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Airly Underground Coal Mine – Mod 3 – Production, Workforce and Train Movement Increases (SSD5581-Mod-3)

Resource & Economic Assessment

Division of Resources & Geoscience

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Executive summary

The Division of Resources and Geoscience assessed the Airly Underground Coal Mine - Modification 3 (SSD-5581-Mod-3) - Production, Workforce and Train Movement Increases Project (the Project or Modification) submitted by Centennial Coal Company Limited on behalf of Centennial Airly Pty Limited (Centennial or the Proponent).

The Division determined the Project will:

- increase the run-of-mine (ROM) coal production rate from the approved 1.8 million tonnes per annum (Mtpa) to 3.0 Mtpa.
- gain maximum operational productivity with the introduction of a second miniwall.
- be an efficient use and recovery of the resource.
- ensure an appropriate return to the NSW Government including;
  - $39 million royalties (current dollars)
  - $540 million total revenue (current dollars)
- provide an additional 45 jobs at the existing Airly mine.

Introduction

State significant development is regulated under the *Environmental Planning and Assessment Act 1979* (EP&A Act), which requires a proponent to apply to the Department of Planning, Industry and Environment for development consent, supported by a Modification Report (MRT).

This Resource & Economic Assessment (REA) conducted for the Modification by the Division assessed:

- the social and economic benefits to NSW including royalties, capital investment, revenues and jobs.
- the resource/reserve estimates stated in the proponent's MRT.
- if the Project is an efficient development of the resource, that resource recovery is optimised and waste minimised.
- if the Project will provide an appropriate return to NSW.

The objects of the *Mining Act 1992* are to encourage and facilitate the discovery and efficient development of mineral resources in NSW.

Of particular relevance to this REA are Section 3A Objects:

- to recognise and foster the significant social and economic benefits to NSW that result from the efficient development of mineral resources.
- to ensure an appropriate return to the State from mineral resources.

The relevant section of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 is Part 3, Clause 15: Resource Recovery requires that resource recovery is efficient, optimised and minimises waste.

Project overview

Current mine history and ownership

Airly Mine Underground Mine (Airly Mine) is located about five kilometres northeast of Capertee in the Western Coalfield.

Airly Mine commenced operations in 1998. The mine produces thermal coal that supplies the domestic and export markets.

The mine currently operates under State Significant Development (SSD) 5581 consent relating to the Airly Mine Extension Project. The Project was approved on 15 December 2016 and allows mining operations at Airly Mine for a period of 20 years from the date of commencement (31 January 2017), with rehabilitation to be undertaken after this period. The consent will lapse on 31 January 2037 and has been modified two times under Section 4.55(1A) of the EP&A Act, with Modification 1 approved in August 2018 and Modification 2 approved in July 2019.

The proposed Mangoola Coal - Continued Operations Project

The proposed modifications to the Project will allow:

- an increase in the ROM coal production rate from the approved 1.8 Mtpa to 3.0 Mtpa.
- an amendment to the approved 20-year mine schedule for the increased production rate.
- an increase in workforce from the approved 155 full time equivalent personnel to 200 personnel.
- an increase in the movement of laden coal trains and water trains leaving the site from the approved average frequency of 2 trains per day to 3 trains per day over any calendar year but maintaining the approved maximum 5 trains per day leaving the site on any day.
- underground blasting (or shot-firing) activities for the removal of geological structures in the event they are encountered within the mining areas.

The increase in production rate will be achieved through a combination of:

- the proposed increase in workforce.
- the installation and operation of additional underground mining equipment.
- an improved strategy for underground mining equipment utilisation and availability.

The modification's proposed increase in coal production limit will allow operational flexibility to Airly Mine and will also improve the mine's economic viability. A consequence of this operational flexibility is that the mine can respond to market opportunities that may present themselves. This flexibility has positive implications for the State, as the ability to increase production in favourable markets would result in increased royalty returns to NSW.

The Division notes that this REA has been undertaken in accordance with commercial-in-confidence resource and mine schedule data supplied by the proponent.

Size and quality of the resource

No change to the total resource recovery or mining method is proposed in the Modification. The Division has verified that the Project will recover about 32.7 Mt ROM coal from 2019 to 2034.

The Proponent has completed coal resource and reserve estimation for the Project in accordance with the Australasian Code for Reporting Exploration results, Mineral Resources and Ore Reserves (the JORC Code). The JORC Code is an industry-standard professional code of practice that sets minimum standards for public reporting of mineral exploration results, mineral resources and ore reserves.

Centennial has consent to beneficiate 1.8 Mtpa of ROM coal through a Coal Handling and Preparation Plant (CHPP). The CHPP is not yet constructed. The Division has assumed all coal will continue to be sold as ROM coal and that Centennial will not construct the CHPP over the life of the Airly Mine.

Centennial sells all coal as ROM coal. This is typically a split of domestic (60%) and export (40%) thermal coal. Centennial estimates the Modification will increase the export thermal coal market split to about 70% of production.

Centennial only produces one high ash coal product which typically ranges from 23 – 25% ash content. No change to product specifications is expected due to the Modification. A review of coal quality data confirms the proposed product quality, target export market split, and yield are achievable.

Resource recovery

Centennial assessed several mine designs and determined the current and approved mine design for the Project is the most appropriate. No change to the total resource recovery or mining method is proposed in the Modification. The Modification will not affect total resource recovery but increases the rate of recovery to extract the same resources over a shorter period.

