

MINING, EXPLORATION & GEOSCIENCE ADVICE RESPONSE

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Dear Tegan

Project: Mount Pleasant Optimisation Project
Stage: Advice on EIS - Resource and Economic Assessment
Development Application: SSD-10418

I refer to your correspondence dated 2 February 2021 inviting the Department of Regional NSW – Mining, Exploration & Geoscience (MEG) to provide comments on the Mount Pleasant Optimisation Project (the Project) submitted by MACH Energy Australia Pty Ltd (the Proponent).

The relevant units internal to MEG have been consulted in generating this advice. The Department of Planning, Industry and Environment – Energy, Resources & Compliance Division and the Proponent should be aware that matters concerning subsidence, subsidence management, mine operator, safety, rehabilitation and environmental impacts of final landform design are not assessed by MEG and advice should be sought from the Resources Regulator.

Advice overview

MEG assessed the Mount Pleasant Optimisation Project and considers that the Project will provide an appropriate return to the NSW Government including:

Parameter	\$m (2021 dollars)
Total Royalties received	1,700
Net Present Value (NPV) Royalties (7% discount rate real)	580
Annual estimated Royalties (average)	80 (Approximate)

In addition, the Project will generate:

- on average 600 full time equivalent (FTE) jobs during operations from end of 2026 to 2048 (Mount Pleasant Operation existing employment is about 440 FTE).
- value of the coal produced by MACH Energy would be around \$22 billion in current dollars, with the NPV of this revenue stream at around \$7.5 billion.

- \$856 million in Net Present Value (NPV) terms of total net production benefits to the NSW economy; and
- Project capital investment of about \$920 million

The Project is considered to be an efficient use of resources.

If approved, the additional export income from the Project would contribute to the approximately A\$18 billion (2019-2020 financial year total) of coal exports annually from NSW, which represents around 45 percent of the state's merchandise goods exports.

If the Project does not proceed the economic benefits outlined above will not be realised.

Resource and Economic Assessment

The existing Mount Pleasant Operation is situated in the Hunter Coalfield of the Sydney Basin, approximately 3 kilometres northwest of Muswellbrook.

The Mount Pleasant Operation produces thermal coal using open cut mining methods and has an approved operational capacity of up to 10.5 million tonnes per annum of Run-of-Mine coal until 22 December 2026 under Development Consent DA 92/97 (as modified).

The approved mine includes a Coal Handling and Preparation Plant, and a rail loop and spur, conveyor and load-out facility connecting the mine to the Muswellbrook–Ulan Rail Line.

Major components include:

- Open cuts (North Pit and South Pit).
- Eastern, South West and North West Out-of-Pit Emplacements.
- Water management infrastructure.
- CHPP and coal stockpiles.
- Fines Emplacement Areas.
- Transport of product coal to the Port of Newcastle for export, or to domestic customers for use in electricity generation, is undertaken by rail. Open cut mining, the handling and processing of ROM coal at the Mount Pleasant Operation CHPP, and the rail transport of coal products is undertaken 24 hours per day, seven days per week.

In view of the constraints outlined in the Proponent's EIS and based on the information currently available, MEG considers that the Project is consistent with the objects of the *Mining Act 1992*. In addition, in relation to clause 15 of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, the Proposal represents an efficient development and utilisation of minerals resources which will foster significant social and economic benefits.

MEG is satisfied that, should the operational outcomes be achieved, the proposed mine design and mining method submissions adequately recover resources and will provide an appropriate return to the state.

The resource utilisation, recovery and economic benefits assessment undertaken by MEG is addressed in Attachment A.

Application of section 380AA of the *Mining Act 1992* – restrictions on planning applications for coal mining and titles required to undertake mining

Coal is a prescribed mineral under the Act and the Proponent is required to hold appropriate mining titles from MEG to undertake mining.

Section 380AA states:

(1) An application for development consent, or for the modification of a development consent, to mine for coal cannot be made or determined unless (at the time it is made or determined) the applicant is the holder of an authority that is in force in respect of coal and the land where mining for coal is proposed to be carried out, or the applicant has the written consent of the holder of such an authority to make the application.

