



2 February 2018

**NSW Planning Assessment Commission Determination Report
Invincible Coal Mine - Southern Extension Modification (07_0127 MOD 5)**

1. INTRODUCTION

On 2 November 2017, the Planning Assessment Commission (the Commission) received from the Department of Planning and Environment (the Department) a modification application from Castlereagh Coal Pty Ltd (the proponent) to develop the Invincible Coal Mine Southern Extension Project.

The Department has referred the modification application to the Commission for determination in accordance with the Minister for Planning's delegation because the Department received more than 25 submissions from the public in the nature of objections and a reportable political donation disclosure.

Ms Lynelle Briggs AO, Chair of the Commission, nominated Mr Paul Forward (chair), Mr Alan Coutts, and Mr Tony Pearson to constitute the Commission to determine the modification application.

1.1 Summary of Modification Application

The modification application proposes to recommence mining operations and extend the life of the mine by 8 years, through the development of a new open cut pit, known as the Southern Extension Area. The Southern Extension Area is approximately 50 hectares. The total disturbance area, including the historically mined areas, is approximately 215 hectares, with approximately 71 hectares of the historical disturbance area in the process of being rehabilitated. Much of the Southern Extension Area has been undermined as part of the Ivanhoe underground operations.

The proposed development targets 2.7 million tonnes of run of mine (ROM) coal in the Irondale, Lithgow and Lidsdale seams at the previously approved extraction rate of 1.2 million tonnes per annum. The ROM coal would be processed using existing infrastructure, with minor modifications. Some additional infrastructure, including the relocation of a 11kV transmission line and additional water management infrastructure, would be required. Product coal would be transported by road to the Shoalhaven Starches plant in Bombaderry, NSW and to the Mount Piper Power Station.

Since the exhibition of the environmental assessment, the proponent has amended the proposal in response to concerns raised by the Department, government authorities and the community. These changes and revisions include:

- removing the need to discharge water intercepted by the Southern Extension Area; and
- reducing the gradient of the final landform at the eastern boundary of the proposed extension.

The project extent and footprint have been modified through ongoing discussions between the Department and the proponent. The mine footprint has been amended to exclude mining on the steep slopes on the eastern boundary of the project area. This amendment has reduced the project footprint to 38 hectares, removing access to 500,000 tonnes of coal.

1.2 Need for modification

The proponent's environmental assessment set out the justification for the proposed modification. The proponent identified that the primary purpose of the southern extension is to provide speciality product coal, colloquially known as "nut coal", to Manildra's Shoalhaven Starches Plant. Currently, "nut coal" accounts for approximately 25-30% of the energy costs and approximately 35-40% of energy production for the plant. Accordingly, the proponent identified that while supply risks are reduced by transitioning from coal to gas or electricity, production costs are increased by doing so.

The proponent also identified that coal resources in the area which are not suitable for use at the Shoalhaven Starches Plant would be available for use at the nearby Mount Piper Power Station.

1.3 Background

The Invincible Open Cut Expansion Project was approved by the then Minister for Planning on 4 December 2008, and allowed mining operations to take place for 8 years from that date. The approval provided for rehabilitation of the site and recognised the need to minimise adverse socio-economic effects associated with the conclusion of the project, including the reduction in local and regional employment levels, by requiring these to be addressed in a Mine Closure Plan.

The mine site has currently been placed in "Care and Maintenance". There has also been limited commencement of the required rehabilitation and remediation objectives. While some areas have commenced rehabilitation, including revegetation, the Department has noted that the observed success was limited, in particular on impacted steeper slopes.

Proposed extensions to mining activities on the project site have been subject to prior consideration by the Commission through the review of the Coalpac Consolidation Project, and subsequent refusal for the expansion of Invincible and Cullen Valley operations.

Coalpac Consolidation Project Review

The consolidation project was a proposed large open cut and high wall expansion reviewed by the Commission in December 2012. The Commission recommended that the project should not be approved, stating that there were unacceptable impacts on regional biodiversity values, the internationally significant rock pagodas that occur near the site, and the amenity of residents in Cullen Bullen. After assessing the merits of the project, and considering the findings of the Commission, the Department concluded that the site was unsuitable for such a large and elongated open cut coal mine, but acknowledged that there could be some merit in allowing a smaller extension that would avoid the more sensitive parts of the site.

Invincible Modification 4 and Cullen Valley Modification 2

The two modification proposals reduced the area of open cut and high wall mining compared to the Coalpac Consolidation Project with a disturbance area of approximately 150 ha within the Ben Bullen State Forest. The Commission refused the modifications in October 2014, finding that the project would have significant impacts on the pagoda landform complex as a whole, including impacts on habitat for fauna species and scenic and landscape values and provide limited, short term economic benefits. It was also determined that the site has significant conservation value and that conservation was the most appropriate land use for the project sites.

2. DEPARTMENT'S ASSESSMENT REPORT FOR THE SOUTHERN EXTENSION MODIFICATION

The Department's assessment report identified impacts to geodiversity and the landscape, biodiversity, water resources, noise and blasting, air quality, Aboriginal Cultural Heritage, economic, and traffic and transport as the key impacts associated with the proposal.

The Department's assessment report found that while the economic benefits of the project were modest, the project would, in addition, provide benefits to the local community. This evaluation was

contingent on the level of impact to the Ben Bullen State Forest being small, effectively managed and appropriately offset through the reduction of mining on the identified steeper slopes and implementation of rehabilitation and water management strategies.

