



**Planning &
Environment**

***ADDENDUM
MAJOR PROJECT ASSESSMENT
Moolarben Coal Project
Stage 2 & Stage 1 Modification (MOD 3)***



Secretary's Environmental Assessment Report
Section 75I and Section 75W of the
Environmental Planning and Assessment Act 1979

November 2014

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NSW Department of Planning & Environment
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1. INTRODUCTION

1.1 Background

This report provides an addendum to the Director-General's Environmental Assessment Report (February 2014) for the Moolarben Coal Project Stage 2 (MP 08_0135) (the project) and the Stage 1 Modification (MOD 3 MP 05_0117).

The report has been prepared to consider the recommendations made in the Planning Assessment Commission's (PAC's) review of the project, and additional information received from Moolarben Coal Mine Pty Ltd (MCM) and the Office of Environment & Heritage (OEH) since the PAC's review.

The report should be read in conjunction with the Director-General's Environmental Assessment Report for the project, which provides a detailed assessment of the key issues in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.2 Chronology of Events

A brief chronology of the key events relevant to this addendum report in the time since the Department of Planning & Environment's (the Department's) referral of the assessment report to the PAC for review is presented in the following table.

Table 1: Chronology of Events

Date	Event
4 Feb 2014	Director-General's Environmental Assessment Report referred to PAC
26 Feb 2014	PAC holds public hearings in Mudgee
28 May 2014	PAC finalises its review and refers the review report to the Department
7 July 2014	MCM submits its response to the PAC report to the Department (Appendix A)
15 July 2014	MCM submits additional information to the Department in relation to biodiversity offsets and noise criteria (Appendix B)
29 Sept 2014	Office of Environment and Heritage (OEH) provides an email submission to the Department providing options for offsetting potential impacts to the Regent Honeyeater (Appendix C)
17 Oct 2014	MCM submits a letter report to the Department prepared by Ecological Australia which provides a biobanking analysis of the adequacy of the Regent Honeyeater habitat in the Moolarben Stage 2 proposed biodiversity offset strategy (Appendix D)
6 November 2014	MCM submits a letter report to the Department prepared by Todoroski Air Sciences which provides a comparison of the project's air emission predictions against the new policy voluntary mitigation and acquisition criteria (Appendix E)
6 November 2014	MCM submits a letter report to the Department prepared by EMM Mitchell McLennon (EMM) which provides a comparison of the project's noise impact predictions against the new policy voluntary mitigation and acquisition criteria (Appendix E)
11 November 2014	OEH provides response to the Department on the Regent Honeyeater Biobanking Assessment (Appendix F)
18 November 2014	OEH provides suggested changes to the Regent Honeyeater Study conditions drafted by the Department (Appendix F)

2. CONSIDERATION OF PAC REVIEW

2.1 PAC Review

The PAC review report concluded that:

“Overall the Commission considers that on the information currently available, the merits of the project require detailed evaluation against the criteria in s.75J and 75W¹ of the Environmental Planning and Assessment Act 1979. The Commission considers that the residual impacts of the project can be reduced to a low level if the recommendations in this review report are adopted. If this occurs, and the relevant actions and/or commitments are in place prior to submission of the project for determination, it can be approved subject to conditions.”

The PAC also made 16 recommendations and 2 requests for the Department to consider before submitting its final assessment report for determination. These recommendations and requests are primarily in relation to:

- preparation of a Regional Biodiversity Strategy, supported by a Regional Biodiversity Conservation Fund;
- provision of financial and/or in kind support for the OEH's Regent Honeyeater Recovery Team;
- protecting the land value and user amenity of the Munghorn Gap Nature Reserve;
- reviewing and strengthening water management performance measures and requirements under the Water Management Plan;
- policy issues regarding air quality acquisition criteria; and
- further consideration of mine planning options in relation to the out-of-pit emplacement area and the number of final voids for the complex.

The Department's consideration of these recommendations is provided below. Based on this consideration, the Department has also prepared revised recommended conditions of approval for the Stage 2 project, which are provided in **Appendix G**.

2.2 Biodiversity Management

PAC Recommendations

The Commission recommends that a Regional Biodiversity Strategy should be prepared to set out the long-term framework for consistent and coordinated planning, management and monitoring of offset areas that will add to and/or complement existing and proposed conservation areas and corridors. As part of the Regional Biodiversity Strategy, consideration should be given to a Regional Biodiversity Conservation Fund to be administered by an expert panel identifying priorities for expenditure to achieve strategic objectives for the region. The strategy and fund should include provision for incentive payments for private landholders demonstrably contributing to achievement of regional conservation outcomes.

The regional biodiversity strategy should also be required to give consideration to woodland bird recovery objectives and to consider supplementary measures that may be able to be introduced to support the recovery of woodland birds in conjunction with existing studies and efforts such as those currently underway for the Regent Honeyeater and Swift Parrot.

