NSW GOVERNMENT | Planning & Environment

Ms Samantha McLean
Executive Director
Independent Planning Commission NSW
Level 3, 201 Elizabeth Street
Sydney NSW 2000

Dear Ms McLean Sam

Dartbrook Coal Mine Modification 7 (DA 231-7-2000 MOD 7) - Additional Information

I refer to the letter from the Commission, dated 9 May 2019, requesting additional information to facilitate the Commission's determination of Dartbrook Coal Mine Modification 7.

The Department has prepared detailed responses to each of the Commission's requests in Attachment A.

If you wish to discuss this matter further, please contact me on [redacted]

Yours sincerely

Michael

Mike Young 4/6/19.
A/Executive Director
Resource Assessments and Compliance

Attachment A

Economics

The Commission has requested advice from the Department in relation to the following aspects of the cost-benefit analysis (CBA):

1. *Coal price and quality assumptions*

AQC Dartbrook Management Pty Ltd (AQC's) CBA relied on a coal price assumption of USD $73/tonne or AUD $95/tonne based on an USD/AUD exchange rate of 0.77 and a coal product ranging from 15-24% ash and 5,500 kcal/kg energy. This coal quality generally aligns with the Platts Newcastle 5,500 net-as-received (NAR) benchmark price which currently sits around USD $62/tonne or AUD $90/tonne based on a current exchange rate of 0.69. However, it is important to note that the price used in the CBA is intended to reflect an average price over the next 9 years rather than today's current market rate.

In reviewing AQC's coal royalty estimates, the Division of Resources and Geoscience (DRG) considered an average coal price of AUD $90/tonne would be reasonable. Whilst AQC's assumed price is somewhat higher than DRG's assumed price (and today's market rate), the Department notes that this AUD $5 difference (5.6%) would not materially affect the CBA outcomes.

2. *Tax, royalty and Voluntary Planning Agreement (VPA) payments*

AQC's CBA estimated that it would contribute $14 million net present value (NPV) in company tax benefits to NSW based on 90% Australian-ownership and a 30% company tax rate of which 32% would be attributable to NSW.

The VPA development contributions were not incorporated into the CBA, however the VPAs were considered under Section 5.6 of the Department's Assessment Report.

3. *Capital cost assumptions*

The EIA estimates that the modification would require additional capital expenditure of $15 million. This expenditure is largely required for altering the coal clearance system. The Response to Submissions (RTS), later clarified that the additional haul road sealing would cost approximately $80,000 and the total capital expenditure required for recommissioning the mine would be in the order of $45 million.

As discussed in the EIA, the CBA to NSW is not sensitive to changes in capital costs.

4. *Head count for operation*

The EIA estimates that the modification would create up to 26 construction jobs and 88 operational jobs. Under the CBA, the net economic benefits to these workers are estimated to be $8 million NPV based on a mining wage premium.

5. *Site rehabilitation costs*

Decommissioning and rehabilitation costs are estimated to cost $9 million. These costs would be incurred with or without the modification therefore they are not considered an 'additional cost' and have therefore not been considered in the CBA for the modification.

6. *Greenhouse gas emissions (GHGEs)*

As discussed in section 5.8 of the Department's Assessment Report, AQC estimates that, over the 10-year life of the modification, it would emit approximately 3.69 Mt CO2-e from electricity use and fuel consumption (ie Scope 1 and 2 emissions). Under the CBA, these emissions are estimated to cost less than $0.1 million NPV to NSW.

On 23 April 2019, AQC provided additional information to the Commission including an estimate of Scope 3 emissions. These emissions were estimated to be 40.1 Mt CO2-e based on undertaking bord and pillar mining for the remainder of the mine life. If AQC instead reinstated the approved longwall mining, these emissions would be in the order of 126.3 Mt CO2-e.

In accordance with the NSW Government's *Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals* and supporting technical notes, Scope 3 emissions have not been considered in the CBA, as they would be accounted for by the respective consumer countries.

The Department remains of the view that the proposed bord and pillar mining would reduce greenhouse gas emissions compared to the approved longwall mining because less coal would be extracted and this coal is already approved for extraction.

