

# **VICKERY EXTENSION PROJECT**

## **ENVIRONMENTAL IMPACT STATEMENT**

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# **SECTION 6**

## **PLANNING FRAMEWORK AND PROJECT JUSTIFICATION**

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## 6 PLANNING FRAMEWORK AND PROJECT JUSTIFICATION

This section provides a description of the need for and objectives of the Project and a justification for the carrying out of the Project in the manner proposed.

This section also outlines the requirements and application of Commonwealth and State legislation to the Project. The requirements of state environmental planning policies (SEPPs), local environmental plans (LEPs) and relevant strategic planning documents are described in Attachment 5. The Project will be assessed in accordance with the framework established by the NSW EP&A Act, the NSW EP&A Regulation and the Commonwealth EPBC Act.

### 6.1 PROJECT JUSTIFICATION

In accordance with the SEARs (Attachment 1), a description of the need for and objectives of the Project and a justification of the carrying out of the Project in the manner proposed is provided below.

This is provided having regard to biophysical, economic and social considerations, including consideration of alternatives, the principles of ecologically sustainable development (ESD) and the consistency of the Project with the objects of the EP&A Act.

The following sub-sections also address requirements for assessment under the EPBC Act, including consistency of the Project with the objects of the EPBC Act.

#### 6.1.1 Need for and Objectives of the Project

The Project objective is the development and operation of an open cut coal mine and associated infrastructure, for a period of approximately 26 years (Sections 1 and 2).

Project infrastructure would include the construction and operation of a Project CHPP, train load-out facility and rail spur.

During peak operations, the workforce would be in the order of 450 full-time equivalent on-site personnel, plus additional contract personnel. It is anticipated the Project may provide for the on-going employment of existing Whitehaven employees working at the Rocglen Coal Mine, which is nearing the end of its approved operational life.

An additional construction workforce of up to approximately 500 full-time equivalent personnel would also be required.

The Project would have a peak production of up to approximately 10 Mtpa of ROM coal (and an average production rate of 7.2 Mtpa of ROM coal).

Over the life of the Project, approximately 44 Mt of additional ROM coal would be extracted in comparison to the Approved Mine (i.e. approximately 179 Mt for the Project compared to 135 Mt for the Approved Mine).

Based on the planned maximum production rate and processing of ROM coal from the Project and other Whitehaven mines, combined total product rail transport would be up to approximately 11.5 Mtpa.

The Project would produce a range of metallurgical and thermal coal for the export market. Project coal production would contribute to NSW export income, State royalties and State and Commonwealth tax revenue.

Should ROM coal from other Whitehaven mines (e.g. the Tarrawonga Coal Mine and Rocglen Coal Mine) be transported to the Project for processing it would significantly reduce the number of haul trucks using the public road system.

This would reduce the existing traffic and road noise impacts associated with ROM coal haulage to the Whitehaven CHPP on public roads. It would also improve the efficiency of Whitehaven's Tarrawonga and Rocglen Coal Mines, as the ROM coal transport distances would be reduced.

The construction of an on-site CHPP at the Project would ultimately no longer require processing of Project ROM coal at the Whitehaven CHPP. Associated community benefits would include a reduction of existing amenity impacts associated with the operation of the Whitehaven CHPP (e.g. noise and air quality impacts to nearby dwellings) should ROM coal from the Tarrawonga Coal Mine and the Rocglen Coal Mine be transported to the Project for processing.

In addition to the Project operational workforce (of up to 450 full-time equivalent on-site personnel), the Economic Assessment (Appendix J) indicates that operation of the Project is likely to result in an average annual stimulus of up to approximately 316 indirect full-time equivalent jobs in NSW. The Project would also make contributions to regional and NSW output or business turnover and household income (Section 4.17).

The benefit cost analysis in Appendix J indicates that a net benefit to NSW of \$1.2 billion (and incremental flow-on benefits of \$500 million relative to the Approved Mine), would be forgone if the Project is not implemented.

The Project would include the implementation of mitigation measures, and management (including performance monitoring), to minimise potential impacts on the environment and community (Section 4).

A summary of the Project environmental mitigation, management, monitoring and reporting measures is provided in Section 7.

A description of Project alternatives considered is provided in Section 6.1.7.

### 6.1.2 Environmental Record of the Applicant

In accordance with requirements in the SEARs pertaining to assessment under the EPBC Act (Attachment 2), a summary of the environmental record of the applicant is provided below.

Whitehaven's environmental procedures are implemented in accordance with the Whitehaven Coal Limited Health, Safety, Environment and Community Committee Charter.

The applicant for the Project is Vickery Coal Pty Ltd (a subsidiary of Whitehaven).

No proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources have been taken against Vickery Coal Pty Ltd.

### 6.1.3 Consideration of Climate Change Projections for Australia and NSW

Consideration of the potential implications of climate change involves complex interactions between climatic, biophysical, social, economic, institutional and technological processes.

Although understanding of climate change has improved markedly over the past several decades, climate change projections are still subject to uncertainties such as (CSIRO, 2015a):

- *scenario uncertainty, due to the uncertain future emissions and concentrations of greenhouse gases and aerosols;*
- *response uncertainty, resulting from limitations in our understanding of the climate system and its representation in climate models; and*
- *natural variability uncertainty, the uncertainty stemming from unperturbed variability in the climate system.*

The following sources for climate change projections have been considered for the Project:

- Climate Change in Australia, produced by CSIRO and the BoM (CSIRO, 2015b).
- The NSW and Australian Capital Territory (ACT) Regional Climate Modelling (NARCLiM) Project, a research partnership between the NSW and ACT governments and the Climate Change Research Centre at the University of NSW (NARCLiM, 2015).

The Climate Change in Australia report presents climate change projections for Australia. The NARCLiM Project presents climate change projections for NSW and ACT only.

#### *Climate Change Projections for Australia*

In Australia, the climate is projected to become warmer and drier.

Climate change may result in changes to rainfall patterns, runoff patterns and river flow. High scenario projections for annual average rainfall in 'Eastern Australia' for 2030 and 2090, relative to 1995 are presented in Table 6-1.

#### *Climate Change Projections in NSW*

The Project is located within the New England North West Region of the NARCLiM Project domain.

Mean temperatures in the New England North West Region are predicted to rise by 0.7°C by 2030 and 2.2°C by 2070. The increases are occurring across the region, with the greatest increase during summer and spring (NARClIM, 2015).

**Table 6-1**  
**Climate Change Projections for Eastern Australia – Percentage Change in Rainfall<sup>1</sup>**

Period	2030	2090	
	RCP4.5	RCP4.5	RCP8.5
Summer	1%	0%	10%
Autumn	-5%	-4%	-4%
Winter	-3%	-10%	-17%
Spring	-2%	-8%	-14%
Annual	-2%	-4%	-6%

Source: After CSIRO (2015b) and Appendix B.

<sup>1</sup> Relative to 1995.

RCP4.5: Emissions scenario assuming a slow reduction in emissions that stabilises CO<sub>2</sub> concentration at about 540 parts per million (ppm) by 2100.

RCP8.5: Emissions scenario assuming an increase in emissions leading to a CO<sub>2</sub> concentration of about 940 ppm by 2100.

Changes to annual rainfall are predicted to vary across the New England North West Region and are presented in Table 6-2.

**Table 6-2**  
**Climate Change Projections for the New England North West Region, NSW – Percentage Change in Rainfall**

Period	2020-2039	2060-2079
Summer	-3.3%	+9.8%
Autumn	+14.9%	+16.8%
Winter	-7.6%	-0.7%
Spring	+2.6%	-0.7%
Annual	+1.6%	+7.7%

Source: After NARClIM (2015).

The NARClIM (2015) and CSIRO (2015b) rainfall projections are quite variable, particularly for the 2080/2090 forecast. As shown in Table 6-1, CSIRO (2015b) are projecting a drier climate, whereas Table 6-2 indicates that NARClIM (2015) are projecting a generally wetter climate.

The potential implications of climate change on local groundwater and surface water resources are considered in Appendices A and B, respectively.

#### 6.1.4 Ecologically Sustainable Development Considerations

##### Background

The concept of sustainable development came to prominence at the World Commission on Environment and Development (1987), in the report titled *Our Common Future*, which defined sustainable development as:

*Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*

In recognition of the importance of sustainable development, the Commonwealth Government developed a *National Strategy for Ecologically Sustainable Development* (NSED) (Commonwealth of Australia, 1992) that defines 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 NSED was developed with the following core objectives:

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

In addition, the NSED contains the following goal:

*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.*

In accordance with the core objectives and a view to achieving this goal, the NSED presents private enterprise in Australia with the following role:

*Private enterprise in Australia has a critical role to play in supporting the concept of ESD while taking decisions and actions which are aimed at helping to achieve the goal of this Strategy.*

The Project will require approval under both the EP&A Act and the EPBC Act (Sections 6.3 and 6.4).

