Submission on the PWCS T4 Project

Response to Submissions & Preferred Project Report (RS/PPR)

Submission for the Coal Terminal Action Group

COAL TERMINAL ACTION GROUP

The Coal Terminal Action Group (CTAG) is an alliance of community groups in Newcastle and the Hunter Valley including: the Australian Coal Alliance, Australian Youth Climate Coalition, the Barrington Gloucester Stroud Preservation Alliance, Climate Action Newcastle, Correct Planning and Consultation for Mayfield Group, Gloucester Residents in Partnership, Hunter Bird Observers Club, Hunter Community Environment Centre, Hunter Communities Network, Hunter Environment Lobby, Islington Village Community Group, the National Parks Association (Hunter Branch), the Nature Conservation Council of NSW, Our Green Corridor, Parks and Playgrounds Movement, Rising Tide Newcastle, Singleton Shire Healthy Environment Group, Stockton Community Action Group, Tighes Hill

The Coal Terminal Action Group welcome the opportunity to respond to the revised development proposal outlined Port Waratah Coal Services' (PWCS) *Response to submissions and Preferred Project Report* (RS/PPR).

The Coal Terminal Action Group (CTAG) is an alliance of over twenty community, resident, environmental, consultative and local planning non-governmental organisations in the Newcastle and Hunter-Central Rivers regions. CTAG actively represents the interests of over 5,000 supporters, including the members of its constituent organisations. This submission identified shared concerns and issues of the alliance members as a whole; as such, we request that this submission be considered in conjunction with the submissions made by its member groups.

CTAG objects to the fourth Newcastle coal terminal (T4) being approved and built. It is the consensus view of the alliance that the proposal outlines a project that creates an unacceptable public burden - financially, environmentally, socially and on public health and quality of life in general - for private benefit. It is submitted that the extent of this burden negates any claim of public benefit from the development, and that on balance the proposal must be rejected. Similarly, it is submitted that the revised development proposal outlined in the RS/PPR does not adequately address the issues raised by submissions to the Environmental Assessment (EA) across a number of themes identified in the proposal.

These objections are specified in greater detail in this submission.

Background

CTAG was formed at a community meeting on 12th April 2012 to unify the concerns and issues of a wide range of non-governmental groups in their opposition to the proposed fourth coal-loading terminal. As a foundational activity of the alliance, CTAG coordinated a survey of community attitudes toward the proposed fourth coal terminal for Newcastle; 580 households in Newcastle suburbs were surveyed in August 2012 with the findings published in the *Sick of Coal* report. It should be observed that the findings of this survey are consistent with the social impact assessment conducted by Coakes Consulting on behalf of the proponents as part of the initial Environmental Assessment, which identified air quality, health, contamination, transport, climate change, environmental issues as significant sources of community concern.

Based on the issues identified in the community survey, CTAG formed a Dust and Health Committee, with a specific brief to conduct robust and defensible community-based action research science to better specify air quality issues from existing and proposed developments in the Newcastle region. Since its formation, the CTAG Dust and Health Committee has undertaken several such studies to accurately quantify the dust, health and air quality issues currently experienced in the Newcastle region. Please refer to the submission from the CTAG Dust and Health Committee, submitted separately.

CTAG has similarly undertaken a range of community information briefings, public hearings, outreach and engagement activities, in order to better understand and advocate on behalf of local concerns in relation to the proposal. This submission represents the findings of these activities, and is consequently an accurate reflection of community sentiment.

Summary of Objections

CTAG member groups are unanimous in their objection to the approval of T4 on the following grounds:

