# A-5 Air Quality Management Subplan

## Stage 1 – North West Transmission Developments Project

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TASMANIAN
PLANNING COMMISSION

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Introduction

This document is the Air Quality Management Subplan, a subplan under the Construction Environmental Management Plan (CEMP) for Stage 1 of the North West Transmission Developments Project (NWTD) in Tasmania.

The Contractor for the delivery of the project is Genus Infrastructure (NSW) Pty Ltd, referred to as Genus throughout this document. Genus has developed the CEMP and subplans to address the environmental management of the project.

Dust emissions are primarily associated with the following construction activities:

Construction of new transmission lines, including land clearing along the transmission corridor, earthworks including rock breaking and bore pile driving for construction of tower foundations, stockpiling and transport of materials to site.
Dismantling of existing transmission lines, including removal of above ground infrastructure and below ground foundations, remediation and rehabilitation of areas involving earthworks.
Augmentation of existing substations, including earthworks, foundation installation, partial removal of assets and installation of new assets and equipment.

Greenhouse gas emissions during construction activities are primarily associated with diesel combustion through use of machinery, land disturbance emissions and electricity consumption of site offices during construction.

The CEMP should be referred to for additional context, including:

- Project details including document control, commitments/conditions and person accepting responsibility for the CEMP and all associated sub-plans including this Air Quality Management Plan
- Project description
- Emergency contacts and procedures
- Potential environmental risks and impacts of the project
- Auditing and review requirements
- Glossary and abbreviations

This CEMP subplan applies to all personnel and subcontractors engaged by Genus for the duration of the contract. The CEMP and subplans will be used to develop site specific, or activity specific environmental management plans.

## 1. Objectives

The primary objectives of the Air Quality Management Subplan are to comply with:

- Commitments in the Development Application (DA) and Environmental Impact Statement (EIS)
- Conditions of approval in Permit number MIPP-2026-01 issued under the MIDA Act (focus is on condition 13)
- Conditions of approval in EPBC 2022/09247 issued under the EPBC Act
- All relevant TasNetworks standards and procedures.

Further specific objectives are outlined in Table 1.

*Table 1 Objectives*

| Aspect | Objectives |
|---|---|
| Amenity | Minimise dust soiling effects on people and property from earthworks, construction and trackout. |
| Human health | Minimise exposure of residential receptors to PM10* emissions. |
| Vegetation health | Minimise dust soiling effects on important plant species particularly dust-sensitive species. |
| Greenhouse gas (GHG) emissions | Minimise Scope 1 and Scope 2 greenhouse gas emissions so far as reasonably practicable. |

**PM10 Refers to airborne particles with a diameter of 10µm or less (≤0.01mm)*

## 2. Reference documents

This Air Quality Management Subplan was identified by the environmental risk assessment (refer to Section 10 of the CEMP) as necessary to mitigate impacts to specific environmental and heritage values of the proposed action area.

This subplan has been prepared in accordance with regulations and guidance documents as shown in Table 2.

*Table 2 Reference documents*

| Title | Reference/link |
|---|---|
| Regulator Permits | |
| Major Infrastructure Project Planning Permit Granted under the Major Infrastructure Development Approvals Act 1999 and the Land Use Planning and Approvals Act 1993 | Permit number: MIPP-2026-01 North West Transmission Upgrades Project - Palmerston to Hampshire Section - Final Report and permit, 10 March 2026 |
| Environmental Protection and Biodiversity Protection Act 1999 | EPBC 2022/09247 |
| Regulation and guidance documents | |
| National Environment Protection (Ambient Air Quality) Measure (NEPC) | National Environment Protection (Ambient Air Quality) Measure |
| Environment Protection Policy (Air Quality) 2004 (EPA Tasmania) | EPP (Air Quality) 2004 |
| Update to Air Pollutant Design Criteria used in the Environmental Impact Assessment Process (EPA Tasmania) | EPA Board Statement |

| Title | Reference/link |
|---|---|
| Guidance on the Assessment of Dust from Demolition and Construction (IAQM) | IAQM guidance |
| AS/NZS 3580.10.1 Methods for sampling and analysis of ambient air | AS/NZS 3580.10.1 |
| Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales, NSW EPA 2022 | Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales, NSW EPA 2022 |
| Design Criteria for Supplementary Air Pollutants (EPA Tasmania) | Director Determination |
| Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales 2022 (NSW EPA) | Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales |
| National Greenhouse and Energy Reporting Act 2007 (Department of Climate Change, Energy, the Environment and Water) | National Greenhouse and Energy Reporting Act 2007 |
| AS IEC 62271.4 High-voltage Switchgear and Control gear Handling Procedures for Sulphur Hexafluoride (SF6) and its Mixtures | ASC IEC 62271.4 |
| Marinus Link Sustainability Framework (Marinus Link) | Sustainability Framework |
| Environmental Handbook TasNetworks (TasNetworks) | TasNetworks Environmental Handbook |
| Documents for additional context and details on requirements as per this subplan | |
| NWTD DA/EIS | NWTD – Part C EIS: Chapter 6 – Potential impacts and their management; biophysical environment July 2025 (response to RFI by regulator).<br>NWTD – Part C EIS: Chapter 6 – Potential Impacts and their management March 2025.<br>NWTD – Part C EIS: Chapter 9 – Environmental management, monitoring and review.<br>NWTD – Part B – Planning Report.<br>NWTD – Part E – Attachments and appendices: Appendix D – Air quality impact assessment.<br>NWTD – Part E – Attachments and appendices: Appendix S – GHG assessment. |

## 3. Air quality impact assessment summary

To assess the potential impacts of air emissions from the NWTD, an air quality risk assessment was conducted (Katestone, 2025a).

Construction activities were divided into four types to reflect their potential impacts:

Demolition - any activities involved in the removal of an existing structure
Earthworks - covers the processes of soil-stripping, ground levelling, excavation and landscaping
Construction - any activities involving the provision of a new structure, its modification or refurbishment
Trackout - the transport of dust and dirt from the construction site onto the public road network where it may be deposited and then re-suspended by vehicles using the road network.

The assessment focused on the potential impacts of dust emissions during construction, including dismantling existing lines. The assessment for NWTD found that the risk of dust emissions without mitigation is generally negligible or low, except for medium or high risk of dust soiling associated with certain activities near dense residential areas along Palmerston to Sheffield and Sheffield to Burnie. A summary of the risk assessment is provided in Table 3.

Mitigation measures were proposed as part of the assessments to minimise the potential for dust impacts and are incorporated into management controls in Section 9.

*Table 3 Risk assessment: EIS Part E Appendix D Air quality impact assessment: Remaining North West Transmission Development, Section 8.1.2*

| Potential impact | Demolition | Earthworks | Construction | Trackout |
|---|---|---|---|---|
| Palmerston to Sheffield section | | | | |
| Dust soiling effects* | Negligible | High | Low | High |
| Human health impacts** | Negligible | Low | Low | Low |
| Sheffield to Burnie section | | | | |
| Dust soiling effects* | Medium | High | Medium | High |
| Human health impacts** | Negligible | Low | Low | Low |
| Heybridge Spur East and Heybridge Spur East sections | | | | |
| Dust soiling effects* | N/A | Low | Low | Low |
| Human health impacts** | N/A | Low | Low | Low |

**Dust Soiling as defined by the IAQM Guidance on the assessment of dust from demolition and construction refers to the effect of deposited dust upon surfaces, which can lead to annoyance.*
***The human health effects are defined in EIS Part E Appendix D Air quality impact assessment: Remaining North West Transmission Development Section 4.2 – In summary, smaller particle sizes such as $PM_{10}$ or $PM_{2.5}$ are able to be inhaled and can become trapped in the nose, mouth or throat or be drawn into the lungs.*

## 4. Greenhouse gas assessment summary

To assess the GHG emissions from the NWTD, a greenhouse gas assessment was conducted (Katestone, 2025b).

The assessment findings for NWTD are as below:

An estimated 9255 tonnes CO2-e emissions (excluding emissions associated with land clearing as these are not reported under the National Greenhouse and Energy Reporting Act 2007) are expected during the construction phase. Fuel emissions from vehicles and helicopters account for most construction emissions.
Excluding emissions associated with land clearing, project emissions will contribute 0.05 percent of Australia's total annual GHG emissions, and 3.22 percent of Tasmania's annual emissions, however these are conservative calculations and do not account for reductions from dismantling the existing Palmerston to Sheffield and Sheffield to Burnie 220 kV overhead transmissions lines (OHTLs).

Overall, the project in aggregation with the Staverton to Hampshire Hills project and Marinus Link will contribute to reducing GHG emissions at a national level.

Measures were proposed as part of the assessments to minimise GHG emissions from construction and operations and are incorporated into management controls in Section 9.

