COMMITMENTS 27

BHP Billiton is seeking government approval for an expansion to the existing Olympic Dam mining and processing operation. The activities proposed for the expansion are described in Chapter 5, Description of the Proposed Expansion, with the remaining chapters of the Draft EIS presenting the findings of environmental, social, cultural and economic assessments of these activities.

Each assessment concludes with a description of the predicted level of residual impact or benefit. That is, the level of impact or benefit remaining after commitments and management measures have been applied.

For the purpose of the Draft EIS, commitments are defined as those safeguards that BHP Billliton can commit to at this time. They include:

- project design decisions that avoid an impact (e.g. a road-over-rail overpass would be constructed about 15 km north of Woomera to avoid vehicle and train interaction)
- outcome based commitments (e.g. dust levels at Roxby Downs would not exceed applicable limits).

Table 27.1 provides a consolidated list of the commitments that BHP Billiton can make at this stage in the development of the Olympic Dam expansion. It is noted that the commitments provided in this chapter are consistent with, or in addition to, normal business practice by BHP Billiton. It is implicit that BHP Billiton will comply with all necessary legal obligations and internal health, safety, environment and community (HSEC) standards.

Where possible, the Draft EIS has also provided management measures that indicate how the outcome based commitments would be achieved. For example, real time monitors would be installed to detect dust levels from the operation and should these indicate rising levels near Roxby Downs, operational controls such as increased dust suppression watering or reducing or relocating dust generating activities would be applied. These measures however may be further refined or amended as a result of improved practices or technological advances, and as such have been linked to the ongoing management of the operation via the Environmental Management Programs (see Chapter 24, Environmental Management Framework for details).

There were approximately 200 management measures noted in the Draft EIS, and 30 commitments which are listed in Table 27.1.

The cost to implement the commitments and management measures is estimated at $1.2 billion capital cost and about $100 million annual operating costs. This does not represent the total cost to the project, but rather the additional costs to the project as a result of implementing the specified environmental commitments and management measures. This does not include the additional costs of the Olympic Dam Agreement. The more significant cost items include:

- the cogeneration plant at about $600 million capital cost
- the renewable energy sourced for the seawater desalination plant at about $15 million annual operating cost
- the encapsulation of potentially reactive mine rock in the RSF at about $5 million annual operating cost
- the seepage and bird management of tailings at about $110 million capital cost
- the dust and marine monitoring systems at $5 million capital cost
- the transport of concentrate from Olympic Dam to the ships hold at the Port of Darwin in a ‘closed system’ at about $50 million capital cost and about $2 million annual operating cost
- the rail line between Pimba and Olympic Dam, the road/rail intermodal facility at Pimba and the landing facility south of Port Augusta at about $375 million capital cost.

Table 27.1 Commitments

Issue	Commitment	Context
Project component	**General operation**	
Greenhouse gas emissions from the expanded project	Greenhouse gas emissions would be addressed by: • applying a goal of reducing greenhouse gas emissions (reportable under the National Greenhouse and Energy Reporting (Measurement) Determination 2008) to an amount equivalent to at least a 60% reduction (to an amount equal to or less than 40%) of 1990 emissions, by 2050 • constructing an on-site cogeneration power station (250 MW capacity) for recovering waste heat • sourcing renewable energy (35 MW capacity) via the national electricity market for the seawater desalination plant • producing an annual 'road map' that quantifies emission reduction opportunities and achievements.	Greenhouse gases are recognised as key contributors to climate change, evidenced through the findings of the International Panel on Climate Change. The current operation and the expansion would consume fossil fuels directly and indirectly, leading to greenhouse gas emissions. BHP Billiton has established its Climate Change Position and recognises that carbon trading schemes would play a significant role in achieving national and international goals. EIS Reference: 13.2.5
Water supply for the proposed expansion	No additional water for the proposed expansion would be obtained from the Great Artesian Basin beyond sustainable yields and that which is available under approvals from the South Australian Government.	The primary water supply for the proposed expansion is a desalination plant located at Point Lowly, not groundwater from the Great Artesian Basin. Water extracted from the Great Artesian Basin would be within South Australian Government approvals. EIS Reference: 2.10.3; 12.7
Vegetation clearance offsets	A Significant Environmental Benefits (SEB) offset strategy would be implemented. This could be achieved by setting aside 126,650 ha of land in the South Australian Arid Lands NRM region or alternative arrangements as agreed with the South Australian Government.	Disturbance to approximately 17,000 ha of native vegetation is required for the expansion. The *Native Vegetation Act 1991* regulates the clearance of native vegetation in South Australia and clearance is to be minimised within the area approved for disturbance and be off-set by an SEB (or set-aside area). There would be no clearance of native vegetation in the Northern Territory. EIS Reference: 15.5.1
Workforce exposure to radiation	BHP Billiton would comply with internationally accepted radiation limits for workers and the public and would set a goal of maintaining doses at less than 50% of the internationally acceptable limits for workers.	The internationally accepted approach to radiation safety, involving a system of dose minimisation and dose limitation, has been adopted in Australia and is a legislative requirement in South Australia and the Northern Territory. The approach is designed to protect the health of employees and the public. EIS Reference: 22.6.5
Occupational health and safety	A 'safety case' for the current operation is being conducted and would incorporate all components of the proposed expansion. This includes: • identifying the hazards and risks of the proposed expansion • describing how the risks are controlled • outlining the safety management system and its implementation • monitoring and review of effectiveness.	A 'safety case' is a rigorous assessment of the safety of complex or large industrial facilities and provides a comprehensive understanding of safety related issues. The health and safety of employees and contractors is a primary goal of BHP Billiton and a 'safety case' provides a sound basis for ensuring that strategies are implemented to maintain safety at all times. EIS Reference: 22.5.2