The Department also assessed the impacts associated with noise, blasting and vibration, air quality, traffic and Aboriginal cultural heritage to be minimal and appropriately managed.

3. COMMISSION'S MEETINGS AND SITE VISIT

As part of its consideration of the proposal, the Commission was briefed by the Department, the proponent and the Lithgow City Council (Council). The Commission visited the site accompanied by the proponent. The Commission also independently visited the rock pagodas adjacent to the proposed Southern Extension Area accompanied by officers of the Office of Environment and Heritage (OEH). Notes from these briefings and the site inspection are provided in **Appendix 1**. The Commission also conducted a public meeting. A list of speakers and notes from the public meeting are provided in **Appendices 2 and 3** respectively.

3.1 Briefing from the Department

On 20 November 2017, the Department briefed the Commission on the historic context of mining at the project site and the potential impacts of the current modification application, including the conservation values, biodiversity, unique landforms and visual amenity, rehabilitation considerations and ground and surface water management.

3.2 Inspection of the sandstone pagodas

On 28 November 2017, the Commission visited some of the sandstone pagodas near the project site accompanied by the Office of Environment and Heritage. During the visit the OEH discussed with the Commission the observed level of impact to the pagodas from historic mining and the habitat requirements and local records of the broad headed snake and the purple copper butterfly.

3.3 Briefings from Proponent and Site Visit

On 28 November 2017, the Commission met with the proponent and visited the site. The proponent detailed the justification for the project with regard to the Manildra Group's ongoing energy security and costs for their Bombaderry ethanol plant, the economic benefits to NSW and the Lithgow region, their community engagement process and the environmental impacts and management strategies. The site visit incorporated an inspection of historic mine workings, including rehabilitated areas, disturbance areas, and areas impacted by historic mine subsidence.

3.4 Meeting with Lithgow City Council

On 28 November 2017, the Commission met with Council. The Council provided its support for the project, noting the importance of the project in providing an economic contribution to the region and the current issues associated with long term high unemployment in Lithgow.

3.5 Public Meeting

The Commission held a public meeting at the Lithgow Workies Club at 3-7 Tank St, Lithgow NSW on 29 November 2017 to hear the public's views on the proposal. A list of the 18 speakers that presented to the Commission is provided in **Appendix 2**. Following the public meeting 1730 written comments were received by the Commission. Of these, 43 supported the project, with the remaining comments objecting to the project. Of the objections 1646 were received via the Colong Foundation's website.

A summary of the issues raised by the speakers and provided in written comments is provided in **Appendix 3**. In summary, the main issues raised in support of the proposal included the importance of the project to the local economy and to the continued functioning of the Shoalhaven Starches plant and its associated suppliers, and the positive community engagement undertaken by the Manildra Group. Issues of concern and objection included the legacy of unrehabilitated

environmental impacts from historic mining operations, the importance of the conservation values of the Gardens of Stone National Park and the Ben Bullen State Forest, the prior findings of the Commission, health and amenity impacts and the need for sustainable employment opportunities in the area.

4. ADDITIONAL INFORMATION

On 1 December 2017, the Commission requested additional information from the proponent regarding concerns raised as part of the public meeting and written comments (**Appendix 4**). The additional information sought clarification on:

- the changes to mine operations and production, including rehabilitation activities;
- the results of recent surveys for the purple copper butterfly and any required revisions to the impact assessment;
- consultation details for groundwater discharge;
- economic feasibility of rehabilitation commitments; and
- consideration of employment options for identified development and extraction options.

On 21 December 2017, the proponent provided additional information in response to the Commission's request. This information is available on the Commission's website.

The Department considered the information provided by the proponent and advised that the additional information did not fundamentally change the nature and extent of the likely impacts or the proposed conditions of consent required to manage the likely impacts. The Department subsequently sought advice from OEH on the significance of the identified impact to the population of purple copper butterflies and any requirements to minimise or manage this impact.

5. COMMISSION'S CONSIDERATION

In this determination, the Commission has considered carefully:

- all information provided by the proponent, including additional information;
- the Department's assessment report;
- advice from government agencies; and
- relevant matters for consideration specified in section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The key matters considered by the Commission include impacts to the landscape and geodiversity, biodiversity, conservation values of Ben Bullen State Forest, social and economic function, rehabilitation, project justification and ground and surface water.

The Commission is satisfied with the Department's assessment of other matters, including impacts to traffic, air quality, noise, indigenous cultural heritage, greenhouse gas emissions and blasting. The Commission has requested that the conditions managing the impacts to indigenous cultural heritage be amended to ensure no additional impacts occur without approval.

5.1 Landscape and Geo-diverse features

The public comments, including those through the Colong Foundation's website, presented significant concern to the Commission about the potential for the proposed project to impact on geo-diverse features found in the region, including internationally important sandstone pagodas. The comments discussed the potential for mining activities to directly and indirectly impact these features through a combination of blasting and vibration impacts to the pagodas as well as the limitations of rehabilitation actions to restore the site.

The proponent's assessment identified the full mine plan for the Southern Area Extension would provide the best economic return for the development, while mitigating and managing impacts to the pagoda landscape. This was inclusive of their view that impacts on steeply sloped areas could

successfully be remediated and revegetated after mining. The proponent concluded that by establishing a suitable buffer between the pagodas and mining activities and appropriately planning and managing mine blasts the impacts to the pagoda features could be avoided.