## 5. Induction and training

Induction and training requirements are identified in Section 8 of the CEMP. Air quality aspects from this subplan that will be included in induction and training material are provided in Table 4.

*Table 4 Induction and training for air quality management*

| Induction/training | Details (as required) |
|---|---|
| All workers – Project induction | All personnel (including staff and sub-contractors) to undergo project induction to ensure that all are aware of:<br>– Requirements of this subplan |

| Induction/training | Details (as required) |
|---|---|
| | – Dust management:<br>• Procedures and work practices to minimise and report dust generation.<br>• Dust suppression methods and when to apply them.<br>• Understanding dust generating activities.<br>• How some weather conditions, i.e. strong winds and dry conditions, have a higher likelihood for dust, and may require adjustment of construction activities.<br>• Maintenance of access track and haul route in good condition and ensure all vehicles well below the specified speed limit.<br>– Soil management, including procedures and work practices to ensure best practices, including:<br>• Stabilising or protecting soil stockpiles.<br>• Management of exposed, cleared or disturbed areas.<br>• Water as a dust suppression mechanism for soil management to avoid dust particles being transported offsite.<br>– Roles and responsibilities for air quality management as per this subplan.<br>– Where the physical copy of this subplan will be onsite for use should an incident occur.<br>– How dust management actions need to be documented. |
| Daily pre-start meeting | – Daily pre-start meetings to disseminate information on what is working and where improvements are needed, e.g. reminders on the frequency of watering stockpiles if any dry and windy conditions are occurring. |
| All workers – Regular training and assessment of competency | – Regular training sessions will be conducted to reinforce the importance of environmental management, General Environmental Duty and to update personnel on any changes to the CEMP/, this subplan or relevant regulations.<br>– A feedback mechanism will be implemented to allow employees and contractors to provide input on the training program and suggest improvements. Regularly review and act on this feedback to enhance the effectiveness of the training.<br>– Regular audits will be conducted to ensure that training and awareness programs are being implemented effectively and that personnel are adhering to the CEMP, this subplan requirements.<br>– Any non-compliance issues are documented and addressed. |

## 6. Responsibility

Responsibilities in relation to the implementation of this subplan are presented in Table 5.

*Table 5 Responsibilities for air quality management*

| Role | Responsibility |
|---|---|
| Environmental Manager or delegate | – Oversight of the implementation of this subplan.<br>– Review of this subplan on an annual basis.<br>– Investigate dust complaints raised by stakeholder team. This includes review of monitoring data, frequency and effectiveness of mitigation measures, including proposing additional mitigation measures if necessary.<br>– Make the complaints log available to relevant authorities when requested.<br>– Conduct dust monitoring using dust deposition gauges (DDGs) at proposed locations prior to construction to establish baseline levels (refer to Section 0). |

| Role | Responsibility |
|---|---|
| | – Conduct dust monitoring using DDGs at proposed locations during construction to monitor compliance with performance criteria in Section 7. Oversee collection and replacement of the DDGs by the Environment team. After collection, DDGs will be sent for analysis at a NATA (National Association of Testing Authorities) accredited laboratory.<br>– Analyse dust deposition data collected prior to construction to establish baseline levels.<br>– Analyse dust deposition data collected during construction and deduct baseline data to identify contribution from the project. This will be compared against the incremental performance criteria in Section 7. Compare dust deposition data collected during construction as is against the cumulative performance criteria in Section 7. Analyse the data in conjunction with mitigation measures applied to understand the effectiveness of mitigation measures.<br>– Monitor weather warnings issued by Bureau of Meteorology (BoM) to identify weather conditions with dry and high speed wind conditions that may require additional dust suppression or adjustment to construction activities.<br>– Conduct weekly inspections of on-site haul routes and access tracks for integrity and instigate necessary repairs to the surface.<br>– Conduct weekly inspections to check for visible dust emissions or soiling and apply additional management measures if required.<br>– Conduct ad hoc checks for visible dust emissions under dry and windy conditions and apply additional management measures if required.<br>– Investigate dust emissions as reported by the staff to apply additional management measures if required.<br>– Maintain a record of results from all inspections, including any corrective actions applied.<br>– Communicate subplan updates, air quality issues/complaints and outcomes to TasNetworks.<br>– Where required obtain temporary water allocation licences under the Water Management Act 1999 |
| Stakeholder team | – Record and register all dust complaints.<br>– Refer dust complaints as necessary to Environmental Manager to investigate. |
| Genus Sustainability Manager | – Provide guidance on opportunities to reduce GHG emissions during project design, construction and post-construction phases. |
| Construction Manager | – Understand this subplan and the responsibilities during decommissioning and construction works to minimise dust emissions, including management of exposed and disturbed areas.<br>– Ensure availability of adequate water supply or dust suppression on site for dust management during construction and dismantling.<br>– Where practicable ensure that stockpiles are positioned away from the site boundary and away from residences. |
| Site Supervisor | – Supervise on-site compliance with air emission requirements and provide feedback to the Environmental Manager on ways to improve the effectiveness of measures. |
| All workers | – Make note of any visible dust emissions in the daily diaries. |

| Role | Responsibility |
|---|---|
| | – Notify environmental team of any observed impacts on air quality including visible dust emissions. |

## 7. Performance criteria

The following performance criteria have been established to manage air emissions to minimise impacts on the community and the environment. In the absence of dust deposition criteria in Tasmania, criteria were adopted from the Approved Methods NSW EPA criteria (EPA, 2022).

*Table 6 Performance criteria for air quality management*

| Objective | Performance criteria |
|---|---|
| Monitor and minimise dust soiling effects during construction | – Monthly dust deposition gauge (DDG) value during construction less than 4 g/m2/month.<br>– Incremental monthly values (DDG values less baseline DDG value established during one month prior to construction) less than 2 g/m2/month. |
| Minimise visible dust emissions | – Decrease in frequency of visible dust emission events per week based on findings from daily inspections (site diaries). |
| Monitor and minimise off site dust impacts for high risk areas* (in response to community complaints**) | – Continuous monitoring for total suspended particulates (TSP) to be located at the site boundary<br>– Corrective action of 250 µg/m3, 15-minute average TSP<br>– Stop work of 400 µg/m3, 15-minute average TSP |

** High risk areas are defined as locations where there is visible dust being generated and blowing beyond the site boundary towards sensitive receivers such as a residential building or densely populated areas where dust emissions are likely to lead to community complaints.*
***See section 12. Adaptive Management Measures.*

## 8. Management controls

Table 7 provides management controls intended to minimise dust and GHG emissions.

*Table 7 Summary of air quality management controls*

| Item | Specific control | Reference | Responsibility |
|---|---|---|---|
| Overarching | | | |
| A1.1 | Minimise emissions where practical to reduce GHG and air quality impacts:<br>– Use of low emission fuels<br>– Conduct maintenance and servicing of plant and equipment as per manufacturer specifications<br>– Conduct visual inspection of emissions from plant as part of pre-acceptance checks<br>– Turn off vehicles when not in use or throttle down when used intermittently<br>– Using mains electricity or battery powered equipment rather than diesel or petrol equipment where practicable<br>– Minimise vegetation clearance where possible | CM057 EIS commitment | Sustainability Manager |

| Item | Specific control | Reference | Responsibility |
|---|---|---|---|
| | – Optimise transport route and transport to minimise number of trips<br>– Purchase of green energy<br>– Procurement of energy efficient machinery where practicable<br>– Use of low carbon emission concrete<br>– Use of recycled materials to avoid waste where practicable | | |
| A1.2 | Minimise sulphur hexafluoride (SF6) emissions:<br>– Measures to avoid SF6 leakage so far as practicable<br>– Manage SF6 in accordance with AS IEC 62271.4:2015 High-voltage switchgear and control gear, Part 4: Handling procedures for sulphur hexafluoride (SF6) and its mixtures<br>– Minimise SF6 release using a closed cycle during installation, maintenance and decommissioning of equipment | CM087<br>*TasNetworks Environmental Handbook* (TasNetworks, 2017) | Sustainability Manager |
| Construction | | | |
| A1.3 | Minimise dust emissions during construction. This will be achieved by the following actions:<br>– Minimise the extent of exposed area and minimise the duration for which it remains exposed<br>– Operating machinery in a manner that maximises the separation distance to sensitive receptors<br>– Where possible minimise excavation activities under dry and windy conditions.<br>If works are required during high risk periods for dust, apply water to exposed soils during excavation to minimise aerial dispersion.<br>If dust suppression is ineffective, cease works until conditions improve.<br>– Minimise drop height when unloading materials and avoid spills and dust dispersion.<br>– Suppressing dust from cutting, grinding, sawing or scabbling equipment by using in built dust extraction and containment methods or by means of wet cutting. | CM052<br>TasNetworks Environmental Handbook (TasNetworks, 2017) | Construction Manager and Site Supervisor |
| A1.4 | Minimise dust emissions associated with stockpiling. This will be achieved by the following actions:<br>– Apply water or dust suppression polymer to all exposed stockpiles and disturbed areas, Alternatively, apply covering to stockpiles to minimise dust emissions (e.g. geofabric)<br>– Minimise the amount of materials stockpiled and position stockpiles away from site boundary (where practicable).<br>– Remove any material that is likely to generate dust and is no longer required on site | CM052 | Construction Manager and Site Supervisor |
| A1.5 | Minimise dust emissions from vehicle movement. This will be achieved by the following actions:<br>– Ensure vehicles don't exceed the specified speed limit on haul roads, access tracks and disturbed area | CM052<br>MIDAA permit condition 13 | Construction Manager and Site Supervisor |