In deciding whether or not to approve the Project, the Commonwealth Minister for the Environment must take into account the principles of ESD pursuant to section 136(2) of the EPBC Act. The relevant definition of the principles of ESD is provided in section 3A of the EPBC Act.

Clause 7(4) of Schedule 2 of the EP&A Regulation sets out the principles of ESD, and the term ESD is defined under the EP&A Act to have the same meaning as it has in section 6(2) of the NSW *Protection of the Environment Administration Act, 1991*. The principles of ESD as outlined in section 3A of the EPBC Act and clause 7(4) of Schedule 2 of the EP&A Regulation are presented and compared in Table 6-3.

The design, planning and assessment of the Project has been carried out applying the principles of ESD, through:

- incorporation of risk assessment and analysis at various stages in the Project design, environmental assessment and decision-making;
- adoption of high standards for environmental and occupational health and safety performance;
- consultation with regulatory and community stakeholders;
- assessment of potential greenhouse gas emissions associated with the Project;
- optimisation of the economic benefits to the community arising from the development of the Project; and
- taking into account biophysical considerations in the Project design, including the principles of ESD as defined in section 3A of the EPBC Act and clause 7(4) of Schedule 2 of the EP&A Regulation.

The Project can be undertaken in accordance with ESD principles through the application of measures to avoid, mitigate and offset the potential environmental impacts of the Project, and ongoing adaptive management. These measures are described in Sections 4 and 7.

The following sub-sections describe the consideration and application of the principles of ESD to the Project.

### *Precautionary Principle*

Environmental assessment involves predicting what the environmental outcomes of a development are likely to be. The precautionary principle emphasises the need to address threats of serious or irreversible environmental damage, even in circumstances where there is scientific uncertainty about environmental risk.

An ERA (Appendix O) and a PHA (Appendix P) were conducted to identify Project related risks and develop appropriate mitigation measures and strategies.

The ERA (Appendix O) considers potential environmental impacts associated with the Project, including long-term effects. In addition, long-term risks are considered by the specialist studies conducted in support of this EIS (Section 1.5). Findings of these specialist assessments are presented in Section 4 and relevant appendices.

Measures designed to avoid, mitigate and offset potential environmental impacts arising from the Project are also described in Sections 4 and 7.

The PHA (Appendix P) considers off-site risks to people, property and the environment (in the presence of controls) arising from atypical and abnormal hazardous events and conditions (i.e. equipment failure, operator error and external events) from fixed installations. The PHA does not consider those risks that are not atypical or abnormal or those risks to Whitehaven employees or Whitehaven owned property.

The specialist assessments, ERA and PHA have evaluated the potential for harm to the environment associated with development of the Project.

Assessment of potential short, medium and long-term impacts of the Project have been carried out during the preparation of this EIS on aspects of (but not limited to) groundwater and surface water, noise and blasting, air quality (including greenhouse gas emissions), terrestrial and aquatic ecology, Aboriginal and historic heritage, agricultural land uses, road transport, visual character, social and community infrastructure and economics.

**Table 6-3  
Principles of Ecologically Sustainable Development – EPBC Act and EP&A Regulation**

Section 3A of the EPBC Act	Clause 7(4) of Schedule 2 of the EP&A Regulation
(a) <i>decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;</i>	-
(b) <i>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;</i>	(a) <i>the precautionary principle, namely, 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. In the application of the precautionary principle, public and private decisions should be guided by:</i>  (i) <i>careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and</i>  (ii) <i>an assessment of the risk-weighted consequences of various options,</i>
(c) <i>the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;</i>	(b) <i>inter-generational equity, namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,</i>
(d) <i>the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making;</i>	(c) <i>conservation of biological diversity and ecological integrity, namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,</i>
(e) <i>improved valuation, pricing and incentive mechanisms should be promoted.</i>	(d) <i>improved valuation, pricing and incentive mechanisms, namely, that environmental factors should be included in the valuation of assets and services, such as:</i>  (i) <i>polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,</i>  (ii) <i>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 waste,</i>  (iii) <i>environmental goals, having been established, 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.</i>

Minimal uncertainty regarding the information used in these specialist assessments is expected given:

- Whitehaven’s operational experience in NSW and specifically the Gunnedah Basin;
- the number of site-based surveys and assessments conducted at the Approved Mine and for the Project;
- the comprehensive nature of the assessments; and
- the consultation process conducted with key stakeholders (Section 3).

A range of measures have been adopted as components of the Project design to minimise the potential for serious and/or irreversible damage to the environment. These include operational controls (e.g. modification of mining operations during adverse weather conditions) and physical controls (e.g. the use of water trucks for dust suppression along haul roads), the development of environmental management and monitoring programmes and biodiversity offsets (Section 4). Where residual risks are identified, contingency controls have also been considered (Section 4).

The Project would achieve the relevant noise and air quality criteria in the Development Consent through an adaptive management approach using real-time monitoring and management (Sections 4.7 and 4.9).

The implementation of an adaptive management approach is consistent with the precautionary principle as described by Justice Preston, Chief Judge of the NSW Land and Environment Court (NSWLEC) in *Newcastle & Hunter Valley Speleological Society Inc v Upper Hunter Shire Council and Stoneco Pty Limited* [2010] NSWLEC 48 at [184]:

*In adaptive management the goal to be achieved is set, so there is no uncertainty as to the outcome and conditions requiring adaptive management do not lack certainty, but rather they establish a regime which would permit changes, within defined parameters, to the way the outcome is achieved.*

In addition, for key Project environmental assessment studies, peer review by recognised experts was undertaken (Attachment 4).

### **Social Equity**

Social equity is defined by inter-generational and intra-generational equity. Inter-generational equity is the concept that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations, while intra-generational equity is applied within the same generation.

The principles of social equity are addressed through:

- assessment of the social and economic impacts of the Project, including the distribution of impacts between stakeholders and consideration of the potential economic costs of greenhouse gas emissions (Appendix J);
- management measures to be implemented in relation to the potential impacts of the Project on water resources, heritage, land resources, agriculture, noise and blasting, air quality, ecology, transport, hazards and risks, greenhouse gas emissions, visual character, economics and social values (Section 4);
- implementation of environmental management and monitoring programmes (Section 4) to minimise and evaluate potential environmental impacts (which include environmental management and monitoring programmes covering the Project life);

- implementation of biodiversity offsets during the life of the Project to compensate for potential localised impacts that have been identified for the development (Sections 4.11 and 7); and
- Whitehaven would make continued contributions to the Gunnedah Shire Council, Narrabri Shire Council and the local community through rates and infrastructure contributions and ongoing support for community initiatives (Section 3.2).

The Project would benefit current and future generations through employment. It would also provide significant stimulus to local and regional economies and provide NSW export earnings and royalties, thus contributing to future generations through social welfare, amenity and infrastructure.

As described above, the Project incorporates a range of operational and physical controls and environmental management and mitigation measures (e.g. the Project biodiversity offset strategy) to minimise potential impacts on the environment. The cost of these measures would be met by Whitehaven.

Where relevant, these costs have been included in the economic assessment, therefore, the potential benefits to current and future generations have been calculated in the context of the mitigated Project.

### **Conservation of Biological Diversity and Ecological Integrity**

For the purposes of this EIS, ecological integrity has been considered in terms of ecological health and ecological values.

The Project area is located in a largely agricultural landscape, with grazing land to the north and south of the Project area where the majority of the vegetation has been extensively cleared for grazing and historic mining activities.

Large areas of native vegetation within the landscape persist within reserved areas and state forests, including the Vickery State Forest (Appendix F). Approximately 405 ha of land within the Project disturbance area has been rehabilitated following former mining activities, and is stabilised by improved pasture (Section 5.1.2).

Surveys conducted for the Project have identified threatened ecological communities and habitat suitable for threatened flora and fauna species. Detailed results from recent terrestrial flora and fauna and aquatic ecology surveys are outlined in Appendices F and N.

The environmental assessment in Section 4.11 (and Appendices F and N) describes the potential impacts of the Project on local and regional ecology.

In accordance with ESD principles, the Project addresses the conservation of biodiversity and ecological integrity by proposing an environmental management framework designed to conserve ecological values, where practicable, after consideration of potential Project impacts as described in the sub sections below.

#### *Greenhouse Gas Emissions and Biological Diversity and Ecological Integrity*

Many natural ecosystems are considered to be vulnerable to climate change. Patterns of temperature and precipitation are key factors affecting the distribution and abundance of species (Preston and Jones, 2006). Projected changes in climate will have diverse ecological implications. Habitat for some species will expand, contract and/or shift with the changing climate, resulting in habitat losses or gains, which could prove challenging, particularly for species that are threatened.

*Anthropogenic Climate Change* is listed as a key threatening process under the NSW *Threatened Species Conservation Act, 1995*<sup>1</sup> (TSC Act) and the NSW BC Act, and *Loss of climatic habitat caused by anthropogenic emissions of greenhouse gases* is listed as a key threatening process under the EPBC Act.

A greenhouse gas assessment was undertaken by Ramboll for the Project (Appendix E). Section 4.10 provides a description of the potential greenhouse gas emissions of the Project.

