NCIG MOD 3
SUBMISSIONS REPORT
June 2020

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1 INTRODUCTION

The Newcastle Coal Infrastructure Group (NCIG) Coal Export Terminal (CET) is located on Kooragang Island in Newcastle, New South Wales (NSW) (Figures 1-1 and 1-2). The NCIG CET was granted Project Approval (06_0009) on 13 April 2007.

The overall NCIG CET includes the construction and operation of a CET up to 66 million tonnes per annum (Mtpa), including associated rail and coal handling infrastructure and wharf/shiploading facilities on the south arm of the Hunter River. The NCIG CET operates as a highly automated and innovative facility that serves as critical infrastructure to the NSW coal mining industry, enabling access to global export markets.

In April 2020, NCIG submitted a Modification Report as a Statement of Environmental Effects (SEE) to support a request to modify the Project Approval (06_0009) under section 4.55 of the NSW *Environmental Planning and Assessment Act, 1979* (the Modification).

The SEE described and assessed the potential impacts of the Modification, which seeks to increase the approved throughput capacity of the existing terminal (as defined by Project Approval 06_0009) from 66 Mtpa to 79 Mtpa. This proposed capacity increase reflects the optimised capacity of the existing infrastructure, as it can be achieved by initiatives such as on-site control system and operational process improvements. The proposed increase in throughput capacity does not require any new infrastructure or capital works.

The SEE concluded the NCIG CET incorporating the Modification would continue to comply with current Project Approval 06_0009 noise and air quality criteria at all privately-owned residences, and that no change to existing environmental performance limits would be required.

Public exhibition of the SEE concluded on 12 May 2020. During and following the public exhibition period, submissions on the Project were received by government agencies, organisations and members of the public. The majority of public submissions (87 percent [%]) expressed support for the Modification. The most commonly raised aspects in all submissions related to:

- Benefits of the efficient use of existing infrastructure.
- Benefits to the industry, in particular the Hunter Valley coal supply chain.
- Benefits of NCIG's ongoing support for local businesses and industry.
- Potential air quality emissions and mitigation and management measures.
- The contribution of the Modification to Australian and global greenhouse gas emissions.

On 15 May 2020, the Department of Planning, Industry and Environment (DPIE) requested that NCIG prepares responses to the aspects raised in the submissions.

This Submissions Report provides NCIG's responses to aspects raised in submissions. It has been prepared in consideration of the *Draft Guideline 4: Guidance for State Significant Projects - Preparing a Submissions Report June 2019* (DPIE, 2019).

The remainder of this Submissions Report is structured as follows:

Section 2 Provides an overview of the Modification.

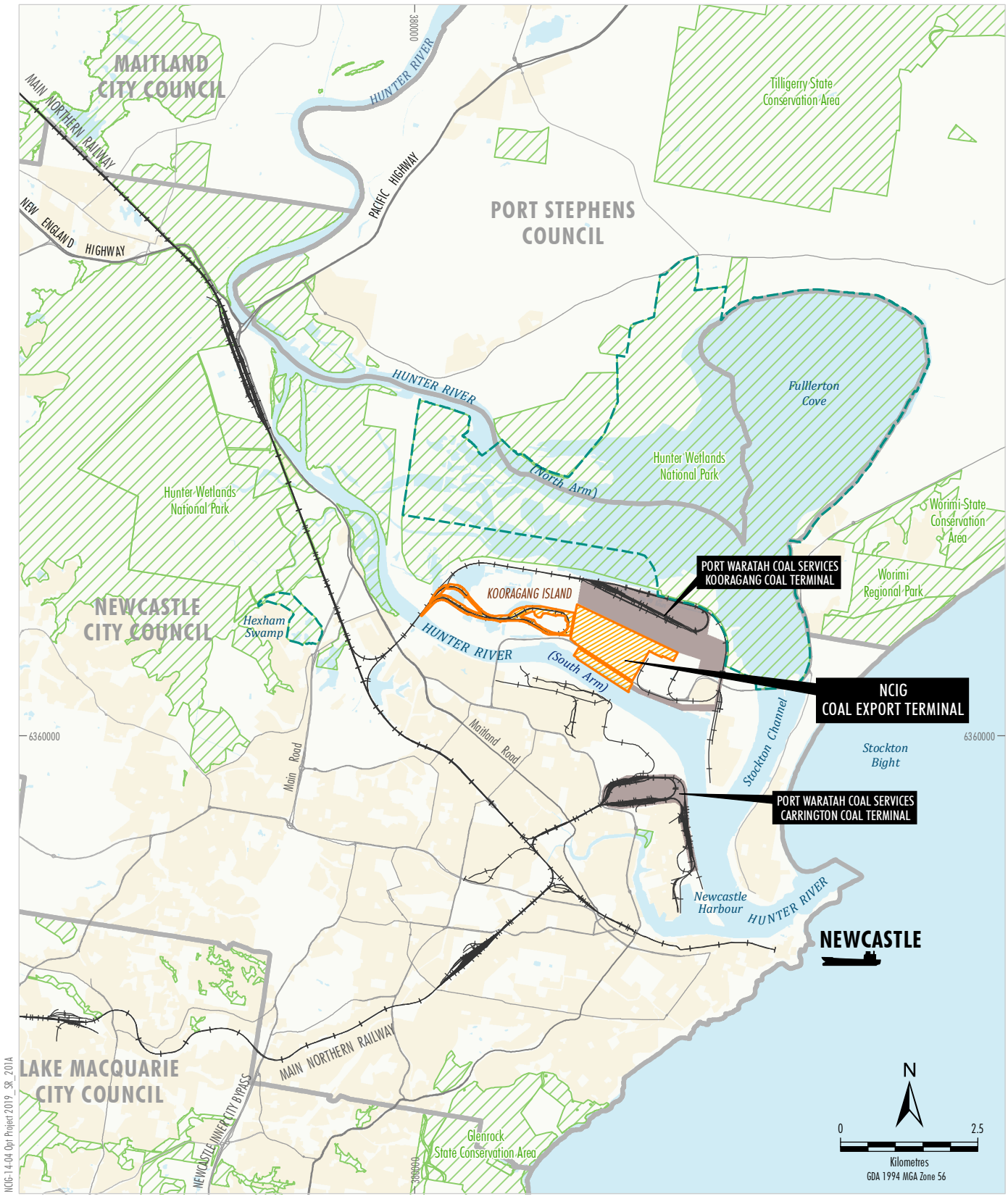
Section 3 Provides an analysis of the submissions received by DPIE during the public exhibition period.

Section 4 Summarises the actions taken since lodgement of the Modification.

Section 5 Provides responses to aspects raised in submissions.

Section 6 Provides an updated evaluation of the Modification's merits.

Section 7 Lists the documents referenced in the Submissions Report.



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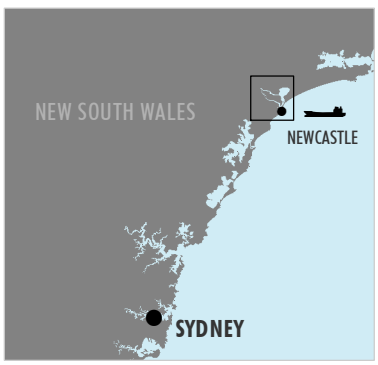


LEGEND
- Railway
- National Park/Conservation Area
- Hunter Estuary Wetlands Ramsar Site
- Local Government Area Boundary
- Approximate Extent of Approved NCIG CET

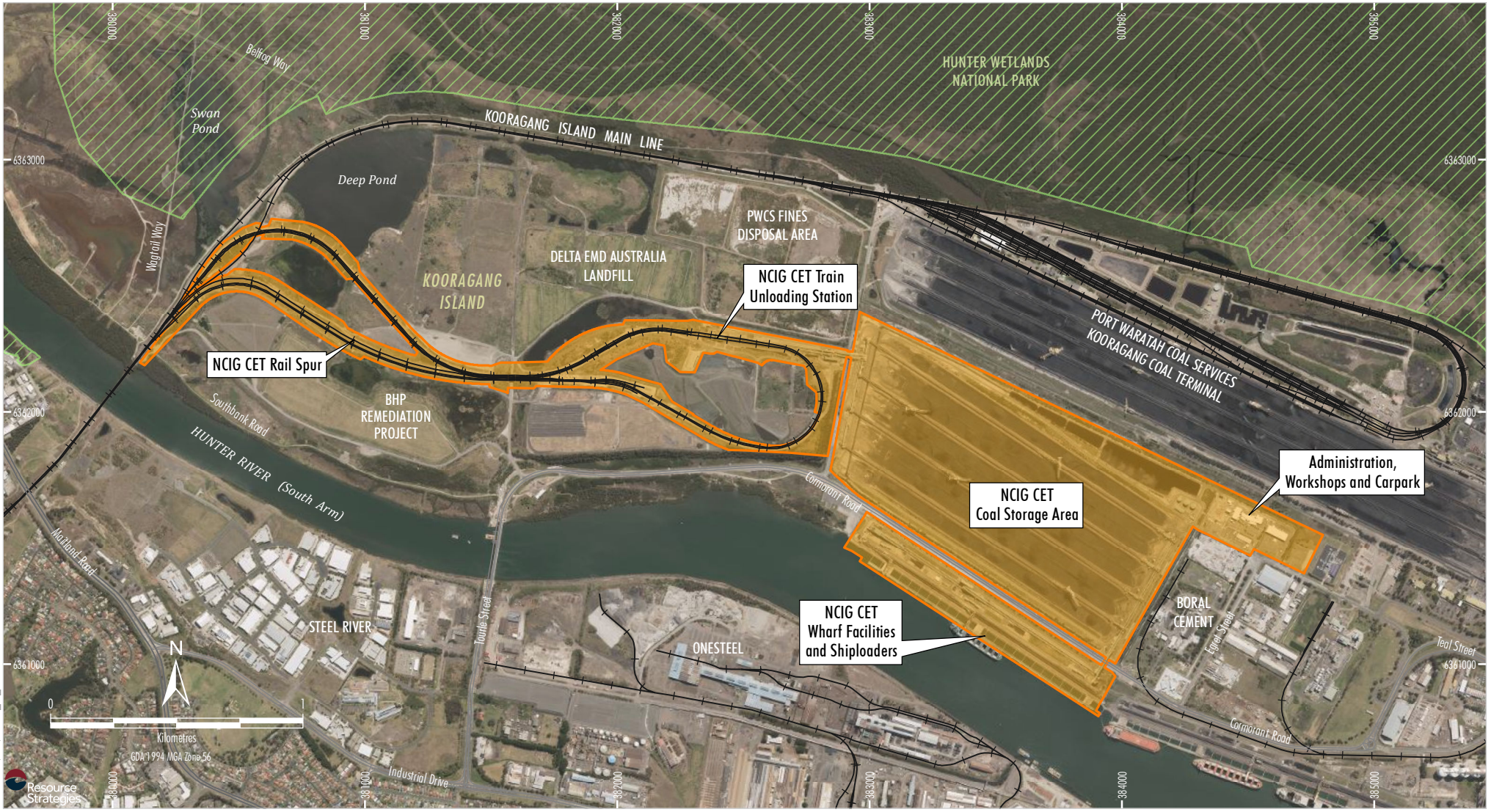
Source: NSW Spatial Services (2019)

Newcastle Coal INFRASTRUCTURE GROUP

SUBMISSIONS REPORT

Regional Location

Figure 1-1



LEGEND
- Railway
- National Park/Consevation Area
- Approximate Extent of Approved NCIG CET

Source: NSW Spatial Services (2019)
Orthophoto: NSW Spatial Services (2019)

Newcastle Coal INFRASTRUCTURE GROUP

SUBMISSIONS REPORT

Approved General Arrangement of the NCIG CET

Figure 1-2

2 OVERVIEW OF THE MODIFICATION

The Modification proposes to increase the approved throughput capacity of the existing terminal from 66 Mtpa to 79 Mtpa.

As a consequence, the Modification would result in an increase in the previously assessed average daily train movements (from 26 to approximately 28 trains unloaded per day). There would be no change to the previously assessed peak daily train movements (40 trains unloaded per day). The Modification would also increase the average number of ship movements (from approximately 12 to 16 ships unloaded per week).

The Modification **would not** result in changes to the following:

- extent of NCIG CET disturbance;
- rail spur, rail sidings or rail loops;
- approved coal stockpile heights or coal storage area extent;
- total coal storage capacity;
- peak train movements;
- number of stackers/reclaimers;
- number or location of coal conveyors, transfer points or buffer bins;
- number of berths, wharf structure, number of shiploaders or peak shiploader capacity;
- peak workforce numbers;
- project life; or
- hours of operation.

Table 2-1 provides a summary comparison of the NCIG CET and the Modification components.