The information provided by the proponent on 21 December 2017 clarified the impacts to these steeply sloping areas and re-stated the proponent's views that they could be successfully rehabilitated, as demonstrated by the current rehabilitation efforts.

The Department identified that the Southern Extension Area does not contain visually prominent pagodas and geodiverse features. Additionally, the views of the Southern Extension Area from the Castlereagh Highway would be intermittent due to screening from existing vegetation and limit the visual impacts from the project. However, their assessment found that the broader landscape warrants protection for its conservation values and that these values could be impacted by open cut mining operation, especially by activities on the steeper slopes at the base of the pagodas.

These impacts may be compounded by the low levels of observed success in remediating and rehabilitating steep slopes post mining. Consequently, the Department's assessment has shown that disturbance in these areas should be avoided. This has been adopted into the Department's findings, which have removed mining from areas with an identified steeper slope.

The Department's assessment found that the project had largely been designed to minimise impacts to the landscape and that with the setback imposed in the conditions, it now incorporated the recommended minimum buffer from the identified pagoda features recommended by a previous Commission review. Importantly, the Department recognised that the project does not propose to undertake high wall mining (a feature of previous unsuccessful applications) and includes practical measures to further reduce impacts from blasting and vibration, including detailed blast planning to be incorporated in the blasting management plan to be developed by the proponent.

The Commission considers that there is sufficient evidence to indicate that the establishment of a buffer between mining activities and the pagodas, in conjunction with detailed blast planning and management, is sufficient to ensure that the pagodas are outside the zone of any anticipated direct impacts from mining activities. The Commission has requested the Department amend the conditions of consent to incorporate a performance measure to ensure that impacts to the pagoda formations, cliff lines and escarpments do not occur.

The Commission is satisfied that the current mine operations and plan, as amended by the Department's assessment, and the described mitigation measures are likely to minimise the risk to geo-diverse features near the project.

Based on the assessment provided, the Commission finds that impacts on the sandstone pagodas and aspects of the pagodas' ecological complex should be able to be avoided through the establishment of the buffer and appropriate blast management. However, the Commission does stress the importance of the operational requirements of the mine ensuring that impacts to the pagodas from mining operations are avoided.

5.2 Conservation Values

The public comments, including those provided by the Nature Conservation Council and through the Colong Foundation's website, expressed concern about the potential for the project to have unacceptable impacts to the conservation values of the Ben Bullen State Forest, including its potential inclusion in the Gardens of Stone National Park. The comments also raised the importance and international recognition of the pagoda landscape, the inability of offsets to compensate for impacts to this landscape and cumulative impacts to the region, including the expansion of mining operations.

The proponent's assessment states that the conservation values of the Southern Extension Area have already been significantly impacted by historic mining processes, including underground mining in the planned extraction area.

The proponent also indicated that the impacts to the conservation values of the project site are intrinsically linked to the planned rehabilitation outcomes for the Southern Extension Area and historic mining areas. Accordingly, it has suggested that in the medium to long term the project will improve the conservation values for the site by building on what it describes as successful and well-established remediation and rehabilitation actions.

The Department's assessment confirmed that the identified conservation values of the sandstone pagoda landscape complex extended beyond the discreet pagoda structures. The Department concluded that reducing the mine footprint to avoid the steeper slopes connecting the pagodas to the surrounding areas was an effective way to minimise impacts to the pagoda landscape complex and limit uncertainty associated with post mining remediation. The Department also concluded that the conservation values of the project site, in the medium to long term, would best be managed by ensuring that better rehabilitation outcomes were achieved on the project site.

The Department assessed the conservation values likely to be impacted by the project based upon the unmodified disturbance footprint of the Southern Expansion Area. As such, the Department was confident that the low level of assessed impact to the pagoda landscape complex would be minimised by the reduction in the mine footprint.

While previous panels have found that the highest and best use for this land is conservation, the Commission considers these conservation values to be better expressed in other, less impacted areas of the Ben Bullen State Forest. Additionally, the Commission considers that the revised mining operation, which excludes mining from the steep slopes adjacent to the sandstone pagodas and a 300-metre buffer, is sufficient to avoid impacts from mining activities to the pagoda landscape complex.

While the demonstration of identified conservation values is currently limited, the Commission considers that they can be at least partially recovered through the implementation of an effective rehabilitation plan to historically mined areas and the Southern Extension Area.

The Commission acknowledges the limitations in the proposed offsetting strategy in compensating for the impacts to the pagoda landscape ecological complex outside of impacts to threatened flora and fauna, discussed later. However, the Commission agrees with the Department's assessment that the impacts to this complex are more effectively managed in the medium to long term through the establishment of an effective remediation and rehabilitation strategy for the project site.

Based on the assessment provided, the Commission finds that impacts on the conservation values of the project site have been reduced by the historic mining practices. These impacts are best addressed through a rehabilitation strategy which will address not only new impacts but will proactively remediate historic impacts which have already been substantially delayed.

5.3 Site Rehabilitation and Remediation

The public comments presented significant concern to the Commission about the limited extent and current poor performance of rehabilitation at the Invincible site. The comments discussed the limitation in the current rehabilitation success in the context of the limited information provided by the proponent regarding their rehabilitation strategy, the unreasonable assumption by the proponent and the Department that the impacts could be rehabilitated and the danger of using the promise of rehabilitating past impacts as a justification for additional impacts.