(2) For that purpose, an authority in respect of coal need not be in force in respect of the whole of the land to which the application for development consent relates but must be in force for the land where mining for coal is proposed.

Based on current title information MEG advises that the Proponent holds the appropriate titles as required for planning applications for coal as relating to the Project and satisfies the requirements of section 380AA.

The requirement for a mining authority

Based on current authority information MEG advises that the Proponent holds the appropriate authorities as required for mining operations as relating to the Project.

Biodiversity offset assessment

MEG requests that the Proponent consider potential resource sterilisation should any future biodiversity offset areas be considered. The Proponent must consult with MEG and any holders of existing mining or exploration authorities that could be potentially affected by the proposed creation of any such biodiversity offsets, prior to creation occurring. This will ensure there is no consequent reduction in access to prospective land for mineral exploration or potential for the sterilisation of mineral and extractive resources.

Summary of review

MEG considers that, should the Project be approved, efficient and optimised resource outcomes can be achieved. MEG requests that it be provided with an opportunity to review the draft conditions of approval before finalisation and any granting of development consent.

For further enquiries on this matter please contact Scott Anson, Manager Assessment Coordination, Resource Assessments on 02 4063 6972 or email assessment.coordination@planning.nsw.gov.au.

Yours sincerely



Stephen Wills
Executive Director Resource Operations
Department of Regional NSW – Mining, Exploration & Geoscience
25 February 2021

Encl. – Attachment A - Mount Pleasant Optimisation Project – Resource & Economic Assessment (DOC21/65482)



Regional
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Mount Pleasant Optimisation Project (SSD-10418)

Resource & Economic Assessment

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More information

Assessment Coordination Unit, Resource Assessments – Mining, Exploration & Geoscience

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Executive summary

Mining, Exploration and Geoscience (MEG) assessed the Mount Pleasant Optimisation Project (SSD-10418) (the Project). MEG considers the Project will provide an appropriate return to the NSW Government including:

- around \$1.7 billion in total royalties (current dollars).

Parameter	\$m (2021 dollars)
Total royalties received	1,700
Net Present Value (NPV) royalties (7% discount rate, real)	580
Annual estimated royalties (average)	80 (Approximate)

In addition, The Project will generate:

- on average 600 full time equivalent (FTE) jobs during operations from end of 2026 to 2048 (Mount Pleasant Operation existing employment is about 440 FTE).
- value of the coal produced by MACH Energy would be around \$22 billion in current dollars, with the NPV of this revenue stream at around \$7.5 billion.
- \$856 million in Net Present Value (NPV) terms of total net production benefits to the NSW economy;
- Project capital investment of about \$920 million

The Project is considered to be an efficient use of resources.

If approved, the additional export income from the Project would contribute to the around A\$18 billion (2019-2020 financial year total) of coal exports annually from NSW, which represents around 45 percent of the state's merchandise goods exports.

If the Project does not proceed the economic benefits outlined above will not be realised.

The Project

MACH Mount Pleasant Operations Pty Ltd (MACH Energy or the Proponent), has submitted an application to extend and optimise the existing Mount Pleasant Operation. The Project would include the extraction of approximately 364 Million Tonnes (Mt) of additional ROM coal within the existing Mount Pleasant Operations Mining Leases. The Project would be supported by the use and augmentation of the existing Mount Pleasant Operation infrastructure.

The Project would support additional extraction of coal by deepening part of the pit floor to access additional coal reserves, and increasing the rate and duration of mining, without significantly increasing the approved mine disturbance footprint.

The Project would:

- extend the life of mine from 2026 to 2048.
- Extract an additional 364 Mt of ROM coal.
- Extract an additional 291 Mt of product coal.

The Project would involve the continued use of existing and approved infrastructure at the Mount Pleasant Operation, with a staged increase in extraction, handling and processing of ROM, and continue employment of the existing workforce.

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 Mount Pleasant Optimisation Project (SSD-10418) by MEG 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 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

The existing Mount Pleasant Operation is situated in the Hunter Coalfield of the Sydney Basin, approximately three kilometres northwest of Muswellbrook.

The Mount Pleasant Operation produces thermal coal using open cut mining methods and has an approved operational capacity of up to 10.5 Mtpa of ROM coal until 22 December 2026 under Development Consent DA 92/97 (as modified).

