



**Planning &  
Environment**  
Resources & Geoscience

# ***Tahmoor South Coal Project***

***Division of Resources & Geoscience***

*Resource & Economic Assessment  
February 2019*

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# Contents

<b>Introduction</b>	<b>4</b>
<b>Project overview</b>	<b>5</b>
<b>Size &amp; quality of the resource</b>	<b>7</b>
<b>Resource recovery</b>	<b>8</b>
<b>Economic benefits of the resource</b>	<b>9</b>
<b>Coal royalty calculation</b>	<b>11</b>
<b>Assessment approvals</b>	<b>12</b>

# 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 Impact Statement (EIS).

This Resource & Economic Assessment conducted for the Tahmoor South Coal Project (the Project or Proposal) by the Division of Resources & Geoscience (the Division) is designed to review the resource/reserve estimates stated in the proponent's EIS 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 and waste minimised. It is also to ensure an appropriate return to the State from developing the resource. As such 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 mineral resources in NSW. 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 mineral 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: Resource Recovery requires that resource recovery is efficient, optimised and minimises waste.

# Project overview

Tahmoor Coal Pty Ltd (Tahmoor Coal or the Proponent) is seeking approval under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) for an extension of underground coal mining and associated activities at the existing Tahmoor Mine. The proposed development is in the Wollondilly local government area of New South Wales.

Tahmoor Coal is owned by SIMEC Mining, a wholly owned subsidiary of the GFC Alliance.

The existing Tahmoor Mine produces up to three million tonnes per annum (Mtpa) of run-of-mine (ROM) coal. The Tahmoor Mine was granted planning and environmental approvals to commence coal mining operations in the mid to late 1970s. Underground mining at the existing operation is anticipated to be completed by 2022, depending upon geological and mining conditions encountered. The proposed development is to continue longwall mining from the Bulli seam into the Tahmoor Central Domain. The Project will result in an additional 47 million tonnes (Mt) of ROM coal, at an extraction rate of up to four million tonnes of ROM coal per annum. The Project is located about 80 kilometres southwest of Sydney and is within the Southern Coalfield of New South Wales.

SIMEC Mining are new to coal mining in New South Wales having acquired the existing Tahmoor Mine and the Project from Glencore Coal in early 2018.

Once the coal has been extracted and brought to the surface, it would be processed at Tahmoor Mine's existing coal handling & preparation plant (CHPP), and then transported to customers via the existing rail loop, the Main Southern Railway and the Moss Vale to Unanderra Railway to Port Kembla for Australian and international markets. Product coal would also be transported via rail to Newcastle (Port Waratah) from time to time. Up to 200,000 tonnes per annum of either product coal or reject material is also proposed to be transported to customers via road.

Saleable coal production from the Southern Coalfield has been relatively steady over the past ten years at around 10 Mtpa. This coalfield is the smallest coal producing region in the state, contributing only around five per cent of the total coal production. The Project if approved would produce around three Mtpa of saleable coal in a typical year of full production and hence would continue the contribution that the Tahmoor Mine has made over the past four decades. Although the Southern Coalfield contributes only a small proportion of total New South Wales coal production it is important in that it produces a large proportion of

high-quality coking coal from the state. The Project would play a role in continuing the production of this important product from the Southern Coalfield.

# *Size & quality of the resource*

The Division has verified that the Project will provide about 47.4 Mt of additional ROM coal and about 38 Mt of additional product (saleable) coal. All coal will be extracted from the Bulli Seam.

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 minerals exploration results, mineral resources and ore reserves.

Tahmoor Coal currently sells coal product to both thermal and metallurgical markets in proportions of around 91 per cent metallurgical and 9 per cent thermal.

The metallurgical coal product is primarily sold as a hard-coking coal product used in steel making. Currently around 25 per cent of metallurgical coal produced is sold to domestic steelmakers (GFG Whyalla and Bluescope Port Kembla). The proportion sold to GFG Whyalla is expected to increase resulting in about 40 per cent of total production being sold domestically.

The remaining coking coal product will continue to be exported from Port Kembla to established international clients.

The thermal coal product is high in ash content and high in calorific value and suitable for blending to complement other export thermal coal products.

A review of coal quality data suggests the proposed product quality, target export market split, and yield are achievable. This has been demonstrated through prior production at Tahmoor Mine from the Bulli Seam. Coal qualities in the Project area are comparable with coal currently produced at Tahmoor Mine. The Division considers that a total of approximately 38 Mt product coal from the Project is feasible.

Raw ash levels necessitate washing all ROM coal to meet export and domestic market specifications and to maximise product value. All coal will be processed in accordance with current operational procedures at the existing Tahmoor Mine CHPP.

# Resource recovery

**The Tahmoor South mine plan adequately recovers coal resources and provides an appropriate return to the state.**

There is a long history of mining the Bulli Seam at the top of the Illawarra Coal Measures from the Southern Coalfield. The Bulli Seam produces a high-quality coking coal and overlies the Wongawilli, Balgownie, American Creek and Tongarra seams within the project area. The Bulli Seam has been prioritised for production as it is the shallowest seam and it produces a higher-quality coking coal product at a higher yield than the Wongawilli Seam. The Wongawilli Seam is the only other seam with mining potential as all other seams are too thin and/or too high in ash content to be commercially viable.

