NSW GOVERNMENT
Planning & Environment
Resources & Geoscience

Newstan Colliery Modification 8

Extended First Workings

Division of Resources & Geoscience

Resource & Economic Assessment

October 2018

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Introduction

State significant development is regulated under the Environmental Planning and Assessment Act 1979, which requires a proponent to apply to the Department of Planning and Environment for development consent, supported by an Environmental Assessment (EA).

This Resource & Economic Assessment, conducted for the Newstan Colliery Modification 8 – Extended First Workings (the Project or Modification) by the Division of Resources & Geoscience (the Division), is designed to review the resource/reserve estimates stated in the proponent's EA and whether the Project will deliver significant social and economic benefits to New South Wales from the efficient development of the resource and that resource recovery is optimised while minimising waste. It is also to ensure an appropriate return to the State from developing the resource. The Division has conducted an independent calculation of the royalty to be generated over the life of the Project.

The objects of the *Mining Act 1992* are to encourage and facilitate the discovery and efficient development of coal resources in New South Wales. Of particular relevance to this Resource & Economic Assessment are:

Section 3A objects:

(a) to recognise and foster the significant social and economic benefits to New South Wales that result from the efficient development of coal resources, and

(d) 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 which requires that resource recovery is efficient, optimised and minimises waste.

Project Overview

Newstan Colliery (Newstan) is an existing underground coal mine 100% owned and operated by Centennial Newstan Pty Ltd a subsidiary of the Centennial Coal Company Limited (Centennial Coal or the Proponent). Centennial Coal is the largest supplier of coal for the state's coal fired power stations. The colliery is located 25 kilometres southwest of Newcastle. Newstan began operations in 1887 and is one of the oldest coal mines in New South Wales. In 2014, the mine was placed on Care and Maintenance for a number of reasons, one of which was difficult operating conditions due to unforeseen geological factors.

Coal handling and distribution activities continue to be undertaken at the Newstan Surface Site as part of the Northern Coal Logistics Project.

The Project seeks approval to undertake investigations for the recommencement of mining in the southern portion of the Newstan holdings. As part of these investigations, Newstan propose to undertake first workings to determine the presence, throw and strike of a series of faults projected from the adjacent historic Newstan workings. This fault system adversely affected operations and resource recovery at Newstan. An improved understanding of this fault system will facilitate improved assessment of mine design, extraction methods and infrastructure requirements for the larger Newstan Extension Project.

The Project seeks approval to extend the currently approved mine life for a further 12 months to 6 July 2021. The extension is expected to enable operations at Newstan to continue until the determination of the Newstan Extension Project is made. The extraction method would be first workings only with the Project seeking to extract up to 2 million tonnes (Mt) of run-of-mine (ROM) coal from the first workings mine area. There would be no change to the approved annual extraction limit of 4 million tonnes per annum (Mtpa) from Newstan. The Project would not result in any substantial change to the approved operations at Newstan.

Size & Quality of the Resource

The Division has verified that the Project will provide about 1.2 Mt of ROM coal and 0.9 Mt of product coal. The Proponent has completed coal resource and reserve estimation for the Project under 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 minerals exploration results, mineral resources and ore reserves.

The Project is located in the Newcastle Coalfield of the Sydney-Gunnedah Basin. Coal resources are contained within the Lambton Formation at the base of the Late Permian Newcastle Coal Measures. The Newcastle Coal Measures are characterised by complex splitting and coalescence of its various coal seams. The Modification proposes to recommence first workings in the West Borehole seam, which is the combination of the Nobbys, Dudley, Yard and Borehole seams.

Raw ash levels necessitate washing the product to meet export and domestic market specifications. All coal will be processed at the existing Coal Handling and Preparation Plant (CHPP) prior to transport for export or use in domestic power stations.

The Project will enable Newstan to recommence supply of product coal from the West Borehole seam to an established clientele. Approximately 70 percent of product coal will be sold into domestic thermal coal markets. The remaining 30 percent of product coal will be sold into export semi-soft coking coal markets at an ash content of ~9 percent.

A review of coal quality data suggests the proposed product quality, target export market split, and yield are achievable. This was achieved in prior production at Newstan from the West Borehole seam. The Division considers that a total of ~0.9 Mt of product (saleable) coal from the Project is feasible.

The CHPP at Newstan has the flexibility to target specific coal product outputs. The number of products, their specifications and export/domestic product split at the Project may therefore be modified depending on market requirements and pricing. Newstan may also blend coal from their Mandalong Mine at the CHPP on-site or with other Centennial Coal products at the Port of Newcastle.