Table 2-1
Summary Comparison of Approved and Modified NCIG CET

Development Component	Approved NCIG CET*	NCIG CET incorporating the Modification
Coal Throughput	Approved throughput of 66 Mtpa.	Proposed throughput of 79 Mtpa using existing coal handling infrastructure.
Coal Transport	Coal trains enter the NCIG CET site from the Kooragang Island mainline via a grade separation flyover to the rail spurs, follow the rail loops and empty their wagons into a hopper at train unloading stations. An average of approximately 26 trains unloaded each day. Up to a maximum approved limit of 40 trains unloaded on any one day.	An average of approximately 28 trains would be unloaded each day. No change to the maximum of 40 trains unloaded on any one day.
Train Unloading	Two train unloading stations.	The two train unloading stations would operate at up to 10,000 tonnes per hour.
Coal Stockpiles	Coal stacked to a maximum height of approximately 25 metres (m) allowing a maximum design capacity of up to 6.6 million tonnes of coal to be stockpiled at the CET. Coal stockpiles served by rail-mounted combined stacker/reclaimers and associated conveyor systems.	Unchanged.
Wharf Facilities and Shiploaders	Three berths served by two rail-mounted shiploaders. Coal transferred from the coal stockpiles to the shiploaders via conveyors over Cormorant Road.	Unchanged.
Shipping	Wharf capable of receiving Cape size vessels which carry up to 230,000 tonnes of coal. Up to approximately 12 ships loaded per week.	Up to approximately 815 ships per year or approximately 16 ships per week would be loaded.

Table 2-1 (Continued)
Summary Comparison of Approved and Modified NCIG CET

Development Component	Approved NCIG CET*	NCIG CET incorporating the Modification
Water Supply	Water supply requirements met from stormwater contained on-site and water purchased from the Hunter Water Corporation. Water recycled on-site to reduce the quantity of water purchased.	No change to sources of water supply. No change to water demand associated with ongoing dust suppression on the coal storage area. Potential change in water demand associated with other activities to be met via existing water supply sources.
Water Management System	Network of water management structures including sub-grade drainage system in the coal stockpile pads, comprises of a series of underground drains, pits/sumps and transfer pumps to control drainage from the coal storage area. Primary and secondary settling ponds and overflow pond constructed to the north of the coal storage area capture water from sub-grade drainage system and rainfall run-off.	Unchanged.
Project Life	Expected to exceed 30 years dependent on the future development of coal reserves in the Hunter Valley and Gunnedah Basin.	Unchanged.
Employment	Construction workforce of up to 500 employees. The current NCIG operational workforce comprises a peak of approximately 230 personnel (including around 100 NCIG employees, 30 full time contractors and 100 contractors during shutdown activities).	Unchanged (i.e. no increase in peak workforce).
Construction	Installation, construction and commissioning of rail infrastructure, coal storage area, wharf facilities and shiploaders. Construction materials provided from dredging activities associated with the approved Extension of Shipping Channels within the Port of Newcastle (DA-134-3-2003-i).^	Unchanged (i.e. no additional construction activities required).
Hours of Operation	Construction activities with the potential to be audible at surrounding residential areas generally undertaken between 7.00 am and 6.00 pm, up to seven days per week. Oversize loads may be transported outside of these times to minimise traffic impacts. Dredged material from the south arm of the Hunter River deposited at the NCIG CET site 24 hours per day and seven days per week. CET operations take place 24 hours per day, seven days per week. Trains and shipping operate 24 hours per day, seven days per week.	Unchanged (i.e. CET hours of operations unchanged and no additional construction activities required).
Access Roads	During the operation of the CET, the main access point for the NCIG CET is via the entrance to the administration and workshop buildings located off the western end of Raven Street near the intersection of Egret Street and Raven Street. Secondary access points are available to the wharf and rail infrastructure areas. Construction access via Transport for NSW approved access points.	Unchanged.
Administration, Store and Workshop Buildings	Infrastructure and services including administration building, offices, general workstation areas, first aid room, store and workshop buildings.	Unchanged.
Electricity Supply and Distribution	An internal power reticulation network developed for the NCIG CET. Electricity supply infrastructure to the NCIG CET provided by Energy Australia.	Unchanged.

* As described in the NCIG CET EA (NCIG, 2006).

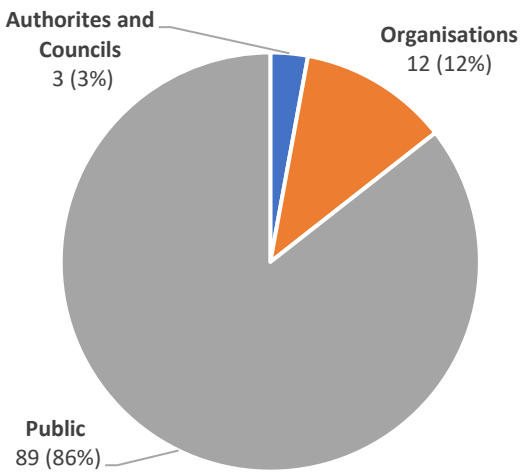
^ In accordance with Condition 2.47 of Project Approval (06_0009) NCIG sought and obtained the agreement of the Director-General of the Department of Planning and Infrastructure (now Secretary of the DPIE) to import construction fill at the NCIG CET site from local quarries with heavy vehicle movements of up to 120 truck deliveries per day over a ten month period between 7:00 am to 6.00 pm, six days per week (Monday to Saturday).

3 ANALYSIS OF SUBMISSIONS

3.1 Number of Submissions

A total of 104 submissions on the Modification were received from Government agencies, organisations and members of the public. Chart 3-1A presents a summary of the total number of submissions by submitter category.

Chart 3-1A
Summary of All Submissions



*Note total percentage may not sum to 100% due to rounding

A summary of the submissions received during the public exhibition period and a register of submitters are provided in Attachments A and B, respectively.

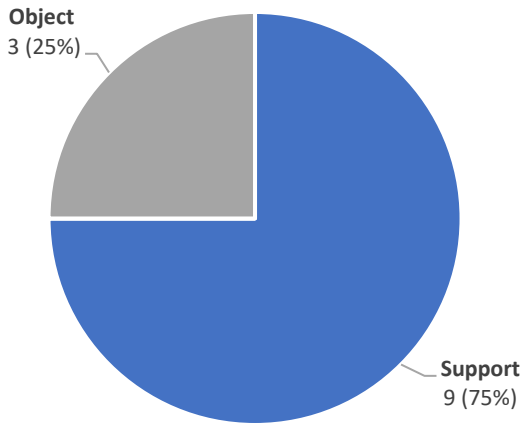
3.2 Agency and Council Submissions

Three submissions were received from NSW Government agencies and the local council (Division of Resources and Geoscience, NSW Environmental Protection Authority [EPA] and City of Newcastle), which were in the form of comments or suggested conditions.

3.3 Organisation Submissions

A total of 12 submissions were received from organisations. Of these, nine supported the Modification and three objected to the Modification (Chart 3-3A).

Chart 3-3A
Summary of Organisation Submissions

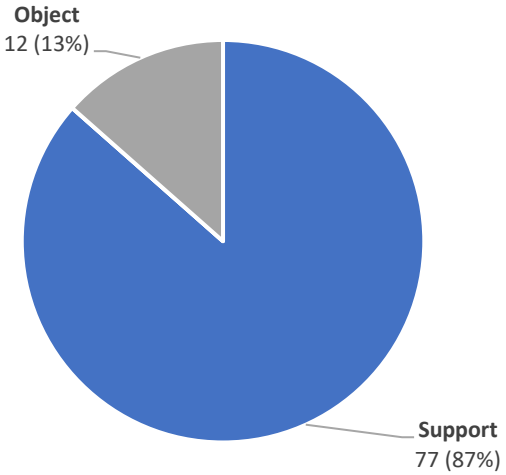


*Note total percentage may not sum to 100% due to rounding

3.4 Public Submissions

A total of 89 public submissions were received from members of the public. Of these 77 supported the Modification and 12 objected to the Modification (Chart 3-4A).

Chart 3-4A
Summary of Public Submission



*Note total percentage may not sum to 100% due to rounding

3.5 Key Aspects Raised in Submissions

The most commonly raised aspects in the submissions related to the following:

- Benefits of the Modification to the industry, in particular:
  - optimisation of existing port infrastructure;
  - coal supply chain efficiency improvements and customer flexibility; and
  - benefits to logistics (rail and shipping costs).

- Benefits of NCIG's ongoing employment and support of small business and local industry.
- Justification for the proposed capacity increase in consideration of:
  - existing NCIG CET capacity and historical throughputs; and
  - future coal demand.
- Air quality.
- Noise.
- Greenhouse gas emissions.
- Rail and shipping movements.
- Soil and water pollution.
- Site closure and rehabilitation.

4 ACTIONS TAKEN SINCE LODGEMENT OF THE SEE

Since lodgement of the SEE, NCIG has continued to consult with Government and community members regarding the Modification, this includes:

- Community Engagement Group meeting on 28 May 2020;
- consultation with EPA on 1 May 2020; and
- providing information regarding the Modification on the NCIG website: www.ncig.com.au/business/optimisation

5 RESPONSES TO SUBMISSIONS

5.1 Supportive Submissions

5.1.1 Benefits of the Modification to the Industry

1. Optimisation of Existing Port Infrastructure

A number of supportive submissions received by organisations and the public recognised that NCIG would achieve the proposed throughput increase through the utilisation of existing infrastructure and without the significant capital expenditure that would normally be required to achieve similar increases.

The increase in terminal throughput capacity from 66 to 79 Mtpa would be enabled by a number of initiatives identified by NCIG staff, such as on-site control system and operational process improvements that improve the efficiency of the overall operation (Sections 1.1.3 and 2 of the SEE).

These improvements use the existing site infrastructure within the existing CET boundary (i.e. no additional infrastructure or surface disturbance is required) and can be achieved at relatively low cost.

The ability to increase terminal capacity without requiring additional infrastructure or significant capital investment has been noted by the Hunter Valley Coal Chain Coordinator (HVCCC), who stated in their submission:

> *Increasing NCIG's nameplate would align its approval with its demonstrated capacity, delivering a potential increase of 13 million tonnes per annum (approximately 7 percent increase) to the coal chain's contractable terminal capacity, without requiring costly infrastructure investment that would normally be needed to achieve such an increase.*

Similarly, Port Waratah Coal Services (PWCS) stated the following in their submission:

> *Investments in coal chain infrastructure come at great cost and therefore it is in the interest of efficiency to ensure that there are no restrictions on infrastructure being utilised to its full potential.*

2. Coal Supply Chain Efficiency Improvements and Customer Flexibility

A number of supportive submissions received by organisations and the public recognised that the proposed increased throughput at the NCIG CET would result in efficiency improvements along the Hunter Valley coal supply chain, including at loading points (i.e. upstream mining operations), along the rail network and at the coal terminal.

The NCIG CET operates as a dedicated stockyard arrangement with unique long-term stockpiling capacity (i.e. 25-30 days) available to customers. This arrangement inherently provides flexibility and efficiency for NCIG's customers as it de-links the rail transport and ship loading stages of the export process (i.e. the terminal does not need to operate as a 'just-in-time' facility).

This is of particular importance to customers with operations located furthest from the Port, who have more restrictions on their access to rail paths (due to single line infrastructure). The de-linking of rail transport and ship loading helps to alleviate congestion and improve efficiency on the rail network, as rail movements can be spread more evenly (i.e. rail movements are not determined by the timing of ships arriving at the Port).

As such, the proposed increase in throughput capacity would further improve the flexibility and efficiency for NCIG's customers as well as along the entire coal supply chain.

This is supported by the HVCCC, who stated in their submission on the SEE:

> *Approving the NCIG proposal would increase the stockpiling capacity at the terminal end of the coal chain which reduces the whole coal chain's dependency on coal in transit between load points and terminals.*

The benefits of efficiency improvements that would result from the Modification along the rail line are noted by Australian Rail Track Corporation (ARTC) in their submission on the SEE:

> *Previous simulations that increase the flexibility and capacity at NCIG supports the ability to smooth demand for the supply side of the export supply chain and reduces network peaking demand at points and across days, increasing the efficiency of invested capital across the supply chain. This benefit is clearly seen in the single line sections of the network west of Muswellbrook. Improvements that support smoothing demand creates robustness in the supply chain and improves Hunter Valley coal chain benefits for all stakeholders.*

These benefits would also be realised at the terminal end, as noted by the Port of Newcastle in their submission on the SEE:

> *The modification application demonstrates that, through optimising existing processes and using existing infrastructure, NCIG can increase efficiencies within the coal chain and provide coal customers with greater flexibility. This aligns with the industry supply strategy for mines located in the Upper Hunter.*
>
> *The modification will assist PON achieve its key objective to increase the efficiency of the supply and improve the service levels to the Port's users, whilst optimising sustainability outcomes.*

The efficiency improvements and flexibility for stakeholders along the entire coal supply chain has been recognised by PWCS, who along with NCIG, provide critical infrastructure to the Port of Newcastle:

> *The release of latent terminal capacity through incremental improvements as articulated in NCIG's Terminal Optimisation project modification is another example of Hunter Valley coal chain efficiency and leading practice. Port Waratah supports the application as it will enable most efficient use of the infrastructure, contributing to the collaborative excellence routinely demonstrated by the Hunter Valley coal industry.*

The proposed increase in NCIG's throughput capacity would improve the flexibility and efficiency for NCIG's customers and across the entire coal supply chain.

3. Benefits to Logistics (Rail and Shipping Costs)

A number of supportive submissions received by organisations recognised that the potential efficiency improvements along the Hunter Valley coal supply chain would reduce rail and shipping costs for stakeholders.

The additional stockpiling flexibility and de-linking of rail and shipping as a result of the Modification would reduce demurrage costs borne by NCIG's customers associated with delays to rail movements and shipping.