Table 27.1 Commitments (cont'd)

Issue	Commitment	Context
Project component	**Mining**	
Dust from mining operations	The National Environment Protection (Ambient Air Quality) Measure (NEPM) ground level dust concentration and SA EPA air quality guidelines for airborne particulates would be met through design and operational management controls of mining operations at Olympic Dam.	The Olympic Dam expansion project is expected to move more than 400 Mtpa of mine rock and ore as part of the new open pit mining operation. Loading, transport and unloading of this material would generate fugitive particulate emissions. Sensitive dust receptors include residents in Roxby Downs, Hiltaba Village and to a lesser extent communities living near service infrastructure and associated corridors during the construction period. Dust modelling assessment suggests that dust criteria would be met under most circumstances at key receptors. Two possible exceptions include Roxby Downs and Hiltaba Village during adverse wind and temperature inversion conditions. The modelling also suggests that modifying operational activities during these periods enables the dust criteria at sensitive receptors to be met. EIS Reference: 13.3.4
	Good quality haul roads would be installed and maintained with regular application of saline water and/or the application of suitable dust suppressants.	Experience in other open pit mines and the EIS modelling has shown that haul roads can be significant sources of fugitive dust. Designing, constructing and maintaining good quality haul roads by measures such as compacting surfaces where necessary, regular grading and clearing, repairing pot holes as soon as possible, and using appropriate dust suppressants combined with operator training can be effective in controlling fugitive dust. EIS Reference: 13.3.4
	A real time dust and meteorological monitoring system would be installed at Olympic Dam to predict dust concentrations which would provide information for operational control of dust.	The ability to predict the conditions that may cause dust concentrations to exceed limits is essential in managing the open pit operation. Installation of the monitoring system would provide information that assists mine management in controlling emissions. EIS Reference: 13.3.5
Impacts of seepage from the RSF	Potentially reactive mine rock would be enclosed within the RSF.	A proportion of the mined rock contains low-grade, non-economic levels of uranium and copper, or is potentially acid generating, and this is known as 'reactive rock'. The volume of potentially reactive mine rock is proportionally small when compared to the total volumes of mine rock in the RSF. An effective method of controlling this material is by enclosing it within the non-reactive or neutralising rock structure. Appropriate planning and operations make this selective placement of reactive rock a straight-forward process. EIS Reference: 12.5.2
Impacts of the expanded operation on Arid Recovery	Arid Recovery would continue to be supported through: • maintaining a distance of 500 m between the RSF and Arid Recovery • ongoing financial support • scientific, managerial and professional support by BHP Billiton.	As a founding member and primary financial supporter of Arid Recovery, Olympic Dam and BHP Billiton recognises the importance of this iconic research and conservation initiative. These commitments ensure BHP Billiton's continued support of Arid Recovery. EIS Reference: 15.3.10

Table 27.1 Commitments (cont'd)