Many factors constrain the mine plan, extraction method and resource recovery at the Project. These include geological features, environmental constraints, and commercial viability.

The current mine design uses a combination of miniwall and continuous miners to extract coal. The dimensions, location and method of mining is determined by the overlying strata. In all areas, the mining method is selected to balance the subsidence related impacts of mining but also optimise resource recovery.

The basal 2.7–2.8 metres of the Lithgow seam is mined at the Airly Mine. Overlying plies of the Lithgow and Lidsdale seam are too high in ash content to be incorporated into the current working section. No other seams with potential to be commercially viable to mine overlie the Lithgow Seam.

After examination of the proponent's MRT, the Division considers the Project an efficient development of coal resources that provides an appropriate return to the State.

Economic benefits of the resource

Over the life of the Project, assuming coal would be sold on the export and domestic thermal markets, the Division has estimated that the value of the coal produced would be around $540 million in current dollars, with the net present value of this revenue stream of around $465 million at a real discount rate of seven percent.

Export income is vital for the health of both the NSW and Australian economies. Export income also contributes to the Nation's balance of trade, which provides benefits to both the state and Australian credit ratings, plus it generally has a positive impact on the value of the Australian dollar exchange rate. If approved, the additional export income from the Project would contribute to the around $23 billion (2018-19 total) of coal exports annually from NSW. Coal exports are the largest value export from NSW, representing around 40 percent of the state's merchandised goods exports.

Some of the coal from the Project could be sold into the domestic thermal market for electricity generation for NSW, depending on supply from other local coal mines. A proportion of coal from the Project could be sold to the nearby Mt Piper power station acting as an alternate supplier . The Airly Mine currently has a short-term contract to supply 0.5 million tonnes to Mt Piper for 6 months.

The Project, if approved, would provide up to 45 additional full-time operational jobs at the existing Airly Mine. The Division estimates that these direct mine jobs would result in around an additional around 180 indirect jobs in both mine and non-mine related services. There would be no additional capital investment from the Project to the existing Airly Mine.

The Project if approved would allow maximum operational productivity to be achieved at the existing Airly Mine by the introduction of a second miniwall. Two fully operational miniwalls would take production substantially past the current maximum consented production of 1.8 Mtpa. The Division is of the opinion that the Project maximum production rate of 3 Mtpa is required.

The Division also notes from the Economic Assessment prepared by the Proponent's economic consultant (Agis Group) that the Project would deliver a net benefit to NSW in NPV terms of $35 million.

Royalty calculation

The Project is a modification to an existing underground mine therefore a royalty rate of 7.2 percent applies to all saleable production. This rate is applicable to the net disposal value. Net disposal value is the price received per tonne minus any allowable deductions. The main allowable deduction is for coal beneficiation, which is either $3.50 per tonne for coal subjected to a full washing cycle, $2.00 per tonne for coal subjected to a simple washing process, or $0.50 per tonne for coal that is washed and screened.

As all ROM coal from the operation is only washed and screened, a deduction of $0.50 per tonne from the value of coal produced applies. A deduction for levies also applies which would amount to no more than $1.00 per tonne. Hence allowable deductions for royalty for the Project are $1.50 per tonne.

One of the most important assumptions in the calculation of future royalty is the estimate of a future coal price over the life of a project. Coal from the Project is expected to be sold into the export and domestic thermal coal markets. A review of coal quality information by the Division suggests this is achievable. Coal from the Project typically has a higher ash content than most export thermal coal mines in NSW and therefore would attract a lower average price due to its lower energy content.

Coal price forecasting is inherently difficult and over the project life variations in coal prices are expected. An average combined price of around A$95 per tonne for export and domestic thermal coal from the Project have been used by the Division, with the domestic coal price being at a lower price than the export coal. The export price has been adjusted downwards by the Division based on the energy content of the product to be produced from the Project. The Division considers these prices to be conservative and at the bottom end of potential coal price scenarios. The domestic coal from the Project has been assumed to attract the export parity price.

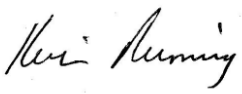
Another important aspect of future royalty calculation for a proposed coal project is estimation of future annual production. The total amount of coal to be mined from the Airly mine does not change with this Project, the Project (if approved) would allow an increase in the maximum annual production from 1.8 Mtpa to 3 Mtpa.

Using the above parameters, the Division has calculated that the State will receive around $39 million in current dollars, and around $33 million in NPV terms (real discount rate of 7 percent) in royalty from the Project. In a typical year at full production the NSW Government would receive around $7 million in royalties from the Project.

Departmental Assessment

Assessed by	Unit	Branch
Assessing Officer: Tully Matthews Senior Geologist	Mineral Resource Assessment – Strategic Resource Assessment & Advice	Geological Survey of NSW
Assessing Officer: Bryan Whitlock Senior Resources Analyst	Resource Economics	Resources Policy, Planning & Programs
Assessing Officer: Adam W. Banister Senior Advisor	Assessment Coordination Unit – Resource Assessments	Resource Operations

Approvals

Approved by	Signature	Date
Approving Officer: Dr Kevin Ruming Director Strategic Resource Assessment & Advice		21/11/2019
Approving Officer: Tamsin Martin Director Resources Planning & Programs		22/11/2019
Endorsing Officer: Dr David Blackmore Director Resource Assessments		25/11/2019