NSW GOVERNMENT
Department of Planning

MAJOR PROJECT ASSESSMENT
Kooragang Coal Terminal – Proposed Increase to Throughput Capacity

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

April 2007

Published April 2007
NSW Department of Planning
www.planning.nsw.gov.au

EXECUTIVE SUMMARY

Port Waratah Coal Services Limited (the Proponent) has lodged a major project application and Environmental Assessment to increase the throughput capacity of its existing coal export terminal at Kooragang Island from 77 to 120 million tonnes per annum (an increase of 43 million tonnes per annum). The increase in capacity throughput would be accomplished by optimising the design of existing equipment and by improving work practices and not by altering the size or footprint of the approved development.

Over the last twenty years the international demand for coal, more specifically thermal coal which is used to generate electricity has experienced strong growth together with sharp price increases. Australia is the world's largest exporter of coal and accounts for a third of the world's coal trade. The Australian coal industry employs 28,000 people and in 2005-2006 exported coal to the value of $24.5 billion. The Proponent's two coal export terminals at Kooragang Island and Carrington make Newcastle Port the largest coal exporting port in the world. In 2006, both terminals handled 79.8 million tonnes per annum providing significant economic benefits at the regional, state and national levels. The demand for thermal coal has been driven mainly by countries such as Japan, Korea, Malaysia, India, Chinese Taipei and China.

According to the Australian Bureau of Agricultural and Resource Economics (ABARE), the world's demand for coal is driven by the international coal price and if unconstrained, by the capacity of the coal chain. ABARE adds that Australia's ability to respond to the continuing strong demand for coal, in particular in the Hunter Valley, has been limited as a result of constraints associated with the transport and handling infrastructure of the coal supply chain to the Port of Newcastle.

The Department has assessed the Environmental Assessment, Statement of Commitments, Response to Submissions Report, the 58 submissions received from the exhibition of the proposal. The assessment indicates that noise impacts, air impacts and greenhouse gas emissions were highlighted as requiring further consideration. Issues such as ecological, visual and heritage impacts do not warrant further assessment since the existing footprint of the Terminal is not proposed to be altered in any way as part of the project.

The Department is satisfied that the impacts of the project can be mitigated and/or managed to ensure an acceptable level of environmental performance. The Department believes that the increased capacity of the terminal would be achieved at a minimal environmental cost in the surrounding areas since the project would be accomplished by optimising existing equipment, by improving work practices and not by altering the size or footprint of the current approved development or increasing vehicle movements on the neighbouring arterial roads.

The Department received 58 submissions from the public exhibition of the Environmental Assessment. Many of these submissions centred on the global greenhouse and climatic change impact from the burning of the coal overseas for power generation. The Proponent has provided estimates of Scope 1, Scope 2 and Scope 3 greenhouse gas emissions directly and indirectly associated with the project. While the Department recognises the significant challenges posed by global warming, it is cognisant of the fact current global demand for energy will not be abated through refusal of the proposed increase in capacity of the existing Kooragang Coal terminal. Rather, to address global warming in the medium term, a more considered and active approach must be taken at a national and international level to manage energy demands, influence energy/ fuel choice through market-based instruments and introduce and encourage less-greenhouse gas intensive energy generation. A refusal of the subject application will not address or ameliorate global warming impacts, but will prevent the economic benefits of the project from being realised.

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1. BACKGROUND

Port Waratah Coal Services Limited (the Proponent) has lodged a major project application to increase the current throughput capacity of its coal terminal at Kooragang Island. The Proponent currently operates two coal terminals in the Port of Newcastle area: one at Carrington and the other at Kooragang Island. The coal terminals receive, stockpile, blend and load Hunter Valley coal onto ships for export. In 2006, the Kooragang Coal Terminal loaded onto ships 60 million tonnes of coal while Carrington handled 20 million tonnes

The subject application requests that the current approved throughput capacity for the Kooragang Coal Terminal be increased to 120 million tonnes (from the currently approved capacity of 77 million tonnes. The capacity increase throughput at terminal would be accomplished through improvements and upgrades to equipment and work practices. The footprint of the coal terminal would not change.

1.1 Existing Kooragang Island Coal Terminal

The Kooragang Coal Terminal which was originally owned by BHP and has been operating since 1984. PWCS purchased and has been operating the coal terminal since 1990. The existing coal terminal site includes a number of parcels of land: Lots 5,7 & 9 DP775774; Lot 1 DP775775; Lot 1 DP869662; Lot 11 DP841542; Lots 2,6,7,8 & 9 DP775772; Lots 11,13,14,17,18,19,20, 22 & 23 DP775773; Lots 10, 29, 31, 34 & 41 DP775776; Lots 48, 49, 51, 53 & 55 DP 775777; Lot 1 DP 1015754; Lots 101, 102, 103, 104, 105, 106, 107, 109 & 111 DP1018591; Lot 131 DP 1018592; Lots 201, 202, 203, 204, 205, 206, 208 & 210 DP 1017038; Lot 211 DP 1018949 and Lot 521 DP1018950. Under the proposal, the land description outline above would remain the same.

The Proponent owns some sections of the site and also has lease arrangements with Newcastle Port Corporation for other sections. The rail line and loop are operated and maintained by the Australian Rail Track Corporation. All coal to the coal terminal is received by rail (road deliveries ceased in 1999).

The activities currently performed at Kooragang Coal Terminal are as follows:

- coal arrives at the enclosed rail receival station and is discharged from rail wagons onto conveyors for transfer to the stockpile areas (also referred to as stockyards);
- as the coal leaves the rail receival station, it is also sampled for quality checks;
- coal is retrieved from the stockyard by rail mounted 'bucket-wheel reclaimers'; and
- coal is conveyed to the ship loading facility for loading onto ships.

Currently the terminal has three shiploaders and three berths. The average time to load and dispatch a ship is less than two days.

1.2 Previous Planning Approvals

The Kooragang Coal Terminal received approval for its current operations in 1982 (Stages 1 and 2) and in 1996 (Stage 3). Stages 1 and 2 involved the construction and operation of road and receival facilities; coal stockpiles: Pad A and Pad B, shipping berths K4 and K5 and associated conveyors, transfer stations, storage and buffer bins. The 1982 consent limited the capacity thoroughput of the coal terminal to 44 million tonnes per annum.

The Stage 3 expansion was approved by the then Minister for Urban Affairs and Planning in 1996 (DA No. 35/96). This consent was subject to appeal action in the Land and Environment Court by an objector. The Court found that the consent was valid but this ruling was subsequently appealed in the NSW Supreme Court of Appeal. In 1997, the NSW Parliament enacted the *Kooragang Coal Terminal (Special Provisions) Act 1997* which confirmed the original development consent.

The Stage 3 consent provided for two additional stockpile pads (Pad C and Pad D); a third shipping berth and shiploader (K6 wharf); a third coal receiver station and fourth shipping berth (K7 wharf). The 1996 consent limited the capacity throughput of KCT to 77 million tonnes per annum.

1.3 Location

Kooragang Island is located approximately two kilometres north of Newcastle (Figure 1) and since the mid 1900s has been developed as a major port-related industrial centre for Newcastle. Kooragang Island is bounded by the South and North Arms of the Hunter River and has an approximate area of 2600 hectares formed by reclaiming and joining Dempsey, Moscheto and Walsh Islands.

