

Thursday 6 August 2009

The Manager,  
Assessment Branch,  
Department of Planning and Local Government  
GPO Box 1815  
Adelaide SA 5001

**Re: Submission regarding the proposed Olympic Dam Expansion**

Friends of the Earth Adelaide (FoE) is a community environment group with members and supporters throughout South Australia, and affiliated with regional FoE groups around Australia. As a member group of Friends of the Earth International, FoE Adelaide is part of the world's largest grassroots environmental network, composed of FoE groups active in over 70 countries, with over 2 million individual members. Our ongoing work with communities affected by the nuclear and uranium mining industries throughout Australia and the region continues to support our opposition to these industries.

Most accepted definitions describe "sustainability" as meeting the needs of the present generation without diminishing the ability of future generations to meet their own needs. Olympic Dam is a project powered primarily by non-renewable fossil fuels, extracting non-renewable resources and contributing to a legacy of long-lived, toxic and radioactive waste. When also considering the mine's projected greenhouse gas emissions and water consumption, in an era of climate change, water scarcity and the twilight of cheap oil, in the view of Friends of the Earth Adelaide, Olympic Dam cannot be considered anything other than profoundly unsustainable. While Friends of the Earth Adelaide strongly opposes the proposed Olympic Dam expansion, given the current political context of bi-partisan support, the following submission highlights some of the key issues raised by the proposal and offers recommendations for consideration by the Department and BHP Billiton.

This submission was prepared by Friends of the Earth Adelaide, in consultation with community groups and with the advice of independent scientists and analysts. **Section 1** presents brief outlines and recommendations of some of the key concerns with the expansion. **Section 2** explores specific aspects of the expansion, including a) the legal privileges held by BHP Billiton under the Roxby Downs (Indenture Ratification) Act 1982, b) social environment, c) impacts on biodiversity, and d) Corporate Social Responsibility and the nuclear fuel chain.

We welcome these concerns being responded to thoroughly in the Supplementary Environmental Impact Statement, and urge BHP Billiton and the South Australian Government to subject the Supplementary EIS to an equivalent level of public scrutiny and comment.

Sincerely,

Kathy Whitta  
Convenor  
Friends of the Earth Adelaide

## **Summary of Recommendations**

### **1.1 Export of copper concentrate**

**Recommendation 1.1.1:** BHP Billiton should document the feasibility of a “no-uranium option” for Olympic Dam in its Supplementary Environmental Impact Statement.

**Recommendation 1.1.2:** BHP Billiton should process copper thoroughly onsite, rather than exporting uranium-laced copper concentrate directly to clients.

### **1.2 Climate change and greenhouse gas emissions**

**Recommendation 1.2.1:** Given the projected greenhouse gas emissions of the project, Friends of the Earth Adelaide recommends that on this basis alone the mine should not proceed. However, at the very least, BHP Billiton should be required to power the mine entirely from renewable energy.

**Recommendation 1.2.2:** BHP Billiton should not be permitted any special deals under the Federal Government’s Carbon Pollution Reduction Scheme.

### **1.3 Economic implications**

**Recommendation 1.3.1:** BHP Billiton should be required to present full calculations for proposed employment at the mine, together with a full costing and timeline of the project.

**Recommendation 1.3.2:** BHP Billiton and the SA Government should declare all proposed Government support for the mine expansion, including the cost of ongoing, onsite waste monitoring and management, in a full and thorough cost/benefit analysis of the project.

### **2.1 The Roxby Downs (Indenture Ratification) Act 1982**

**Recommendation 2.1.1:** Friends of the Earth submit that BHP Billiton should be required to detail all legislation relevant to the proposed expansion, including but not limited to the Indenture Act.

**Recommendation 2.1.2:** Consistent with previous requests, Friends of the Earth submit that the Indenture Act should be repealed, making the Olympic Dam lease subject to the full set of regulations, standards and due process in SA.

### **2.2 Aboriginal Cultural Heritage**

**Recommendation 2.2.1:** Friends of the Earth submit that BHP Billiton provide substantive detail on what activities they have done to protect Aboriginal Heritage

**Recommendation 2.2.2:** The Aboriginal Heritage Act should be removed from the ambit of the Indenture Act.

### **2.3 Social environment**

**Recommendation 2.3.1:** Change the governance structure of the municipality to a democratically-elected council.

**Recommendation 2.3.2:** Greatly expanding the health services in Roxby Downs should be a high priority. In particular there needs to be a focus on community health services such as mental health and counselling, and looking at overall sustainable lifestyles (such as shorter working hours and more family-friendly working hours) to limit these impacts. BHP Billiton should also support the option of union membership for all workers to help guarantee these conditions.

**Recommendation 2.3.3:** BHP Billiton also needs to undertake a full study into the health consequences of its mining operations, and take greater responsibility for these issues.

**Recommendation 2.3.4:** BHP Billiton or an external agency establish a long-term worker health monitoring database in order to support long-term documentation and analysis of these risks.

**Recommendation 2.3.5:** Given expected increases in crime and anti-social behaviour, it is unacceptable to continue with a project of this scale. At the very least, BHP Billiton needs to take

responsibility for these issues and assure fundamental measures (safe houses for women, sufficient police etc) are provided.

**Recommendation 2.3.6:** BHP Billiton should allocate funds for social service infrastructure in the Roxby Downs area according to the needs identified by both the Roxby community and service providers. Health and social services need to be given greater priority and detail in the Supplementary Environmental Impact Statement.

## **2.4 Impacts on biodiversity**

**Recommendation 2.4.1:** Consider the utilisation of other disposal methods of tailings to avoid death of biota.

**Recommendation 2.4.2:** Model a truer estimation of bird deaths, begin addressing current losses, and base the predicted impacts due to expansion on these more representative figures.

**Recommendation 2.4.3:** Compensate for the current and increased faunal losses.

**Recommendation 2.4.4:** Provide a technical analysis of the operation of the proposed protective structures to be used at the TSF and evaporation ponds.

**Recommendation 2.4.5:** Describe and account for the ongoing impact of the destruction and fragmentation of habitat to all species, in particular those that are dispersal limited, in a more realistic manner (eg. quantified estimates of species populations to be directly lost and affected by fragmentation, consideration of home range requirements).

**Recommendation 2.4.6:** Proposed compensation actions are shown to truly be SEBs with detailed management actions and appropriate costing.

**Recommendation 2.4.7:** Proposed compensation actions are ongoing to reflect the true lasting impact of the expansion with detailed management actions.

**Recommendation 2.4.8:** Compensation monies must be a last resort. If they are used, costing must be vastly improved to account for all of the environmental values affected, and the true cost of any serious and effective habitat restoration activity.

**Recommendation 2.4.9:** The supplementary EIS consider the ongoing impact of the extraction of water from the GAB which will constitute a component of the operation of the expanded mine.

**Recommendation 2.4.10:** BHP Billiton should be required to phase out extraction from the Great Artesian Basin entirely, and to cease its draw from Borefield A as soon as possible.

**Recommendation 2.4.11:** The TSF and evaporation ponds must be fully lined.

**Recommendation 2.4.12:** BHP Billiton should be required to present a waste management plan that demonstrates complete isolation of the mine waste from the environment for the 10,000 years required by Federal regulations for the Ranger uranium mine. The disposal of the tailings by returning them to the open pit should be considered as a key strategy to achieve this.

**Recommendation 2.4.13:** Drastically improve the impact assessment on the Giant Cuttlefish.

**Recommendation 2.4.14:** Friends of the Earth Adelaide endorses the submission of the Cuttlefish Coast Coalition, and recommends that their queries be addressed in detail in the Supplementary Environmental Impact Statement.

**Recommendation 2.4.15:** BHP Billiton consider open ocean locations for its proposed desalination plant, and that alternative scenarios for water supply that protect fragile ecosystems be presented for further public comment in the Supplementary Environmental Impact Statement.

**Recommendation 2.4.16:** A detailed plan for post mining operation in terms of the regional ecological impact be provided.

## **2.5 Corporate social responsibility and the nuclear fuel chain**

**Recommendation 2.5.1:** If Olympic Dam is to continue as, amongst other things, a mine producing uranium for sale, then to remedy the shortcomings identified above in the EIS, BHP Billiton should be required to enter into contractual agreements which satisfactorily address all the problems identified above. The agreements, with appropriately heavy sanctions for non-compliance, should set out by what means and extent BHP Billiton will be bound to ensure that the assurances it provides are effectively enacted within specified time frames.