7. *Minimal or no costs for impacts (greenhouse gas, amenity, health agricultural and equine industries)*

As discussed above, the CBA estimates that greenhouse gas emission would cost less than $0.1 million NPV to NSW. Other indirect environmental, social and transport-related costs were not considered significant enough to materially impact the CBA and have therefore not been quantified.

8. *Costs associated with the reopening and operation of the coal washery*

AQC has estimated that reopening the coal washery would cost approximately $10 million. This cost has not been considered in the CBA as it does not fall within the scope of the modification. In the end this cost would accrue to AQC and not impact on the CBA for NSW.

Mine Safety – Resources Regulator

The Commission has requested clarification from the Department to assist in considering issues raised in relation to mine safety. In particular, did the Resources Regulator review and provide advice in relation to the proposed conditions of approval include provision for:

1. *the nature and magnitude of the risk of the Project;*
2. *how the Project complies with the environmental assessment criteria[1] of the Environmental Compliance Operations;*
3. *potential safety issues and risk of spontaneous combustion, with regard to the previous high gas levels experienced;*
4. *safety issues associated with high gas levels anticipated using the bord and pillar mining method and longwall mining should these methods be resumed; and*
5. *safety and suitability of the proposed mine shaft.*

The Department acknowledges the community concerns over mine safety, particularly in light of historical incidents that have occurred on the site. The Department notes that operations ceased in late 2006 due to geological constraints causing operating difficulties. These issues included gas drainage, spontaneous combustion risk management and geotechnical issues. The mine has since been on care and maintenance. The modification seeks to extract coal from the Kayuga Seam using bord and pillar first workings extraction methods. The revised mining methodology is proposed over the approved longwall mining as it would reduce risks associated with the mine's geological conditions (including spontaneous combustion, gas management and geotechnical conditions). The Kayuga Seam was prioritised in this modification over other potential underground targets due to its relatively low gas content, existing underground access and increased geological understanding due to previous mining experience and exploration work.

The Department notes that AQC has separately responded to the Commission on this matter on 23 April and 22 May 2019, and providing additional information on its safety and health

[1] The Department understands that these criteria are internal standards used by the Resources Regulator's Environmental Compliance Operations Unit to assess if sustainable rehabilitation outcomes can be achieved.

management system that would be implemented to mitigate health and safety risks. AQC also noted that since 2006, the industry has made significant technological improvements in gas and spontaneous combustion modelling, monitoring and management techniques, and that AQC would utilise these technologies at the mine.

The Department also sought the advice of the Resources Regulator on the above questions and its response is attached to this letter (see Attachment A1). In this response, the Resources Regulator confirmed that the proposed modification does not introduce significant safety issues and that the existing provisions of the NSW work, health and safety legislative framework can be appropriately applied to manage mine safety risk at Dartbrook. Resources Regulator has also proposed four minor changes to the recommended notice of modification to clarify its regulator responsibilities. The Department endorses these changes.

Groundwater – Department of Industry – Water (DoI Water)

The Commission has requested clarification from the Department that DoI Water has considered the event that the proposed shaft into the Hunter Tunnel is within the Hunter River alluvium and will incur groundwater ingress, and that this has been adequately reflected in the proposed conditions of approvals, in particular:

1. *adequate protection measures consistent with the proposed measures by the Proponent in its RTS i.e. conducting a test bore of the site prior to the commencement of any shaft construction and lining the shaft if alluvium water is encountered; and*
2. *adequate assessment of the interference of any aquifer including the obtainment of necessary and required approvals.*

The Department remains satisfied that it has carefully considered and addressed all potential groundwater impacts associated with the proposed delivery shaft. As discussed in Sections 4.3 and 5.4 of the Department's Assessment Report, the proposed shaft is on the fringe of the Hunter River alluvium, and therefore in its Response to Submissions (RTS), AQC committed to drilling a preliminary test bore to identify if alluvial groundwater is present. If present, AQC would install appropriate sleeving or casing to effectively limit seepage into the existing Hunter Tunnel. AQC currently holds a Water Access Licence (WAL) under the Hunter Unregulated – Hunter Regulated River Alluvial Water Source that could account for any minor seepage from the delivery shaft. No other licences/approvals under the *Water Management Act 2000* would be required as Aquifer Interference Approvals are yet to commence under this act.