Valuation of potential impacts of greenhouse gas emissions has been incorporated in the Economic Assessment (Appendix J) for the Project.

The potential implications of climate change on local groundwater and surface water resources are addressed in Appendices A and B, respectively.

#### *Measures to Maintain or Improve the Biodiversity Values of the Surrounding Region*

A range of impact avoidance, mitigation and offset measures would be implemented for the Project to maintain or improve the biodiversity values of the surrounding region in the medium to long-term, as described below.

Sections 4.11, 5 and 7 summarise a number of Project measures that would assist in maintaining the biodiversity of the region. These measures include the long-term viability of existing vegetation communities (i.e. the Project biodiversity offset strategy) and rehabilitation of mine landforms.

An offset strategy has been developed to address the potential residual impacts on biodiversity values associated with the Project, such that biodiversity values of the region are maintained or improved in the medium to long-term (as detailed in Sections 4.11 and 7 and Appendix F).

Section 5 presents Whitehaven's rehabilitation strategy for the Project. The disturbance areas associated with the Project would be progressively rehabilitated and revegetated with species characteristic of native woodland/open forest and pasture with scattered trees (Figure 5-3).

An objective of the rehabilitation programme is to establish self-sustaining ecosystems on landforms that are safe and stable, with adequate, geomorphologically stable drainage features.

Terrestrial flora, fauna and aquatic ecology management measures including the biodiversity offset strategy and the Biodiversity Management Plan are described in Section 4.11.

#### *Valuation*

One of the common broad underlying goals or concepts of sustainability is economic efficiency, including improved valuation of the environment. Resources should be carefully managed to maximise the welfare of society, both now and for future generations.

Consideration of economic efficiency, with improved valuation of the environment, aims to overcome the underpricing of natural resources and has the effect of integrating economic and environmental considerations in decision making, as required by ESD.

<sup>1</sup> In March 2018, the DP&E confirmed that the Project is a 'pending or interim planning application' under the *Biodiversity Conservation (Savings and Transitional) Regulation, 2017*. Therefore, the relevant provisions of the EP&A Act that would be in force if that Act had not been amended (such as sections 5A to 5C of the EP&A Act) apply to the Project.

While historically, environmental costs have been considered to be external to Project development costs, improved valuation and pricing methods attempt to internalise environmental costs and include them within Project costing.

The Economic Assessment (Appendix J) undertakes an analysis of the Project and incorporates environmental values via direct valuation where practicable (e.g. greenhouse gas emissions of the Project and Project impacts on agricultural values). Furthermore, wherever possible, direct environmental effects of the Project are internalised through the adoption and funding of mitigation measures by Whitehaven to mitigate potential environmental impacts (e.g. the Project biodiversity offset strategy).

Based on the environmental costs evaluated, the cost benefit analysis in Appendix J indicates a net benefit of approximately \$1.2 billion to NSW, and incremental flow-on benefits of \$500 million, would be forgone if the Project is not implemented (Appendix J).

In addition, Analytecon (2018) has completed a disaggregation of the cost benefit analysis to examine potential benefits and costs at a regional level. This analysis differs from the central Project cost benefit analysis based on a regional distribution of externalities and some costs incurred by Whitehaven are treated as a benefit for particular regions. This additional regional analysis indicates that a net benefit of approximately \$224 million to the Gunnedah, Narrabri, Liverpool Plains and Tamworth Regional Local Government Areas (LGAs) would be forgone if the Project is not implemented (Appendix J).

### 6.1.5 Consideration of the Project against the Objects of the Environmental Planning and Assessment Act, 1979

Section 1.3 of the EP&A Act describes the objects of the EP&A Act as follows:

- (a) *to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,*
- (b) *to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,*

- (c) *to promote the orderly and economic use and development of land,*
- (d) *to promote the delivery and maintenance of affordable housing,*
- (e) *to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*
- (f) *to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),*
- (g) *to promote good design and amenity of the built environment,*
- (h) *to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,*
- (i) *to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,*
- (j) *to provide increased opportunity for community participation in environmental planning and assessment.*

The Project is considered to be generally consistent with the objects of the EP&A Act, because it is a Project which:

- incorporates:
  - measures for the management and conservation of resources including water, agricultural land and natural areas (Section 4);
  - development of the State's mineral resources (i.e. coal resources) within Whitehaven's mining and exploration tenements (Section 2);
  - measures to minimise potential amenity impacts associated with noise, blasting, air quality and visual impacts on surrounding land uses (Sections 4.7, 4.8, 4.9 and 4.14); and
  - significant employment and other socio-economic benefits to the community (Sections 4.17, 4.18 and 6.1.11);
- would allow for the economic use and development of land, while maintaining key existing land uses including grazing uses on surrounding Whitehaven owned lands;

- would support the provision of community services and facilities through significant contributions to State royalties, State taxes, Commonwealth tax revenue and any applicable contributions to local councils (Appendix J and Section 6.3.8);
- incorporates a range of measures for the protection of the environment, including the protection of native plants and animals, threatened species and their habitats (Sections 4.11, 5 and 7);
- incorporates relevant ESD considerations (Section 6.1.4);
- is a State Significant Development Project that would be determined by the Minister or the IPC (Section 6.3.2), however, consultation with other levels of government and a range of stakeholders has been undertaken and the issues raised have been considered and addressed where relevant (Section 3); and
- includes public involvement and participation through the Project EIS consultation program and the Approved Mine CCC (Section 3), the public exhibition of the EIS document and DP&E assessment of the Project in accordance with the requirements of the EP&A Act.

Sections 5A to 5C of the EP&A Act provided additional requirements in relation to threatened species, populations or ecological communities and their habitats, as well as requiring the consent authority to have regard for the register of critical habitat<sup>2</sup>. Consideration of these matters is provided in Appendices F and N and summarised in Section 4.11.

<sup>2</sup> In March 2018, the DP&E confirmed that the Project is a 'pending or interim planning application' under the *Biodiversity Conservation (Savings and Transitional) Regulation, 2017*. Therefore, the relevant provisions of the EP&A Act that would be in force if that Act had not been amended (such as sections 5A to 5C of the EP&A Act) apply to the Project.

### 6.1.6 Consideration of the Project against the Objects of the Environment Protection and Biodiversity Conservation Act, 1999

Section 3 of the EPBC Act describes the objects of the EPBC Act as follows:

- (1) *The objects of this Act are:*
- (a) *to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and*
  - (b) *to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and*
  - (c) *to promote the conservation of biodiversity; and*
  - (ca) *to provide for the protection and conservation of heritage; and*
  - (d) *to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples; and*
  - (e) *to assist in the co-operative implementation of Australia's international environmental responsibilities; and*
  - (f) *to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and*
  - (g) *to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.*

The Project is considered to be generally consistent with the objects of the EPBC Act, because it is a Project which:

- incorporates a range of measures for the protection of the environment, including listed threatened species and ecological communities, water resources and heritage (Section 4);
- incorporates relevant ESD considerations (Section 6.1.4);
- includes a proposal for offset of unavoidable impacts on biodiversity and other compensatory measures (Sections 4.11, 5 and 7);

- includes the involvement and participation of the community, landholders and indigenous people through the Approved Mine CCC, the Project EIS consultation program (Section 3.1), the public exhibition of the EIS document and DP&E assessment of the Project in accordance with the requirements of the EP&A Act;
- would not result in a significant impact on migratory species protected under international agreements;
- is not predicted to result in a significant impact on water (Sections 4.4 and 4.5);
- includes the involvement of RAPs throughout the life of the Project through the Heritage Management Plan; and
- includes target employment of 10% of the operational workforce being of Aboriginal and/or Torres Strait Islander descent within five years of commencement of operations.

#### 6.1.7 Consideration of Project Alternatives

A number of alternatives to the Project assessed in this EIS were considered by Whitehaven in the development of the Project description, including further consideration of alternatives following lodgement of the *Project Description and Preliminary Environmental Assessment* in January 2016.

An analysis of the feasible alternatives to the Project considered by Whitehaven is provided below, in accordance with clause 7(1)(c) of Schedule 2 of the EP&A Regulation (Table 1-3) and requirements pertaining to assessment under the EPBC Act (Attachment 2).

##### **Project Location**

The State of NSW has procedures for the allocation of exploration tenements for coal, which determines where exploration licences are granted.

The presence of coal seams able to be economically mined in the vicinity of the Approved Mine and within Whitehaven’s mining and exploration tenements determines the location of the Project. The DRE (now DRG) acknowledged that the Project represents a responsible utilisation of NSW’s valuable coal resources.

The Project involves extensions to the Approved Mine and therefore provides new mining areas that are contiguous with approved mining areas, thereby minimising potential new disturbance areas.

##### **Mining Operations**

The relative scale, rate and nature of a mining operation is determined by the optimum resource recovery and production rate that maximises value to the applicant and demonstrates ongoing viability in consideration of mine planning constraints.