### **Section 1: Key concerns**

#### **1.1 Export of copper concentrate**

Uranium mining, with its attendant legacy of long-lived toxic and radioactive waste, nuclear risk and documented links with nuclear weapons proliferation, remains a contentious aspect of the Olympic Dam operation. The Draft Environmental Impact Statement has failed to assess the feasibility of the mine continuing operations without exporting uranium. Such an option would address some of the key environmental concerns with Olympic Dam, while also modelling a potential future for the mine should the uranium market collapse in the event of a serious nuclear accident.

Furthermore, there are serious concerns surrounding BHP Billiton's intention to export uranium-laced copper concentrate directly to China. By processing the copper onsite, not only would more jobs be retained in South Australia, but BHP Billiton will be able to more adequately monitor and manage the risks associated with processing radioactive materials. The export of uranium in this form, may amount to several thousand tonnes of the mineral a year once the copper has been processed. The export of uranium in this manner will only contribute to the lack of accountability in the uranium trade.

**Recommendation 1.1.1:** BHP Billiton should document the feasibility of a "no-uranium option" for Olympic Dam in its Supplementary Environmental Impact Statement.

**Recommendation 1.1.2:** BHP Billiton should process copper thoroughly onsite, rather than exporting uranium-laced copper concentrate directly to clients.

#### **1.2 Climate change and greenhouse gas emissions**

The proposed expansion of Olympic Dam is projected to increase South Australia's total emissions by some 14% by 2020, seriously compromising the state's Kyoto target and efforts to reduce emissions into the future. Given the documented environmental impacts and risks of nuclear energy, claiming that BHP Billiton's export of uranium for nuclear reactors somehow "offsets" the direct greenhouse gas emissions of the mine is unacceptable.

**Recommendation 1.2.1:** Given the projected greenhouse gas emissions of the project, Friends of the Earth Adelaide recommends that on this basis alone the mine should not proceed. However, at the very least, BHP Billiton should be required to power the mine entirely from renewable energy.

**Recommendation 1.2.2:** BHP Billiton should not be permitted any special deals under the Federal Government's Carbon Pollution Reduction Scheme.

#### **1.3 Economic implications**

Despite the tone of breathless excitement on the part of the South Australian Government and BHP Billiton about job creation and supposed economic benefit as a consequence of the Olympic Dam Expansion, that BHP Billiton has not released timelines or budgets for the project leaves little cause for confidence.

In 2006, Premier Mike commented that the expansion, would generate “20,000 jobs”<sup>1</sup>, with actual permanent jobs rising from 3,000 to 4,000 positions<sup>2</sup>.

However, in 2007, BHP Billiton announced its intention to export radioactive copper concentrate to China, rather than processing the concentrate in South Australia. Such a move would “diminish the investment cost of the expansion, since smelting and refining for much of the copper increment will not be required”<sup>3</sup>. Premier Rann insisted that such a decision was “not on”, due to the potential loss of jobs. However in 2008, BHP Billiton ruled out the option of processing copper on site<sup>4</sup>. Then, in late 2008, BHP Billiton’s Graeme Hunt described how Olympic Dam would be the trial for a new crop of remote controlled trucks, developed by Caterpillar, and aimed towards “autonomous mining” that “[takes] people out of the interface”. These trucks are intended to be controlled remotely from a central control centre, “instead of employing hundreds of truck drivers”<sup>5</sup>.

With the emergence of the Global Financial Crisis, BHP Billiton has been among the many corporations worldwide who have begun shedding thousands of jobs. Despite Premier Rann’s enthusiastic calls that we are set to become “the new Western Australia’ – a resource rich state fuelling the seemingly insatiable appetites of mineral hungry China and India”<sup>6</sup>, Western Australia has been one of the first states to be affected by BHP’s job cuts. In January 2009, BHP Billiton announced it would begin to cut 6,000 jobs worldwide, over half of which were in Australia. BHP Billiton started with closing its Ravensthorpe nickel mine and toning down operations at its Mount Keith mine in Western Australia, resulting in the loss of 2100 jobs<sup>7</sup>. BHP Billiton is now under investigation for a possible breach of the Workplace Relations Act for the sackings<sup>8</sup>.

In South Australia, BHP Billiton announced the scrapping of 200 jobs relating to the proposed Olympic Dam expansion<sup>9</sup>, then in March, terminated a further 85 jobs<sup>10</sup>, offering no assurance that more sackings would not follow<sup>11</sup>. Likewise, after hacking 1,100 jobs in Queensland in early 2009, BHP Billiton sacked a further 400 people in March<sup>12</sup>.

In May 2009, the media reported the company’s revised claim that the mine would create some 18,000 jobs, down 2,000 from Premier Rann’s earlier claim<sup>13</sup>. These claims of employment or economic benefits are provided by BHP Billiton with little justification and are often reproduced uncritically by the government. Clearly, the promise of jobs is a shifting aspect of the Olympic Dam project, compounded by the volatile nature of the global market.

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<sup>1</sup> Rann, M 2006, ‘Regional development key link for regional growth’, 06/12/06, Government of South Australia, <http://www.ministers.sa.gov.au/news.php?id=1049>

<sup>2</sup> Government of South Australia 2007, ‘Investing in SA: BHP Billiton Olympic Dam’, *SouthAustralia.biz*, [http://www.southaustralia.biz/CaseStudy/2007/08/04/BHP Billiton-Olympic-Dam.aspx](http://www.southaustralia.biz/CaseStudy/2007/08/04/BHP%20Billiton-Olympic-Dam.aspx)

<sup>3</sup> World Nuclear News 2008, ‘BHP Billiton outlines Olympic Dam grand plans’, *World Nuclear News*, 06/11/09, <http://www.world-nuclear-news.org/newsarticle.aspx?id=23510>

<sup>4</sup> Lower, G 2008, ‘BHP abandons plans for the new smelter at Olympic Dam’, *The Australian* [http://www.theaustralian.news.com.au/story/0,,24513030-643,00.html?from=public\\_rss](http://www.theaustralian.news.com.au/story/0,,24513030-643,00.html?from=public_rss)

<sup>5</sup> Nicholas, B 2008, ‘Trucks taking control’, *The Independent Weekly*, 21-27 November 2008, p. 18

<sup>6</sup> Spoehr, J 2008, ‘The best of times and the worst of times’, *The Adelaide Review*, [http://www.adelaidereview.com.au/archives.php?subaction=showfull&id=1214446456&archive=1217478880&start\\_from=&ucat=16&](http://www.adelaidereview.com.au/archives.php?subaction=showfull&id=1214446456&archive=1217478880&start_from=&ucat=16&)

<sup>7</sup> WA Today 2009, ‘BHP halts Ravensthorpe, sheds 2100 jobs’, *WA Today*, 21/01/09 <http://business.watoday.com.au/business/bhp-halts-ravensthorpe-sheds-2100-jobs-20090121-7m0h.html>

<sup>8</sup> The Independent Weekly 2009a, ‘BHP under scrutiny for sacking 1800 workers’, *The Independent Weekly*, 03/04/09, <http://www.independentweekly.com.au/news/national/national/general/bhp-under-scrutiny-for-sacking-1800-workers/1478085.aspx>

<sup>9</sup> England, C 2009a, ‘BHP to cut 200 jobs in South Australia’, *AdelaideNow*, 21/01/09, <http://www.news.com.au/adelaidenow/story/0,22606,24942361-913,00.html>

<sup>10</sup> Russell, C 2009, ‘BHP Billiton sacks 85 at Roxby Downs Olympic Dam mine’, *AdelaideNow*, 10/03/09, <http://www.news.com.au/adelaidenow/story/0,22606,25166309-2682,00.html>

<sup>11</sup> ABC 2009 ‘BHP Billiton axes SA mining jobs’, *ABC Local*, 10/03/09, <http://www.abc.net.au/news/stories/2009/03/10/2512180.htm?site=local>

<sup>12</sup> The Independent Weekly 2009b, ‘BHP cuts mining jobs in Queensland’, *The Independent Weekly*, 26/03/09, <http://www.independentweekly.com.au/news/national/national/general/bhp-cuts-mining-jobs-in-qld/1470651.aspx>

<sup>13</sup> England, C 2009b, ‘18,000 workers needed for a growing project’, *The Advertiser*, 2 May 2009, p. 11

The changing fortunes of the mining industry highlight the danger of basing an economy on a non-renewable, extractive industry like mining. Indeed, as commentator Mark Davis wrote before the mining bubble burst, in building an economy reliant on mining, Australia's prosperity has become "dependent on outside forces, riding on the back of strong global growth and demand for resources", while the government failed to "produce a comprehensive, forward looking agenda" as "non-mining export income languished and productivity stagnated"<sup>14</sup>.