The Commission considers that the Office of Environment and Heritage's recommendation of 2 April 2014 are reasonable and should be given careful consideration in the drafting of conditions for the mine. In particular:

- *the Proponent should provide a 50 m buffer zone between open cut operations and the Munghorn Gap Nature Reserves;*
- *the Proponent should conduct surveys to identify the entire boundary of the Stage 2 Project with the Munghorn Gap Nature Reserve;*
- *if the PAC accepts the remote biodiversity offset locations, then land management issues are to be addressed, including:*
 - *The Avisford 1 and Avisford 2 properties be secured via transfer to OEH Estate with management funds as agreed with OEH;*
 - *Lot 80 DP 704159 of 'Dun Dun East' be removed from the Stage 2 offset quantum;*
 - *The proponent should be encouraged to extend the remainder of the 'Dun Dun East' offset to include Pyramul Creek on adjoining Crown Land with development of an appropriate revegetation proposal for this area. The purpose is to maximise the value of this proposed offset in light of concerns regarding remoteness and 'like for like' matching.*
- *A precinct approach to the management of the outstanding biodiversity offset areas should be considered.*
- *Ensure referencing of in-perpetuity conservation mechanisms of the offset areas includes OEH's BioBanking Agreements and OEH Estate additions.*

2.2.1 Regional Biodiversity Strategy and Conservation Fund

The Office of Environment and Heritage (OEH) is responsible for biodiversity conservation planning within the State.

In this regard, the State Government published a draft *NSW Biodiversity Strategy 2010-2015* (DECCW) (NSW Biodiversity Strategy) in November 2010 and has recently published the *NSW Biodiversity Offsets Policy for Major Projects* (OEH, September 2014) (Offsets Policy).

In accordance with commitments made under the NSW Biodiversity Strategy, OEH has been preparing a series of vegetation information system (VIS) maps to guide investment in native vegetation management at both a State and local level. A VIS map has been prepared for the Hunter region and OEH has confirmed that the map for the Central West area will be prepared over the next year.

The Department cannot see any merit in getting MCM to duplicate the work being carried out by OEH via a condition of approval, nor does it consider MCM to have the ability or expertise to prepare such a strategy.

In addition, it does not think it would be equitable to require MCM to provide a financial contribution to assist OEH with the preparation of the VIS maps, as:

- there is no framework in place for the payment of such contributions;
- MCM would be the only private company contributing the preparation of the maps at this stage; and
- MCM already has an offset strategy that would offset the impacts of the project.

Nevertheless, OEH has advised the Department that the VIS mapping is being done at a regional scale, and would benefit if MCM was to give OEH the detailed vegetation mapping and survey data gathered during the assessment process. This information will allow the map to be done at a finer scale for areas covered by the project. MCM has agreed to do this, and the Department has recommended a condition requiring MCM to provide this mapping and data for inclusion into the Central West VIS maps free of charge.

In September 2014, OEH published the *NSW Biodiversity Offsets Policy for Major Projects*.

The Offsets Policy, which was published after the PAC review, addresses several of the recommendations made by the PAC in the review. The Offsets Policy encourages broad, strategic and enduring environmental gains by requiring avoidance where possible, then minimising, mitigating and remediating (in that order) biodiversity impacts. Beyond this framework of impact minimisation, the policy provides a method for proponents to assess impacts and various options for them to meet their offset requirements. These include provision of land-based offsets, provision of funds for supplementary measures and/or making monetary contributions to the NSW Biodiversity Offsets Fund for Major Projects.

OEH is still developing the Biodiversity Offsets Fund, but it would be consistent with the Regional Biodiversity Conservation Fund envisaged in the PAC review report. Proponents would contribute to the Fund to offset the impacts of the project, in accordance with the rules of the Offsets Policy, and these funds would then be used to further the State's conservation priorities.

Once again, there is no role that MCM could meaningfully play in the development of the Fund, and it already has a strategy in place to offset the impacts of the project. While there are some residual concerns about whether this strategy would fully offset the potential impacts of the project on the Regent Honeyeater (see below), the Department has developed conditions to deal with these concerns. These conditions would allow MCM to make a contribution to the Biodiversity Offsets Fund if it is established within the next two years instead of providing additional direct offsets (should additional offsets be required).

2.2.2 Support for the Recovery of Woodland Birds

The PAC's report notes concerns raised by OEH in relation to the loss of habitat for threatened woodland birds as a result of the Stage 2 Project, particularly the Regent Honeyeater, which is listed as critically endangered under the *Threatened Species Conservation Act 1995* (TSC Act) and endangered under the Commonwealth's *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The PAC agrees with OEH that MCM should be required to provide additional financial/or in kind support for the Regent Honeyeater in order to compensate for habitat loss associated with the project.