Mine planning is a structured process that takes into account the range of key variables that may influence a potential mining operation and its viability. Aspects considered in the mine planning process include safety, resource recovery, potential environmental impacts (e.g. noise, air quality, water), community issues, risks to the operation, mining methods and rates, equipment requirements, infrastructure capacity, development timeframes and economics (i.e. capital and operating costs).

Key alternatives with respect to the proposed mining operations are provided below.

##### **Mining Method**

Coal reserves are typically mined in one of two ways:

- underground methods (whereby the coal is accessed via a small surface opening leading to sub-surface excavations by which the coal is extracted); or
- open cut methods (whereby mining occurs from the surface downwards to progressively expose and extract the coal).

The Project would use open cut mining methods to recover approximately 179 Mt of ROM coal from the Maules Creek Formation (Section 2.1).

The multiple thin coal seams across the Project area particularly lend themselves to recovery through open cut methods, as underground extraction would not achieve optimal recovery of available coal resources. In addition, geological anomalies including faults and unconformities render underground extraction an unsafe and uneconomic method in the Project area.

Variations in coal quality across the coal seams would be managed through the coal preparation process to produce the required products.

### *Project Extent and Scale*

The Project open cut extension areas are estimated to provide access to approximately 44 Mt of additional ROM coal to that associated with the Approved Mine. Resource definition and mine planning conducted by Whitehaven to date indicates that the extension areas are the optimum extent of the open cut within Whitehaven's existing mining and exploration tenements using the proposed mining fleet (in consideration of environmental constraints).

The extent of the open cut was constrained by the following:

- the Vickery State Forest to the east;
- the target coal seams sub-crop to the west;
- CL 316 limiting extraction to the north;
- CL 316 limiting extraction to the south; and
- community sensitivity regarding the proximity of the Blue Vale Open Cut to the Namoi River (Section 6.1.9).

The floor of the Cranleigh Seam has been used as the depth design constraint for the Project.

### *Production Rate*

Whitehaven has undertaken an analysis (including consideration of the aspects outlined above and coal handling and transportation constraints) to determine the optimum production rate for the Project in consideration of Whitehaven's corporate objectives. Whitehaven determined the Project would have a peak production rate of approximately 10 Mtpa of ROM coal (and an average production rate of 7.2 Mtpa of ROM coal). By comparison the maximum production rate for the Approved Mine is 4.5 Mtpa. The Project indicative mine schedule is provided in Section 2.5.4.

### *Minimising Additional Project Surface Development Area*

Whitehaven has evaluated the relative costs and environmental benefits of a number of alternative mechanisms to reduce the potential additional disturbance area associated with the Project.

The following refinements and mine design considerations have resulted in minimising additional land disturbance and associated impacts on flora, fauna, agriculture and Aboriginal heritage:

- maximising the containment of the waste rock emplacement within the footprint of the open cut to minimise the overall mine footprint;
- substantially containing the footprint of the Western Emplacement within the approved emplacement footprint;
- design of the Project rail spur and associated laydown areas to minimise impacts to existing agricultural enterprises and associated water management infrastructure;
- location of the secondary infrastructure area and Blue Vale Road realignment to avoid a patch of Weeping Myall Woodland EEC;
- avoidance and conservation of individuals of the endangered flora species Winged Peppergrass, located adjacent to the Canyon Coal Mine rehabilitation area; and
- if constructed, the private haul road and Kamilaroi Highway overpass would avoid disturbance to mature trees, where practicable.

### *Coal Processing and Transport*

Other Whitehaven owned mines (e.g. the Tarrawonga, Sunnyside and Rocglen Coal Mines) use the Whitehaven CHPP for ROM coal handling, processing and train load-out. The Whitehaven CHPP would be used to process ROM coal from the Project until the Project CHPP, train load-out facility and rail spur reach full operational capacity.

A Project CHPP is preferred in comparison to the continued use of the Whitehaven CHPP for the following reasons:

- reduced amenity impacts (e.g. noise and traffic) associated with road haulage of ROM coal to Gunnedah;
- reduced amenity impacts to nearby private landholders (e.g. noise and air quality impacts) associated with the operation of the Whitehaven CHPP;
- reduced operational costs associated with road haulage of ROM coal to Gunnedah;

- ability to have a higher processing rate; and
- reduced greenhouse gas emissions from consumption of diesel fuel associated with ROM coal haulage to Gunnedah.

Further analysis of alternative locations for the Project rail spur is provided in Section 6.1.8.

#### **Alternative Transport Methods**

Whitehaven commissioned a study to investigate the feasibility of an overland conveyor system to transport ROM coal from the Approved Mine to the Whitehaven CHPP (Engincom, 2011).

The study identified that the cost of constructing and operating the overland conveyor system was prohibitive.

Given the above, and the significantly higher ROM coal production rate for the Project, an overland conveyor system to transport coal from the Project is not considered feasible.

#### **Waste Rock Emplacement**

The location of the Western Emplacement was selected because it is a suitable haulage distance from the open cut, avoids economically viable coal resources, is located on an area that has been largely disturbed by agricultural and mining activities, and largely avoids disturbance to the alluvial floodplain and better quality agricultural land to the north and south of the Project mining area.

The Approved Mine includes construction of the Eastern Emplacement. Development of the Project would avoid the requirement for out-of-pit emplacement of waste rock material to the east of the open cut, and as such, construction of the Eastern Emplacement would not be required, and it would no longer be a permanent feature of the final landform.

The Project mine design considered the use of the Eastern Emplacement to provide alternative waste rock emplacement capacity, however Whitehaven considers the improved integration of the Project final landform with the surrounding landscape outweighs the benefits the additional waste rock emplacement capacity provides to operations.

Further discussion on the final landform is provided in Section 6.1.10.

#### **Hours of Operation**

The selection of the open cut mining hours of operation for the Project has implications for return on capital investment (e.g. return on investment on new mining equipment), staffing and environmental consequences with respect to amenity at nearby receivers (e.g. operational noise and dust generation).

Project economic viability constraints require 24 hour open cut mining operations (noting that the implementation of real-time noise and air quality controls may be required during adverse conditions).

Construction/development activities would generally be restricted to daytime hours (i.e. 7.00 am to 6.00 pm), seven days a week. Construction/development activities may be conducted outside daylight hours where the activities would not result in noise impacts at privately-owned residences.

#### **No Project**

Consideration of the potential consequences of not proceeding with the development of the Project is provided in Section 6.1.11.

#### **6.1.8 Rail Spur Analysis**

The *Project Description and Preliminary Environmental Assessment* lodged in January 2016 presented two Rail Spur Investigation Corridors (a northern rail corridor, connecting to the common section of the Maules Creek Coal Mine and Boggabri Coal Mine rail spurs, and a corridor to the south-west, connecting directly to the Werris Creek Mungindi Railway).

Since January 2016, Whitehaven has evaluated the two corridors described above, as well as numerous other potential rail spur alignments, to identify a preferred Project rail spur alignment. Factors considered in the analysis included:

- length of rail spur;
- landownership (e.g. whether the land is owned by Whitehaven, other mining companies, the Crown or privately owned);
- watercourse and road crossing requirements;
- rail spur cycle times;

- cultural heritage impacts;
- flood plain management conditions;
- vegetation and habitat disturbance;
- impacts to existing biodiversity offset areas;
- capacity of existing rail infrastructure to accommodate Project rail movements;
- upgrade requirements to existing rail infrastructure;
- contribution to capital costs and operating costs (including access fees associated with existing rail infrastructure); and
- operational and scheduling impacts to other rail users.

The rail spur alignment proposed for the Project (i.e. the Project rail spur described in Section 2.4.3) is similar to the south-west rail option described in the *Project Description and Preliminary Environmental Assessment* lodged in January 2016, with alterations to reflect recent land ownership agreements and consultation with local landholders (e.g. such that the Project rail spur minimises potential impacts to agricultural practices [Appendix H] and changes to flood afflux and velocities [Appendix C]).

#### **Northern Rail Option**

Whitehaven’s analysis of the northern rail option examined the operational and commercial viability of connecting to the common section of the Maules Creek Coal Mine and Boggabri Coal Mine rail spur. Between the Project and Boggabri Coal Mine, the rail spur could be located only partially on Whitehaven owned land.

Capacity modelling of the common section of the Maules Creek Coal Mine and Boggabri Coal Mine rail spur and the Werris Creek Mungindi Railway was conducted, including consideration of existing train movements, train movements associated with the Project and the future growth of the Maules Creek Coal Mine, Boggabri Coal Mine and Narrabri Mine.

The rail capacity modelling predicted increased congestion on the common section of the Maules Creek Coal Mine and Boggabri Coal Mine rail spur, and the adjacent part of the Werris Creek Mungindi Railway, due to the additional train movements associated with the Project. Alleviation of this congestion would require upgrades of the rail infrastructure and additional train units, specifically:

- a new passing loop constructed on the Werris Creek Mungindi Railway, near the connection point of the common section of the Maules Creek Coal Mine and Boggabri Coal Mine rail spur; and
- an extra train unit each for the Maules Creek Coal Mine, Boggabri Coal Mine and Narrabri Mine to satisfy future demand under increased train cycle times.