Writer and former Liberal Party member Guy Pearse calls this focus on mining "quarry vision", a dependency on resource extraction that "has come to dominate our economic and political culture, in the form of vested interests and longstanding beliefs. This makes it very hard for the country to set a different course as circumstances demand. In the era of global warming, such a change is urgently required"<sup>15</sup>. While Pearse's argument particularly concerns coal (another of BHP Billiton's key commodities), his warnings about quarry vision are equally powerful when considering the Olympic Dam expansion. At the heart of "quarry vision" is the illusion that mining is somehow crucial to our national prosperity, when Pearse demonstrates that its economic importance has been consistently overstated<sup>16</sup>.

The danger of quarry vision lies in pinning our prosperity on an industry based on the extraction of finite resources through energy-intensive, fossil-fuelled, greenhouse-gas emitting methods. Despite claims of boundless jobs and wealth, as BHP Billiton's track record shows, such jobs carry few guarantees. However, even if such jobs were guaranteed, as Pearse highlights, "quarry vision" compromises Australia's ability to cultivate jobs in other sectors, as mining ties up vast quantities of capital, and can take decades to deliver returns<sup>17</sup>. "This cycle digs us even deeper into the quarry by compromising our capacity to pay our way in the world by other means"<sup>18</sup>. Likewise, "nations squander the proceeds of booms with monotonous regularity," with only a few, like Norway, investing the windfalls from its oil industry to try ensure continuing prosperity once its oil reserves are exhausted. This is a lesson Australia has not yet learned, "billions of extra tax dollars generated by high commodity prices were temporary, yet almost all of the windfall [from mining] was spent on new liabilities"<sup>19</sup>.

If the proposed expansion goes ahead, among a number of subsidies, BHP Billiton will be eligible for the diesel fuel rebate. This will grant BHP Billiton an estimated \$70 million a year for the first five years while the open pit is dug, with a possible \$85 million per year thereafter. Through the rebate, the government will essentially be paying the world's largest mining corporation \$350 million to dig a hole. Rather than filling the coffers of the world's largest mining corporation, such money (potentially totalling \$3 billion by 2050) could be better invested in sustainable industries in an effort to extend South Australia's prosperity beyond the life of its mining industry. At the very least, such subsidies should be administered by government or allocated to social and environmental agencies and organisations to ameliorate the significant social and environmental impact of the project.

Mark Parnell offers an observation on the long term costs and impacts of mining projects,

The Olympic Dam expansion is presented as being of net economic benefit to the State. Yet, an example from BHPB's recent past is revealing. The Brukunga mine near Mt Barker made the company about \$10,000,000 in today's money. The State Government sold indemnity to BHP for \$75,000 (i.e. about \$750,000 in today's money). The cost of remediating this site is in the order of \$50,000,000 for major earth works (tailings dam and waste heap) and around \$600,000 annually in water collection and treatment. In terms of size, the Brukunga site has an 8 Mt waste heap – Olympic Dam will have a 242 Mt waste heap ... The environmental threat will persist at Olympic Dam long after the mine closes. Acid drainage will be at this site for hundreds of years and

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<sup>14</sup> Davis, M 2008, *The Land of Plenty: Australia in the 2000s*, Melbourne University Press, Carlton, p. 255

<sup>15</sup> Pearse, G 2009, 'Quarry Vision: coal, climate change and the end of the resources boom', *Quarterly Essay*, Issue 33, p. iii

<sup>16</sup> *Ibid.*, p. 11

<sup>17</sup> *Ibid.*, p. 16

<sup>18</sup> *Ibid.*, p. 16

<sup>19</sup> *Ibid.*, p. 16

radioactivity persists far longer ... Yet, there appears no commitment to genuine ongoing monitoring and rehabilitation<sup>20</sup>.

At the heart of projects like Olympic Dam is the paradox of attempting to balance the possibility of short-term wealth against the grim legacy of damaged landscapes, water systems and long-lived radioactive waste. “No commodity or mine is indispensable – not even the biggest,” says Pearse, “and history’s field is littered with those who pretended otherwise”<sup>21</sup>.

**Recommendation 1.3.1:** BHP Billiton should be required to present full calculations for proposed employment at the mine, together with a full costing and timeline of the project.

**Recommendation 1.3.2:** BHP Billiton and the SA Government should declare all proposed Government support for the mine expansion, including the cost of ongoing, onsite waste monitoring and management, in a full and thorough cost/benefit analysis of the project.

## **Section 2**

### **2.1 The Roxby Downs (Indenture Ratification) Act 1982**

The Roxby Downs (Indenture Ratification) Act 1982 (Indenture Act) provides BHP Billiton the legal authority to override the Aboriginal Heritage Act 1988; Development Act 1993; Environmental Protection Act 1993; Freedom of Information Act 1991; Mining Act 1971; and Natural Resources Act 2004 (including the Water Resources Act 1997). The possible negative cultural and environmental consequences that flow from this legislative framework have been well documented by Friends of the Earth and other organizations<sup>22</sup>.

Currently, the schedule of the Indenture Act does not cover the expansion. Thus, to extend the legal privileges for the area of the expansion, BHP Billiton will need to vary the current Indenture Act. To this end, the EIS notes that the indenture “is likely to require amendment to accommodate the expanded project configuration and higher production rates. Amendments are to come before the South Australian parliament for consideration.”

The EIS is deficient in that it seems to assume that this variation is a matter of formality, rather than legislative process. In evidence of this, the EIS fails to provide any information on the legislative framework that will govern the project if the amendments are not forthcoming. Certainly, the power to amend legislation is vested in the democratically elected parliament and it is not appropriate for BHP Billiton to assume that this variation will occur.

**Recommendation 2.1.1:** Friends of the Earth submit that BHP Billiton should be required to detail all legislation relevant to the proposed expansion, including but not limited to the Indenture Act.

**Recommendation 2.1.2:** Consistent with previous requests, Friends of the Earth submit that the Indenture Act should be repealed, making the Olympic Dam lease subject to the full set of regulations, standards and due process in SA.

### **2.2 Aboriginal Cultural Heritage**

The inclusion of the Aboriginal Heritage Act 1988 (AHA) in the Indenture Act has significant consequences for issues of equality and questions how seriously our State Government treats Indigenous rights and interests.

The AHA is the key legislative enactment aimed at protecting Indigenous heritage in South Australia. Prior to the operation of Native Title in the early 1990s it governed most government/Indigenous relations concerning land and cultural heritage. The Act continues to play an important function for Indigenous cultural heritage. However, under the Indenture Act the traditional owners of the land surrounding Roxby Downs, the Kokatha, Arabunna and Barngarla peoples, are now forced to deal with BHP Billiton to have their heritage recognised. This places

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<sup>20</sup> Parnell, M 2009, *Olympic Dam Expansion (ODX) EIS – Summary*, Discussion Paper, accessed online, Thursday 6 August 2009, <http://www.markparnell.org.au>

<sup>21</sup> Pearse, G 2009, ‘Quarry Vision: coal, climate change and the end of the resources boom’, *Quarterly Essay*, Issue 33, p. 10

<sup>22</sup> See further <http://www.foe.org.au/anti-nuclear/issues/nfc/mining/roxby/indenture>

BHP Billiton in a legal position to undertake any consultation that occurs, decide which Aboriginal groups they consult and the manner of that consultation. As the commercial operator and proponent of expansion within these areas, BHP Billiton is in a position of deciding the level of protection that Aboriginal heritage sites received and which sites they recognised.

This framework places BHP Billiton in a legal position to ignore the provisions of the 1988 Act designed to protect Aboriginal heritage; Determine the nature and manner of any consultation with Indigenous communities; Choose which Aboriginal groups to consult with; Decide the level of protection that Aboriginal Heritage sites receive; and decide which Aboriginal Heritage sites they recognise. As operators of the Olympic Dam mine, BHP Billiton clearly cannot participate in decisions concerning the recognition and protection of Aboriginal sites without a gross conflict of interest.

The inclusion of the AHA in the Indenture exists in opposition to the company's stated commitment to the protection and respect for aboriginal cultural heritage. Further, the EIS has very little substantive information on what BHP Billiton has done to protect cultural heritage and claims of 'comprehensive' tests do little to dispel concerns regarding the framework of consultation and the means with which this is carried out.

**Recommendation 2.2.1:** Friends of the Earth submit that BHP Billiton provide substantive detail on what activities they have done to protect Aboriginal Heritage

**Recommendation 2.2.2:** The Aboriginal Heritage Act should be removed from the ambit of the Indenture Act.

### 2.3 Social environment

Friends of the Earth Adelaide feels that the EIS underestimates the social impacts of the proposed Olympic Dam expansion, in particular on critical population groups. It also lacks detail in explaining how these social impacts will be addressed, preferring instead to leave these details to be worked out by the government, when there are certain fundamental services that need to be assured.

