

20 November 2013

630.10123 Response DPI 20131120.docx

Centennial Coal Company Pty Ltd  
Manager  
Western Coal Services Project  
PO Box 198  
Wallerawang, NSW 2845

**Attention: Lyndon Bryant**

Dear Lyndon

## **Response to Department of Planning and Infrastructure Sleep Disturbance**

SLR Consulting Australia Pty Ltd (SLR) has been requested by Centennial Coal Company Pty Ltd (Centennial) to respond to comments by the Department of Planning and Infrastructure (DP&I) on report number 630.10123.00500R2R3 Centennial Western Coal Services Project Noise and Vibration Impact Assessment (NVIA) in relation to sleep disturbance from truck movement during the night.

Concerns have been raised by the DP&I over the predicted maximum noise level, contained in the NVIA, at residence B14 of 64 dBA which exceeds the sleep disturbance goal of LA1(1minute) of 45 dBA.

In relation to sleep disturbance the Environment Protection Authority (EPA) Industrial Noise Policy Application Notes states the following:

*EPA reviewed research on sleep disturbance in the NSW Environmental Criteria for Road Traffic Noise (ECRTN) (EPA, 1999) [now Road Noise Policy]. This review concluded that the range of results is sufficiently diverse that it was not reasonable to issue new noise criteria for sleep disturbance.*

*From the research, EPA recognised that current sleep disturbance criterion of an LA1, (1 minute) not exceeding the LA90, (15 minute) by more than 15 dB(A) **is not ideal**. Nevertheless, as there is insufficient evidence to determine what should replace it, EPA will continue to use it as a guide to identify the likelihood of sleep disturbance. This means that where the criterion is met, sleep disturbance is not likely, but where it is not met, a more detailed analysis is required.*

The EPA Road Noise Policy states:

*From the research on sleep disturbance to date it can be concluded that:*

- *maximum **internal noise levels** below 50–55 dB(A) are unlikely to awaken people from sleep*
- *one or two noise events per night, with maximum **internal noise levels** of 65–70 dB(A), are not likely to affect health and wellbeing significantly.*

As previously detailed the predicted maximum noise levels are generated from trucks using the link road and/or the Mount Piper Haul Road. The sound power level used in the NVIA was taken from measurements conducted on Mt Piper and Wallerawang Haul Roads. The 124dBA maximum sound power level (SWL) was due to an unloaded truck hitting a discontinuity in the road surface (pot hole). It is considered that this type of maximum event is very much a worst case and is unlikely to occur if the haul road is well maintained. The existing haul roads operate with an established Noise Management Plan and Haul Road Inspection Protocols which Centennial has made a commitment to consolidate and update as necessary as part of the Western Coal Services Project.

A more typical maximum sound power level generated by trucks on the Mt Piper Haul Road (from measured results in Blackmans Flat) would be 115 dBA. Revised sleep disturbance predictions for the typical case for Blackmans Flat are contained in **Table 1**.

**Table 1 Predicted Typical Sleep Disturbance Noise Levels – Blackmans Flat**

Location	Predicted External Maximum Noise Level LA <sub>max</sub> (dBA)	Predicted Internal Maximum Noise Level LA <sub>max</sub> (dBA)	EPA External Goal LA <sub>1</sub> (1minute) (dBA)	EPA Internal Goal Unlikely to Cause Awakening LA <sub>1</sub> (1minute) (dBA)
B2	47	37	45	50 to 55
B4	48	38	45	50 to 55
B5	49	39	45	50 to 55
B6	49	39	45	50 to 55
B7	50	40	45	50 to 55
B8	50	40	45	50 to 55
B9	48	38	45	50 to 55
B10	48	38	45	50 to 55
B11	48	38	45	50 to 55
B12	47	37	45	50 to 55
B13	50	40	45	50 to 55
B14	55	45	45	50 to 55
B15	44	34	45	50 to 55
B16	36	26	45	50 to 55
B17	30	20	45	50 to 55
B18	<30	<30	45	50 to 55

As can be seen from **Table 1** although predicted external noise levels at some locations exceed the EPA sleep disturbance trigger level of 45 dBA, predicted internal noise levels at all locations are below a level which is likely to cause a disturbance to sleep. At the most affected residential receiver (B14) predicted internal noise levels of 45 dBA are 5 dBA below a level likely to cause an awakening reaction.

It should also be noted that haul trucks currently use the Mt Piper Haul road at night and therefore the maximum noise levels from trucks will not change as a result of the Western Coal Services Project.

In conclusion if internal haul roads are kept in a good state of repair then the predicted sleep disturbance levels contained in **Table 1** would be more typical of maximum noise levels in the vicinity of the Western Coal Services Project.

I trust the preceding is suitable for your current requirements. If you require any additional information please contact me on 02 4037 3210 or email [jcotterill@slrconsulting.com](mailto:jcotterill@slrconsulting.com).

Yours sincerely

A handwritten signature in black ink, appearing to read 'John Cotterill', with a stylized flourish at the end.

JOHN COTTERILL  
Technical Director Acoustics