

7.0 PROJECT ENVIRONMENTAL RISK ASSESSMENT

A preliminary scoping and broad brush risk assessment was undertaken by Centennial Mandalong in early 2012 in order to:

- Identify those issues relating to the Mandalong Southern Extension Project that represent the greatest risk to the local environment and surrounding populace; and
- Assist in setting (and justifying) priorities for the level of assessment required to address each identified risk in the EIS.

The Risk Assessment Report, including a Risk Register, prepared as part of this preliminary risk assessment process was appended to the Project Briefing Paper (Preliminary Environmental Assessment) prepared and submitted by Centennial Mandalong to the DP&I, along with various other government agencies, seeking the DGRs for the Project.

In early 2013 this risk assessment was revisited and updated based on the additional information available from the mine planning and project optimisation process (see **Section 5.0**), the specialist environmental assessments commissioned as part of this EIS (see **Sections 9.0** and **10.0**) and extensive stakeholder consultation activities (see **Section 8.0**).

A qualitative risk assessment methodology (using the Dyadem Stature Risk Management software) was adopted in general compliance with the requirements of the *Australian Standard AS/NZS ISO 31000:2009 – Risk Management – Principles and Guidelines* and in order to provide a consistent and reliable approach. The various identified project-related issues were assessed in light of the mitigation measures and management strategies already in place at Mandalong Mine. Where an individual risk was considered unacceptable, or where a knowledge gap was identified, additional mitigation measures and/or management responses were nominated in accordance with the recommendations made as part of the specialist environmental assessments.

The updated Risk Assessment Report, including the Risk Register, is contained within **Appendix I**. The key issues that were specifically addressed in the risk assessment are:

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|---------------------------------------|--------------------|
| • Subsidence; | • Air quality; |
| • Soil and land capability; | • Greenhouse gas; |
| • Agricultural resources/enterprises; | • Noise; |
| • Groundwater; | • Traffic; |
| • Surface Water; | • Visual; |
| • Water management; | • Bushfire hazard; |
| • Biodiversity; | • Social; and |
| • Aboriginal heritage; | • Final land use. |
| • European heritage; | |

The Centennial Risk Matrix adopted, and the management requirements in accordance with the Centennial Risk Standard and Risk Matrix, is summarised in **Table 12**.

Table 12 – Requirements for Risk Management

Risk Ranking	Risk Category	Generic Management Actions
1 to 4	Extreme	Immediate intervention required from senior management to eliminate or reduce this risk.
5 to 9	High	Imperative to eliminate or reduce risk to lower level by the introduction of control measures. Management planning required at senior level.
10 to 15	Significant	Corrective action required. Senior management attention needed to eliminate or reduce risk.
16 to 19	Moderate	Corrective action to be determined, management responsibility must be specified.
20 to 25	Low	Monitor and manage by corrective action where practicable.

A total of 41 risks were assessed, with the majority being ranked as “low” risks. In summary:

Extreme Risk

The only “extreme” risk identified was the potential impact to TransGrid’s 330 kilovolt electricity transmission lines caused by subsidence and resulting in costs to Centennial Mandalong to repair transmission line damage and costs incurred as a result of the interruption to electricity supply.

High Risk

There were no “high” ranking risks identified during the risk assessment.

Significant Risk

Four “significant” ranking risks were identified:

1. Significant loss of vegetation caused by subsidence and/or construction of the Mandalong South Surface Site resulting in loss of habitat;
2. Increased water make caused by additional surface infrastructure and/or underground mining resulting in impacts to the current water management system;
3. Impacts to Centennial-owned infrastructure as a result of bushfires; and
4. Changes to remnant ponding caused by subsidence and resulting in impacts to creek geomorphology and/or creek flows.

Moderate Risk

Nine “moderate” ranking risks were identified:

1. Residential buildings exceeding the SSR standards as a result of subsidence requiring acquisition of properties;
2. Significant impact to other infrastructure, such as roads and telecommunication networks, caused by subsidence resulting in loss of service and costs to Centennial Mandalong to repair damage;
3. Increased risk of bushfires starting as a result of the Project (negligence);
4. Destruction or damage to Aboriginal heritage sites as a result of subsidence and/or construction of the Mandalong South Surface Site;
5. Increased water discharge at Licensed Discharge Point 001 (LDP001) at the Cooranbong Entry Site caused by increased water make resulting in impacts to the receiving aquatic environment;

6. Adverse social impacts resulting in community complaints, damage to the company's reputation and/or loss of amenity;
7. Noise emissions caused by the construction of the Mandalong South Surface Site resulting in community complaints and/or exceedances of application criteria;
8. Greenhouse gas emissions caused by diesel and electricity usage and fugitive coal emissions resulting in global warming and sea level rises; and
9. Traffic associated with the construction of the Mandalong South Surface Site resulting in community complaints and/or noise impacts to sensitive receptors.

Low Risks

The remaining 27 risks were "low" ranking risks requiring minimal, if any, additional management responses beyond those that are already in place at Mandalong Mine or are inherent to the Project.

Section 10.0 contains a comprehensive and relevant assessment of all environmental issues to a level commensurate with their risk.