| Item | Specific control | Reference | Responsibility |
|---|---|---|---|
| | – Where possible, reduce movement of vehicles around disturbed areas<br>– Ensure loads are always covered<br>– Inspect loads prior to departure and during transport to confirm covering and load security to prevent material loss<br>– In the event of a material spill during transport or unloading, spill response is to be managed in accordance with the NWTD Health and Safety Management Plan (PLN-J0955-GNI-0001)<br>– Where spilled material has the potential to generate dust, additional measures are to be implemented to minimise dust emissions, including prompt containment and recovery of material and application of water or other suitable dust suppression methods prior to and during clean-up<br>– Residual material deposited on haul routes or public roads is to be removed as soon as practicable (e.g. via wet sweeping or mechanical means) to prevent trackout and re-entrainment of dust from vehicle movements | | |
| A1.6 | Conduct construction air quality monitoring including:<br>– Monitor daily forecast of wind and rainfall from nearby automatic weather station or BoM to determine if there is risk of dust emissions due to dry and windy conditions<br>– Conduct investigation in response to a complaint to determine the cause and review the monitoring data in conjunction with mitigation measures to determine effectiveness of mitigation measures<br>– Conduct dust monitoring as specified by SQP in response to confirmed presence of contaminated soil or material, as a result of assessment completed under the Soil and Water Management Subplan. | CM052 | Environmental Manager |
| A1.7 | Conduct inspections including:<br>– Make daily observations of any visible dust emissions in daily diaries and report to site supervisor.<br>– If dust is observed leaving site during observation, corrective actions are to be taken (i.e. apply water to works area, reduce speed that trucks and equipment are tracking through site)<br>– Corrective actions should be documented in the site diary | CM052 | All staff |
| A1.8 | Conduct inspections including:<br>– Conduct weekly inspections of any visible dust emissions around the area of construction and apply additional controls if visible dust emissions are observed including adjusting intensity of construction activities<br>– Conduct weekly inspections around access tracks and apply additional controls if visible emissions are observed including applying water with a watercart | CM052 | Environmental representative and Environmental Manager |

| Item | Specific control | Reference | Responsibility |
|---|---|---|---|
| | – Conduct checks for any visible dust emissions under dry and windy conditions<br>– Investigate dust emission events as reported by the staff | | |

# 9. ISC requirements

This section describes requirements for accreditation to a Level 2 for the Env-4 Air Quality credit. Some of the obligations intersect with EIS commitments, whilst others are additional compliance pre-requisites linked to the ISC accreditation process.

## 9.1 Description of Env-4 credit

The Environmental Impacts (Env) category of credits focusses on preventing and mitigating discharges to air, water and land, including receiving water quality, noise, vibration, air quality and light pollution over the life cycle of an infrastructure asset. The Env-4 credit is for air quality, which is the subject of this document. The intent of this credit is to manage air quality impacts and improve air quality for receptors.

Table 8 maps the requirements from the IS Rating v2.1 Technical Manual, and the current status of meeting these requirements. Based on an initial gap analysis, a SQP has prepared a technical memo to be included as an appendix to this subplan, to confirm where ISC requirements have been met, and to provide additional information to address identified gaps.

*Table 8 Env-4 credit map*

| Credit | Must statements | Status |
|---|---|---|
| DL1.1 | The location, extent, type and sensitivity of air quality receptors and their pre-existing exposure have been determined.<br>Baseline studies must be undertaken or reviewed by a suitably qualified professional to identify and assess the pre-existing air quality conditions prior to the project commencing, and cover:<br>– Monitored compounds or pollutants (see Additional Guidance)<br>– Monitored meteorological parameters<br>– Seasonal or time of day variations (whichever is more appropriate for accurate baselines to be established)<br>– Specific local variations, representative sampling and links to activities likely to affect the baseline<br>– The measurement criteria or indicators or factors used in the assessments<br>– Consideration of sensitive receptors<br>– Existing long-term air quality impacts that may be affecting human health<br>A map showing the location of any sensitive receptors must be provided with the baseline studies. | This requirement has been met in the EIS. |
| DL1.2 | Modelling for air quality has been developed for the construction and operation phases of the project.<br>Air quality impacts must be modelled (see Definitions) for the construction and operation phases of the project and take the baseline data into account (DL1.1). | Modelling completed in EIS. SQP will assess in Air Quality Technical Memo, and provide guidance on any gaps. |

| Credit | Must statements | Status |
|---|---|---|
| | Modelled impacts must be developed or reviewed by a suitably qualified professional and incorporate all equipment proposed to be used through the project's construction and operation that could result in air quality impacts. For the operation phase, predicted impacts are normally demonstrated using modelling results from the design development.<br>Modelled impacts must factor in sensitive receptors (see DL1.1) and the increased air quality impacts they experience, including accumulated impacts (i.e. multiple impacts affecting the same sensitive receptors). | |
| DL1.3 | Air Quality goals have been identified for construction and operations.<br>SMART air quality goals (see Additional Guidance) must be established for the project considering the baseline data (DL1.1) and modelled impacts (DL1.2) and cover both construction and operational phases. Documentation for goals must outline:<br>– The intended outcome/s (measurable/quantifiable)<br>– Any assumptions made (supporting legislation or guidelines and calculations where relevant<br>– How the baseline data and predictions have been incorporated<br>Air quality goals must be reviewed by a suitably qualified professional against the requirements above. | Goals set in Air Quality Section 7 of this subplan (by SQP). |
| DL1.4 | Measures to achieve air quality goals during construction and operation have been identified and implemented.<br>Measures to meet the air quality goals (DL1.3) must be identified for construction and operation.<br>In the design phase, measures to be implemented for construction and operation must be detailed in relevant documents i.e. measures incorporated into the design to mitigate impacts or improve amenity in operation and controls specified to mitigate impacts or improve amenity during construction.<br>Where exceedances are predicted, these predicted exceedances must be clearly identified with the appropriate control measures to limit the scale of the impact. | Measures in Section 0 of this subplan.<br>The exclusion of operations from the assessment, and any predicted exceedances (and control measures) has been addressed in Technical Memo Appendix A. |
| DL1.5 | Monitoring requirements for sensitive receptors have been determined with due regard to the project's air quality goals.<br>An air quality monitoring program must be prepared or reviewed by a suitably qualified professional in line with the project's air quality goals (DL1.3) and for all scenarios where the risk to sensitive receptors warrants, and outline:<br>– Monitoring objectives<br>– Risk assessment outcomes used to determine monitoring requirements<br>– Monitoring methods (if targeting level 3 see DL3.2) | Monitoring program in Section 10 of this subplan. |

| Credit | Must statements | Status |
|---|---|---|
| | – The frequency, duration and locations of monitoring, any relevant triggers e.g. high-risk activities, complaints, incidents<br>– The parameters to be monitored | |
| DL2.1 | Air quality impacts, controls and mitigation measures have been reviewed with affected stakeholders.<br>Affected stakeholders including those in the local community must be informed of the results of air quality modelling for construction and operations and engaged to review the project's air quality goals, and the choices and potential consequences of mitigation measures for construction and operations. These requirements may be linked to aspects of Sta-1 and Sta-2.<br>The project must demonstrate how they have considered stakeholder inputs in proposed air quality controls and mitigation measures. | These requirements will be met in the Stakeholder Engagement Plan. |
| DL2.2 | Modelling demonstrates no recurring or major exceedances of the air quality goals.<br>Modelling interpreted by a suitably qualified professional must demonstrate no recurring or major exceedances of the project's construction and operations air quality goals (DL1.3).<br>Modelling of construction and operational air quality must be completed for all scenarios where the risk to sensitive receptors warrants, and the risk levels justified. | This has been reviewed as part of the SQP Technical Memo Appendix A |
| ABL1.1 | Construction measures to mitigate air quality impacts and meet the air quality goals established in Design have been implemented and monitored. | This subplan provides the high level framework for achieving these aspects during construction. Will need to be updated on the basis of additional requirements highlighted in SQP Technical Memo, detailed design and construction methodology information, and stakeholder inputs. |
| ABL1.2 | Measures to mitigate operational air quality impacts and meet the operations air quality goals established in Design have been implemented. | |
| ABL1.3 | Details regarding mitigation measures and monitoring that require ongoing attention during operation have been formally handed over to the proponent/operator. | |
| ABL2.1 | Air quality impacts and mitigation measures have been regularly reviewed with key external stakeholders and their feedback considered. | |
| ABL2.2 | Implemented construction measures have been monitored and no recurring or major exceedances of the air quality goals demonstrated. | |
| ABL2.3 | Modelling of air quality during asset operation has been updated if required and demonstrates no recurring or major exceedances of the air quality goals. | |

## 10. Monitoring requirements

A summary of air quality monitoring requirements is provided in Table 9. Dust deposition monitoring is to be conducted near the towns of Sheffield, Deloraine and Burnie as per risk profile for air emissions and the locations are provided in Table 9.

