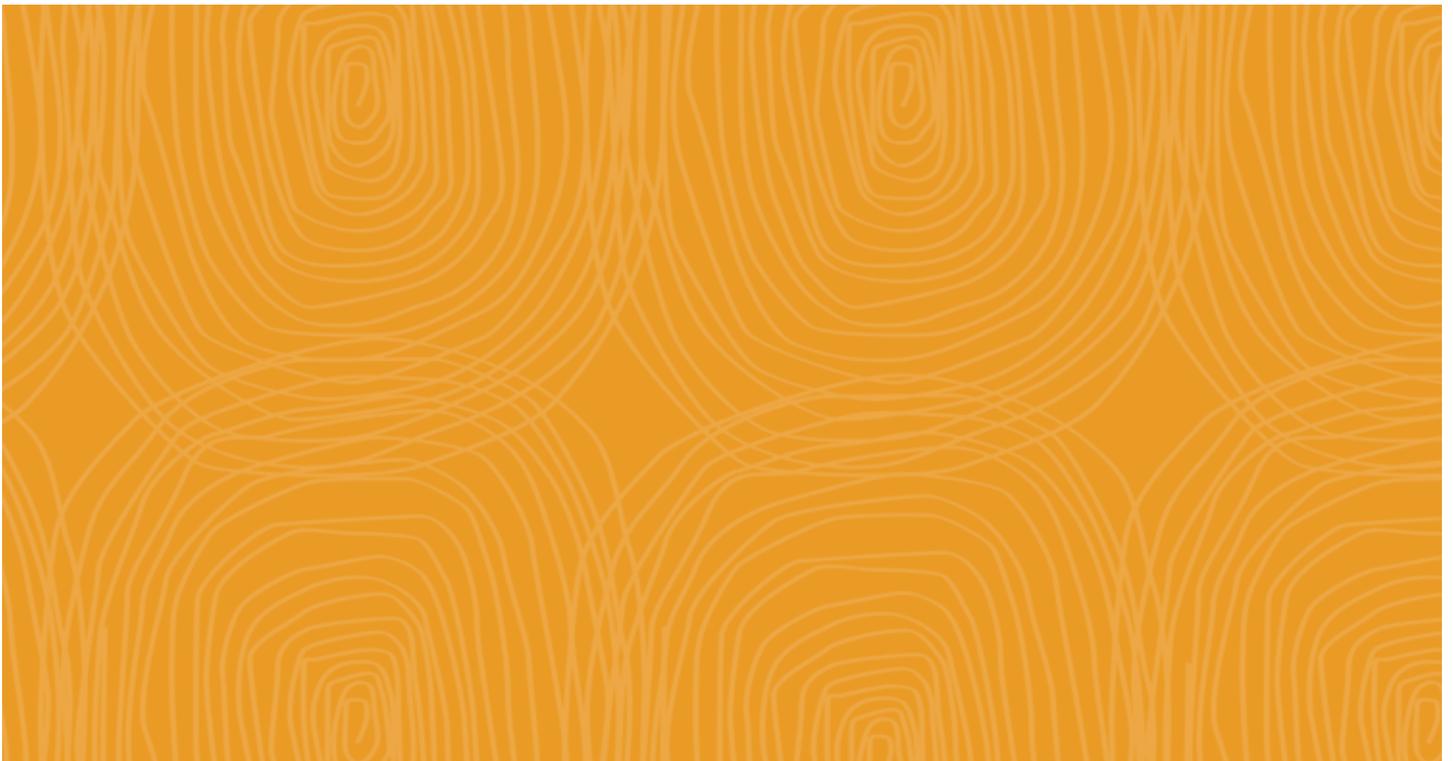


23 | Sustainability



Section 23 Sustainability

23.1 Introduction

This section provides a comparative analysis of how the Alpha Rail Project (herein referred to as the Project) conforms to the objectives for 'sustainable development' as outlined in the Federal Government's *National Strategy for Ecologically Sustainable Development* (NSESD) (DEWHA, 1992).

The analysis considers both beneficial and adverse cumulative impacts of the Project through its entire life, taking into consideration the scale, intensity, duration and frequency of the impacts to demonstrate a balance between environmental integrity, social development and economic development.

This analysis is required to demonstrate that sustainable development aspects have been considered and incorporated during the scoping and planning of the Project. Cumulative Impacts are addressed in Volume 1, Section 3 of this Environmental Impact Statement (EIS).