Resource Recovery

Centennial have assessed many potential mine designs and determined the mine design in the Modification is the most appropriate. Many factors constrain the mine plan, extraction methodology and therefore the resource recovery at the Project. These include geological features, subsidence-sensitive surface assets, environmental constraints and commercial viability.

The Modification has been designed to integrate into the southwest resource area of the larger Newstan Extension Project. Underground longwall operations at the adjacent Newstan workings in the West Borehole seam were previously adversely affected by a system of faults. This faulting is consistent with regional trends of the Newcastle Coalfield and those identified locally at the Awaba and Myuna collieries. Faulting in the adjacent Newstan workings is expected to persist though the Modification area. An improved understanding of the type and magnitude of faulting will be achieved by first workings development of the Project. This will inform decisions on mine design, safety requirements and extraction methods for the Newstan Extension Project.

First workings are proposed at the Project using two Continuous Miners units. Secondary extraction is not proposed as part of the Modification but has not been ruled out as part of the subsequent Newstan Extension Project. First workings ensure flexibility in mine operations, are designed to have no measurable surface subsidence, and be stable in the long term. This will ensure overlying subsidence-sensitive surface assets remain unaffected.

The Great Northern, Victorian Tunnel and Australasian seams overlie the West Borehole seam at the Project. Of the overlying seams, only the Great Northern is of sufficient thickness and ash content to be considered a commercially viable target for extraction. The Great Northern seam resource has been extracted by the Awaba Colliery and therefore the West Borehole seam represents the only remaining coal resource at the Project.

The West Borehole seam working section has been confirmed through previous workings at Newstan Colliery. The Nobby's Tuff overlies the West Borehole seam within the Project and is prone to developing roof stability issues. To provide a stable roof and safe operating environment a section of coal (typically 0.6m thickness) is required to be left in the roof after extraction. The Waratah Sandstone is the floor of the proposed workings and provides a suitable operating horizon. This allows coal extraction of the West Borehole seam down to the contact with the Waratah Sandstone floor.

Following a review of the proponent's EA, the Division considers the Project mine plan to adequately recover coal resources and provide an appropriate return to the State within the mine footprint, giving due consideration to the constraints of the location.

Economic Benefits of the Resource

Over the life of the Project, assuming production is sold on the domestic thermal (70 percent) and export metallurgical (30 percent) coal markets, the Division has estimated that the value of the coal produced would be around $87 million in current dollars, with the net present value of this revenue stream of around $79 million at a real discount rate of 7 percent.

As the majority of the coal would be sold into the domestic thermal market, the main benefit of the Project would be to continue to provide a reliable coal supply for electricity generation in New South Wales. Currently around 80 percent of the State's electricity needs are supplied from coal-fired generation.

The Project, if approved, would provide 60 full time operational jobs. The Division estimates that these direct mine jobs would result in around an additional 240 indirect jobs in both mine and non-mine related services. Capital investment for the Project would be of the order of $110 million.

Coal Royalty Calculation

The Project is a proposed underground mine. A royalty rate of 7.2 percent therefore 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 a majority of ROM coal from the operation would be subject to the full washing cycle, a deduction of $3.50 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 $4.50 per tonne.

One of the most important assumptions in the calculation of future royalty for a coal proposal 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 domestic thermal (70 percent) and export metallurgical markets (30 percent). A review of coal quality information by the Division suggests this is achievable.

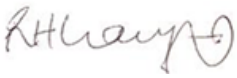
Coal price forecasting is inherently difficult. Over the project life there could be variations in coal prices. An average price of around A$85 per tonne for the domestic thermal coal, and around A$125 per tonne for the metallurgical coal from the Project have been used by the Division. The Division considers these prices to be conservative and at the bottom end of potential coal price scenarios.

Another important aspect of future royalty calculation for a proposed coal project is estimation of future annual production. The Division has estimated that if the Project is approved, around 0.9 Mt of product coal would be able to be economically mined from the Project.

Using the above parameters, the Division has calculated that the State will receive around $6 million in current dollars, and around $5 million in NPV terms (real discount rate of 7 percent) in royalty from the Project. In a typical year at full production the New South Wales Government would receive around $3 million in royalty from the Project.

Assessment Approvals

Table 1 – Divisional Approvals

Position	Signature or CM9 approval	Date
Approving Officer: Rob Larkings Manager Coal Resource Assessment		16/10/2018
Approving Officer: Bryan Whitlock A/Manager Resource Economics	Approved in CM9	15/10/2018
Endorsing Officer: Dr Mark Armstrong A/Director Strategic Resource Assessment (02) 4063 6708)		17/10/2018
Endorsing Officer: Tamsin Martin Director Resources Planning & Programs (02) 4063 6584	Approved in CM9	17/10/2018