- That the impacts of the proposal on endangered, threatened and migratory species are unacceptable when assessed against Federal Government guidelines, and inadequately mitigated by the offset proposals provided. The proposed offset strategy is demonstrably inadequate to deal with the project's residual impacts as specified by the proponents.
- That the impacts on the Hunter Estuary are unacceptable, and contravene international legal obligations for the preservation of ecological integrity of these wetlands. These impacts are not capable of mitigation within the current project design.
- That the Scope 3 Greenhouse Gas (GHG) Emissions from the project are globally significant, and must be considered in the assessment of the project's impact. The scale of these emissions is of such significance to warrant an outright rejection of the proposal.
- That the project cannot be approved prior to the findings of the Lower Hunter Particle Characterisation Study, given the substantial contribution that the project will make to airborne particulates and air pollution generally in the Lower Hunter area.
- That the proposal falls alarming short of current accepted practice in fugitive particulate emission controls for a coal export facility. Cost-effective measures, including fully enclosed stockpiles and conveyors, provision for controlled wash-down of spillage, dust extraction of conveyors at transfer points and dust suppression spray water system, could be easily included in a revised proposal.
- That the outline of measures for surface water management are insufficient to adequately assess impact. No approval for the project can be granted at least until the impact on water and contamination can be assessed.
- That the project cannot be approved in the absence of a health impact assessment, detailing the likely impact of air quality, noise, vibration on community health, and an assessment of the likely risks particularly to vulnerable populations such as children, the elderly, and those with chronic disease.
- The economic analysis of the purported benefits of the project is biased due to the choice of assessment methodology, and cannot be considered to fulfil the requirements for economic analysis to facilitate cost-benefit analysis of the project.

Biodiversity Impacts

Threatened and Endangered Species

The RS/PPR appropriately identifies some of the geographic extent of the biodiversity impacts of the proposal on the Hunter Estuary, and identifies the threatened species and populations that will be significantly impacted by the proposal, including the Australasian bittern (*Botaurus poiciloptilus*), listed as endangered under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), the green and golden bell frog (*Litoria aurea*), listed as vulnerable under the EPBC Act and known to breed in the Ramsar site, and the estuary stingray (*Dasyatis fluviorum*), listed as vulnerable on the IUCN Red List, and 19 species of migratory shorebirds protected under international agreements.

These international agreements include The Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment (JAMBA); and The Agreement between the Peoples Republic of China and the Government of Australia for the Protection of Migratory Birds and their Environment (CAMBA). Any impact on these migratory shorebirds represents a serious breach of the terms of these agreements.

The Hunter Estuary is widely regarded as the single most significant important site for migratory shorebirds in New South Wales, among the top ten in Australia, and was internationally recognised via its listing under the Ramsar Convention in 1984.[1] The Ramsar Convention creates legal obligations to maintain the ecological integrity of the wetlands, specifically: “that the essential character of (the) wetland be recognised and that measures (notably inclusion of wetland concerns in landuse and water management planning, adoption of a whole catchment approach and/or creation of buffer zones) be taken to ensure that the ecological character of Ramsar sites and wetland reserves is not placed at risk” (Recommendation C.5.3).[2] The Plan of Management for the site developed by the NSW Government in 1998 further committed to “protect, and where necessary improve the ecological condition of, the estuarine wetlands of Kooragang Nature Reserve so as to maintain and promote the population numbers and species diversity of migratory birds and waterfowl, particularly those recognised as endangered”.[3] The RS/PPR reaches the conclusion that the “T4 Project is unlikely to result in a significant impact on the ecological character”[4] of the Wetland, despite also identifying that “the T4 project will have a significant impact on some threatened and migratory species.”[5]

The Plan of Management also identifies the principal threats to the Ramsar site’s values are changes in tidal range due to dredging, drainage works, and the installation and operation of flood mitigation structures; changes in the freshwater/saltwater balance due to drainage works; introduced animals and plants; and industrial development on lands adjoining the

[1] http://www.environment.nsw.gov.au/wetlands/HunterEstuaryWetlands.htm
[2] http://www.ramsar.org
[3] http://www.environment.nsw.gov.au/resources/parks/pomfinalhexhamkooragang.pdf
[4] RS/PPR S6.1.2(ii)a
[5] RS/PPR S6.1.2(ii)a

Ramsar site. In its current form, the proposal outlined in the RS/PPR will impact on water availability and flow, sediment and water quality in the Hunter Estuary. All of these impacts will likely have flow-on impacts on the availability of food for migratory shorebirds. Further, the dredging, drainage from the Tomago site and the increased shipping traffic all have the potential to degrade foraging habitat and lifecycle of migratory birds dependant on the continued ecological integrity of the wetland. These impacts have not been adequately assessed in the RS/PPR, represent clear and present threats, and must be shown to be consistent with the requirements under existing management plans and international obligations before any consent for development is considered.