23.2 National Strategy for Ecologically Sustainable Development

The NSESD defines ecologically sustainable development (ESD) as *'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'*.

The goals, core objectives and guiding principles of the NSESD are as follows:

- the goal of the NSESD is 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;
- the core objectives are:
 - to enhance individual and community well-being and welfare 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.
- the guiding principles are:
 - decision making processes will 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 will not be used as a reason for postponing measures to prevent environmental degradation;
 - the global dimension of environmental impacts of actions and policies will be recognised and considered;
 - the need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection will be recognised;

- the need to maintain and enhance international competitiveness in an environmentally sound manner will be recognised;
- cost effective and flexible policy instruments will be adopted, such as improved valuation, pricing and incentive mechanisms; and
- decisions and actions will provide for broad community involvement on issues which affect them.

The NSESD also identifies three specific objectives for the mining sector:

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

The NSESD also identifies four specific objectives for energy use, energy production and transport sector:

- to limit harmful emissions arising from energy production and distribution wherever economically efficient, and to promote alternative energy sources;
- to improve the energy efficiency of residential buildings and domestic appliances; and to influence householders to become more economical in their use of energy, and to switch to energy sources with lower greenhouse gas emissions;
- to influence industries and businesses to adopt behaviour, practices, technology and equipment that make them minimise their energy use; or lead them to switch to energy sources with lower greenhouse gas emissions; and
- to improve the technical and economic efficiency of urban and non-urban transportation; encourage switching to alternative transport technologies or modes where this reduces greenhouse gas emissions (GHG) per passenger or unit of freight and to optimise the modal mix of transport to achieve greater economic, environmental and social benefits.

An analysis of each of these ESD objectives and principles against the Project are addressed in Table 23-1.

Table 23-1: NSESD Comparative Analysis

Objective/Principle	Conforms	Cumulative Impacts (beneficial/adverse)	Relevant EIS Section
Core Objective			
To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations.	Yes	<p>The Project will have significant social and economic benefits to the local and regional community through development of employment and investment in infrastructure. The overall Project will deliver the following substantial economic benefits, such as:</p> <ul style="list-style-type: none"> • inject \$3 billion per year into the Queensland economy; • generate approximately 2500 jobs at peak construction, and 1500 at full production over the 30 plus years life of the Alpha Coal Mine, together with increased employment opportunities for local communities; • establish support service industries for the Alpha Township and surrounding regions in rural Queensland (Hancock Prospecting Pty Ltd, 2010); and • upgrade existing infrastructure such as the Alpha airport and local roads. <p>Hancock Prospecting Pty Ltd (HPPL) is committed to engaging the community and stakeholders in developing the Project. HPPL will follow a detailed Community and Stakeholder Engagement Plan to ensure local communities and stakeholders are engaged in a proactive and open manner that encourages and facilitates active consultation and involvement. This process has already commenced.</p> <p>To assist in enhancing individual and community well-being HPPL in conjunction with the Barcaldine Regional Council (Queensland) developed the Hancock Community Support Program. The essence of this program is to assist the communities in which HPPL operates to achieve independent growth and long-term sustainability. A priority for HPPL is to develop partnerships which promote the future economic development of these communities and to contribute to community growth.</p>	Volume 3, Section 20 and Section 22 of this EIS.