In its response to the PAC's report (refer to **Appendix A**), MCM stated that a monetary contribution towards the Regent Honeyeater is neither appropriate nor warranted. MCM's position was based on the following arguments:

- there are no records for the Regent Honeyeater within the Stage 2 disturbance area;
- a total of 2,949 ha of potential Regent Honeyeater habitat is confirmed to be present within the Stage 2 biodiversity offset areas, compared to about 902 ha of potential habitat in the Stage 2 disturbance area;
- MCM's commitment to regenerate grassland areas within the biodiversity offset areas to woodland using species which are recognised habitat for the Regent Honeyeater would increase the area of habitat conserved or created by an additional 1,134 ha. This would be further increased by 1,502 ha through rehabilitation of the Stage 2 disturbance areas, resulting in a total of 5,585 ha of Regent Honeyeater habitat;
- MCM's biodiversity strategy is consistent with OEH's biodiversity offsetting principles which require (amongst other things) "offsets to result in net improvement in biodiversity over time" and that offsets should "ensure the long-term viability and functionality of biodiversity"; and
- clearing of the disturbance area would be undertaken progressively, so there would not be any 'immediate loss' of habitat for woodland birds.

These arguments did not change OEH's view that the offset strategy was deficient to offset any potential impacts on the Regent Honeyeater.

To try and address OEH's residual concerns, MCM engaged Eco Logical Australia (ELA) to undertake a biobanking assessment of the species in accordance with the new Offsets Policy (refer to **Appendix D**). The species credit assessment was subjected to a range of species recovery response scores (known as Tg scores). The results are summarised in Table 2 below.

When assessed on a 'species credit' basis, ELA indicates that the Stage 2 impacts would require between 3,098 and 17,877 species credits (depending on the Tg scores used). The existing habitat in the biodiversity offset areas was calculated to generate 16,910 ecosystem credits, with an additional 8,633 credits to be generated through proposed restoration (25,543 credits in total). ELA indicate that this would result in a surplus of between 7,666 and 22,445 credits for the Regent Honeyeater.

Further, ELA notes that these calculations exclude rehabilitation, which would generate a further 9,012 species credits.

Table 2: Biobanking Results for Regent Honeyeater

Biodiversity Assessment Methodology		Impact Credits Required	Credits Generated from Biodiversity Offset Strategy	Surplus
Species Credits	Tg 0.75	3,098	Total = 25,543	22,445
	Tg 0.125	7,043	16,910 (existing)	18,500
	Tg 0.33	17,877	8,633 (restoration)	7,666

The Department forwarded this assessment to OEH for review.

OEH was critical of the methodology used by ELA, as well as the findings of the biobanking assessment. Nevertheless, OEH has agreed that using the calculators under the new Offsets Policy is the most robust way of determining whether the existing offset strategy would adequately offset the impacts of the project on the Regent Honeyeater. It has also agreed that

the work started by ELA could be completed post approval, as the existing offset strategy would offset the potential impacts of the project on the Regent Honeyeater to some extent and the risk of MCM not being able to offset any residual impacts is extremely low.

Consequently, the Department has recommended conditions requiring MCM to:

- carry out a detailed assessment of the potential impacts of the project on the Regent Honeyeater using the calculators under the new Offset Policy;
- calculate the credits that would be generated for this species by the offset areas in the offset strategy; and
- if there is a deficit of credits, then either acquire or retire the residual credits within 24 months of completing the biobanking assessment to the satisfaction of OEH.

OEH has indicated that it is satisfied that the proposed conditions address the residual issues in relation to the Regent Honeyeater (refer to **Appendix F**).

The Department considers this to be fairest way of determining if there are any residual impacts on this species, and is preferable to requiring the payment of arbitrary amount into a fund for the recovery of the species.

2.2.3 Munghorn Gap Nature Reserve

The PAC's report recommends that MCM should be required to protect the Munghorn Gap Nature Reserve by conducting surveys to identify the entire boundary of the Stage 2 Project and maintaining a 50 m buffer zone between open cut operations and the Reserve.

The Department notes that these recommendations are included in MCM's Statement of Commitments at Appendix 3 of the project approval. However, to ensure this occurs the Department has recommended specific conditions be included in the revised project approval.

2.2.4 Biodiversity Offset Areas Land Management Issues

In-perpetuity Options for Protection of Offset Sites

The PAC's report recommends that project approval conditions, setting acceptable in-perpetuity conservation mechanisms for the Stage 2 offset areas, should specifically include OEH's biobanking agreements and additions to the national park estate (particularly for the Avisford 1 and Avisford 2 properties).

The Department notes that MCM has been developing its biodiversity offset strategy for many years, and that this process pre-dates the release of Government's new Offsets Policy. It is therefore considered important that conditions governing the requirements for long-term (ie in perpetuity) conservation of offset lands retain some flexibility in order to accommodate conservation mechanisms that have been established well before the release of the new Offsets Policy.

The existing condition includes a note stating that the preferred mechanism for the provision of long-term conservation is via the transfer of the offset areas to the national park estate. To address OEH's requests, but retain some flexibility, the Department has recommended that this note be extended to also include biobanking agreements.

Dun Dun East Property

OEH recommended that Lot 80 DP 704159 of 'Dun Dun East' (ie the northern portion) be removed from MCM's proposed Stage 2 offsets. OEH considered that the forest types within the northern portion of the Dun Dun East offset area (totalling 729 ha) were overrepresented in the offset strategy considering that such vegetation is not impacted by the project.