The proponent has committed to implementing a progressive approach to a whole of site rehabilitation program, including for historically mined areas. The commitments propose to rehabilitate the proposed Southern Extension Area and all existing disturbance areas at Invincible through reshaping mining areas to remove voids and revegetating the reshaped landform with locally endemic woodland and forest communities.

The proponent's assessment stated that there are significant areas of the site that are yet to be rehabilitated. This includes three final voids that are required to be backfilled under the existing approval. The proponent identified that there is currently insufficient fill material to backfill the existing mine voids without disturbing established rehabilitation. The assessment also identified that while the residual voids had yet to be remediated, some areas had undergone remediation and revegetation, which was now well advanced.

The proponent identified that the methodology, including performance measures, trigger action response plans and completion criteria, for the rehabilitation will be developed and included in the mine operation plan to be developed for the Southern Extension Area. This would include the final landforms, which would blend with the surrounding landscape, with no voids remaining. Rehabilitation would attempt to return the majority of the site to vegetation generally consistent with local native woodland and forest.

The Department's assessment highlighted the inherent risks associated with rehabilitation of steep areas including erosion, preferential flow paths between natural and rehabilitated land, and operational constraints in establishing the final landform. The Department's assessment also found that the current state of rehabilitation on the project site, particularly on steep slopes such as the West Pit Area, have been sub-optimal to date due to the steep sloped nature of the post-mining landform.

The Department's assessment report and the proponent's assessment documentation also highlighted that as a result of limited historic planning at the site, the current requirement to backfill all three residual mine voids was, under current operating conditions, unlikely to be achieved.

The Commission acknowledges the inherent uncertainty in post mining rehabilitation and remediation processes. While the proponent has stated that the nature and success of the current on-site rehabilitation of steeper slopes was demonstrated during the site visit, the Commission was not provided with sufficient evidence to evaluate the success of these actions. Accordingly, the Commission agrees with the Department's assessment that rehabilitation of steeper slopes has the potential to be problematic and that the impacts to these areas should be avoided through removing mining operation on the identified steeper slopes.

While the Commission acknowledges the limited extent of remediation and rehabilitation on the site is an historic impact, the legal liability to remediate this area currently resides with the proponent. The remediation works for this site have suffered significant delays. The Commission considers that the recommencement of mining at this site is acceptable only if progress on historic rehabilitation of the site is demonstrated. Accordingly, the Commission has requested the Department amend the conditions of consent to ensure that the planning and commencement of site rehabilitation, including the backfilling of voids, occurs within an appropriate timeframe.

Based on the assessment and site context provided, the Commission has concluded that the rehabilitation of the Invincible site is a priority outcome for the proponent. Accordingly, the Commission agrees with the revised conditions of consent, which emphasise the need to commence rehabilitation.

5.4 Biodiversity

The public comments, including those provided by the Nature Conservation Council and through the Colong Foundation's website, expressed concern to the Commission about the potential for the project to result in unacceptable impacts to threatened flora and fauna present in the project site and the adjoining Ben Bullen State Forest. The comments noted the likely and confirmed presence of protected species in the project area as well as the inability of biodiversity offsets, not located within Ben Bullen State Forest, to compensate for impacts to the Ben Bullen State Forest and cumulative impacts to the region, including the possible expansion of mining operations through subsequent project modifications.

The proponent stated that they have assessed the likely impacts to biodiversity values in accordance with the *NSW Framework for Biodiversity Assessment (FBA)* and *Major Projects Offset Policy*. Their assessment concluded that while habitat for threatened species would be cleared through the development of the project, these impacts could effectively be offset through securing a biobanking site and, in cases where a suitable land based offset could not be identified, such as for the endangered broad-headed Snake, making a financial contribution to the New South Wales government's species conservation fund.

The Department confirmed that the identified direct impacts to biodiversity have been assessed in accordance with the FBA and offset policy. This assessment also established a biodiversity offset requirement appropriate for the level of vegetation clearance associated with the development. The Department also considered that the identified impacts to biodiversity were likely to be lower than those assessed, reflecting the reduction in the project scale as discussed in its assessment report.

The Commission notes the assessment of impacts to biodiversity, as presented in the proponent's biodiversity assessment, including the supplementary information. The Commission agrees with the Department that this assessment provides an appropriate consideration of the likely impacts to threatened species and native vegetation as a result of the development of the project that is consistent with government policy.

During the Commission's site visit the proponent confirmed that supplementary surveys had confirmed the presence of the endangered purple copper butterfly (*Paralucia spinifera*), one of Australia's rarest butterflies, in the project site. Following confirmation of the purple copper butterfly on the project site, the Commission requested the proponent and the Department review their assessment of impacts to regional biodiversity and any conditions required to manage these impacts.

Through the supplementary information, the proponent identified the area of habitat for this species that would be impacted and its intention to transplant the impacted habitat plants to the rehabilitation sites. Due to the rarity of the species and its unique habitat requirements, the proponent identified that it would be unlikely to identify a land based offset and committed to providing a suitable financial contribution to the NSW government's species conservation fund.

The Department, in consultation with OEH, provided a revised assessment of the impacts to biodiversity, focusing on the impacts to the purple copper butterfly. The revised assessment documentation includes formalising commitments by the proponent to undertake translocation trials for the impacted *Bursaria spinosa* and associated ant colony as a method to mitigate impacts to the purple copper butterfly.

The Commission agrees with the Department that the impacts to biodiversity are likely to be less than those assessed by the proponent as a result of the reduction of the mining footprint. The Commission considers that while threatened species have been confirmed on site, the scale of the

impacts are small and can be managed through the conditions of consent and the identified biodiversity offsets.