As the proposed test bore and lining of the shaft were clearly committed to by AQC in its RTS, the Department did not consider it necessary to impose a specific condition on this matter. Generally, in drafting conditions, the Department does not reflect all commitments made by an applicant in the conditions of consent, particularly if they relate to lower risk activities. Compliance with these commitments is instead captured under condition 1.1(a)(xi), which requires AQC to undertake the development generally in accordance with the Environmental Assessment (EA) and RTS, including any commitments made in these documents.

DoI Water reviewed the EA, RTS and draft conditions, and raised no matters of concern, including in respect of the location or construction of the proposed delivery shaft.

Impact on Upper Hunter Equine Critical Industry Cluster (ECIC)

The Commission has requested the Department's advice in relation to:

1. *the suitability of mining beneath mapped ECIC;*
2. *the impact of bord and pillar mining beneath ECIC; and*
3. *possible impacts if the currently approved longwall mining beneath mapped ECIC is recommenced.*

The Department notes that, as longwall mining is currently approved under DA 231-7-2000, there is no requirement to re-asses its potential impacts on overlying mapped ECIC. The proposed bord and pillar mining would occur within this approved mining area and the existing mining lease, ML 1497. Bord and pillar mining would reduce subsidence levels to less than 80 mm (ie far less than the approved long wall mining), therefore any subsidence impacts to overlying surface features

would be negligible. Further, this mapped ECIC does not appear to support active equine industries.

However, as stated in its response of 22 May 2019, AQC considered that the approved and proposed underground mining would not preclude equine industries or agricultural enterprises from operating on the surface. The Department agrees with this position and notes that there are sufficient measures in place to protect overlying land uses, particularly agricultural enterprises. Under the current conditions of consent, any landowner that suffers from a loss of land capability or agricultural productivity, as a result of the development, has the right to request rectification, compensation or acquisition from AQC. In addition to this, under Modification 7, the Department has proposed a specific subsidence impact performance measure for agricultural enterprises to ensure that second workings (ie longwall panels) do not exceed a negligible loss of land capability or agricultural productivity. For all future second workings, AQC would be required to prepare an Extraction Plan which would also include a Land Management Plan which provides for the management of potential impacts and/or environmental consequences of the proposed second workings on land in general, with a specific focus on agricultural enterprises.

Cumulative Impact of Air Pollution

The Commission has requested clarification from the Department to assist in the Commission's consideration of the Project's air quality impacts:

1. *How do the proposed conditions of approval monitor and manage cumulative impacts of air pollution and what is the relationship, if any, of this approach with the EPA's monitoring network;*
2. *Is the Department aware of any frequent and significant exceedances of the air quality criteria in the airshed? and if so, did the Department consider these in their assessment report?*

As discussed in Section 5.1 of the Department's Assessment Report, the Department has recommended contemporising the air quality conditions to align with its current drafting standards, the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW 2016* and the non-discretionary development standards under clause 12AB(4) of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP). This includes imposing stricter incremental (ie project alone) 24-hour and cumulative (ie all sources) annual air quality standards for PM_{10}, $PM_{2.5}$, and TSP. AQC would be required to ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not exceed these criteria at any residence on privately-owned land. AQC would also be required to monitor particulate matter levels at representative locations around the development to demonstrate compliance with these criteria.

The Upper Hunter Air Quality Network (UHAQMN) was established in 2012 in partnership with all Upper Hunter coal mines and power stations in response to community concerns over the effect of these industries on regional air quality. This network currently includes 14 ambient air quality monitors, with rolling 24-hour cumulative results published hourly online, which allows the public to stay readily informed of air pollutant levels in their local area. Mining companies can also rely on these monitors to support their compliance monitoring networks. However, additional analysis and validation would be required to assess compliance.

The closest monitors to Dartbrook are in Aberdeen and Muswellbrook. Analysis of recent results from these monitors indicates that the area experiences elevated daily PM levels a few days per year and that these events are most often due to regional dust storms, bushfires or other extraordinary events. The Muswellbrook monitor also commonly records exceedances of the annual average $PM_{2.5}$ standard, whereas annual average PM_{10} levels at Aberdeen and Muswellbrook are commonly just below the applicable standard.

AQC's air quality impact assessment (AQIA) aligns with these findings. In particular, that background PM levels are high in the area. As such, despite being a small contributor, the proposed modification would result in 9 receivers experiencing exceedances of the cumulative annual average $PM_{2.5}$ criterion. The Department has recommended voluntary acquisition rights for these 9 receivers in accordance with the *Voluntary Land and Acquisition Mitigation Policy*.