The Kooragang Coal Terminal has sea access via the Hunter River and Newcastle Harbour. The former BHP steelworks and current OneSteel operations are located to the south and south-west from the coal terminal site across the Hunter River.

1.4 Surrounding Land Uses

The Kooragang Coal Terminal is located in the south-eastern section of Kooragang Island with the nearest residential areas located at Fern Bay (1.7 kilometres to the east); Stockton (1.5 kilometres to the south-east) and Mayfield (1.7 kilometres south-west). Industrial activities at Kooragang Island include cement production, concrete batching and recycling, concrete building products, oilseed processing, fertiliser manufacturing and distribution and ammonium manufacturing. Within the vicinity of terminal there are a number of other port facilities which mainly handle raw materials and agricultural products. (Figure 2)

To the south-west of terminal lies an area of vacant land which is largely controlled by the Regional Land Management Corporation (RMLC). This area has been earmarked by the Newcastle Coal Infrastructure Group for a proposed coal export terminal. The northern end of the terminal adjoins the Kooragang Nature Reserve. Parts of Kooragang Island have been internationally recognised as a Ramsar site.

Figure 1 – Kooragang Coal Terminal

Figure 2 – Kooragang Island Land Uses

2. PROPOSED DEVELOPMENT

2.1 Project Description

The Proponent has lodged an application to increase in capacity throughput of its existing coal export terminal at Kooragang Island. The 1996 consent limited the throughput capacity of the coal terminal to a maximum of 77 million tonnes per annum. The Proponent is now seeking to increase the capacity to 120 million tonnes of coal per annum. The increase in capacity throughput would be accomplished by optimising the design of key equipment and by improving operational activities and practices. All proposed changes would be within the existing terminal operation envelope. The project would not involve alteration of the size or footprint of the approved development and the external appearance of the plant would not change.

The following areas would be able to sustain greater throughput capacities by improving design and work practices:

- the three receival and four stacking streams;
- the coal reclaim system; and
- the shiploading system.

Proposed design improvements include:

- installing new low noise drives of higher power and increased speed;
- increasing the coal profile of the belt;
- changing the higher capacity chutes and introducing soft flow design for more efficient movement of the coal; and
- changes to operational activities and practices.

Upgrade works would also be undertaken on some services, including power supply and control systems.

The Proponent also anticipates that there would not be an increase in daily vehicle movement in the arterial road network in the vicinity of the site beyond that approved in the 1996 consent.

The coal terminal would continue to operate 24 hours per day, 365 days per year. The operational workforce would remain at current numbers. Construction work would be undertaken by existing personnel. The proposal has a project cost of $78 million.

2.2 Response to Submissions Report

Copies of the 58 submissions (refer to section 4 of this report) received in response to the exhibition of the application were referred to the Proponent at the conclusion of the exhibition period. The Proponent was directed to prepare a Response to Submissions Report which addressed all issues raised in submissions, and to detail if the proposal would have to be amended in light of these issues. The Report was also required, where appropriate, to update commitments made by the Proponent in its Statement of Commitments.

The Proponent submitted the Response to Submissions Report in two parts; Part A was received by the Department on 12 January 2007. Part B of the Report was submitted to the Department on 29 January 2007. Parts A and B are provided in Appendix D to this report. The Response to Submissions Report was forwarded to the Department of Environment and Conservation (DEC) and comments provided by DEC have been incorporated in section 5 of this report.

2.3 Justification for the Project

2.3.1 World Coal Trade

Coal is currently used to generate 39% of the world's electricity and it is predicted that this figure is likely to remain at this level for the next 30 years.[1] The seaborne trade of thermal coal[2] has increased an average of 8%

[1] World Coal Institute. *The Global Coal Market.*

per year over the last twenty years together with a sharp increase in price. This increase in coal demand is driven mainly by the developing Asian markets, particularly Japan, Korea, Malaysia, India, Chinese Taipei and China.

China is currently both an importer and an exporter of thermal coal, however, although China has considerable coal reserves, it is predicted that it will become an important import market due to a number of factors, including: difficulties in transporting coal from the north of China (where most of its coal reserves are located) to the manufacturing centres in China's south east; closing of small and unsafe coal mines and increases in electricity demand associated with its strong economic growth.[3] China's imports of thermal coal are projected to increase by nearly 40 per cent to 50 million tonnes by 2012. Strong demand for thermal coal is also predicted from the ASEAN (Association of South East Asian Nations) region to an average increase of 4 to 5 per cent due to increasing demand for coal for electricity generation. Similar increases are also expected from the Republic of Korea. The increase in demand for thermal coal is expected to be met by countries such as Indonesia, Australia, South Africa and Colombia. In regards to meeting the Asian demand, both Australia and Indonesia would play an important role since transportation costs account for a large percentage of the total cost of coal. To minimise the transportation costs, world coal trade has been divided into two regional markets; the Atlantic and the Pacific. The Pacific market covers the developing Asian market and it currently accounts for 60% of the world trade.

2.3.2 The Australian Coal Market

Australia is the world's largest exporter of coal with total coal exports valued at $24.5 billion in 2005-2006.[4] The Australian coal industry employs 28,000 people throughout the country concentrated mainly in Queensland and NSW. Australia's coal exports are projected to increase at an average annual rate of 2.7% to reach 395 million tonnes by 2025 (an increase of 30% on 2005 figures). In its projections, ABARE has also employed two other scenarios: high and low export scenarios due to the uncertainties in the coal export market, particularly for thermal coal. Table 1 gives an indication of the projected coal exports expected under the different scenarios for both thermal coal which is mainly exported out of NSW and metallurgical coal which is mainly exported out of Queensland:

Table 1: Projected Australian Coal Exports

	2005	2025		
		Low	Reference	High
	Mtpa	Mtpa	Mtpa	Mtpa
Thermal	108	146	184	225
Metallurgical	125	210	210	210
Total	233	353	394	435

Source: ABARE research report 06.15: *australian coal exports to 2025*

The above table highlights that the demand for Australian coal can range anywhere from a low estimate of 146 Mtpa to high estimate of 225 Mtpa in the 2025 timeframe.

2.3.3 Demand for Hunter Valley Coal and the Coal Chain

NSW currently has three export coal terminals; two at Newcastle Port (Kooragang Island and Carrington) with the third located at Port Kembla. The two coal export terminals make Newcastle Port the largest coal exporting port in the world and as such provide significant economic benefits at the regional, state and national levels. A fourth coal terminal is currently proposed by the Newcastle Coal Infrastructure Group and proposed to be located adjacent to the Kooragang Island coal terminal.

In particular for the Hunter Valley, the report: *Infrastructure Issues in the Hunter Valley Coal Supply Chain* (ABARE 2005), predicts a higher international demand for Hunter Valley coal. This report quotes a predicted demand which ranges between 130 Mtpa and 200 Mtpa by 2015. In addition, the Proponent advises that Hunter

[2] The discussion in this section concentrates on thermal coal since this type of coal is heavily represented in the coal exported out of Newcastle Port – the split is 87% thermal coal and 13% metallurgical coal.

[3] abare – australian commodities: march quarter 2007.

[4] ABARE research report 06.15: australian coal exports to 2025.

