Tasman Extension Project
Environmental Impact Statement

SECTION 6

PLANNING FRAMEWORK AND PROJECT JUSTIFICATION

Resource Strategies

DONALDSON COAL
Part of Gloucester Coal

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6 PLANNING FRAMEWORK AND PROJECT JUSTIFICATION

6.1 EXISTING APPROVALS AND REGULATORY CONTROLS

Mining operations at the Tasman Underground Mine are currently conducted in accordance with the existing Development Consent (DA 274-9-2002). There have been no modifications to the Development Consent (DA 274-9-2002) to date.

SMP Approval has been granted for the following areas at the Tasman Underground Mine (Figure 2-1):

- Panel 1;
- Panels 2 to 4;
- Panel 5;
- Panels 6 to 9; and
- Panels 10 to 15.

Key approvals and documentation pertaining to the existing Tasman Underground Mine include:

- Tasman Underground Mine Development Consent DA 274-9-2002 issued under Part 4 of the EP&A Act and approved by the Minister for Infrastructure and Planning in March 2004.
- ML 1555 issued under Part 5 of the *Mining Act, 1992* and approved in September 2004 (Figure 2-1).
- EPL 12483 issued under Chapter 3 of the PoEO Act by the EPA in May 2006 (as modified by subsequent licence reviews).
- MOP for the period 1 January 2008 to 31 March 2012 approved by the (then) DPI-MR on 8 February 2008.
- MOP for the period 1 April 2012 to 31 March 2019 lodged with the DRE for approval in March 2012.
- Groundwater licence 20BL171792 for the interception of groundwater and dewatering issued under Part 5 of the *Water Act, 1912* by the NOW.
- Various Groundwater Licences for monitoring bores issued under Part 5 of the *Water Act, 1912* by the NOW.
- Mining and occupational health and safety related approvals granted by the DRE.

A register of current licences, permits and approvals is maintained on-site by Donaldson Coal and a summary of current approvals is presented in the AEMR that is available on the GCL website:

http://www.gloucestercoal.com.au

Existing environmental management, monitoring and mitigation measures that are implemented in accordance with the existing Tasman Underground Mine approvals are described in Sections 2.1.7, 4 and 7, where relevant.

A summary of the Project key interactions with surrounding mining and industrial developments is provided in Section 2.4 and Attachment 4 and, where relevant, potential cumulative environmental impacts are described in Section 4.

In addition to the above, Donaldson Coal also operates exploration activities in the Newcastle Coalfield in accordance with relevant exploration tenements and associated environmental approvals from the DRE. EL 5337, EL 5497 and EL 5498 were issued under Part 3 of the *Mining Act, 1992* and approved on 8 August 1997, 22 July 1998 and 24 July 1998, respectively (as modified by subsequent renewals).

6.2 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 4.1) of Part 4 of the EP&A Act.

6.2.1 Permissibility and Requirement for Development Consent

The Development Application area is located with the Cessnock and Lake Macquarie LGAs.

The Development Application area includes land zoned under the *Cessnock Local Environmental Plan 2011* (Cessnock LEP 2011) as (Attachment 3):

- Zone RU2 (Rural Landscape);
- Zone RU3 (Forestry);
- SP2 (Infrastructure); and
- Zone E1 (National Parks and Nature Reserves).

The Development Application Area also includes land identified as "Deferred Matter" in the Cessnock LEP 2011. Pursuant to clause 1.3(1A) of the Cessnock LEP 2011, the *Cessnock Local Environmental Plan, 1989* (Cessnock LEP 1989) applies to these lands. These lands are zoned under the Cessnock LEP 1989 as Zone 1(a) (Rural "A") (Attachment 3).

The Development Application area includes land zoned under the *Lake Macquarie Local Environmental Plan 2004* (Lake Macquarie LEP) as (Attachment 3):

- Zone 1(1) (Rural [Production]);
- Zone 5 (Infrastructure);
- Zone 7(2) (Conservation [Secondary]);
- Zone 7(3) (Environmental [General]); and
- Zone 8 (National Park).

The land within Zone 5 (Infrastructure) is located within EL 5337, however no Project activities would be conducted on this land.

The effect of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP) is that notwithstanding any prohibition contained in the land use tables of the local environmental plans (LEPs), development for the purpose of underground mining may be carried out with development consent (Attachment 3).

6.2.2 Application of State Significant Development (Division 4.1) of Part 4 of the Environmental Planning and Assessment Act, 1979

Section 89C of the EP&A Act outlines the nature of development that is State Significant Development:

> *(1) For the purposes of this Act, **State significant development** is development that is declared under this section to be State significant development.*
>
> *(2) A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.*
>
> *…*

Clause 8 of the State and Regional Development SEPP indicates:

> *(1) Development is declared to be State significant development for the purposes of the Act if:*
>
> *(a) 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 Act, and*
>
> *(b) the development is specified in Schedule 1 or 2.*

The Project would not be permissible without development consent (Section 6.2.1) and Clause 5 of Schedule 1 of the State and Regional Development SEPP relevantly includes:

> ***5 Mining***
>
> *(1) Development for the purpose of mining that:*
>
> *(a) is coal or mineral sands mining…*

The Project represents 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 89D of the EP&A Act, the NSW Minister for Planning and Infrastructure (the Minister) is the consent authority for the Project. The Minister will determine a development application in accordance with Section 89E(1) of the EP&A Act by granting consent to the application with such modifications of the proposed development or on such conditions as the Minister may determine, or refusing consent to the application.

6.2.3 Approvals and Authorisations that are not Required for State Significant Development

Section 89J (1) of the EP&A Act outlines the authorisations that are not required for a State Significant Development consented under Division 4.1 of Part 4. These authorisations are those ordinarily required under the following legislative provisions:

- The concurrence under Part 3 of the *Coastal Protection Act, 1979* of the Minister administering that Part of that Act.
- A permit under section 201, 205 or 219 of the FM Act.

- Division 8 of Part 6, 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*.
- An authorisation referred to in section 12 of the *Native Vegetation Act, 2003* (or under any Act repealed by that Act) to clear native vegetation or State protected land.
- 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*.

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

Section 89K 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 4.1 and provides that those authorisations are to be substantially consistent with the Division 4.1 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 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*.

6.2.5 Environmental Impact Statement Required for State Significant Development

Section 78A(8A) 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*
>
> *(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 2) 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).

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 environmental impact statement.

The Project DGRs setting out the environmental assessment requirements in accordance with Clause 3, Schedule 2 of the EP&A Regulation are provided in Attachment 1 and summarised in Table 1-2.

6.2.6 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.

6.2.7 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 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) 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 falls within clause 5 of Schedule 1 of the State and Regional Development SEPP (Section 6.2.2).

Therefore, the portion of the Project outside Sugarloaf State Conservation Area is public notification development, and the Development Application will be notified in accordance with clause 49(2) of the EP&A Regulation.

Consent requirements relating to the portion of the Project located within the Sugarloaf State Conservation Area are described in Section 6.4.

6.2.8 Division 6 Development Contributions

Planning Agreements

Subdivision 2, section 93F of the EP&A Act describes voluntary planning agreements that may be entered into between a planning authority and a proponent/developer (including a proponent 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 93F(2) indicates 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.

Section 93F(3) indicates the required content of a voluntary planning agreement including:

- a description of the land to which the agreement applies;
- a description of the development to which the agreement applies;
- the nature and extent of the provision to be made, the time or times by which the provision is to be made and the manner by which the provision is to be made;
- whether the agreement excludes (wholly or in part) or does not exclude the application of sections 94, 94A or 94EF to the development;
- if the agreement does not exclude the application of section 94 to the development, whether benefits under the agreement are or are not to be taken into consideration in determining a development contribution under section 94;
- a mechanism for the resolution of disputes under the agreement; and
- the enforcement of the agreement by a suitable means, such as the provision of a bond or guarantee, in the event of a breach of the agreement by the developer.