The Commission notes the commitments made by the proponent to undertake translocation trials for *Busaria spinosa* that would be cleared as part of the development. The Commission agrees with the Department and OEH that this is an important component of mitigating the risk to this species. The Commission notes that the OEH has provided initial comments on the best way to achieve success for this translocation, including avoiding translocation into areas undergoing rehabilitation and revegetation. Accordingly, the Commission is supportive of this action if it is done in consultation with OEH to maximise the chances of success and compliments an appropriate biodiversity offset for the purple copper butterfly.

The Commission considers that overall the identified biodiversity offsets are consistent with the FBA and will compensate for the direct impacts to threatened species. The Commission considers that the identified properties that will be set aside as a biodiversity offset and the proposed financial contributions are a suitable method for compensating for the loss of known or likely habitat for threatened species and are in keeping with government policy.

The Commission note's OEH's statement that aspects of the proponent's offset strategy for impacts to the purple copper butterfly will need to be amended to meet the requirements of the FBA, principally that a reasonable effort to provide a direct land or management based offset should be made before financial contributions are considered. As the OEH has identified potential offset sites for this species, the Commission considers that the proponent should undertake reasonable efforts to meet their offset liability through land conservation or management actions before seeking to use a financial contribution to meet their credit liability.

Based on the assessment provided, the Commission finds that impacts to biodiversity to be limited and that they have been sufficiently considered by the Department and the proponent. While the project will result in impacts to threatened species, these impacts would largely be offset by the conservation of a nearby native woodland and financial contributions to the NSW government, consistent with current government policy.

5.5 Water Management

The public comments expressed concern to the Commission that the project would likely result in significant impacts to ground and surface water resources. The comments highlighted the high level of uncertainty associated with the proponent's water modelling, the unknown relationship between the proposed mine and historic underground voids and impacts from the discharge of mine water.

The proponent's assessment for the application found that the ground and surface water impacts associated with the project would be minor and largely consistent with the water impacts that are present as a result of historic mining activities. Through its assessment the proponent did not identify any significant changes to surface and groundwater management practices.

The proponent provided a site water balance, which has undergone significant adjustment. This balance identified that there is likely to be surplus storage capabilities within the existing water storage structures and voids to manage the expected produced mine water. The proponent also identified, through its surface and ground water assessments, that due to underground connectivity established through historic mine workings, a relatively small volume of water was likely to transfer to the underground workings of the nearby Baal Bone coal mine, currently in care and maintenance. The proponent identified that there was currently sufficient capacity in Baal Bone's water licenses to accommodate the discharge of this water, in accordance with its conditions of consent.

The Department assessed the likely impacts to water resources, including the modelled site water balance, groundwater management and surface water management protocols. Through the

assessment report the Department stated that, overall, it considered the project would have minimal impact on water resources and that there are sufficient mechanisms in place, or expected to be implemented through the conditions of consent, to manage the impacts.

This assessment included the review of the project's site water balance and concluded that the existing storage capacity, including the voids and underground workings, are more than adequate to account for the dewatering requirements of the proposal and there are sufficient mechanisms in place to prevent any direct discharge of this water. Regarding the connectivity between the Baal Bone underground workings and the proposed water storages, sufficient existing water entitlements are in place to account for any seepage into the Baal Bone Underground workings.

The Commission agrees with the Department's assessment that the proponent's site water balance shows that there is more than adequate existing storage capacity on site to manage the predicted level of groundwater and intercepted surface water. The Commission also notes the requirement for the proponent to manage any discharge water to a quality specified in *The Australian and New Zealand Environment Conservation Council (ANZECC) water quality guidelines*.

The Commission agrees with the Department that the proponent will need to refine its surface water management practices, including the clean water diversions, to bring its operation in line with industry best practice. The Commission considers these refinements to be essential for any reasonable operation of the proposed project. Accordingly, the conditions of consent have been amended to require the proponent to upgrade these systems prior to recommencing mining operations.

The Commission acknowledges the complications that occur as a result of the hydrological connection of the project with the adjacent Baal Bone mining operation. The Commission considers that while connection does exist, the volume of water likely to be transferred to the Baal Bone's workings is relatively small and capable of being managed.

The Commission recognises the importance of the proponent consulting with the owners of the Baal Bone colliery to ensure a functioning groundwater management system is established. However, the Commission notes the public statements from Glencore Australia, the operators of the Baal Bone mine site, regarding their intention to commence full mine closure in 2018, including the capping of their underground workings and ceasing dewatering activities at the site. It will be important for both parties to work together to ensure this proposal does not exacerbate any impacts associated with the potential closure of the Baal Bone colliery.

Based on the assessment provided, the Commission finds that impacts on water resources would be minor and can be effectively managed through the conditions of consent. However, it considers the identified improvements to the surface water management processes necessary to maintain or reduce impacts to surface water systems. While the conditions do set a timeframe for implementing these improvements, the Commission considers that it is fundamental that the proposed clean water management plan is established prior to the recommencement of mining activities.

5.6 Economic Benefits and Project Justification

The public comments expressed significant disparity about the extent of the economic benefit, including the project justification, as presented by the proponent and the Department. The public comments discussed the potential for the project to provide local mining jobs, helping to mitigate the impact of recent mine closures and the importance of the project in securing economic energy resources for Manildra's Shoalhaven Starches Plant. The public comments also highlighted that a large level of impact was being sought to access a small coal resource and that coal to meet the Manildra Group's requirements could more effectively be sourced from other existing mines, or from alternative energy sources.