When the social perspective is looked at as a whole, the consequences of this project appear to outweigh the benefits to the state.

### Governance

We are concerned that Roxby Downs is administered by a non-democratically elected council, with the administrator being a State government appointment. This limits the ability to which Roxby Downs citizens can shape and control their civic future, and denies them rights which most other South Australians are entitled to. While Roxby citizens can get involved in various forums and community groups, it seems that the purpose of some of these is to lobby for things which the council should already be providing and councils do indeed provide in many other parts of the state. For example, while the community wishes to be a model environmentally friendly town (as outlined in the 2005 Roxby Downs Community Plan) with a highly efficient management of waste, water and power<sup>23</sup>, there is still no curbside recycling program in the town. It seems there is a mismatch in community expectations about what a council should provide, and what the non-democratically elected council is providing. This is reflected in statistics that show a reasonably low satisfaction with Roxby's services and facilities<sup>24</sup>, and ultimately low community strength and capacity.

When considered with the legal powers granted to BHP Billiton under the Indenture Act, the appointed nature of the council contributes to a worrying pattern of exemption from the democratic norms of the rest of the nation.

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<sup>23</sup> "Environment Forum" webpage, Roxby Downs website, [http://www.roxbydowns.com/servlet/Web?s=1902997&p=RD\\_Community\\_EnvironmentForum](http://www.roxbydowns.com/servlet/Web?s=1902997&p=RD_Community_EnvironmentForum) [accessed 10/07/09]

<sup>24</sup> "A Social Health Atlas of Australia", Third Edition, 2008, Public Health Information Development Unit website, [http://www.publichealth.gov.au/data\\_online/sa\\_sha\\_online\\_2008/sha\\_sa\\_2008\\_demog\\_ses\\_data.xls#Community\\_capacity\\_strength!A1](http://www.publichealth.gov.au/data_online/sa_sha_online_2008/sha_sa_2008_demog_ses_data.xls#Community_capacity_strength!A1)



Under an expansion, and subsequent population increase and increased community tensions and issues, there is no reason why the town should continue to operate in this undemocratic manner. There is no justification provided in the EIS for keeping the municipality under a State-appointed council, when Roxby citizens might legitimately aspire to be part of the council and help develop and push the community in certain directions.

**Recommendation 2.3.1:** Change the governance structure of the municipality to a democratically-elected council.

### Health

The EIS and other research shows that the residents in Roxby Downs suffer certain health problems disproportionately to the rest of the state. They have a higher rate of mental health problems, including mood, neurotic, and stress-related disorders<sup>25</sup>. They have a high rate of accident and emergency presentations at the hospital<sup>26</sup>, and they have much higher rates of obesity and health risks due to alcohol consumption. More than 1 in 4 males in Roxby Downs were suffering from obesity in 2005<sup>27</sup>, and in the same period, nearly 9% of Roxby citizens had a high health risk due to alcohol consumed, compared to a rural average of 6.3% and a state average of 5.6%<sup>28</sup>.

BHP Billiton should be required to conduct a study into why the Roxby Downs population has below-average health indicators (despite relatively high incomes), and how it is going to rectify this situation, prior to the proposed increase in population. For example, it is noted that citizens have a relatively low intake of fresh fruit and vegetables<sup>29</sup>. This may be because fresh produce is too expensive, and this is something that BHP Billiton could investigate subsidising.

The EIS sets out the limitations of Roxby's health services, and these services need to be greatly expanded to cater for a population increase as a high priority. However the EIS does not suggest that BHP Billiton feels responsible in trying to limit the potential health issues and flow-on impacts of health problems associated with its mining operations. The attitude seems to be that it is up to the government to address these problems, rather than working for their prevention. In particular, studies show the mental health issues and psychological pressures associated with mining communities<sup>30</sup>, for both workers and their families. In this instance an expansion would be exposing many more thousands of workers to these pressures. It seems that these physical and psychological pressures are manifesting in disproportionate alcohol and drug use, as well as domestic violence<sup>31</sup>.

Furthermore, the radiation risk of uranium mining is well documented. It is essential that BHP Billiton or an external agency establish a long-term worker health monitoring database in order to support long-term documentation and analysis of these risks.

**Recommendation 2.3.2:** Greatly expanding the health services in Roxby Downs should be a high priority. In particular there needs to be a focus on community health services such as mental health and counselling, and looking at overall sustainable lifestyles (such as shorter working hours and more family-friendly working hours) to limit these impacts. BHP Billiton should also support the option of union membership for all workers to help guarantee these conditions.

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<sup>25</sup> Olympic Dam Expansion Draft EIS 2009, p.596

<sup>26</sup> Ibid

<sup>27</sup> "A Social Health Atlas of Australia", Third Edition, 2008, Public Health Information Development Unit website, [http://www.publichealth.gov.au/data/social-health-atlas-of-south-australia-online\\_-2008---updated-february-2009.html](http://www.publichealth.gov.au/data/social-health-atlas-of-south-australia-online_-2008---updated-february-2009.html)

<sup>28</sup> Ibid

<sup>29</sup> Ibid

<sup>30</sup> Sharma, S. and Rees, S. 'Consideration of the determinants of women's mental health in remote Australian mining towns', *Australian Journal of Rural Health*, 15(1):1-7, February 2007.

Colley, P "A Career and a Life in Mining: What needs to be done", CFMEU Paper presented to the Sustainable Development 2005 conference of the Minerals Council of Australia, Alice Springs, 2005. From web: <http://www.cfmeu.com.au/index.cfm?section=0&Category=29&viewmode=content&contentid=54>

<sup>31</sup> Olympic Dam Expansion Draft EIS 2009, p. 598

**Recommendation 2.3.3:** BHP Billiton also needs to undertake a full study into the health consequences of its mining operations, and take greater responsibility for these issues.

**Recommendation 2.3.4:** BHP Billiton or an external agency establish a long-term worker health monitoring database in order to support long-term documentation and analysis of these risks.

### **Crime**

The EIS sets out that crime and anti-social behaviour is likely to increase as a result of the expansion<sup>32</sup>.

It is unacceptable that while the number of men in Roxby Downs greatly outweighs the number of women, (a ratio which is likely to increase), and domestic violence and crimes against women are anticipated to rise<sup>33</sup>, there is no emergency accommodation or safe house for women or children who are being abused<sup>34</sup>, and no explicit indication of plans to provide such a service. This is a basic service and must be provided as a priority.

The potential impact of the construction workforce in particular will have on the neighbouring communities is a cause for concern. It seems unrealistic to expect the construction workers to remain in Hiltaba Village. The artificial social situation of importing thousands of predominantly young, male workers for a limited amount of time, will almost certainly lead to strife in neighbouring communities. It is unacceptable that BHP Billiton appears to accept that crime (including assault, sexual assault and domestic violence, as articulated by the community) and anti-social behaviour will increase, yet is willing to accept this as collateral damage for its operations.

**Recommendation 2.3.5:** Given expected increases in crime and anti-social behaviour, it is unacceptable to continue with a project of this scale. At the very least, BHP Billiton needs to take responsibility for these issues and assure fundamental measures (safe houses for women, sufficient police etc) are provided.

### **Social services and infrastructure**

We support the priorities identified by the Roxby community for increased social services and infrastructure, and again these need to be considered a high priority. It is not enough for BHP Billiton to say that the provision of services is dependent on government and BHP Billiton funding, they need to assure that fundamental needs are provided for, in order to avoid escalating social impacts into the future. There also needs to be more detailed information about what social services will be provided at Hiltaba Village, beyond recreational and entertainment opportunities for workers.

**Recommendation 2.3.6:** BHP Billiton should allocate funds for social service infrastructure in the Roxby Downs area according to the needs identified by both the Roxby community and service providers. Health and social services need to be given greater priority and detail in the Supplementary Environmental Impact Statement.

The EIS insufficiently addresses the social impacts of this expansion. BHP Billiton needs to take greater responsibility for these issues, rather than deflecting them as government matters, when in fact many of the issues are caused by its mining operations. It needs to focus on preventative measures and to assure an increase in social and health services.

Ultimately, Friends of the Earth Adelaide believes that the raft of negative social impacts that the Olympic Dam expansion will undisputedly harbour negates the potential benefits to the state.