Section 93G indicates public notice requirements and the period for inspection by the public of not less than 28 days and also indicates the regulations may provide further public notice requirements.

Clause 25D of the EP&A Regulation relevantly provides:

> *(1) If a planning authority proposes to enter into a planning agreement… in connection with a development application … the planning authority is to ensure that public notice of the proposed agreement, amendment or revocation is given:*
>
> *(a) in the case of an agreement in connection with a development application:*
>
> *(i) if practicable, as part of and contemporaneously with, and in the same manner as, any notice of the development application that is required to be given by a consent authority for a development application by or under the Act, or*
>
> *(ii) if it is not practicable for notice to be given contemporaneously, as soon as possible after any notice of the development application that is required to be given by a consent authority for a development application by or under the Act and in the manner determined by the planning authorities that are parties to the agreement, or*
>
> *…*

It is expected that as with other recent major coal mining projects in NSW, a voluntary planning agreement would either be negotiated prior to determination of the Project, or would be required by the Project Development Consent. Any such planning agreement would be negotiated between the DP&I, Donaldson Coal, Cessnock City Council and Lake Macquarie City Council.

Local Infrastructure Contributions

Subject to any exclusions or inclusions with respect to section 94 in any Project voluntary planning agreement (refer discussion above) the Minister may grant development consent to the Project subject to a condition requiring contributions under either section 94 or section 94A of the EP&A Act.

Contributions under section 94 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.

Section 94B(2) provides that where the consent authority is not a council (as is the case for the Project), the consent authority may impose a condition under section 94 or section 94A that is not authorised by or determined in accordance with an applicable contributions plan, as long as the consent authority has regard to the contributions plan that applies to the whole or any part of the area in which the development is to be carried out.

The Project Development Application area is located within the Cessnock and Lake Macquarie LGAs. The Lake Macquarie City Council has a *Lake Macquarie Section 94 Contributions Plan Citywide – Glendale Catchment* (Lake Macquarie City Council, 2010) that may be of relevance to the consent authority's consideration of contributions.

In addition, in accordance with section 94C of the EP&A Act, a condition may be imposed under section 94 or 94A for the benefit (or partly for the benefit) of an area that adjoins the Cessnock or Lake Macquarie LGAs.

6.3 OTHER APPLICABLE STATUTORY APPROVALS

6.3.1 NSW Approvals

In addition to the EP&A Act, the following NSW Acts may be applicable to the Project:

- *Aboriginal Land Rights Act, 1983*;
- *Coal Mine Health and Safety Act, 2002*;
- *Contaminated Land Management Act, 1997*;
- *Crown Lands Act, 1989*;
- *Dangerous Goods (Road and Rail Transport) Act, 2008*;
- *Electricity Supply Act, 1995;*
- FM Act;
- *Forestry Act, 1916*;
- *Heritage Act, 1977*;
- *Mine Subsidence Compensation Act, 1961*;
- *Mining Act, 1992;*
- *National Parks and Wildlife Act, 1974;*
- *Native Title (New South Wales) Act, 1994*;
- *Native Vegetation Act, 2003*;
- *Noxious Weeds Act, 1993*;
- PoEO Act;
- *Roads Act, 1993*;
- TSC Act;
- *Water Act, 1912*;
- *Water Management Act, 2000*; and
- *Work Health and Safety Act, 2011*.

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

For example, the Project would require additional mining leases under the *Mining Act, 1992*; revision of EPL 12483 and/or application for a new EPL under the PoEO Act; and water licences under the *Water Act, 1912* for groundwater extraction, where applicable.

Additional detail on the likely Project requirements under the NSW *Mining Act, 1992*, PoEO Act, *Water Management Act, 2000*, *Water Act, 1912*, *Roads Act, 1993, Forestry Act, 1916*, *Aboriginal Land Rights Act, 1983* and *Mine Subsidence Compensation Act, 1961* are provided in the sub-sections below.

Detail on the *National Parks and Wildlife Act, 1974* with respect to activities within the Sugarloaf State Conservation Area is provided in Section 6.4.

Mining Act, 1992

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

All mining operations must be carried out in accordance with the MOP which has been prepared to the satisfaction of DRE. The MOP describes site activities and the progress toward environmental and rehabilitation outcomes required under mining lease conditions and Development Consent under the EP&A Act and other approvals (DoP, 2008).

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).

AEMRs must contain a review and forecast of performance for the preceding and ensuing 12 months in relation to the following (DoP, 2008):

- compliance with the accepted MOP;
- Development Consent under the EP&A Act requirements and conditions;
- licences and approvals from the OEH and NOW;
- any other statutory environmental requirements;

- details of any variations to environmental approvals applicable to the lease area; and
- where relevant, progress towards final rehabilitation objectives.

Collectively, the MOP and AEMR constitute the MREMP (DPI-MR, 2006) which has been developed by DRE. The MREMP is a framework that aims to facilitate the development of mining in NSW in a manner such that operations are safe, the environment is protected, the resources are efficiently extracted and rehabilitation achieves a stable, satisfactory outcome (DPI-MR, 2006).

There are provisions of the *Mining Amendment Act, 2008* which would amend the *Mining Act, 1992* to replace the MREMP with the requirement to submit a REMP. Until the commencement of REMP provisions, the structure and content of the Project MOP and AEMR would be developed in accordance with the *Guidelines to the Mining, Rehabilitation and Environmental Management Process* (DPI-MR, 2006) and through consultation with various regulatory and advisory agencies including the DRE, EPA, OEH, DP&I, Cessnock City Council and Lake Macquarie City Council.

Mining Tenements

Donaldson Coal has lodged MLA 416 with the DRE for the portions of the Project mining area to the west and south of ML 1555 (Figure 1-3a). Notification of MLA 416 was given in the *Sydney Morning Herald* and *Newcastle Herald* on 21 January 2012 in accordance with section 51A of the *Mining Act, 1992* and clause 25(2) of the *Mining Regulation, 2010*.

Donaldson Coal has also lodged MLA 426 for the pit top, ventilation infrastructure and northern portion of the Project mining area with DRE (Figure 1-3a). Notification of MLA 426 was given in the *Sydney Morning Herald* and *Newcastle Herald* on 9 June 2012.

Donaldson Coal will apply for and renew ML 1555 and relevant exploration tenements with the DRE as required.

Protection of the Environment Operations Act, 1997

The existing Tasman Underground Mine is currently licensed under EPL 12483 to conduct "mining for coal" and "coal works" as defined in Schedule 1 of the PoEO Act. Donaldson Coal would apply for a revision of EPL 12483 and/or grant of a new EPL for additional works associated with the Project.

With respect to licensing functions, section 45 of the PoEO Act states that various matters are to be taken into consideration (as are of relevance) by the appropriate regulatory authority.

Water Management Act, 2000 and Water Act, 1912

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* and *Water Act, 1912* would be sought and obtained for the Project in consultation with NOW.

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

Roads Act, 1993

The Project would involve the construction of a roundabout on George Booth Drive for the intersection of the access road from the new pit top facility (Section 2.5.1). The Project would also involve mining beneath Sheppeard Drive.

Donaldson Coal is undertaking ongoing consultation with RMS in regard to the new intersection with George Booth Drive (Section 3.1.2).

Donaldson Coal would apply for the necessary consents under section 138 of the *Roads Act, 1993* for these works. In accordance with section 89K(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 6.2.4).