Valley coal exports will continue to grow beyond the current capacity of the coal chain[5]. PWCS's current customers have provided binding commitments for future coal shipments which exceed the current combined approved capacity of 102 Mtpa for both Carrington and the Kooragang Island terminals.

According to ABARE it is important to note that there is some level of uncertainty in terms of future medium to long term demand for Hunter Valley coal especially due to the Kyoto Protocol coming into force and the potential for Japanese climate change policies resulting in a decrease in demand for both thermal and metallurgical coal. ABARE adds that any potential decrease in demand is likely to be offset by the increase in demand from countries such as China, as discussed above.[6]

The world demand for coal is driven by international coal prices, and if unconstrained, by the capacity of the coal chain capacity. A recently released report by ABARE entitled *australian coal exports to 2025,* quotes that:

> *Constraints in coal transport and handling infrastructure in New South Wales and Queensland in recent years have limited Australia's capacity to respond to the unforseen strong growth in world coal consumption.*

The above statement particularly relates to thermal coal and the Hunter Valley 'coal chain' and its limitations to meet the increasing demand for coal from the rapidly growing Asian markets. Based on 2006 figures, the coal exported from Newcastle Port is destined for Japan (59%), Taiwan (14%), Korea (10%), Mexico (7%), and others (10%).

2.3.4 Queuing at Newcastle Port

The ability of individual Hunter Valley coal producers to meet potential market demand depends on there being sufficient capacity in the coal supply transport chain, namely the infrastructure associated with rail and port facilities. In February 2007, Newcastle Port experienced record numbers of ships (78) queuing offshore waiting to be loaded with coal. PWCS loads on average 80 ships per month but currently the size of the queue is 71 vessels. The average waiting time per ship is up to 25 days which is impacting on the coal producers through demurrage[7] costs which can be up to $1 million per day.

2.3.5 Department's Position

The current approved capacity of the Kooragang Coal Terminal is 77 million tonnes per annum and according to 2006 figures, it is already handling 60 million tonnes. It is also important to include the proposed Newcastle Coal Infrastructure Group's (NCIG) coal export terminal in the equation. If the proposal by NCIG for a third Coal Export Terminal is approved, the overall capacity of Newcastle Port would be 211 Mtpa (120 million from an expanded Kooragang Coal Terminal, 25 million from the Carrington terminal and 66 million from the new NCIG terminal). Considering the buoyancy of the coal export market as noted above, Australian exporters require that the 'coal chain' is unrestricted to meet the rapid growth in demand for thermal coal especially from markets in Asia. The Proponent and NCIG proposals ensure that there is enough capacity in the coal chain well beyond 2015.

If we consider the worst case scenario, that is, continued constraints to the Hunter Valley 'coal chain,' ABARE estimates that losses in coal export revenue would be in the order of up to $7.9 billion in net present value terms in the ten years to 2015. Losses to the NSW Gross State Product would be in the order of $8.6 billion and 1934 coal industry jobs. In 2006, the coal handling charge per tonne at KCT was $2.70 and the throughput was 60 Mtpa earning the Proponent $162 million.

The Proponent's proposal to increase terminal's throughput capacity would be achieved at a minimal environmental cost in the surrounding areas since it is being accomplished by optimising existing equipment, by improving work practices and not by altering the size or footprint of the current approved development or increasing vehicle movements on the neighbouring arterial roads.

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[5] The term 'coal chain' refers to the cycle of coal production from mining to end-use.

[6] *Delivering Reliable Australian Coal Exports to the World – Coal Transport Infrastructure* – A report commissioned by xxxx

[7] Where vessels are required to wait longer than specified time to load goods, the vessel owners charge demurrage to users such as coal producers.

3. STATUTORY CONTEXT

3.1 Major Project

On 1 August 2006, the Director-General under delegation from the Minister for Planning formed the opinion pursuant to clause 6 of *State Environmental Planning Policy (Major Projects) 2005* that the proposal is for the purpose of development described in Schedule 1 of that Policy (clause 22 – development for the purpose of shipping berths or terminals or wharf-side facilities (and related infrastructure) that has a capital investment value of more than $30 million). The proposal is thus declared to be a project to which Part 3A of the *Environmental Planning and Assessment Act 1979* applies.

The project will therefore be assessed and determined by the Minister for Planning under Part 3A of the Act in accordance with section 75D(1).

3.2 Director-General's Requirements and Adequacy of Environmental Assessment

The Director-General's requirements for the preparation of an Environmental Assessment were issued on 15 August 2006. For the purpose of section 75I(2)(g) of the *Environmental Planning and Assessment Act 1979*, the Environmental Assessment for the project complied with the Director-General's requirements on its second submission and the Proponent was notified of this compliance on 15 November 2006.

3.3 Exhibition and Notification

The Environmental Assessment for the proposal was placed on public exhibition from 20 November 2006 to 22 December 2006. Exhibition locations were as follows:

- the Department of Planning's head office and its Newcastle regional office;
- Newcastle City Council; and
- the Nature Conservation Council.

The Environmental Assessment was also provided for viewing and/or downloading at the Department's internet site.

Notification of the exhibition of the Environmental Assessment appeared in the Newcastle Herald on two separate occasions: 17 November 2006 and 1 December 2006.

3.4 Environmental Planning Instruments

There are no State Environmental Planning Policies (SEPP) that apply to the proposal that substantially govern the carrying out of the development with the exception of *State Environmental Planning Policy No. 74 – Newcastle Port and Employment Lands*. SEPP 74 applies to land in the south-west of the project site. The aims of this Policy are to:

- Promote and co-ordinate the orderly and economic development of certain land in the local government areas of Port Stephens and Newcastle City.
- Promote the economic development of the Port of Newcastle while promoting the conservation of natural and cultural heritage in the lower Hunter.
- Facilitate the carrying out of certain types of industrial and infrastructure development of State significance with a strong commitment to sustainable environmental performance.
- Enable public involvement and participation in the assessment of applications for consent to carry out this development.

It is considered that the project complies with the aims of the SEPP. Clause 10 outlines additional matters that are required to be considered by the consent authority, as follows:

- The cumulative air and other environmental impacts of the development or activity and any other development in the vicinity of a development or activity to which this Policy applies.
- The efficiency of the utilisation of resources, including energy, water and raw materials.
- The minimisation and management of waste.
- The minimisation of visual impacts, including the restoration of native vegetation.

- The likely effects of the development on local and regional societies and economies.
- The adequacy of consultation undertaken by the applicant or proponent with potentially affected land owners and communities.
- Minimisation of direct or indirect impacts to National Parks and Wildlife Service estate, Ramsar estate and other habitat for wildlife.
- Minimisation of direct or indirect impacts to natural and cultural heritage values, including important vegetation communities, threatened species and migratory species and key habitats and corridors.
- The impact of the development or activity on the distribution of floodwater within the Hunter River estuary.

The Department has considered the above matters as part of its assessment of the project.

3.5 Permissibility

Under the *Newcastle Local Environmental Plan 2003* the Kooragang Island Coal Terminal site is zoned Port and Industrial 4(b). The primary objective of the zone is:

> *To accommodate port, industrial, maritime industrial, and bulk storage activities which by their nature or the scale of their operations require separation from residential areas and other sensitive land uses.*

Therefore, the proposal is permissible with development consent. The project is therefore not partially prohibited or "wholly prohibited" within the meaning of section 75J(3) of the Act.

