

SECTION 7

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7 PROJECT JUSTIFICATION AND CONCLUSIONS

7.1 Introduction

This section provides an overview of the project in respect to the principles of ecologically sustainable development (ESD), the findings of a risk analysis and justification for the project.

Given the significant positive benefits of this project the use of ESD principles on the justification of the project provides an effective balanced framework to assess the overall impact of the project.

7.2 Ecologically Sustainable Development

ESD is the exploitation of plants, animals and other resources at a level which allows the number and variety of species to remain much the same from generation to generation.

ESD requires the effective integration of economic and environmental considerations in decision-making processes. ESD can be achieved through the implementation of the following principles and programs:

- The precautionary principle;
- Inter-generational equity;
- Conservation of biological diversity and ecological integrity; and
- Improved valuation, pricing and incentive mechanisms.

ESD is founded on the basis that current and future generations should leave a natural environment that functions equally as well or better than the one inherited.

The following section describes the consideration and application of ESD principles in relation to the project.

7.2.1 Precautionary Principle

The precautionary principle means that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (Protection of the Environment Administration Act 1991).

Application of the precautionary principle to this Chitter and Tailings Reclamation Project needs to ensure that there has been:

- Careful evaluation of the proposal to avoid serious or irreversible damage;
- Predictable and transparent decision making for the proposal; and
- An assessment of consequences of various options undertaken.

The environmental consequences of the proposal have been documented in *Section 5 – Existing Environment and Interactions* and associated appendices. Scientific and engineering analysis of the environment and likely impacts of the project has been thorough, and has involved field surveys, computer modelling, impact identification and measures to ameliorate impacts.

At all stages of project development there has been an open and transparent decision making process. Consultation has occurred with the various stakeholders and resulted in the project being modified to minimise the potential for serious and/or irreversible damage to the environment. These modifications include:

- The extraction sequence of the resource being designed to incorporate an environmental bund (in the form of a resource bench) to minimise impacts to adjoining residences;
- Haulage routes have been designed to minimise impacts to flora and fauna through the selection of existing fire trails that minimise impacts on the local community and road users;
- Drainage of excess dirty waters and acidic seepages to the underground workings results in a significant environmental improvement; and
- The removal of the resources, results in the removal of significant environmental problems (acid and salt leachate, spontaneous combustion) that will enhance the local environment.

The project will effectively reverse past practices that contributed to a serious degradation of the environment, resulting in an improved landscape.

7.2.2 Social Equity including Intergenerational Equity

Social equity involves value concepts of justice and fairness so that basic needs of all sectors of society are met and there is a fairer distribution of costs and benefits to improve the well-being and welfare of the community, population or society (DUAP, 1995). Social equity also includes concerns for intergenerational equity which requires that the present generation should ensure the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

The mitigation and rehabilitation measures described in Section 5 – Existing Environment and Interactions will minimise the impact upon not only the current generation, but also upon future generations.

The reclamation of chitter and tailings results in a significant value adding to a previously abandoned waste. This value adding is through the reduction in expended energy to obtain the same calorific value that would otherwise need to be extracted from underground or open cut coal mines. It also results in greater natural resources for use by future generations.

Coal is an essential component of life in Australia, and provides approximately \$8 billion in export income. It is the energy source for over 90% of the State's electricity, and energy is fundamental to sustaining and improving living standards. Coal provides a safe, secure, relatively inexpensive source of energy nationally and internationally, and will continue to do so until alternate renewable energy sources are developed to a commercially viable level. Coal allows us to maintain our current way of life while we tackle the difficult and long term task of developing economically viable renewable sources of energy. The wise use of our non-renewable resources such as coal will ensure Australia's economic future through export income and access to competitively priced energy. It will also help ensure that the legacy we hand to the next generation will be as valuable as the one we have inherited. Coal has a key role to play in ensuring a sustainable future for Australia.

While coal has been linked to global warming through the production of carbon dioxide during power generation, an assessment of the global warming impacts associated with this development was undertaken and found to be negligible. Further given this coal is sourced from a previously abandoned waste, it is likely to have less impacts than assessed given the shallow oxidisable nature of the resource and its propensity to self combust. This project value adds to this abandoned resource.