## **2.4 Impacts on biodiversity**

Significant impact to the environmental integrity of the proposal region is unavoidable. The quality of the impact assessment, and the subsequent efforts to mitigate and compensate must be to scale with the serious nature of the predicted impact. We find the impact assessment and

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<sup>32</sup> Ibid, p. 610

<sup>33</sup> Ibid, p. 621

<sup>34</sup> Ibid, p.599

proposed remediation measures to be wanting in a number of critical areas with respect to the ecological values potentially affected by the proposal, and thus do not feel a justifiable approval can be made. Key areas of concern which must be addressed by the company are included below.

▪ **Evaluation of loss of biota (flora and fauna)**

NB. Although conservation status is a useful tool for identifying areas of particular concern, the absence of species with conservation status at a particular site is not a justifiable rationale for reduced consideration of impacts to species and species requirements. It is this attitude that leads to species ultimately requiring conservation status.

**Death of biota due to TSF and evaporation ponds**

In the past 3 years 1400 birds have been recorded as dead due to accessing the TSF, currently extending 530 ha (TSF plus evaporation ponds). With the predicted expansion this area will increase to 4000 ha. The company has acknowledged serious inadequacies in monitoring and detection methods (Appendix N11). Modelling could reveal a truer estimation of faunal deaths due to visitation to the TSF, however rough calculation indicates in actuality 2000 birds per year are killed. The expansion of the TSF to almost 10 times its current extent presents a daunting figure of potential bird deaths. For the EPBC Act listed Banded Stilt, it is estimated that 15 % of the population known to traverse central SA could be lost due to the TSF (Appendix N11). Calculations have not been included in the EIS for other listed and non-listed species.

The company outlines the use of protective structures to minimise visitation to the TSF (Section 15.4.2), however also identifies that wildlife deterrent structures require continued assessment (Section 15.5.7). Though netting and covering structures are referred to, there is no technical explanation as to how these structures will be erected and maintained in a highly corrosive and acidic environment. Additionally, the structures are only proposed to cover the liquid portion of the TSF (Section 15.5.7), however extensive areas of 'muddy flats' will remain exposed and function as an attractant to transitory birds, particularly night fliers. The consideration of other methods of protection such as neutralising the liquor and incorporating tailings within the interstitial spaces of waste rock dumps has not been made.

Truly enlightened environmental responsibility would see the appropriate quantification of predicted species losses accompanied with proposed compensation measures.

**Recommendation 2.4.1:** Consider the utilisation of other disposal methods of tailings to avoid death of biota.

**Recommendation 2.4.2:** Model a truer estimation of bird deaths, begin addressing current losses, and base the predicted impacts due to expansion on these more representative figures.

**Recommendation 2.4.3:** Compensate for the current and increased faunal losses.

**Recommendation 2.4.4:** Provide a technical analysis of the operation of the proposed protective structures to be used at the TSF and evaporation ponds.

**Impact of habitat clearance and project operation**

> 17 000 ha of native vegetation will be cleared throughout the project operation. Clear quantification of the loss of fauna in particular but also flora (quantification of vegetation associations has been shown to some degree) has not occurred. Different components of the proposal will have different impacts, including the project closure and thus the impact on many species will not be once off but rather ongoing. It is essential that the actual losses of all known species in the area be articulated as without such information, adequate compensation and mitigation will not be achieved.

The compensation and mitigation proposals made in the EIS for the clearance of native vegetation are according to the Significant Environmental Benefits (SEB) guidelines of the Native Vegetation Act (1991). The proposed scheme is a combination of set aside areas, and payment to the Native Vegetation Fund (Appendix N9.5.1, N9.5.2, N9.5.2).

The EIS does not adequately show that the proposed areas to 'set aside' will result in an SEB (if the areas are not used for pastoral activities, they are already protected from clearance, and thus 'setting' them aside does not result in a net SEB). The nature of the 'set aside' is not divulged (i.e. is it to be a formal covenant?). Additionally, reference is made to the need to manage these areas to result in an SEB, but details (actions and costs) of this management are not included.

The payments to the Native Vegetation Fund are flawed. A component of the calculation equation is based on 'land market value'. In the project zone the land market value is low, however the biodiversity value is not dependent on an artificial valuation process based on perceived anthropogenic worth, and is thus a ridiculous component on which to determine compensation. Additionally, management components as referred to for 'set aside' areas have not been included in this calculation.

Unfortunately all too often lofty commitments for biodiversity offsets are made at the project development stage, but once approval is granted and the true cost of best practice compensation/mitigation is made, a substandard outcome occurs. Without detailed articulation of all aspects of SEB management, representative valuation and cost calculation, an informed decision of approval will not be made.

**Recommendation 2.4.5:** Describe and account for the ongoing impact of the destruction and fragmentation of habitat to all species, in particular those that are dispersal limited, in a more realistic manner (eg. quantified estimates of species populations to be directly lost and affected by fragmentation, consideration of home range requirements).

**Recommendation 2.4.6:** Proposed compensation actions are shown to truly be SEBs with detailed management actions and appropriate costing.

**Recommendation 2.4.7:** Proposed compensation actions are ongoing to reflect the true lasting impact of the expansion with detailed management actions.

**Recommendation 2.4.8:** Compensation monies must be a last resort. If they are used, costing must be vastly improved to account for all of the environmental values affected, and the true cost of any serious and effective habitat restoration activity.

#### ▪ **Groundwater dependent ecosystems**

##### **Great Artesian Basin (GAB) water usage**

The Great Artesian Basin and associated Mound Springs are impacted by the current Olympic Dam operations. The present EIS must consider the ongoing impact of the current extraction as it does constitute an activity of the expanded mine. An environmentally conscientious operation must actively strive towards eradicating the need to utilise this unique fossil water, and impact further on the endangered Mound Springs and associated biota.

**Recommendation 2.4.9:** The supplementary EIS consider the ongoing impact of the extraction of water from the GAB which will constitute a component of the operation of the expanded mine.

**Recommendation 2.4.10:** BHP Billiton should be required to phase out extraction from the Great Artesian Basin entirely, and to cease its draw from Borefield A as soon as possible.

##### **TSF leakage**

The TSF will not be completely lined. It is predicted that at peak TSF operation, 8.2 ML/d will seep into the subsurface environment (Section 12.6.2). The pollution of the underlying groundwater is unacceptable, particularly as at cessation of the mine ground water will flow into the open pit, creating an acidic and radioactive lake (discussed below).

**Recommendation 2.4.11:** The TSF and evaporation ponds must be fully lined.

**Recommendation 2.4.12:** BHP Billiton should be required to present a waste management plan that demonstrates complete isolation of the mine waste from the environment for the 10,000 years required by Federal regulations for the Ranger uranium mine. The disposal of the tailings by returning them to the open pit should be considered as a key strategy to achieve this.

## **Desalination plant**

The location of the proposed desalination plant at Point Lowly requires further assessment. The final site of the desalination plant must be due to environmental considerations, not financial cost to the proponent. The substantial unanswered environmental issues associated with the proposed development resulted in the Environment Resources and Development Committee of the Parliament of South Australia Desalination (Port Bonython) report, that states that “Government require BHP Billiton to conduct further investigations into alternative sites for a desalination plant because of the high potential risk to the marine environment at Point Lowly”, and we support this decision.

Surely one of the most obvious impact considerations must be made to that of the Giant Cuttlefish. However, the depth of this consideration appears to be unacceptably brief. Population estimations are based on inadequate surveys (Appendix O5) which potentially missed peak population abundance and significant fluctuations, therefore do not provide a realistic baseline. The impact of highly saline slugs on the survivorship and migratory behaviour of the species does not appear to have occurred. Predictive models of various scenarios of demographic loss and therefore effect on the population are basic information tools required to truly consider the potential impact on this species and have not been employed.

The Upper Spencer Gulf is ecologically significant, and its low flushing rate is well documented. Such a low flushing rate makes the site entirely unsuitable for a desalination plant. Furthermore, that BHP Billiton only considered sites in the Upper Spencer Gulf is inadequate, given that all such sites would present similar conditions with unsuitably low flushing rates. According to modelling by Dr. Jochen Kaempf, it is likely that deoxygenated brine underflows will occur, and that upwelling of the toxic brine into cuttlefish breeding grounds is possible during storm surges<sup>35</sup>. Even a single event can cause significant damage, demonstrating that the current favoured siting is far too risky.

**Recommendation 2.4.13:** Drastically improve the impact assessment on the Giant Cuttlefish.

**Recommendation 2.4.14:** Friends of the Earth Adelaide endorses the submission of the Cuttlefish Coast Coalition, and recommends that their queries be addressed in detail in the Supplementary Environmental Impact Statement.

**Recommendation 2.4.15:** BHP Billiton consider open ocean locations for its proposed desalination plant, and that alternative scenarios for water supply that protect fragile ecosystems be presented for further public comment in the Supplementary Environmental Impact Statement.

