



Planning,
Industry &
Environment

DOC19/1064006

Glendell Continued Operations Project (SSD9349)

Resource & Economic Assessment

Division of Resources & Geoscience

January 2020



Published by NSW Department of Planning, Industry and Environment

dpie.nsw.gov.au

Title: Glendell Continued Operations Project (SSD9349)

Subtitle: Resource & Economic Assessment

File reference: DOC19/1064006

More information

Assessment Coordination Unit, Resource Assessments – Division of Resources & Geoscience

assessment.coordination@planning.nsw.gov.au or 02 4063 6534

© State of NSW through Department of Planning, Industry and Environment 2020. You may copy, distribute, display, download and otherwise freely deal with this publication for any purpose, provided that you attribute the Department of Planning, Industry and Environment as the owner. However, you must obtain permission if you wish to charge others for access to the publication (other than at cost); include the publication in advertising or a product for sale; modify the publication; or republish the publication on a website. You may freely link to the publication on a departmental website.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (January 2020) and may not be accurate, current or complete. The State of NSW (including the NSW Department of Planning, Industry and Environment), the author and the publisher take no responsibility, and will accept no liability, for the accuracy, currency, reliability or correctness of any information included in the document (including material provided by third parties). Readers should make their own inquiries and rely on their own advice when making decisions related to material contained in this publication.

Contents

Executive summary	2
Introduction.....	3
Project overview	4
Size and quality of the resource	5
Resource recovery.....	6
Final Landform	7
Economic benefits of the resource.....	8
Royalty calculation	9
Departmental Assessment	10
Approvals	10

Executive summary

The Division of Resources and Geoscience assessed the Glendell Continued Operations Project (the Project). The Division considers the Project will:

- support continued operations at Glendell until 2044.
- improve resource recovery and be an efficient use of resources.
- ensure an appropriate return to the NSW Government including;
 - \$726 million royalties (current dollars)
 - \$9.2 billion total revenue (current dollars)
- support continued employment for up to 690 workers at the existing Glendell mine until 2044.

Without the Project the existing Glendell mine would cease operations in 2023.

The project

Glencore through SSD 9349 seek a northern extension to the existing operations at Glendell open cut coal mine that will:

- extend life of mine from 2023 to 2044.
- add an additional 135.2 million tonnes (Mt) of Run-of-Mine (ROM) coal recovery.

The Project will use the existing mine workforce, equipment and approved management systems.

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, Industry and Environment for development consent, supported by an Environmental Impact Assessment (EIS).

This Resource & Economic Assessment (REA) conducted for the Glendell Continued Operations Project 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 EIS.
- if the Proposal is an efficient development of the resource, that resource recovery is optimised and waste minimised.
- if the Proposal 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

Glendell is an open cut mine located about 20 kilometres north-west of Singleton in the Hunter Valley of NSW. Glendell forms a part of the Mount Owen Complex, which includes the Mount Owen mine and the Ravensworth East mine. All operations within the Mount Owen Complex share coal handling facilities, a Coal Handling and Preparation Plant (CHPP), and a water and tailings management system.

The Mount Owen Complex is a wholly owned subsidiary of Glencore PLC (Glencore or the proponent). Glencore is the largest producer of coal in NSW.

The Glendell mine commenced production in 2008. The mine produces semi-soft coking coal and thermal coal that is blended with products from the greater Mount Owen Complex and supplies both the domestic and export markets.

DA 80/952 (as modified 4 times) currently provides for mining operations at Glendell until June 2024, producing 4.5 million tonnes per annum (Mtpa) ROM coal. Based on the current mining schedule and resource, mining operations will cease in the existing mining area by 2023.

The proposed Glendell Continued Operations Project

Glencore through SSD 9349 seek a northern extension to the existing operations that will provide an additional 22 years of mining, and an additional 135.2 Mt of ROM coal recovery.

The Project will use the existing mine workforce from the current Glendell mine, in addition to the utilisation of workforce from the greater Mount Owen Complex as the operation requires. Overall there will be no change to the greater Mount Owen complex workforce.

The Project will utilise existing equipment, coal handling and processing, and approved management systems. A new Mine Infrastructure Area will be constructed as part of the Project.

The Project increases the maximum production rate from Glendell to 10 Mtpa from the existing 4.5 Mtpa. There will be no change to the greater Mount Owen Complex CHPP throughput of 17 Mtpa. The increased production rate from the Project will maintain existing processing rates of the Mount Owen Complex and substitute decreased production from other areas of the operation.

The Division notes that this Resource & Economic Assessment has been undertaken in accordance with commercial-in-confidence resource and mine schedule data supplied by the proponent. The proponent indicated a Life-of-Mine (LOM) extension of 22 years and increase in ROM coal recovery of 135.2 Mt.