The continued operation of the processing of chitter and tailings at the Hebburn No.3 site will deliver significant economic benefits to the local community, the region and both state and federal governments during the life of the project.

7.2.3 Conservation of biological diversity and ecological integrity

Biological diversity refers to the variety of life forms on earth and is reflected at three levels by genetic diversity, species diversity and ecosystem diversity.

The Project is designed to be consistent with the conservation of biological diversity and ecological integrity. The project is founded on the reclamation of abandoned chitter and tailings emplacements in an area which has previously been disturbed by coal mining activities, and the rehabilitation of sites that are significant environmental problems, using existing fire trails and roads that minimise impacts to the community and environment.

The project has received a thorough examination consistent with statutory authority guidelines, with special attention on threatened and endangered species that may potentially be impacted. Significance assessments have determined that the project will not have a significant adverse impact on any species.

Environmental and rehabilitation procedures will ensure the project does not adversely impact the local environment, and will result in the significant improvement of the local environment.

While the project will have a short term impact on some threatened biodiversity the rehabilitation of these sites should result in an improvement of threatened biodiversity in the area.

7.2.4 Improved valuation, pricing and incentive mechanism

This principle requires that environmental factors should be included in the valuation of assets and services, such as:

- Polluter pays – those who generate pollution and waste should bear the cost of containment, avoidance or abatement;
- The users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes;
- Environmental goals having been established, they should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

The process of identifying project impacts (positive and negative) on the environment and formulating actions or works to mitigate negative impacts recognises the value of both the resource and environment. The Environmental Assessment has examined the environmental consequences of the project and recommended mitigation measures and safeguards be implemented if the project proceeds. The costs of mitigation and associated management measures proposed for the project have, therefore, been included in the costs of the proposal to ensure that the local environment is protected from pollution. The proponent considers and acknowledges that the environment is a valuable resource for the local and broader communities but also for future generations.

Further this project provides, employment, revenues to the State Government and will reduce the environmental and financial burden associated with the management and maintenance of these sites.

7.3 Risk Analysis

Risk analysis is undertaken by assessing the consequence severity level (C) of an impact against the predicted frequency or probability (P) of the event occurring. For example, an issue with a high probability and high consequence severity has a High Risk while a low probability and low consequence severity has Negligible Risk.

Table 7.1 details the risk assessment of key issues and proposed controls identified during the environmental assessment process. The risk assessment has been undertaken generally in accordance with Risk Management Guidelines Companion to AS/NZS 4360:2004. **Table 7.2** and **Table 7.3** define the Probability and Consequence rankings respectively whilst **Table 7.4** defines the Risk Assessment Matrix.

Table 7.1: Risk analysis for the Project.

No	Aspect	Issue (Details of issues are located with the relevant discipline section in <i>Section 5</i>)	Proposed Control as a result of Environmental Assessment	Risk			Further Actions to be Adopted as part of Statement of Commitments and MOP.	Residual Risk		
				P ¹	C ²	R ³		P	C	R
1.	Air Quality.	Potential exceedences of adopted air quality criteria for sensitive receptors include: - No Exceedences of PM10 24hr and dust deposition goals at Aberdare East for Haulage Route A2; - Exceedences of PM10 24hr and dust deposition goals at some residences	- Review of meteorological conditions for each day to minimise the short-term impact on the residences at each site; - Schedule material extraction at the three sites to utilise the best climatic conditions to minimise impacts to adjoining residences (i.e. minimise works at Aberdare East during south east winds, similarly minimise works at	B	4	M	- Prepare Air Quality Management Plan; - Install appropriate meteorological equipment to monitor site conditions; - Apply for Environmental Protection Licence (EPL); - Employment of suitably site manager to ensure	B	4	M

¹ P = Probability of Issue occurring – See Table 7.2 (A – Almost Certain to E – Rare).

² C = Consequence Severity Level – See Table 7.3 (1 – Most severe to 5 – least severe).

³ R = Assigned Risk Level – See Table 7.4 (H = High, M =Medium, L = Low, N = Negligible).