This has been recognised by the HVCCC, who stated in their submission on the SEE:

> *It is the assessment of HVCCC that the proposed increase in the nameplate capacity of the NCIG terminal from 66 million tonnes per annum to 79 million tonnes per annum would benefit the Hunter Valley coal chain in terms of assisting to maximise the flow of coal and minimise the total logistics costs.*
>
> *… NCIG's ability to achieve throughput rates above its annual capacity helps sustain low vessel queues (which would otherwise invoke demurrage costs) …*

As such, the benefits of NCIG's initiatives to optimise the capacity of the CET are already being realised. However, the extent of these benefits is currently limited by the approved throughput capacity of 66 Mtpa. The Modification, which would align NCIG's approved annual throughput with the CET's true capability of 79 Mtpa, would facilitate increased benefits.

5.1.2 Importance of the Modification to Ongoing Employment and Support of Small Business and Local Industry

A number of supportive submissions from local businesses and industry stakeholders noted the Modification would result in the continuation of support for their ongoing operations, with a number of these local businesses assisting in the implementation of the optimisation initiatives implemented at the NCIG CET.

Although the Modification would not result in an increase in the existing workforce, it represents a further commitment to the Hunter region, its workforce and the community by facilitating the sustainable continuation of operations into the future.

NCIG maintains a strong relationship with its upstream customers (i.e. mines that use the terminal), local businesses and industries as well as its existing workforce.

5.2 Justification of the Proposed Capacity Increase

5.2.1 Existing Capacity and Historical Throughputs

A number of submissions received by organisations and the public raised concerns regarding the need for the NCIG CET to seek an increase to its existing capacity given historical annual throughputs have been below the approved capacity of 66 Mtpa. In addition, some submissions raised concerns that when considered on a daily basis, NCIG has exceeded its approved capacity limits.

As noted by a number of submissions, the effect of the optimisation improvements implemented is that when annualised, it is technically feasible for the peak existing daily/weekly throughput capacity of the NCIG CET to exceed 66 Mtpa. The annual capacity of the existing NCIG CET, when optimised, is approximately 79 Mtpa.

The ability of the NCIG CET to operate at an increased throughput to account for these inevitable fluctuations has been recognised by the HVCCC, who stated in their submission on the SEE:

> *Although during 2019, NCIG's actual annual throughput was 54Mt, NCIG regularly achieved annualised throughput rates in excess of 70Mt to meet fluctuating demand and peaks around network disruptions. Similarly, peak annualised rates above NCIG's approved annual nameplate capacity have continued during 2020, for example an annualised rate of 74Mt was achieved during the week 20-26 April 2020 and a rate of 99Mt was achieved on 05 May 2020. NCIG's throughput for May 2020 is running at an annualised rate of 69Mt.*

Accordingly, while historic total throughput has been below 66 Mtpa, the Modification is required to align the approved annual throughput with the NCIG CET's optimised capability. This will provide flexibility to NCIG's existing customers to access NCIG's stockpiling arrangements and realise efficiency benefits across the supply chain (as described above).

The daily throughput of the existing operations necessarily fluctuates due to a number of factors, such as accounting for rail paths, variable ship movements and adverse weather which may shut down operations temporarily (or restrict the transport of coal). However, while it is technically feasible for the terminal to operate at a capacity equivalent to 79 Mtpa, NCIG operates in strict compliance with its current approval limit of 66 Mtpa (i.e. total annual throughput of 66 Mt) and environmental performance limits (including during periods at capacity equivalent to 79 Mtpa).

5.2.2 Consideration of Future Coal Demand

Some submissions received by organisations and the public raised concerns regarding the need for NCIG to seek an increase to its approved capacity given their expectation that future coal demand would decrease.

There is currently no requirement for additional terminal capacity at the Port of Newcastle for ARTC contracted export volumes (ARTC, 2019). The current total capacity of the terminals at the Port of Newcastle of 208 Mtpa provides sufficient capacity to service the contracted export volumes of 193.5 Mtpa for 2019 and beyond (ARTC, 2019).

The Modification is not linked to any specific increase in total export through the Port of Newcastle to meet any increased demand. Rather, the Modification would provide flexibility and option value for NCIG's customers to gain further access to NCIG's unique stockpiling capacity arrangements.

High-quality coal products from the Hunter region are expected to continue to be in demand to meet ongoing requirements from the key Asia-Pacific demand regions. Prospective estimates by ARTC indicate that potential increases in future export volumes could increase to a potential peak of 225 Mtpa in 2022. However, the HVCCC has for some years assumed that in order to meet any potential future demand it would be necessary to develop some incremental capacity through enhancement of existing terminals. Therefore, the Modification may relieve the need for further infrastructure expansion.

The Modification is not linked to any specific increase in total export through the Port of Newcastle or a need for infrastructure to meet any increased demand. Rather, it would provide flexibility and option value for NCIG's customers to gain further access to NCIG's unique stockpiling capacity arrangements.

5.3 Air Quality

5.3.1 Summary of Submissions

Agencies and Local Councils

The EPA provided comments on the Modification relating to air quality. These comments included:

- Further justification that existing controls are effective and consistent with best-practice, including consideration of reasonable and feasible mitigation measures (particularly application of water sprays to stockpiles).
- Consideration of potential air quality impacts on industrial receivers.

Public and Organisations Submissions

Comments made in public and organisations submissions relevant to air quality included:

- Clarification of potential impacts to undeveloped areas of Kooragang Island.
- Consideration of air quality emissions associated with train and ship movements (including beyond NCIG's site boundary).
- Amenity impacts and associated health impacts.

5.3.2 Response to EPA Submission

The EPA stated the following in their submission:

> ***Demonstration that particulate matter controls are adequate***
>
> *The EPA requires:*
>
> - *additional detail to demonstrate that the controls proposed to be used for particulates from coal stockpiles, including watering of stockpiles, are appropriate, effective and consistent with best practice; or*
> - *an assessment of all reasonable and feasible options to improve water application to the highest sections of coal stockpiles that are impacted by strong north-westerly wind conditions, and nomination of the preferred option(s) that will be implemented to improve water application to the highest sections of the coal stockpiles.*
>
> *…*
>
> *On several occasions, the EPA has observed that the current water sprays are not effective during these stronger north-westerly winds because they do not reach the top of the stockpiles under these conditions. The EPA has also observed that during north-westerly winds, PM_{10} levels at Stockton, downwind of the coal stockpiles, may exceed the relevant criteria even though particle levels at other monitors around Newcastle are lower.*
>
> *The EPA understands that NCIG has traditionally operated its coal stockpiles below the approved height. As part of the proposed increase in throughput, coal stockpile heights will increase by about two metres. Water sprays will therefore be even less likely to reach the top of the stockpiles during strong winds.*
>
> *…*
>
> ***Assessment of air quality impacts on industrial receivers***
>
> *…*
>
> *The AQIA predicts the modification's air quality impacts at the nearest residential receptors in Mayfield and Stockton. No specific assessment was conducted at the nearby Kooragang Island or Mayfield industrial and commercial premises.*
>
> *The Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (EPA 2017) requires impacts to be assessed at 'Sensitive Receptors' and defines these as "a location where people are likely to work or reside". This definition includes industrial and commercial premises on Kooragang Island and Mayfield as these are premises where people work.*

Responses to the concerns raised by the EPA are provided in the sections below.

1. Outcomes of Air Quality and Greenhouse Gas Assessment – Modification

The NCIG CET is regulated in accordance with the requirements of Environmental Protection Licence (EPL) 12693, Project Approval 06_0009 and the *Operational Dust and Air Quality Management Plan*.

NCIG has operated in compliance with air quality criteria due to the performance if its existing controls and mitigation measures on-site. The performance of the existing site controls is supported by annual independent environmental audits (conducted in accordance with Project Approval 06_0009), which show that during the most recent reporting period (the period 1 October 2015 to 1 October 2018), NCIG reported compliance with relevant air quality criteria at all receivers (pitt&sherry, 2019).

The Modification seeks approval for the NCIG CET to operate at an increased throughput of 79 Mtpa to match the existing capability of the plant.

Assessment of potential Modification-related air quality emissions was undertaken by Todoroski Air Sciences (2020). The assessment predicted the NCIG CET inclusive of the Modification (and other existing and proposed cumulative sources) would continue to comply with the relevant air quality criteria in *the Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (Approved Methods) (EPA, 2017). This included predictions of PM_{10} and $PM_{2.5}$ emissions at receptors at Stockton, with Modification-related emissions below relevant criteria as defined in the Approved Methods.

As noted by the EPA, one of the efficiency improvements implemented to date to achieve this increased throughput capacity is the extension of the stockpiles to the eastern limit of the existing stockyard pads, as well as use of the existing stockpiles up to the already approved height of 25 m.

As such, the Modification would not change the size of the coal stockpiles at the NCIG CET in comparison to the currently approved and previously assessed footprint and heights. **Accordingly, wind erosion emissions from stockpiles would not increase relative to previous assessments** (refer to Table 6-1 of Todoroski Air Sciences [2020]).

In addition, because of the implementation of dust controls during operations, the NCIG CET inclusive of the Modification is predicted to generate 52% less emissions than those assessed and approved in the original Environmental Impact Statement.

Todoroski Air Sciences (2020) concluded:

> *Overall, the assessment demonstrates that even using conservative assumptions, the NCIG CET incorporating the Optimisation Project can operate without causing any significant air quality impact at sensitive receptors in the surrounding environment.*

The NCIG CET has demonstrated ongoing compliance with relevant air quality limits.
The Modification would not increase wind erosion emissions from stockpiles in comparison to the previously assessed and approved operations.
The NCIG CET incorporating the Modification is predicted to continue to comply with relevant air quality limits.

2. Summary of Best Practice Emission Controls – Existing NCIG CET

NCIG has identified that wind-blown emissions from coal stockpiles are a key emissions source for the existing operations. As such, NCIG already implements best-practice emissions controls to manage wind-blown emissions, including:

- water sprays;
- an integrated and adaptive dust suppression control system, including:
  - real-time monitoring of coal moisture;
  - meteorological forecasting to identify adverse conditions;
  - real-time meteorological monitoring;
  - automated misting and water addition sprays on conveyors and coal stockpiles when required (i.e. as determined by a combination of meteorological and coal moisture monitoring); and
- on-site continuous dust monitors to verify the effectiveness of the controls.

The existing controls and mitigation measures at the NCIG CET to manage dust emissions from coal stockpiles represent best-practice emissions control measures.

The EPA queried in their submission the effectiveness of the existing dust control measures to manage wind-blown emissions from the coal stockpiles during adverse conditions (i.e. extreme north-westerly winds).

NCIG currently has systems in place to manage emissions during more adverse weather conditions (i.e. during stronger north-west wind events). In particular, this in undertaken through the integrated dust suppression control system which monitors and reacts to more adverse conditions.

The integrated dust suppression control system activates sprays to ensure that inbound coal product is maintained at the optimal moisture content (i.e. to limit the potential for dust lift-off) as the coal is transferred to the stockyard.

To manage dust emissions during high or extreme risk events, meteorological monitoring is used to forecast the arrival of more adverse conditions two hours in advance (i.e. extreme north-westerly winds), and the integrated dust suppression control system activates stockpile water sprays to wet down the stockpiles beforehand (NCIG, 2018).

Stockpile sprays are activated according to an evapotranspiration algorithm that calculates the evaporation of moisture from the coal surface using real-time data from the NCIG on-site weather station. Sprays sequence from west to east and south to north, with up to five sprays operating at any one time. A sequence of sprays will take approximately 30 to 50 minutes. Operators are also able to turn sprays on manually, and are expected to do so if inspections of the stockyard suggest this is necessary.

Depending on the direction and speed of extreme wind events, the configuration of stockyard sprays can also be augmented (e.g. other sprays can be integrated into the spray network to reach the tops of the stockpiles during adverse wind conditions). In addition, stockyard sprays are activated further upwind from certain stockpiles under extreme wind conditions, to allow spraying to be blown down onto the pile (NCIG, 2018).

On-site continuous air quality monitors (refer to locations of Beta-Attenuation Mass samplers [BAMs] in Figure 6-3 of the SEE) provide real-time validation of the effectiveness of the controls. In the event that dust generation is identified by these monitors stockpile sprays will be automatically activate.

The performance of the integrated dust suppression control system has recently been demonstrated during recent north-westerly wind events experienced on-site between 30 April to 2 May 2020.

During this period, north-westerly winds of up to 16 metres per second were experienced on-site. Winds remained at high to extreme levels for the entire three-day period. However, the Stockton monitor (located to the south-east of the site) recorded a maximum daily PM_{10} concentration of approximately 25 micrograms per cubic metre (µg/m^3) (i.e. well below the Approved Methods 24-hour average PM_{10} criteria of 50 µg/m^3).

Accordingly, NCIG does not agree with the EPA's comment that "*…the current water sprays are not effective during these stronger north-westerly winds because they do not reach the top of the stockpiles under these conditions…*".

In addition, Todoroski Air Sciences (refer to Attachment E for further detail) notes that the Stockton monitor experiences elevated dust levels regardless of wind direction:

> *It is noted that the Stockton monitor shows high dust levels under both low and high wind speed conditions under north-easterly winds. This is due to salt in the air from wave action along Stockton beach.*

It is considered the adaptive management system, when combined with meteorological forecasting, coal moisture monitoring and continuous air quality monitoring to validate performance, are highly effective in minimising dust emissions for the existing operations. Given wind erosion emissions for the Modification are not expected to increase, the current controls will also be effective for the Modification.

