

23 | Sustainability



Section 23 Sustainability

23.1 Introduction

This section demonstrates that the planning of the Alpha Coal Project (Mine) (the Project) reflects the objectives and principles defined in the National Strategy for Ecological Sustainable Development (Commonwealth Government, 1992).

The analysis considers the possible cumulative impacts (both beneficial and adverse) of the Project, taking into account the scale, intensity, duration and frequency of the impacts to demonstrate environmental integrity, social development, as well as economic prosperity. Refer also to the cumulative impacts report (Volume 4, Appendix G) for a comprehensive assessment of projects new and existing considered relating to the Project.

23.1.1 Ecologically Sustainable Development

Sustainable development, or ecologically sustainable development (ESD), means using, conserving and enhancing the community's resources so that ecological processes on which life depends are maintained and quality of life for both present and future generations is increased (Commonwealth Government, 1992). Simply, it is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (United Nations World Commission on Environment and Development, 1987).

An ecologically sustainable approach to project development takes an integrated and long-term view in considering the wider economic, social and environmental implications of decisions and actions for the community and environment, locally and nationally.

23.1.2 Legislative Context

23.1.2.1 Sustainable Planning Act 2009

The Queensland *Sustainable Planning Act 2009* defines ecological sustainability as a balance that integrates protection of ecological processes and natural systems, economic development and maintenance of cultural, economic, physical and social wellbeing of people and communities.

The *Sustainable Planning Act 2009* provides a legislative framework for managing the development process and assessing effects on the environment by integration of the principles of ESD and coordination of local, regional and state planning. The key principles of ESD are described under Part 1 of the Act.

23.1.2.2 Environmental Protection Act 1994

The object of the *Environmental Protection Act 1994* is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends – that is, ecological sustainable development.

23.2 National Strategy for Ecologically Sustainable Development

The National Strategy for Ecological Sustainable Development (Commonwealth Government, 1992) set the following core objectives for achieving ESD:

- To enhance individual and community well-being by following a path of economic development that safeguards the welfare of future generations;
- To provide for equity within and between generations; and
- To protect biological diversity and maintain essential ecological processes and life-support systems.

These core objectives should be considered in balance with the following guiding principles to pursue the goal of ESD:

- Decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations.
- Where 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.
- The global dimension of environmental impacts of actions and policies should be recognised and considered.
- The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised.
- The need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised.
- Cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms.
- Decisions and actions should provide for broad community involvement on issues which affect them.

The National Strategy for Ecological Sustainable Development (Commonwealth Government, 1992) provides the broad strategic framework for industry sectors that rely on natural resources as their productive base, including the mining sector. The following objectives were identified to develop the mining sector in a way that manages resources efficiently and is consistent with the principles of ESD:

- To ensure mine sites are rehabilitated to sound environmental and safety standards, and to a level at least consistent with the condition of the surrounding land;
- To provide appropriate community returns for using mineral resources and achieve better environmental management and protection in the mining sector; and
- To improve community consultation and information, improve performance in occupational health and safety and achieve social equity objectives.

ESD is a fundamental consideration in the development and design of the Project. Project sustainability principles adopted during the planning of the Project reflect the following guiding principles for achieving ESD. The application of each of the core objectives and guiding principles of ESD to the development of the Project is analysed in Table 23-1.

Table 23-1: Application of Key Objectives and Guiding Principles of Ecologically Sustainable Development

ESD Objective/ Principle	Conformance	Application	Relevant EIS Section
Core Objectives			
<p>To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations.</p>	<p>Yes</p>	<p>The Project will result in significant social and economic benefits for the local and regional community through the development of employment opportunities and investment in infrastructure.</p> <ul style="list-style-type: none"> • Economic stimulus throughout the life of the Project is estimated to be \$47 billion, assuming all operating inputs are purchased in the State. • Increased employment, training and economic development opportunities. • New or improved support service industries established in the region. • Upgrades to road and airport infrastructure. • Introduction of significant supply infrastructure into the region including raw water and power. <p>These benefits are likely to result in flow-on effects for individual and community wellbeing and quality of life.</p> <p>The Proponent is committed to ongoing consultation in accordance with a detailed Community and Stakeholder Engagement Plan to ensure local communities and stakeholders are engaged in a way that encourages active participation and safeguards the welfare of current and future generations. This process has already commenced and will continue according to the Social Impact Management Plan (Volume 2, Section 20).</p> <p>In addition, the Proponent has developed the Hancock Community Support Program to develop long-term partnerships that assist the communities to achieve independent growth and promote future economic and community development.</p>	<p>Volume 2, Section 20 Social</p> <p>Volume 2, Section 21 Health and Safety</p> <p>Volume 2, Section 22 Economics</p> <p>Volume 2, Section 27 Social Impact Management Plan</p>

