistics from the general population, additional action can be taken at the earliest opportunity.

CCSA believe that it is essential for stakeholders to be re-assured that better data and health monitoring is available for the uranium mine workers, compared with that provided to asbestos workers in the past.

## **Facing up to Indigenous Social and Cultural Issues**

CCSA are calling for BHP-B to describe how it has addressed social and cultural issues for indigenous communities, and what steps are being taken to ensure that this mine will result in improvements to the long-term well being of these communities. To meet the full requirements of the *Aboriginal Heritage Act* would require the repeal of the *Roxby Downs (Indenture Ratification) Act 1982*, as has already been recommended.

**Conclusion:**

The scale of the proposed Olympic Dam expansion demands that the highest possible standards apply in relation to the environment and ecology of the area. CCSA await a commitment from BHP-Billiton to a complete and thorough Environmental Impact Statement (EIS) process that will enable informed decision making to be conducted by the state's policymakers, stakeholders and the wider community

BHP-B as the project manager, and the State Government as the overseeing regulator, must ensure that there is a level playing field and that the highest possible environmental standards are adhered to, for the benefit of the environment, the workers and the people of South Australia.

For more information please contact:

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## Appendix 1: Mining, Minerals and Sustainable Development

In 1998, BHP-Billiton joined with a number of other mining companies to establish the Global Mining Initiative, a major component of which was the [Mining, Minerals and Sustainable Development \(MMSD\) study](http://www.iied.org/mmsd/) ([www.iied.org/mmsd/](http://www.iied.org/mmsd/)). The MMSD study was a major independent study aimed at better understanding the role of the mining industry in a sustainable future.

MMSD considered that, in the context of the minerals sector, the goal for sustainable development should be 'to maximise the contribution to the well-being of the current generation in a way that ensures an equitable distribution of its costs and benefits, without reducing the potential for future generations to meet their own needs'. To facilitate this, the MMSD study developed the following key principles of sustainable development (**emphasis added**)

### Economic sphere

- Maximise human well-being.
- **Ensure efficient use of all resources, natural and otherwise, by maximising rents.**
- **Seek to identify and internalise environmental and social costs.**
- Maintain and enhance the conditions for viable enterprise.

### Social sphere

- Ensure fair distribution of the costs and benefits of development for all those alive today.
- Respect and reinforce the fundamental rights of human beings, including civil and political liberties, cultural autonomy, social and economic freedoms, and personal security.
- Seek to sustain improvements over time; ensure that depletion of natural resources will not deprive future generations through replacement with other forms of capital.

### Environmental sphere

- **Promote responsible stewardship of natural resources and the environment, including remediation of past damage.**
- **Minimise waste and environmental damage along the whole of the supply chain.**
- **Exercise prudence where impacts are unknown or uncertain.**
- **Operate within ecological limits and protect critical natural capital.**

## Governance sphere

- Support representative democracy, **including participatory decision-making.**
- Encourage free enterprise within a system of clear and fair rules and incentives.
- Avoid excessive concentration of power through appropriate checks and balances.
- **Ensure transparency through providing all stakeholders with access to relevant and accurate information.**
- **Ensure accountability for decision and actions, which are based on comprehensive and reliable analysis.**
- Encourage cooperation in order to build trust and shared goals and values.
- Ensure that decisions are made at the appropriate level, adhering to the principle of subsidiarity where possible.

We have clearly articulated our commitment to sustainable development in the Company Charter, HSEC Policy and HSEC Management Standards. As outlined in the section on [Our approach to sustainable development](#), this **commitment provides a consistent framework aligned to the principles above, designed to reduce the environmental impact of our businesses, enhance the societal benefit of our operations and produce superior returns for our shareholders.**

The journey towards sustainable development is not ours alone. **It is about partnerships and engagement with all our stakeholders. Only through the cooperative efforts of many will society be able to pursue sustainable development.**

Source: <http://hsecreport.BHP-Billiton.com/2004/repository/sustainabilityBHP-Billiton/sustainabilityBHP-Billiton.asp>