The Department notes that this portion of the Dun Dun East property was excluded from the offset figures presented in its Director-General's Environmental Assessment Report (Table 10 of that report) in order to provide OEH with an indication of the adequacy of the offset without this land. However, the full area of this property was included in the draft project approval (Table 11 of the approval). The Department believes this is the correct approach, particularly given that:

- MCM has confirmed that this portion of the Dun Dun East property contains habitat for the Regent Honeyeater and other woodland birds;

- MCM has indicated its intention to conserve the 729 ha area in perpetuity, irrespective of whether it is required under the project approval; and
- inclusion in the formal biodiversity offset land will not result in additional management requirements or financial costs to the Government.

In addition, OEH recommended that MCM should be encouraged to extend the remainder of the Dun Dun East offset to include Pyramul Creek, located on adjoining Crown land, with development of an appropriate revegetation proposal for this area. OEH indicated that the purpose is to maximise the value of this proposed offset in light of concerns regarding remoteness and 'like for like' matching.

The Department agrees that implementing a revegetation program on the land in the vicinity of Pyramul Creek would be advantageous; however the approval could not legitimately require MCM to implement land management works on Crown land.

Instead, in order to address OEH's recommendations, the Department has recommended a condition requiring MCM to use its best endeavours to work with the Crown Lands Division of the Department of Primary Industries to identify and implement any reasonable and feasible regeneration of vegetation works in the vicinity of Pyramul Creek, immediately to the south of the 'Dun Dun East' biodiversity offset area.

Other Biodiversity Offset Issues

The Department has also made several other minor amendments to the figures in Table 11 of the project approval. These amendments have been made following more detailed surveys of the offset areas undertaken by MCM early this year (refer to **Appendix B**). The Department is satisfied that the changes do not reduce the total area of any of the offsets; rather they represent minor changes to the portions of the offsets to be enhanced and/or regenerated.

2.3 Water

PAC Recommendations

The Water Management Performance Measures should be reviewed and strengthened in the final conditions to ensure local and regional impacts over time are detected early and appropriate mitigation measures are implemented to mitigate identified impacts. In this regard the Commission suggests the performance measures:

- should not only cover impacts on water quality, but should also cover impacts on water quantity, along with appropriate monitoring to ensure compliance with this measure;*
- should require mine water storage to be designed to prevent offsite discharges of mine (dirty) water, including adequate freeboard to account for potential intensification of extreme events as a result of climate change;*
- should require tailings, acid forming and potentially acid forming materials to be emplaced, encapsulated and capped in pit in such a way as to prevent the migration of pollutants beyond the pit shell (no out-of-pit emplacement of these materials should be allowed);*
- should include requirements for the pit voids to contain adequate freeboard to prevent discharge of surface water;*
- should include trigger levels and water quality objectives developed by considering both the existing site specific water quality data (or pre-mining data where this is available), and ANZECC 2000 guidelines, with the most stringent criteria to be adopted;*
- should ensure that the riparian vegetation is appropriately re-established along the realignment, and that aquatic biodiversity is also restored throughout the creek;*

The Proponent is to ensure it has sufficient water for all stages of the project and adjust the scale of operations to match the available water supply, should also include requirements for forward planning, to ensure that water supply constraints do not compromise any aspect of the environmental performance of the mine.

The Water Management Plan requirements should include:

- *reference to the Water Management Performance Measures set out in the previous condition;*
- *reference to the Office of Water's additional monitoring requirements;*
- *reference to the National Water Quality Management Strategy;*
- *monitoring to characterise the Drip's water source; and*
- *a plan to respond to any monitoring that is inconsistent with the model and the predicted impacts on local and regional water resources.*

2.3.1 Water Management Performance Measures

In its Report, the PAC recommended that the water management performance measures proposed by the Department for inclusion in the project approval are reviewed and strengthened to ensure that local and regional water resource impacts are detected early and appropriate mitigation measures are then implemented to mitigate identified impacts.

The PAC made 6 specific proposals to strengthen the performance measures [listed (a) to (f) above]. The Department accepts two of these proposals [(c) and (f)] and has recommended changes to the project approval accordingly.

The Department does not believe that additional performance measures are necessary in relation to proposal (a) given that the existing approval includes several performance measures and a water supply condition which are specifically designed to minimise impacts on water quantity and ensure compliance. Further 'take' of water is specifically regulated by the NSW Office of Water (NOW) under water legislation, and MCM would need to ensure it is licensed for any water use on site under this legislation.

In relation to proposals (b) and (d), the Department notes that MCM has designed its water management system for the Stage 2 project to meet a "zero" discharge objective. In order to ensure this is achieved, the existing performance measures require that specific water management infrastructure design standards are met. This includes ensuring that the pit void has an adequate freeboard to prevent discharge of surface water. All monitoring requirements to ensure compliance with these performance measures are required to be included in the Water Management Plan.