Forestry Act, 1916

The *Forestry Act, 1916* provides for the dedication, reservation, control and use of State forests, timber reserves and Crown lands for forestry and other purposes.

The Project would involve activities within Heaton State Forest, which is dedicated as a State Forest pursuant to the *Forestry Act, 1916*.

Section 21 of the *Forestry Act, 1916* provides that land within a State Forest is subject to the provisions of the *Mining Act, 1992* and that the exercise of any right under the *Mining Act, 1992* within a State Forest is subject to conditions relating to forestry or the purpose of the reserve.

For the portion of the Project within Heaton State Forest, Donaldson Coal has lodged MLA 416. Activities within Heaton State Forest would be conducted in accordance with the conditions of the relevant mining tenement.

Under section 32 of the *Forestry Act, 1916* it is an offence to occupy or use any land within a State Forest without a lawful authority. Donaldson Coal would apply for necessary occupation permits for activities that would be conducted as a component of the Project within Heaton State Forest.

Aboriginal Land Rights Act, 1983

Three crown land lots (1/551918, 104/755262 and 1/338999) within the Development Application Area are the subject of ALCs under the *Aboriginal Land Rights Act, 1983*.

Section 45 of the *Aboriginal Land Rights Act, 1983* relates to mining on Aboriginal land:

(1) In this section:

*(a) **mining operations** means prospecting, exploring or mining for mineral resources or other natural resources, and*

(b) (Repealed)

(2) Notwithstanding any other Act, but subject to this section:

(a) any transfer of lands to an Aboriginal Land Council under section 36 includes the transfer of the mineral resources or other natural resources contained in those lands,

(b) any vesting of the title to lands in an Aboriginal Land Council under section 37 includes, subject to that section, the vesting of the title to the mineral resources or other natural resources contained in those lands, and

(c) where:

(i) an Aboriginal Land Council purchases lands under section 38, or

(ii) lands are acquired under section 39 and vested in an Aboriginal Land Council,

any mineral resources or other natural resources which were, immediately before the purchase or vesting, vested in the Crown shall, on that purchase or vesting, become vested in the Aboriginal Land Council.

…

(11) Nothing in or done under this Act operates to abridge or control the prerogative rights and powers of the Crown with respect to gold mines and silver mines or affects the Crown's ownership of coal and petroleum.

(12) This section does not apply to or in relation to any mining operations that are or may be carried on on any lands of an Aboriginal Land Council:

(a) in respect of gold, silver, coal or petroleum, or

…

…

As the Project is a mining operation in respect of coal, section 45 of the *Aboriginal Land Rights Act, 1983* does not apply to the Project.

Mine Subsidence Compensation Act, 1961

Under the *Mine Subsidence Compensation Act, 1961*, the MSB is established, which is a service organisation operating for the community in coal mining areas of NSW and is responsible for administering the *Mine Subsidence Compensation Act, 1961*.

Under section 15 of the *Mine Subsidence Compensation Act, 1961*, approval is required from the MSB to alter or erect improvements or to subdivide land within a declared mine subsidence district.

The Development Application area is located partially within the Killingworth-Wallsend Mine Subsidence District, which is restricted to the Lake Macquarie LGA. There is no declared mine subsidence district in the portion of the Development Application area within the Cessnock LGA, including the new pit top facility area.

Therefore, approval for the new pit top facility under section 15 of the *Mine Subsidence Compensation Act, 1961* is not required. Donaldson Coal would apply for any approvals associated with the development or alteration of improvements associated with the Project in the Killingworth-Wallsend Mine Subsidence District.

Under section 10 of the *Mine Subsidence Compensation Act, 1961*, a Mine Subsidence Compensation Fund has been established into which colliery holders are required to make annual payments. From this fund the *Mine Subsidence Compensation Act, 1961* provides for compensation or repair services where property improvements are damaged by mine subsidence resulting from the underground extraction of coal.

The *Mine Subsidence Compensation Act, 1961* covers: improvements built at any time where no mine subsidence district exists; improvements altered or erected following the proclamation of a mine subsidence district where the improvement has first been approved by the MSB; and improvements that have been in existence since before a mine subsidence district was proclaimed.

Donaldson Coal would continue to make contributions to the Mine Subsidence Compensation Fund and would conduct ongoing consultation with the MSB in regard to Project subsidence impacts on improvements.

6.3.2 Commonwealth Approvals

The following Commonwealth Acts may be applicable to the Project:

- EPBC Act;
- *Native Title Act, 1993;*
- *National Greenhouse and Energy Reporting Act, 2007* (NGER Act);
- *Clean Energy Act, 2011*;
- *Energy Efficiency Opportunities Act, 2006* (EEO Act); and
- *Minerals Resources Rent Tax Act, 2011.*

The relevance of these Acts is described in the sub-sections below.

Environment Protection and Biodiversity Conservation Act, 1999

The existing Tasman Underground Mine was declared 'Not a Controlled Action' under the EPBC Act on 9 May 2002 (2001/253).

Donaldson Coal lodged a Referral under the EPBC Act with SEWPaC on 5 December 2011 for the components of the Project not associated with the existing Tasman Underground Mine. On 10 January 2012, a delegate of the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities decided that the Project is not a controlled action (2011/6211). Therefore, the Project does not require further assessment and approval under the EPBC Act before it can proceed.

Native Title Act, 1993

The Commonwealth *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 profess an interest in the land (or any part thereof) have the opportunity to express this interest formally, and to negotiate with the Government and the applicant about the proposed grant or renewal, or consent to access native title land.

The NSW *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 a 'Rights to Negotiate' about the grant and some renewals by governments of exploration and mining titles.

The *Native Title Act, 1993* is applicable to MLA 416 which is required for the Project. The notification date for the purpose of section 29(4) of the *Native Title Act, 1993* is 4 April 2012.

The *Native Title Act, 1993* process would be complied with in relation to the granting of MLA 416 for the Project.

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 object of the Act:

> *The 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:*
>
> *(a) underpin the introduction of an emissions trading scheme in the future; and*
>
> *(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.

GCL triggers the threshold for reporting under the NGER Act, and reports energy use and greenhouse gas emissions from its enterprises, including the Tasman Underground Mine.

Clean Energy Act, 2011

The *Clean Energy Act, 2011* establishes a mechanism where corporations must purchase carbon units for their direct greenhouse gas emissions (i.e. per tonne of CO_2-e emitted). The Act commenced on 2 April 2012.

The *Clean Energy Act, 2011* makes the purchase of carbon units mandatory for corporations controlling facilities with greenhouse gas emissions above specified thresholds. The thresholds would only apply to greenhouse gas emissions from sources covered under the *Clean Energy Act, 2011*.

The objects of the proposed Act are outlined in clause 3 of the *Clean Energy Act, 2011* as follows:

(a) to give effect to Australia's obligations under:

(i) the Climate Change Convention; and

(ii) the Kyoto Protocol;

(b) to support the development of an effective global response to climate change, consistent with Australia's national interest in ensuring that average global temperatures increase by not more than 2 degrees Celsius above pre-industrial levels;

(c) to:

(i) take action directed towards meeting Australia's long-term target of reducing Australia's net greenhouse gas emissions to 80% below 2000 levels by 2050; and

(ii) take that action in a flexible and cost-effective way;

(d) to put a price on greenhouse gas emissions in a way that:

(i) encourages investment in clean energy; and

(ii) supports jobs and competitiveness in the economy; and

(iii) supports Australia's economic growth while reducing pollution.

The Project may trigger the facility threshold for the pricing mechanisms detailed in the *Clean Energy Act, 2011* during the Project life (Appendix J). The greenhouse gas emissions from the Tasman Underground Mine (including the Project) would be monitored and reported through the NGER Act.