3.6 Objects of the Environmental Planning and Assessment Act 1979

Public submissions received in response to the exhibition of the Environmental Assessment for the project have placed a strong emphasis on the principles of ecologically sustainable development. In general terms, submissions have argued that the project is not consistent with these principles, and if not refused on that basis, should be refused as being in contravention of the objects of the *Environmental Planning and Assessment Act 1979* which themselves refer to the need to encourage ecologically sustainable development. Some submissions go so far as to suggest that the project would be in contravention of *all* of the objects of the Act.

It is a recognised principle that the objects of a particular statute provide the overarching framework that informs the purpose and intent of the legislation, and gives guidance to the application and operation of the sections of the legislation. This is particularly relevant when one considers discretionary and/ or decision-making functions such as the determination of the subject project application by the Minister for Planning. In this circumstance, the Minister's consideration and determination of the application must be informed by the relevant provisions of the *Environmental Planning and Assessment Act 1979*, consistent with and against the backdrop of the objects of the Act. Section 5 of the *Environmental Planning and Assessment Act 1979* details the objects of the legislation, as follows:

The objects of this Act are:

(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.

Of particular relevance to the environmental impact assessment and eventual determination of the subject project application by the Minister are those objects stipulated under section 5(a). Relevantly, the objects stipulated under (i), (ii), (vi) and (vii) are significant factors informing determination of the application (noting that the project does not raise significant issues relating to matters such as public lands, community services or affordable housing). With respect to ecologically sustainable development, the *Environmental Planning and Assessment Act 1979* adopts the definition in the *Protection of the Environment Administration Act 1991*, including the precautionary principle, the principle of inter-generational equity, the principle of conservation of biological diversity and ecological integrity, and the principle of improved valuation, pricing and incentive mechanisms.

In light of the above, the Department generally concurs with statements in submissions that the principles of ecologically sustainable development are relevant matters framing the assessment and determination of the project application for the proposed increase of capacity at the Kooragang Coal terminal. It is important to recognise, however, that while the *Environmental Planning and Assessment Act 1979* requires that the principles of ecologically sustainable development be encouraged, it provides other objects that must equally be included in the decision-making process for the subject project application. The Department has considered the need to encourage the principles of ecologically sustainable development in addition to the need for proper management and development of mineral resources, conservation of natural resources, and the orderly and economic development of the Port of Newcastle and the State's coal reserves as indicated in Section 5 of this report.

In addition, the Proponent undertook an assessment of how the project satisfies the principles of ecologically sustainable development as part of its Response to Submissions Report (Response to Submissions Part A (January 2007). The Response to Submissions Part B document also outlined the downstream impacts of the project in relation to the generation of greenhouse gas emissions from the end combustion of coal overseas. The coal that will be transported from the proposal will be exported overseas and subsequently burned to produce energy and result in the generation of 116,698,203 $MTCO_{2e}$ per annum which represents 0.46% of total global greenhouse gas emissions in 2005. While this is an increase in global greenhouse gas emissions, the Department does not consider that the increase is significant when balanced with the many benefits that the project would provide, particularly to the local and regional economy of New South Wales.

The provision of adequate, reliable and affordable energy is essential to meeting the needs of people in both developed and developing countries. Access to energy remains a critical development need, particularly for the one-third of the world's population without electricity. Therefore, a balance is required between the promotion and co-ordination of the orderly and economic use and development of land, the proper management and development of our resources and the protection of the environment and the effective integration of economic, social and environmental considerations as defined by the requirements of ecologically sustainable development.

4. CONSULTATION AND ISSUES RAISED

The Major Project application and the Environmental Assessment were publicly exhibited from Monday 20 November 2006 until Friday 22 December 2006. As a result of the public exhibition period, 58 submissions were received, 90% objected to the proposal, 4% supported the proposal, 5% did not clearly state a position and 1% expressed concern.

Submissions were received from five State government agencies:

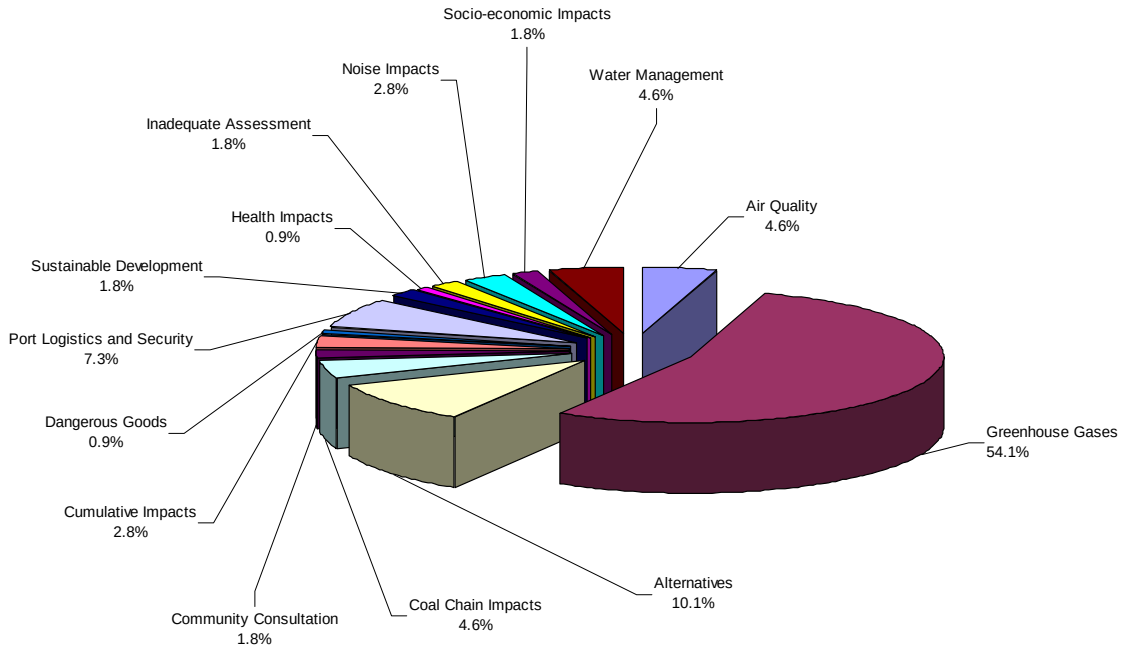
- Department of Environment and Conservation – **does not object to the proposal**, subject to a number of recommended conditions;
- Newcastle Port Corporation – **raised no objection to the proposal**, and added that the increase in shipping traffic can be managed without affecting maritime safety;
- NSW Maritime – **raised no objections** and noted that since there would not be changes to the footprint;
- Hunter Regional Development Committee - **raised no objection to the proposal;** and
- Newcastle City Council – **did not state a position** but advised that the proposal is consistent with the Newcastle Urban Strategy in relation to access to the Port of Newcastle which encourages continued use of the land for port-related activities. Council also made comments on noise, air and water quality issues together with energy and greenhouse management and Ecologically Sustainable Development.