The existing performance measures also require mine sediment dams to be designed, installed and maintained generally in accordance with the series *Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries* (the "Blue Book"), which is the applicable best practice standard. If climate change predictions warrant a review in the standards required under the Blue Book, then that document will be reviewed, and its revised standards would be applied to the site.

The Environment Protection License (EPL) also represents a readily available and efficient means by which individual site standards can be revised. That is, if actual or threatened pollution events occur as a result of extreme weather events, then the EPL represents a means of imposing additional requirements via Pollution Reduction Programs or prosecuting for any failure to prevent pollution.

Finally, in relation to proposal (e), the Department notes that methods of developing trigger levels and water quality objectives are already outlined in the *ANZECC 2000 guidelines* which are specifically referenced as an existing performance measure. Irrespective, as discussed above, the Stage 2 project would operate as a "zero" discharge site.

No further performance measures in relation to proposals (a), (b), (d) or (e) are therefore considered necessary.

2.3.2 Water Supply and Water Management Plan

The Department accepts the PACs recommendations in relation to water supply and the Water Management Plan and has revised the conditions accordingly.

2.4 Air Quality

PAC Recommendations

The current long term impact assessment criteria and acquisition criteria for annual average PM₁₀ levels should be reviewed against the WHO goal of 20 µg/m³.

The commitment to work with NSW Education to deal with dust and noise impacts to the Ulan Public School should be included as a condition of approval for Stage 2.

The modelled air quality impacts that the Commission has considered are based on the use of a conveyor between open cut pit four and the coal handling and processing facility. Any approval should be for use of the conveyor rather than any other means of transport

Given that the national 24 hour PM₁₀ criterion is 50 µg/m³, the Commission considers that the acquisition criteria should be reviewed in consultation with NSW Health and the EPA. The Commission recommends that revised acquisition criteria should be developed in consultation with NSW Health and the EPA prior to any final approval of this project

The Commission does not agree with the draft changes to the conditions relating to air quality and recommends that the conditions for Stage 2 are drafted to be consistent with the existing conditions for Stage 1, wherever possible.

2.4.1 Air Quality Criteria

The Department notes that the project approval includes the standard air quality criteria which is set out in the Environment Protection Authority's (EPA's) guideline *Approved Methods for Modelling and Assessment of Air Pollutants in NSW (2005)* (Approved Methods).

The Department confirms that *National Environment Protection Measures* (NEPMs) for ambient air quality are currently under review by the Commonwealth and that this review could lead to changes in the Approved Methods. However, this process is likely to take some time. In the interim, the Department believes that the Stage 2 project should be required to comply with the Approved Methods.

The Department has recently released a *Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments* (November, 2014) (Acquisition and Mitigation Policy).

The project would not trigger any of the relevant criteria under the Acquisition and Mitigation Policy (refer to **Appendix E**). Nevertheless, the Department recommends that the air quality criteria and acquisition criteria remain in the approval as a safeguard.

The PAC's report also recommends that the air quality conditions for the Stage 2 project are consistent with the conditions for the Stage 1 project. The Department agrees that this should be the case, and has amended both approvals accordingly.

2.4.2 Modelling of Conveyor

The PAC's report notes that the modelled air quality impacts of the Stage 2 project are based on the use of a conveyor between OC4 and the coal handling and processing facility at the Stage 1 surface infrastructure area. The PAC recommended that any approval should be for use of the conveyor rather than any other means of transport.

However, in its response to the PAC report (see **Appendix A**), MCM confirmed that the Air Quality Assessment (Appendix C of the Preferred Project Report) modelled the use of the haul road because this was the likely "worst-case" dust generating scenario over the life of the Stage 2 Project. If the project is predicted to be compliant with air quality criteria with the use of the haul road, then it follows that the air quality it will be further below the criteria if other coal transportation methods, such as the conveyor, are used.

This approach provides the mine with the flexibility to use either the haul road or conveyor, or a combination of methods to transport coal, whilst maintaining compliance. Irrespective, MCM will be obliged under the Air Quality Management Plan to implement best practice air quality mitigation.

It is therefore not considered reasonable or necessary to restrict coal haulage to the conveyor system only.

2.4.3 Ulan School

The PAC's report recommends that MCM's commitment to work with NSW Department of Education and Communities (DEC) to deal with dust and noise impacts to the Ulan Public School should be included as a condition of approval for Stage 2.

The Department accepts this recommendation and has included a condition which reflects this in the revised project approval. In addition, in line with MCM's original commitment, the Department has also recommended a condition requiring MCM, on a reasonable basis relating to the adverse effect of noise and/or dust from the project, to negotiate with DEC to contribute to or meet reasonable costs toward relocating the school.

2.5 Mine Plan

PAC Recommendations

Further consideration should be given to options to reduce the size of the out-of-pit emplacement area.

Further consideration should be given to options to adjust the mine plan to ensure that no more than two final voids are included in the final post mining landform for the complex.

2.5.1 Out-of-pit Emplacement Area

In its report the PAC indicated that further consideration of options to reduce the size of the out-of-pit emplacement area should be pursued. In particular, the PAC considered that the out-of-pit emplacement should avoid impacts on endangered ecological communities (EECs).

