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Air Quality Peer Review

BYLONG COAL PROJECT
Environmental Impact Statement

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Mr Nathan Cooper
Hansen Bailey
cc Belinda Sinclair

6 July 2015 IA061600

Dear Nathan

Review of Bylong Coal Project Air Quality and Greenhouse Gas Assessment report

I have completed a review of the air quality and greenhouse gas assessment report, prepared by Pacific Environment Limited (PEL). The document reviewed was titled:

- *"Bylong Coal Project – Air Quality & Greenhouse Gas Assessment"*. Prepared by Pacific Environment Limited. Job ID 05832. Dated 1 July 2015.

This letter provides a brief overview of the Project, the review methodology and review outcome.

I am an Atmospheric Scientist with 17 years' air quality consulting experience. I have been specialising in meteorological studies, air dispersion modelling, emission estimation and air quality assessment for various industry sectors, but predominantly for coal mining projects and operations in the Hunter Valley. It is in this capacity that I have undertaken the review.

1. Background

KEPCO Bylong Australia Pty Ltd (KEPCO) is seeking approval for the construction and operation of the Bylong Coal Project. This Project involves the recovery of approximately 124 Million tonnes of Run of Mine coal by open cut and underground mining methods. The Project is fully described in the Environmental Impact Statement (EIS) (Hansen Bailey, 2015). Pacific Environment Limited has prepared the accompanying air quality and greenhouse gas assessment, which is the subject of this review.

The main objective of the assessment was to address the Secretary's Environmental Assessment Requirements (as relevant to the assessment of air quality), as well as the assessment requirements of the Environment Protection Authority (EPA). The PEL assessment was based on the use of an air dispersion model to predict dust concentration and dust deposition levels in the vicinity of the project, including at the nearest sensitive receptors. Three operating years of the mine life were considered and the modelling referred to the procedures outlined by the EPA in their *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (DEC, 2005).

In terms of potential impacts, the main conclusions of the PEL assessment were as follows:

- *"no private sensitive receptor is predicted to experience ground level concentrations of PM_{10}, $PM_{2.5}$, TSP and dust deposition above the relevant assessment criteria, due to the Project alone or cumulatively"*.

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- *"The maximum predicted 1-hour NO_2 from blasting… is less than 40% of the ambient air quality criteria at any sensitive receptor".*
- *"average annual scope 1 [greenhouse gas] emissions would represent approximately 0.02% of Australia's commitment under the Kyoto Protocol".*

2. Review Methodology

This review has been undertaken with consideration of the Secretary's Environmental Assessment Requirements (as relevant to the assessment of air quality), and the EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (DEC 2005).

Specifically, the review has focussed on:

- Air quality impact assessment criteria.
- Model selection and approach.
- Meteorological data and methods for inclusion.
- Background levels and approach to cumulative effects.
- Emission inventories and calculations.
- Identification of sensitive receptors.
- Accuracy/clarity of presentation and interpretation of results.
- Clarity and adequacy of impact assessment.
- Proposed mitigation and monitoring.

Review of potential health effects of airborne particulate matter was outside the scope of this review.

This review was also carried out by considering:

- Consistency with the *"Approved Methods for the Modelling and Assessment of Air Pollutants in NSW"* (DEC 2005).
- Requirements from the Department of Planning and Environment *Director-General's Environmental Assessment Requirements*.
- Emission factors from *"National Pollutant Inventory Emission Estimation Technique Manual for Mining, Version 3.1"* January 2012 (SEWPaC 2012).
- Emission factors from "*Compilation of Air Pollutant Emission Factors*" (US EPA 1985 and updates).
- Consistency with "*NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining*" (Katestone 2011).
- Consistency with *The Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard Revised Edition* (WRI/WBCSD, 2004), *National Greenhouse and Energy Reporting (Measurement) Amendment Determination 2014* (No. 1) and the *National Greenhouse Accounts (NGA) Factors 2014* (DoE, 2014).

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3. Review outcome

In my opinion, the air quality assessment (based on dispersion modelling) has been undertaken in a manner which is consistent with the requirements of the EPA (DEC 2005) for these types of projects. The methodology used in this assessment has been appropriate and applied in a conservative manner, in order to determine the potential air quality impacts. The conclusions of the assessment are supported by the model predictions.

Yours sincerely

Shane Lakmaker

Senior Associate (Air Quality)

References

DEC (2005) *"Approved Methods for the Modelling and Assessment of Air Pollutants in NSW"*, Prepared by the Department of Environment and Conservation (now EPA), August 2005.

DoE (2014a) *National Greenhouse and Energy Reporting (Measurement) Amendment Determination 2014 (No. 1)*

DoE (2014b) *National Greenhouse Accounts (NGA) Factors 2014*.

Katestone (2011) "*NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining*". June 2011.

SEWPaC (2012) "National Pollutant Inventory Emission Estimation Technique Manual for Mining, Version 3.1". January 2012. Department of Sustainability, Environment, Water, Population and Communities.

US EPA (1985 and updates) "*Compilation of Air Pollutant Emission Factors*", AP-42, Fourth Edition.

WRI/WBCSD (2004) *The Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard Revised Edition*