Donaldson Coal would participate in the pricing mechanisms in the *Clean Energy Act, 2011* if the facility threshold is triggered.

Energy Efficiency Opportunities Act, 2006

The EEO Act requires large energy using corporations to assess and improve their energy efficiency, and publicly report the results of their energy efficiency assessments. Corporations that exceed mandatory participation thresholds must register and prepare assessment plans that meet the requirements specified in the *Energy Efficiency Opportunities Regulations, 2006*.

Section 3 of the EEO Act defines the object of the Act:

(1) The object of this Act is to improve the identification and evaluation of energy efficiency opportunities by large energy using businesses and, as a result, to encourage implementation of cost effective energy efficiency opportunities.

(2) In order to achieve its object, this Act requires large energy using businesses:

(a) to undertake an assessment of their energy efficiency opportunities to a minimum standard in order to improve the way in which those opportunities are identified and evaluated; and

(b) to report publicly on the outcomes of that assessment in order to demonstrate to the community that those businesses are effectively managing their energy.

GCL is a registered participant under the EEO Act. As such, GCL will assess energy usage from all aspects of its operations, including the Tasman Underground Mine, and publicly report the results of energy efficiency assessments.

Minerals Resources Rent Tax Act, 2012

On 2 July 2010, the Commonwealth Government announced new taxation arrangements for the resources sector (The Treasury, 2011). As part of these arrangements, the *Minerals Resources Rent Tax Act, 2012* will apply a Minerals Resources Rent Tax (MRRT) on profits from mining 'taxable resources' (mainly coal and iron ore). The *Minerals Resources Rent Tax Act, 2012* commences on 1 July 2012.

GCL would pay any MRRT liability associated with profits from the Project (if applicable).

6.4 SUGARLOAF STATE CONSERVATION AREA

The Sugarloaf State Conservation Area was reserved on 1 July 2007 pursuant to the *National Park Estate (Lower Hunter Region Reservations) Act, 2006*. A plan of management has not been prepared for the Sugarloaf State Conservation Area.

The geology of the Sugarloaf State Conservation Area is dominated by the Narrabeen Group, which overlies the Newcastle Coal Measures (DECC, 2008).

The existing Tasman Underground Mine involves mining within the Sugarloaf State Conservation Area.

The Development Application Area includes a portion of the Sugarloaf State Conservation Area and the Project would involve the continuation and extension of underground mining in Sugarloaf State Conservation Area.

As a component of the Project, surface activities would also be required in Sugarloaf State Conservation Area during the life of the Project, for example:

- exploration activities;
- subsidence and environmental monitoring;
- subsidence remediation activities; and
- associated access tracks.

Pursuant to section 47M of the *National Parks and Wildlife Act, 1974*, the Minister is to review the status of land within state conservation areas every 5 years. The review conducted in 2008 recommended the following in regard to Sugarloaf State Conservation Area (DECC, 2008):

> ***Recommendation*** *Sugarloaf SCA should remain an SCA.*
>
> ***Reason*** *Exploration and mining titles apply in the reserve, which means the SCA cannot be reserved as a national park or nature reserve under the NPW Act, and must remain an SCA to allow for exploration or mining, subject to environmental assessment.*

The following sub-sections outline the requirements with respect to the Development Application, mining leases and surface activities in regard to Sugarloaf State Conservation Area.

Development Application

As the Project includes land that is a state conservation area reserved under the *National Parks and Wildlife Act, 19*74, the consent of the Minister for the Environment is required in respect of the Development Application pursuant to clause 49 of the EP&A Regulation.

The consent of the Minister for the Environment may given at any time prior to the determination of the Development Application.

Mining Leases

Section 47J of the *National Parks and Wildlife Act, 1974* outlines general provisions relating to mining and State Conservation Areas:

> *(1) In this section, **mining interest** means:*
>
> *(a) any mining lease under the Mining Act 1992, or*
>
> *(b) any mining licence under the Offshore Minerals Act 1999, or*
>
> *(c) any lease under the Petroleum (Onshore) Act 1991.*
>
> *(2) Subject to this section, the Mining Act 1992, the Offshore Minerals Act 1999, the Petroleum (Onshore) Act 1991 and the Petroleum (Offshore) Act 1982 apply, at any time, to lands within a state conservation area to the extent to which those Acts are in force at that time.*
>
> *(3) A mining interest shall not be granted in respect of lands within a state conservation area without the concurrence in writing of the Minister.*

(4) A renewal of, or extension of the term of, a mining interest in respect of lands within a state conservation area (other than an existing interest referred to in section 47H) shall not be granted under the Mining Act 1992, the Offshore Minerals Act 1999 or the Petroleum (Onshore) Act 1991 without the concurrence in writing of the Minister.

(5) Except as provided in this section, nothing in this Division affects the right, title or interest of any person (other than a person who is or was trustee of the lands comprised in a state conservation area) in respect of minerals in any such lands.

…

The concurrence of the Minister for the Environment would be required for the grant, renewal or extension of MLA 416, if the Project is approved.

Section 47H of the *National Parks and Wildlife Act, 1974* defines existing interests for the purpose of section 47J(4):

(1) In this section, existing interest means any authority, authorisation, permit, lease, licence or occupancy.

(2) Except as provided by this Act, the reservation of lands as, or as part of, a state conservation area does not affect:

(a) the terms and conditions of any existing interest in respect of those lands from the Crown or the trustees, current and in force at the time of the reservation, or

(b) the use permitted of those lands under the interest.

(3) Subject to subsection (4), no such interest shall be renewed nor shall the term of any such interest be extended except with the approval of the Minister and subject to such conditions as the Minister determines.

(4) The provisions of subsection (3) do not apply to any authority, lease or licence under the Mining Act 1992, the Offshore Minerals Act 1999, the Fisheries Management Act 1994 or the Petroleum (Onshore) Act 1991, or to any permit or licence under the Petroleum (Offshore) Act 1982.

(5) Upon the termination, surrender, forfeiture or determination of any existing interest (otherwise than for the purpose of renewing it or extending its term) referred to in subsection (2), the lands the subject of the interest are, to the extent to which they would not, but for this subsection, be lands reserved as part of the state conservation area within which they are situated, hereby so reserved.

ML 1555 was granted in September 2004, therefore Donaldson Coal has an existing interest under section 47H of the *National Parks and Wildlife Act, 1974* and the renewal or extension of ML 1555 would not require the concurrence of the Minister for the Environment.

Surface Activities

Part 12 of the *National Parks and Wildlife Act, 1974* outlines the power to grant leases and licences for the use of lands in state conservation areas. Sections 151 and 151A relevantly provide:

151 Leases and licences of reserved lands

(1) The Minister may grant a lease or licence of land within a reserve (including any buildings or structures on the land).

…

(3) Without limiting section 2A, in determining whether to grant a lease or licence of land under this section, the Minister is to give effect to the objects of this Act.

***Note**. Section 2A (1) (d) provides that it is an object of this Act that the management of reserved land be in accordance with the applicable management principles.*

Section 81A makes it clear that Part 5 (Plans of management) has effect in any part of a reserve that is the subject of a lease or licence under this Part. Section 151C also provides that it is a condition of every lease or licence of land granted under this section that the lessee or licensee must ensure that the provisions of this Act, the regulations and the relevant plan of management are complied with.

151A Purposes for which a lease or licence may be granted

(1) A lease or licence of land (other than a nature reserve) may only be granted under section 151 for one or more of the following purposes:

*(a) **General purposes***

…

(viii) any other purpose that is:

(A) consistent with the relevant management principles for the land set out in Division 2 of Part 4, and

(B) identified in the relevant plan of management as being a permissible purpose for the land concerned,

…

If the Project is approved by the Minister, Donaldson Coal would require appropriate licences from Minister for the Environment (e.g. under section 151A(a)(viii) of the *National Parks and Wildlife Act, 1974*) to undertake ongoing surface activities in Sugarloaf State Conservation Area.