## **Project conclusion**

Once the project concludes, there is no real consideration of the lasting impact of the activity. For example, as previously mentioned, the open pit will refill with highly toxic groundwater contaminated from the leaky TSF – what of the effects on regional biota? Where is consideration of the mitigation and compensation activities for this legacy? Management, compensation and mitigation must last the entirety of the impact, not simply the profit making life, of the project.

**Recommendation 2.4.16:** A detailed plan for post mining operation in terms of the regional ecological impact be provided.

## **2.5 Corporate social responsibility and the nuclear fuel chain**

Friends of the Earth Adelaide takes the view that the ecologically and socially responsible description which BHP Billiton adopts in the draft EIS is inconsistent with the proposed expansion.

BHP Billiton, already operating a substantial uranium and other metals mine, is not in a position to claim that it operates according to principles of sustainable development. The proposed expansion of Olympic Dam, with its attendant increase in the transport and sales of radioactive materials only makes such a description less credible.

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<sup>35</sup> Kaempf, personal communication, 23 July 2009

• BHP Billiton claims 'an overriding commitment to health, safety, environmental responsibility and sustainable development'<sup>36</sup>. It also indicates<sup>37</sup> that it is a signatory to the Mineral Council of Australia's (MCA) *Enduring Value* code which, according to the MCA brings with it a number of obligations. These include: 'Progressive implementation of the ...Principles and Elements [of the code]'.<sup>38</sup>

*Enduring Value* consists of over 40 principles including:

**1. to 'integrate sustainable development principles into company ... practice' and '... operate ... in a manner that enhances sustainable development'<sup>39</sup>.**

'Principles' of sustainable development include the following<sup>40</sup>:

- *Adherence to intergenerational equity, or 'fairness between generations'*

Trading in uranium whose highly toxic wastes have no disposal method demonstrably safe for the many thousand years necessary<sup>41</sup> is not congruent with this principle.

- *Adherence to intragenerational equity, or 'fairness within any generation'*

Estimates and clusters of cancer morbidity and mortality around nuclear facilities<sup>42</sup>, leakage of radioactive materials and their appearance in humans<sup>43</sup>, inadequate accounting procedures for radioactive materials so that on more than one continent they have been 'lost' or the subject of theft, smuggling and blackmarket and illegal/unsafe activities<sup>44</sup> and a long history of 'incidents'<sup>45</sup> provide for inequitable distributions of health and harm. The elevated traffic in nuclear materials, for example consequent to an expanded Olympic Dam mine, will lead to an increased likelihood of criminal and terrorist personnel acquiring fissile material for use in WMDs<sup>46</sup>.

The proposed expansion of Olympic Dam would bring an associated transport of radioactive copper concentrate to China. Its refining in China and consequent production of radioactive wastes will expose Chinese workers to radioactively unsafe work practices in China, which already has a

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<sup>36</sup> BHP Billiton 2009 'Olympic Dam Expansion; Draft Environmental Impact Statement 2009. Main Report vol. 1.' p. 5. BHP Billiton, Adelaide

<sup>37</sup> Ibid

<sup>38</sup> 'Enduring Value; the Australian Minerals Industry Framework for Sustainable Development', p. 6, [http://www.minerals.org.au/enduringvalue/resources/summary\\_booklet](http://www.minerals.org.au/enduringvalue/resources/summary_booklet), accessed 24/7/09

<sup>39</sup> Ibid, p. 7

<sup>40</sup> Principles of sustainable development are available at many sites e.g. 'Ecologically Sustainable Development' at <http://www.environment.gov.au/esd/#what>; 'Principles of Ecologically Sustainable Development' [http://www.lawlink.nsw.gov.au/lawlink/lec/ll\\_lec.nsf/vwFiles/speech\\_23Nov06\\_PrestonCJ.pdf/\\$file/speech\\_23Nov06\\_PrestonCJ.pdf](http://www.lawlink.nsw.gov.au/lawlink/lec/ll_lec.nsf/vwFiles/speech_23Nov06_PrestonCJ.pdf/$file/speech_23Nov06_PrestonCJ.pdf), accessed 24/7/09

<sup>41</sup> Continuing difficulties with nuclear waste management in e.g. the USA are discussed in 'Funding cut for US nuclear waste dump' *Nature*, vol. 458, p. 1086-87

<sup>42</sup> Nuclear Information & Resource Service (NIRS), 2008, 'False Promises; Debunking Nuclear Industry Propaganda' p. 42-44, NIRS, Takoma Park, Maryland, USA. Available at: <http://www.nirs.org/falsepromises.pdf>, accessed 24/7/09; Butler, Declan 1997 'Nuclear love affair loses its charm', *Nature*, vol. 387, p. 839

<sup>43</sup> 'False Promises'(see note 7) p. 44; 'Cogema's "arrogance" adds to La Hague's problems', *Nature*, 1997, p. 839; 'Groundwater contamination by US reactors', The Progressive Foundation/Nukewatch - [www.nukewatch.com/.../groundwatercontamination1.pdf](http://www.nukewatch.com/.../groundwatercontamination1.pdf), accessed 24/7/09; 'Strontium-90 in breast milk near New York reactors' 2009 *Nukewatch Quarterly*, Spring, p. 1 - [www.nukewatch.com/quarterly/2009spring/cover.pdf](http://www.nukewatch.com/quarterly/2009spring/cover.pdf) - accessed 24/7/09

<sup>44</sup> Peters, Katherine McIntire, 2009, 'U.S. Energy Department Cannot Account for Nuclear Materials at 15 Locations', *Global Security Newswire* - [http://www.globalsecuritynewswire.org/gsn/nw\\_20090224\\_7895.php](http://www.globalsecuritynewswire.org/gsn/nw_20090224_7895.php), accessed 24/7/09; Blakeslee, Sandra 1984, 'Nuclear spill at Juarez looms as one of worst' - <http://www.nytimes.com/1984/05/01/science/nuclear-spill-at-juarez-looms-as-one-of-worst.html?pagewanted=all>, accessed 24/7/09; Ball, Philip 2005 'Plutonium, books don't balance at UK plant', *Nature*, online - <http://www.nature.com/news/2005/050217/full/news050214-14.html> - accessed 24/7/09; Harding, Luke 2007 'Russian "smuggled weapons-grade uranium".', <http://www.spidernews.com/Videos/Videos/iframe.htm?url=@http://www.guardian.co.uk/georgia/story/0,,1998753,00.html?gusrc=rss&feed=12> - accessed 24/7/09; Carrell, Severin 2007 ' "Grave errors" at nuclear plant', <http://www.guardian.co.uk/world/2007/feb/16/nuclear.pollution>, accessed 24/7/09

<sup>45</sup> 'Let the Facts Speak; An Indictment of the Nuclear Industry' 3<sup>rd</sup> edition 2006. Office of Senator Rachel Siewert, WA

<sup>46</sup> Barnaby, Frank & Kemp, James (eds) 2007 'Secure Energy? Civil Nuclear Power, Security and Global Warming, Oxford research group, London. Available at: [http://oxfordresearchgroup.org.uk/publications/briefing\\_papers/secure\\_energy\\_civil\\_nuclear\\_power\\_security\\_and\\_global\\_warming](http://oxfordresearchgroup.org.uk/publications/briefing_papers/secure_energy_civil_nuclear_power_security_and_global_warming), accessed 24/7/09; 'The biggest threat? 2009 *Nature*, vol 457, p. 235

documented reputation for disregard for worker health and safety<sup>47</sup>. Citizens of countries prepared to act as repositories for large amounts of the world's nuclear wastes, such as Russia, with an appalling record of unsafe handling of nuclear materials<sup>48</sup>, are also likely to have their health and safety compromised.

Contributing to these dangers to citizens of other countries is not congruent with the principle of intragenerational equity.

*- Acting responsibly to minimise danger to global/international systems*

The movement of radioactive materials increases dangers to terrestrial and marine systems, and the humans associated with them, actions not congruent with this principle.

*- Treating risk with caution*

BHP Billiton has no involvement in measures to increase the security associated with the handling of nuclear materials. In the expansion of Olympic Dam, BHP Billiton takes no responsibility for increasing the workload of the International Atomic Energy Agency, already unable to accurately and comprehensively ensure the safety of nuclear materials<sup>49</sup>, a position made more difficult with Israel's possession of nuclear weapons without being a signatory<sup>50</sup>.

The EIS risk management material provides for some estimation of the likelihood of systems not operating safely (leakage, derailment) but no indication is given of the possible consequences of a series of accidents nor of the compensation available to ecosystems or humans damaged by such an accident.