Lastly, the Department notes that a consent authority is not prevented from granting consent if the non-discretionary development standards under the Mining SEPP cannot be complied with. Nevertheless, compliance with these standards is carefully considered as part of the merit assessment and in recommending conditions to mitigate these impacts.

A number of public submissions, for this modification and other developments in the Upper Hunter, have raised concern that the airshed near Muswellbrook and Aberdeen is already at 'capacity' and that no further dust-generating developments should be approved. The Department acknowledges this concern and notes that it has carefully considered the background air quality environment in its assessment of this modification. However, as this mine is already approved, the Department should only consider the incremental impacts associated with the modification, rather than assessing it as if it were a new development.

The Department remains of the view that it has carefully considered air quality impacts of the modification, including cumulative impacts, and that, subject to the recommended conditions, the impacts would be manageable and acceptable.

NSW GOVERNMENT | Planning & Environment Resources Regulator

MINUTE

Mine: Dartbrook Underground Coal Mine

From: Garvin Burns – Chief Inspector of Mines

To: Megan Dawson

Date: 03/06/2019

Ref: AREQ0003286

IPC Assessment of Dartbrook Underground Coal Mine Proposal – Request for additional information

The Resources Regulator has two key functions:

- The Mine Safety Inspectorate has expertise regarding risk management practices applied to mining operations. This expertise is engaged to ensure the regulator can fulfill its function as prescribed in section 152 of the Work Health and Safety Act 2011 (WHS Act).
- The Compliance Operations Unit is focused on rehabilitation outcomes being compliant with conditions applied to authorities issued under the Mining Act 1992.

The Resources Regulator, in fulfilling these functions, is focused on undertaking assessment activities at mine sites to ensure mine operators implement and maintain effective risk controls to reduce the risk to workers as low as reasonably practicable and give due regard to the principle that workers and other persons should be given the highest level of protection against harm to their health, safety and welfare from hazards and risks arising from work.

Underground coal mining has inherent risks. Examples of these include:

- ground and strata failure;
- inrush and inundation;
- airborne contaminants;
- fire and explosion; and
- subsidence

Any determination as to mine operator capacity to manage risk must be based on the assessment of the adequacy of risk controls identified in Principal Hazard Management

Plans and then implemented by the mine operator to manage these risks as low as reasonably practicable.

In considering the specific issues raised in correspondence submitted by the IPC to DPE on the 9 May 2019:

1. There is nothing in this correspondence that gives cause for the Resources Regulator to alter its position as outlined in our previous response on this matter.
2. It is the view of the regulator the proposed modification does not introduce a level of risk to workers that differs to other underground coal operation in NSW, and the existing provisions of NSW WHS legislation can be appropriately applied to manage this risk.
3. Not-withstanding the above comments, some of the issues identified require specific responses:
    a. The Compliance Operations unit has reviewed the proposed conditions of approval and consider that sustainable rehabilitation outcomes are achievable and that any identified risks or opportunities can be effectively regulated through the conditions of mining authorities issued under the Mining Act 1992. To avoid confusion regarding the regulatory roles of the agencies regarding rehabilitation and the Mining Operations Plan, it is recommended that reference to “DRG” be replaced with “Resources Regulator” in the following conditions:
        - 2.1(a)
        - 2.1(d)
        - 2.1(e)
        - 12.1(a) – to add Resources Regulator
    b. The regulator is unaware of any spontaneous combustion issues relating to extraction undertaken in the Kayuga Seam at Dartbrook. There is no relationship between “gas” levels and the likelihood of spontaneous combustion.
    c. The regulator cannot support the proposition that high gas levels can be anticipated using the “bord and pillar” method. This will be dependent on the in-situ gas content of the virgin coal, and the competency of the ventilation arrangements employed by the mine operator to dilute any gas that may accumulate. It is noted that in the *Proponents Additional Comments to the Commission* it is stated the Kayuga in-seam gas content is considered relatively low, and there is no intent on behalf the proponent to undertake pillar extraction. In any case a mine operator has a legal obligation to maintain gas levels at a mine to within prescribed limits, regardless of the mining method.