6.5 ENVIRONMENTAL PLANNING INSTRUMENTS

Section 79C(1)(a) of the EP&A Act requires the Minister to take into consideration the provisions of any environmental planning instrument in determination of the Project.

6.5.1 State Environmental Planning Policies

The following State Environmental Planning Policies (SEPPs) may potentially be relevant to the Project:

- State and Regional Development SEPP;
- SEPP 33;
- SEPP 44;
- *State Environmental Planning Policy No. 55 (Remediation of Land)* (SEPP 55);
- Mining SEPP;
- *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP); and
- *Hunter Regional Environmental Plan 1989 (Heritage).*

A discussion of relevant SEPPs is provided in Attachment 3.

6.5.2 Local Environmental Plans

The Development Application Area falls within the Cessnock and Lake Macquarie LGAs (Figure 1-1).

The Development Application Area is located within the lands covered by the Lake Macquarie LEP, the Cessnock LEP 2011 and the Cessnock LEP 1989.

The permissibility of the Project under the relevant LEPs and consideration of relevant objectives and special provisions is provided in Attachment 3.

It is noted that a Draft Lake Macquarie LEP is currently under preparation, however as the Draft Lake Macquarie LEP has not been the subject of public consultation under the EP&A Act it is not a relevant consideration under section 79C of the EP&A Act.

6.6 STRATEGIC PLANNING DOCUMENTS

Consideration of the applicability of Development Control Plans and relevant strategic planning documents is provided in Attachment 3.

6.7 PROJECT JUSTIFICATION

In accordance with the DGRs (Section 1.2 and 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 ESD and the consistency of the Project with the objects of the EP&A Act.

6.7.1 Need for and Objectives of the Project

The Project would involve the continuation and extension of the existing Tasman Underground Mine for an additional operational life of 15 years as described in Section 2. The Project would provide for the direct employment of approximately 20 construction and approximately 150 operational personnel.

The Project would include the implementation of SCZs to achieve subsidence performance measures (Section 2.6.3) and other mitigation measures and management to minimise potential impacts on the environment and community (Sections 4 and 7).

A summary of the proposed Project environmental management, monitoring and reporting as well as specific environmental commitments made in relation to the Project are provided in Section 7.

The Project would involve the production of up to 1.5 Mtpa of ROM coal with over 19 Mt of coal extracted over the life of the Project (Section 2.6.1). The Project would produce a combination of thermal and coking coal that would be sold domestically or exported for electricity generation and steel production and other manufacturing overseas.

Coal has met almost half of the increase in global energy demand over the last decade (International Energy Agency [IEA], 2011). In the World Energy Outlook 2011, IEA (2011) examined a number of future energy scenarios, including: maintaining current policies; implementing recent government policy commitments in a cautious manner; and the policies required to limit the long-term increase in the global mean temperature to 2°C above pre-industrial levels. All of the energy scenarios involve an increase in coal consumption in the next decade (at least), with coal consumption in 2035 at least similar to total world coal demand in 2009 (IEA, 2011).

The NSW Government (2011) anticipates that over the coming decades coal exports from NSW could increase substantially, generating significant economic growth in regional areas of the State.

Project coal production would contribute to NSW export income, State royalties and State and Commonwealth tax revenue, as well as contributing to electricity supply and manufacturing in Australia and other countries that purchase Project coal.

The Socio-Economic Assessment (Appendix M) indicates that operation of the Project is likely to result in an average annual stimulus of up to approximately 404 direct and indirect jobs in the local region and some 736 direct and indirect jobs in NSW at peak production. The Project would also make contributions to regional and NSW output or business turnover and household income (Section 4.16).

The benefit cost analysis in Appendix M indicates a net production benefit of approximately $87M, and a net benefit of between $57M and $94M would be forgone if the Project is not implemented.

6.7.2 Consideration of Project Alternatives

A number of alternatives to the Project assessed in this EIS were considered by Donaldson Coal in the development of the Project description. This included consideration of alternatives to the Project location, mining method, production scale and rate, coal processing and ROM coal transport.

In accordance with clause 7 of Schedule 2 of the EP&A Regulation (Table 1-3), an analysis of the feasible alternatives to the Project considered by Donaldson Coal is provided below.

Project Location

The location for the Project is determined by the presence of coal seams able to be economically mined in the vicinity of the existing Tasman Underground Mine and within Donaldson Coal's exploration licences. The Project involves the continuation of approved mining in the Fassifern Seam and the extension of mining into the West Borehole Seam.

The Project's proposed location allows for the continued use of the existing Bloomfield CHPP and rail loading infrastructure (Section 2.7).

Pit Top Facility Location

Donaldson Coal evaluated a number of options for access to the West Borehole Seam including:

- developing drifts from the existing Fassifern Seam workings to the West Borehole Seam and continued use of the existing Tasman Underground Mine pit top (including standard 1 in 8 grade drift and 1 in 5 grade belt drift); and
- other locations for box cut/drift access and shaft access to the east and west of Mount Sugarloaf.

Developing a drift from the existing Fassifern Seam workings to the West Borehole Seam was determined to be infeasible as the length required for the drift made the cost prohibitive.

The proposed new pit top location was determined based on:

- distance and depth to the West Borehole Seam;
- availability of land for purchase by Donaldson Coal; and
- a reduction in the public road trucking distance to the Bloomfield CHPP (i.e. a reduction of 6 km per return trip) in comparison to the existing pit top location.

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 which expose the coal); or
- open cut methods (whereby mining occurs from the surface downwards to progressively expose the coal).

The depth of cover and the sensitivity of the existing land uses mean that the coal resource is amenable to underground mining methods and is not well suited to open cut mining methods.

Due to constraints on the ROM coal production rate (discussed further below), bord and pillar mining methods are the preferred mining method over longwall mining. A combination of total and partial pillar extraction methods maximise the efficiency and recovery of the Project while allowing for adjustment of extraction to manage subsidence impacts.

Subsidence Performance Measures and Subsidence Control Zones

Donaldson Coal has made significant reductions in the potential Project mining reserve within the West Borehole Seam mining area through the implementation of SCZs to achieve subsidence performance measures (Section 2.6.3).

The subsidence performance measures were developed in consideration of the sensitivity of existing surface features and consideration of stakeholder consultation.

The SCZs were developed by DgS and Donaldson Coal to achieve the adopted performance measures. Donaldson Coal would implement an adaptive management approach to the SCZs to achieve the subsidence performance measures for the Project (Section 2.6.3).

Production Scale and Rate

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

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

Project Scale

The Project mining reserve comprises approximately 18.7 Mt of ROM coal from the West Borehole Seam (Section 2.2). The scale of the Project was constrained by a number of factors to the extent of mining in the West Borehole Seam, as follows (Section 2.6.1):

- areas with low depth of cover in the western extent of the West Borehole Seam mining area (i.e. mining would not occur below depths of cover of approximately 50 m);
- historic underground workings in the West Borehole Seam undertaken as part of the closed Stockrington No. 2 Colliery to the east of the West Borehole Seam mining area; and
- an east-west trending dyke to the south of the West Borehole Seam mining area.

The Project would involve the early completion of mining in the Fassifern Seam. This is because the coal quality, working conditions and the presence of geological structures in the Fassifern Seam make it currently less economic than mining in the West Borehole Seam. Notwithstanding, the underground mine access along with existing Tasman Underground Mine pit top may be placed under care and maintenance (i.e. for future access to the Fassifern Seam or other seams) subject to necessary approvals under the *Mining Act, 1992*.