These approaches are clearly not congruent with this principle.

**2. to 'uphold fundamental human rights ... in dealings with employees and others who are affected by our activities'**

Citizens and workers of China and other countries embroiled in the nuclear fuel chain, whose lives will be less secure and, probably, less healthy with an expanded trade in nuclear materials, including the transport and treatment of radioactive copper concentrate consequent to the proposed expansion of Olympic Dam, will not find BHP Billiton upholding their rights.

**3. to 'develop, maintain and test effective emergency response procedures in collaboration with potentially affected parties'**

It is not apparent that BHP Billiton has proceeded in this way in relation to the land-based or marine transport of copper concentrate, or any of the processes involved in refining it and dealing with the resulting radioactive wastes.

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<sup>47</sup> E.g. 'China Labor Watch: Lower Prices Mean Unsafe Products, Labor Violations' [http://walmartwatch.com/blog/archives/lower\\_prices\\_mean\\_unsafe\\_products/](http://walmartwatch.com/blog/archives/lower_prices_mean_unsafe_products/) and 'What is the responsibility of American companies and consumers for unsafe working conditions in Chinese factories?' <http://www.pulitzercenter.org/openitem.cfm?id=855> and 'Epidemiology of Major Occupational Accidents in Shanghai Chemical Industry, 1983-2000' - <http://web.wits.ac.za/NR/rdonlyres/BC16C138-1FA4-487F-94A3-FB5904A6750E/0/constr4.pdf> (all accessed 24/7/09)

<sup>48</sup> EU-Russia summit to ignore nuclear safety concerns' - <http://euobserver.com/9/27109>; 'EU-Russia Committee discusses Russian nuclear safety' - [http://www.bellona.org/english\\_import\\_area/international/russia/waste-mngment/ipwg/27461-](http://www.bellona.org/english_import_area/international/russia/waste-mngment/ipwg/27461-); and 'Russian Spent Nuclear Fuel' - [http://www.nti.org/e\\_research/e3\\_25a.html](http://www.nti.org/e_research/e3_25a.html) - both accessed 24/7/09; Dawson, Jane I. and Darst, Robert G. 2005 'Russia's proposal for a global nuclear waste repository; Safe, secure and environmentally just?', Environment, vol. 47, No. 4, p 17

<sup>49</sup> 'Iran seeking nuclear weapons technology –ElBaradei' <http://www.alertnet.org/thenews/newsdesk/LH646060.htm> - accessed 2/8/09. e.g. 'ElBaradei [IAEA Director] also bemoaned the IAEA's inability to enforce transparency in suspect countries. "We are called the watchdog but we don't bark at all if we do not have the authority."'"; 'Five minutes past midnight: the clear and present danger of nuclear weapons grade fissile materials' - <http://www.usafa.af.mil/df/inss/OCP/ocp8.pdf> - accessed 2/8/09. e.g. 'Thus meeting the inspection goal at these facilities by taking physical inventories, material balances and other quantitative accountancy measures is **not** sufficient to ensure that the diversion of a significant quantity of nuclear material has not occurred. In other words, there can be no firm assurance that enough plutonium for several nuclear weapons has not been or will not be diverted into clandestine nuclear weapons programs.'

<sup>50</sup> 'Israel Undermining NPT, ElBaradei Warns' - <http://news.antiwar.com/2009/02/16/israel-undermining-npt-elbaradei-warns/> - accessed 24/7/09

#### 4. to 'provide for safe storage and disposal of residual wastes and process residues'

The leakage of large volumes from radioactive tailings dams and the above-ground 'disposal' of tailings is not congruent with 'safe storage and disposal'. Nor is the notion that the rehabilitation plan for the tailings storage facility 'would be developed when the design of its cover had been completed'<sup>51</sup>. It appears a great deal is to be taken on trust.

• BHP Billiton's 'overriding commitment to health, safety, environmental responsibility and sustainable development' is also an empty claim in the case of the following issues:

- *Transport of radioactive materials*: The adverse outcomes of all this transport are entirely avoidable. Processing of the copper concentrate could occur in Australia which would decrease the likelihood of damage to humans and ecosystems. It would also provide more job opportunities in Australia.

- *Nuclear weapons proliferation*: Expansion of Olympic Dam will contribute to considerably increased sales of Australian uranium to several signatories to the Nuclear Non-proliferation Treaty, none of which are seriously pursuing disarmament as the treaty requires. Indeed, several signatories are increasing the capacities of existing nuclear weapons<sup>52</sup>.

- *Security*: The proposed expansion will contribute to increased uranium sales to China. This will very probably diminish the conditions of the Chinese people due to the policing required to keep nuclear materials safe, in a country with an already unenviable human rights record. It will also diminish regional security, in all probability fuelling a regional arms race given China's support for North Korea, a position of complexity as China seeks to avoid nuclearisation of North Asia<sup>53</sup>. Recent disagreements<sup>54</sup> around the Nuclear Non-Proliferation Treaty add to this continuing lack of international security.

- *Accounting for nuclear materials*: Export of radioactive copper concentrate, with its content of uranium which the Chinese will, no doubt, extract and add to their uranium stockpile, contributes further to the difficulty of there being a degree of accounting for Australia's exported uranium which will ensure that our uranium in the future has no chance of supporting the manufacture of weapons of mass destruction. China has acknowledged<sup>55</sup> that it possesses insufficient uranium for both its domestic and military nuclear programs; the sale of Australian uranium to China will allow the diversion of Chinese domestic uranium to military ends and constitutes a de facto support by Australia for any Chinese nuclear proliferation. Such support is not congruent with Australia being a signatory under the Nuclear Non-proliferation Treaty.

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<sup>51</sup> BHP Billiton 2009 'Olympic Dam Expansion; Draft Environmental Impact Statement 2009. Main Report vol. 2.' p.699-70, BHP Billiton, Adelaide

<sup>52</sup> 'Revealed: Blair to upgrade Britain's nuclear weapons' - <http://www.independent.co.uk/news/uk/politics/revealed-blair-to-upgrade-britains-nuclear-weapons-491517.html> (accessed 24/7/09). E.g. 'Britain will build a new generation of nuclear deterrent to replace the ageing Trident submarine fleet.' 'The US is also developing a new range of nuclear bombs, including smaller devices that could be used on the battlefield. This is controversial because it could lower the threshold for using nuclear weapons.'; 'Nuclear weapon states are continuing to upgrade, modernize and test new nuclear weapons and other states are trying to acquire them' - [http://www.icanw.org/ican\\_canada](http://www.icanw.org/ican_canada) (accessed 24/7/09); Learn about Nuclear Weapons - <http://www.slmk.org/larom/ENG/Dokument/Geography/US%20ADVANCED.pdf> - (accessed 24/7/09), E.g. 'Within the next years, the warheads on the Minuteman III missile arsenal will be upgraded to almost double their yield. The American nuclear-powered submarines have been upgraded to carry more accurate submarine-launched ballistic missiles with greater yields.'

<sup>53</sup> 'China's North Korea Problem: The Nuclear Issue and Geopolitics of Northeast Asia'

[http://www.allacademic.com/meta/p\\_mla\\_apa\\_research\\_citation/0/9/9/9/4/pages99943/p99943-1.php](http://www.allacademic.com/meta/p_mla_apa_research_citation/0/9/9/9/4/pages99943/p99943-1.php) - accessed 24/7/09

<sup>54</sup> 'Nuclear Non-Proliferation Review Closes Without Consensus' - <http://www.gsinstitute.org/pnnd/archives/000272.html> - accessed 2/8/09; - E.g. 'The nuclear weapons capability in North Korea and in Israel, U.S. intransigence on disarmament and its threat to return to nuclear testing, controversy over Iran, and concerns over nuclear weapons usable plutonium production programs in Japan and other countries, and the reprocessing of spent nuclear fuel all played a part in the collective failure of the conference.'; 'The Impulse towards a Safer World - 40th Anniversary of the Nuclear Nonproliferation Treaty' - [despite the fact that] 'Even with the system's flaws, scholars of the nonproliferation system generally believe that the Treaty has made a difference'...'[in 2008] the nonproliferation regime that the NPT created is in a state of crisis' and 'the treaty has other loopholes, for example, the lack of enforcement procedures and the broad scope provided by the Treaty to develop capabilities to produce fissile materials' - <http://www.gwu.edu/~nsarchiv/nukevault/ebb253/index.htm> - accessed 24/7/09

<sup>55</sup> 'Govt. reassurances on China uranium deal threadbare: Greens' <http://christine-milne.greensmps.org.au/content/media-release/govt-reassurances-china-uranium-deal-threadbare-greens> - accessed 2/8/09



The IAEA is already unable to ensure accurate accounting for nuclear materials<sup>56</sup>. Some of these 'misplaced' materials could be used in nuclear weapons, others in 'dirty' conventional weapons. Given that over 40 countries are believed to have the capacity to produce nuclear weapons<sup>57</sup> this lack of accounting accuracy, presently of considerable concern, will be compounded by the increase in nuclear materials transport and use consequent to the proposed expansion. Many observers agree that the combination of incomplete accounting for nuclear materials, their increased transport and the anti-social intentions of criminal and terrorist elements is an extremely dangerous combination to allow<sup>58</sup>.