The approved mine includes a Coal Handling and Preparation Plant (CHPP), and a rail loop and spur, conveyor and load-out facility connecting the mine to the Muswellbrook–Ulan Rail Line.

Major components include:

- Open cuts (North Pit and South Pit).
- Eastern, South West and North West Out-of-Pit Emplacements.
- Water management infrastructure.
- CHPP and coal stockpiles.
- Fines Emplacement Areas.

Transport of product coal to the Port of Newcastle for export, or to domestic customers for use in electricity generation, is undertaken by rail. Open cut mining, the handling and processing of ROM coal at the Mount Pleasant Operation CHPP, and the rail transport of coal products is undertaken 24 hours per day, seven days per week.

The Mount Pleasant Optimisation Project

The Project involves a life of mine extension to the existing Mount Pleasant Operation, that would extract coal until December 2048 from the current approval which ceases in 2026. The Project would also increase the maximum consented ROM production from 10.5 Mtpa to 21 Mtpa.

MACH Energy indicates that the Project would result in an additional 364 Mt ROM coal recovery and 291 Mt of product coal.

The Project, if approved, would support the continued employment of the existing Mount Pleasant Operation workforce of about 440 FTE operational workers. The Project is estimated to employ an average of 600 FTE operational workers.

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

The Project, if approved, would support the following activities and development:

- increased open cut extraction within Mount Pleasant Operation MLs by mining of additional coal reserves, including lower coal seams in North Pit.
- a staged increase in extraction, handling and processing of ROM coal up to 21 Mtpa (i.e. progressive increase in ROM coal mining rate from 10.5 Mtpa over the Project life).
- staged upgrades to the existing CHPP and coal handling infrastructure to facilitate the handling and processing of additional coal.
- rail transport of up to approximately 17 Mtpa of product coal to domestic and export customers.
- upgrades to workshops, electricity distribution and other ancillary infrastructure.
- existing infrastructure relocations to facilitate mining extensions (e.g. local roads, powerlines and water pipelines).
- construction and operation of new water management and water storage infrastructure in support of the mine.
- additional reject dewatering facilities to allow co-disposal of fine rejects with waste rock as part of ROM waste rock operations.
- development of an integrated waste rock emplacement landform that incorporates geomorphic drainage design principles for hydrological stability, and varying topographic relief to be more natural in exterior appearance.
- construction and operation of new ancillary infrastructure in support of mining.
- extension to the time limit on mining operations to 22 December 2048.
- an average operational workforce of approximately 600 people, with a peak of approximately 830 people.
- ongoing exploration activities; and other associated infrastructure, plant, equipment and activities.

Size and quality of the resource

MACH Energy proposes to continue mining the coal seams of the Jerry Plains and Vane subgroups of the Whittingham Coal Measures. Coal seams amenable to open cut mining occur in eight correlated seams and include the Warkworth, Mt Arthur, Piercefield, Vaux, Broonie, Bayswater, Wynn and Edderton seams. The strata dips gently towards the west northwest at approximately 6° to 8° in the east, closest to the anticline axis, easing to 2° to 4° in the west.

MEG has verified that the Project will provide about 364 Mt of additional ROM coal which will produce around 291 Mt of product coal (yield of 79.8%).

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 Project plans to produce three thermal products;

- Thermal 6000 Specification (16%)
- Thermal 5500 Specification (70%)
- Thermal 5000 Specification (14%)

The Proponent can modify these product specifications when needed to fit their customers' needs. The Mount Pleasant Operation currently supplies both domestic and export markets and sell two thirds of their coal through contracts and one third as spot sales.

Coal qualities in the Project area are comparable with coal currently produced from the current operation. The coal is generally washed and part of this project includes two new wash plant modules. Product coal would be transported on the Muswellbrook–Ulan Rail Line and Main Northern Railway to the Port of Newcastle for export, or to domestic customers for use in power generation. A review of coal quality data confirms the proposed product quality, target export market split, and yield are achievable.

The mine plan proposed by the Proponent, if approved, has a cumulative 406 Mt ROM coal and 322 Mt product coal for the existing Mount Pleasant Operation and the Project when combined.