Following exhibition of the original EA, the Department requested that MCM alter the design of the project, particularly the boundaries of the additional open cut pit (OC4) and the size and location of the associated out-of-pit emplacement areas, specifically to reduce the impact of the project on EECs. As discussed in detail in the Director-General's Environmental Assessment Report, in response MCM reduced the number of out-of-pit emplacement areas from two (which were originally located adjacent to the southern most "arm" of OC4), to one (located above Underground No. 1 on the northwestern side of OC4). This resulted in a reduction in the total area of disturbance required for the out-of-pit emplacements of 29 ha (ie from 122 ha combined to 93 ha) and the avoidance of 16 ha of EEC (ie from 19 ha to 3 ha). The new out-of-pit emplacement area would only result in disturbance of a small area (ie 3ha) of EEC located on the fringe of a much larger area of this community.

In its response to the PAC's report (see **Appendix A**), MCM stated that revising the location and size of the out-of-pit emplacement areas meant a loss of some of the operational flexibility that the original larger emplacement areas had provided. In respect of mine design, materials handling and operator safety, MCM considers that it now has limited ability to further reduce the size of the out-of-pit emplacement area without a significant redesign of the open cut pit and the potential sterilisation of some of its coal reserves.

The Department accepts that MCM has made significant changes to the original project to avoid EECs and that relocating or significantly reducing the size of the remaining out-of-pit emplacement area is now difficult from an operational perspective. It would require a complete change of the mine plan, which is not considered feasible at this late stage of the project. The Department is also satisfied that the small area of EEC that would be disturbed by the new location of the out-of-pit emplacement area would be adequately offset by MCM's proposed biodiversity offset strategy.

2.5.2 Final Voids

The PAC considers that further consideration should be given to options to adjust the mine plan to reduce the number and size of final voids in the final post mining landform.

The Stage 2 project would result in one final void located on the eastern side of OC4, adjacent to the Wilpinjong Coal Mine western boundary. In its response to the PAC's report (**Appendix A**), MCM indicates that it has put considerable effort into the planning of the sequencing of mining in OC4 to ensure that only one void would be created. MCM also pointed out that the original approval for the Stage 1 Project allowed for three voids, including one in each of the open cut pits, but that this was reduced to two voids as a result of a recent modification (ie MOD 9). MCM completed an analysis of the costs involved in backfilling the OC3 and OC4 voids that indicates that the total costs would be in the order of \$133 million, which MCM considers would significantly devalue the project.

Existing government policy and practice is that the merits of leaving final voids should be considered on a case-by-case basis, taking into consideration a wide range of factors including whether the cost of filling the voids justifies the environmental benefits, and the environmental consequences of not filling voids. The Department carefully considers the potential environmental impacts of proposed final voids during the assessment process - including their potential ability to sterilise land, pollute water resources and remove water from productive use - to ensure that impacts are acceptable and can be suitably managed.

In regard to the Stage 2 project, the Department notes that the land on which the final void would be created is relatively unproductive grazing land. The catchment area reporting to the void is relatively small and the void has been designed to ensure it is not overtopped during high rainfall events. The Department does not believe it is reasonable or feasible to require MCM to backfill the void. A precautionary approach, in this case, suggests that a major and costly decision should not be taken in the absence of substantial evidence that a significant environmental benefit would result.

The Department also notes the existing Rehabilitation Objectives in the previously-proposed conditions of approval for Stage 2, which would require MCM to:

- minimise the size and depth of final void so far as is reasonable and feasible;
- minimise the drainage catchment of the final void so far as is reasonable and feasible;
- ensure negligible high wall instability risk;
- design the size and depth of the final voids having regard to their function as long-term groundwater sinks, to ensure that groundwater flows across the back-filled pit towards the final void; and
- minimise risk of flood interaction for all flood events up to and including the Probable Maximum Flood level.

The Department believes these rehabilitation objectives are adequate to ensure that the void is designed and managed to minimise all potential environmental impacts, including long-term impacts.

2.6 Subsidence

PAC Recommendation

The consideration of the Stage 2 project application should include provision for ongoing monitoring for subsidence in addition to a Trigger Action Response Plan (TARP).

The Department accepts the PACs recommendations in relation to subsidence monitoring and has revised the conditions accordingly.

3. CONSIDERATION OF RESIDUAL MATTERS – MODIFICATION TO STAGE 1 PROJECT

3.1 *Integration of Stage 2 with Stage 1, via Stage 1 (MOD 3)*

The Stage 2 Project would be operated in conjunction with the Stage 1 Project, and together the two projects would form a single, integrated mining complex with a range of shared infrastructure. To allow this integration, consequential modifications to the Stage 1 project approval (ie MOD 3) are required to allow the Stage 1 infrastructure to receive, handle, process, store and load coal received from the Stage 2 mining operations and to extend the operational life of the approved Stage 1 infrastructure to match the time frame for mining at the Stage 2 Project (ie until 31 December 2038).