In regard to the existing dust controls, Todoroski Air Sciences (refer to Attachment E for further detail) concluded the following:

> *Operational and physical dust mitigation measures are utilised at the NCIG CET to ensure dust generation is controlled and the potential for off-site impacts is reduced to best practice levels.*
>
> *There are no known better dust control practices that would be viable for the existing NCIG CET incorporating the Modification to further significantly reduce dust, and it is noted that the proposal offers a total 52% reduction in dust to that which is presently approved (noting that the approved project does not specify dust controls).*

The Modification would not change wind erosion emissions from stockpiles in comparison to the previously assessed and approved NCIG CET.
The existing controls – which have been demonstrated to be effective under north-west winds – will continue to be implemented for the Modification.

3. Consideration of Potential Air Quality Impacts on Industrial Receivers

The EPA requested that assessment of potential air quality impacts as a result of the Modification at industrial and commercial receptors be undertaken.

It is noted that the NCIG CET is located within a heavily industrialised area, with a number of industrial facilities located proximal to the site as well as within the wider Port of Newcastle area (Figure 5-1).

NCIG conducts internal ambient dust monitoring of total suspended particles (TSP) using a network of BAMs, which are located in close proximity (within 80 m) of active coal stockpiling areas (i.e. closer to the NCIG CET than industrial and commercial receptors on Kooragang Island and at Mayfield) (Figure 5-2). Monitoring data indicates that the annual average TSP concentrations at these BAMs were below the criterion of 90 µg/m^3 for the period 2014 to 2018.

NCIG also conducts external ambient dust monitoring using High Volume Air Samplers (HVAS) and dust deposition gauges (DG). Two of these sites (HVAS 1 and DG5) are located within the Mayfield industrial area. Maximum 24-hour PM_{10} monitoring data collected from the HVAS 1 monitoring station from 2014 to 2018 shows that on all bar one monitoring period in 2016, the levels were below the relevant criteria (on 7 November 2016, all HVAS monitors recorded elevated levels above the criterion – satellite imagery indicates extensive bushfires occurring in the region, which are the likely cause of the elevated levels at the monitors). It is noted that elevated levels were also recorded at HVAS monitors during the November 2019 to January 2020 period, due to bushfire events.

The Approved Methods defines a 'sensitive receptor' as (emphasis added):

> *A location where people are likely to work or reside; this may include a dwelling, school, hospital, office or public recreational area.*

It is not considered that the intended definition of 'sensitive receptor' as defined in the Approved Methods included receptors typical of the industrial receivers proximal to the NCIG CET (e.g. other coal terminals, manufacturing facilities).

The Air Quality and Greenhouse Gas Assessment Review (Appendix B of the SEE) undertaken for the Modification assessed potential air quality impacts at sensitive receptors (i.e. residential receivers, schools, hospitals, office spaces and public recreational areas) in accordance with the Approved Methods. The Air Quality and Greenhouse Gas Assessment Review (Appendix B of the SEE) concluded that the NCIG CET incorporating the Modification would continue to comply with all relevant air quality assessment criteria at all sensitive receptors.

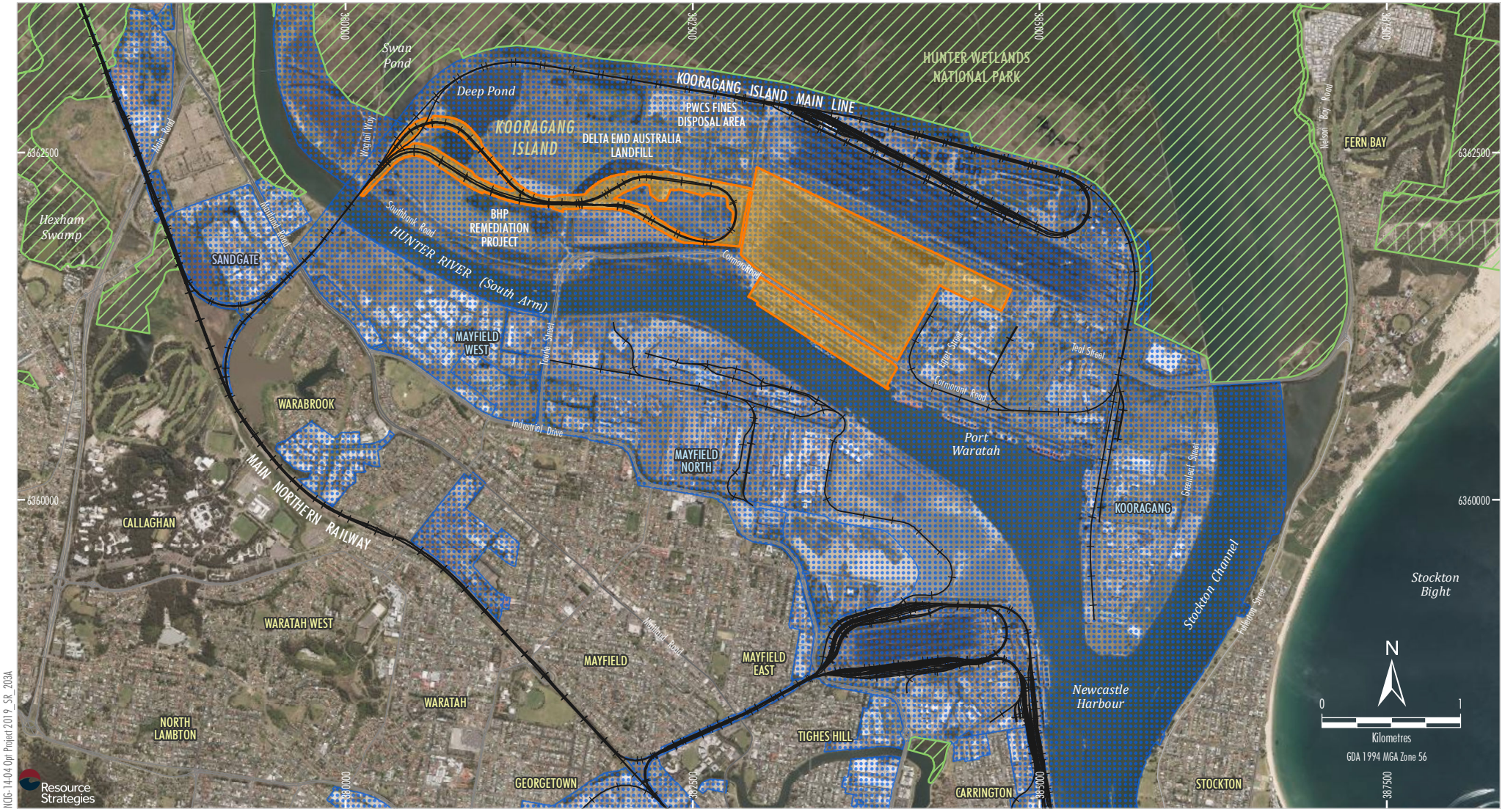
In addition, Todoroski Air Sciences (refer to Attachment E) concluded that the Modification assessed potential air quality impacts at all relevant sensitive receptors.

5.3.3 Consideration of Air Quality Emissions associated with Train and Ship Movements

Some public and organisations' submissions raised concerns regarding potential air quality emissions associated with the increase in rail and ship movements, including consideration of emissions beyond the extent of the NCIG site boundary. It is noted that the EPA did not specifically raise concerns regarding air quality emissions associated with rail and ship movements. Further detail in this regard is provided below.

Todoroski Air Sciences (2020) considered the following in the Air Quality and Greenhouse Gas Assessment Review for the modelling undertaken for the Modification:

- trains:
  - diesel exhaust emissions from trains at the NCIG CET, assuming that three locomotives would be on-site at all times (note this is considered to be conservative, as due to anticipated average train movements, a train with three locomotives would not be on-site at all times); and
  - material handling emissions associated with the unloading of coal from trains to unloading stations at the proposed rate of 79 Mtpa.
- ships:
  - diesel exhaust emissions from ships docked at the NCIG CET, assuming that a ship would be on-site at all times (note this is considered to be conservative, as due to anticipated average ship movements, a ship would not be located at the on-site berths at all times); and
  - material handling emissions associated with loading coal to ships at the proposed rate of 79 Mtpa.



LEGEND

- Railway
- National Park/Conservation Area
- Industrial Area
- Approximate Extent of Approved NCIG CET

Source: NSW Spatial Services (2019)
Orthophoto: NSW Spatial Services (2019)

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Industrial and Residential Areas Proximal to the NCIG CET

Figure 5-1

LEGEND
- Railway
- National Park/Conservation Area
- Approximate Extent of Approved NCIG CET

Monitoring Sites
- Dust Gauge
- Environmental Beta Attenuation Monitor
- High Volume Air Sampler
- Meteorological Station
- OEH Monitoring Site

Source: NSW Spatial Services (2019), NCIG (2019)

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Air Quality Monitoring Sites

Figure 5-2

Todoroski Air Sciences (2020) concluded the NCIG CET including the Modification could continue to operate in accordance with relevant air quality criteria.

Train and ship movements beyond the NCIG CET site boundary are not the subject of regulation under NCIG's Project Approval or EPL. In addition, as the Modification is not linked to any specific increase in total throughput at the Port of Newcastle, the Modification would not necessarily result in any change to total rail movements on ARTC's network or total ships entering the Port of Newcastle.

Existing ship and rail movements beyond NCIG's site boundary have been considered in the assessment of potential cumulative impacts where relevant (e.g. background air quality monitoring data used to assess cumulative impacts includes any contribution from existing ship and train movements).

5.3.4 Clarification of Potential Impacts to Undeveloped Areas of Kooragang Island

Some submissions from members of the public and organisations raised concerns regarding the potential for air quality emissions to affect the future use of undeveloped portions of Kooragang Island.

The Modification would not result in any material change to existing/approved air quality emissions in comparison to the approved operations, and would not require any change to current environmental performance limits. Accordingly, the Modification would not affect any future development on Kooragang Island (which is zoned as an industrial area).

5.3.5 Impacts from Coal Dust Emissions

Some community members expressed concern in their submission about the potential effects of coal dust on their health and amenity.

The risk of adverse impacts as a result of air quality impacts was considered in the Air Quality and Greenhouse Gas Assessment Review (Appendix B of the SEE).

The Air Quality and Greenhouse Gas Assessment Review (Todoroski Air Sciences, 2020) presents a quantitative assessment of potential air quality impacts from the Modification as assessed against criteria levels set to protect human health and amenity in accordance with the Approved Methods (EPA, 2017).

Todoroski Air Sciences (2020) predicted the NCIG CET inclusive of the Modification could continue to operate in compliance with relevant limits for air quality, including both health and amenity criteria.

The results of air quality compliance monitoring, demonstrating ongoing compliance with air quality limits, would continue to be made available on NCIG's website and when requested by members of the community.

5.4 Noise

Some organisations and members of the public raised concerns regarding potential noise impacts associated with increased rail and ship movements outside of the NCIG site boundary. NCIG notes that the EPA did not raise concerns in their submission in regard to potential noise impacts associated with the Modification.

The Modification would result in an increase of average daily rail movements from 26 to 28 trains unloaded at the NCIG CET per day. However, there would be no change to the currently approved maximum of 40 trains unloaded on any day.

The Modification would increase the number of ships loaded from up to approximately 12 ships per week to up to approximately 16 ships per week.

SLR Consulting (2020) considered the following in regard to trains and ships for the Noise Impact Assessment Review prepared for the Modification:

- operational noise (as assessed against the operational noise criteria of the *Noise Policy for Industry* (NPfI) and existing Project Approval/EPL limits):

  - locomotives idling on-site;
  - rail unloading infrastructure; and
  - ship loading infrastructure.
- rail noise (as assessed against the rail noise criteria of the *Rail Infrastructure Noise Guideline* [RING]):
  - increase in average train movements from 26 to 28 trains unloaded per week (noting there is no change to peak train movements of 40 per day).

SLR Consulting (2020) concluded operational noise would continue to comply with NCIG's existing Project Approval noise limits, and would also comply with criteria derived using the NPfI (noise criteria derived under the NPfI are generally higher than the existing Project Approval noise limits).

In regard to off-site rail noise assessed against the RING, SLR Consulting (2020) concluded there would be an indiscernible change in train noise levels (0.8 decibels) as a result of the increase in average train movements for the Modification. There would be no change in peak rail noise emissions for the daytime, evening and night periods or maximum train pass-by noise levels (i.e. as there would be no change to approved peak daily train movements).

Train and ship movements beyond the NCIG CET site boundary are not the subject of regulation under NCIG's Project Approval or EPL. In addition, as the Modification is not linked to any specific increase in total throughput at the Port of Newcastle, the Modification would not necessarily result in any change to total rail movements on ARTC's network or total ships entering the Port of Newcastle.

5.5 Greenhouse Gas Emissions

5.5.1 Summary of Submissions

Agencies and Local Council

The City of Newcastle provided comments on the Modification relating to greenhouse gas emissions. These comments included:

- Justification of the Modification in consideration of the NSW Government's goal of achieving net-zero emissions by 2050.
- Consideration of the potential impacts of greenhouse gas emissions of the Modification to the Newcastle Local Government Area (LGA).

Public and Organisation Submissions

Comments made in public and organisation submissions relevant to greenhouse gas emissions included:

- Requirement to de-carbonise the world economy in response to climate change.
- Consideration of predicted greenhouse gas emissions of the Modification in carbon budgeting (i.e. Government policies).
- Consideration of Scope 3 emissions mitigation.
- Justification of how the Modification is consistent with Ecologically Sustainable Development (ESD).