ESD Objective/ Principle	Conformance	Application	Relevant EIS Section
<p>To provide for equity within and between generations.</p> <p>Inter-generational equity requires the present generation to ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.</p> <p>Intra-generational equity considers equity within the present generation – i.e. the people within the present generation having equal rights to benefit from the use of natural resources and from the enjoyment of a clean and healthy environment.</p>	Yes	<p>The Alpha Coal Project (Mine) was developed considering environmental and socio-economic protection for future generations. This EIS identifies management and mitigation measures to ensure that the development of the Project will not reduce or degrade the health, diversity and productivity of the environment or adversely affect current and future generations.</p> <p>The planning process has provided for broad community involvement on issues which affect them. This feedback included a comprehensive assessment of potential impacts and appropriate avoidance, mitigation and management measures to be implemented during design, construction, operation and decommissioning of the development.</p> <p>In addition to protecting the existing environment from potential adverse impacts, the following Project initiatives may provide other benefits to current and future generations.</p> <ul style="list-style-type: none"> • Increased economic growth over 30 year project life. • New infrastructure through upgrades of roads, aerodrome, water supply and power. • Increased employment and training opportunities. <p>Specific environmental management plans, monitoring and auditing and community consultation will assist in integrating the principles of inter- and intra-generational equity values at all stages of the Project lifecycle.</p> <p>Development of the Galilee Basin will lead to benefits for the region extending beyond the 30-year life of the Alpha Coal Project.</p>	All EIS

ESD Objective/ Principle	Conformance	Application	Relevant EIS Section
<p>To protect biological diversity and maintain essential ecological processes and life-support systems.</p>	<p>Yes</p>	<p>The conservation of biological diversity and ecological integrity was a fundamental consideration in development of the Project as required by legislative obligations under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>.</p> <p>The results from the ecological studies were input into Project planning and development, including nature conservation and rehabilitation strategies. As a result, the following design and management measures were considered and where possible adopted to protect the biological diversity and ecological integrity of the Project site.</p> <ul style="list-style-type: none"> • Location of the mining and infrastructure areas to minimise local-scale impacts (e.g. vegetation clearing) and maintain habitat connectivity. • Staff induction to raise awareness of nature conservation values, native species identification and management. • Erosion control to prevent sedimentation of remaining habitat. • Progressive revegetation with seed from native species sourced on-site to ensure long-term stability and rehabilitation success. • Rehabilitation strategy to recover the biological diversity and ecological integrity of the area. • Control populations of pest and weed species. • Engagement of ecologist/fauna spotter prior to clearing of vegetation to ensure adequate protection of local fauna. <p>A detailed Environmental Management Plan (EM Plan) has been developed (refer to Volume 5, Appendix P) that identifies management and mitigation measures to protect biological diversity during the construction and operation of the Project.</p>	<p>Volume 2, Section 9 Terrestrial Ecology</p> <p>Volume 2, Section 10 Aquatic Ecology and Stygofauna</p> <p>Volume 5, Appendix P Environmental Management Plan</p>

ESD Objective/ Principle	Conformance	Application	Relevant EIS Section
Guiding Principles			
<p>Decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations.</p>	<p>Yes</p>	<p>The principle of integration requires mutual consideration of the components of sustainable development – that is, environmental protection and social values are considered in making economic development decisions.</p> <p>This EIS demonstrates an iterative planning approach to the design and development of the Project was adopted to effectively integrate both environmental and social considerations into decision making. The Project aims to positively influence and benefit the Alpha community and the surrounding Barcaldine Region.</p> <p>Potential environmental and social effects over the Project life were identified on the basis of detailed understanding of the existing environment and community context, past experience with similar projects and input from community consultation.</p> <p>Leading experts were engaged to carry out comprehensive specialist studies to assess the potential environmental and social impacts that may occur as a result of the Project development. Where potential impacts could not be avoided, mitigation measures were proposed.</p> <p>The outcomes of each of these studies demonstrate how the Project accounted for the cost to the environment and the influence on social development, supporting the objectives of ESD.</p>	<p>All EIS</p>