The Department has provided a draft Notice of Modification (NoM) for MOD 3, together with the consolidated Stage 1 project approval, as proposed to be modified (see **Appendix H**). The NoM reflects the changes necessary to integrate the State 2 approval operationally with the Stage 1 approval. The NoM also reflects conditions of approval recommended in the draft Stage 2 project approval. Conditions in both approvals provide for the integration of various requirements, such as the integration of the management plans required under each approval.

3.2 *Previous Notice of Modification for Stage 1 (MOD 9)*

On 16 June 2014, the PAC approved a separate modification (MOD 9) to the Stage 1 Project. The resulting NoM was accompanied by a Determination Report, which outlined amendments made by the PAC to the Department's draft NoM for MOD 9.

The Department has a number of concerns regarding the conditions of approval determined in relation to MOD 9. Specifically, these concerns relate to:

- noise-related land acquisition and mitigation criteria; and
- cumulative noise criteria and cumulative noise-related land acquisition criteria.

Similar concerns were raised by MCM in a letter to the Department (see **Appendix B**). A discussion of the nature of the issues and recommended corrective actions is provided below.

3.2.1 *Land Acquisition and Mitigation Criteria*

The NoM for MOD 9 replaced the existing Land Acquisition Criteria applicable to the noise impacts of Stage 1 of the project, which had been in place since the approval was first granted in 2007. The new acquisition criteria appear in condition 2 of Schedule 3 of the approval, and require acquisition of land if noise generated by the project exceeds 35 dB(A) (during any noise measurement period).

The Department notes that this noise-related land acquisition criteria is in some cases lower than the project's noise criteria specified in condition 1 of the NoM (which range from 35 to 39 dB(A)). Further, the acquisition criteria in some cases are lower than the criteria for mitigation-on-request criteria specified in condition 5 (which also range from 35 to 39 dB(A)).

Condition 2 therefore allows landowners to write to MCM and request the acquisition of their land despite the project being compliant with its noise emission criteria, or indeed, where the property has previously been subject to noise mitigation to reduce noise impacts.

The draft condition proposed by the Department had specific application to five identified properties, where noise predictions were in excess of 35 dB(A), ie the Department proposed that all properties where noise impacts greater than the lowest possible PSNL of 35 dB(A) should receive noise mitigation on request. The PAC's form of words extended this requirement to properties where the lowest possible PSNL was actually met.

The Department agrees with MCM that these conditions could lead to material consequences for the company by allowing any residence on privately owned land to have additional noise mitigation and acquisition rights if noise levels are equal to or exceed 35 dB(A).

3.2.2 Cumulative Noise Criteria

The NoM for MOD 9 also required the inclusion of 'Cumulative Noise Criteria' (see the current conditions 3 and 4 of Schedule 3 of the project approval).

Both the EPA and the Department consider these conditions to be unenforceable. Further, it is not mathematically possible for noise from Moolarben, combined with other nearby mines, to exceed the amenity noise criteria without the mine first exceeding its intrusive noise criteria. The amenity (ie cumulative) noise criteria are therefore redundant.

3.3 Application of the New Land Acquisition and Mitigation Policy

The Department believes that the setting of mitigation and acquisition rights for both Stages 1 and 2 of the project should be undertaken in accordance with the recently released Acquisition and Mitigation Policy. This will require the complex to comply with the most up-to-date mitigation and acquisition criteria for air and noise emissions, and remove the issues raised above in relation to the MOD 9 approval.

A summary of policy approach for potential noise impacts and treatments is provided in Table 3.

Table 3: Government Policy for Noise Impacts and Potential Treatments

Residual Noise Exceeds INP Criteria by	Characterisation of Impacts	Potential Treatment
0-2 dB(A) above the project specific noise levels (PSNL)	Negligible	The exceedances would not be discernable by the average listener and therefore would not warrant receiver based treatments or controls
3-5 above the PSNL	Marginal / Moderate	Provide mechanical ventilation / comfort condition systems to enable windows to be closed without compromising internal air quality / amenity and/or upgraded façade elements like windows, doors, roof insulation etc. to further increase the ability of the building façade to reduce noise levels.
>5dB(A) above the PSNL	Significant	Provide mitigation as for moderate impacts and apply voluntary land acquisition provisions.

The Acquisition and Mitigation Policy states that voluntary land acquisition rights should be granted where the noise generated by the development would:

- be more than 5dB(A) above the project specific noise level at any residence on privately-owned land; or
- contribute to exceedances of the recommended maximum noise levels in Table 2.1 of the NSW Industrial Noise Policy (INP) (EPA, 1999) on more than 25% of any privately owned land, and a dwelling could be built on that land under existing planning controls.

For the Moolarben project (which is in a rural environment), recommended maximum noise levels in Table 2.1 of the INP equate to an LA_{eq} of 55/50/45 dB(A) for the day/evening/night periods, respectively.

A summary of the operational noise levels that would be experienced at residences in the vicinity of the Moolarben Stage 1 and 2 projects is provided in Table 4. This table has been copied from Table 4 of the Director-General's Environmental Assessment Report.