5.5.2 Consideration of NSW Government Goal of Net-zero Emissions by 2050

The submissions from the City of Newcastle and some organisations and members of the public raised concerns regarding the potential impact of the Modification on NSW's ability to achieve its goal of net-zero emissions by 2050.

As noted by the City of Newcastle, the increase in Scope 1 and 2 greenhouse gas emissions would be 0.003% of Australia's greenhouse gas emissions reported for 2018. The City of Newcastle also stated:

> *It is also stated that the increased emissions are not expected to affect the ability of NSW to meet its emissions reduction target of net-zero emissions by 2050. It is recommended the applicant is required to provide further commentary to support this claim.*

The NSW Government released the *Net Zero Plan Stage 1: 2020-2030* (the Plan) in March 2020, which outlines the NSW Government's goal of achieving net-zero emissions by 2050.

The Plan acknowledges the ongoing contribution of mining and consideration of the importance of the industry in parallel to the Government achieving this goal (NSW Government, 2020):

> *New South Wales' $36 billion mining sector is one of our biggest economic contributors, supplying both domestic and export markets with high quality, competitive resources. Mining will continue to be an important part of the economy into the future and it is important that the State's action on climate change does not undermine those businesses and the jobs and communities they support.*

The Plan outlines the following priorities to achieve this goal:

- Driving uptake of proven emissions reduction technologies.
- Empowering consumers and businesses to make sustainable choices.
- Investing in the next wave of emissions reduction technology.
- Ensuring the Government leads by example.

It is noted the NSW and Commonwealth Governments' current policy frameworks do not promote restricting private development as a means for Australia to meet its commitments under the *Paris Agreement* or the long-term goal of the Plan. Neither do they require any action to be taken by the private sector in Australia to minimise or offset the greenhouse gas emissions of any parties outside of Australia, including the emissions that may be generated in transporting or using goods that are produced in Australia (DPIE, 2020).

The NCIG CET does not produce or consume coal. Scope 3 emissions from the combustion of coal, which would occur overseas regardless of the Modification, would be accounted for in any emission targets in the countries in which the coal is used, consistent with the international legal framework under the United Nations Framework Convention on Climate Change and the *Paris Agreement*.

More than 99% of the NCIG CET's Scope 1 and 2 emissions are associated with Scope 2 emissions from the purchase of electricity. Accordingly, as the emissions intensity of the electricity network decreases through implementation of measures in the Plan and under Australia's *Paris Agreement* obligations, NCIG's Scope 2 emissions will reduce accordingly.

Based on the above it is considered the Modification would not affect the NSW Government's ability to implement the Plan.

In addition, NCIG has recently moved to purchase approximately 10% of its electricity from "green" sources. As the network continues to incorporate renewable capacity, NCIG would seek to use more of these energy sources to meet on-site electricity requirements.

5.5.3 Consideration of the Potential Impacts of Greenhouse Gas Emissions of the Modification to the Newcastle LGA

The City of Newcastle stated:

> *The Newcastle 2030 Community Strategic Plan identifies the main priorities and aspirations of our community. In regard to a 'Protected Environment' an objective is that 'Environmental and climate changes* [sic] *risks and impacts are understood and managed.' The Newcastle 2020 Carbon and Water Management Action Plan recognises that the contribution of the business sector to the carbon emissions of the Newcastle Local Government Area (LGA) 'is significant, but difficult to quantify in detail' because of an historic lack of systematic, detailed recording of such data. It is recommended the applicant is required to provide further consideration of the likely impacts of the modification in terms of the carbon emissions of the Newcastle LGA.*

NCIG reports its Scope 1 and 2 greenhouse gas emissions annually under the *National Greenhouse and Energy Reporting Act, 2007* (NGERS). All emissions required to be reported under NGERS are publicly available on the Australian Government Clean Energy Regulator's website.

The Modification's Scope 1 and 2 emissions would continue to be reported under NGERS.

The *City of Newcastle Carbon and Water Management Action Plan*, aims for a 30% reduction (from the 2008-09 levels) in the Council's carbon footprint (i.e. the emissions generated directly within the Newcastle LGA) (The City of Newcastle, 2011). The Modification would not affect the ability of the City of Newcastle to achieve this aim (for the same reasons as described in Section 5.5.2 above).

5.5.4 Justification of the Modification in consideration of ESD

One community submission raised concerns that the Modification was not consistent with the principles of ESD.

It is noted the principles of ESD were considered when approval was originally granted for the NCIG CET. In comparison, the Modification would not significantly change the operation of the NCIG CET to achieve the proposed increase in terminal capacity.

The Modification would facilitate ESD, as economic efficiencies can be achieved with no increase in currently accepted environmental performance measures, and no increase in the duration of existing impacts of the NCIG CET.

The SEE has considered the precautionary principle, which reinforces the need to take risk and uncertainty into account in relation to threats of irreversible environmental damage, by assessing the maximum potential air quality and noise emissions associated with the Modification.

The Modification is not expected to adversely impact the conservation of biological diversity and ecological integrity, as there would be no capital development or footprint expansion works involved, nor would the Modification require any construction activities or material changes to the operational activities at the CET to achieve the increased level of terminal capability.

Given the Modification would not significantly change the operational activities of the NCIG CET, and is predicted to continue to comply with existing environmental performance limits, the Modification is not expected to adversely affect inter-generational equity.

5.6 Ship and Rail Movements

Correct Planning & Consultation for Mayfield Group made comments relating to rail and ship movements, including justification that the proposed increase in train and ship movements would be sufficient to achieve the proposed capacity increase.

NCIG is limited to the previously assessed maximum of 40 trains unloaded per day. There would be no change to this approved maximum of 40 trains unloaded in any one day for the Modification.

For example, during the week of 20 to 26 April 2020 the NCIG CET's annualised throughput was approximately 99 Mtpa, however, the number of trains unloaded during this period remained below 40 trains per day.

Based on current operational knowledge and the increased throughput from 66 to 79 Mtpa, average train movements for the Modification would increase from the previously assessed average of 26 trains unloaded per day to approximately 28 trains unloaded per day, based on average train size.

The Modification would increase the average number of ship movements from approximately 12 ships unloaded per week to approximately 16 ships unloaded per week, based on average vessel size.

However, it should be noted the Modification would not necessarily result in an increase to the number of trains operating on the ARTC network or number of ships entering the Port of Newcastle, as the Modification is not linked to any specific increase in total throughput at the Port of Newcastle.

The Modification included consideration of rail and ship movements in the air quality and noise impact assessments undertaken for the Modification (refer to Sections 5.3 and 5.4). Beyond the NCIG EPL boundary, train and ship movements would continue to be regulated in accordance with the EPLs of the ARTC and Port of Newcastle, respectively.

5.7 Soil and Water Pollution

Some community submissions raised concerns regarding potential for soil and water pollution to undeveloped areas of Kooragang Island as a result of the Modification.

The Modification would not involve footprint expansion works to achieve the increased level of terminal capacity. As such, there are no potential impacts to soil or water quality anticipated for undeveloped portions of Kooragang Island as a result of the Modification.

As described in Section 5.3, it is not anticipated that there would be adverse impacts to the undeveloped portions of Kooragang Island due to dust emissions from the Modification.

Environmental management of the NCIG CET incorporating the Modification would continue to be undertaken in accordance with existing environmental management plans, procedures and environmental monitoring programs.

5.8 Site Closure and Rehabilitation

The submission from Correct Planning & Consultation for Mayfield Group made comments relating to the consideration of site closure and rehabilitation planning for the Modification.

The Modification does not propose any changes to the expected NCIG CET project life or extent of existing infrastructure. Therefore, site closure and rehabilitation planning for the NCIG CET is unchanged by the Modification.

Subject to the ongoing use of the terminal as a storage facility by its current and future customers, closure and decommissioning of the terminal will be planned for when required in accordance with Project Approval 06_0009.

6 MODIFICATION EVALUATION

Submissions on the Modification were received from government agencies, local council, organisations and members of the public during the exhibition period for the SEE. Approximately 87% of submissions received from members of the public and 75% of submissions received from organisations supported the Modification.

This Submissions Report provides responses to aspects raised by submissions from government agencies (the EPA), local council (City of Newcastle), organisations and members of the public during the exhibition period for the SEE and has been prepared in consideration of the *Draft Guideline 4: Guidance for State Significant Projects - Preparing a Submissions Report June 2019* (DPIE, 2019).

Since lodgement of the SEE, NCIG has continued to consult with key stakeholders including Government and community members regarding the Modification.

Potential impacts of the Modification have been assessed against established thresholds of acceptability contained in relevant guidelines and policies where possible. Potential impacts have been avoided or minimised as far as is reasonable or feasible. The Modification is predicted to continue to comply with relevant air quality criteria and noise limits at all residential receptors.

As noted by a number of organisations integral to the operation of the coal supply chain (e.g. HVCCC, ARTC, Port of Newcastle and PWCS), the Modification would benefit the coal supply chain, as it would further de-link rail transport and ship loading, helping to alleviate congestion and improve efficiency on the Hunter Valley rail network.

In consideration of the information provided as assessed and described in the SEE and Submissions Report, NCIG considers the benefits of the Modification outweigh its impacts and is, on balance, considered to be in the public interest.

7 REFERENCES

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Department of Planning, Industry and Environment (2019). *Draft Guideline 4: Guidance for State Significant Projects - Preparing a Submissions Report,* June 2019.

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ATTACHMENT A

SUBMISSIONS SUMMARY

Table A-1
Summary of Submissions

Name	Reference Number	Location	Group	View	Industry Benefits / Support for Local Business	Project Justification	Air Quality	Noise	Greenhouse Gas Emissions	Ship and Rail Movements	Soil and Water Pollution	Site Closure
Division of Resources & Geoscience	SE-125943	Maitland	Authority	Comment	-	-	-	-	-	-	-	-
Environment Protection Authority	SE-126283	-	Authority	Comment	-	-	1	-	-	-	-	-
City of Newcastle	SE-126285	-	Authority	Comment	-	-	-	-	1	-	-	-
Freyssinet Australia	SE-125483	Caves Beach	Organisation	Support	1	-	-	-	-	-	-	-
T.W.Woods Construction Pty Ltd	SE-125485	Tomago	Organisation	Support	1	-	-	-	-	-	-	-
Maddison Safety Pty Ltd	SE-125717	Redhead	Organisation	Support	1	-	-	-	-	-	-	-
Pegasus	SE-125918	Newcastle West	Organisation	Support	1	-	-	-	-	-	-	-
Port of Newcastle	SE-126009	Newcastle	Organisation	Support	1	-	-	-	-	-	-	-
Port Waratah Coal Services	SE-126042	Kooragang Island	Organisation	Support	1	-	-	-	-	-	-	-
Daracon	SE-126055	Beresfield	Organisation	Support	1	-	-	-	-	-	-	-
Port Stephens Greens	SE-126062	Nelson Bay	Organisation	Object	-	1	1	-	1	-	1	-
Correct Planning & Consultation for Mayfield Group	SE-126076	Mayfield	Organisation	Object	-	1	1	1	1	1	1	1
Australian Rail Track Corporation	SE-126085	Surry Hills	Organisation	Support	1	-	-	-	-	-	-	-
Hunter Valley Coal Chain Coordinator	SE-126097	Broadmeadow	Organisation	Support	1	-	-	-	-	-	-	-
Climate Action Newcastle	SE-126118	Islington	Organisation	Object	-	1	1	-	1	-	-	-
Aaron Arthur	SE-125586	Largs	Public	Support	1	-	-	-	-	-	-	-
Alan Blanch	SE-126008	Fullerton Cove	Public	Support	1	-	-	-	-	-	-	-
Allonby Peter	SE-125922	Bushells Ridge	Public	Support	1	-	-	-	-	-	-	-
Anna Harvey	SE-126137	Croydon	Public	Object	-	-	1	-	1	-	-	-
Anthony Thomas	SE-126108	Ashtonfield	Public	Support	1	-	-	-	-	-	-	-
Barry Arens	SE-125904	Charlestown	Public	Support	1	-	-	-	-	-	-	-
Ben Belfield	SE-125836	Adamstown Heights	Public	Support	1	-	-	-	-	-	-	-
Blade McNaught	SE-125625	Lochinvar	Public	Support	1	-	-	-	-	-	-	-
Brett Mills	SE-125917	Stockton	Public	Support	1	-	-	-	-	-	-	-
Brooke Stevenson	SE-125924	Merewether	Public	Support	1	-	-	-	-	-	-	-
Catherine Blanch	SE-126101	Islington	Public	Support	1	-	-	-	-	-	-	-
Cecilia Lee	SE-125913	Merewether	Public	Support	1	-	-	-	-	-	-	-
Chad Moffiet	SE-126013	Islington	Public	Support	1	-	-	-	-	-	-	-
Charles Henshaw	SE-125954	Merewether	Public	Support	1	-	-	-	-	-	-	-
Chris Daley	SE-126070	New Lambton	Public	Support	1	-	-	-	-	-	-	-
Craig O'Neill	SE-125637	Coal Point	Public	Support	1	-	-	-	-	-	-	-
Craig Beckett	SE-125808	Cessnock	Public	Support	1	-	-	-	-	-	-	-
Daniel Alcantara	SE-125630	New Lambton Heights	Public	Support	1	-	-	-	-	-	-	-
Darren Mehan	SE-125949	Stockton	Public	Support	1	-	-	-	-	-	-	-