It is also noted that the Hunter Estuary is already heavily impacted by industry and existing development, evidenced by the fact that that migratory shorebirds are declining more rapidly at the Hunter Estuary than at other similar locations in Australia. For example, the Eastern Curlew, which is listed on the IUCN Red List as Vulnerable[6], has documented declines of on average over 40% in 30 years in the Hunter Estuary. Similarly, Bar-tailed Godwit and Pacific Golden Plover are declining more at the Hunter than at other places throughout the country.[7] Although the cause of this decline is debatable, it is unacceptable to potentially exacerbate the current rate of decline with an additional project in the vicinity of the wetland area.

It is critical that further studies are established in order to first understand what is driving accelerated declines in the area, before any further approvals are allowed which may in fact simply continue to impact the wetland and its threatened flora and fauna species.

Offsets

The RS/PPR identifies significant areas of impact on habitat for threatened and endangered species, including 27ha of Australasian bittern habitat, 26ha of migratory shorebird habitat, and more than 50ha of breeding and wetland habitat for the green and golden bell frog.[8] It proposes that these “residual impacts” will be compensated by the establishment of a biodiversity offset strategy.

The proposed offset strategy is unproven, experimental, lacks sufficient scientific certainty, and as such does not provide adequate compensation for the extent of the project’s residual impacts on biodiversity. The legally enforceable framework for the determination of offsets is established through the Environmental Protection and Biodiversity Conservation Act (1999) Environment Offset Policy.[9] It is a stated intent of this policy that offsets are not intended to make proposals with unacceptable impacts acceptable. This is, however, the precise intent of the offset strategy as outlined in the RS/PPR.

The reliance on Tomago offset area provides no additive conservation value, as the area currently provides suitable wetland habitat attributes. If relied upon as an offset area, it will

[6] http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=847
[7] http://dlibrary.acu.edu.au/digitaltheses/public/adt-acuvp273.01032011/
[8] RS/PPR S6.2.1
[9] http://www.environment.gov.au/resource/epbc-act-environmental-offsets-policy

further contribute to the net loss of wetlands and environmental values in the Hunter Estuary. Under the EPBC Offset Policy, offsets must directly contribute to the ongoing viability of the protected area, and deliver a conservation outcome that improves or maintains the viability of the area as compared to what would have occurred in the absence of the project. Claiming an extant wetland as an offset is a clear violation of this principle, and is unacceptable as a component of an offset strategy.

The establishment of offset habitat in areas 40km and 250km away from the project site respectively does not adequately compensate for the impacts on the species in their existing location in the Hunter region, where they are locally and regionally significant. The establishment of distant habitat compounds the experimental nature of these offset proposals, does not adequately substitute for the loss of ecological values at the relevant scale, and contributes further to overall loss of ecological value across the distribution range. The same principles apply to migratory shorebirds, Australasian Bittern, threatened aquatic bird species, endangered ecological communities, and the loss of habitat generally as a result of the T4 project.

The Federal Offset Policy explicitly states that for impacts on habitat for threatened species, migratory species and threatened ecological communities, any direct offset must meet, as a minimum, the quality of the habitat at the impact site. Where a proposed offset site has a lower habitat quality than that of the impact site, the offset must be managed and resourced over a defined period of time so that its habitat quality is improved to meet the quality of habitat originally impacted. It is not apparent from the RS/PPR that the selected sites meet this requirement, nor are the actions required to establish an equivalent or improved quality indicated.

The proposed strategy to offset the impacts on the green and golden bell frog contain no reference to best practice habitat design, and the assumptions regarding the success of artificial habitat creation works are untenable. Whilst it is noted that green and golden bell frog populations can occur in human-made habitats, it should not be inferred that the viability of habitat engineering is guaranteed. Best practice in habitat creation for the green and golden bell frog recognises that the process remains speculative, and that even at sites where there has been significant success in terms of creating GGBF habitat, the proportion of 'successful' ponds is low.[10] There is insufficient evidence provided in the RS/PPR to determine whether the proposed strategy constitutes an appropriate offset. Given the lack of scientifically robust information about the likely success of the proposed habitat creation works, the precautionary principle must apply.