Submissions were also received from a number of environmental and community groups:

- Rising Tide Newcastle;
- Hunter Community Environment Centre;
- Greenpeace;
- Stockton Community Forum;
- Clarence Environment Centre; and
- Citizens and Kooragang Alliance

A breakdown of all issues raised in submissions is presented in **Figure 3**. The frequency of each issue raised in submissions has been calculated based on its occurrence relative to the total number of issues raised, rather than the fraction of total submissions that raise a particular issue.

Figure 3 - Breakdown of Issues Raised in Submissions



Issues raised in submissions can be generally divided into three distinct groups: those directly related to the direct impacts of the proposal or its immediate surrounding environment; the indirect impacts of the proposal; and the processes applied to the decision-making process, both before and during the formal assessment period.

The first group of submissions, being those which relate to the direct impacts of the proposal on the surrounding environment (air, water management, noise, health, dangerous goods, cumulative impacts and increase in shipping) cover 20% of all issues raised in submissions. Of these issues, air impacts and water management constitute the most frequently raised issue of concern, at 9.2% of all issues raised in submissions. Noise impacts, increases in shipping and cumulative impacts constitute the next tier of direct impacts raised in the submissions at 2.8% for each impact.

Indirect impacts generated by the proposal were the most frequently raised cause of concern mentioned in the submissions. Climate change/greenhouse concerns represent 54.1% of all issues raised in submissions, alternative fuel/reduction in energy represent 10.1% and coal exports/ coal chain represent 4.6%.

The next set of submissions relate to the decision-making processes and related to issues such as inadequate Environmental Assessment and community consultation, inadequate consideration of Ecological Sustainable Development (1.8% each) and port logistics.

Following an assessment of the proposal and the submissions received, the issues outlined in the table below have been highlighted as those requiring further consideration in this report. Issues such as ecological, visual and heritage impacts are not considered further since the footprint of the current operations will not alter in any way. Also, these type of issues were considered as part of the 1996 consent.

Table 2 - Assessment of Submission Issue Categories

Issue Category	Section of this Report
Justification	section 2.3
Noise impacts	section 5.2
Air quality impacts	section 5.3
Greenhouse gases consideration & Adequacy of Environmental Assessment	Section 5.1
Water management	section 5.4

5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

Key issues raised in the submissions in response to the public exhibition of the project and/or identified during the Department's assessment included:

- greenhouse gas emissions;
- noise impacts;
- air quality impacts; and
- water management

All other issues are considered to be minor and have been addressed as part of the Proponent's Statement of Commitments.

5.1 Greenhouse Gas Emissions

Issues

The Proponent has provided an assessment of the direct greenhouse gas emissions to be generated by the construction and operation of the project. A specialist company, SEE Sustainability Consulting was commissioned by the Proponent to undertake a greenhouse gas and energy assessment for the project. An assessment of Scope 1 (direct emissions) and Scope 2 (indirect emissions e.g. consumption of purchased electricity) energy and greenhouse gas emissions was undertaken for existing (60 Mtpa), approved (77 Mtpa) and proposed (120 Mtpa) throughput capacities at the terminal. The Proponent estimates that the major source of greenhouse gas emissions is from the consumption of electricity to convey coal and power mobile equipment such as stackers, reclaimers and shiploaders. The Proponent has calculated that based on a proposed throughput capacity of 120 Mtpa, the annual greenhouse gas emissions from the project are estimated at 119,957 tonnes $CO_{2\text{-}e}$ which represents 0.02% of Australia's total greenhouse gas emissions of 564,700,000 tonnes $CO_{2\text{-}e}$ based on 2004 levels. The Proponent has indicated that the greenhouse index for the operation of the project at 120 Mtpa throughput capacity is estimated at 1.0 kg $CO_{2\text{-}e}$/tonne of coal handled and that this would be a reduction of approximately 22% from the greenhouse index of 1.285 $CO_{2\text{-}e}$/tonne at the existing production level of 60Mtpa.

The Environmental Assessment states that the Proponent would implement energy and greenhouse management initiatives during the project. A number of greenhouse mitigation measures were outlined, largely focussing on energy management and energy efficiency on the project site.
Given the significant number of submissions that raised the issue of greenhouse gas impacts during the public exhibition process (54.1%), the Proponent provided a more detailed consideration of greenhouse gas implications as part of its Response to Submissions Report (Part A), including downstream greenhouse gas generation associated with the combustion of coal exported through the project.

The greenhouse gas assessment presented in the Submissions Report was prepared having consideration of:

- the World Business Council for Sustainable Development and World Resources Institute *Greenhouse Gas Protocol 2004*; and
- the Australian Greenhouse Office *Factors and Methods Workbook December 2005*;

The Response to Submissions Report (Part A) considers greenhouse gas emissions in terms of Scope 1 (direct emissions from the project), Scope 2 (indirect emissions associated with electricity consumption) and Scope 3 (indirect downstream impacts). While the Proponent has presented information with respect to Scope 3 emissions, it has argued strongly and consistently that Scope 3 emissions should not be attributed to the project. In particular, the Proponent has highlighted that the *Greenhouse Gas Protocol 2004* includes Scope 3 emissions as an optional reporting requirement. It also states that reporting of Scope 3 emissions can result in double counting of emissions and can make comparisons between organisations and/or projects difficult because reporting is voluntary.

A summary of greenhouse gas emissions data presented by the Proponent in the Environmental Assessment and Response to Submissions Report (Part A) is provided in Table 1. The emissions figures are based on the

additional 43 million tonnes of coal proposed to be handled by the project (the subject of the current project application).

Table 1 - Summary of Greenhouse Gas Emissions

Scope 1 emissions (tonnes CO_{2-e}/ year)	Scope 2 emissions (tonnes CO_{2-e}/ year)	Scope 3 emissions (tonnes CO_{2-e}/ year)	Scope 3 emissions (tonnes CO_{2-e}/ year) (incl rail and sea transport)
288	32,034	116,698,203	117,636,194

The Proponent argues that only those greenhouse gas emissions attributable to the operation of the project (Scope 1 and Scope 2) should be considered as part of the assessment and in the determination of the project application, and those emissions beyond the control of the Proponent (Scope 3) should be recognised as a separate issue. Based on this line of reasoning, the Proponent suggests that greenhouse gas emissions attributable to the additional proposed capacity of the project are in the order of 32,322 tonnes per annum of CO_{2-e}. Compared with an Australian greenhouse gas emission estimate of 550,000,000 tonnes in 2005, the project is expected to result in a national increase of approximately 0.005%.

The Submissions Report presents quantification of Scope 3 emissions, with the Proponent reinforcing that despite Kooragang Coal Terminal not controlling Scope 3 emissions, this information has been provided for completeness. In comparison, the combined Scope 1 and Scope 2 emissions associated with the project are estimated to be in the order of 0.0001% and 0.00006% of global emissions in 2010 and 2030, respectively based on global CO_2 emissions of 30 gigatonnes in 2010 and 47 gigatonnes in 2030 (NCIG Response to Submissions Report, December 2006).

Submissions

A large percentage of the submissions (54.1%) raised global climate change and the effects of greenhouse gas emissions as a key issue of concern.