*Table 9 Summary of air quality monitoring program*

| Location/s | Monitoring requirement | Frequency | Record | Responsibility |
|---|---|---|---|---|
| Dust monitors (refer to Figure 9.3 (map 1) of Chapter 9, EIS:<br>– DDG1: Burnie Sub<br>– DDG2: Burnie Sub<br>– DDG3: Burnie Area<br>– DDG4: Burnie Area<br>– DDG5: Burnie Sub<br>– DDG6: Burnie Sub<br>– DDG7: Burnie Area<br>– DDG8: Near T45 (SHBU)<br>– DDG10: Near T43 (SHBU)<br>– DDG11: Near T141 (PMSH)<br>– DDG12: Near T121 (PMSH)<br>– DDG13: Sheffield Sub<br>– DDG14: Burnie Sub | Dust deposition monitors | – One month prior to construction<br>– Sample every 30 days (+/- 2 days) during construction | Dust deposition record | Environmental Manager |
| All locations | Daily observation to include the following:<br>– Visible dust emissions from construction activities and exposed areas where observed | – Daily | Daily diary | All staff |
| All locations | Weekly inspections to include the following:<br>– Weekly weather forecast data likely to result in high dust emissions (dry and high wind speed conditions) from closest available BoM station<br>– Visible dust emissions from construction activities<br>– Idling vehicles and equipment<br>– Exposed stockpiles and any associated dust emissions | Weekly | Site inspection checklist | Environmental Manager or delegate |
| All locations | Inspections under dry and high wind speed conditions including the following: | Ad hoc | Site inspection checklist | Environmental Manager or delegate |

| Location/s | Monitoring requirement | Frequency | Record | Responsibility |
|---|---|---|---|---|
| | – Visible dust emissions from construction activities and exposed areas | | | |
| Contaminated soil excavation or stockpile areas | Monitoring as specified by a SQP-Site Contamination | As Required | Data record | Environmental Manager or delegate |

## 11. Adaptive management measures

Adaptive management measures (contingency actions) associated with this air quality management are presented in Table 11.

*Table 10 Air Quality Management Plan triggers and contingencies*

| Trigger | Adaptive management measure |
|---|---|
| Dust monitoring and adjustment | If there is an exceedance in the dust deposition criteria during construction:<br>– Review the dust generating activities conducted over the month, site inspection records, meteorological data and controls applied to determine the cause of dust exceedance<br>– Document findings and review this subplan to specify additional management controls if required<br>– Use data to inform future decision making and refine this subplan<br>– Implement staff training on this subplan if required |
| Dust complaints | – Notify relevant agents (Genus Project Manager, Genus Environmental Lead and TasNetworks' Project stakeholder/complaints)<br>– If there is an increase in dust complaints received weekly, review the dust generating activities and meteorological data (including wind speed, wind direction and rainfall) to determine likely cause of the complaint and implement additional controls where required.<br>– Document findings in a complaint register in the relevant management systems including corrective actions<br>– Revise this subplan based on the findings and implement staff training on updated subplan.<br>– Should the investigation into the cause of increased dust related complaints find that the use of visual inspection and site diary documentation is not providing sufficient data to manage the generation or management of dust, the following should be implemented<br>  ○ Monitoring for total suspended particulates (TSP) to be located at the site boundary<br>  ○ Corrective action of 250 µg/m3, 15-minute average TSP<br>  ○ Stop work of 400 µg/m3, 15-minute average TSP |
| Visible dust | – If workers onsite report an increase in visible dust, review the dust generating activities, meteorological data (including wind speed, wind direction and rainfall) and controls to investigate cause for the issue |

| Trigger | Adaptive management measure |
|---|---|
| | – Specify additional controls as required for the combination of dust generating activity and meteorological condition that would have resulted in multiple visible dust events in the week<br>– Revise this subplan based on the findings and implement staff training on updated subplan |

The Air Quality Management Subplan must be reviewed annually by the Environmental Manager, considering any new information or changes to design or construction methodology.

If monitoring determines the controls identified in this plan are not effective, the construction process generating the adverse outcome will be paused. Alternative management controls will be determined in accordance with the environmental management framework set out within the CEMP and in accordance with the measures identified in Table 11 above. Once these management controls have been determined, works may resume.

Environmental management plans such as this subplan are not static documents. They require updating during the project to reflect new information and alterations to management controls in accordance with the triggers and revision processes described in Section 7 of the CEMP.

If changes are made to the project targets, the new targets and their justification must be approved by ISC via the Credit Interpretation Request (CIR) process.

## 12. Reporting and documentation requirements

A full summary of reporting requirements for environmental management of the Project is provided in Section 7 of the CEMP. The reporting and documentation inputs from this subplan are provided in Table 11.

*Table 11 Reporting and documentation requirements for the Air Quality Management Subplan*

| Reporting requirement | Type | Frequency | By who | To who |
|---|---|---|---|---|
| Daily diaries | Observations | Visible dust emissions as observed on daily basis | All staff | Recorded and available for Site Supervisor or Environmental Manager inspection |
| Inspection records | Inspection | Weekly (including records from ad hoc inspections conducted under high-risk conditions) | Environmental Manager or delegate | Recorded and available for Environmental Manager inspection |
| Monthly dust deposition report | Report | Monthly | Environmental Manager | Executive Steering Committee |

# 13. Document history

## 13.1 Current document authoriser

| Title | Name |
|---|---|
| General Manager – Major Projects Transmission | Craig Gosney |

## 13.2 Revision history

| Rev | Date | Author | Authoriser | Details of Amendment |
|---|---|---|---|---|
| A | 27/10/2025 | GHD | CG | Initial document – 70% Design Gate Draft |
| B | 30/01/2026 | GHD & EC | CG | 90% Design Gate Update |
| C | 26/03/2026 | GHD & EC | CG | 90% TN comments addressed, Permit Conditions Addressed, IFC Submission |
| D | 24/04/2026 | GHD Genus | CG | Address 100% TN comments, updates based on provisional EPBC Approval conditions |
| E | 15/06/2026 | GHD | CG | Address TPC comments |

# Appendices

# Appendix A

## Technical memorandum – Review of project compliance with IS Env-4 air quality requirements

# Technical Memorandum

**10 October 2025**

| | | | |
|---|---|---|---|
| **To** | Flavia Tarmo | **Contact No.** | 0421219469 |
| **Copy to** | | **Email** | flavia.tarmo@genus.com.au |
| **From** | James Forrest | **Project No.** | 12658174 |
| **Project Name** | Genus NWTD - Sustainability Rating Support | | |
| **Subject** | Review of Project compliance with IS Env-4 air quality requirements | | |

# 1. Introduction

## 1.1 Project description

Tasmanian Networks Pty Ltd (Tas Networks) proposes upgrading and building new transmission lines required for the Tasmanian transmission network. This project includes the construction of new double-circuit 220 kV overhead transmission lines (OHTLs) in Northwest Tasmania, the upgrade of the existing substations, and the construction of new switching stations. This project is part of the broader Northwest Transmission Developments (NWTD) proposed by Tas Networks and is referred to as the Remaining NWTD (the project). It is being delivered in two stages, with the current focus on Stage 1. The following describes the details of this project:

**Stage 1**

- **Palmerston – Sheffield OHTL.** A new double circuit 220 kV OHTL between Palmerston station and Sheffield. The existing single circuit 220 kV OHTL between the Palmerston and Sheffield substations will be dismantled.
- **Sheffield – Heybridge OHT via Stowport.** A new double circuit 220 kV OHTL between the Sheffield substation and a proposed switching station at Heybridge. The proposed switching station at Heybridge is not part of this project. The existing single circuit 220 kV OHTL will be dismantled.
- **Heybridge – Burnie OHTL via Stowport.** A new double circuit 220 kV OHTL between the proposed Heybridge switching station and Burnie substation. The existing single circuit 220 kV OHTL between the Sheffield and Burnie substations will be dismantled.