Similarly, there is no guarantee that the offset strategy for migratory birds will be appropriate for the species impacted, and whilst it may be appropriate for some species, it most certainly will not be a suitable substitute for all impacted migratory species. Given the unproven nature of the biodiversity offset strategy, the proposal must be amended include an appropriate and costed adaptive management framework should the experiment to establish

[10] http://www.environment.nsw.gov.au/resources/threatenedspecies/08468tsdsgreengoldenbro.pdf

alternative habitat fail. The effectiveness of these proposals as valid offsets relies on active management, including the management and provision of environmental flows, vegetation controls and ongoing monitoring. In the current proposal, there is no contingency for the outcome that the offset fails to achieve the intended outcomes, and no provision of resources to ensure the permanency of the offset. The proposal for active management of offset sites is proposed in the RS/PPR to be transferred to a state agency (the NPWS is suggested), thus creating additional public costs for ongoing works. Critically, no clearing or construction should be permitted to begin before the viability of the offset strategy is demonstrated, shown to be an adequate substitute for the removed habitat, and supplemented by a permanent and funded adaptive management framework to ensure its effectiveness for the life of the project. As currently outlined, the offset strategy does not effectively account for and manage the risks of the offset not succeeding.

The uncertainty as to whether the proposed offset sites in the plan have previously been used for other projects, particularly those proposed by the Northbank Enterprise Hub and the Newcastle Coal Infrastructure Group is not resolved in the RS/PPR. The RS/PPR does not adequately address whether or not this is the case. It is inadequate for sites that have previously been used to offset biodiversity impacts be 'double counted' as the mitigation qualities of these sites cannot be considered transferable. Crucially, the Environmental Offsets Policy under the EPBC Act require that offsets "be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs".[11]

We therefore recommend that further inquiry be undertaken to establish whether the proposed biodiversity offset sites have been previously used as biodiversity offsets for other projects.

In addition, **we support the establishment of a transparent and publicly accessible register of offset sites be established to limit future uncertainty around the establishment of offsets.**

Greenhouse Gases

According to the analysis conducted by Environ for the project proponents, the average annual Scope 3 greenhouse gas (GHG) emissions from the T4 project are estimated to be 174.2 Mt of carbon dioxide equivalent. As stated, this represents 0.25% to 0.32% of the 2030 estimated global GHG emissions. Alternatively, these emissions can be considered as equivalent to 30% of Australia's current annual Scope 1 and 2 GHG emissions. The sheer scale of these emissions, consequent on the approval of the proposal, is of such magnitude to necessitate their consideration in any assessment of the project's impact. Consideration of these emissions should not be excluded on an accounting technicality.

It is noted that Scope 3 emissions are outside of the direct operational control of PWCS. This is of little consequence for the purposes of the assessment of the proposal. It is

[11] http://www.environment.gov.au/resource/epbc-act-environmental-offsets-policy

acknowledged by the proponents that the "T4 Project will be part of the coal supply chain and transport and use of coal exported through the T4 Project will result in GHG emissions".[12] Therefore, the projected GHG emissions are clearly a direct consequence arising from the approval of the project, and must be considered in terms of its overall environmental, climate and other impacts. The key question is not whether PWCS are responsible for the Scope 3 emissions, but whether those emissions, and the associated climate impacts, would be prevented by the rejection of the project.

Approval of T4 will cause severe, long-term and irreversible adverse environmental impacts due to the large emission of greenhouse gases from the mining and use of coal facilitated and enabled directly from the operation of the project, contributing to anthropogenic climate change and ocean acidification.

It is the adamant submission of CTAG that the extent of GHG emissions made possible by the approval of the project constitute sufficient and defensible grounds for outright rejection of the proposal.

Further, **it is prudent to refuse to approve the project until such time as it is feasible to capture and store indefinitely the project's Scope 3 GHG emissions, which would thereby prevent them from contributing to climate change, ocean acidification and the concurrent environmental impacts.**

This project will cause serious environmental harm to the character, resilience and values of the receiving environment, the atmosphere and the oceans, due to the large emission of greenhouse gases that will result from the project. The resilience of the atmosphere to maintain a climate similar to that on which civilization developed and to which life on Earth is adapted has already been exceeded. To maintain a safe climate atmospheric carbon dioxide will need to be reduced from its current 390 parts per million (ppm) to at most 350 ppm.[13] Approval of this project will further exacerbate the current environmental harm to the atmosphere, oceans and climate.