Production Rate

Donaldson Coal has undertaken a mine planning analysis (including consideration of the aspects described above and coal handling and transportation constraints) to determine the optimum production rate for the Project. Based on this analysis and Donaldson Coal's corporate objectives, it was determined that the Project would have a maximum production rate of up to approximately 1.5 Mtpa of ROM coal, with mining operations conducted 24 hours per day, seven days per week. The Project indicative mine schedule is provided in Section 2.6.1.

Coal Processing

It was determined that the Project would include the continued use the Bloomfield CHPP and rail loading infrastructure.

Based on current economic and technical factors, establishing a new CHPP for the Project is not a feasible option for the Project, due to:

- the capital costs associated with establishment of a new CHPP;
- additional land disturbance and supporting infrastructure (e.g. electricity supply) that would be required at the new pit top facility;
- restricted land availability at the new pit top facility for the CHPP and the requirement for on-site tailings disposal facilities;
- increased site water demand that would be required at the Project; and
- additional air and noise impacts associated with the duplication of infrastructure at a new Project CHPP.

On the above basis, off-site transport of ROM coal is required for the Project to allow for processing of the ROM coal at the Bloomfield CHPP.

ROM Coal Transport

The Project involves the transportation of ROM coal along George Booth Drive and John Renshaw Drive for processing at the Bloomfield CHPP (Section 2.7).

Transportation Method

In accordance with the DGRs (Attachment 1), an assessment of the costs and benefits of alternative transport methods for ROM coal was conducted by Gillespie Economics (Appendix M).

The cost benefit analysis included consideration of three potentially feasible alternatives:

- an underground conveyor from the new pit top facility to the Abel Underground Mine surface facilities;
- an overland conveyor to the Bloomfield CHPP; and
- restriction of ROM coal transportation to the existing approved rate (i.e. 975,000 tpa with transport of no more than 4,000 tonnes per day).

The cost benefit analysis determined that all of the above options would result in a net cost to society (Appendix M). On this basis the continuation and increase of ROM coal transportation on roads is the preferred option for the Project.

Road Transport Route

Donaldson Coal has previously evaluated a number of alternative road haulage transport routes, including as part of the EIS process for the existing Tasman Underground Mine. The existing approved public road haulage route was selected on balance of capital costs, transport efficiency (e.g. required haulage distance) and consideration of road safety and potential environmental issues (e.g. avoiding coal haulage through built up residential areas).

The approved road haulage route has been the subject of a range of public road upgrade works by Donaldson Coal in support of the Tasman Underground Mine, in accordance with the existing Development Consent, including the provision of intersection and road upgrade works (Section 4.12).

Notwithstanding, other potential road transport routes from the new pit top facility to the Bloomfield CHPP would include (Figure 1-2):

- turning right out of the new pit top onto George Booth Drive, travelling south-east on George Booth Drive, north on the Sydney-Newcastle (F3) Freeway and west along John Renshaw Drive; or
- turning right out of the new pit top onto George Booth Drive, travelling south-east on George Booth Drive, entering the new Hunter Expressway via the Sydney-Newcastle (F3) Freeway, travelling north-west along the Hunter Expressway and east along John Renshaw Drive.

The above road transport routes are not the preferred option as the routes would significantly increase the ROM coal haulage distance on the public road network and would both involve coal transport through the village of Seahampton, which includes built-up residential areas.

Project Waste Rock Transport

Waste rock from the excavation of the boxcut, drifts and other earthworks would be used for construction on-site or trucked along the ROM coal transport route to the Donaldson Open Cut Mine and emplaced in the open cut (Section 2.5.2).

Alternatively, Project waste rock would be trucked to Daracon's Buttai and/or Stockrington Quarries via the proposed roundabout on George Booth Drive and the privately-owned Daracon Buttai Quarry access road. This alternative would be subject to suitable commercial arrangements between Donaldson Coal and Daracon (and relevant approvals).

The option to truck Project waste rock to the Daracon Quarries would have positive implications for the operation of the surrounding public roads compared with trucking the waste rock to the Donaldson Open Cut Mine, as there would be a reduction in the number of heavy vehicle trips per day on the public road network in 2013 (GTA Consultants, 2012).

An addendum to the Tasman Extension Project Road Transport Assessment (GTA Consultants, 2012) describes the potential benefits associated with trucking Project waste rock to the Daracon Quarries and is provided in Attachment 8.

No Project

Consideration of the potential consequences of not proceeding with the development of the Project is provided in Section 6.7.6.

6.7.3 Consideration of Climate Change Projections for Australia and NSW

Climate change involves complex interactions between climatic, biophysical, social, economic, institutional and technological processes.

The weight of scientific opinion supports the proposition that the world is warming due to the release of emissions of carbon dioxide and other greenhouse gases from human activities including industrial processes, fossil fuel combustion, and changes in land use, such as deforestation (Pew Centre on Global Climate Change, undated).

Although understanding of climate change has improved markedly over the past several decades, climate change projections are still subject to uncertainties such as (CSIRO, 2007):

- *Socio-economic uncertainties associated with the current and future activities of humans, which affect the development of greenhouse gas and aerosol emission scenarios.*
- *Uncertainties associated with our understanding of how the Earth's major biophysical systems behave and how they are represented in climate models.*
- *Uncertainties regarding the assignment of probability distributions to regional climate change projections.*
- *Uncertainties associated with projecting climate change at small spatial scales, particularly for coastal and mountainous areas.*

Climate Change Projections for Australia

In Australia, the climate is projected to become warmer and drier. By 2030, warming (for mid-range global emission scenarios) is projected to be about 1°C over most of Australia, with slightly less warming in some coastal areas, and slightly more warming inland (CSIRO, 2007). By 2070, annual average temperatures are projected to increase by 1.8 to 3.4°C with spatial variations similar to those for 2030 (CSIRO, 2007) depending on the emission scenarios examined. Substantial increases in the frequency of days over 35^{o}C, fewer frosts and increased evaporation are likely (CSIRO, 2007).

Sea level is projected to rise by 18 to 59 centimetres (cm) by 2100, or 2 to 7 cm per decade, as a result of global warming (CSIRO, 2007). Sea-level rise will have impacts on soft sediment shorelines and intertidal ecosystems, which will be especially vulnerable to change with additional impacts from extreme events.

The interaction of severe weather events, such as tropical cyclones, with the coastal ocean has the potential to generate severe waves and storm surge, which in turn can have significant impacts on the coast. Warmer ocean waters and sediment transport following heavy rainfall will affect fisheries and coastal ecosystems (CSIRO, 2007).

Climate change may result in changes to rainfall patterns, runoff patterns and river flow. High global emission scenario projections for annual average rainfall in Australia for around 2050 and 2070, relative to 1990 include (CSIRO, 2007):

- in southern areas (-20% to +0% by 2050 and -30% to +5% by 2070);
- in central, eastern and northern areas (-20% to +10% by 2050 and -30% to +20% by 2070);
- decreases are most pronounced in winter and spring;
- some inland and eastern coastal areas may become wetter in summer, and some inland areas may become wetter in autumn; and

- where average rainfall increases, there are predicted to be more extremely wet years and where average rainfall decreases there would be more dry spells.

Climate Change Projections for NSW

Current climate trends indicate an accelerating increase in average annual temperature in NSW, with an annual average temperature rise of approximately 0.1°C per decade during the 1950s to 1980s and an annual average temperature rise of approximately 0.5°C per decade from 1990 to 2010 (DECCW, 2010c).