No	Aspect	Issue (Details of issues are located with the relevant discipline section in <i>Section 5</i>)	Proposed Control as a result of Environmental Assessment	Risk			Further Actions to be Adopted as part of Statement of Commitments and MOP.	Residual Risk		
				P ¹	C ²	R ³		P	C	R
		at Neath predominantly associated with haulage; - No impacts to residences adjoining Richmond Main East; and - Generation of dust along unsealed haulage roads.	Neath during north west winds); - Vegetation stripping should be undertaken during damp conditions or when prevailing winds are not in the direction of the residences; - Maintain stockpiles in a moist condition to minimise wind blown and traffic generated dust; - Water all roads and trafficked areas in sensitive areas to minimise the generation of dust; - Where excessive dust is generated investigate alternative dust suppression methods such as road improvements; and - Commit to progressive extraction and rehabilitation to minimise the total area of exposure.				implementation of controls and management plan; - Liaison with potentially impacted receptors to determine most appropriate management action; and - Implement environmental monitoring program to ensure the air quality impacts are monitored and reduced as possible.			
		- Greenhouse gas emissions (including Scope 1, 2 and 3) from the consumption of energy for rehabilitation will be 2,037,267t of CO₂-equivalent per year. - Potential increase to global temperature of 0.0000019°C as a consequence of CO₂ emissions generated from the project.	- Selection and maintenance of machinery to minimise fuel usage and subsequent emissions; and - Selection of the shortest haulage route available to minimise greenhouse associated with increased haulage. - The use of the preferred haulage routes utilising the Werakata National Park amounts to a significant reduction (more than 400%) in greenhouse gas emissions due to the increased haulage distance required;	A	4	M	- The regular maintenance of plant and equipment; - Responsible use of energy; and - Consideration of energy efficiency in the purchase of plant and equipment.	A	4	M

No	Aspect	Issue (Details of issues are located with the relevant discipline section in <i>Section 5</i>)	Proposed Control as a result of Environmental Assessment	Risk			Further Actions to be Adopted as part of Statement of Commitments and MOP.	Residual Risk		
				P ¹	C ²	R ³		P	C	R
2.	Acoustics.	Exceedences of noise criteria at sensitive receptors surrounding the project during preferred meteorological and operational conditions include : 3 residences at Aberdare East that may be impacted by less than 2dBA and 1 less than 7dBA; 7 residences at Neath that may be impacted by less than 7dBA; and 1 residence at Richmond Main East may be impacted by less than 5dBA.	- Schedule material extraction at the three sites to utilise the best climatic conditions to minimise impacts to adjoining residences (i.e. minimise works at Aberdare East during south east winds, similarly minimise works at Neath during north west winds); - Work resource with a working face between extraction and majority of receptors; and - Liaison with potentially impacted receptors to determine most appropriate management action.	B	4	M	- Prepare Noise Management Plan; - Apply for Environmental Protection Licence (EPL); and - Employment of suitably site manager to ensure implementation of controls and management plan.	B	4	M
3.	Ecology	The significant ecological values likely/potentially affected as a result of the project include: - Forty-nine <i>Grevillea parviflora</i> ssp. <i>parviflora</i> from roadside environments; - Ten <i>Parramatta Redgum</i> (<i>Eucalyptus parramattensis</i> ssp. <i>decadens</i>) at Aberdare East; - Thirteen <i>Parramatta Redgum</i> (<i>Eucalyptus parramattensis</i> ssp. <i>decadens</i>) at Richmond Main East; 1.9 ha of Lower Hunter Spotted Gum Ironbark Forest EEC along the bushland tracks; and 1.0 ha of Kurri Sand Swamp	Development of mitigation strategy that incorporates: - Rehabilitation of sites in accordance with methodology proposed in <i>Section 5</i>; - Collection and use of provenance seed in the rehabilitation; and - Use of ameliorative works to reduce the extent of direct impacts during preparatory land clearing events.	A	4	M	- Prepare Land Rehabilitation Management Plan; and - Prepare Flora and Fauna Management Plan; and - The protection of established rehabilitation under the Native Vegetation Act.	B	4	M