The proponent has stated that the proposed project will result in an important economic benefit for the Lithgow region and the Shoalhaven region, through the continued operation of the Shoalhaven Starches Plant. Directly, the proponent identified that the project, as proposed, in a high production scenario of 85k tonnes per annum would likely employ up to 35 full time employees during extraction, which was expected to take 4 years. The proponent has also stated that the project was likely to generate a net present value of \$79.7 million, including \$55 million to NSW.

The additional information provided by the proponent identified that reduction in the project scale as proposed by the Department would not significantly reduce the employment opportunities and duration of mining. The proponent has indicated, assuming a high production scenario, that the modified project would still likely result in up to 35 full time employees over the extraction period, which is indicated to be 3.5 – 7 years. The proponent also provided a revised net present value for the modified project of \$70.6 million.

The Department acknowledged that the reduction in mine footprint would reduce the overall economic benefit of the project. However, the Department considered that the proposed reduction, on balance, would allow the project to continue to generate important local economic benefits, while limiting the adverse environmental impacts associated with the project.

The Commission acknowledges the overall economic benefit of the project will be constrained by the small level of coal resource targeted and the short extraction timeframe and life of mine, from 4 – 8 years. However, considering the current economic setting of the Lithgow region, as presented in the comments by the community and Lithgow City Council, the Commission considers that the project will make an important economic contribution to the community over the short term.

Based on the assessment provided, the Commission finds that economic benefits of the project, while relatively small, are important. The Commission agrees with the Department's view that in the amended form the project will provide tangible benefits to the Lithgow region and NSW.

6. COMMISSION'S RESPONSE TO COMMUNITY ISSUES

Speakers at the public meeting and written comments raised a high level of concern about the potential for significant future expansion of open cut and high wall coal mining, should the proposed project be approved. Separate to the Commission's consideration of the modification application in Section 5 of this report, the Commission responds to the issue raised by the community as follows.

The Commission acknowledges that future applications seeking the modification of approved projects is a possibility and a legal right of a developer. Ultimately, the Commission can only consider the application before it, and any future mining application would need to be assessed on its merits.

Any expansion of the project would be subject to a robust assessment under the NSW EP&A Act, which would consider the impacted conservation values of the areas proposed for mining. This assessment would also include the opportunity for public consultation as part of the assessment process and, if applicable, public hearings and/or meetings as requested by the Minister for Planning.

7. COMMISSION'S FINDINGS AND DETERMINATION

The Commission has considered carefully the proponent's proposal, the Department's assessment report and the relevant matters for consideration under section 75W of the EP&A Act. The Commission has noted the advice from Lithgow City Council, and government agencies, including the NSW Office of Environment and Heritage. Finally, the Commission has heard from members of the community about their concerns for the proposal during the public meeting in Lithgow, NSW and through subsequent written comments.

The Commission acknowledges that the merits of this project are finely balanced between the economic benefits to the Lithgow region and the important conservation value of the Ben Bullen State Forest, including the pagoda landscape ecological complex, as identified by previous Commission panels which have considered projects in the region.

In reaching its conclusion the Commission found that while the scope of the economic and public benefits of the project are small, the impacts are also limited. While the Commission has considered the findings of previous panels considering open cut developments at this site, this panel has determined that the scale of the impact to the conservation values of the Ben Bullen State Forest, including to geodiversity and biodiversity, are limited and suitably mitigated or compensated.

The Commission was persuaded by Council and community views on the importance of providing local jobs to the Lithgow area, though notes that the employment opportunities provided by the proposed modification are likely to be transient in nature.

The Commission acknowledges that the Ben Bullen State Forest and Garden of Stones contains important conservation values, though the expression of these values is limited in the reduced project area, as discussed by the Department. The Commission, in this circumstance, is persuaded that the identified conservation values are more prominent in other areas of the Garden of Stone National Park and Ben Bullen State Forest, including those considered by the Commission for the prior modification requests.

The Commission agrees with the Department that the commitments to rehabilitate historic mine impacts should not be used as a justification for further disturbance. However, the Commission acknowledges that there is an intrinsic link between the timely remediation of these areas and achieving a public benefit from the development.

The Commission considers the proposed modification of the Invincible Southern Expansion Project does not fundamentally change the essential nature of the development in its currently approved form. The project approval, if modified, would provide the same rate of resource extraction. In the Commission's view, the proposed changes are within the scope of section 75W and may be considered under section 75W.

For the reasons set out above, the Commission has determined to grant approval to the modification application subject to the conditions set out in the notice of modification.