Projections of climate change in NSW were undertaken by the DECCW (2010c) and are reported in the NSW Climate Impact Profile. Based on a global emissions scenario that assumes a low uptake of carbon alternative fuels, NSW is projected to experience the following changes to its climate by 2050 (DECCW, 2010c):

- NSW is expected to become hotter, with higher maximum and minimum temperatures very likely (i.e. greater than 90% probability) to be experienced across the state in all seasons.
- The greatest increases in maximum temperatures are projected to occur in the north and west of the state, with winter and spring maximum temperatures expected to rise by around 2 to 3°C across much of northern NSW.
- A slight increase in summer rainfall is projected for NSW, however, this is likely to be accompanied by a significant decrease in winter rainfall in the south-western regions.
- Many parts of the state will experience a shift from winter dominated to summer-dominated rainfall, which may have implications for the duration and severity of drought in these areas.
- Evaporation is expected to significantly increase across much of NSW, due to increased temperatures.

Projected changes to NSW's climate would have associated impacts, including to land, settlements and ecosystems (DECCW, 2010c).

The projected increases in evaporation are likely to counteract the expected increases in summer rainfall across the state, and as such, dry soil conditions would be expected to be even more prevalent in the west of the state. Erosion of soils is also expected to increase across the state, due to increased runoff associated with higher intensity rainfall events and lower rainfall comparative to evaporation, and decreased vegetation cover (DECCW, 2010c).

Projected changes in rainfall and evaporation in all regions will also likely affect the soil salinity. An increase or decrease in soil salinity in a particular area will depend on local factors for each catchment (DECCW, 2010c).

Settlements would likely be affected by increased sea levels and increased frequency and intensity of flood-producing rainfall events. Changes in rainfall, runoff and evaporation are also likely to affect NSW water supplies (DECCW, 2010c).

Potential impacts of climate change to biological diversity and ecological integrity are described in Section 6.7.4.

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

6.7.4 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* (NSESD) (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 NSESD 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 NSESD 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 NSESD 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.*

Clause 7 of Schedule 2 of the EP&A Regulation (Table 1-3) requires justification for the Project having regard to biophysical, economic and social consideration, including the principles of ESD.

Clause 7(4) of Schedule 2 of the EP&A Regulation provides a definition of ESD relevant to the preparation of environmental impact statements:

> *(4) The principles of ecologically sustainable development are as follows:*
>
> *(a) 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) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*
>
> *(ii) an assessment of the risk-weighted consequences of various options,*
>
> *(b) **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,*
>
> *(c) **conservation of biological diversity and ecological integrity**, namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,*
>
> *(d) **improved valuation, pricing and incentive mechanisms**, namely, that environmental factors should be included in the valuation of assets and services, such as:*
>
> *(i) polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,*
>
> *(ii) 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,*
>
> *(iii) 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.*

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

- incorporation of risk assessment and analysis at various stages in the Project design and environmental assessment and within decision-making processes;
- implementation of an adaptive management approach to achieve the subsidence performance measures;
- 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; and
- optimisation of the economic benefits to the community arising from the development of the Project.

The Project design takes into account biophysical considerations, including the principles of ESD as defined in clause 7(4) of Schedule 2 of the EP&A Regulation.

In addition, it can be demonstrated that the Project can be operated in accordance with ESD principles through the application of mitigation and management measures to minimise environmental impacts of the Project and an adaptive management approach to achieve the subsidence performance measures.

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 reinforces the need to take risk and uncertainty into account, especially in relation to threats of irreversible environmental damage.

The type and level of measures to prevent environmental damage should be determined based on consideration of the degree of seriousness and irreversibility of the threat of environmental damage and the degree of uncertainty (*Telstra Corporation Limited v Hornsby Shire Council* [2006] NSWLEC 133 at [161]).

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

The PHA (Appendix N) 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 (e.g. long-term effects of dust emissions on adjacent vegetation) or risks associated with transportation by pipeline, road, rail or sea.

The ERA (Appendix O) addressed 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 1.3).

Findings of these specialist assessments are presented in Sections 4.2 to 4.19 and relevant appendices. Measures designed to mitigate potential environmental impacts arising from the Project are also described in Sections 4.2 to 4.19 and Section 7.

The specialist assessments, PHA and ERA 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 surface water and groundwater, transport movements, air quality emissions (including greenhouse gas emissions), noise and blasting, visual character, aquatic and terrestrial ecology, heritage, land uses and socio-economics.

A range of mitigation measures have been adopted as components of the Project design to minimise the potential for serious and/or irreversible damage to the environment, including physical controls (e.g. SCZs), the development of environmental management and monitoring programs, contingency measures and compensatory measures and ecological initiatives (Sections 4.1 to 4.19 and Section 7).

The implementation of an adaptive management approach is consistent with the precautionary principle as described by Chief Justice Preston 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.*

For potential subsidence impacts, an adaptive management approach would be implemented to achieve the subsidence performance measures (Section 2.6.3 and Figure 2-10).

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 socio-economic impacts of the Project, including the distribution of impacts between stakeholders and consideration of the potential socio-economic costs of climate change (Appendix M);
- management measures to be implemented in relation to the potential impacts of the Project on water resources, heritage, land resources, ecology, noise and blasting, air quality, transport, hazards and risks, greenhouse gas emissions, visual character and socio-economics (Section 4);
- implementation of environmental management and monitoring programs (Section 4) to minimise potential environmental impacts (which include environmental management and monitoring programs covering the Project life); and
- implementation of compensatory measures and ecological initiatives during the life of the Project to compensate for potential localised impacts that have been identified for the development (Sections 4 and 7).

In particular, the Project would benefit current and future generations through the maintenance and expansion of employment and regional expenditure (Appendix M).

The Project would continue to provide stimulus to local and regional economies and provide NSW export earnings and royalties, thus contributing to future generations through social welfare, amenity and infrastructure. In addition, GCL, as the parent company of Donaldson Coal, operates a number of programs to aid in the local recruitment and training of its workforce (Section 4.17.1).

The Project incorporates a range of physical controls (e.g. implementation of SCZs) and environmental management and mitigation measures (e.g. remediation of subsidence impacts and private driveway upgrades) to minimise potential impacts on the environment and the costs of these measures would be met by Donaldson Coal.

These costs have been included in the economic assessment (Appendix M), 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

Biological diversity or 'biodiversity' is considered to be the number, relative abundance, and genetic diversity of organisms from all habitats (including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are a part) and includes diversity within species and between species as well as diversity of ecosystems (Lindenmayer and Burgman, 2005).

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

The majority of the Project area is vegetated, with some clearing for electricity line easements, rural residential lots and roads and access tracks. The Fassifern Seam and West Borehole Seam underground mining areas include Sugarloaf State Conservation Area and Heaton State Forest.

A total of 229 native flora species and 112 native fauna species have been located within the Project area and surrounds (Appendices F and G).

Five threatened ecological communities have been recorded within the Project area and surrounds, including the: Hunter Lowland Redgum Forest in the Sydney Basin and New South Wales North Coast Bioregions; Lower Hunter Spotted Gum – Ironbark Forest in the Sydney Basin Bioregion; River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions; Lowland Rainforest in the New South Wales North Coast and Sydney Basin Bioregions; and Central Hunter Ironbark – Spotted Gum– Grey Box Forest in the New South Wales North Coast and Sydney Basin Bioregions (Section 4.8.1).

Three threatened flora species listed under the TSC Act and EPBC Act were recorded by the Project flora surveys, namely: Heath Wrinklewort (*Rutidosis heterogama*); Black-eyed Susan (*Tetratheca juncea*); and Small-flower Grevillea (*Grevillea parviflora* subsp. *parviflora*) (Appendix F).