**Stage 2**

- Burnie to East Cam (not included)
- East Cam to Hampshire Hills (not included)

As outlined in Figure 1.1, the NWTD project is located across various sites.

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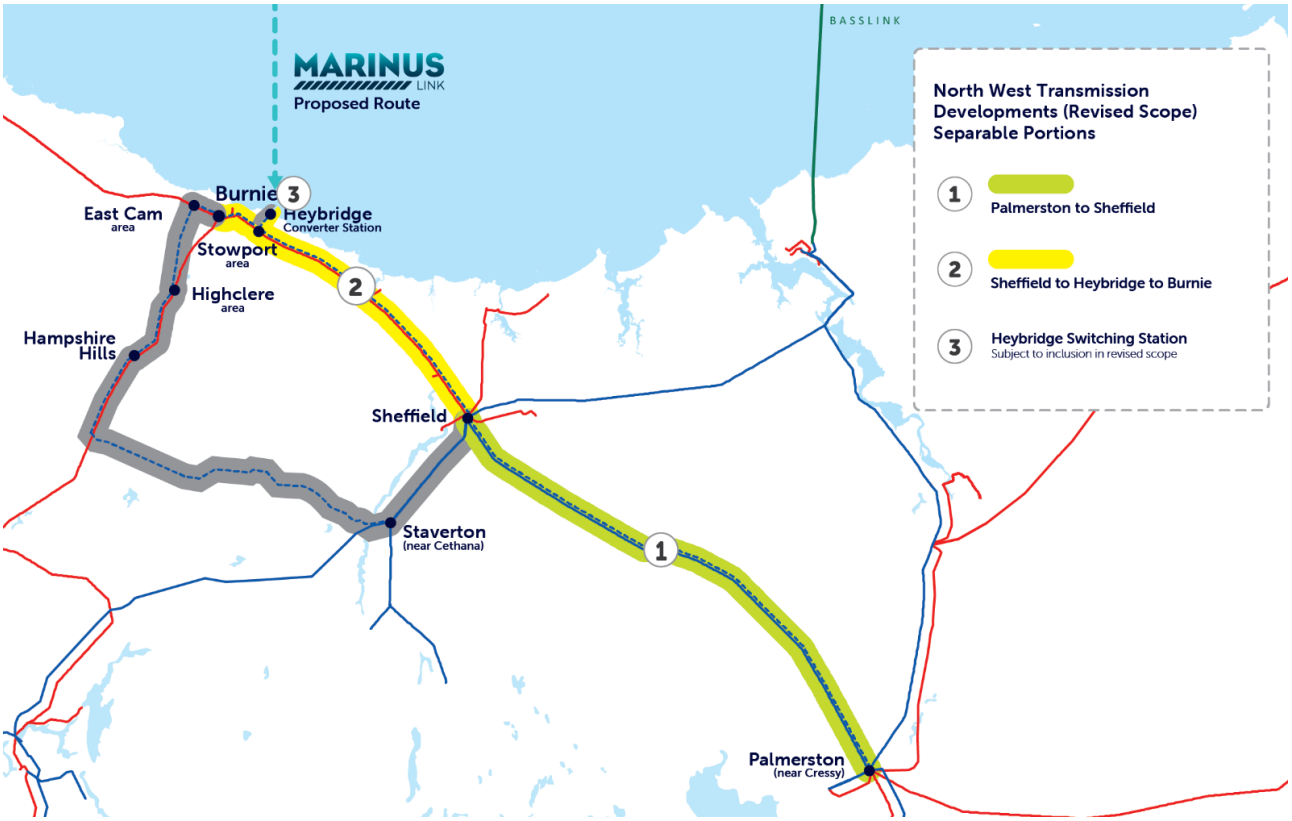


*Figure 1.1 NWTD Project outline*

## 1.2 NWTD and potential impacts on air quality

The assessment of air quality impacts undertaken as part of the Environmental Impact Statement (EIS) (Env-04a) concluded that the operation of the new OHTLs and associated switching stations and infrastructure is unlikely to result in emissions to air. The key issue relating to air quality will be emissions of dust generated from construction activities.

Construction activities with the most significant potential for the generation of dust emissions include:

- Land clearing along the OHTL route and for works at substations
- Excavation and stockpiling of topsoil associated with the OHTL tower foundations and other construction works
- Bore pile driving and rock breaking are required for the construction of tower foundations
- Transport of concrete and other materials to construction sites and laydown areas
- Earthworks and surface preparation are required to construct and upgrade roads and access tracks
- Dust emissions will occur due to the earthmoving activities involved in preparing these areas, including:
    - Materials handling associated with excavation and dozing
    - Wheel generated dust from material transport
    - Wind erosion from stockpiled material and exposed ground

The study concluded that there is a low risk of odour emissions. This may occur if the topsoil and subsoil removed during the project's construction phase are contaminated. Given the limited quantity of contaminated soils present, movement of such material is expected to be completed over a very short timeframe within the construction period, with the odour temporary in nature and dissipating after a few days. Control of odour will be managed through the Soil and Water Management Subplan of the Construction Environmental Management Plan (CEMP), which includes management of contaminated soils. Odour emissions during construction is considered a low risk.

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However, dust emissions are of higher significance, particularly given the proximity of sensitive receptors. The construction activities are occurring in built up areas, with the EIS stating that 1,608 residential receptors occur within 250 m of the OHTL easement and access tracks, noting that this includes some areas of Stage 2. However, the most built-up areas are the Burnie to Sheffield easement, followed by the Sheffield to Palmerston easement. The modelling using a risk based approach was undertaken in four steps for each section of the Project:

- Screening level assessment to identify sensitive receptors
- Risk assessment based on projected magnitude of emissions, sensitivity of the receiving environment, and risk of impacts
- Develop site specific mitigation measures
- Determine residual effects and significance.

The conclusions were that, without mitigation, the risk is generally Negligible or Low. In dense residential areas along the Palmerston to Sheffield and Sheffield to Burnie sections of the route, there is a Medium or High risk of dust soiling effects during some activities. An appropriate package of mitigation measures has been recommended to ensure that the overall effects will be 'not significant'.

Regarding potential human health impacts, the assessment demonstrated that the project represents a low risk; therefore, a quantitative assessment using dispersion modelling was not required to verify NEPM compliance for $PM_{10}$, $PM_{2.5}$ and combustion gases.

## 1.3 Sustainability support

GHD was engaged by Genus to be a part of the sustainability support team associated with NWTD, providing the sustainability support to obtain Infrastructure Sustainability (IS) v2.1 Design and As Built Rating. The sustainability target of this project is a minimum score of 30 points (Bronze) for both the Design and As Built phases. GHD was assigned 14 credits to provide initial technical support to Genus, including those related to environmental impacts, ecology, stakeholder engagement, heritage, and workforce sustainability.

Genus provided a phased schedule for the IS rating, which included critical milestones throughout the project. At the 70 percent design gate of the Project, a CEMP was developed for submission to TasNetworks, including an Air Quality Management Subplan. The CEMP will be updated at the 90 percent design gate, with any sustainability rating requirements integrated into the management and monitoring measures.

## 1.4 ISC rating requirements

The Infrastructure Sustainability (IS) Rating Scheme, developed by the Infrastructure Sustainability Council (ISC), is designed to assess the sustainability efforts of infrastructure projects, focusing on their environmental, social, and economic impacts. This framework is intended for a broad range of stakeholders, including project proponents, designers, and teams involved in construction and operations, guiding sustainable practices across design, procurement, construction, and operational stages.

The IS rating requirements are structured around four key themes: governance, economic, environmental, and social, which are further divided into 16 categories and 37 credits. Each credit has specific criteria outlining the necessary actions, documentation, and evidence to demonstrate compliance. The credit levels—ranging from basic to advanced—reflect the sustainability practices implemented at various stages of the project. Achieving higher levels requires stronger evidence of sustainability outcomes.