No	Aspect	Issue (Details of issues are located with the relevant discipline section in <i>Section 5</i>)	Proposed Control as a result of Environmental Assessment	Risk			Further Actions to be Adopted as part of Statement of Commitments and MOP.	Residual Risk		
				P ¹	C ²	R ³		P	C	R
		Woodland EEC along the bushland tracks.								
4.	Groundwater.	- Removal of the “artificial” groundwater table within the tailings dams and consequential improvement in surface water qualities within the Black Creek catchment through the removal of the acid source and establishment of original creek line and drainage; and - Discharge of acidic seepages and excess surface waters from disturbed areas onsite to a drilled bore hole into the underground workings at Aberdare East and Neath, impacts associated with this practice are thought to be minimal given the highly reducing environment and existing poor water quality within the underground workings.	Regular monitoring of water draining to the underground workings.	B	5	L	Develop a groundwater management plan.	B	5	L
5.	Surface Water.	Potential water quality impacts including the mobilisation and release of sediments, salts, acid, and hydrocarbons (oils, fuels and grease) from infrastructure and extraction areas;	- Minimise the area of disturbance; - Undertake extraction activities using best practice techniques in water diversion, containment and treatment; - Install and maintain erosion and sedimentation control; - Minimise the contamination and	B	4	M	- Prepare Site Water Management Plan. - Apply for Environmental Protection Licence (EPL); and - Continue to implement monitoring program.	C	4	L

No	Aspect	Issue (Details of issues are located with the relevant discipline section in <i>Section 5</i>)	Proposed Control as a result of Environmental Assessment	Risk			Further Actions to be Adopted as part of Statement of Commitments and MOP.	Residual Risk		
				P ¹	C ²	R ³		P	C	R
			maximise the reuse of water; - Spill containment kits carried in all machines onsite; and - Progressive stabilisation and revegetation of disturbed areas.							
6.	Aboriginal Heritage.	Potential disturbance of archaeological sites on sides of existing access roads as a result of road maintenance and improvement	Members of the local aboriginal groups will be employed to monitor activities involved with the maintenance and improvement of access roads	C	4	L	Record and conserve / collect items if identified.	C	4	L
7.	European Heritage.	Potential disturbance of items of european heritage that have been buried by past rehabilitation activities		C	4	L	Record and conserve items if identified.	C	4	L
8.	Visuals.	Moderate to high daytime visual disturbance for adjoining residential and rural properties.		A	4	M	- Prepare Land Rehabilitation Management Plan; - Prepare a traffic management plan; and - Undertake regular consultation with potentially impacted residences.	A	4	M

No	Aspect	Issue (Details of issues are located with the relevant discipline section in <i>Section 5</i>)	Proposed Control as a result of Environmental Assessment	Risk			Further Actions to be Adopted as part of Statement of Commitments and MOP.	Residual Risk		
				P ¹	C ²	R ³		P	C	R
9.	Traffic and road infrastructure	- Minor increase to existing traffic levels; and - Potential damage sections of the local road network.	The use of fire trails in National Parks will substantially reduce public road impacts.	A	3	H	- Prepare Traffic Management Plan; and - Enter into a Voluntary Planning Agreement (VPA) with Cessnock City Council as detailed in the Statement of Commitments for the repair or reinstatement of roads as a result of the project.	A	4	M
10.	Geochemistry	- Erosion of sodic and dispersive soils; - Increased rates of saline and acid water generation from Increased oxidation and exposure of chitter and tailings, in initial stages of project; and - Potential acid generation from reject at Hebburn No.3.	- Application of ameliorant (gypsum or lime) to sodic and dispersive soils; - Implement water management strategy that retains dirty or contaminated water for onsite treatment and reuse; and - Discharge of poor quality waters to the underground workings at Aberdare East and Neath.	B	3	M	- Routine system of testing to be established to monitor characteristics of coal reject at Hebburn No.3 - Prepare Site Water Management Plan;	C	3	M
11.	Rehabilitation, and Final Landform	- Incompatible rehabilitation; and - Incompatible landforms.	- Commitment to progressive rehabilitation; - Shaping of landforms to seek compatibility with existing topography; - Rehabilitation as detailed in Sections 4 and 5; and - Undertake soil management practices in accordance with the soil recommendations.	C	3	M	- Prepare Erosion and Sediment Control Plan; - Negotiations with landholders and key agencies for suitable outcomes on final landform and landuse - Prepare Land Rehabilitation Management Plan; and - Prepare Flora and Fauna Management Plan	D	3	L