Issue	Commitment	Context
Project component	**Processing plant**	
Sulphur dioxide (SO_2) emissions	Real-time monitoring of sulphur dioxide in the smelter would be used to assess the continuing adequacy and effectiveness of the ventilation system.	Sulphur dioxide is generated during the smelting process and can be harmful to personal health. The smelter has been designed to minimise emissions into the workplace and to assess the effectiveness of this design, real-time monitoring of sulphur dioxide provides the best indicator of performance. EIS Reference: 22.6.3
Project component	**Tailings Storage Facility (TSF)**	
Impacts of seepage from existing and future TSF	The design of the TSF incorporates controls to minimise seepage including: • increasing the volume of liquor recycled from the TSF • constructing larger cells with greater evaporation capacity • collecting liquor through a central decant arrangement • installing a liner beneath the central decant systems • recycling water from the mound beneath the TSF.	Tailings liquor is acidic, slightly radioactive and contains heavy metals. The most effective method of managing tailings liquor is through evaporation and the TSF is designed to contain the solids, maximise evaporation and minimise seepage. The physical process of seepage through the underlying substrate significantly reduces acidity, radioactivity and metal concentrations through neutralisation of the liquor. EIS Reference: 5.5.6
Closure plan for the tailings storage facility	Tailings cells would be capped when they reach their target design height, and when it is safe for vehicles to access the TSF surface.	The TSF would be capped with appropriate material at the end of its operating life to reduce the long-term release of radon and dust. EIS Reference: 23.8.4
TSF and wildlife access	The proposed expansion of the TSF would minimise impacts on birds, by: • not building additional evaporation ponds • netting (or similar) the central decant pond of each expansion TSF cell • covering the balancing ponds with netting or similar.	Open water bodies, including sewage ponds, process water storage, acidic liquor ponds and wet tailings beach environments at the existing operation attract fauna, particularly water birds. Large numbers of these species are regularly recorded utilising good quality water storages, such as process water and sewage ponds in the vicinity of the operation. Acidic liquor ponds and wet tailings beach environments within the TSF offers poor quality habitat for fauna, but a number of animals still attempt to utilise the facilities as they are attracted to the prospect of suitable habitat. Numerous mitigation measures and deterrent devices have been trialled and implemented at the existing Olympic Dam operations to reduce its attractiveness to birds. These measures have met with varying success, and the proposed expansion offers an opportunity to reduce the area of free liquor by improved design. Ongoing research and development in this area will continue. EIS Reference: 15.4.2
Project component	**Desalination plant**	
Impacts of desalination plant construction in the marine environment	To mitigate potential impacts during the breeding period of the Australian Giant Cuttlefish, the installation of the intake and outfall pipes would only occur between 1 November and 1 May.	Australian Giant Cuttlefish congregate and breed on the rocky reef areas off Point Lowly during winter months. Installing intake and outfall pipes for the desalination plant outside of this period would reduce the potential for impact on the cuttlefish. EIS Reference: 16.5.2
	Areas of disturbed Australian Giant Cuttlefish breeding habitat would be reinstated once the intake and outfall pipes have been installed.	Installation of the intake and outfall pipes requires direct disturbance to 0.06% of Australian Giant Cuttlefish habitat. Once pipes are installed, the displaced rock would be reinstated over the pipes to maintain the habitat value of the area. It is likely that the reinstated rock would be used as breeding habitat, as happens on the artificial rock breakwaters around Whyalla. EIS Reference: 16.6.11

Table 27.1 Commitments (cont'd)