Objective/Principle	Conforms	Cumulative Impacts (beneficial/adverse)	Relevant EIS Section
To provide for equity within and between generations.	Yes	<p>Project specific management and mitigation measures have been proposed in this EIS to ensure the Project will not reduce, or degrade the health, diversity and productivity of the Queensland environment or affect current and future generations.</p> <p>The Project has a design life of at least 30 years. Third party usage of the Project railway line is expected. As a result, this will increase in the expected life of the railway and it will remain available for use by future generations. Some of the key measures in relation to protecting environmental resources for future generations include:</p> <ul style="list-style-type: none"> rehabilitation is intended to progressively occur following installation of the rail line. Areas at high risk of erosion such as the banks of drainage lines / creeks / streams and rivers, areas of steep and / or sustained slopes and areas of high erosive soils are required to be stabilised and rehabilitated as soon as practical following construction in those areas; the final landform of the Project corridor will ensure the surface water runoff is managed and that the areas other than the rail line itself are restored to a condition that resembles the pre-disturbance landscape as close as possible; as the Project construction phase approaches completion, temporary construction camps will be decommissioned and rehabilitated. All unnecessary buildings and workshops will be removed. Haul roads and unnecessary access tracks will be rehabilitated. Sediment basins constructed along the Project corridor for sediment treatment may be given permanent status if landowners request they stay as small water reservoirs. If this is requested and agreed with by the relevant stakeholders, additional stabilisation works will ensure the sediment basins remain structurally sound; details of vegetation clearing are detailed in Volume 3, Section 9 of this EIS. Clearing has been minimised as far as possible in the design phase by locating the Project footprint in areas that have been previously cleared or degraded by past land use practices. Vegetation offsets will be provided for all vegetation that is identified as having conservation value (threatened ecological communities under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>, and endangered and of concern regional ecosystems under the <i>Queensland Vegetation Management Act 1994</i>; a GHG assessment has been undertaken for the Project (refer to Volume 3, Section 14 of this EIS). Mitigation options have been developed for the construction and operation phases in order to reduce the quantity of GHG emissions arising from the Project. 	Volume 3, Section 25, Section 9 and Section 14 of this EIS.

Objective/Principle	Conforms	Cumulative Impacts (beneficial/adverse)	Relevant EIS Section
To protect biological diversity and maintain essential ecological processes and life-support systems.	Yes	<p>Biological diversity and cumulative impacts of biological diversity are detailed in Volume 3, Section 9 and Section 10 of the EIS.</p> <p>A detailed Environmental Management Plan (EMP) has been developed (refer to Volume 3, Section 26 of this EIS) that identifies management and mitigation measures to protect biological diversity during the construction and operation of the Project.</p>	Volume 3, Section 9, Section 10 and Section 26 of this EIS.
Guiding Principles			
Decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations.	Yes	<ul style="list-style-type: none"> The Project will enable further development of the currently underdeveloped Galilee Basin and its coal resources, and the demand for good quality thermal coal from Australia; 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; Queensland will benefit from 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 surrounding areas; and the Project aims to positively influence and benefit the Alpha community and the surrounding Barcaldine Region. 	All Volume 3 sections.
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.	Yes	<p>An assessment of the threats and impacts on the environment from the Project has been detailed in the relevant sections of the EIS. The findings of these assessments have been used to formulate appropriate management and mitigation measures which are outlined in Volume 3, Section 26 of this EIS.</p> <p>These management and mitigation measures will be used throughout the construction, operation and decommissioning of the Project to prevent serious or irreversible environmental damage from the Project.</p>	Volume 3, Section 26 of this EIS.

Objective/Principle	Conforms	Cumulative Impacts (beneficial/adverse)	Relevant EIS Section
<p>The global dimension of environmental impacts of actions and policies should be recognised and considered.</p>	<p>Yes</p>	<p><u>Climate Change</u></p> <p>A GHG Assessment has been undertaken (refer to Volume 3, Section 14 of this EIS). This assessment presented an analysis of the potential GHG emissions that would be produced as a result of the construction and operation phases of the Project and highlighted potential means by which these emissions could be reduced or avoided.</p> <p>The emissions were categorised as construction - including embodied emissions of materials; transportation of materials to the Project sites, diesel use during construction; and vegetation clearing; -and operations - including emissions from diesel use during the operations phase.</p> <p>Overall, the diesel use in the Project is the largest source of emissions (44% of all emissions), with diesel use during operations and construction phases estimated to contribute 28% and 16% of all emissions, respectively. The embodied emissions of materials during the construction stage is also a large source of emissions, estimated to contribute 30% of all emissions, followed by the transportation of materials during construction (19% of all emissions).</p> <p>Mitigation options are detailed further in Volume 3, Section 14 and will be deployed during the construction and operation phases in order to reduce the quantity of GHG emissions arising from the Project and the global impact of climate change.</p> <p><u>World Heritage Properties and Ramsar Wetlands</u></p> <p>There are no world heritage properties directly affected by the Project. However, the the Burdekin Catchment flows into the Great Barrier Reef World Heritage Area (GBRWHA). The Great Barrier Reef (GBR) covers a total area of 348,000 km² and supports a variety of habitats including: seagrass beds; mangrove forests; sandy and muddy seabed communities; inter-reefal areas; deep oceanic water and island communities (DEWHA, 2008).</p> <p>The catchment also flows into the Bowling Green Bay Ramsar Wetland via the Houghton River. The Bowling Green Bay Wetland is located 21 km north east of Ayr and has a total area of 35,500 ha. The wetland aggregation contains a diversity of habitats including: seagrass beds; coastal sand dunes; tidal flats; mangrove forests; highly saline supratidal salt pans; brackish to freshwater marshes; and lakes. The Bowling Green Bay Wetland is an internationally significant habitat for wader birds and provides important breeding and nursery habitat for commercially and recreationally important fish species such as barramundi.</p>	<p>Volume 3, Section 9, Section 10, Section 14 and Section 26.</p>