ESD Objective/ Principle	Conformance	Application	Relevant EIS Section
<p>Where 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.</p>	<p>Yes</p>	<p>This EIS indicates that serious or irreversible environmental damage is likely to be low due to the nature of the Project, the existing environment and avoidance, mitigation and management measures identified.</p> <p>To fulfil the requirements of the precautionary principle, the Project has included the following measures.</p> <ul style="list-style-type: none"> • Detailed research, planning and investigative studies will be used to increase scientific certainty about the threat of serious or irreversible environmental damage. Outcomes have been and will continue to be fed back into the Project design by incorporating an appropriate margin for error and avoidance, mitigation and management measures. • Management plans will be prepared and implemented to assist in the avoidance, mitigation and management of potentially serious or irreversible damage to the environment and social development. • Monitoring will assess the implementation and effectiveness of measures to demonstrate compliance with evaluation objectives and performance criteria. Compliance will verify that the residual risks associated with the Project are low and manageable. • Extensive consultation opportunities provided to local communities and stakeholders since 2008. <p>On this basis, this EIS was prepared and the resulting management approach is outlined in Volume 5, Appendix P Environmental Management Plan.</p>	<p>All EIS Volume 2, Section 26 Environmental Management Plan Volume 5, Appendix P Environmental Management Plan</p>

ESD Objective/ Principle	Conformance	Application	Relevant EIS Section
The global dimension of environmental impacts of actions and policies should be recognised and considered.	Yes	<p>Climate Change: The potential impacts and vulnerabilities to climate change are assessed in Volume 2, Section 14 Greenhouse Gas Emissions and Climate Change. This assessment presented an analysis of the potential greenhouse gas emissions to be produced as a result of the construction and operation phases of the Project and highlighted mitigation options to reduce the quantity of greenhouse gas emissions and the global impact of climate change.</p> <p>World-heritage: There are no world-heritage properties directly affected by the Project. The Burdekin catchment does flow into the Great Barrier Reef World Heritage Area and Bowling Green Bay Ramsar Wetland (over 400 km from the Project site). Mitigation and management measures proposed to protect the indirect impacts upon the world heritage and wetland areas, including migratory species, are detailed in Volume 2, Section 9 Terrestrial Ecology.</p>	<p>Volume 2, Section 9 Terrestrial Ecology</p> <p>Volume 2, Section 11 Surface Water</p> <p>Volume 5, Appendix P Environmental Management Plan</p>
The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised.	Yes	<p>The Project represents a significant development within the local, regional and state context facilitating the export of 30 Mtpa of product coal. Both construction and operation will result in major stimulus to the Queensland economy across a range of industry and service sectors.</p> <p>The Project will result in significant social and economic benefits for the local and regional community through the development of employment opportunities and investment in infrastructure.</p> <ul style="list-style-type: none"> • Economic stimulus throughout the life of the Project is estimated to be \$47 billion, assuming all operating inputs purchased in the State. • Increased employment, training and economic development opportunities. • New support service industries established in the region. • Upgrades to road and airport infrastructure. • Introduction of additional water and power supply into the region. 	<p>Volume 2, Section 22 Economics</p>

ESD Objective/ Principle	Conformance	Application	Relevant EIS Section
The need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised.	Yes	<p>Once fully operational, the Project will produce approximately 30 Mtpa of coal exports valued at \$2.9 billion per annum.</p> <p>The Project meets Queensland Government objectives in realising the timely development of the Galilee Basin whilst ensuring the community benefits and environment objectives are supported.</p> <p>Queensland will benefit from the development of the mine and associated port and rail infrastructure through long-term contributions of royalties to the State economy, employment, improvement to local infrastructure and small business opportunities in areas surrounding.</p> <p>The development of the Project in accordance with the design and management measures identified in the EIS would ensure that international competitiveness is enhanced in an environmentally sound manner.</p>	Volume 2, Section 22 Economics
Cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms.	Yes	<p>The EIS planning process identifies the short- and long-term external environmental costs of the Project over the full project life cycle. Environmental and social values and potential impacts are assessed in relevant sections of this EIS. This planning process has accounted for both the discrete and cumulative impacts, both beneficial and adverse, over the Project life to achieve a net positive outcome.</p> <p>Project development takes into account the full life cycle of costs of development to decommissioning and rehabilitation, including ultimate disposal of any waste, into the total Project cost. From the earliest stages of project planning, the Project has acknowledged and accounted for the cost of a progressive and final rehabilitation program to be implemented to achieve the desired landscape performance goals and ensure the post-mining landscape is safe, stable and suitable for the designated future use. Financial assurance is to be put aside to demonstrate commitment to these outcomes.</p> <p>Community and stakeholder engagement will remain an integral component of the Project – e.g. accurate and timely environmental, social and economic information will be provided to surrounding communities and stakeholders to demonstrate compliance.</p>	All EIS, specifically – Volume 2, Section 22 Economics Volume 2, Section 27 Social Impact Management Plan Volume 5, Appendix N Economics