This memorandum focuses on the Environmental theme under the Environmental Impact category, specifically the Env-4 Air Quality credit. The over-arching intent of the Env-4 credit is **to manage air quality impacts and improve air quality for receptors.**

For the Env-4 Air Quality credit, the following actions are required for compliance with Level 1:

- **Review and update baseline studies** of the existing receiving air environment

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- Identify **air quality impacts** through modelling for both the construction and operation phase
- Set **air quality goals** within the **Construction Environmental Management Plan and Design Reports**
- **Identify and implement measures** to achieve air quality goals
- Develop an **air quality monitoring program** aligned with air quality goals

For Level 2:

- **Affected stakeholders** need to be informed of the air quality monitoring and have **input into controls and mitigation measures**
- Modelling of construction and operational air quality must be completed for all scenarios where the risk to sensitive receptors warrants, and must demonstrate **no recurring or major exceedances of goals**

The key document for the Env-4 Air Quality credit is the Air Quality Impact Assessment for the NWTD (Appendix D of the EIS). This document summarises the baseline air quality assessment, outlining the existing air quality environment, identifying sensitive receptors, and mapping their locations. A secondary document referred to is Chapter 9 from the EIS, Environmental Management, Monitoring and Review.

## 1.5 Management measures committed to in EIS

Attachment 5 of the Environmental Impact Statement (EIS) (Env-04d) lists management measures committed to. Whilst these may differ from the final permit conditions, they provide insight into likely conditions. Relevant to air quality is CM052, which states:

Minimise dust deposition on and nuisance to sensitive receivers, including houses, schools, kindergartens, medical facilities, native vegetation and crops. As a minimum, this will include:

- Siting and operating machinery to maximise the separation distance to sensitive receivers.
- Monitoring weather for high risk conditions for dust generation.
- Restricting speeds on unsurfaced haul roads, access tracks and worksites.
- Minimising the extent and time of exposed areas.
- Maintaining an adequate water supply for effective dust suppression, using non-potable water where practicable.
- Suppressing dust by water spraying or chemical additives, particularly during dry periods and high risk conditions.
- Storing, handling and transporting materials in a way that minimises dust generation (e.g., covering or spraying stockpiles, covering loads, use of enclosed material storage facilities, avoiding spills during filling, minimising drop heights when unloading materials)
- Suppressing dust generated by cutting, grinding, sawing or scabbling equipment by in-built features (e.g., dust extraction and containment) or dust suppression methods.
- Monitoring dust suppression activities and implementing further controls if existing controls are not appropriate for conditions
- Monitoring dust deposition in the vicinity of residential sensitive receivers.

## 1.6 Purpose of this memorandum

This memorandum has been prepared to provide a response on some of the requirements of the IS V2.1 rating framework, specifically aspects relating to credit Env-4 (Air Quality). This should be read in conjunction with the Construction Environmental Management Plan, particularly on matters for the construction phase. The basis for this memorandum is to respond to certain requirements that are not easily covered off by the CEMP, specifically operational requirements, although some construction advice is provided in relation to Env-4 (Air Quality).

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## 1.7 Scope and limitations

This memorandum has been prepared by GHD for Genus Services Pty Ltd and may only be used and relied on by Genus Services Pty Ltd for the purpose agreed between GHD and Genus Services Pty Ltd as set out in Section 1.6 of this memorandum.

GHD otherwise disclaims responsibility to any person other than Genus Services Pty Ltd arising in connection with this memorandum. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this memorandum were limited to those specifically detailed in the memorandum and are subject to the scope limitations set out in the memorandum.

The opinions, conclusions and any recommendations in this memorandum are based on conditions encountered and information reviewed at the date of preparation of the memorandum. GHD has no responsibility or obligation to update this memorandum to account for events or changes occurring subsequent to the date that the memorandum was prepared.

The opinions, conclusions and any recommendations in this memorandum are based on assumptions made by GHD described in this memorandum (refer Section 1.8 of this memorandum). GHD disclaims liability arising from any of the assumptions being incorrect.

## 1.8 Assumptions

This memorandum is subject to the following assumptions and limitations:

- The client and the project team recognise the extent of the requirements in achieving the project's sustainability goals under the IS v.2.1 rating scheme and understand that these cannot be achieved with a 'business as usual' approach to the project.
- While GHD is committed to supporting the project in achieving the target sustainability rating, the final outcome may be influenced by factors beyond our direct control. As such, GHD cannot be held liable if the project does not meet the target IS rating or the individual credit scores.
- GHD is entitled to rely on information provided by Genus and its client (Tas Networks) consultants and contractors in performing our assistance. We will not perform any validation or verification of information provided outside of what is within the agreed scope of work.
- This memorandum is based on reports made available to GHD at the time of writing. Any additional information or further iterations of environmental assessment documents will need to be considered during the design phase, but this memorandum will not be updated.
- The CEMP and Air Quality Management Subplan documents referred to in this memorandum were prepared at the 70% design gate. These documents will be updated at the 90% design gate and will have ongoing iterations during Project implementation.

# 2. Gap analysis

A Gap Analysis memorandum has been provided to Genus to highlight what has been achieved to date in documenting air quality. Our team has reviewed all available information to date and presents this memorandum to inform the next steps.

## 2.1 Response to gaps identified

This memorandum has been prepared to provide a response on some of the requirements of the Infrastructure Sustainability (IS) V2.1 Design and As Built Rating, specifically aspects relating to Env-4 (Air Quality) credit. This memorandum should be read in conjunction with the CEMP, particularly on matters for

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the construction phase, which I have also provided input to and reviewed, noting that at the time of writing this memorandum, this refers to the 70% design gate CEMP, which will be updated at the 90% design gate.

The basis for this memorandum is to respond to certain requirements that are not easily covered off by the CEMP, specifically operational requirements, although some construction advice is provided in relation to Env-4 (Air Quality).

The Env-4 (Air Quality) credit outlines general method for understanding the existing background (baseline) air quality to then enable predictions for construction and operation, including setting air quality goals. This is particularly helpful when potential or actual negative impacts are anticipated.

For this Project, air quality emissions are not anticipated during operation. During construction, the main air quality impacts are those from dust and from the operation of plant and machinery, in particular where these are not in good working order. This is discussed further below for each ISC requirement.

### 2.1.1 DL1.1 The location, extent, type and sensitivity of air quality receptors and their pre-existing exposure have been determined

As identified in the Gap Analysis Report, extensive mapping of sensitive receptors and the pre-existing air quality issues were documented in the Air Quality Assessment Report in the EIS (Env-4a). Residential sensitive receptors were mapped, and it was noted that there were no identified protected vegetation communities, flora or fauna species within 1 km of the OHTL centreline or the switching station upgrades that are sensitive to dust deposition, and therefore there was no mapping of ecologically sensitive receptors. If looking at flora and fauna species that are both protected and non-protected, occurrence throughout this farming and built-up area is likely to be relatively consistent, and unlikely to be impacted by dust deposition.

I have reviewed this work and it is likely to satisfy the IS rating requirement.

### 2.1.2 DL1.2 Modelling for air quality has been developed for the construction and operation phases of the project

***Air quality impacts must be modelled for the construction and operation phases of the project and take the baseline data into account.***

The potential impacts of dust emissions during the construction phase have been assessed using a risk-based approach. The modelling adopts the methodology developed by the Institute of Air Quality Management (IAQM) to evaluate construction dust impacts. This approach considers the baseline data collected from the EPA Tasmanian monitoring station, focusing on the potential impacts of $PM_{10}$ and $PM_{2.5}$, and dust deposition

It is acknowledged construction activities can produce other types of air pollution, particularly emissions from construction plant and equipment. However, these impacts largely occur through incorrect usage or use of poorly maintained equipment. In events of this occurring, the impact is localised to within a small radius of the equipment, and therefore analytical air modelling or monitoring of other pollutants is not considered appropriate. The most appropriate goals to set for these types of emissions are those associated in prevention, namely:

– Ensure any poorly performing vehicles are identified and stood down from site.
– All construction and maintenance equipment/vehicles to be operated and maintained to manufacturers specifications in order to minimise exhaust emissions.

These measures have been included in the CEMP Air Quality Management Subplan.

Section 10 of the Air Quality Assessment states that operation and maintenance activities will not generate significant emissions to air, so a detailed assessment of impacts during operation has not been carried out.

***Modelled impacts must factor in sensitive receptors and the increased air quality impacts they experience, including accumulated impacts (i.e. multiple impacts affecting the same sensitive receptors).***

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The modelling of cumulative impacts is considered adequate, although only addressed at a high level. The major contributor to existing air quality and therefore influencing cumulative impacts is wood smoke particulates in Tasmania. Wood smoke particulates are primarily a source during colder months, which typically correspond with low risk from dust during construction due to cooler, wetter conditions. Therefore, the cumulative risk from both dust from construction and particles from wood smoke is considered very low and no further analysis is required.

### 2.1.3 DL1.3 Air quality goals have been identified for construction and operation

***SMART air quality goals must be established for the project, considering the baseline data and modelled impacts, and cover both the construction and operational phases.***

The construction air quality goals recommended for the Project are documented to minimise the impact of dust soiling, human health impacts from dust, and to meet the requirements of Air NEPM and Air Quality EPP compliance. The criteria for particulate matter are shown in Table 1.

