

APPENDIX C: IPRP TERMS OF REFERENCE

**Terms of Reference for the Independent Pre-Determination Review Panel (IRP) for the
Airly Coal Mine Extension Project (MEP) (SSD 5581)**

Introduction

Centennial Coal Company Limited (Centennial) has accepted that there are some geotechnical uncertainties around the mining systems proposed in the Airly Coal MEP. Those uncertainties were initially proposed to be managed by an independent expert panel during the Extraction Plan process after determination of the Airly Coal MEP. However, the Planning Assessment Commission (Commission), on the advice of the Division of Resources and Energy (DRE) has recommended that the panel be constituted and carry out its review function prior to the determination of the Airly Coal MEP.

These terms of reference for the IRP are based on an initial proposal by Centennial, which was revised by the Department of Planning and Environment (the Department) to closely reflect the Commission's review of the Airly Coal MEP (particularly recommendations 2 and 3), comments received from DRE and the Department's own consideration.

Members of the IRP

Consistent with the advice of DRE and the Commission, the following three members are recommended to comprise the IRP:

- Emeritus Professor Jim Galvin (Galvin and Associates Pty Ltd);
- Mr Ken Mills (SCT Operations Pty Ltd); and
- Mr Don Kay (MSEC Pty Ltd).

In the inability of any one of the above to undertake the role of a member, an alternative can be considered, with the first alternative to be:

- Prof Ismet Canbulat (UNSW Mining Engineering).

Terms of Reference

In accordance with the Commission's recommendation, the IRP should provide advice and recommendations to Centennial and DPE on the following two key aspects of the proposal:

1. The accuracy and reliability of predicted subsidence impacts on sensitive surface features across the Airly Coal MEP application area, but particularly in relation to cliff lines in the vicinity of the areas to be mined and beneath the former New Hartley Shale Mine. This should include consideration of:
 - a) the subsidence predictions made for each proposed mining zone and the angles of draw associated with the proposed mining, including the special case of multi-seam workings proposed beneath the New Hartley Shale Mine interaction zone;
 - b) the long-term stability of pillar systems after extraction, including an assessment of the adequacy of system factor of safety (FoS) and the FoS of individual elements (or

- panels), the final pillar width to height ratios and the geological conditions including soft roof conditions, topographic relief, potential for post-mining flooding and pillar spalling across the proposed depth of workings; and
- c) the adequacy of the proposed size of the "*cliff line zone and zone of first workings*" as a result of the analysis undertaken in 1(a) – (b) and 2(a) inclusive.
2. The adequacy of the management regime in the proposed conditions of consent, including the subsidence impact performance measures, management plans and monitoring requirements, in terms of providing appropriate protection to sensitive surface features. This should include consideration of:
- a) the adequacy of the proposed subsidence impact performance measures in preventing impacts beyond negligible levels on the surface features above the workings in previously un-mined areas with a focus on sensitive surface features such as cliffs and pagoda features;
 - b) the adequacy of subsidence monitoring, pillar system performance monitoring programs and actions that would be taken as part of the proposed adaptive management response, having regard to environmental and safety aspects associated with subsidence monitoring;
 - c) review opportunities for conventional monitoring, cliff movement monitoring, remote monitoring and underground monitoring in order to ensure sufficient data would be obtained to allow calibration of subsidence predictions and inform management decisions such as adaptive management responses, while having regard to the rugged terrain, limitations of access and environmental sensitivities of the overlying Mugii Murum-ban State Conservation Area; and
 - d) an appropriate initial mining area in which to gain data on mining system performance and verify that the mine design parameters are performing as planned.¹

In accordance with the Commission's recommendation, the IRP should review all material regarding subsidence submitted for the Commission's consideration, including information supplied directly to the Commission by the Applicant and its consultant, and comments from DRE and its Principal Subsidence Engineer (including the Minutes dated 12 December 2014 and 2 October 2015).

¹ Centennial advises that, due to the expected high rate of extraction, the entire first proposed mining area of the Airly Coal MEP (approximately 17 panels) may be mined in a matter of 2-3 years. Determination of any initial mining area would need to take into account the context of a larger Stage 1 Extraction Plan area to allow for continuity of extraction while final mine design parameters are established and implemented.