Many of the submissions related to greenhouse gas emissions from the project and the potential for the project to contribute to global climate change from the export and subsequent burning of coal (Scope 3 emissions). A number of submissions indicated that the 43 million tonne per annum increase in throughput capacity translates to 100 million tonnes of equivalent carbon dioxide being emitted into the global atmosphere every year increasing the potential for global climate change. Many submissions state that this would be equivalent to a doubling of NSW emissions from power generation, transport and mining. A small number of submissions (1.8%) also stated that Scope 3 emissions should have been addressed as part of the Environmental Assessment and therefore the assessment of greenhouse gas in the document and its implications were considered to be inadequate.

Consideration

The Department is satisfied that the Proponent has applied appropriate data and calculation methodologies in deriving the Scope 1, Scope 2 and Scope 3 greenhouse gas emissions figures related to the project. It is important to note that the figures calculated by the Proponent present the likely *magnitude* of greenhouse gas emissions and include a minor and acceptable level of uncertainty based on assumed scenarios, combustion equipment and fuel efficiencies. For the purpose of considering the greenhouse gas implications of the project, the Department is satisfied that the uncertainty generated through particular assumptions applied to the Proponent's calculations do not significantly alter the outcome of the assessment process. For example, public submissions have indicated that the Scope 3 emissions figure would generally be about 100,000,000 tonnes of CO_2 equivalent per annum which is similar to what the Proponent has calculated at 116,689,203 tonnes of CO_{2-e} per annum.

The Proponent has also calculated greenhouse emissions from the transport of coal (by rail and sea) in addition to its calculations of Scope 3 emissions from the burning of the additional 43 million tonnes per annum of coal handled by the project. The Scope 3 emissions from the diesel fuel consumed by rail transport of coal to the Kooragang Coal Terminal has been calculated as 73,146 tonnes of CO_{2-e} per annum and the Scope 3 emissions

from the diesel fuel consumed by sea transport of the coal from the terminal was calculated as 873,845 tonnes of $CO_{2\text{-}e}$ per annum.

With respect to Scope 1 and Scope 2 emissions associated with the project, the Department considers that greenhouse gas emissions are minimal in a global context (approximately 0.0001% on 2005 data) and when compared with Australian emissions (0.005%). The principal contributors to these emissions are petrol and diesel consumption on site, and the use of electricity from the grid. While the Proponent may apply measures from day to day to minimise the consumption of fuel and electricity, the Department does not consider that the emissions savings likely to be achieved through these measures would significantly alter the Scope 1 and Scope 2 emissions from the project. Nonetheless, the Proponent has committed to actively implement energy minimising measures, and auditing of those measures, as part of the project.

The most contentious and vigorously debated aspects of the project are the calculation of Scope 3 greenhouse gas emissions, any responsibility the Proponent may bear for those emissions, and the weight that should be applied to the Scope 3 emissions data when the Minister determines the project application. As noted above, the Proponent, the Department and relevant submitters generally agree on the magnitude of Scope 3 emissions calculated based on an assumption of combustion of an additional 43 million tonnes per annum of coal. However, positions on how Scope 3 emissions data should be used are divided. The Proponent argues that the emissions should not be directly assigned to the project and it should not be held directly responsible for mitigating those emissions. The majority of submissions that raise concern over greenhouse gas impacts take the contrary view that the project should be seen as entirely responsible for Scope 3 emissions, and that the project should be refused on the basis of these emissions (and the resultant impacts with respect to global warming, biodiversity loss, sea level rises and implications for future generations).

In the first instance, it is important to reinforce that the significance of greenhouse gas impacts, global warming and the resultant impacts on human settlements and ecology is not in question. There is sufficient evidence in support of the links between greenhouse gas emissions and changes to the environment to pursue a reasoned and proactive global approach to arrest and reverse the effects of global warming. In this regard, the Proponent has at no stage argued that these effects are not real or do not present a clear challenge on a global scale.

There is likely to be on-going debate over whether the Scope 3 emissions estimates presented by the Proponent are significant in a global context, and for that matter, what level of emissions from any particular development could be considered acceptable. The reality is, however, that the Scope 3 emissions are driven purely by existing global demand for energy and independent of the proposed capacity increase of the existing coal export terminal. Whether or not the subject project is approved, this energy demand will remain. In the medium term, global energy demand will need to be addressed through demand management, market and pricing mechanisms to influence energy/ fuel choice and substitution of less greenhouse gas intensive energy generation technologies. Until these measures are in place on a broad scale, there will be an on-going need for the supply of coal for the purpose of energy production. Refusal of the project application for an increase in the capacity of the existing Kooragang Coal Terminal will not alleviate the current demand for energy, the need for coal to supply that energy or the resultant greenhouse gas emissions. A refusal would instead mean the loss of the economic benefits likely to be realised through the expansion of the project.

On balance, the Department recognises that the predicted Scope 3 greenhouse gas emissions are likely to eventuate whether or not the project is approved. These emissions and their global impacts must be addressed outside and above the scope of the New South Wales planning system. How best to address the issue of greenhouse gas emissions and global warming requires further concerted effort at national and international levels, and is clearly a matter that is independent of whether or not the current project application is approved.

5.2 Noise Impacts

Issues

The challenge for the Proponent is to manage the increase in its operational capacity of its Kooragang Island terminal within the existing and approved parameters both in terms of noise and air. The noise assessment undertaken by Heggies Australia measured existing noise levels plus those expected as a result of the operation of the proposal. The data obtained was assessed against the relevant DEC guidelines. The assessment showed

that the predicted noise levels associated with the proposed increase in capacity are consistent with those associated with current operations. Under neutral (calm) atmospheric conditions, the predicted noise levels are even lower to those predicted for the Stage 3 expansion.

The noise assessment indicated that the Industrial Noise Policy criteria were marginally to moderately exceeded at the closest residential areas of Fern Bay and Stockton during the night time period (generally 6-7 dB(A) above amenity criteria). The expanded terminal would, however, meet sleep disturbance criteria. The Proponent highlights, however, that these noise impacts are dominated by contributions from the existing coal terminal, which was assessed and approved prior to the introduction of the NSW Industrial Noise Policy. The proposed expansion of the terminal will generally not alter noise impacts from the existing situation at Fern Bay and Stockton, although the Proponent recognises that existing noise impacts are above contemporary noise standards.

The Proponent has indicated in the Environmental Assessment and its Responses to Submission Report that a number of mitigation measures would be undertaken to ensure that the increase in throughput capacity at the coal terminal would comply with the noise limits. The mitigation measures and strategies include:

- the continued implementation of an *Acoustical Design, Procurement, Construction and Commissioning Process* which was initiated as part of the Stage 3 Expansion. This process has proven to be effective as it has reduced noise levels to below those required by existing consents; and
- the use of best available technology which promotes research and development of acoustical solutions.

The Environmental Assessment states that the Proponent is committed to the ongoing investigation of initiatives to further reduce potential noise impacts.

Submissions

Three submissions raised noise as an issue (DEC, Newcastle City Council and the Citizens and Kooragang Alliance). Key issues raised in these submissions were as follows:

- Construction noise generated by Stage 3 expansion (1996 consent) was not discernable. Recommends continuation of noise monitoring program;
- Concern with operational noise at night time at Fern Bay and Stockton. The Continuous Noise Improvement Program should continue and noise assessment should take into consideration Stockton Hospital and Stockton Primary School;
- Cumulative noise impacts are acceptable except at Fern Bay and Stockton; and
- Noise goals in relation to train noise should be imposed as part of the approval.