Issue	Commitment	Context
Project component	**Desalination plant (cont'd)**	
Impacts of desalination plant design and operation on the marine environment	The return water diffuser would be designed and operated to deliver, as a minimum, the dilution predicted at 100 m from the diffuser and the dilution required to mitigate significant impacts at the nearest cuttlefish breeding habitat.	Modelling of the dispersion from the return water diffuser has been based on a set of design parameters aimed to provide a dilution that would protect the marine environment. The final design may be different to the modelled design, however, the predicted dispersion would be met by the final design. EIS Reference: 16.5.2
Impacts of desalination plant operation on the marine environment	BHP Billiton would undertake appropriate monitoring to identify significant changes to marine flora and fauna communities and water quality.	The modelling has provided estimates of the characteristics and impacts of the discharge water on the marine flora and fauna and water quality. Ongoing monitoring would occur to ensure that actual outcomes align with predicted outcomes. Methods of monitoring would be revised from time to time. EIS Reference: 16.6.5
Project component	**Transport and logistics**	
Transport and handling of concentrate	A 'closed system' would be used to transport, store and convey concentrate from Olympic Dam to the ship's hold at the Port of Darwin. Specifically: • appropriate dedicated equipment would be constructed and used • rail wagons would be effectively sealed with suitable covers and fitted in such a manner that concentrate would not escape during transport • the water used to wash the outside of the rail wagons would be collected and reused. Solids that settle from this water would be placed on the concentrate stockpile and when required, water would be returned to Olympic Dam for disposal • the concentrate storage system and conveying system would have a negatively pressured extraction ventilation system with automatic unloading and rail wagon wash systems.	Bulk quantities of concentrate would be transported to international customers via rail, road and ships. The levels of radioactivity are low (material contains up to 2,000 ppm uranium), but are sufficient for the material to be defined as 'radioactive', requiring special precautions to be undertaken. In addition, measures such as emergency response and cleanup procedures would be implemented in conjunction with appropriate authorities. Olympic Dam has been producing and exporting uranium oxide since 1988 under strictly controlled conditions without incident. A large amount of expertise has been accumulated resulting in an ongoing, safe and environmentally competent operation. EIS Reference: 5.9.5
Impacts on safety from increased transport and road use	BHP Billiton would provide for the safe and efficient movement of materials and goods in and out of Olympic Dam through: • the installation of a rail/road intermodal facility at Pimba and the construction of a rail line between Pimba and Olympic Dam • the installation of a landing facility south of Port Augusta to handle pre-assemblies • the construction of a road-over-rail overpass on Olympic Way • the installation of up to 15 passing bays along the Stuart Highway and Olympic Way that would enable traffic to pass safely.	The installation of the Pimba intermodal facility and the rail spur would act to reduce the amount of freight from operations and construction on the road between Port Augusta and Olympic Dam. Larger loads would continue to travel by road for the period of construction, requiring specific additional safety precautions. BHP Billiton recognises the potential inconvenience and safety implications and would continue to work with the South Australian Government to refine a traffic management plan. EIS Reference: 5.9.2, 22.6.9
	To provide for the safe movement of traffic between, and within, Roxby Downs, Hiltaba Village and Olympic Dam, BHP Billiton would: • install a new four lane, median separated carriageway from the northern intersection of the heavy vehicle bypass and Olympic Way to a new main gate at Olympic Dam • install new roads, intersections and engineered traffic controls such as roundabouts in Roxby Downs • provide a fleet of buses for travel between the construction site and accommodation areas.	The expansion project would result in an increase in the short, medium and long term population of Roxby Downs, Olympic Village and Hiltaba Village with a corresponding increase in traffic. BHP Billiton would work with local government and state government to develop measures to manage impacts. The provision of a fleet of buses to transport the construction workforce would reduce the need for construction workers to have personal vehicles. EIS Reference: 19.5.6, 22.6.9

Table 27.1 Commitments (cont'd)

Issue	Commitment	Context
Project component	**Transport and logistics (cont'd)**	
Impacts on safety from increased transport and road use	Inconvenience to the general public and the safe and efficient transport of large loads and pre-assemblies between Port Augusta and Olympic Dam would be managed by: • notification of road usage and interruptions through regular community announcements • aiming to transport loads at times that are out of peak periods • applying a goal of ensuring that the maximum time that the general public may be disrupted by individual road closure events is 45 minutes.	Large over-dimensional loads would be transported to the operation over the entire construction period and there would be delays for road users on occasions. BHP Billiton would aim to keep these impacts to a minimum and would implement a range of measures in conjunction with the state authorities. During previous expansions at Olympic Dam, similar measures were successfully implemented. EIS Reference: 19.5.6
Project Component	**Community and workforce**	
Crime and anti-social behaviour	To reduce the likelihood of adverse impacts associated with the construction workforce, BHP Billiton plans to construct separate, high-quality accommodation (i.e. Hiltaba Village) with on-site entertainment, recreation and sports facilities.	An appropriately designed modern construction village would accommodate construction workers. There would be on-site entertainment and recreation facilities to encourage on-site use and minimise the use of existing services in Roxby Downs. In addition, the majority of construction workers would be on a fly-in fly-out arrangement and since the village is constructed away from Roxby Downs and Andamooka, travel to these locations would be inconvenient. EIS Reference: 19.5.2
	BHP Billiton would implement a range of measures, in conjunction with local service providers, to address concerns relating to crime and anti-social behaviour resulting from the expansion.	Crime and anti-social behaviour has been identified by the residents of Roxby Downs and service providers as an issue of concern, requiring proactive community-wide measures to manage. Examples of initiatives that BHP Billiton would implement include: • developing a code of behaviour for Hiltaba Village residents • developing, in collaboration with police, a proactive community policing-style security and surveillance presence in Hiltaba Village to prevent and respond to incidents • continuing to implement the fitness-for-work program, including routine drug and alcohol monitoring of workers • establishing complaints procedures whereby reported incidents of unacceptable behaviour would be investigated. EIS Reference: 19.5.2
Housing affordability in Roxby Downs	BHP Billiton would work collaboratively with the South Australian Government to develop and implement a strategy to provide an appropriate diversity of accommodation to meet the socio-economic requirements of the demographic mix of the Roxby Downs community as it expands.	Roxby Downs is an open community, with its own unique housing supply and demand profile. When considering state-wide or national goals in housing affordability, it is important that the local conditions are considered, as those goals may not be directly applicable. The housing profile of Roxby Downs includes the housing needs of the services and non-mining sector as well as BHP Billiton residential workers and families, and this would be regularly reviewed and addressed as required. EIS Reference: 19.5.3
Impacts of the expanded operation on Olympic Village	The existing accommodation area of Olympic Village would be relocated as part of the proposed expansion.	Olympic Village is located adjacent to the proposed footprint of the open pit mine and the RSF. As the operation expands, there would be a need to relocate the village, although the exact timing on this move is yet to be finalised. EIS Reference: 5.10.2