Whitehaven’s share of the existing capacity would be insufficient for the rail task arising from the Project and would therefore require agreements with the other five parties involved.

It was also identified that the northern option would require disturbance of a biodiversity offset area for the Boggabri Coal Mine. Disturbance of this area would require establishment of additional compensatory biodiversity offsets.

The northern option would also result in increased train movements through the town of Boggabri, increasing amenity and transport impacts currently experienced by the township.

In consideration of these operational and capacity constraints, and potential environmental impacts, Whitehaven examined options to connect directly to the Werris Creek Mungindi Railway.

#### **Northern Rail Option and Project Rail Spur Comparative Financial Analysis**

A comparative financial analysis of the northern rail option and Project rail spur was conducted, following conceptual design of the rail spurs.

The requirement to elevate the Project rail spur (to minimise flooding impacts and to cross the Kamilaroi Highway [Section 2.4.3]) would result in some increased construction costs compared with the northern rail option. Whitehaven’s preliminary costing of the Project rail spur and northern rail option identified a differential in comparative construction costs of approximately \$40 million.

The increased construction costs associated with the Project rail spur would be offset by the benefits of avoiding the rail congestion associated with the northern rail option, a reduction in the travel distance to the Port of Newcastle (approximately 30 km less than the northern option) and potential delays in obtaining access.

A comparative economic analysis of the Project rail spur and northern rail option was therefore conducted in consideration of:

- comparative rail spur construction costs;
- the additional passing loop and additional train units required for the northern option;
- contribution to the capital costs outlaid by other parties in the construction of the common section of the Maules Creek Coal Mine and Boggabri Coal Mine rail spur;
- ongoing access fees to obtain capacity along the common section of the Maules Creek Coal Mine and Boggabri Coal Mine rail spur;
- comparative transport costs during operations;
- land acquisition/agreement costs; and
- costs associated with the establishment of additional biodiversity offsets due to impact on the Boggabri Coal Mine's offset area.

The comparative economic analysis identified the Project rail spur delivers significant economic advantage well in excess of \$150 million over the life of the Project (compared to the northern rail option).

The environmental assessment (Section 4) of the Project rail spur confirms the potential impacts associated with its construction and operation can be managed to meet Whitehaven's objectives.

Therefore, taking environmental, social and economic objectives into account, the Project rail spur provides the superior outcome for the Project.

### 6.1.9 Removal of Blue Vale Open Cut from Project

The *Project Description and Preliminary Environmental Assessment* lodged in January 2016 described the recommencement of mining in the Blue Vale Open Cut as part of the Project.

Blue Vale formed part of the Project area's previous open cut mine operations (Section 1.2.1) and was partially mined and then rehabilitated during the late 1990's and early 2000's. The existing Blue Vale void is located to the south-west of the Vickery Open Cut.

Hydrological and hydrogeological studies indicated mining activities in the Blue Vale Open Cut could have recommenced to extract an additional 7 Mt of ROM Coal as part of the Project with no significant impacts to surface water or groundwater resources associated with the Namoi River.

However, during initial consultation with the community on a range of aspects regarding the Project (Section 3), feedback indicated some sensitivity about the proximity of the proposed Blue Vale Open Cut (as per the extent described in the *Project Description and Preliminary Environmental Assessment*) to the Namoi River.

As a result of this community feedback, Whitehaven has decided to remove the Blue Vale Open Cut from the Project scope.

This results in a reduction in total ROM coal reserves associated with the Project from 186 Mt to 179 Mt, with an associated value of some \$900 million which would be foregone.

### 6.1.10 Final Void Analysis

A final void is a depression below the natural ground level at the completion of open cut mining and closure.

The size of a final void is dictated by the depth of the open cut, the extent of backfilling that is undertaken and the mining sequence.

The final landform would include a single final void (in addition to the existing Blue Vale void). This represents an improvement to the current landform (i.e. five existing voids) and to the Approved Mine final landform, which includes three final voids (i.e. the Northern and Southern final voids as well as the existing Blue Vale void). A summary of the existing, approved and proposed final voids is provided in Section 5.3.3.

The final open cut highwall would be designed to have long-term geotechnical stability, with additional works (e.g. placement of additional waste rock at the base of the highwall) undertaken as required following the completion of mining to achieve the required stability.

A number of options were considered by Whitehaven with respect to the number and location of the final voids in the Project final landform. Options that were considered include:

- retaining the northern and southern Approved Mine final voids (Option 1);
- retaining a single void along the full width of the southern extent of the open cut (Option 2); and
- retaining a single final void as shown on Figure 5-2 (Option 3).

Option 1 would provide Whitehaven with operational flexibility as mining operations could be scheduled over two mining domains (i.e. northern and southern domains).

Option 2 also offers operational flexibility as it would allow Whitehaven to mine the open cut using longer benches providing opportunities for selective mining operations.

Notwithstanding the operational flexibility associated with Options 1 and 2, Option 3 was selected because:

- it results in a reduction in the number of final voids in the final landform relative to the Approved Mine (i.e. from two final voids to one, excluding the Blue Vale void) and from those currently present in the Project area (i.e. from five final voids to two); and
- results in a final void located further away from the Namoi River and its floodplain than Option 2.

Whitehaven also considered options for the Project final void, including:

- partial filling of the final void to the existing groundwater table level to eliminate the creation of a final void water body; and
- complete filling of the final void to the existing ground level.

Option 3 (open void) is preferred to the above options given:

- The estimated cost of filling the final void (either partially or completely) is considered unreasonable. The estimated cost of the partial and complete filling scenarios is approximately \$440 million and \$600 million, respectively (based on an estimated cost of \$4 per cubic metre of material rehandled).

- There is no risk of overflow from the Project final void (Advisian, 2018). This is consistent with the water management performance measure described in Condition 29, Schedule 3 of the Approved Mine Development Consent (SSD-5000) that requires adequate freeboard within the final void to minimise the risk of discharge to surface waters.
- The proposed final void would provide an environmental benefit by acting as a groundwater sink, limiting the flow of water from the waste rock emplacement areas to the Upper Namoi Alluvium. It is a requirement of Condition 50, Schedule 3 of the Development Consent for the Approved Mine (SSD-5000) for the approved final voids to act as groundwater sinks, due to the benefit of the sinks preventing the migration of poorer quality groundwater to surrounding aquifers. This benefit would not be provided by the other options described above.
- The predicted long-term groundwater inflows from the Upper Namoi Alluvium are small (maximum of 22 ML/year [HydroSimulations, 2018]) and would be appropriately licensed.

#### 6.1.11 Consideration of the Consequences of not Carrying out the Project

Were the Project not to proceed and Whitehaven developed the Approved Mine, the following consequences are inferred:

- 44 Mt of ROM coal would not be mined;
- approximately 200 additional operational employment opportunities would be foregone and the associated flow on effects would be lost;
- an incremental peak of up to 500 direct construction employment opportunities and associated flow on effects would not be created;
- the opportunity to reduce haul truck movements along public roads associated with transporting ROM coal from the Tarrawonga and Rocglen Coal Mines to the Whitehaven CHPP, and the associated operational efficiency improvement, would not be realised;
- incremental flow-on benefits of \$500 million, would be foregone (Appendix J);
- additional tax revenue from the Project would not be generated (Appendix J);

- additional royalties to the State of NSW would not be generated (Appendix J);
- three final voids would remain in the landscape (five if the Approved Mine was not to proceed) as opposed to two following completion of the Project (Section 5.3.3);
- the potential incremental environmental and social impacts described in this EIS for the Project would not occur;
- economic and social benefits to the Gunnedah and Narrabri LGAs associated with the Project would not be realised; and
- the incremental benefits of the Project biodiversity offset strategy and other revegetation areas would not be realised.

## 6.2 EXISTING APPROVALS AND REGULATORY CONTROLS

A general description of the mining and approvals history of the Approved Mine is provided in Section 1.2.

Key approvals and documentation pertaining to the Project and relevant existing Whitehaven operations include:

- Applications for Development Consent (DA 23/86) to the Gunnedah Shire Council and (DA 18/86) to the Narrabri Shire Council and granted in 1986 by the NSW Minister for Planning and Environment under the former section 101 of the EP&A Act for the Namoi Valley Coal Project (construction and operation of the former Vickery Coal Mine) (and subsequent modifications).
- Whitehaven acquisition of CL 316 and AUTH 406 from Rio Tinto Limited in February 2010.
- Development Consent (DA 0079/2002) issued by the Gunnedah Shire Council under delegation from the NSW Minister for Urban Affairs and Planning on 2 October 2002 for the operation of the Whitehaven CHPP, as modified by the Gunnedah Shire Council in 2008 (Modification of Consent No. 305208) and the DP&I in 2011 (DA 0079/2002 Mod 2).
- ML 1471 issued under Part 5 of the *Mining Act, 1992* by the NSW Minister for Mineral Resources in September 2002.
- Whitehaven acquisition of the Vickery South Exploration Project (EL 7407) in July 2012.