**Table 1 NEPM air quality standards and Air Quality EPP design criteria**

| Pollutant | Averaging period | Value |
|---|---|---|
| $PM_{10}$ | 24-hour average | 50 µg/m³ |
| | Annual | 25 µg/m³ |
| $PM_{2.5}$ | 24-hour average | 25 µg/m³ |
| | Annual | 8 µg/m³ |

Construction dust should be monitored at key locations across the site, by two different methods depending on the prominent risk:

- Continuous monitoring – Measures the build up of dust over time, typically done using dust deposition gauges.
- Instantaneous monitoring – Measures the volume of particulates in the air (i.e. dust level) at moments in time, typically done using DustTraks or similar devices. This is particularly relevant where dust may contain potentially hazardous particulates, such as those within contaminated material.

Analytical monitoring will not replace regular visual monitoring of dust by those on site to inform the real-time needs for dust suppression via water carts. Both methods will be employed.

The recommended dust monitoring goals are provided below. These are based on existing air quality guidelines and factor in the baseline results. This enables monitoring to be compared with that which is considered acceptable, but also does not discount the realities of the potential for emissions to be generated from other nearby sources. These goals have been incorporated into the CEMP Air Quality Management Subplan.

**Instantaneous dust monitoring goals**

Monitoring will be recorded based on total suspended particulates (TSP), which are monitored at the site boundary using DustTrak or similar monitors, with 10-minute average TSP concentrations compared against a typical trigger level as follows:

- 250 µg/m$^3$ – Action level to undertake additional dust control measures onsite
- 400 µg/m$^3$ –Action level to halt dust generating activities until unfavourable weather conditions (such as high winds) cease

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Where either of the above are exceeded, prior to taking action on site, the exceedance will be investigated for cause. Examples of events external to the Project where these may be triggered are smog from bush fires or forestry burn-off activities.

**Continuous dust monitoring goals**

Longer term monitoring will also be undertaken using directional DDGs, which is assessed against the following criteria:

– 2 g/m$^2$/30 days – Maximum increase in deposited dust levels (annual average)
– 4 g/m$^2$/30 days – Maximum total deposited dust levels (annual average)

Where either of the above are exceeded, dust levels collected downstream from site will be compared with those collected from the opposite direction. Where dust levels downstream from site are found to be like that collected from the opposite direction, the event will not be considered an exceedance as a result of dust from the Project site, rather from an event in the wider environment.

Section 10 of the Air Quality Assessment states that operation and maintenance activities will not generate significant emissions to air, so a detailed assessment of impacts during operation has not been carried out.

Therefore, it is considered unnecessary to undertake a detailed assessment, establishing baseline data, modelling and setting goals, nor undertaking operational monitoring, as it is considered unlikely this Project will result in a deterioration of the local air quality immediately after practical completion as well as over the long-term during operation.

I have reviewed this approach and find it to be appropriate from both a technical and management perspective.

***Documentation for goals must outline:***

– ***The intended outcomes (measurable/quantifiable)***
– ***Any assumptions made (supporting legislation or guidelines and calculations where relevant)***
– ***How the baseline data and modelled impacts have been incorporated***

The recommended goals provide intended outcomes and assumptions. Baseline data and modelled impacts have been incorporated. As a part of developing the CEMP Air Quality Management Subplan, the associated goals have been reviewed and incorporated to meet the requirements of this credit.

### 2.1.4 DL1.4 Measures to achieve air quality goals during construction and operation have been identified and implemented

***Measures to meet the air quality goals (DL1.3) must be identified for construction and operation.***

Mitigation measures to avoid and minimise air quality impacts have been documented in Section 8.4 and listed in Table 46 of the Air Quality Assessment, including communications, site management, monitoring, preparing and maintaining the site, operating vehicle/machinery and sustainable travel, operations, waste management, measures specific to demolition, measures specific to earthworks, measures specific to construction, measures specific to track out. Such measures have also been included in the CEMP Air Quality Management Subplan.

The assessment states that once operational, the operation and maintenance activities associated with the project will not generate significant emissions to air. Therefore, it is considered unnecessary to undertake a detailed assessment, establishing baseline data, modelling and setting goals, nor undertaking operational monitoring, as it is considered unlikely this Project will result in a deterioration of the local air quality immediately after practical completion as well as over the long-term during operation.

I have reviewed this approach and find it to be appropriate from both a technical and management perspective.

***In the design phase, measures to be implemented for construction and operation must be detailed in relevant documents i.e. measures incorporated into the design to mitigate impacts or improve***

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***amenity in operation and controls specified to mitigate impacts or improve amenity during construction.***

Mitigation measures have been classified according to project phase—design and construction—with those related to the design phase highlighted in blue, and construction phase measures highlighted in green (Table 46, Air Quality Assessment – refer to Attachment 1). Such measures have been incorporated into the CEMP Air Quality Management Subplan.

There is considered to be limited opportunities to reduce dust emissions through design choices, for example opportunities for micro-siting. Therefore the need for mitigation during construction becomes central to sustainability outcomes. The route options assessment completed as part of the EIS, and going forward, the Change Management Process, will take into consideration any opportunities. For example, any time a tower is moved or alignment changed for any sort of reason, the design team as part of the change management process, documents the basis for the change decision. Where possible, Genus should also consider documenting secondary benefits such as reduced air emission impacts to sensitive receptors.

The primary method for reduction is identification as part of the risk assessment and required mitigation implemented through the CEMP Air Quality Management Subplan.

***Where exceedances are predicted, these predicted exceedances must be clearly identified with the appropriate control measures to limit the scale of the impact.***

In Table 46 of the Air Quality Assessment, control measures have been circled in red to indicate areas where pollutant exceedances are predicted (refer to Attachment 1). In assessing the risk of dust impacts occurring, appropriate mitigation measures, based on the likely risk, have been incorporated into the CEMP Air Quality Management Subplan.

### 2.1.5 DL1.5 Monitoring requirements for sensitive receptors have been determined with due regard to the project's air quality goals

***An air quality monitoring program must be prepared or reviewed by a SQP in line with the project's air quality goals (DL1.3) and for all scenarios where the risk to sensitive receptors warrants, and outline:***

- ***Monitoring objectives***
- ***Risk assessment outcomes used to determine monitoring requirements***
- ***Monitoring methods***
- ***The frequency, duration and locations of monitoring, any relevant triggers***
- ***The parameters to be monitored***

In the mitigation measures table, there is a section on monitoring (pg.60):

- Undertake daily inspections to check for visible dust emissions, and adjust controls if required to minimise dust emissions. Record results of inspection, corrective actions, and residual emissions.
- Carry out regular site inspections to monitor compliance with the CEMP Air Quality Management Subplan.
- Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Conduct dust deposition monitoring at selected sensitive receptors.

In Chapter 9 of the EIS, Table 9.4 provides a proposed monitoring program for a range of factors (pg.21), with proposed monitoring sites shown in Figure 9.3 (pg.23-29).

Air quality monitoring is proposed at receivers nearest to PM-SH T121, T141, T163 and Sheffield substation SH-BU T43, T45, T94, T96, T97, T99, T100. The parameter being monitored is dust deposition. It is recommended that monitoring takes place three months prior to construction, and monthly during periods of construction. The dust monitoring sites are shown on Figure 9.3, situated in highly built up areas.

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I have reviewed this approach and find it to be appropriate from both a technical and management perspective. Additionally, an air quality monitoring program has been prepared and outlined in the CEMP Air Quality Management Subplan. I have reviewed the recommended monitoring program and confirm suitability for IS requirements.

### 2.1.6 DL2.1 Air quality impacts, controls and mitigation measures have been reviewed with affected stakeholders

***Affected stakeholders including those in the local community must be informed of the results of air quality modelling for construction and operations and engaged to review the project's air quality goals, and the choices and potential consequences of mitigation measures for construction and operations.***

Concerns about dust may have been raised and documented in some of the public forums and opportunities for feedback during the conceptual design and EIS process. It is recommended that the TasNetworks Stakeholder Engagement Team provide this detailed data to Genus, as it may provide evidence that air quality issues have been discussed with stakeholders during the early planning and design processes.

During the current phase of detailed design, it is critical that consultation is proactive rather than reactive. Specific information on air quality impacts and mitigation measures must be provided to affected stakeholders for their review and input. This provides the opportunity to improve mitigation measures in response to sensitivities that were not picked up during the EIS study. This early engagement with affected stakeholders provides the opportunity to prevent impacts during construction.

As the construction stage approaches, consultation must clearly provide a schedule of works and information on potential local impacts, including dust. There needs to be clear pathways for affected stakeholders to raise complaints, but more importantly, they need the opportunity for input into appropriate mitigation measures from the outset to avoid complaints where possible.