Table A-1 (Continued)
Summary of Submissions

Name	Reference Number	Location	Group	View	Industry Benefits / Support for Local Business	Project Justification	Air Quality	Noise	Greenhouse Gas Emissions	Ship and Rail Movements	Soil and Water Pollution	Site Closure
Darren Douglas	SE-126054	Waratah	Public	Support	1	-	-	-	-	-	-	-
David Goodwin	SE-125471	Terrigal	Public	Support	1	-	-	-	-	-	-	-
David Nelmes	SE-125899	Merewether	Public	Support	1	-	-	-	-	-	-	-
Greg Quill	SE-125478	Redbournberry	Public	Support	1	-	-	-	-	-	-	-
Ian Hunt	SE-125640	Muswellbrook	Public	Support	1	-	-	-	-	-	-	-
Josh Wilson	SE-125964	New Lambton Heights	Public	Support	1	-	-	-	-	-	-	-
Kasandra Smith	SE-125903	Bar Beach	Public	Support	1	-	-	-	-	-	-	-
Katelijn Hullegie	SE-125930	Tighes Hill	Public	Object	-	1	1	-	1	-	-	-
Lauren Ross	SE-126005	Corlette	Public	Support	1	-	-	-	-	-	-	-
Layne Richards	SE-125953	East Maitland	Public	Support	1	-	-	-	-	-	-	-
Lee Haggerty	SE-126027	Valentine	Public	Support	1	-	-	-	-	-	-	-
Lynden Jacobi	SE-125480	Whitebridge	Public	Object	-	-	1	-	1	-	-	-
Lynden Cockerill-Wright	SE-125629	Chisholm	Public	Support	1	-	-	-	-	-	-	-
Mark Curtis	SE-126107	Metford	Public	Support	1	-	-	-	-	-	-	-
Mick Nadalin	SE-125741	Merewether	Public	Support	1	-	-	-	-	-	-	-
Myles Thomas	SE-126105	Ashtonfield	Public	Support	1	-	-	-	-	-	-	-
Nathan Juchau	SE-125662	Kooragang Island	Public	Support	1	-	-	-	-	-	-	-
Nigel Waters	SE-126060	Nelson Bay	Public	Object	-	1	1	-	1	-	1	-
Phillip Enderby	SE-125474	Speers Point	Public	Support	1	-	-	-	-	-	-	-
Renata Roberts	SE-125678	Merewether	Public	Support	1	-	-	-	-	-	-	-
Robert Monteath	SE-125823	Merewether	Public	Support	-	-	-	-	-	-	-	-
Scott Liddell	SE-125627	Thornton	Public	Support	1	-	-	-	-	-	-	-
Scott Grunsell	SE-125960	Lambton	Public	Support	1	-	-	-	-	-	-	-
Steve Clack	SE-126068	Cooks Hill	Public	Support	1	-	-	-	-	-	-	-
Steven Bullman	SE-126041	Ashtonfield	Public	Support	1	-	-	-	-	-	-	-
Susan Morley	SE-126125	Islington	Public	Object	-	-	1	-	1	-	-	-
Travis Smith	SE-125467	Fletcher	Public	Support	1	-	-	-	-	-	-	-
Trent Watson	SE-125546	Stockton	Public	Support	1	-	-	-	-	-	-	-
Troy Greedy	SE-125622	Muscle Creek	Public	Support	1	-	-	-	-	-	-	-
Wendy Wales	SE-126096	Kayuga	Public	Object	-	1	1	-	1	-	1	-
Withheld	SE-125465	Fletcher	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125466	Turramurra	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125468	Merewether	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125510	New Lambton	Public	Object	-	1	1	1	1	-	-	-
Withheld	SE-125577	Mount Hutton	Public	Support	1	-	-	-	-	-	-	-

Table A-1 (Continued)
Summary of Submissions

Name	Reference Number	Location	Group	View	Industry Benefits / Support for Local Business	Project Justification	Air Quality	Noise	Greenhouse Gas Emissions	Ship and Rail Movements	Soil and Water Pollution	Site Closure
Withheld	SE-125578	Charlestown	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125600	Mayfield	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125631	Kingsford	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125633	Mirrabooka	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125664	Figtree	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125676	Warners Bay	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125680	East Maitland	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125690	Maryville	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125720	Figtree	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125760	Valentine	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125774	Corlette	Public	Object	-	1	-	-	1	-	-	-
Withheld	SE-125791	Hamilton	Public	Object	-	-	-	-	1	-	-	-
Withheld	SE-125821	Beresfield	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125825	Stroud	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125829	Brandy Hill	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125908	Mayfield East	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125909	Thornton	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125929	Tighes Hill	Public	Object	-	1	-	-	1	-	-	-
Withheld	SE-125952	East Maitland	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125958	Fern Bay	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125959	Breeza	Public	Object	-	1	-	-	1	-	-	-
Withheld	SE-125976	Thornton	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125979	Blacksmiths	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-125999	Stroud	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-126002	Cameron Park	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-126032	Charlestown	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-126079	Redhead	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-126080	Valentine	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-126093	Fletcher	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-126102	Charlestown	Public	Object	-	1	1	-	-	-	-	-
Withheld	SE-126129	Mayfield	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-126138	Mayfield East	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-126140	Fern Bay	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-126143	Medowie	Public	Support	1	-	-	-	-	-	-	-
Withheld	SE-126150	Barangaroo	Public	Support	1	-	-	-	-	-	-	-

ATTACHMENT B

REGISTER OF SUBMITTERS

Table B-1
Register of Submitters

Group	Reference Number	Name	Where issues are addressed (section)*
Authority	SE-125943	Division of Resources & Geoscience	N/A
Authority	SE-126283	Environment Protection Authority	5.3
Authority	SE-126285	City of Newcastle	5.5
Organisation	SE-126062	Port Stephens Greens	5.2, 5.3, 5.5, 5.7
Organisation	SE-126076	Correct Planning & Consultation for Mayfield Group	5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8
Organisation	SE-126118	Climate Action Newcastle	5.2, 5.3, 5.5
Public	SE-126137	Anna Harvey	5.3, 5.5
Public	SE-125930	Katelijn Hullegie	5.2, 5.3, 5.5
Public	SE-125480	Lynden Jacobi	5.3, 5.5
Public	SE-126060	Nigel Waters	5.2, 5.3, 5.5, 5.7
Public	SE-126125	Susan Morley	5.3, 5.5
Public	SE-126096	Wendy Wales	5.2, 5.3, 5.5, 5.7
Public	SE-125510	Withheld	5.2, 5.3, 5.4, 5.5
Public	SE-125774	Withheld	5.2, 5.5
Public	SE-125791	Withheld	5.5
Public	SE-125929	Withheld	5.2, 5.5
Public	SE-125959	Withheld	5.2, 5.5
Public	SE-126102	Withheld	5.2, 5.3

*only objecting or commenting submissions are presented

ATTACHMENT C

RESPONSE TO NSW ENVIRONMENTAL PROTECTION AUTHORITY

Table C-1
Response to NSW Environmental Protection Authority

ID	Comment	NCIG Response
1	*The EPA requires:* • *additional detail to demonstrate that the controls proposed to be used for particulates from coal stockpiles, including watering of stockpiles, are appropriate, effective and consistent with best practice; or* • *an assessment of all reasonable and feasible options to improve water application to the highest sections of coal stockpiles that are impacted by strong north-westerly wind conditions, and nomination of the preferred option(s) that will be implemented to improve water application to the highest sections of the coal stockpiles.*	NCIG acknowledges the EPA's concerns regarding dust emissions and has identified that wind-blown emissions from coal stockpiles are a key emissions source for the existing operations. As such, NCIG already implements best practice emissions controls to manage wind-blown emissions, including: • water sprays; • an integrated and adaptive dust suppression control system, including: - real-time monitoring of coal moisture; - meteorological forecasting to identify adverse conditions; - real-time meteorological monitoring; - automated misting and water addition sprays on conveyors and coal stockpiles when required (i.e. as determined by a combination of meteorological and coal moisture monitoring); and • on-site continuous dust monitors to verify the effectiveness of the controls. NCIG currently has systems in place to manage emissions during more adverse weather conditions (i.e. during stronger north-west wind events). In particular, this in undertaken through the integrated dust suppression control system which monitors and reacts to more adverse conditions (refer to response to comment 2 below regarding performance of this system). The integrated dust suppression control system measures the moisture level of the inbound coal product through real-time moisture level monitoring. Sprays are activated by the system to ensure that inbound coal product is maintained at the optimal moisture content (i.e. to limit the potential for dust lift-off) as the coal is transferred to the stockyard. To manage dust emissions during high or extreme risk events, meteorological monitoring is used to forecast the arrival of more adverse conditions two hours in advance (i.e. extreme north-westerly winds), and the integrated dust suppression control system activates stockpile water sprays to wet down the stockpiles beforehand (NCIG, 2018). Stockpile sprays are activated according to an evapotranspiration algorithm that calculates the evaporation of moisture from the coal surface using real-time data from the NCIG on-site weather station. Sprays sequence from west to east and south to north, with up to five sprays operating at any one time. A sequence of sprays will take approximately 30 to 50 minutes. Operators are also able to turn sprays on manually, and are expected to do so if inspections of the stockyard suggest this is necessary. Depending on the direction and speed of extreme wind events, the configuration of stockyard sprays can also be augmented (e.g. other sprays can be integrated into the spray network to reach the tops of the stockpiles during adverse wind conditions). In addition, stockyard sprays are activated further upwind from certain stockpiles under extreme wind conditions to allow spraying to be blown down onto the pile (NCIG, 2018).

ID	Comment	NCIG Response
		On-site continuous air quality monitors (refer to locations of Beta-Attenuation Mass samplers [BAMs] in Figure 6-3 of the SEE) provide real-time validation of the effectiveness of the controls. In the event that dust generation is identified by these monitors stockpile sprays will be automatically activated. Therefore, the existing controls and mitigation measures at the NCIG CET to manage dust emissions from coal stockpiles represent best-practice emissions control measures, with Todoroski Air Sciences (refer to Attachment E for further detail) concluding the following: *Operational and physical dust mitigation measures are utilised at the NCIG CET to ensure dust generation is controlled and the potential for off-site impacts is reduced to best practice levels.* *There are no known better dust control practices that would be viable for the existing NCIG CET incorporating the Modification to further significantly reduce dust, and it is noted that the proposal offers a total 52% reduction in dust to that which is presently approved (noting that the approved project does not specify dust controls).* Refer to the response to comment 2 below regarding the performance of the existing controls.
2	*Appropriate control of wind erosion from the coal stockpiles is therefore very important, specifically the appropriate use of water sprays.* *…* *On several occasions, the EPA has observed that the current water sprays are not effective during these stronger north-westerly winds because they do not reach the top of the stockpiles under these conditions. The EPA has also observed that during north-westerly winds, PM_{10} levels at Stockton, downwind of the coal stockpiles, may exceed the relevant criteria even though particle levels at other monitors around Newcastle are lower.*	The performance of the integrated dust suppression control system currently utlised on-site (as described above in comment 1) has recently been demonstrated during recent north-westerly wind events experienced on-site between 30 April to 2 May 2020. During this period, north-westerly winds of up to 16 metres per second were experienced on-site. Winds remained at high to extreme levels for the entire three-day period. However, the Stockton monitor (located to the south-east of the site) recorded a maximum daily PM_{10} concentration of approximately 25 micrograms per cubic metre ($\mu g/m^3$) (i.e. well below the Approved Methods 24-hour average PM_{10} criteria of 50 $\mu g/m^3$). Accordingly, NCIG does not agree with the EPA's comment that "*…the current water sprays are not effective during these stronger north-westerly winds because they do not reach the top of the stockpiles under these conditions…*". In addition, Todoroski Air Sciences (refer to Attachment E for further detail) notes that the Stockton monitor experiences elevated dust levels regardless of wind direction: *It is noted that the Stockton monitor shows high dust levels under both low and high wind speed conditions under north-easterly winds. This is due to salt in the air from wave action along Stockton beach.* It is considered the adaptive management system, when combined with meteorological forecasting, coal moisture monitoring and continuous air quality monitoring to validate performance, are highly effective in minimising dust emissions for the existing operations. Given wind erosion emissions for the Modification are not expected to increase, the current controls will also be effective for the Modification.
3	*The EPA understands that NCIG has traditionally operated its coal stockpiles below the approved height. As part of the proposed increase in throughput, coal stockpile heights will increase by about two metres. Water sprays will therefore be even less likely to reach the top of the stockpiles during strong winds.*	As noted by the EPA, one of the efficiency improvements implemented to date to achieve the increased throughput capacity is the extension of the stockpiles to the eastern limit of the existing stockyard pads, as well as use of the existing stockpiles up to the already approved height of 25 m. As such, the Modification would **not change the size of the coal stockpiles at the NCIG CET in comparison to the currently approved and previously assessed footprint and heights**. Accordingly, the Air Quality and Greenhouse Gas Assessment Review (Appendix B of the SEE) predicted that wind erosion emissions from stockpiles would not increase relative to previous assessments (refer to Table 6-1 of Todoroski Air Sciences [2020]).