Two threatened bird species and four threatened mammals listed under the TSC Act and/or EPBC Act were recorded by the Project fauna surveys, namely the: Glossy Black Cockatoo (*Calyptorhynchus lathami*); Little Lorikeet (*Glossopsitta pusilla*); Yellow-bellied Glider (*Petaurus australis*); Grey-headed Flying-fox (*Pteropus poliocephalus*); Large-eared Pied Bat (*Chalinolobus dwyeri*); and Eastern False Pipistrelle (*Falsistrellus tasmaniensis*) (Appendix G).

Data from the aquatic field surveys determined that the condition of the stream aquatic habitat within the Project area was good, but the streams do not generally provide significant habitat for aquatic fauna due to the limited availability of permanent water (Appendix E). No threatened aquatic biota were found during the aquatic surveys and it is considered unlikely that any would occur in the Project area (Appendix E).

The environmental assessments in Sections 4.7 to 4.9 (and Appendices E, F and G) describe the potential impacts of the Project on the biological and ecological environment.

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

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, 2005). 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.

Human-caused Climate Change is listed as a key threatening process under the TSC Act.

In making its final determination to list anthropogenic climate change as a key threatening process, the NSW Scientific Committee (2000) found that:

1. The distribution of most species, populations and communities is determined, at least at some spatial scale, by climate.
2. Climate change has occurred throughout geological history and has been a major driving force for evolution.
3. There is evidence that modification of the environment by humans may result in future climate change. Such anthropogenic change to climate may occur at a faster rate than has previously occurred naturally. Climate change may involve both changes in average conditions and changes to the frequency of occurrence of extreme events.
4. Response of organisms to future climate change (however caused) is likely to differ from that in the past because it will occur in a highly modified landscape in which the distribution of natural communities is highly modified. This may limit the ability of organisms to survive climate change through dispersal (Brasher and Pittock, 1998; Australian Greenhouse Office, 1998). Species at risk include those with long generations, poor mobility, narrow ranges, specific host relationships, isolated and specialised species and those with large home ranges (Hughes and Westoby, 1994). Pest species may also be advantaged by climate change.

A greenhouse gas assessment was undertaken by PAEHolmes for the Project (Appendix J). Section 4.15 provides a description of the potential greenhouse gas emissions of the Project in accordance with the DGRs (Attachment 1). Valuation of potential impacts of greenhouse gas emissions has been incorporated in the Socio-Economic Assessment (Appendix M) for the Project.

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

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

A range of impact avoidance, mitigation, offset and compensatory 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.

A range of vegetation management measures would be implemented for the Project to minimise impacts on flora, fauna, and their habitats (Sections 4.8.3 and 4.9.3).

High frequency fire has the potential to impact on biodiversity by reducing vegetation structure and resulting in a corresponding loss of animal species. High frequency fire is listed as a key threatening process under the TSC Act. A range of management measures would be implemented for the Project to minimise the risk of bushfire and in doing so, would maintain or improve the biodiversity values of the surrounding region. These measures are described in Section 4.3.3.

Section 5 presents Donaldson Coal's rehabilitation strategy for the Project. The pit top facilities would be rehabilitated and revegetated to native bushland once the pit top facilities are no longer required.

Sections 4.8, 4.9 and 7 summarise a number of Project biodiversity offset and compensatory measures that would assist in maintaining the biodiversity of the region. The Project biodiversity offset and compensatory measures would comprise a combination of securing the long-term viability of existing woodland, revegetation of pit top facilities and ancillary surface disturbance areas, research programs and financial contributions to rehabilitation, revegetation and other management works in Sugarloaf State Conservation Area (Section 7).

Terrestrial flora, fauna and aquatic ecology management measures, including the biodiversity offset and compensatory management measures, are described in Sections 4.7.3, 4.8.3 and 4.9.3.

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.

In the past, some natural resources have been misconstrued as being free or underpriced, leading to their wasteful use and consequent degradation. 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 environment considerations in decision making, as required by ESD.

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 Socio-Economic Assessment (Appendix M) undertakes an analysis of the Project and incorporates environmental values via direct valuation where practicable (e.g. greenhouse gas emissions of the Project and impacts of ROM coal transport on public roads). Furthermore, wherever possible, direct environmental effects of the Project are internalised through the adoption and funding of mitigation measures by Donaldson Coal to mitigate potential environmental impacts (e.g. implementation of SCZs, private driveway upgrades and biodiversity offset and compensatory measures).

The benefit cost analysis in Appendix M indicates a net production benefit of approximately $87M, and a net benefit of between $57M and $94M would be forgone if the Project is not implemented.

6.7.5 Consideration of the Project Against the Objects of the EP&A Act

Section 5 of the EP&A Act describes the objects of the EP&A Act as follows:

(a) to encourage:

(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,

(ii) the promotion and co-ordination of the orderly and economic use and development of land,

(iii) the protection, provision and co-ordination of communication and utility services,

(iv) the provision of land for public purposes,

(v) the provision and co-ordination of community services and facilities, and

(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and

(vii) ecologically sustainable development, and

(viii) the provision and maintenance of affordable housing, and

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

(c) to provide increased opportunity for public involvement and 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 natural resources including water, forests and natural areas (Section 4);
  - development of the State's mineral resources (i.e. coal resources) in a manner that minimises environmental impacts through the implementation of SCZs (Sections 2.2 and 2.6);
  - measures to minimise potential amenity impacts associated with blasting, noise, air quality and visual impacts on surrounding land uses (Sections 4.13, 4.14 and 4.19);
  - continued employment and other socio-economic benefits to the community (Sections 4.16 and 4.17);
- would extend the life of the Tasman Underground Mine and includes the economic use and development of land, while maintaining key existing land uses such as the Sugarloaf State Conservation Area and Heaton State Forest;
- includes measures to minimise potential impacts on Sugarloaf State Conservation Area, Heaton State Forest and other crown land (public land) (Section 4.3.3);
- incorporates measures to manage and protect the existing communication and utility services in the region that may potentially be subject to Project mine subsidence effects (Section 4.2 and Appendix A);
- would support the ongoing provision of community services and facilities through contributions to State royalties, State taxes, Commonwealth tax revenue and voluntary contributions to community initiatives (Sections 3.2 and 4.17 and Appendix M);
- 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 4.7, 4.8, 4.9 and 7);
- incorporates relevant ESD considerations (Section 6.7.4);
- is a State Significant Development that would be determined by the NSW Minister (Section 6.2.1), however consultation with other levels of government and a range of stakeholders has been undertaken and issues raised have been considered and addressed where relevant (Section 3.1); and
- involves public involvement and participation throughout the Project EIS consultation program (Section 3.1), which would be ongoing following the public exhibition of this EIS document and DP&I assessment of the Project in accordance with the requirements of the EP&A Act.

6.7.6 Consideration of the Consequences of not Carrying out the Project

In accordance with clause 7 of Schedule 2 of the EP&A Regulation (Table 1-3), an assessment of the consequences of not proceeding with the Project has been conducted. Were the Project not to proceed, the following consequences are inferred:

- approximately 110 existing direct employment opportunities would be discontinued following completion of currently approved mining at the Tasman Underground Mine and the associated socio-economic flow-on effects would be lost;
- a peak of up to 20 direct construction and an additional approximately 40 (i.e. total of approximately 150) direct operational phase employment opportunities and associated socio-economic flow-on effects would not be created;
- net production benefit of approximately $87M, and a net benefit of between $57M and $94M would be forgone (Appendix M);
- tax revenue from the Project would not be generated (Appendix M);
- royalties to the State of NSW would not be generated (Appendix M);
- the potential environmental and social impacts described in this EIS for the Project would not occur; and
- the Project biodiversity offset and compensatory measures and voluntary contributions to community initiatives would not be established.