The employment and other purported benefits that the T4 project may generate must be balanced against the contribution it will make to climate change, ocean acidification and the serious social, economic and environmental harm that this will cause locally, nationally and globally. When balanced against the social, economic and environmental harm that this proposal will cause by contributing a large emissions of greenhouse gases exacerbating climate change and ocean acidification, approval of this proposal is not in the public interest or in any way consistent with a public beneficial outcome.

[12] RS/PPR S9.2.1(i)
[13] http://www.ipcc.ch/report/ar5/wg1/

Ground and Surface Water

There is substantial uncertainty around the impacts of proposed ground and surface water management during construction and operation due to climatic change and variability, contamination issues, and inherent differences in water quality within the site and across the surrounding habitats. It is noted, for example, that the prescribed mitigation actions associated with the altered flow regimes, including the constructed channel between Mosquito Creek and Mosquito Creek Tributary and the modifications to the levee at the Eastern Watercourse channel, are currently conceptual plans.[14] More detailed design specifications are required to determine the extent to which the conceptual models are feasible, and deliver the requirements of the existing tidal flow regime. Similarly, precise detail on the site surface water management plan has not been adequately provided, particularly in relation to water quality trigger values and the treatment of discharges that exceed the predicted capacity. The current description of measures for surface water management is insufficient to adequately assess impact. No approval for the project can be granted at least until the impact on surface and groundwater can be assessed.

Public Health

One of the identified major shortcomings of the RS/PPR is the continued refusal to provide a health impact assessment (HIA) as part of the assessment documentation. Appendix D as provided in the RS/PPR does not constitute a HIA.[15] It is noted that the DGR did not require a HIA, however numerous submissions on the EA raised issues regarding the health impacts associated with increased particle pollution as a consequence of T4. For example, NSW Health expressed concern that PM_{10} levels in Newcastle already exceed the national standard many times each year, that an additional 120Mtpa throughput of coal will result in a substantial increase in coal train traffic to and from the Port of Newcastle, and that PWCS had inadequately considered air quality issues associated with rail transport of coal, including diesel emissions in its assessment. The lack of response to these issues represents a significant failure of the RS/PPR to appropriately address issues raised in the submissions.

Particulate air pollution is consistently related to serious air pollution effects, including lung cancer and other cardiopulmonary mortality. There is strong evidence that increased particulate pollution leads to an elevated impact on human health and that there is no known lower threshold at which this impact does not occur. Health risks can range from increased mortality and morbidity to diminished quality of life and according to the World Health Organization (WHO), particulate matter (PM) affects more people than any other pollutant. The range of health effects is broad, but is predominantly to the respiratory and cardiovascular systems. Worldwide, fine particulate air pollution causes about 3 per cent of mortality from cardiopulmonary disease, about 5 per cent of mortality from cancer of the trachea, bronchus, and lung, and about 1 per cent of mortality from acute respiratory

[14] RS/PPR S5.1.2(ia) & (ib)
[15] RS/PPR S8.2.2(ii)

infections in children under 5 years, amounting to about 800,000 premature deaths and 6.4 million years of life lost.

The health problems linked to particle pollution, include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing. Airborne dusts are also known to be associated with systemic intoxications such as lead poisoning, especially at higher levels of exposure. Wherever the particles are deposited, either in the head or in the lung, they have the potential to cause harm locally and elsewhere in the body.

Particulate matter is regulated at the Commonwealth level by the *National Environment Protection (Ambient Air Quality) Measure 2003* (The Air Quality NEPM). The Air Quality NEPM considers levels of particulate pollution as annual averages and daily averages. The Air Quality NEPM currently has a mandatory requirement for daily averages of PM_{10} to be below 50μgm^3 (with a number of allowable annual exceedances) and advisory standards of 25μgm^3 for daily averages and 8 μgm^3 for annual averages for $PM_{2.5}$.