Consideration

The Department considers that the noise assessment undertaken by the Proponent is adequate but as outlined above, the assessment has revealed that the Industrial Noise Policy criteria may be exceeded, in particular in the suburbs of Fern Bay and Stockton. The DEC has advised that the night-time would be the critical period since noise may be enhanced by adverse meteorological conditions including inversions and drainage flows which could exacerbate noise levels and have the potential for sleep disturbance issues. Therefore, DEC has recommended stringent night-time noise levels as part of the conditions of approval as well as conditions to mitigate these impacts particularly in the neighbouring areas of Fern Bay and Stockton.

It is important to note that although the expanded coal terminal will not meet contemporary noise standards during the night time period at Fern Bay and Stockton (as specified in the Industrial Noise Policy), the expansion itself will not significantly worsen the acoustic environment. In this context, the Department considers that the noise impacts posed by the terminal expansion are acceptable. However, the Department recommends imposition of a condition of approval that requires the Proponent to undertake additional investigations and mitigation work, in consultation with the DEC, with the aim of reducing noise impacts from the existing terminal over time.

The Department is satisfied that the project would be able to meet the specified noise limits recommended in the approval. The Citizens and Kooragang Alliance, a community group, notes that the measures to be undertaken

as part of the project would have a positive effect on the noise levels in the area and not add to the cumulative noise coming from Kooragang Island.

To ensure that the additional capacity throughput at coal terminal does not negatively impact on the surrounding areas, the recommended conditions of approval include requirements to minimise noise emissions from plant and equipment and adhering to maximum allowable noise contributions for day, evening and night. In addition, the recommended consent has specific noise goals and requirements for the most likely affected areas of Fern Bay and Stockton. The Proponent is required to investigate all feasible and reasonable mitigation measures to reduce noise impacts in these two areas. A report outlining the investigations undertaken shall be submitted to the DEC and the Director-General within 12 months of commencement of works to ensure that the Proponent is investigating all feasible and reasonable measures in reducing noise emissions from the site. The Department considers that the objects of the Act have been met with regard to the assessment of noise as the mitigation measures proposed to be implemented by the Proponent together with additional measures recommended as part of the conditions of approval has considered the need for proper management and development of mineral resources, and the orderly and economic development of the Port of Newcastle and the State's coal reserves.

In terms of train noise, the recommended conditions of approval require that trains operated on the site meet the noise performance criteria specified for the remainder of the project. The recommended conditions of approval also contains noise auditing requirements which would outline monitoring, details of complaints, non-compliance and details of any additional measures undertaken to ensure compliance. The Proponent is also required to prepare a Noise Environmental Management Plan.

If the NCIG proposal were approved, noise monitoring would be a special challenge. In order to manage this issue, the conditions of approval require that both proponents prepare a Coordinated Environmental Monitoring and Management Protocol to measure and manage noise and air emissions from the site. The Protocol is required to be submitted to both the Director-General and the DEC. In this regard, the Department has assessed the potential impacts of the proposal together with the potential impacts associated with the NCIG proposal on the adjacent land and therefore made a recommendation as part of the conditions of approval that a co-ordinated approach with regard to monitoring and management of noise from the projects be undertaken to protect the amenity of the surrounding communities.

DEC's *Noise Control Guidelines Construction Site Noise* specifies recommended times for construction if the noise is likely to be audible at the receiver. The Proponent has requested in the Environmental Assessment that construction times be allowed to occur between the hours of 7am to 6pm seven days per week (the recommended times under the noise guidelines are 7am to 6pm Monday to Friday, 8am to 1pm on Saturdays and no audible work to be performed on Sundays and Public Holidays). DEC is of the opinion that the construction work to be undertaken is not likely to be discernable in residential areas and has supported the Proponent's request for extended construction hours. The Department concurs with the request for increased construction hours.

5.3 Air Quality Impacts

Issues

The Proponent currently has a number of dust control measures and implements safeguards to ensure that the current operations meet the levels specified in the 1996 consent for Stage 3. The consent requires that the Proponent comply with air quality goals so that dust deposition is less than 4 g/m^2/month, total suspended solids (TSP) are less than 90$\mu g/m^3$ (12 months averaging time) and PM_{10} is less than 50 $\mu g/m^3$ as an annual average.

Microscopic analysis of dust samples taken from the Fern Bay and Stockton residential areas has shown that coal dust from the Proponent's operations accounts for approximately 20% of the annual dust deposition in these areas. The Proponent conducts regular monitoring of the ambient air quality as required by its consent conditions and DEC licences. The continued monitoring has shown that dust deposition within the residential areas is below the relevant DEC criteria. The Proponent also indicates that as the capacity of the coal terminal has increased with time, the levels of particulate matter in the ambient air have not risen.

The proposal is unlikely to have air quality impacts during construction but the proposal has the potential to impact on the air quality of the surrounding area during its operational phase. The sources of coal dust are likely to be:

- coal dust from the unloading of trains;
- unloading of coal to stockpiles;
- reclaiming coal from stockpiles and the transfer of coal to the shiploader; and
- loading of coal onto ships.

An inventory of dust emissions was conducted on the above activities. The inventory showed the largest potential source of dust emissions form the site is from the stockpiles and exposed areas. The approved footprint of stockpiles will not change as part of this proposal so dust emissions from this source is not likely to change.

The air quality assessment prepared by Pavel Zib and Associates and Holmes Air Sciences indicates that dust emissions would increase as throughput capacity increases. The increased levels would still be below the levels set by the 1996 consent and DEC licences. For example, predicted dust concentrations would be well below DEC's criterion of 50 $\mu g/m^3$ and predicted PM_{10} annual average concentrations are less than 2 $\mu g/m^3$ at the nearest residential area.

Submissions

Five submissions raised air quality impacts as an issue (DEC, Newcastle City Council, Citizens and Kooragang Alliance and from the community). Key issues raised in submissions are as follows:

- air quality is of major concern to Stockton and Fern Bay residents but are reassured that the measures to be taken by the Proponent as part of the proposal would not increase the overall concentrations of particulate matter in the area;
- lack of information regarding the source, amount and size of TSPs coming from coal loader in order to assess the health impacts on the community;
- the existing dust monitoring program should continue and be included as a condition of approval; and
- cargo ships are a source of dust both from the transport of coal and the burning fuel and therefore should be included in the assessment.

Consideration

The DEC is satisfied that the proposal can operate within the relevant air quality impact assessment criteria and that the assessment presented in the Environmental Assessment has been carried out in accordance with the procedures outlined in *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (DEC 2005). The modelling presented in the EA predicts that the project alone would only have a small impact in increasing PM_{10} levels in the area and would not cause additional days where PM_{10} concentrations exceed the guidelines.

The air quality assessment undertaken by the Proponent also took into consideration cumulative impacts in respect to the proposed Newcastle Coal Infrastructure Group's proposal for a new coal export terminal adjacent to the site of the Kooragang Coal Terminal. The air modelling indicates that should the NCIG proposal be approved and operated, the maximum 24-hour average PM_{10} concentrations from the proposal would be 2 $\mu g/m^3$ at Mayfield and Stockton and 1 $\mu g/m^3$ at Fern Bay. The DEC is satisfied that the assessment of cumulative impacts is adequate. The assessment indicates that should both proposals be approved it is unlikely that there would be any adverse air quality impacts under normal operating conditions.