No	Aspect	Issue (Details of issues are located with the relevant discipline section in <i>Section 5</i>)	Proposed Control as a result of Environmental Assessment	Risk			Further Actions to be Adopted as part of Statement of Commitments and MOP.	Residual Risk		
				P ¹	C ²	R ³		P	C	R
12.	Social and Economics.	The social and economic impacts associated with this project not being approved include: • The loss of over 50 jobs; • The loss of revenues associated with product coal generated at the Hebburn No.3 processing plant; and • The loss of an economically sustainable project that results in the environmental clean up of degraded sites. • The loss of private funding for the rehabilitation of sites that were otherwise a Local and State government financial burden.	• Preparation of adequate Environmental Assessment report under Part 3A of the EP&A Act, 1979.	C	3	M	• Continue consultation with key stakeholders	C	3	M
13.	Bushfire	• The safety of personnel and residents of the area (i.e. contact with smoke and flame); • Damage to plant and buildings (i.e. vehicles, machinery, administration centre); • Ignition of reject stockpiles and insitu resource • Interruption of extraction operations; • Loss of rehabilitation/ revegetation works; and • Increased bushfire ignition risks.	• All vehicles to carry fire extinguishes; • Water trucks available on demand to aid in suppressing fires; and • Site personnel induction to include relevant emergency contacts in the event of a fire.	C	3	M	• Preparation of Bushfire Management Plan; and • Preparation of Spontaneous Combustion Management Plan.	D	3	L

No	Aspect	Issue (Details of issues are located with the relevant discipline section in <i>Section 5</i>)	Proposed Control as a result of Environmental Assessment	Risk			Further Actions to be Adopted as part of Statement of Commitments and MOP.	Residual Risk		
				P ¹	C ²	R ³		P	C	R
14.	Soils.	- Erosion of existing soils; and - Erosion of proposed landforms.	- Keep vehicular traffic to a minimum on the soils to be stripped. Exclude all traffic from soils that are sensitive to structural degradation; and - Construction of stockpiles with a "rough" surface condition to reduce erosion hazard, improve drainage and promote revegetation; - Soil stockpiles will be no more than 60 cm high to maintain the soil microflora and macroflora biology. Where site constraints do not allow this, stockpiles will be no deeper than 3 meters in order to minimise problems with anaerobic conditions; - Fertilise and seed stockpiles which are to be inactive for extended periods to maintain soil structure, organic matter and microbial activity; - Installation of silt fences around stockpiles to control potential loss of stockpiled soil through erosion prior to vegetative stabilisation; - Stockpiles to be deep-ripped to establish aerobic conditions, prior to reapplication of stockpiled soil for rehabilitation; - The appropriate soil ameliorant be applied at an appropriate rate to dispersive soil stockpiles where necessary; - Implement appropriate weed control strategies particularly for any noxious weeds; and	C	3	M	- Prepare Land Rehabilitation Plan; and - Prepare Operational Erosion and Sediment Control Plan.	D	3	L