Objective/Principle	Conforms	Cumulative Impacts (beneficial/adverse)	Relevant EIS Section
		<p>The Bowling Green Bay Wetland is located more than 100 km from the northern end of the Project.</p> <p>Mitigation and management measures are proposed to protect the indirect impacts upon the world heritage and wetland areas, these are detailed further in Volume 3, Section 26.</p> <p><u>Migratory Species</u></p> <p>The Caley Valley wetland supports a significant community of marine and migratory wetland birds. 26 migratory or marine bird species were found within the study area (11 birds and 1 reptile predicted to occur). The Project is unlikely to substantially modify, destroy or isolate important habitat. Apart from Caley Valley, few permanent water sources will be affected by the Project.</p> <p>The Project is unlikely to result in invasive species becoming established in important habitat for migratory species. Most species are regionally abundant and an ecologically significant proportion of a species population is unlikely to occur within the study area.</p> <p>Mitigation and management measures are proposed to protect migratory species and these are detailed further in Volume 3, Section 26.</p>	
<p>The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised.</p>	<p>Yes</p>	<p>The Alpha Coal Project will deliver the following substantial economic benefits:</p> <ul style="list-style-type: none"> • inject \$3 billion per year into the Queensland economy; • generate approximately 2500 jobs at peak construction, and 1500 at full production over the 30 plus years life of the Alpha Coal Mine, together with increased employment opportunities for local communities; • establish support service industries for the Alpha Township and surrounding regions in rural Queensland; and • upgrade existing infrastructure such as the Alpha airport and local roads. <p>The Project is of high significance within the local, State and national context. The Project will facilitate the export of up to 60 Mtpa of coal from the Alpha Coal Mine, and 30-50 Mtpa from other Gailiee Basin coal mines.</p> <p>The construction phase of the Project is likely to result in a major stimulus to the Queensland economy. Project purchases will result in broadly distributed stimuli across various industry sectors. The purchase of materials, locomotives and wagons will result in a major stimulus to the manufacturing sector. The actual construction workforce is to reach approximately:</p> <ul style="list-style-type: none"> • 600 workers by 2011; 	<p>Volume 3, Section 22 of this EIS.</p>

Objective/Principle	Conforms	Cumulative Impacts (beneficial/adverse)	Relevant EIS Section
		<ul style="list-style-type: none"> • 2,600 workers by 2012; • 1,050 workers by 2013; and • 120 workers by 2014. <p>Up to 350 workers will operate and maintain the railway. However, significant flow on employment is anticipated throughout the economy, throughout the construction and operational phases of the Project.</p> <p>The economic impacts of the Project (beneficial and adverse) are detailed in Volume 3, Section 22 of this EIS.</p>	
The need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised	Yes	The Project will enable the timely and efficient transport of coal from the Alpha Coal Mine to the Port at Abbott Point without which the Galilee Basin coal resources would remain undeveloped for an extended period of time. The opportunity for shared rail and port facilities would be put at risk, which could jeopardise other developments in the area and cause Australia to lose market share with lower quality coals being provided to end users by the Asian market. In addition, potential future revenue to the State Government will not be realised, and further community development postponed.	Volume 3, Section 1.4
Cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms.	Yes	<p>HPPL is committed to fully investigating the economic, cultural, environmental and social implications of the Alpha Coal Project in accordance with Queensland and Australian Government requirements.</p> <p>The Project team has already undertaken government relations activities at all levels of government, and to date has received support and encouragement for the Alpha Coal Project. At the Commonwealth level, briefings have taken place with the offices of the Australian Prime Minister, the Minister for Resources and Energy, and the Minister for Environment and Heritage.</p> <p>As the Alpha Coal Project continues, HPPL is committed to maintaining open lines of communication with all levels of Australian Government. Regular meetings between relevant government agencies and HPPL representatives are conducted on a fortnightly or monthly basis.</p>	Not applicable
Decisions and actions should provide for broad community involvement on issues which affect them.	Yes	<p>Community consultation activities in relation to the EIS are detailed in Volume 6, Appendix M.</p> <p>The Alpha Coal Project will follow a detailed Community and Stakeholder Engagement Plan to ensure local communities and stakeholders are engaged in a proactive and open manner that encourages and facilitates active consultation and involvement.</p>	Volume 6, Appendix M.