ID	Comment	NCIG Response
	The AQIA applied an emission control efficiency (reduction) of 50% through the application of water sprays (Table B-2). If water sprays fail to reach the top of the stockpiles during strong winds, their control efficiency would decrease, particulate emissions would increase, and the potential impacts may be inconsistent with those predicted in the AQIA. Given that each stockpile is over one kilometre long, this increased height could result in a significant increase in the surface area of coal exposed to wind erosion.	In addition, the assessment predicted the NCIG CET inclusive of the Modification (and other existing and proposed cumulative sources) would continue to comply with the relevant air quality criteria in the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (Approved Methods) (EPA, 2017). This included predictions of PM_{10} and $PM_{2.5}$ emissions at receptors at Stockton, with Modification-related emissions below relevant criteria as defined in the Approved Methods. Because of the implementation of dust controls during operations, the NCIG CET inclusive of the Modification is predicted to generate 52% less emissions than those assessed and approved in the original Environmental Impact Statement. Todoroski Air Sciences (2020) concluded: *Overall, the assessment demonstrates that even using conservative assumptions, the NCIG CET incorporating the Optimisation Project can operate without causing any significant air quality impact at sensitive receptors in the surrounding environment.* As described above (response to comment 2), the performance of the existing dust controls on the stockpiles was recently demonstrated during the recent extreme wind event between 30 April to 2 May 2020. The NCIG CET is regulated in accordance with the requirements of Environmental Protection Licence (EPL) 12693, Project Approval 06_0009 and the *Operational Dust and Air Quality Management Plan*. NCIG has operated in compliance with air quality criteria due to the performance if its existing controls and mitigation measures on-site. The performance of the existing site controls is supported by annual independent environmental audits (conducted in accordance with Project Approval 06_0009), which show that during the most recent reporting period (the period 1 October 2015 to 1 October 2018), NCIG reported compliance with relevant air quality criteria at all receivers (pitt&sherry, 2019).
4	*NCIG has advised the EPA that it considers that increased use of water sprays in the north-west sector of the coal yard, upwind of the stockpiles, is assisting to reduce offsite emissions. All feasible controls, such as these, need to be fully evaluated.*	As described above, NCIG currently implements best-practice control measures to manage dust emissions associated with wind-blown emissions from stockpiles, including reactive measures to manage emissions during extreme wind events. NCIG would continue to investigate best-practice mitigation measures throughout the life of the CET.
5	***Assessment of air quality impacts on industrial receivers*** *The EPA requires an amended AQIA or supporting documents that fully assess air quality impacts on all sensitive receptors.* *The AQIA predicts the modification's air quality impacts at the nearest residential receptors in Mayfield and Stockton. No specific assessment was conducted at the nearby Kooragang Island or Mayfield industrial and commercial premises.* *The Approved Methods for the Modelling and Assessment of Air Pollutants in New South*	It is noted that the NCIG CET is located within a heavily industrialised area, with a number of industrial facilities located proximal to the site as well as within the wider Port of Newcastle area (Figure 5-1 of the Submissions Report). The Approved Methods defines a 'sensitive receptor' as (emphasis added): *A location where people are likely to work or reside; this may include a dwelling, school, hospital, office or public recreational area.* It is not considered that the intended definition of 'sensitive receptor' as defined in the Approved Methods included receptors typical of the industrial receivers proximal to the NCIG CET (e.g. other coal terminals, manufacturing facilities). The Air Quality and Greenhouse Gas Assessment Review (Appendix B of the SEE) undertaken for the Modification assessed potential air quality impacts at sensitive receptors (i.e. residential receivers, schools, hospitals, office spaces and public recreational areas) in accordance with the Approved Methods.

ID	Comment	NCIG Response
	Wales (EPA 2017) requires impacts to be assessed at 'Sensitive Receptors' and defines these as "a location where people are likely to work or reside". This definition includes industrial and commercial premises on Kooragang Island and Mayfield as these are premises where people work.	The Air Quality and Greenhouse Gas Assessment Review (Appendix B of the SEE) concluded that the NCIG CET incorporating the Modification would continue to comply with all relevant air quality assessment criteria at all sensitive receptors. Notwithstanding, NCIG conducts internal ambient dust monitoring of total suspended particles (TSP) using a network of BAMs, which are located in close proximity (within 80 m) of active coal stockpiling areas (i.e. closer to the NCIG CET than industrial and commercial receptors on Kooragang Island and at Mayfield) (Figure 5-2 of the Submissions Report). Monitoring data indicates that the annual average TSP concentrations at these BAMs were below the criterion of 90 µg/m^3 for the period 2014 to 2018. NCIG also conducts external ambient dust monitoring using High Volume Air Samplers (HVAS) and dust deposition gauges. Two of these sites (HVAS 1 and DG5) are located within the Mayfield industrial area. Maximum 24-hour PM_{10} monitoring data collected from the HVAS 1 monitoring station from 2014 to 2018 shows that on all bar one monitoring period in 2016, the levels were below the relevant criteria (on 7 November 2016, all HVAS monitors recorded elevated levels above the criterion – satellite imagery indicates extensive bushfires occurring in the region, which are the likely cause of the elevated levels at the monitors). It is noted that elevated levels were also recorded at HVAS monitors during the November 2019 to January 2020 period, due to bushfire events. NCIG also works closely, and has open communication, with industrial neighbours to ensure that any concerns they may have are clearly understood and resolved.

ATTACHMENT D

RESPONSE TO CITY OF NEWCASTLE

Table D-1
Response to City of Newcastle

ID	Comment	NCIG Response
1	*It is also stated that the increased emissions are not expected to affect the ability of NSW to meet its emissions reduction target of net-zero emissions by 2050. It is recommended the applicant is required to provide further commentary to support this claim.*	The NSW Government released the *Net Zero Plan Stage 1: 2020-2030* (the Plan) in March 2020, which outlines the NSW Government's goal of achieving net-zero emissions by 2050. The Plan acknowledges the ongoing contribution of mining and consideration of the importance of the industry in parallel to the Government achieving this goal (NSW Government, 2020): *New South Wales' $36 billion mining sector is one of our biggest economic contributors, supplying both domestic and export markets with high quality, competitive resources. Mining will continue to be an important part of the economy into the future and it is important that the State's action on climate change does not undermine those businesses and the jobs and communities they support.* The Plan outlines the following priorities to achieve this goal: • Driving uptake of proven emissions reduction technologies. • Empowering consumers and businesses to make sustainable choices. • Investing in the next wave of emissions reduction technology. • Ensuring the Government leads by example. It is noted the NSW and Commonwealth Governments' current policy frameworks do not promote restricting private development as a means for Australia to meet its commitments under the *Paris Agreement* or the long-term goal of the Plan. Neither do they require any action to be taken by the private sector in Australia to minimise or offset the greenhouse gas emissions of any parties outside of Australia, including the emissions that may be generated in transporting or using goods that are produced in Australia (DPIE, 2020). The NCIG CET does not produce or consume coal. Scope 3 emissions from the combustion of coal, which would occur overseas regardless of the Modification, would be accounted for in any emission targets in the countries in which the coal is used, consistent with the international legal framework under the United Nations Framework Convention on Climate Change and the *Paris Agreement*. More than 99% of the NCIG CET's Scope 1 and 2 emissions are associated with Scope 2 emissions from the purchase of electricity. Accordingly, as the emissions intensity of the electricity network decreases through implementation of measures in the Plan and under Australia's *Paris Agreement* obligations, NCIG's Scope 2 emissions will reduce accordingly. Based on the above it is considered the Modification would not affect the NSW Government's ability to implement the Plan. In addition, NCIG has recently moved to purchase approximately 10% of its electricity from "green" sources. As the network continues to incorporate renewable capacity, NCIG would seek to use more of these energy sources to meet on-site electricity requirements.

ID	Comment	NCIG Response
2	*The Newcastle 2030 Community Strategic Plan identifies the main priorities and aspirations of our community. In regard to a 'Protected Environment' an objective is that 'Environmental and climate changes risks and impacts are understood and managed.' The Newcastle 2020 Carbon and Water Management Action Plan recognises that the contribution of the business sector to the carbon emissions of the Newcastle Local Government Area (LGA) 'is significant, but difficult to quantify in detail' because of an historic lack of systematic, detailed recording of such data. It is recommended the applicant is required to provide further consideration of the likely impacts of the modification in terms of the carbon emissions of the Newcastle LGA.*	NCIG reports its Scope 1 and 2 greenhouse gas emissions annually under the *National Greenhouse and Energy Reporting Act, 2007* (NGERS). All emissions required to be reported under NGERS are publicly available on the Australian Government Clean Energy Regulator's website. The Modification's Scope 1 and 2 emissions would continue to be reported under NGERS. The *City of Newcastle Carbon and Water Management Action Plan*, aims for a 30% reduction (from the 2008-09 levels) in the Council's carbon footprint (i.e. the emissions generated directly within the Newcastle LGA) (The City of Newcastle, 2011). The Modification would not affect the ability of the City of Newcastle to achieve this aim (for the same reasons as described in response to comment 1 above, e.g. recent purchase of "green" energy sources to meet a portion of on-site electricity requirements).

ATTACHMENT E

TODOROSKI AIR SCIENCES LETTER

TODOROSKI AIR SCIENCES
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12 June 2020

Nathan Juchau
Manager HSEC
Newcastle Coal Infrastructure Group
Via email: njuchau@ncig.com.au

RE: NCIG CET Optimisation Project – Further Information Required by the NSW EPA

Dear Nathan,
This letter provides additional information requested by the New South Wales (NSW) Environment Protection Authority (EPA) in relation to the Newcastle Coal Infrastructure Group (NCIG) Coal Export Terminal (CET) Optimisation Project (MP06-0009 Mod 3) (hereafter referred to as the Project). The key issues raised by the EPA are set out below and are followed by a response to each issue.

Brief outline of the Project
The current approved operations at the NCIG CET allow for a capacity of 66 million tonnes per annum (Mtpa) of product coal, delivered to the site via trains from the Newcastle, Hunter Valley, Gloucester, Gunnedah and Western Coalfields.

The Optimisation Project incorporates a number of on-site control system and operational process improvements that NCIG has identified and implemented to improve the efficiency of the operations to allow for an increased capacity to 79 Mtpa.

The potential air quality impacts associated with the Optimisation Project have been assessed in the *Air Quality and Greenhouse Gas Assessment NCIG CET Optimisation Project* (**Todoroski Air Sciences, 2020**).

EPA issues
The EPA raises two key issues regarding the operations at the Project and other issues relating to the Air Quality Assessment report. The issues raised are outlined below.

Best practice operation is proposed
In regard to operations at the Project the EPA seeks information to show that these would be carried out per best practice, with a specific focus on controlling potential dust from the highest parts of the stockpiles under strong north westerly winds. The EPA request is as follows:

- additional detail to demonstrate that the controls proposed to be used for particulates from coal stockpiles, including watering of stockpiles, are appropriate, effective and consistent with best practice; or

- an assessment of all reasonable and feasible options to improve water application to the highest sections of coal stockpiles that are impacted by strong north-westerly wind conditions, and nomination of the preferred option(s) that will be implemented to improve water application to the highest sections of the coal stockpiles.

Dust controls

Operational and physical dust mitigation measures are utilised at the NCIG CET to ensure dust generation is controlled and the potential for off-site impacts is reduced to best practice levels.

There are no known better dust control practices that would be viable for the existing NCIG CET incorporating the Modification to further significantly reduce dust, and it is noted that the proposal offers a total 52% reduction in dust to that which is presently approved (noting that the approved project does not specify dust controls).

The dust control measures include:

- Extensive environmental monitoring network (meteorological and ambient dust monitoring);
- Integrated dust suppression system;
    - Preventative measures include real-time monitoring of coal moisture, adding water as needed to maintain a suitable coal moisture level to prevent emissions during coal handling;
    - Predictive measures include:
        - real-time meteorological monitoring integrated with water addition sprays to maintain coal surface moisture;
        - monitoring of forecast wind conditions to trigger pre-emptive water sprays to wet the surface before winds increase to high speeds;
    - Reactive measures include a real-time triggered action response plan (TARP) using measured dust levels from ambient dust monitoring around site;
- Decreased stockpile surface area relative to stockpile volume to reduce wind erosion;
- Received coal is classified in terms of dust risk with high risk material planned for lower stockpile heights and positioned in locations to minimise dust emissions from the site;
- Full enclosure of elevated conveyors;
- Fully enclosed transfer stations and buffer bin chutes;
- Monitoring of all conveyor, hopper, transfer and storage infrastructure to identify potential spill points and maintenance requirements;
- A dust suppression system in place at the grizzly level of the dump station;
- Water sprays at the reclaim grizzly; and,

- Water sprays on the output side of buffer bin chutes;

Measures that represent controls beyond the best practice measures in the published literature include soft flow technology for chutes to minimise coal stream separation. This prevents wind acting on falling coal, and keeps the flow uniform/ even to minimise dust generation.

A range of other measures were considered but are not viable or practical at the operation. These include bypassing stockpiles, (however improvements in a similar vein to avoid double handling are used), physical enclosures and covering as well as vegetation and other such barriers and screening measures which are also not viable on the scale needed to have any significant benefit.

Additional dust control measures used specifically to ensure the highest parts of the stockpiles are managed effectively under elevated wind conditions include:

- Review forecast wind conditions to identify periods of high winds and pre-wet the stockpiles before wind speeds increase; and,
- Switch on the water sprays for additional nozzles upwind of the piles so water is effectively blown onto the piles under increase wind speed conditions.