To ensure that air quality goals are met, the DEC has recommended that a more cost-effective, comprehensive, real-time and ambient dust monitoring system be implemented by the Proponent in conjunction with NCIG (should its proposal be approved). If the NCIG coal terminal and the Kooragang Coal Terminals are operating concurrently, it would be difficult for the regulator to distinguish the source of any non-compliance. In addition, the DEC recommends the use of Tapered Element Oscillating Microbalance Samplers (TEOMS) as part of the integrated, real-time air quality monitoring program. Investigation into the use of TEOMS has been added as a recommended condition of approval as part of an Ambient Dust Monitoring Program. Validation of the modelling data obtained for TSP, PM_{10} and dust deposition as outlined in the Environmental Assessment is also required. The Proponent is required to collect one full year of data and compare it with the predicted levels, and must

highlight any significant deviation from the predictions and also any exceedance in relation to ambient air quality goals. If the study reveals non-compliance, then the Proponent must outline details of additional measures proposed to ensure that air quality goals are met. The model validation study is required to be submitted to both the Director-General and DEC.

The Proponent has provided assurances that there would not be significant increases in air quality impacts within the surrounding residential areas and that the operations at Kooragang Coal Terminal will remain within relevant air quality limits. The proposal involves the introduction of soft flow chutes which would assist in maintaining a better coal trajectory from one conveyor to the next and thus minimise the generation of dust emissions.

The Department has recommended a number of specific conditions of approval in relation to the minimisation of dust from the site. These measures are additional to the measures proposed by the Proponent and will ensure that the generation of dust is minimised to the extent practicable. In this regard, the Department considers that the Proponents assessment of the project in relation to potential impacts to air quality and the Department's assessment of the project has taken into account the objects of the Act as it encourages the proper management of resources and the orderly and economic use and development of land within the Port.

5.4 Water Management

Issues

The Kooragang Island Coal Terminal currently uses considerable amounts of water to suppress airborne coal dust from different areas in the facility, including the unloading station, stockpiles and shiploader. The water used at the Terminal is sourced from a combination of on-site collection processes (harvesting stormwater and recycling stockyard water) and purchased from Hunter Water Corporation. It is estimated that, due to the proposed increase in capacity, an additional 43 megalitres of water would be needed at Kooragang Coal Terminal which will be sourced from Hunter Water Corporation.

Submissions

Concern over water usage represented 4.6% of all submissions. Key issues raised in submissions were as follows:

- the water usage will increase due to increase in stockpile volumes on site;
- recycling options should be pursued;
- monitoring of water usage should continue and every effort should be taken to reduce the amount of water used;
- the use of Hunter Water Corporation's potable water supply is not supported. Stormwater harvesting should be used to supplement water required for dust control; and
- DEC recommended a more detailed review of the feasibility of using recycled sewage effluent before the use of potable water can be approved.

Consideration

The use of potable water was an issue which was taken into consideration as part of the consent granted by the Minister for Urban Affairs and Planning in 1996. The consent required that the Proponent conduct investigations, in conjunction with Hunter Water Corporation and other appropriate bodies, into the feasibility of the use of treated wastewater for dust suppression. The Proponent has advised that there are problems with the availability of wastewater but that it will continue to investigate opportunities to make a greater use of recycled water across the site and investigate alternate sources of water supply.

The Department is satisfied that the Proponent has and will continue to investigate opportunities to decrease its dependency on potable water from Hunter Water Corporation. The Department recommends that a condition of approval be included which requests that the Proponent maximise the capture and re-use of stormwater on-site for the purposes of dust control.

6. CONCLUSIONS AND RECOMMENDATIONS

The Department has assessed the Environmental Assessment, Statement of Commitments, Response to Submissions Report, the 58 submissions received from the exhibition of the proposal and the technical support service provided by the Department of Environment and Conservation and is satisfied that the impacts of the project can be mitigated and/or managed to ensure an acceptable level of environmental performance. The Department recommends that the Minister approve the project, subject to conditions.

A number of environmental commitments have been outlined to ensure that the project would not result in any significant impacts to the surrounding environment. With these measures implemented during construction and operation, the Department does not consider that the project would result in significant adverse impact to the surrounding environment. The implementation of the mitigation measures proposed as part of the Statement of Commitments provided in the Environmental Assessment, as well as additional measures outlined as part of the recommended conditions of approval would ensure that any potential impacts are minimised to an acceptable level and the project does not unduly impact on the surrounding community.

The Department believes that increased capacity of the terminal would be achieved at a minimal environmental cost in the surrounding areas since the project would be accomplished by optimising existing equipment, by improving work practices and not by altering the size or footprint of the current approved development or increasing vehicle movements on the neighbouring arterial roads.

Many of the submissions centred on the global greenhouse and climatic change impact from the burning of the coal overseas for power generation. The Proponent has provided estimates of Scope 1, Scope 2 and Scope 3 greenhouse gas emissions directly and indirectly associated with the project. While the Department recognises the significant challenges posed by global warming, it is cognisant of the fact current global demand for energy will not be abated through refusal of the proposed increase in capacity of the existing Kooragang Coal terminal. Rather, to address global warming in the medium term, a more considered and active approach must be taken at a national and international level to manage energy demands, influence energy/ fuel choice through market-based instruments and introduce and encourage less-greenhouse gas intensive energy generation. A refusal of the subject application will not address or ameliorate global warming impacts, but will prevent the economic benefits of the project from being realised.

The Proponent has assessed a worst-case scenario and assumed that all the coal exported from the project would be burned overseas to produce energy. Global warming/climate change presents a clear threat of serious or irreversible environmental damage and is also predicted to adversely impact on biodiversity. While the proposal would contribute to this threat, the contribution is considered to be very small on a global scale. Similarly, increased greenhouse gas emissions would have an effect on global warming/climate change which in turn has the potential to adversely impact on future generations. The Department considers that the proposal would contribute, albeit in a very small manner, to this impact. However, it must also be acknowledged that the downstream energy and other socio-economic benefits produced by the project would also benefit future generations, particularly through the shoring up of national and international energy needs and the maintenance of quality of life in a number of developing countries.

The Department believes that the need for the proposal is justified, as outlined in Section 2.2 of this report and does not consider that the impact on the global climate is sufficient to warrant specific measures, additional to those committed by the Proponent in its Statement of Commitments, as part of the proposed conditions of approval. The Proponent would implement specific mitigation measures associated with the proposed increased capacity of the terminal in order to protect the surrounding environment and ensure the proper management of the project in accordance with the object of the Act, The Proponent has outlined a large number of mitigation measures throughout the Environmental Assessment and its Statement of Commitments and the Department has recommended additional measures as part of its recommended conditions of approval to further mitigate impacts to the surrounding environment. On balance, the Department considers that the project can be undertaken in an ecologically sustainable manner as it will not alter the footprint of the site nor result in any additional impacts to the natural environment but will ensure the continued economic development of the industry and the region.

7. REFERENCES

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APPENDIX A – RECOMMENDED CONDITIONS OF APPROVAL

APPENDIX B – STATEMENT OF COMMITMENTS

APPENDIX C – RESPONSE TO SUBMISSIONS REPORT

APPENDIX D – ENVIRONMENTAL ASSESSMENT