The Bulli Seam ranges from 1.7 metres to 2.4 metres thick within the Project area. The entire geological section of the Bulli Seam will be recovered by a longwall. The seam has a higher ash content basal 'Bulli split' which will be included in the working section.

The Proposal allows Tahmoor Coal to transition from the current Tahmoor working area to Tahmoor South and minimise impact to production and staffing. Tahmoor Coal will re-locate existing longwall equipment to Tahmoor South when resources are exhausted in the current operating area at around 2021-2022.

Tahmoor South will utilise existing infrastructure such as the CHPP, rail load out, site access and pit top with minor modification.

SIMEC Mining has assessed several longwall designs for the Project and determined the mine design proposed as the most appropriate. Many factors constrain the proposed longwall design and resource recovery at the Project. These include geological constraints (Nepean Fault zone) and subsidence sensitive surface features (environmental, infrastructure and heritage features). Considering constraints outlined in the Proponent's EIS, the Project mine plan adequately recovers coal resources and provides an appropriate return to the state.



# *Economic benefits of the resource*

The proposed development would prolong the life of the Tahmoor Mine to provide for the ongoing direct employment of approximately 390 employees and enable existing coal markets to be serviced. The Project would provide ongoing significant local, regional and state economic benefits in the form of additional wages, royalties and flow-on positive economic effects, and would maximise recovery of the existing coal resource within coal lease areas.

Over the life of the Project, assuming all production is sold on the export and domestic metallurgical (90 per cent) and thermal (10 per cent) coal markets, the Division has estimated that the value of the coal produced would be around \$5.8 billion in current dollars, with the net present value (NPV) of this revenue stream of around \$3.5 billion at a real discount rate of seven per cent.

Export income is vital for the health of both the New South Wales and Australian economy. 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 approximately \$19.7 billion (2017-18 total) of coal exports, annually, from New South Wales. Coal exports are the largest value export from New South Wales, representing around 45 per cent of the state's merchandised goods exports. The Project would also continue to supply a portion of the coking coal to the New South Wales based BlueScope steelworks at Port Kembla and the Onesteel plant at Whyalla in South Australia. The Onesteel plant was acquired in 2017 by the GFG Alliance from Arrium, creating synergies between the Project and the Onesteel plant.

The Project, if approved, would provide 390 full time operational jobs and 175 construction jobs. The Division estimates that these direct mine jobs would result in around an additional 1500 indirect jobs in both mine and non-mine related services. Capital investment for the Project would be of the order of \$340 million. Operating expenditure for the Project would be of the order of \$1.6 billion in NPV terms over the Project life. As a large proportion of the operating expenditure over the life of a mine is wages paid to mine workers, a significant amount of this expenditure would be spent in the regional economy and surrounding localities.

The Division also notes from the Economic Assessment prepared by the Proponent's economic consultant (Cadence Economics) that the Project would deliver the following net benefits in NPV terms, if approved:

- Increase in gross regional income in the Wollondilly Region by between \$3.288 billion and \$3.561 billion.
- Increase in New South Wales gross state product by between \$4.692 billion and \$5.055 billion.

# Coal royalty calculation

The Project is a proposed medium depth underground mine attracting a royalty rate of 7.2 per cent on 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 is 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 is the estimate of a future coal price over the life of a project. Coal from the Project is expected to be sold mostly into the export and domestic metallurgical markets (90% total coking coal), with the remainder to be sold into the domestic and export thermal markets. A review of coal quality information by the Division suggests this is achievable.

Coal price forecasting is inherently difficult and over the project life variations in coal prices are expected. An average price of around A\$85 per tonne for the thermal coal, and around A\$160 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 38 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 \$414 million in current dollars, and around \$249 million in NPV terms (real discount rate of seven per cent) in royalty from the Project. In a typical year at full production the New South Wales Government would receive around \$35 million in royalties from the Project.

# Assessment approvals

**Table 1 – Divisional Approvals**

Position	Signature or CM9 approval	Date
Assessment Officer: Tully Matthews Senior Geoscientist – Strategic Resource Assessment & Advice (02) 4063 6770		21/02/2019
Assessment Officer: Bryan Whitlock A/Manager Resource Economics (02) 8275 1963	Approved in CM9	21/02/2019
Approving Officer: Robert Larkings Manager Coal Resource Assessment (02) 4063 6744		21/02/2019
Approving Officer: Dr Kevin Ruming Director Strategic Resource Assessment (02) 4063 6689		25/02/2019
Approving Officer: Tamsin Martin Director Resources Planning & Programs (02) 4063 6584	Approved in CM9	25/02/2019
Endorsing Officer: Dr David Blackmore A/Executive Director Resource Operations (02) 4063 6632		27/02/2019