Table 4: Summary of Operational Noise Levels - Residences

Receiver ID	Criteria Day / evening / night	Predicted Worst Case Noise Level dB(A)LA _{eq} , 15 min					
		Yr 2	Yr 6	Yr 11	Yr 16	Yr 21	Yr 24
30	35 / 35 / 35					39 (+4)	37 (+2)
31	35 / 35 / 35					36 (+1)	
63	38 / 38 / 37		38 (+1)	39 (+2)			
70	35 / 35 / 35		37 (+1)	37 (+2)	36 (+1)	36 (+1)	
75	35 / 35 / 35			36 (+1)			

Based on the application of the new Acquisition and Mitigation Policy to these noise levels, the only property in the vicinity of the project that would attract mitigation rights is Property 30.

The Department requested that MCM provide additional analysis of the noise model predictions to determine if any properties fall within the 25% of any privately owned land “rule” for acquisition. MCM engaged EMM to complete this analysis (refer to **Appendix E**). The analysis concludes that Property 32, which is located immediately south of the Stage 1 Open Cut Pit 3, would experience night-time noise levels of 45dB(A) on 34% of its land area.

Therefore, the Department has recommended in both the Stage 1 (MOD 3) approval and the Stage 2 approval that Property 30 receive voluntary mitigation rights and Property 32 receive voluntary acquisition rights in accordance with the new Acquisition and Mitigation Policy.

4. CONCLUSION

In May 2014, the PAC completed a merit review of the Moolarben Coal Project – Stage 1 and concluded that, as a whole, the project has merit and is approvable, subject to resolving a number of outstanding matters.

This Addendum Report focuses on addressing these matters, and should be read in conjunction with the Director General's Environmental Assessment Report for the project, which provides a detailed assessment of the key issues in accordance with the requirements of the EP&A Act.

The Department agrees with or accepts most of the PAC report's recommendations, including recommendations to protect the Munghorn Gap Nature Reserve and strengthen certain water-related performance measures. These recommendations have been directly incorporated into revised draft conditions for the Stage 2 project.

However, a small number of recommendations, in particular those relating to air quality acquisition criteria and climate change, are considered to be policy issues and beyond the bounds of any individual project approval. Further, some of these issues have now been separately addressed by Government (ie the development of a regional biodiversity strategy, the creation of an offset fund, and voluntary land acquisition and mitigation policy).

One of the key residual issues is whether the project's offset strategy would adequately offset the potential impacts of the project on the Regent Honeyeater. The Department has developed a condition to address this in consultation with OEH. This condition would require MCM to calculate whether any further offsets are required for the Regent Honeyeater using the relevant calculators under the NSW Biodiversity Offset Policy for Major Projects; and if so, retire the residual credits in accordance with the rules of the policy within 18 months of completing the calculations.

The Department notes that MCM has previously revised the location of its out-of-pit emplacement area to significantly reduce its impact on EEC, and is satisfied that the small area of EECs that would be disturbed by the new location of the out-of-pit emplacement area would be adequately offset by MCM's proposed biodiversity offset strategy. The Department also believes the existing rehabilitation objectives are adequate to ensure that the final void is designed and managed to minimise all potential environmental impacts, including long-term impacts.

The Department is satisfied that its recommended conditions are based on best-practice and are equitable. It is also satisfied that the project is in the public interest and recommends that it be approved subject to the recommended conditions of consent.

In relation to the PAC's approval for the Stage 1 Project, the Department has recommended changes to allow the integration of the Stage 1 and Stage 2 Projects, as well as the update of noise and air-related criteria to be in-line with recent Government policy.

5. RECOMMENDATION

It is RECOMMENDED that the Planning Assessment Commission, as delegate of the Minister for Planning:

- **consider** the findings and recommendations of this report;
- **approve** the development application, subject to conditions; and
- **sign** the attached instruments of approval (**Appendix G** and **Appendix H**).

DKitto 18/11/14

David Kitto
Acting Executive Director
Resource Assessments



Marcus Ray
Acting Deputy Secretary
Planning Services

18/11/14

APPENDIX A: MCM'S RESPONSE TO THE PAC REPORT

APPENDIX B: MCM'S ADDITIONAL INFORMATION ON BIODIVERSITY OFFSETS AND NOISE CRITERIA

APPENDIX C: OEH SUBMISSION ON THE REGENT HONEYEATER

APPENDIX D: BIOBANKING ANALYSIS FOR THE REGENT HONEYEATER

APPENDIX E: MCM ADDITIONAL INFORMATION ON NOISE AND AIR COMPLIANCE WITH NEW GOVERNMENT POLICY

APPENDIX F: OEH'S RESPONSE TO THE REGENT HONEYEATER BIOBANKING ANALYSIS

APPENDIX G: REVISED STAGE 2 – PROJECT APPROVAL

APPENDIX H: REVISED STAGE 1 (MOD 3) – PROJECT APPROVAL AND NOTICE OF MODIFICATION