Objective/Principle	Conforms	Cumulative Impacts (beneficial/adverse)	Relevant EIS Section
		<p>HPPL in conjunction with the Barcaldine Regional Council (BRC) developed the Hancock Community Support Program. The aim of this program is to assist the communities in which HPPL operates to achieve independent growth and long-term sustainability.</p> <p>HPPL has developed a Cultural Heritage Management Plans (CHMP) with affected traditional landowners and have commenced the agreement (ILUA) process and cultural heritage surveys.</p> <p>A priority for HPPL is to develop partnerships which promote the future economic development of these communities and to contribute to community growth.</p>	
Objectives – mining sector			
To ensure mine sites are rehabilitated to sound environmental and safety standards, and to a level at least consistent with the condition of surrounding land.	NA – refer to Volume 2 of the Alpha Coal Project (Mine) EIS.	NA – refer to Volume 2, Alpha Coal Project (Mine) EIS.	NA – refer to Volume 2 of the Alpha Coal Project (Mine) EIS.
To provide appropriate community returns for using mineral resources and achieve better environmental protection and management in the mining sector.	NA – refer to Volume 2 of the Alpha Coal Project (Mine) EIS.	NA – refer to Volume 2, Alpha Coal Project (Mine) EIS.	NA – refer to Volume 2 of the Alpha Coal Project (Mine) EIS.
To improve community consultation and information, improve performance in occupational health and safety and achieve social equity objectives	NA – refer to Volume 2 of the Alpha Coal Project (Mine) EIS.	NA – refer to Volume 2, Alpha Coal Project (Mine) EIS.	NA – refer to Volume 2 of the Alpha Coal Project (Mine) EIS.
Objectives – energy use, energy production and transport sector			
To limit harmful emissions arising from energy production and distribution wherever economically efficient, and to promote alternative energy	NA – Project does not include energy production.	NA – Project does not include energy production.	NA – Project does not include energy production.

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Objective/Principle	Conforms	Cumulative Impacts (beneficial/adverse)	Relevant EIS Section
sources.			
To improve the energy efficiency of residential buildings and domestic appliances and to influence householders to become more economical in their use of energy, and to switch to energy sources with lower GHG emissions.	NA – Project does not include energy production.	NA – Project does not include energy production.	NA – Project does not include energy production.
To influence industries and businesses to adopt behaviour, practices, technology and equipment that make them minimise their energy use; or lead them to switch to energy sources with lower GHG emissions.	NA – Project does not include energy production.	NA – Project does not include energy production.	NA – Project does not include energy production.
To improve the technical and economic efficiency of urban and non-urban transportation; encourage switching to alternative transport technologies or modes where this reduces GHG emissions per passenger or unit of freight and to optimise the modal mix of transport to achieve greater economic, environmental and social benefits.	Yes	<p>As detailed above, a GHG assessment has been undertaken (refer to Volume 3, Section 14 of this EIS). This assessment presented an analysis of the potential GHG emissions that would be produced as a result of the construction and operation phases of the Project and highlighted potential means by which these emissions could be reduced or avoided.</p> <p>Mitigation and management measures to improve the technical and economic efficiency of the rail operations are detailed further in Volume 3, Section 14 and will be deployed during the construction and operation phases in order to reduce the quantity of GHG emissions arising from the Project and the global impact of climate change.</p> <p>The design grade of the alignment (1:320) delivers greater efficiencies for operation of the diesel locomotives.</p>	Volume 3, Section 14 of this EIS.

23.3 Conclusions

This section of the EIS has outlined HPPL's commitment to meeting the objectives and principles outlined in the NSESD and how these commitments have been incorporated into the construction, operation and decommissioning of the Project.

In conclusion, detailed consideration of the impacts identified in this EIS and effective implementation of mitigation options is expected to deliver a Project that is aligned with the objectives of Sustainable Development and provides long term sustainable benefits to the region.