The EA acknowledged that average 24 hour PM_{10} levels at all ten of their monitoring locations in Newcastle already exceed 50μgm^3 and that "for the worst-case day of the year, the baseline 24 hour average concentration exceeds the relevant criterion at all assessment locations." The EA stated that T4 will contribute up to 11.4μgm^3 of PM_{10} during construction and 6μgm^3 during Stage 3 (operation), pushing the level well above the level of concern. All ten sites monitored for the assessment are predicted to have a cumulative 24-hour PM_{10} average above 50μgm^3 if T4 is built. Even with the modified proposal in the RS/PPR, all ten sites are projected to continue to exceed the cumulative PM_{10} requirements.[16]

According to Doctors for the Environment Australia (DEA), air quality is already poor in Newcastle and is likely to be impacting on the health of people living here, but the health impacts of current pollution levels are not understood. DEA has asserted that there should be no more major developments of export coal facilities at least until there has been more detailed air monitoring and a health impact assessment, and only then if the ambient air quality can be improved. DEA consider that "Newcastle residents are already, according to the World Health Organisation, experiencing levels of particulates in the air that they breathe that is injurious to their health." CTAG also supports the request of DEA for a HIA to include both the positive and negative impacts on health, and an assessment of the likely risks particularly to vulnerable populations such as children, the elderly.

Air Quality

Airborne particulate concentrations in Newcastle have exceeded the World Health Organisation annual standard (that is, 20μgm^3) in seven of the last ten years. Newcastle residents are experiencing levels of particulates in the air that is injurious to their health. Community dust monitoring undertaken by CTAG over a one-month period in 2012 found

[16] RT/PPR S8.1.2(i)

PM_{10} levels above National Standards (a 24 hour average of 50µgm^3) at seven of eleven residential locations.[17] Carrington and Tighes Hill monitoring sites were found to have the highest 24-hour average PM_{10} concentrations (80µgm^3 and 63µgm^3 respectively). The Carrington monitoring site breached National air quality standards over all five days recorded. CTAG have more recently released community monitoring of particle emission signatures of coal trains in Newcastle, which showed substantially elevated particle emissions from loaded and unloaded coal trains compared to other trains.

Critically, these findings demonstrate the need for the immediate cessation of any activity predicted to increase air pollution in the region. The proposal would see a significant increase in air pollution, both by the establishment of additional uncovered coal stockpiles, and the increase in particle pollution associated with increased rail transport. The expansion of the export capacity of Newcastle as a consequence of the T4 proposal will result in an additional 19,418 train movements per annum. This proposal will only aggravate existing coal dust and pollution levels, and at the time when the prevailing community expectation is for improvements to control coal dust from existing open coal stockpiles and train movements.

This has been recognised by the State Government in the initiation of particle characterisation studies for the Upper and Lower Hunter. The Upper Hunter Fine Particle Characterisation Study commenced in January 2012 to study the composition of fine particles (2.5 microns and smaller in diameter) in the Upper Hunter Valley towns of Singleton and Muswellbrook. In July 2013, the Environment Minister announced that a further particle characterisation study would be undertaken for the Lower Hunter, and that this study is to investigate both $PM_{2.5}$ and PM_{10} particles. According to the Environment Minister, these studies are designed to help further the scientific, evidence-based approach to reducing impacts from harmful emissions in the Lower Hunter.[18] Clearly, the absence of this information makes it impossible to assess the impact of the T4 proposal on air quality compared with current condition and trend.

CTAG therefore submits that there should be no more major developments of export coal facilities in Newcastle at least until the findings of the Newcastle Particle Characterisation study have been determined, and only then if the ambient air quality can be improved.

Additionally, it is noted that a number of basic and cost-effective dust mitigation measures could have been incorporated into the design of T4 that would make it consistent with current best practice. Given the current air quality issues in the project vicinity, and the priority of air quality issues identified by the proponents in their own community survey, these measures should have been implemented for the T4 RS/PPR, including:

- Coal stockpiles will be fully enclosed in a steel frame and clad building (large shed) and dust emissions shall be minimised through the use of a dust

[17] http://www.abc.net.au/radionational/linkableblob/5045958/data/dust-data.pdf
[18] https://www.nsw.liberal.org.au/news/state-news/newcastle-air-quality-study-begins

suppression spray water system with provision for negative pressurisation and dust extraction. It is considered best practice within Australia to cover coal stockpiles.
- Conveyors will be enclosed, with provision for controlled wash-down of spillage.
- Transfer points will be fully enclosed and fitted with misting sprays to suppress dust emissions at transfer points and dust extraction of conveyors at transfer points will use local ducted bag filters to collect any remaining airborne dust.
- The ship loading facility will be fitted with a fully enclosed boom conveyor, a wash-down system and a telescopic spout with misting sprays designed to minimise the drop height of material into the holds of vessels.
- Rail wagons will be covered with a tight-fitting metal or fibreglass lid to minimise fugitive emissions.

