NSW GOVERNMENT Resources & Energy

OUT14/30226

Mr Paul Freeman
Senior Planner
Mining Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Mr Freeman

Mandalong Southern Extension Project (SSD 5144)
Environmental Impact Statement
Subsidence Assessment

I refer to the Centennial Mandalong Pty Limited application to extend the Mandalong Colliery's existing underground longwall mining operations to the southwest and NSW Trade & Investment, Regional Infrastructure & Services, Division of Resources & Energy (DRE) previous letter dated 12 December 2013.

DRE has reviewed the *Mandalong Southern Extension Project Environmental Impact Statement* (EIS) dated September 2013 and provides the following comments which are directed at specific areas of DRE responsibility for this proposal.

SUBSIDENCE
Two major subsidence issues relating to public safety and built features have been identified as requiring particular attention in the planning approval process:

- High voltage power lines (330kV), and;
- Private residences.

High Voltage Power Lines
The Mandalong Southern Extension project area is traversed by a number 330kV power lines. These power lines link two major power stations as well as supply power to large parts of Sydney. Any interruption to services would potentially have significant state-wide consequences.

The power lines in question include suspension and tensioned towers, in particular several angled turn towers. Two of these power lines will be significantly affected by the proposed mining. There are major feasibility issues relating to the proposed mining as angled turn towers are highly sensitive to subsidence movements and currently there are no established management measures to protect such towers.

Department of Trade & Investment, Regional Infrastructure & Services
Division of Resources and Energy
PO Box 344 Hunter Region Mail Centre NSW 2310
516 High St Maitland NSW 2323
Tel: 02 4931 6666 Fax: 02 4931 6776
ABN 72 189 919 072 www.industry.nsw.gov.au

Options to mitigate against mine subsidence impacts to the angled towers in question include a combination of:

a. Mine design to avoid subsidence of selected towers;
b. Re-routing of part of the affected power lines to where subsidence would be manageable.

The EIS indicates that there is a potential that a section of transmission line 24 (TL24) will need to be relocated. This power line is characterised by a number of high-angled turn towers. The EIS indicates that in the event of a need to relocate a section of this power line then development consent to do so would be required.

Based on the information in the EIS it appears that power line TL24 will be affected early in the mining schedule. It is therefore essential that the management of this power line is addressed at an early stage. Any delay in implementing adequate management measures for the high voltage power lines creates the risk of interruption to power supply or significant sterilisation of coal.

It is not clear from the information provided in the EIS that it will be feasible to relocate the relevant sections of the high voltage power lines.

DRE considers that relocation of the relevant angled towers is an important measure for managing potential subsidence impacts to high voltage power lines. This will provide a balance between protection of power supply and coal resource utilisation at the site.

Private Properties
The EIS indicates that 114 private residences will be potentially affected by the proposed mining.

The EIS includes characterisation of the affected residences, identifying 24 residences of brick construction and with the remainder being of "non-brick" construction. The EIS indicates that no individual structural assessment of private residences has been undertaken at this stage.

Three subsidence issues associated with the proposed mining have been identified in relation to private residences:

i. Six properties potentially at risk due slope instability (rock fall). Detailed slope stability risk assessment for these properties was not carried out as part of the EIS;
ii. Three properties where minimum acceptable (MSB guideline) freeboard above the 1:100 year ARI flood level will not be met;
iii. Uncertainty in the predicted subsidence due to the adopted mine design.

In relation to point iii above, the proponent has adopted a mine layout with panel widths that are in the transitional sub-critical to critical range, i.e. 160m to 200m wide,

in an attempt to exploit the spanning behaviour of the overburden to reduce subsidence.

However, the adoption of such transitional panel widths gives rise to uncertainty in subsidence development and impacts as it noticeably increases the sensitivity of the overburden spanning behaviour to inherent variations in geotechnical conditions across the site. This may lead to development of an irregular subsidence profile which is not possible to predict without an adequate understanding of the geotechnical conditions. An irregular subsidence profile will lead to concentration of tilts and strains which are responsible for damage to built features.

DRE notes that the greatest concentration of private residences coincides with an area of sparser geological and geotechnical information (a lower density borehole pattern) i.e. there is not an adequate understanding of the geotechnical conditions where it is most critical.

The Proponent intends to continue the mine layout design (i.e. panel width) and management practices that have are used at the current Mandalong Mine operation.

It should be noted however that there are significantly more properties that will be affected by the Mandalong Southern Extension Project as compared to the current operation. To date, fewer than 20 privately owned properties with a dwelling have been affected by the current Mandalong mining operation. Further, the management strategies adopted at the current Mandalong Mine for private properties has included the acquisition of almost half of the affected properties.

2.3 Other Issues

DRE considers that other subsidence issues relating to built features and public safety identified in the EIS can be addressed through the Extraction Plan process.

Should you have any enquires regarding this matter please contact Julie Moloney, Principal Adviser, Industry Coordination on (02) 4931 6549.

Yours sincerely

ADRIAN DELANY
ACTING DIRECTOR
INDUSTRY COORDINATION
15.9.14