No	Aspect	Issue (Details of issues are located with the relevant discipline section in <i>Section 5</i>)	Proposed Control as a result of Environmental Assessment	Risk			Further Actions to be Adopted as part of Statement of Commitments and MOP.	Residual Risk		
				P ¹	C ²	R ³		P	C	R
			Immediate revegetation will provide vegetative competition to assist with control of undesirable plant species.							
15.	Hazard and Risk	The identified hazards include: - Site security and public access - Onsite personnel safety; - Safety of other road and or fire trail users; - Increased public access to bushland areas through improvement of fire trails resulting in illegal rubbish dumping and potentially arson; - Soft ground within open tailings cells; - Unshaped steep excavation faces; - Spontaneous combustion; and - Hydrocarbon spills from machinery (fuel refilling or hydraulic leakages, oil spills).	- Installation of gates across fire trails to limit access outside of operational hours, keys will be issued to Rural Fire Services (RFS), the land owner and DEC where relevant; - Application of a reporting system for truck drivers and site personnel that identifies a site officer of unknown vehicles or unauthorised persons onsite or using roads in the area; - Installation of signage along haulage routes at key intersections to highlight the usage of the road by heavy vehicles; - Appropriate induction for all drivers that highlights areas of sensitivity, such as School zones and the Werakata National Park; - Restriction of speeds to 40km/hr on National Park fire trails and local roads (such as Government Road, David Street or the eastern end of Caledonia Street) used for haulage; - Special induction of operations staff that work in or adjacent to the tailings emplacements; - Maintenance of external fences within Aberdare East and erection of signage that reinforces the dangers associated	C	2	H	- Develop a Health and Safety Management System for each site; and - Adopt the specified mitigation measures.	D	2	M

No	Aspect	Issue (Details of issues are located with the relevant discipline section in <i>Section 5</i>)	Proposed Control as a result of Environmental Assessment	Risk			Further Actions to be Adopted as part of Statement of Commitments and MOP.	Residual Risk		
				P ¹	C ²	R ³		P	C	R
			with entering the land;; - Repair of existing fences at Neath and erection of signage that reinforces the dangers associated with entering the land; - Given the proximity of adjoining residence construction of fences around sedimentation / pre-borehole discharge dams, if water qualities are expected to be poor; - All excavations on site including tailings drainage trenches and dams will be constructed to ensure there is an appropriately graded escape ramp; - At completion of each day extraction faces will be reduced to a safe batter; - Installation of warning fence and signs around open tailings cells and drainage trenches, limiting access to soft ground; - Rapid management of spontaneous combustion issues where identified through excavation and tracking the material with a dozer or excavator; - Inclusion of hydrocarbon spill kits in all machinery for rapid cleanup in the event of leakages or spills; and - All storage of chemicals (such as small amounts of herbicide, lime or flocculant) to be stored appropriately within a lockable container with Material Safety Data Sheets (MSDS) collated and in an obvious and readily accessible location.							

Table 7.2: Table of probability rankings

A	Almost certain	The event is expected to occur during the project.
B	Likely	The event will occur during the project.
C	Possible	The event will probably occur at some time during the project.
D	Unlikely	The event could occur at some time during the project.
E	Rare	The event may occur only in exceptional circumstances.

Table 7.3: Table of consequence severity rankings

Consequence Type	Consequence Severity Level				
	1	2	3	4	5
Health and safety.	Fatality/permanent disability.	Serious lost time injury >1 month.	Moderate 1 week to 1 month lost time injury.	Minor lost time injury 1 day to 1 week.	No lost time injury.
Natural environment.	Very serious long-term environmental impairment of ecosystem functions.	Serious long-term environmental impairment of ecosystem functions.	Serious medium term environmental effects.	Moderate, short-term effects but not affecting ecosystem functions.	Minor effects on biological of physical environment.
Social/cultural heritage.	On-going serious widespread social issues, or significant irreparable damage or loss of structures/items of cultural significance.	On-going serious social issues, or significant damage to structures/items of cultural significance.	Medium-term social impacts on local population, or permanent damage to items of cultural significance.	Minor medium-term social impacts on local population, or damage or loss of items of low cultural significance.	Minor short-term social impacts on local population, or damage of items of low cultural significance.

Consequence Type	Consequence Severity Level				
	1	2	3	4	5
Community/ government reputation/ media.	Serious public or media outcry (international coverage).	Significant adverse national media/public/ non-government organisation attention.	Attention from media and/or heightened concern by local community. Criticism by non-government organisations.	Minor, adverse local public attention.	Localised community complaints.
Legal.	Significant prosecution and fines. Very serious litigation including class actions.	Major breach of regulation. Major litigation.	Serious breach of regulation with investigation or report to authority with prosecution and /or moderate fine possible.	Minor legal issues, minor non-compliances and breaches of regulation.	