- Development Consent (SSD-5000) issued by the DP&I as delegate for the Minister in September 2014.
- ML 1718 issued under Part 5 of the NSW *Mining Act, 1992* by the NSW Minister for Mineral Resources in September 2015.
- SVC (for the MLA 1 area) issued by the Secretary of the DP&E in February 2016.
- Development Consent (DA 72-03-2000) granted by the NSW Minister for Urban Affairs and Planning for the Canyon Coal Mine in August 2000, and associated extensions and modifications.

Regulated river access licences for surface water extractions and aquifer access licences for groundwater extractions issued under the NSW *Water Management Act, 2000* by DI – Water are also associated with some landholdings that Whitehaven has acquired (Attachment 6).

A summary of key Project interactions with surrounding existing and proposed mining operations is provided in Section 2.3 and, where relevant, potential cumulative environmental impacts are discussed in Section 4.

In addition to the above, Whitehaven also operates exploration activities in the Gunnedah Basin in accordance with relevant exploration tenements and associated approvals.

## 6.3 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

The EP&A Act and EP&A Regulation set the framework for planning and environmental assessment in NSW. Approval for the Project will be sought under the State Significant Development provisions (Division 4.7) of Part 4 of the EP&A Act.

Consideration of the Project against the objects of the EP&A Act is provided in Section 6.1.5.

### 6.3.1 Permissibility and Requirement for Development Consent

The Development Application area is located within the Gunnedah and Narrabri LGAs.

The portion of the Development Application area within the Gunnedah LGA includes land zoned under the *Gunnedah Local Environmental Plan 2012* (Gunnedah LEP) as Zone RU1 (Primary Production) (Attachment 5).

The portion of the Development Application area within the Narrabri LGA includes land zoned under the *Narrabri Local Environmental Plan 2012* (Narrabri LEP) as Zone RU1 (Primary Production) (Attachment 5).

The Project may be carried out in these zones with development consent (Attachment 5).

### 6.3.2 Applicability of Division 4.7 of Part 4 of the Environmental Planning and Assessment Act, 1979

Development Consent for the Project will be sought under the State Significant Development provisions (Division 4.7) under Part 4 of the EP&A Act. It is proposed to surrender the Development Consent for the Approved Mine (SSD-5000) if the Project is approved with conditions satisfactory to the applicant.

Under section 4.36 of the EP&A Act a class of development such as mining may be declared as State Significant Development by a SEPP.

Clause 8 of the *State Environmental Planning Policy (State and Regional Development) 2011* (State and Regional Development SEPP) provides that the development is declared to be State Significant Development for the purposes of the EP&A Act if:

- the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the EP&A Act (first criterion); and
- the development is specified in Schedule 1 or 2 (second criterion).

In respect of the first criterion identified above, pursuant to the Gunnedah LEP, Narrabri LEP and clause 7 of the Mining SEPP, the Project is permissible with development consent under Part 4 of the EP&A Act.

In respect of the second criterion identified above, development for the purpose of mining that:

*(a) is coal or mineral sands mining ...*

is specified in Schedule 1, Item 5 of the State and Regional Development SEPP as being State Significant Development.

The Project is development for the purpose of coal mining (Section 2) and therefore is State Significant Development for the purposes of the EP&A Act.

In accordance with section 4.5(a) of the EP&A Act and clause 8A of the State and Regional Development SEPP, the IPC or the Minister is the consent authority for the Project.

### 6.3.3 Approvals and Authorisations that are not Required for State Significant Development

Section 4.41 of the EP&A Act prescribes the authorisations that are not required for a State Significant Development authorised by a development consent under Division 4.7 of Part 4. The authorisations that are not required under section 4.41(1) are:

- A permit under section 201, 205 or 219 of the *NSW FM Act*.
- An approval under Part 4, or an excavation permit under section 139 of the *Heritage Act, 1977*.
- An Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act, 1974* (NPW Act).
- A bushfire safety authority under section 100B of the *Rural Fires Act, 1997*.
- A water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the *Water Management Act, 2000*.

### 6.3.4 Other Approvals and Legislation that must be Applied Consistently for State Significant Development

Section 4.42 of the EP&A Act outlines the authorisations that cannot be refused if they are necessary for the carrying out of an approved State Significant Development under Division 4.7, and provides that those authorisations are to be substantially consistent with the Division 4.7 development consent.

These authorisations are of the following kind:

- An aquaculture permit under section 144 of the *FM Act*.
- An approval under section 15 of the *Mine Subsidence Compensation Act, 1961*.
- A mining lease under the *Mining Act, 1992*.
- A production lease under the *Petroleum (Onshore) Act, 1991*.

- An EPL under Chapter 3 of the NSW *Protection of the Environment Operations Act, 1997* (PoEO Act) (for any of the purposes referred to in section 43 of that Act).
- A consent under section 138 of the *Roads Act, 1993*.
- A licence under the *Pipelines Act, 1967*.

(iii) *that the information contained in the statement is neither false nor misleading.*

This EIS contains the information outlined above, including the address of relevant lands (Attachment 3) and the name, address, professional qualifications and declaration of the person by whom the EIS has been prepared in consideration of the requirements of Schedule 2 of the EP&A Regulation (refer inside front cover of Volume 1).

### 6.3.5 Environmental Impact Statement Required for State Significant Development

Section 4.12(8) of the EP&A Act specifies that a Development Application for State Significant Development is to be accompanied by an EIS prepared by, or on behalf of, the applicant in the form prescribed by the regulations.

Clause 6 of Schedule 2 of the EP&A Regulation describes the required form of an EIS:

*An environmental impact statement must contain the following information:*

- (a) *the name, address and professional qualifications of the person by whom the statement is prepared,*
- (b) *the name and address of the responsible person,*
- (c) *the address of the land:*
  - (i) *in respect of which the development application is to be made, or*
  - (ii) *on which the activity or infrastructure to which the statement relates is to be carried out,*
- (d) *a description of the development, activity or infrastructure to which the statement relates,*
- (e) *an assessment by the person by whom the statement is prepared of the environmental impact of the development, activity or infrastructure to which the statement relates, dealing with the matters referred to in this Schedule,*
- (f) *a declaration by the person by whom the statement is prepared to the effect that:*
  - (i) *the statement has been prepared in accordance with this Schedule, and*
  - (ii) *the statement contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and*

Clause 7 of Schedule 2 of the EP&A Regulation describes the required content of an EIS. Table 1-3 provides a reconciliation of each requirement in subclause (1) and the relevant section of this EIS where the information is provided.

Subclause (2) of clause 7 of Schedule 2 of the EP&A Regulation indicates that the requirements set out in subclause (1) (Table 1-3) are subject to the environmental assessment requirements that relate to the EIS.

The Project SEARs that set out the environmental assessment requirements in accordance with clause 3 of Schedule 2 of the EP&A Regulation are provided in Attachment 1 and summarised in Table 1-2.

### 6.3.6 Documents to Accompany Development Application

Subclauses 2(1) to 2(3) of Schedule 1 of the EP&A Regulation describe documentation that is required to accompany a Development Application. This EIS satisfies relevant documentation requirements outlined by these subclauses.

Clause 50A of the EP&A Regulation requires that for 'mining and petroleum development' (within the meaning of Part 4AA of the Mining SEPP) that is on land shown on the Strategic Agricultural Land Map (or on any other land that is the subject of an SVC and not located on mapped critical industry cluster land), the Development Application must be accompanied by either a current Gateway Certificate or an SVC that certifies that the land on which the proposed development is to be carried out is not Biophysical Strategic Agricultural Land.

The Project is not located on mapped critical industry cluster land under the Mining SEPP. An SVC was issued by the Secretary of the DP&E on 8 February 2016 verifying that the MLA associated with the Project (MLA 1) is not located on Biophysical Strategic Agricultural Land. The SVC is provided in Attachment 9.

### 6.3.7 Public Notification of the Development Application

In accordance with clause 49(1) of the EP&A Regulation, a Development Application may be made by the owner of the land to which the Development Application relates, or by any other person, with the consent in writing of the owner of that land. Alternatively, clause 49(2) of the EP&A Regulation provides:

*Subclause (1) (b) does not require the consent in writing of the owner of the land for a development application made by a public authority or for a development application for public notification development if the applicant instead gives notice of the application:*

- (a) *by written notice to the owner of the land before the application is made, or*
- (b) *by advertisement published in a newspaper circulating in the area in which the development is to be carried out no later than 14 days after the application is made.*

For the purposes of clause 49, clause 49(5) relevantly defines public notification development as:

**public notification development means:**

- (i) *State significant development set out in clause 5 (Mining) or 6 (Petroleum (oil and gas)) of Schedule 1 to State Environmental Planning Policy (State and Regional Development) 2011 but it does not include development to the extent that it is carried out on land that is a state conservation area reserved under the National Parks and Wildlife Act 1974, or*

...