The Project alone, if approved, will produce an additional 364 Mt of ROM coal, and 291 Mt of product coal on top of the coal that will be produced from the Mount Pleasant Operation over the remainder of operations.

Resource recovery

The Proponent 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.

Continuing to mine the coal resources in the Project area via open cut methods will optimise the recovery of coal in this project. Mining below the Edderton seam has been considered by the Proponent but due to economical and geotechnical concerns they have made the decision not to.

The Proponent is very conscious of the visual aspects of the mine due to the proximity of the mine to Muswellbrook. This in part has affected the mining design and order of operations to date. The final landform has been designed to look natural through the implementation of geomorphic landform design and the final void will be hidden behind from view.

After examination of the proponent's EIS, MEG 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.

Economic benefits of the resource

Over the life of the Project, the majority of production would be sold on the export thermal market. MEG has estimated that the value of the coal produced would be around \$22 billion in current dollars, with the net present value of this revenue stream at around \$7.5 billion at a real discount rate of seven percent. If approved, the additional export income from the Project would contribute to the around A\$18 billion (2019-2020 financial year total) of coal exports annually from NSW, which represents around 45 percent of the state's merchandise goods exports.

The Project, if approved, would provide on average around 600 full time operational jobs from the end of 2026 to 2048. At its peak, the Project would employ over 800 people. MEG estimates that these direct mine jobs would result in an additional 2,000 indirect jobs in both mine and non-mine related services. Initial capital investment for the Project is indicated to be of the order of A\$920 million with additional ongoing capital expenditure.

The proponent has estimated that disposable income for employees of the Project would be around A\$409 million NPV. Most of this expenditure would be spent in the regional economy of the Upper Hunter, Muswellbrook and Hunter localities. The Project is important to the region in that without this extension the existing Mount Pleasant operations will cease in 2026, with production and employment quickly reducing after then.

MEG also notes from the Economic Assessment prepared by the Proponent's economic consultant (AnalytEcon) that the Project would deliver a net benefit to NSW in NPV terms of A\$856 million to the NSW economy.

Royalty calculation

Assumptions

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. As a majority of ROM coal from the operation would be subject to the full washing cycle, a deduction of A\$3.50 per tonne from the value of coal produced applies. A deduction for levies also applies which would amount to no more than A\$1.00 per tonne. Hence allowable deductions for royalty for the Project of A\$4.50 per tonne are applicable.

The majority of coal from the Project is expected to be sold into the export thermal market. A review of coal quality information by MEG suggests this is achievable. Approximately 70% of the coal from the Project typically will be in the 5,500kcal/kg range, with 16% measuring around 6,000kcal/kg and the remainder at 5,000kcal/kg.

Coal price forecasting is inherently difficult and over the project life variations in coal prices are expected. The following average export thermal coal prices from the Project has been used by MEG:

- A\$67 per tonne for 5,000kcal/kg
- A\$74 per tonne for 5,500kcal/kg, and
- A\$93 per tonne for 6,000kcal/kg for the premium product.

MEG considers these prices to be conservative. The small amount of coal to be sold into the domestic coal-fired generation market from the Project has been assumed to attract the export parity price.

MEG has estimated that if the Project is approved, around 291 Mt of product coal would be able to be economically mined from the Project over the project life. This is equivalent to about 13 Mtpa.

Total royalties estimate


Using the above assumptions and parameters, MEG has calculated that the State will receive:

Parameter	\$m (2021 dollars)
Total royalties received	1,700
Net Present Value (NPV) royalties (7% discount rate, real)	580
Annual estimated royalties (average)	80 (Approximate)

Departmental Assessment

Assessed by	Unit	Branch
Assessing Officer: Gwen Stefani Senior Geologist	Coal Geoscience Assessment & Advice (GAA)	Geological Survey of NSW
Assessing Officer: Matt Gagan Senior Advisory Officer Royalties	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 Phillip Blevin Director Strategic Geoscience Assessment & Advice	Approved in CM9	24/02/2021
Approving Officer: Tamsin Martin Director Resources Planning & Programs	Approved in CM9	24/02/2021
Endorsing Officer: Stephen Wills Executive Director Resource Operations		25/02/2021