Height of piles

In this regard whilst there would be a nominal 2 metres (m) increase in the height of the stockpiles relative to the typical current heights at which NCIG operates the stockpiles, the new height would remain below the approved height that may presently be used (i.e. 25 m). There is no aspect of the proposal which seeks to increase the approved stockpile height, and thus the stockpile height is not a factor that can result in any additional dust beyond what is already approved.

It is important to point out there is a difference between actual typical operations and what is modelled, and this difference is relevant when evaluating a proposal (as opposed to a site's operations in practice). The modelling is generally conservative and it is fundamentally designed to predict the maximum extent of potential impacts (and the modelled results are thus generally higher than the effects of the typical operation). For example the stockpiles are modelled at full capacity, and as always being present at full capacity, but in practice (current and future) there will be times when some parts the stockpiles are not present, or when the piles will be less long or not as tall as proposed and modelled.

Orientation of stockpiles

The EPA notes that the coal stockpiles are oriented approximately east-west, approximately along the key dominant prevailing wind axis.

It is important to note that this orientation affords a significant inherent reduction in wind erosion. The stockpile face perpendicular to the incoming wind is most susceptible to wind erosion, and the face parallel to the wind experiences least wind erosion. This can be ascertained from the US EPA promulgated AP-42 emissions equations procedures, and has been verified in a study by **Cong et al. (2011)** which calculates less than half the emissions arise when winds blow along the axis of long stockpiles relative to when winds are perpendicular to the axis.

Due to the shape of the site relative to the prevailing winds, the pile configuration can be aligned in a best-practice manner, and the existing pile orientation provides the highest possible inherent design control for wind erosion along the wind axis of most concern.

It is noted that the winds generally perpendicular to the piles (i.e. north-east and south-west) are significantly less frequent and only occur at generally lower wind speeds than the prevailing winds. Such north-easterly winds would blow from the site towards the largest and nearest population of sensitive receptors. Under these wind conditions, there are no significant impediments to achieving full wetting of the piles via water sprays, or any inherent limitation to achieving best practice control levels.

Dust emissions during high wind speed conditions

EPA notes that it has observed that under high north westerly winds, the existing sprays may not reach the top of the piles, and seeks to ensure that all reasonable and feasible measures are employed to ensure this is not a significant issue in future.

It should be noted that the way in which the sprays are used has been modified up to tackle this issue, with additional upwind sprays to operate under elevated wind speed conditions, and the use of forecast wind conditions to trigger pre-emptive spraying to saturate the surface before wind speeds increase.

The EPA also notes that PM_{10} levels at Stockton may be elevated at these times, despite other monitors being lower. In this regard, it is important to note some key differences between the monitor at Stockton relative to the other monitors. The Stockton monitor experiences significantly higher wind speeds due to it being positioned in a less sheltered location, and it also experiences significantly higher readings, that include large contributions from localised sources including salt spray and other confounding sources. For example, the Lower Hunter Particle Characterisation Study (**CSIRO, ANSTO & OEH 2016**) found that sea salt accounted for 63% of the ambient PM_{10} at Stockton and 40% of the PM_{10} at Mayfield.

Figure 1 shows dust levels during a four day period from 30 April 2020 to 3 May 2020 over which there are extreme wind conditions. Over this period, there were very high wind speed north-westerly wind conditions. However, when the dust levels measured in locations to the piles in the north, south, east and west are examined (note this is TSP data), along with the Stockton PM_{10} data, the results show that dust levels immediately downwind of the piles increase significantly only after a prolonged period of extreme wind conditions (i.e. day or more).

The data also show that the trends in the dust levels immediately downwind of the piles do not align well with the trends in the PM_{10} levels further down wind at the Stockton monitor. At the times of the highest TSP dust emissions from the stockpiles, (which are also the highest wind conditions) the highest hourly PM_{10} levels at Stockton fluctuate greatly from negative values to moderately high hourly values, which is indicative of the monitor drawing in water (perhaps wind-blown salt spray from the harbour/ river), and is not indicative of dust from a large area source like the coal piles that were emitting dust and were always upwind.

In any case, the measured PM_{10} levels at Stockton on the four days of 30 April, 1 May, 2 May and 3 May are respectively: no data, 14.8µg/m^3, 24.7µg/m^3, and 26.8µg/m^3. These dust levels are relatively typical of the location, are near to half the applicable criteria when winds blow from the site towards the monitor. The data reveal that no abnormally high dust levels or any adverse impact arose at receptors under the most extreme dust emitting circumstance that can arise for the existing, and the proposed operation should such conditions occur again.

It is noted that on 3 May, for approximately the first half of the day when winds were from the site towards the Stockton monitor, the PM_{10} levels are lower, and for the rest of the day when the winds are not from the site towards the monitor or at wind speeds that could lead to any significant dust from the

coal piles, the PM_{10} levels at Stockton are higher. The maximum hourly dust levels on this day arise when the wind speed is moderately low and the winds are from the south. These dust levels are similar to the maximum hourly levels the day prior at the time of the most extreme winds acting on the coal piles and blowing towards the monitor. Overall on this day, when there would be no tangible contribution from NCIG CET, the 24-hour PM_{10} level at Stockton is in fact slightly higher than on the previous, most extreme dust emitting day for the site on 2 May.

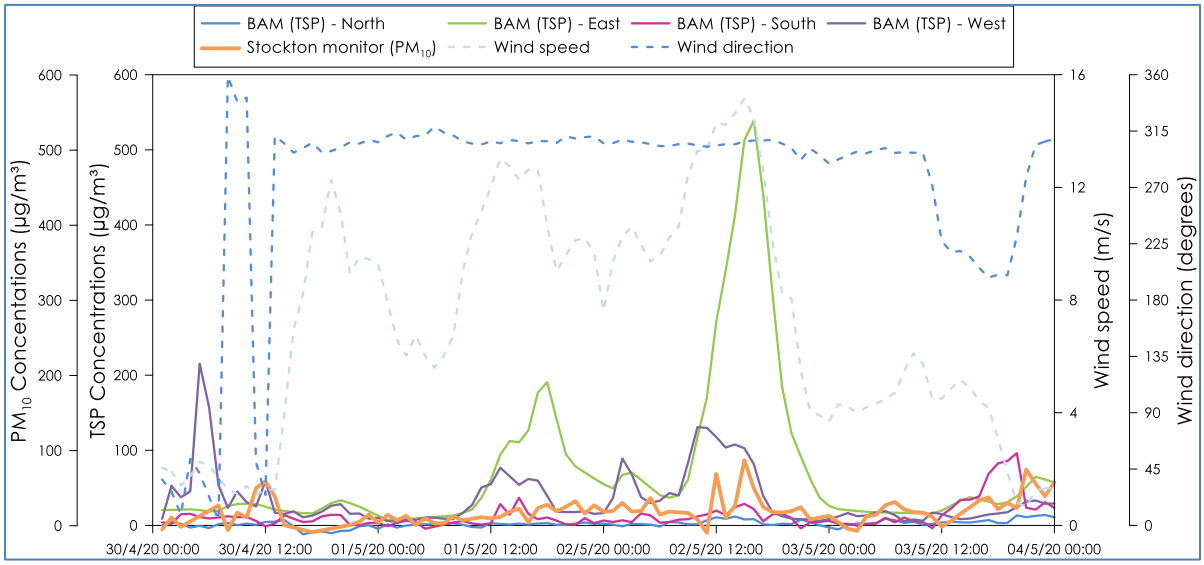

Figure 1: Dust levels under extreme wind conditions

The available data indicate that the existing measures, which include real-time reactive measures and pre-emptive wetting in response to forecast conditions are effective at controlling the release of dust, and that no actual significant impact arises at sensitive downwind receptors even in such extreme conditions. (Note that increasing wind speeds improve the dispersion of dust downwind of a specific source, even though there may be more emissions).

To examine whether this is the case for a compete year, rather than just in the most extreme case, the dust and weather data for 2018 were examined. Note that 2019 was a relatively extreme year for drought and bushfires conditions, that would confound the analysis, so it was not considered.

Figure 2 presents pollution rose diagrams for 2018, for five Department of Planning, Industry and Environment (DPIE) monitoring stations around the NCIG CET. The pollution rose diagrams all indicate high dust concentrations originating from the northwest, regardless of the monitor position relative to the NCIG CET, including monitors upwind and crosswind to NCIG at the times of high dust levels. This shows that dust originating from non NCIG CET sources that are northwest of all of the monitors contribute to the elevated dust levels under high wind conditions. There is also some evidence of higher dust under southerly wind conditions affecting all of the sites, and this may relate to southerly weather fronts.

It is noted that the Stockton monitor shows high dust levels under both low and high wind speed conditions under north-easterly winds. This is due to salt in the air from wave action along Stockton beach. There are also moderately elevated dust levels under very low to high wind speeds that would

be due to sources to the northwest and east of the monitor. The NCIG CET site does not have any tangible emissions under low to moderate wind conditions.

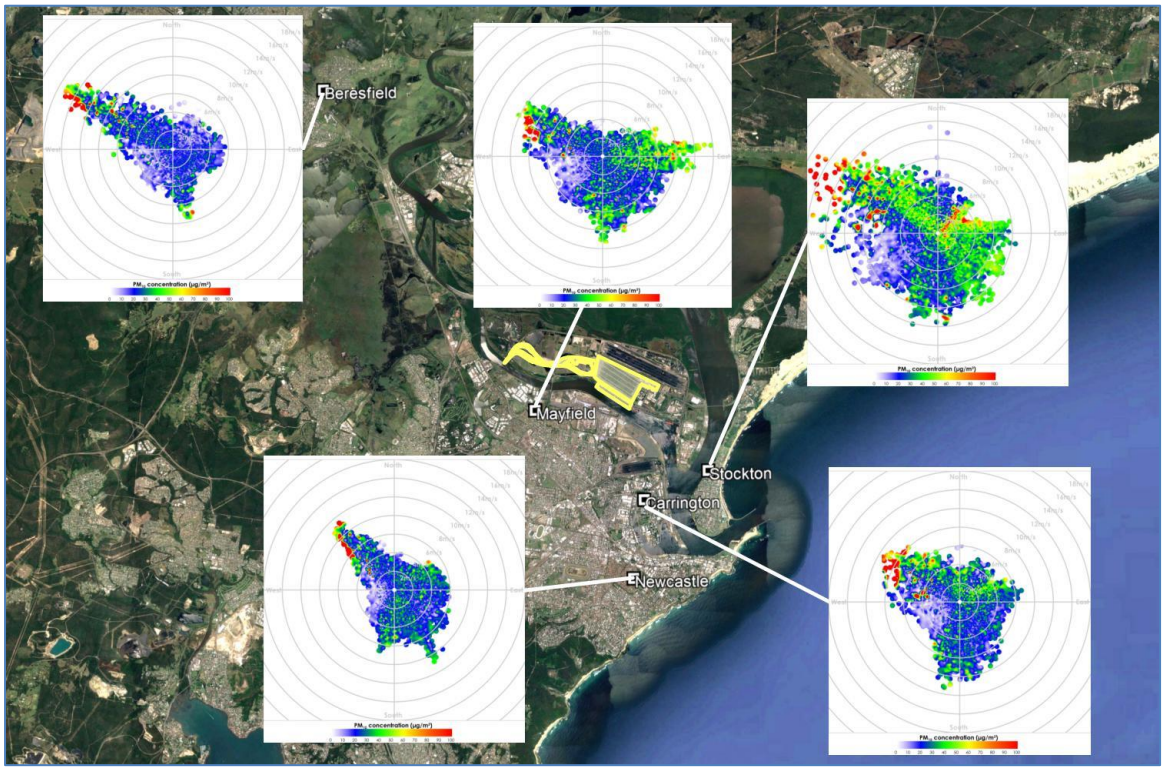

Figure 2: Pollution rose diagrams for DPIE monitoring stations

Assessment of all sensitive receptors

In regard to the air quality impact assessment report, the EPA notes that, per the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (**NSW EPA, 2017**) receptors in industrial areas may potentially be sensitive receptors, and that the assessment only explicitly assesses receptors in the nearest residential areas. In this regard, the EPA has requested a revised assessment or:

- supporting documents that fully assess air quality impacts on all sensitive receptors.

It is acknowledged that in some cases, potentially sensitive receptors may be found in an industrial area where sensitive individuals may be present for periods of time over which EPA criteria apply. Such receptors may (and generally would) be considered to be sensitive receptors.

The existing industrial receptors in the vicinity of the proposal were examined and we were unable to identify any that could be reasonably considered as being sensitive receptors. The key factors considered were that only healthy adults would be present, whereas the EPA criteria applicable to the project are set at levels suitable to protect the most sensitive individuals in the community and such individuals would not reasonably be present at the commercial facilities. We also considered that people at these receptor locations would be present for less than 24-hours over any day, whereas the relevant EPA criteria apply to 24-hour periods.

Thus, whilst the EPA criteria may, and at times do apply in places where people may work, this does not mean all such places are sensitive receptors, and in this case, no such sensitive receptors were identified.

Workplace air quality standards are many times higher than the EPA criteria and are directly applicable to the places where people may work at the nearby industrial receptors. The workplace criteria are set at suitable levels to manage the health of adult workers present at the industrial receptors and compliance with such criteria would not be tangibly affected by any off-site contributions due to the Project.

Please feel free to contact me directly if you would like to clarify any aspect of this letter.

Yours faithfully,
Todoroski Air Sciences

A Todoroski

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