The Project is a public notification development as it falls within Item 5 of Schedule 1 of the State and Regional Development SEPP (Section 6.3.2). The Development Application will be notified in accordance with clause 49(2)(b) of the EP&A Regulation.

Clause 49(3A) of the EP&A Regulation provides that:

- (3A) *Despite subclause (1), a development application made in respect of land owned by a Local Aboriginal Land Council may be made by a person referred to in that subclause only with the consent of the New South Wales Aboriginal Land Council.*

There is no land within the Project Development Application Area that is owned by a LALC and therefore the consent of the NSW Aboriginal Land Council is not required for the Development Application.

### 6.3.8 Division 7.1 Development Contributions

#### Planning Agreements

Section 7.4 of the EP&A Act describes voluntary planning agreements that may be entered into between a planning authority and an applicant/developer (including an applicant who has made, or proposes to make a Development Application) under which the developer is required to dedicate land free of cost, pay a monetary contribution, or provide any other material public benefit, or any combination of them, to be used for or applied towards a public purpose.

Section 7.4(2) indicates that a public purpose includes any of the following:

- the provision of (or the recoupment of the cost of providing) public amenities or public services, affordable housing, transport or other infrastructure relating to land;
- the funding of recurrent expenditure relating to the provision of: public amenities or public services; affordable housing or transport; or other infrastructure;
- the monitoring of the planning impacts of development; and
- the conservation or enhancement of the natural environment.

Voluntary planning agreements have already been established between Whitehaven, Narrabri Shire Council and Gunnedah Shire Council for the Approved Mine.

It is expected that, as with other recent major coal mining projects in NSW, updated voluntary planning agreements would either be negotiated prior to determination of the development application for the Project, or would be required by the Project Development Consent. Any such planning agreements would be negotiated between Whitehaven, the relevant councils, the DP&E and/or the Minister (as appropriate).

Under section 7.7 of the EP&A Act, the Minister or the IPC can only impose a condition of consent requiring a planning agreement to be entered into if it is in the terms of an offer made by the applicant, in connection with the Development Application.

#### **Local Infrastructure Contributions**

Sections 7.11 and 7.12 of the EP&A Act relate to contributions towards provision or improvement of amenities or services, and fixed development consent levies, respectively.

Subject to any exclusions or inclusions with respect to sections 7.11 or 7.12 in any Project voluntary planning agreement (refer to above discussion), the Minister or the IPC may grant Development Consent to the Project subject to a condition requiring contributions under either section 7.11 or 7.12 of the EP&A Act.

Contributions under section 7.11 can only be required in circumstances where the development will, or is likely to require the provision of, or increase the demand for, public amenities or services within the area.

For the Project, the Minister or the IPC may impose a condition under section 7.11 or section 7.12 that is not authorised by or determined in accordance with an applicable contributions plan, as long as the consent authority has regard to any relevant contributions plan (as provided by section 7.13[2]).

The Project Development Application area is located within the Gunnedah and Narrabri LGAs.

The Gunnedah Shire Council has section 94 and 94A Contributions Plans (Gunnedah Shire Council, 2013a and 2013b) that may be potentially applicable to the Project if adopted by the Gunnedah Shire Council. In addition, the Narrabri Shire Council also has section 94 and 94A Development Contributions Plans (Narrabri Shire Council, 2017 and 2011, respectively) that may be potentially applicable to the Project if adopted by the Narrabri Shire Council.

#### **6.3.9 Additional Matters to be Considered**

The Project is State Significant Development and is located within 200 km of the Siding Spring Observatory, therefore, the consent authority must consider the *Dark Sky Planning Guideline* (DP&E, 2016) pursuant to clause 92 of the EP&A Regulation.

The Siding Springs Observatory is located approximately 115 km to the south-west of the Project. There are a number of light sources and small towns (e.g. Coonabarabran) between the Project and the Siding Springs Observatory which may contribute to sky glow at the Siding Springs Observatory.

Lighting of night-time works is essential for the safety of personnel operating at the Project. Measures that would be implemented to mitigate potential impacts from night-lighting (including sky glow) are described in Appendix L.

### **6.4 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT, 1999**

The EPBC Act provides that activities that are likely to have a significant impact on a MNES under Part 3 of the Act are 'controlled actions'. Proposals that are, or may be, a controlled action are required to be referred to the Commonwealth Minister for the Environment for a determination as to whether or not the action is a controlled action.

MNES include:

- world heritage properties;
- wetlands listed under the Ramsar Convention;
- listed threatened species and ecological communities;
- listed migratory species protected under international agreements;
- nuclear actions;
- the Commonwealth marine environment;
- national heritage places; and
- water resources, in relation to coal seam gas development and large coal mining developments.

The Approved Mine was referred to the Commonwealth Minister in 2012, and was determined as ‘not a controlled action if undertaken in a particular manner’ (EPBC 2012/6263).

The Project was referred to the Commonwealth Minister in February 2016 (EPBC 2016/7649).

A delegate of the Commonwealth Minister determined on 14 April 2016 that the proposed action is a ‘controlled action’ for the purposes of the EPBC Act due to potential impacts on the following controlling provisions under Part 3 of Chapter 2 of the EPBC Act:

- Listed threatened species and communities (sections 18 and 18A).
- A water resource, in relation to coal seam gas development and large coal mining development (section 24D and 24E).

In 2018, Whitehaven notified the DEE of a variation to the Action, to reflect the final proposed approximate extent of the Vickery Extension Project (EPBC/7649). On 17 July 2018, the request to vary the referred action was accepted by the DEE.

The delegate of the Commonwealth Minister also determined on 14 April 2016 that the proposed action is to be assessed under the assessment bilateral agreement with the NSW Government.

The Commonwealth of Australia and the State of NSW governments signed a bilateral agreement in February 2015 (Bilateral Agreement) which accredits the NSW assessment regime under Part 4 of the EP&A Act for assessment purposes under the EPBC Act.

Clause 3.2 of Schedule 1 of the Bilateral Agreement relevantly states:

*3.2 Guidelines or Directions*

...

- (b) *In addition to standard guidelines and directions, the NSW Minister, the Secretary, the consent authority or the determining authority must issue guidelines to proponents of controlled actions that are designed to ensure that material prepared by the proponent as part of the assessment:*
- (i) *contains an assessment of all impacts that the action has, will have or is likely to have on each matter protected by a provision of Part 3 of the EPBC Act;*

- (ii) *contains enough information about the controlled action and its relevant impacts to allow the Commonwealth Minister to make an informed decision whether or not to approve the controlled action under the EPBC Act; and*
- (iii) *addresses the matters outlined in Schedule 4 of the Environment Protection and Biodiversity Conservation Regulations 2000 (Cth).*

The SEARs for the Project were issued on 19 February 2016 and 19 July 2018 (Attachment 1). The supplementary SEARs require information about the controlled action and its relevant impacts, and the matters outlined in Schedule 4 of the Commonwealth *Environment Protection and Biodiversity Conservation Regulations, 2000* to be addressed in this EIS.

A summary of the SEARs is provided in Table 1-2, as well as the relevant section of the EIS where the SEARs are addressed.

In addition, a summary and index indicating where the supplementary SEARs have been addressed in the EIS is provided in Attachment 2.

The Project will be assessed in accordance with the Bilateral Agreement and will require approval under both the EP&A Act and the EPBC Act.

Consideration of the Project against the objects of the EPBC Act is provided in Section 6.1.6.

## 6.5 OTHER APPLICABLE STATUTORY APPROVALS

The following approvals must be obtained before the Project may commence:

- Development Consent issued under the EP&A Act, and any relevant secondary approvals under the Development Consent conditions (e.g. management plans) (Section 6.2);
- approval of the action (EPBC 2016/7649) under section 133 of the EPBC Act, and any relevant secondary approvals under the approval conditions (e.g. management plans) in relation to those activities that comprise part of the action (Section 6.4);

- additional mining lease(s) issued under the NSW *Mining Act, 1992* for relevant activities outside CL 316, ML 1464, ML 1471 and ML 1718, and any relevant secondary approvals under the mining lease conditions (e.g. MOP) (Section 6.5.1); and
- an EPL under the PoEO Act (Section 6.5.1).

In addition, Whitehaven is required to hold water licences under the NSW *Water Management Act, 2000* for groundwater and surface water extraction, where applicable (Attachment 6).

### 6.5.1 NSW Approvals

The following NSW Acts may be applicable to the Project:

- *Aboriginal Land Rights Act, 1983*;
- *Biosecurity Act, 2015*;
- *Contaminated Land Management Act, 1997*;
- *Crown Land Management Act, 2016*;
- *Dams Safety Act, 1978*;
- *Dams Safety Act, 2015*;
- *Dangerous Goods (Road and Rail Transport) Act, 2008*;
- *Electricity Supply Act, 1995*;
- FM Act;
- *Heritage Act, 1977*;
- *Mining Act, 1992*;
- NPW Act;
- *Native Title (New South Wales) Act, 1994*;
- *Native Vegetation Act, 2003*;
- *Pipelines Act, 1967*;
- PoEO Act;
- *Roads Act, 1993*;
- TSC Act<sup>3</sup>;
- *Water Management Act, 2000*;

<sup>3</sup> In March 2018, the DP&E confirmed that the Project is a 'pending or interim planning application' under the *Biodiversity Conservation (Savings and Transitional) Regulation, 2017*. Although the TSC Act has been repealed, some provisions of the TSC Act that would be in force if that Act had not been repealed (such as assessment guidelines) apply to the Project.