Pre-construction engagement will include dialogue with people likely to be impacted by dust, particularly during the individual landholder agreement process. It is important that this dialogue, including any additional air quality mitigations, is documented. In addition, a feedback register will be established for all complaints and resolutions. This has been developed as part of the CEMP, with specific aspects related to air quality incorporated in the Air Quality Management Subplan.

***The project must demonstrate how they have considered stakeholder inputs in proposed air quality controls and mitigation measures.***

The Air Quality Management subplan of the CEMP outlines methods for stakeholder engagement, particularly for affected land owners and neighbouring properties. During this engagement, the potential impact of dust emissions and proposed mitigations must be discussed. Affected stakeholders must be able to raise any sensitive receptors that may be impacted and propose additional mitigation measures. This must be documented in the Air Quality Management subplan. An ideal opportunity is to undertake this consultation prior to the 90% design gate, so that the updated CEMP can reflect inputs from affected stakeholders.

A further opportunity for the Project to demonstrate stakeholder inputs is each individual landholder agreement. Additional mitigation or monitoring measures over and above the CEMP can be included in these localised management plans if there are particular concerns from the landholder in relation to air quality.

### 2.1.7 DL2.2 Modelling demonstrates no recurring or major exceedances of the air quality goals

***Modelling interpreted by a suitably qualified professional must demonstrate no recurring or major exceedances of the project's construction and operations air quality goals (DL1.3).***

– The author of this report is Padraig McDowell, who is an Air Quality Consultant from Katestone.

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– This report concludes that the potential impact of dust emissions is generally negligible to low in the absence of mitigation, although certain activities may present a medium to high risk of dust soiling. A comprehensive package of mitigation measures has been recommended to ensure that the overall effects remain 'not significant'. Consequently, the Project is considered to pose a low risk to human health. Furthermore, operational activities are not expected to generate significant air emissions (Section 10 of the Air Quality Assessment).

The CEMP Air Quality Management Subplan clearly articulates the air quality goals. As the project progresses, modelling (risk assessment) will be reviewed to demonstrate that no major or recurring exceedances are going to occur. The air quality emission goals have been selected to avoid regular or recurring exceedances.

***Modelling of construction and operational air quality must be completed for all scenarios where the risk to sensitive receptors warrants, and the risk levels justified.***

The modelling method applies the Institute of Air Quality Management (IAQM) guideline, assessing the sensitivity of the study area and risk of impacts associated with four activities, including demolition, earthworks, construction and track out across various sections of the proposed routes of Project.

The modelling uses a risk-based approach based on distances. I have reviewed this approach and find it to be appropriate, and no further modelling is required.

# 3. Summary response to key gaps identified

This memorandum has been provided primarily to resolve the following gaps which have previously been identified:

– Review of approach to the assessment, and endorsement of risk-based mapping against the standards as an appropriate response in alignment with the risk.
– Review of likely existing air pollution sources (particularly adding to comment on particulates from wood fire heating) and confirmation that accumulated air quality impacts are of negligible concern.
– Confirmation of the negligible air pollution that will occur during the operational phase of the Project, and justification that it can be excluded from the assessment (or additional input into assessing operational air quality impacts).

Further work will be required to document proactive stakeholder engagement and feedback in relation to air quality prior to construction. The opportunity to document this will occur at the time of individual landowner agreements, and in pre-construction community consultation with sensitive receptors. It is critical that air quality management, mitigation and monitoring is included in the engagement dialogue, and that affected stakeholders can have input into mitigation measures. There may be sensitive receptors that are not identified in the assessment to date, that require additional mitigation. The aim of the consultation is to prevent impacts through being informed by affected stakeholders, rather than responding to complaints as they occur during construction. Documentation of the outcomes is important, demonstrating where mitigation measures have changed or received additional focus following this consultation.

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*Table 3.1 Summary of additions required for CEMP Subplan*

| ISC requirement | | CEMP Subplan reference | Additional work required |
|---|---|---|---|
| DL1.1 | The location, extent, type and sensitivity of air quality receptors and their pre-existing exposure have been determined | N/A | Nil |
| DL1.2 | Modelling for air quality has been developed for the construction and operation phases of the project | A1.1 (Section 9, Table 7) | Nil |
| DL1.3 | Air quality goals have been identified for construction and operation | Section 11, Table 9 | Incorporation of instantaneous dust monitoring goals in Section 11 (where required based on risk assessment of dust impacts) |
| DL1.4 | Measures to achieve air quality goals during construction and operation have been identified and implemented. | Section 9, Table 7 | Nil |
| DL1.5 | Monitoring requirements for sensitive receptors have been determined with due regard to the project's air quality goals | Section 11, Table 9 | Nil |
| DL2.1 | Air quality impacts, controls and mitigation measures have been reviewed with affected stakeholders | Section 12, Table 10 | Need to ensure this has occurred as part of current review of client comments for CEMP and subplans. |
| DL2.2 | Modelling demonstrates no recurring or major exceedances of the air quality goals. | N/A | Nil |

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## 4. Project document references

*Table 4.1 Reference documents for Env-4 credit*

| Document | CSF Reference |
|---|---|
| Appendix D of EIS. Air Quality Assessment Report | Env-4a |
| Ricky Gellatly CV (SQP for Air Quality Assessment Report) | Env-4b |
| EIS Chapter 9 – Monitoring, Management and Review | Env-4c |
| EIS Chapter 9 – Monitoring, Management and Review | Env-4d |
| CEMP Air Quality Management Subplan | Env-4e |
| James Forrest CV (SQP for Air Quality Management Subplan and this memorandum) | Env-4f |

## 5. Closing

I trust this information provides clarification and background on potential air quality emissions and impacts for the Project. Should you require additional information, please do not hesitate to contact me.

Kind regards

**James Forrest**
Technical Director - Air Quality, Noise and Tunnel Ventilation

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# Attachments

# Attachment 1

## Recommended mitigation measures from Air Quality Assessment Report

**Table 46 Recommended mitigation measures**

| Mitigation Measure |
|---|
| **Communications** |
| Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary or near active construction works. This may be the environment manager/engineer or the site manager. |
| Display the head or regional office contact information. |

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| |
|---|
| **Preparing and Maintaining the Site** |
| Suppress dust by water spraying and/or chemical additives, particularly when construction activities are within 100m of sensitive receptors. |
| Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. |
| Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. |
| Store materials susceptible to dust (e.g., aggregate) in a way that minimises dust mobilisation e.g., covering or spraying stockpiles and use of enclosed storage facilities. |
| **Operating Vehicle/Machinery and Sustainable Travel** |
| Ensure all on-road vehicles comply with relevant vehicle emission standards, where applicable. |
| Turn off vehicles, plant and equipment when not in use or throttle down when used intermittently. |
| Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. |
| Impose and signpost a suitable maximum-speed-limit on unsurfaced haul roads and work areas. |
| Service vehicles, plant and equipment and operate in accordance with manufacturer's specifications to reduce emissions. |
| **Operations** |
| Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction (e.g. suitable local exhaust ventilation systems) when proximate to sensitive receptors. |
| Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate. |
| Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. |
| Monitor severe weather, flood, damaging wind and storm warnings issued by Bureau of Meteorology and plan or defer activities, such as excavation works, to minimise risk of environmental harm, particularly dust, erosion and sedimentation. |
| **Waste Management** |
| No on-site burning of waste materials. |

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| Mitigation Measure |
| --- |
| **Measures specific to demolition** |
| Ensure effective water suppression is used during demolition operations with the potential to generate dust. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground. |
| Avoid explosive blasting, using appropriate manual or mechanical alternatives. |
| **Measures specific to earthworks** |
| Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. |
| Use hessian, mulches or tackifiers where it is not possible to re- vegetate or cover with topsoil, as soon as practicable. |
| Minimise the area where cover is removed or material disturbed, as much as practical. |
| Minimise the drop height when unloading material from haul trucks. |
| **Measures specific to construction** |
| Avoid scabbling (roughening of concrete surfaces) if possible. |
| Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. |
| Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. |
| Store bulk cement and other fine powder materials in enclosed silos or enclosed bunded areas to prevent windblown material and material washing offsite. Prevent overfilling during delivery to avoid spill. |
| **Measures specific to Trackout** |
| Where practical, ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. |
| Inspect on-site haul routes and access tracks for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. Record all inspections. |
| Apply water to unsealed access tracks, particularly during dry periods and for heavily-trafficked routes within 100m of sensitive receptors. |

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Level 1 | 63 Abernethy Road, Belmont WA 6104

T: 08 9390 6999 | F: 08 9390 2999 | M: 0449 255 679