Table 27.1 Commitments (cont'd)

Issue	Commitment	Context
Project Component	**Community and workforce (cont'd)**	
Roxby Downs Draft Master Plan	Once finalised, BHP Billiton would facilitate the implementation of the Roxby Downs Master Plan, in collaboration with council, state government, developers and community organisations.	BHP Billiton is a stakeholder in the development and implementation of the Roxby Downs Master Plan. Recognising that the workforce and the community are an important part of the operation, consideration and management of social interactions are necessary for a safe community and workforce. The scale of the expansion is likely to increase pressure on workforce resources, labour supply and demand, availability of skilled personnel, along with ensuring there are adequate services, housing, recreational opportunities, further education and training opportunities, cultural needs and support for an increased population (and potentially an increase diversity in cultural background) during construction and operation. It is important that issues are understood and appropriate strategies are implemented to assist in meeting the needs of the community and workforce, where BHP Billiton has the authority and capacity to do so. EIS Reference: 19.5.3
Ongoing involvement of Aboriginal communities	BHP Billiton commits to its obligations under the Olympic Dam Agreement, which includes: • establishing a trust to manage payments by BHP Billiton and to support community and business development initiatives for Aboriginal communities in northern South Australia (as defined in the Agreement) • implementing the Heritage Management Protocol to manage the Aboriginal ethnographic and archaeological values of the region.	BHP Billiton has negotiated an agreement with the Kokatha, Barngarla and Kuyani Aboriginal groups, known as the Olympic Dam Agreement. The Agreement is a broad package of benefits, including: • processes for managing the impacts of the expanded project on Aboriginal cultural heritage sites • ongoing Aboriginal cultural heritage protection and management • payments by BHP Billiton arising from the expanded project over the remaining life of the Olympic Dam for the benefit of, and for Aboriginal people living in, the relevant region • a trust for administering those benefits • Aboriginal employment and training initiatives • cross-cultural awareness training for BHP Billiton employees and contractors. EIS Reference: 17.5.2
Ongoing monitoring of social impacts	BHP Billiton would develop and implement, in collaboration with government and other stakeholders, a Social Management Plan. This plan would aim to monitor the impacts of the proposed expansion on Roxby Downs and relevant communities in the northern region and identify areas for action.	BHP Billiton recognises the potential impacts that the size and extent of the expansion proposal may have on the community of Roxby Downs and other nearby communities. A multi-stakeholder social management plan would be implemented to monitor and respond to social issues as they arise. EIS Reference: 19.5.7
Impacts of the expanded operation on Olympic Dam Village	The existing heavy industrial area at Olympic Dam Village would be relocated as part of the proposed expansion.	Noise, dust and radiation exposure levels at the existing heavy industrial area at Olympic Dam Village would comply with industrial requirements. The facilities would be relocated when levels become unacceptable or when the area is needed for the RSF. EIS Reference: 5.10.2