- *Work Health and Safety Act, 2011*; and
- *Work Health and Safety (Mines and Petroleum Sites) Act, 2013*.

Relevant licences or approvals required under these Acts would be obtained for the Project as required.

Additional detail on the likely Project requirements under the *Mining Act, 1992*, PoEO Act, *Roads Act, 1993* and *Water Management Act, 2000* are provided in the sub-sections below.

#### *Mining Act, 1992*

The objects of the *Mining Act, 1992* are to encourage and facilitate the discovery and development of mineral resources in NSW, having regard to the need to encourage ESD.

#### *Mining Tenements*

Whitehaven is the applicant for the Development Application for the Project.

Whitehaven is also the holder of AUTH 406, CL 316, ML 1464, ML 1471, ML 1718 and EL 7407 for Group 9 minerals (Coal) over all relevant land where mining for coal is proposed to be carried out for the Project. Therefore, there is no impediment under section 380AA of the *Mining Act, 1992* to Whitehaven making the Development Application.

If the Project is approved, Whitehaven would apply for MLA 1 (Figure 2-2), which covers the southern extension of the open cut.

Under section 4.42(1)(c) of the EP&A Act, if the Project is approved as State Significant Development, mining leases granted under the *Mining Act, 1992* that are required for carrying out the Project cannot be refused and are to be substantially consistent with any Development Consent granted under Division 4.7 of Part 4 of the EP&A Act.

#### *Mining Operations Plan*

Under the *Mining Act, 1992*, environmental protection and rehabilitation are regulated by conditions included in all mining leases, including requirements for the submission of a MOP prior to the commencement of operations, and subsequent Annual Reviews.

All mining operations must be carried out in accordance with the MOP which has been prepared to the satisfaction of the relevant regulatory agency. The MOP describes site activities and the progress toward environmental and rehabilitation outcomes required under mining lease conditions and development consent conditions under the EP&A Act and other approvals.

The MOP, together with environmental conditions of other approvals, forms the basis for ongoing adaptive management of mining operations and their environmental impacts (DoP, 2008). The MOP must apply best available practice and technology to mine operations and include strategies to control identified environmental risks (DoP, 2008).

#### ***Protection of the Environment Operations Act, 1997***

The PoEO Act and the *NSW Protection of the Environment Operations (General) Regulation, 2009* set out the general obligations for environmental protection for development in NSW, which is regulated by the EPA.

Under section 48 of the PoEO Act, it is an offence to carry out a “scheduled activity” without an EPL. Schedule 1 of the PoEO Act lists “scheduled activities” for the purposes of section 48.

Clause 10 of Schedule 1 of the PoEO Act describes “coal works” which is defined as any activity (other than coke production) that involves storing, loading or handling coal (whether at any coal loader, conveyor, washery or reject dump or elsewhere) at an existing coal mine or on a separate coal industry site.

Clause 10(2) provides that a “coal work” is declared to be a scheduled activity if:

- (a) *it has a capacity to handle more than 500 tonnes per day of coal, or*
- (b) *it has a capacity to store more than 5,000 tonnes of coal (not including storage within a closed container or building).*

Clause 28 of Schedule 1 of the PoEO Act describes “mining for coal” which is defined as the mining, processing or handling of coal at underground mines or open cut mines.

Clause 28(2) provides that “mining for coal” is declared to be a scheduled activity if:

- (a) *it has a capacity to produce more than 500 tonnes of coal per day, or*
- (b) *it has disturbed, is disturbing or will disturb a total surface area of more than 4 hectares of land by:*
  - (i) *clearing or excavating, or*
  - (ii) *constructing dams, ponds, drains, roads, railways or conveyors, or*
  - (iii) *storing or depositing overburden or coal (including tailings and chitter).*

Section 45 of the PoEO Act outlines matters to be taken into consideration by the relevant regulatory authority with respect to licensing functions.

As the Project is a scheduled activity under clauses 10 and 28 of Schedule 1 of the PoEO Act, Whitehaven would apply for an EPL. Under section 4.42(1)(e) of the EP&A Act, if the Project is approved, an EPL cannot be refused and is to be substantially consistent with the Development Consent (Section 6.3.4).

#### ***Roads Act, 1993***

The Project would involve the realignment of Blue Vale Road (Section 2.12.3). In addition, the Approved Mine and the Project includes the development of a short length of private haul road and a Kamilaroi Highway overpass that may be constructed prior to any cumulative road haulage of ROM coal along the Approved Road Transport Route (from all Whitehaven mines) exceeding 3.5 Mtpa.

If the Project is approved, Whitehaven would apply for necessary consents under section 138 of the *Roads Act, 1993* for the road relocations and development of new roads. In accordance with section 4.42(1)(f) of the EP&A Act, if the Project is approved, consent under section 138 of the *Roads Act, 1993* cannot be refused and is to be substantially consistent with the Development Consent (Section 6.3.4).

It would also be necessary to close public access to sections of Braymont Road and Shannon Harbour Road (Section 2.12.4) in accordance with the requirements of the *Roads Act, 1993*.

### **Water Management Act, 2000**

Consideration of the Project against the water management principles and access licence dealing principles under the *Water Management Act, 2000*, and a discussion of the access licences required for each water source associated with the Project are provided in Attachment 6. Appropriate licences under the *Water Management Act, 2000* would be sought and obtained for the Project in consultation with DI–Water.

Approval requirements for water use and water management works are also described in Attachment 6.

### **6.5.2 Commonwealth Approvals**

The relevance of the EPBC Act to the Project is described in Section 6.4.

The relevance of the Commonwealth NGER Act and the Commonwealth *Native Title Act, 1993* to the Project are described in the sub-sections below.

#### **National Greenhouse and Energy Reporting Act, 2007**

The NGER Act introduced a single national reporting framework for the reporting and dissemination of corporations' greenhouse gas emissions and energy use. The NGER Act makes registration and reporting mandatory for corporations whose energy production, energy use or greenhouse gas emissions meet specified thresholds.

Section 3 of the NGER Act defines the objects of the Act:

- (1) *The first object of this Act is to introduce a single national reporting framework for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production of corporations to:*
  - (b) *inform government policy formulation and the Australian public; and*
  - (c) *meet Australia's international reporting obligations; and*
  - (d) *assist Commonwealth, State and Territory government programs and activities; and*
  - (e) *avoid the duplication of similar reporting requirements in the States and Territories.*

- (2) *The second object of this Act is to ensure that net covered emissions of greenhouse gases from the operation of a designated large facility do not exceed the baseline applicable to the facility.*

Whitehaven triggers the NGER Act reporting threshold, and accordingly, reports all energy use and greenhouse gas emissions from its activities. This would include any emissions from the Project.

#### **Native Title Act, 1993**

The *Native Title Act, 1993* provides for the recognition and protection of Native Title rights in Australia.

The *Native Title Act, 1993* provides a mechanism to determine whether Native Title exists and what the rights and interests are that comprise that Native Title. The process is designed to ensure that Indigenous people who claim to have an interest in a parcel of land have the opportunity to express this interest formally, and to negotiate with the Government and the applicant about the proposed grant or renewal of a mining tenement, or consent to access Native Title land.

The *Mining Act, 1992* must be administered in accordance with the *Native Title Act, 1993*. The primary effect of the *Native Title Act, 1993* on exploration and mining approvals is to provide Native Title parties with 'Rights to Negotiate' about the grant and some renewals by Governments of exploration and mining titles.

The *Native Title Act, 1993*, where applicable, would be complied with in relation to the granting and renewal of any necessary mining tenements for the Project.

## **6.6 ENVIRONMENTAL PLANNING INSTRUMENTS**

### **6.6.1 State Environmental Planning Policies**

The following SEPPs are potentially relevant to the Project:

- State and Regional Development SEPP;
- Mining SEPP;
- SEPP 33;
- SEPP 44;

- *State Environmental Planning Policy No 55 – Remediation of Land* (SEPP 55); and
- *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP).

A discussion of the relevant SEPPs is provided in Attachment 5.

#### **6.6.2 Local Environmental Plans**

The Development Application area falls within the Gunnedah and Narrabri LGAs (Figure 1-2), and therefore on lands covered by both the Gunnedah LEP and Narrabri LEP zonings.

The permissibility of the Project under the relevant LEPs and consideration of relevant objectives and special provisions is provided in Attachment 5.

### **6.7 STRATEGIC PLANNING DOCUMENTS**

Consideration of strategic planning documents is provided in Attachment 5.