Paul Forward (Chair)
Member of the Commission



Alan Coutts
Member of the Commission



Tony Pearson
Member of the Commission

**APPENDIX 1
RECORDS OF COMMISSION MEETINGS**

Notes of Briefing from the Department

This meeting is part of the determination process		
Meeting notes taken by: David Way	Date: 20 November 2017	Time: 10:30am
Project: Invincible Coal Mine - Southern Extension Modification		
Meeting place: Planning Assessment Commission Offices, 201 Elizabeth Street, Sydney		
<p>Attendees:</p> <p>Department of Planning & Environment: Clay Preshaw (Director – Resource Assessments) and Matt Riley (Senior Planning Officer – Resource Assessments)</p> <p>Commission Members: Paul Forward (chair), Alan Coutts and Tony Pearson</p> <p>Commission Secretariat: Megan Webb (Team Leader) and David Way (Senior Planning Officer)</p>		
The purpose of the meeting is for the Department to brief the Commission on the assessment report.		
<p>Topics discussed included:</p> <p>Project Description and Context</p> <ul style="list-style-type: none"> • Project overview, including proposed extent of mining operations, resource assessment, and key impacts • Regional context of the project, including historic mining operations both at Invincible and in the nearby region • Overview of previously proposed modifications and reviews • Overview of public comments <p>Project Considerations, including:</p> <ul style="list-style-type: none"> • Geodiversity <ul style="list-style-type: none"> - Identification of pagodas as important local landforms, and their proximity to proposed mining operations - Extent of proposed mining impacts, including from blasting - Establishment of buffers to mitigate blasting impacts, minimise slope instability associated with any final landform, and minimise visual impacts from exposed mining areas and rehabilitation activities • Project economics <ul style="list-style-type: none"> - Importance of coal supply from the project for power supply at Shoalhaven Starches - Importance of coal supply from the project to the Mount Piper Power Station - Economic benefits associated with the proposed employment opportunities likely to be generated by the project • Historic and contemporary rehabilitation <ul style="list-style-type: none"> - Status of rehabilitation activities at the site, and care and maintenance status - Effectiveness of rehabilitation on steep slopes • Biodiversity and conservation impacts <ul style="list-style-type: none"> - Principal species likely to be impacted, including changes in impact from amendments to the proposed area of mining operations 		

- Suitability of the proposed offsetting strategy
- Ground and surface water considerations
 - Development and refinement of the site water balance and groundwater to be intercepted in the Ivanhoe Mine workings
 - Connectivity between historic underground workings of the Invincible Mine and the Baal Bone mining operations (currently on care and maintenance)
 - Role of future studies to inform surface water management
- Traffic and social impacts
 - Extent, and impact, of vehicle movements, including those associated with the identified transportation route to Bomaderry, NSW and to Mount Piper
 - Timing of truck movements with regard to school hours

Documents [tabled at meeting]: Summary PowerPoint presentation (available on the Commission's website)

Meeting close: 12:00pm

Notes of Meeting with Lithgow City Council

This meeting is part of the determination process.		
Meeting note taken by: David Way	Date: 29 November 2017	Time: 12:00 pm
PROJECT: Invincible Coal Mine - Southern Extension Modification		
Meeting place: Lithgow City Council, 180 Mort Street, Lithgow		
Attendees: Lithgow City Council: Clr Stephen Lesslie (Mayor), Clr Wayne McAndrew (Deputy Mayor), Andrew Muir (Director Economic Development and Environment), Jessica Ramsden (Development Planner) Commission Members: Paul Forward (chair), Alan Coutts and Tony Pearson Commission Secretariat: Megan Webb (Team Leader) and David Way (Senior Planning Officer)		
The purpose of the meeting is for the Lithgow City Council to meet with the Commission and provide their considerations on the project and the Department of Planning and Environment's assessment report.		
Topics discussed included: <ul style="list-style-type: none">• Economic matters considered by the Council<ul style="list-style-type: none">- Higher than average unemployment in the Lithgow region, especially in (a) Cullen Bullen and (b) regional youth unemployment- Importance of the project as a way of creating local employment and apprenticeship opportunities, and generating ancillary financial benefits- Findings of recent economic strategy discussion paper• Community Engagement and Regional Support for the project<ul style="list-style-type: none">- Favorable local view on mining and power generation• Council has negotiated a VPA with the proponent, which has been endorsed by Council• The proposed benefits for the village of Cullen Bullen• Visual amenity impacts from the project visible from the highway• The importance of managing vehicle movements into and out of the site, e.g. ensuring that vehicle loads are covered and washed• The proposed mining area is now smaller, and significantly further away from homes, than in previous applications• Council is satisfied with the Department's assessment of the application		
Documents [tabled at meeting]: extract from the Lithgow Economic Strategy (available on the Commission's website)		
Meeting close: 12:30pm		

Notes of Site Visit to Sandstone Pagodas

This meeting is part of the determination process.		
Meeting note taken by: David Way	Date: 29 November 2017	Time: 1:00 pm
PROJECT: Invincible Coal Mine - Southern Extension Modification		
Meeting place: Cullen Bullen		
Attendees: Office of Environment and Heritage: David Geering (Conservation Planning Officer), Renee Shepherd (Senior Conservation Planning Officer) and David Coote (Senior Threatened Species Officer) Commission Members: Paul Forward (chair), Alan Coutts and Tony Pearson Commission Secretariat: Megan Webb (Team Leader) and David Way (Senior Planning Officer)		
The purpose of the meeting is for the Commissioners to view the sand stone pagodas, their condition and proximity to the proposed project.		
Topics discussed included: <ul style="list-style-type: none">• Habitat features for the broad-headed snake and the purple copper butterfly, including recent and nearby records for these species.• The extent of observed impacts to the pagodas from prior mining activities.• Important features of the sandstone pagodas.• The layout of the project with reference to the nearest sandstone pagoda structures.		
Documents [tabled at meeting]: NA		
Meeting close: 3:00pm		