Size and quality of the resource

The Project proposes to mine the Lemington, Pikes Gully, Arties, Liddell, Barrett and Hebden coal seams of the Whittingham Coal Measures. The Project area straddles the Camberwell anticline which runs approximately north-west to south-east throughout the project area with gently strata dipping from the fold axis. Dips on the western flank of the anticline reach a maximum of 10° within the project area, and dips on the eastern flank reach a maximum 12° within the project area. The coal seams to be mined in the Project are the same as those mined in the existing Mount Owen Coal Complex so Glencore is experienced in mining the Project seams and is expecting products to remain consistent.

The Division has verified that the Project will provide about 135.2 Mt of additional ROM coal which will produce around 86.1 Mt of product coal (yield of 64%).

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.

The Mount Owen Complex currently sells thermal and semi-soft coking coal to domestic (11%) and export markets (89%). Glencore predict they will continue to supply both these products. Two products are expected to be produced from the Project:

- a <13% ash thermal product (66 Mt).
- a ~9% ash semi-soft coking product (20.1 Mt).

Coal qualities in the Project area are comparable with coal currently produced from the current Glendell operations. The amount of raw ash requires that the ROM coal be washed to meet export market specifications and maximise product value. All coal will be processed in accordance with current operational procedures at the Mount Owen Complex Coal Handling and Preparation Plant (CHPP). The product coal is then railed to Newcastle for export. A review of coal quality data confirms the proposed product quality, target export market split, and yield are achievable.

Resource recovery

Glendell assessed several mine designs and determined the mine design in the Project is the most appropriate. Many factors constrain a mine plan and extraction methodology and therefore the resource recovery at the Project. These include geological features, environmental constraints, and commercial viability (predominantly defined by strip ratio).

Coal resources within the mine design will be extracted via open cut truck and excavator methods. Minor coal plies too thin to be viably recovered with open cut mining equipment have been excluded from the mine design.

After examination of the proponent's EIS, the Division considers the Project an efficient development of coal resources that provides an appropriate return to the State, within the mine footprint, giving due consideration to the constraints of the location.

Final Landform

The Division has examined the final landform for the Project outlined by the proponent. Two different scenarios were developed by Glencore, including having a single final void in the Project area or no final void. The options were assessed according to mine design, engineering feasibility, economic feasibility and the balance provided for appropriate environmental and social outcomes.

The case chosen by Glencore and included in the Glendell Continued Operations EIS will result in a single final void, which is no addition to the number of final voids currently approved for the Glendell mine. The proposed final void will be larger than the currently approved final void.

It is recommended that if time permits an independent expert examination of the proposed final landform be undertaken, focusing on whether the project case selected by the proponent is the best option.

The assessment of rehabilitation measures associated with the Project is a matter for the NSW Resources Regulator.

Economic benefits of the resource

Over the life of the Project, assuming product coal would be sold on the export thermal and metallurgical markets, the Division has estimated that the value of the coal produced would be around \$9.2 billion in current dollars, with the net present value of this revenue stream of around \$3.8 billion 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 existing \$23.1 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.

The Project, if approved, would provide up to 690 full time operational jobs to 2044. Without the Project the existing Glendell mine would close in 2023. The Division estimates that these direct mine jobs would result in around an additional around 2700 indirect jobs in both mine and non-mine related services. Total capital investment for the Project would be of the order of \$870 million.

Without the Project the existing Mt Owen mining complex would be severely impacted from 2023 onwards as Mt Owen is heavily reliant on the Project to fully utilise the existing mine infrastructure and in particular the CHPP and rail loop.

The Division also notes from the Economic Assessment prepared by the Proponent's economic consultant (Ernst & Young) that the Project would deliver a net benefit to NSW in NPV terms of \$1.15 billion, \$400 million of these benefits would be direct and \$750 million would be indirect. The Project would increase the Gross Regional Product in the Lower Hunter Region by \$2.5 billion in NPV terms according to Ernst & Young.

Royalty calculation

The Project is a proposed open cut mine therefore a royalty rate of 8.2 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 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. The majority of coal from the Project is expected to be sold into the export thermal market, with a smaller proportion sold into the export metallurgical coal market. 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\$100 per tonne for export thermal coal and around A\$130 for the semi-soft 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 86 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 \$726 million in current dollars, and around \$302 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 \$40 million in royalties from the Project.

Departmental Assessment

Assessed by	Unit	Branch
Assessing Officer: Erin Holmes Senior Geologist	Coal Resource Assessment – Strategic Resource Assessment & Advice	Geological Survey of NSW
Assessing Officer: Bryan Whitlock Senior Resource Analyst	Resource Economics	Resources Policy, Planning & Programs
Assessing Officer: Scott Anson Manager Assessment Coordination	Assessment Coordination Unit – Resource Assessments	Resource Operations

Approvals

Approved by	Signature	Date
Approving Officer: Dr Mark Armstrong Acting Director Strategic Resource Assessment & Advice		13/01/2020
Approving Officer: Tamsin Martin Director Resources Planning & Programs		15/01/2020
Endorsing Officer: Stephen Wills Executive Director Resource Operations		23/01/20