ESD Objective/ Principle	Conformance	Application	Relevant EIS Section
Decisions and actions should provide for broad community involvement on issues which affect them.	Yes	<p>The planning process has provided for broad community involvement on issues which affect them. This feedback included a comprehensive assessment of potential impacts and appropriate avoidance, mitigation and management measures to be implemented during the Project life.</p> <p>The Proponent is committed to ongoing consultation in accordance with a detailed Community and Stakeholder Engagement Plan to ensure local communities and stakeholders are engaged in a way that encourages participation and feedback. This process has already commenced. The development and implementation of the Social Impact Management Plan (refer Volume 2, Section 27) will actively promote community participation at all stages.</p> <p>In addition, the Proponent developed the Hancock Community Support Program to develop long-term partnerships that assist the communities achieve independent growth and promote future economic development of the community.</p>	<p>Volume 2, Section 20 Social</p> <p>Volume 2, Section 27 Social Impact Management Plan</p>
Mining Sector Objectives			
To ensure mine sites are rehabilitated to sound environmental and safety standards, and to level at least consistent with the condition of the surrounding land.	Yes	<p>The Project design and sequencing will enable progressive rehabilitation of the environment disturbed by the Project to comply with rehabilitation goals and objectives of the DERM guideline – Guideline 18: Rehabilitation requirements for mining projects in relation to intergenerational equity, polluter pays principle, protection of biodiversity and maintenance of essential ecologically processes.</p> <p>The strategies for mine rehabilitation will involve progressive landform preparation and revegetation to create a stable post-mining landform and use consistent with the surrounding environment (refer Volume 2, Section 25). A financial assurance is to be put aside to provide guarantee for long-term land use outcomes.</p>	<p>Volume 2, Section 25 Decommissioning and Rehabilitation</p> <p>Volume 5, Appendix P Environmental Management Plan</p>

ESD Objective/ Principle	Conformance	Application	Relevant EIS Section
To provide appropriate community returns for using mineral resources and achieve better environmental management and protection in the mining sector.	Yes	<p>Through the EIS planning process and community consultation, the Proponent has committed to provide appropriate community returns to the advantage of both current and future generations.</p> <ul style="list-style-type: none"> • Economic stimulus throughout the life of the Project is estimated to be \$47 billion, assuming all operating inputs purchased in the State. • Increased employment, training and economic development opportunities. • New support service industries established in the region. • Upgrades to road and airport infrastructure. • Introduction of additional water and power supply into the region. • Adopt best practice technology and management to improve the efficiency and the sustainability of the Project. • Financial assurance is to be put aside to guarantee appropriate decommissioning and rehabilitation of the Project site. <p>Active community participation and feedback will be encouraged during all stages of Project development.</p>	<p>Volume 2, Section 22 Economics</p> <p>Volume 5, Appendix N Economics</p> <p>Volume 2, Section 27 Social Impact Management Plan</p>
To improve community consultation and information, improve performance in occupational health and safety and achieve social equity objectives.	Yes	<p>The Proponent is committed to ongoing consultation in accordance with a detailed Community and Stakeholder Engagement Plan to ensure local communities and stakeholders are engaged in a way that encourages participation and feedback. This process has already commenced.</p> <p>Active community participation at all stages of the Project lifecycle will be facilitated according to the development and implementation of the Social Impact Management Plan (refer Volume 2, Section 27).</p> <p>In addition, the Proponent developed the Hancock Community Support Program to develop long-term partnerships that assist the communities achieve independent growth and promote future economic development of the community.</p>	<p>Volume 2, Section 20 Social</p> <p>Volume 2, Section 27 Social Impact Management Plan</p>

23.3 Conclusion

The analysis of the core objectives and principles of ESD in Table 23-1 demonstrates the Proponent's commitment to incorporate sustainability considerations throughout design, construction, operation and decommissioning of the Project. In conclusion, this EIS demonstrates an iterative planning approach to the design and development of the Project, effectively integrating both environmental and social considerations into decision making and supporting the objectives of ESD.