Economic Assessment

The economic assessment of the project provided in Appendix 5 of the RS/PPR vastly overstates the economic benefit of the T4 project, due to the choice of methodology. Input-Output Analysis (I/O) using multipliers has been widely discredited for use in economic impact analysis as its inherent limiting assumptions compromise its ability to estimate project benefits. The Australian Bureau of Statistics discontinued the production of I/O multiplier tables in 2001, stating: "While I–O multipliers may be useful as summary statistics to assist in understanding the degree to which an industry is integrated into the economy, their inherent shortcomings make them inappropriate for economic impact analysis. These shortcomings mean that I–O multipliers are likely to significantly over–state the impacts of projects or events."

The criticisms of the approach outlined by the Australian Bureau of Statistics apply to the economic assessment provided in the RS/PPR, and are reproduced below[19]:

- **Lack of supply–side constraints:** The most significant limitation of economic impact analysis using multipliers is the implicit assumption that the economy has no supply–side constraints. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.
- **Fixed prices:** Constraints on the availability of inputs, such as skilled labour, require prices to act as a rationing device. In assessments using multipliers, where factors of production are assumed to be limitless, this rationing response is assumed not to occur. Prices are assumed to be unaffected by policy and any crowding out effects are not captured.
- **Fixed ratios for intermediate inputs and production:** Economic impact analysis using multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. As such, impact analysis using multipliers can be seen to describe average effects, not marginal effects. For example,

[19] See ABS Publication 5209.0.55.001 - Australian National Accounts: Input-Output Tables.

increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount;

- **No allowance for purchasers' marginal responses to change:** Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.
- **Absence of budget constraints:** Assessments of economic impacts using multipliers that consider consumption-induced effects (type two multipliers) implicitly assume that household and government consumption is not subject to budget constraints.
- **Not applicable for small regions:** Multipliers that have been calculated from the national I–O table are not appropriate for use in economic impact analysis of projects in small regions. For small regions multipliers tend to be smaller than national multipliers since their inter–industry linkages are normally relatively shallow. Inter–industry linkages tend to be shallow in small regions since they usually don't have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions.

The ABS suggests that more complex methodologies, such as Computable General Equilibrium (CGE) models, are required to overcome these shortcomings.[20] As such, CTAG does not consider the economic projections of the public benefit associated with the T4 project to be sufficiently robust to fulfil the requirements of economic assessment.

It is submitted that this analysis should not be considered valid for the purposes of assessing the T4 project.

The economic assessment used in the RS/PPR produces some absurd conclusions about the value of the project. For example, the revised project reduces the throughput of the Port from 120Mt/A to 70Mt/A. Yet whilst the larger project created no new jobs, the revised project will now create 80. The suspect claims in the economic analysis are then used by the proponents to assert that the net benefit of the project is either $6bn (present value) or $13bn (present value). The Benefit/Cost Analysis needs to be re-conducted with an adequate economic modelling methodology before such claims can be considered for the assessment process to exhibit credibility.

Justification

There is no justification for the project. Given the admission of the proponents that the construction of T4 is no longer a contractual obligation under the Capacity Framework Agreement, the significant negative impacts on the region cannot be set aside due to

[20] ABS Publication 5209.0.55.001 - Australian National Accounts: Input-Output Tables.

requirement to fulfil prior commercial arrangements. Instead, the project must be assessed in terms of the value of its predicted benefits against the public cost. The substantial quantifiable and direct public costs of the project, in terms of the provision of public health, the remediation and restoration of damaged environments, the costs associated with mitigation and adaptation to climate change, cannot be justified given the predominance of private benefit. CTAG submits that the T4 proposal must be rejected.