- *Sustainable energy?*: The increase in nuclear reactor numbers world-wide which the EIS claims probable is also suggested to need the operation of 13 mines the size of the present Olympic Dam<sup>59</sup>. The Olympic Dam deposit is claimed to contain 30-40% of the world's known uranium supply. How can an enlarged nuclear power industry of the size BHP Billiton claims as part of its justification for the Olympic Dam expansion, therefore, be able to survive for more than a few years? At that point the world will have spent large sums of money on a power supply with limited life, and will need to seek again safe and renewable supplies of electricity. It will also need to finance the decommissioning of hundreds/thousands of nuclear reactors, a process contributing to the load of high-level nuclear wastes needing attention and consuming large sums of money. The latter will make the development of large-scale renewable energy systems all that much more difficult.

- *Safe levels?*: BHP Billiton fails to acknowledge the wide body of opinion that there is no safe level for exposure to radioactivity<sup>60</sup>. Nor does it acknowledge that the 'international standards' have been repeatedly reduced<sup>61</sup>. There is absolutely no guarantee that today's 'standards' are any more reliable than earlier ones.

There appears to be no attempt to maintain an historical record of worker exposure over the several decades necessary to enable proper epidemiological evidence gathering about the long-term carcinogenic and other possible deleterious effects of radiation exposure on humans

- *Carbon footprint*: The EIS discusses the project's carbon footprint, acknowledging its substantial extent. It offers a series of strategies<sup>62</sup> which BHP Billiton might pursue. It identifies projects which 'may or may not' proceed, 'as examples of how the stated goal [minimising or removing the project's carbon footprint] may be achieved'<sup>63</sup>.

Further, In Appendix L<sup>64</sup>, the strategies are discussed in more detail. None of the strategies proposed is guaranteed in its application or effectiveness. The reduction of the project's considerable carbon footprint is, at this stage, a set of optimistic propositions, not a suite of fully accounted for and already-demonstrated successful approaches. The set of optimisms is not accompanied by any indication of guarantee that BHP Billiton will affect any of them.

- *Health and safety in and around Roxby Downs*: Most of the up to 6000 occupants of the construction phase Village will be single young (20-40 year old) males. Under certain conditions

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<sup>56</sup> 'Nuclear security undervalued' Nature, #7180, p. 745, 14/2/08; see also note 14 above

<sup>57</sup> 'False Promises' (see note 7 above) p.40

<sup>58</sup> 'Secure Energy? Civil Nuclear Power, Security and Global Warming'

[http://oxfordresearchgroup.org.uk/publications/briefing\\_papers/secure\\_energy\\_civil\\_nuclear\\_power\\_security\\_and\\_global\\_warming](http://oxfordresearchgroup.org.uk/publications/briefing_papers/secure_energy_civil_nuclear_power_security_and_global_warming) - accessed 24/7/09. E.g. 'The storage and fabrication of MOX fuel assemblies, their transportation and storage at conventional nuclear-power stations on a scale envisaged by the nuclear industry will be extremely difficult to safeguard. The risk of diversion or theft of fuel pellets or whole fuel assemblies by personnel within the industry or by armed and organised terrorist groups is a dreadful possibility.'

<sup>59</sup> BHP Billiton 2009 'Olympic Dam Expansion; Draft Environmental Impact Statement 2009. Main Report vol. 1.' pp.62-63, BHP Billiton, Adelaide

<sup>60</sup> 'Radiation, how much is considered safe for humans?' <http://web.mit.edu/newsoffice/1994/safe-0105.html> - accessed 24/7/09

<sup>61</sup> 'Chernobyl Postmortem: Unresolved Obstacles Continue to Plague the Nuclear Industry'

<http://www.questia.com/googleScholar.qst;jsessionid=K14f4HLrqrvcvgqHBpPprvJQTM57rBLLcfrN8D1TRTyysM1lpHQpT!-1216340480!1098105941?docId=5001247278> - accessed 2/8/09

<sup>62</sup> BHP Billiton 2009 'Olympic Dam Expansion; Draft Environmental Impact Statement 2009. Main Report vol. 1.' pp. 382-84, BHP Billiton, Adelaide

<sup>63</sup> Ibid

<sup>64</sup> BHP Billiton 2009 'Olympic Dam Expansion; Draft Environmental Impact Statement 2009 Appendix L', pp. 27-32, BHP Billiton, Adelaide

this demographic is associated with a high incidence of crime, including physical violence, drug provision and intake and sex work, and of gun-, automobile- and alcohol-related injuries and deaths. This will cause an increase in 'incidents' either in Roxby Downs, in neighbouring towns and in surrounding areas.

BHP Billiton gives no indication of clear strategies to be employed to assist in the minimisation of such incidents or in the counselling and other support which will be necessary for those directly and indirectly involved.

- BHP Billiton also lays claim to the 'consideration of the entire asset's life cycle from exploration and planning to design, construction, operation and closure'.

To so delimit the 'asset' of a mine to exclude the contents and products of the mine is to ignore the fact that the 'asset' is that which can be sold, not the place from which it was obtained. This includes all the products derived from the Olympic Dam mine, including uranium, copper and other metals. The principle of Extended Producer Responsibility<sup>65</sup>, increasingly seen as a necessary inclusion in the 'socially responsible' strategies for a business seeking to position itself as one demonstrating corporate responsibility, is one which BHP Billiton, however, presently ignores because:

- it takes no responsibility for the safe transport and handling of uranium and related compounds, including radioactive nuclear waste, that are routine members of the nuclear fuel chain
- it refuses to recognise that its exporting of uranium for domestic uses inescapably links it to the military uses of uranium which have several times in history grown out of so-called domestic nuclear programs
- it takes no responsibility for the possibly adverse effects on the public and on workers of the use in China of radioactive copper concentrate. 'Possible' might be rendered as 'probable', given China's less-than-desirable history of worker exploitation. Further, export of recoverable uranium in the radioactive copper concentrate adds to the lack of accountability of the use by China of Australia's uranium and the lack of responsibility that BHP Billiton takes for the 'asset' it sells.

BHP Billiton—in presenting the given EIS as a sufficient document from a company claiming to operate as an ethical business—is quite pointedly ignoring, or providing inadequate attention to, issues which require attention.

- BHP Billiton cannot have it both ways. It is either an environmentally and socially responsible company with a commitment to sustainable development or it is a uranium miner and sales agent. As indicated above the two are mutually exclusive. This position will be exacerbated by any expansion of Olympic Dam.

As described above, to approach a position of an ecologically and socially responsible corporation BHP Billiton should:

- operate Olympic Dam as a copper, gold and silver mine. It is entirely possible to stockpile the uranium-containing materials, just as the EIS proposes to establish Rock and Tailings Storage Facilities.
- present scenarios for the operation of Olympic Dam as such a mine. This has not been considered in the existing EIS and represents a further level of incompleteness of the EIS.

**Recommendation 2.5.1:** To remedy the shortcomings identified above, BHP Billiton should be required to enter into contractual agreements which satisfactorily address all the problems identified above. The agreements, with appropriately heavy sanctions for non-compliance, should set out by what means and extent BHP Billiton will be bound to ensure that the assurances it provides are effectively enacted within specified time frames.

BHP Billiton's assurances about being able to deal effectively with the issues raised above are not enshrined in any legislation—although BHP Billiton's privilege to not need to comply with several SA Acts of Parliament is so protected. That hardly seems equitable.

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<sup>65</sup> EPR is discussed in terms of waste management strategies e.g. at:  
<http://www.environment.nsw.gov.au/warr/ProdStewardshipEPR.htm> - accessed 24/7/09

BHP Billiton's past record, for example in the case of its Ok Tedi operations<sup>66</sup>, is not one of which the company can be proud. Before any expansion of Olympic Dam is approved Australian citizens deserve legally binding assurances that BHP Billiton will be able to deal with, and will deal with, negative issues when they arise.

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<sup>66</sup> OK Tedi Mine: Unearthing controversy' - <http://archive.wri.org/page.cfm?id=1860&z=?> - accessed 2/8/09