Table 7.4: Risk assessment matrix

Probability	Consequence				
	1	2	3	4	5
A	H	H	H	M	M
B	H	H	M	M	L
C	H	H	M	L	N
D	H	M	L	L	N
E	M	L	L	N	N

H = High, M = Medium, L = Low, N = Negligible

7.4 Justification of the Rehabilitation Project

The project will result in economic benefits to the Cessnock City Council local government area during the operational phases of the project.

The chitter and tailings represent reject material from past coal operations of the Cessnock – Kurri Kurri and potentially Newcastle coal fields. At that time, the material was unsuitable for the market and was consequently rejected and deposited in emplacements. Some emplacements were capped with clay or chitter while others (primarily chitter emplacements) received no rehabilitation at all. Many of these carbonaceous emplacements release into the surrounding environment a variety of contaminants, principally salt and acid, which compromises a variety of environmental values in the surrounding landscape. The emplacements are also capable of spontaneous combustion that represents a significant safety and environmental hazard.

The extent of past rehabilitation works have had limited success in containing the environmental impacts arising from these emplaced carbonaceous materials on the surrounding environment. Past rehabilitation works represented a “temporary” solution, with the potential failure of the rehabilitation works considered likely in the absence of further remedial actions and continual management.

This project represents the definitive management outcome for these carbonaceous emplacements by removing the source of the ongoing impacts to the local environment and enhancing the environment and local biodiversity.

The recovery of this material value adds to a previously abandoned waste, that still has a calorific value. The recovery and reuse of this waste represents a significant environmental benefit in terms of reduced greenhouse emissions and environmental impact compared to the extraction of a similar volume of virgin coal from open cut or underground mining operations.

The rehabilitation will also remove a significant social and financial burden on the local community, local and State governments (in particular at Aberdare East, and Neath), whilst maintaining approximately 50 local employment opportunities, and injecting revenue to the state government in the form of taxes and royalties paid on product coal generated at the Hebburn No.3 processing facility.

The Project and associated short term impacts are justified on the basis of:

- Continued employment for over 50 people;
- The rehabilitation of degraded landscapes;
- Value adding to a previously abandoned waste;
- Reduced greenhouse gases generated in the production of product coal in comparison to conventional coal mining operations;
- Removal of a financial burden in the form of management and remedial actions by the State Government;
- Generation of royalties on product coal to the State Government;
- Improved biodiversity values of the area; and
- Improved water qualities in the Black, Swamp and Wallis Creek catchments.

The consequences of not proceeding with this rehabilitation project will include the loss of employment continued degradation of land, biodiversity and water and the loss of social benefits that accrue to the community at large from taxation revenues generated on a previously taxed and abandoned waste.

7.5 Conclusion

The objectives of the development of the project are based upon the following principles:

- The development of a safe and economically viable rehabilitation project;
- The minimisation of impacts upon the host physical and social environments.

The Environmental Assessment report has within *Section 5 – Existing Environment and Interactions* considered the impacts, mitigation measures and benefits this Chitter and Tailings Reclamation Project will have on the physical and socio-economic environs whilst an assessment of the project against the principles of ESD has been provided above.

The authors of this Environmental Assessment report have formed the opinion that the project meets the following objects of the EP&A Act, 1979, viz:

- " (a) (i) *the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
- (ii) *the promotion and co-ordination of the orderly and economic use and development of land,*
- (iii) *the protection, provision and co-ordination of communication and utility services,*
- (iv) *the provision of land for public purposes,*
- (v) *the provision and co-ordination of community services and facilities,*
- (vi) *the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
- (vii) *ecologically sustainable development, and*
- (c) *to provide increased opportunity for public involvement and participation in environmental planning and assessment."*

Based on the investigations for the project and associated interactions with the environment, the extraction and haulage of chitter and tailings and subsequent rehabilitation of the sites is in the public's interest and accordingly it is respectfully requested that the Minister for Planning proceed to grant conditional approval to the proposed project, subject to the implementation of the proponent's Statement of Commitments contained in Section 6 of the Environmental Assessment Report.