Notes of Meeting with Castlereagh Coal and Site Visit

This meeting is part of the determination process.		
Meeting note taken by: David Way	Date: 28 November 2017	Time: 15:15
PROJECT: Invincible Coal Mine - Southern Extension Modification		
Meeting place: Invincible Coal Offices		
<p>Attendees:</p> <p>Castlereagh Coal: Brett Moore (Manildra Group Financial Accountant and Project Manager), Peter Stretton (Manildra Group CFO), Brian Hanley (Manildra Energy & Sustainability Manager), Tom Geczy (Consultant to Manildra Group), John Honan (Manildra Group Managing Director), Graham Goodwin (Shoalhaven Coal Mine Manager), John Merrell (Umwelt Group Manager), David Holmes (Umwelt Principal Environmental Consultant), Naomi Finlayson (Umwelt Senior Environmental Planner) and Kate Swain (McCullough Robertson Special Counsel)</p> <p>Commission Members: Paul Forward (chair), Alan Coutts and Tony Pearson</p> <p>Commission Secretariat: Megan Webb (Team Leader) and David Way (Senior Planning Officer)</p>		
<p>The purpose of the meeting is for Castlereagh Coal to discuss the project and the Department of Planning and Environment’s assessment report with the Commission and conduct a site visit.</p>		
<p>Topics discussed included:</p> <ul style="list-style-type: none"> • Project Description and Context <ul style="list-style-type: none"> - Volume and quality of target seams and product coal. - Context of the proposed modification with reference to prior mining proposals • Project Considerations, including: <ul style="list-style-type: none"> - Project economics and justification, including the known quantities of “nut coal” in the Lithgow Seam and the potential for suitable coal to be found in the Irondale Seam; - Relationship with the Shoalhaven Starches plant and Manildra’s contribution to regional employment; - Benefits of the project, including state and local economic contributions, energy security for Shoalhaven Starches and environmental benefits through improved rehabilitation; - Historic and contemporary rehabilitation practices, including impacts, current success and proposed benefits to landform from the project, implications of the Department’s assessed setback on strip ratios and spoil volumes; - Biodiversity and conservation; - Ground and surface water considerations; and - Traffic and social impacts. • Site inspection and key project areas <ul style="list-style-type: none"> - Historic Rehabilitation sites, including areas of steep slope rehabilitation - Residual mining voids, including the Eastern and Northern voids - Proposed mining footprint, including examples of the current subsidence impacts - Identified steep slope areas identified by the Department’s assessment report. 		
Documents [tabled at meeting]: Project Presentation (available on the Commission’s website)		
Meeting close: 17:30		

**APPENDIX 2
LIST OF SPEAKERS**

**Planning Assessment Commission
Invincible Coal Mine - Southern Extension Modification**

Date and Time: Tuesday 29 November 2017, 9:30 am

Place: Lithgow Workers Club at 3-7 Tank St, Lithgow NSW 2790

List of Speakers

1. Cr Stephen Lesslie (Lithgow Mayor)
2. John Honan and Brett Moore (Manildra Group)
3. Keith Howell
4. John Brunner (Manildra Group)
5. Ray Blackley
6. Richard Austen (Lithgow & District Community Forum)
7. Ilan Salbe
8. Geoff Miell
9. Wendy Day
10. Ming Leung (Manildra Group)
11. Madi Maclean (Blue Mountains Conservation Society)
12. Cr Maree Statham
13. Brian Hanley (Manildra Group)
14. Keith Muir (Colong Foundation for Wilderness)
15. Jeff Young
16. Dianne Taylor
17. Peter Gray
18. Andrew Griffiths

APPENDIX 3

SUMMARY OF ISSUES FROM WRITTEN AND VERBAL SUBMISSIONS TO THE PUBLIC MEETING

The following issues were raised:

Economic Importance and Justification of the Southern Expansion

- Importance of the agreed Voluntary Planning Agreement for the Lithgow region
- The importance of the “nut coal” resource to the long-term energy security for the Shoalhaven Starches plant.
- Flow on impacts to other businesses due to the contraction of the mining industry.
- Support for approving project as submitted by Manildra.
- Limited capability of other industries, such as tourism, to provide employment.
- Historic and current importance of mining in the Lithgow region, with limited historic diversification.
- Availability of “Nut Coal” from other suppliers, with lower environmental impacts.
- Lack of verification of the economic data used to justify the development of the project.
- Potential to displace jobs from other mines and coal producers.
- Uncertainty regarding the commencement and length of operations, which is likely to be very short term, with limited economic benefits.
- Declining cost of renewable generation and decrease in coal price and demand make opening a new thermal coal mine unnecessary.
- Comment that biofuels are not as environmentally friendly as being presented in the project justification.
- Opening new mines is contrary to Australia’s commitments under the Paris Agreement.

Social and health impacts to the Lithgow region

- Long-term unemployment in the Lithgow region, higher than the State and National levels, particularly for youth unemployment.
- Adverse mental health impacts in Lithgow and Cullen Bullen associated with long-term unemployment and the feasibility of real time monitoring.
- Safety and health concerns regarding air quality changes to Cullen Bullen from the project.
- High numbers of Lithgow residents forced to work outside of the region or travel long distances (greater than 1 hour) for employment.
- The potential to return services to Cullen Bullen.
- Long term patterns of decline in Lithgow and Cullen Bullen as a result of mining downturns
- Limitations and lack of verification in the assessment of air quality impacts through the CALPUFF model.
- High local economic and social uncertainty without an approved mine.

Biodiversity and Conservation Values

- Importance of the current Planning Assessment Commission panel to recognize and respect the findings of the prior findings of the Planning Assessment Commission, which establish conservation as the highest and best use of the land.
- No evidence to not uphold the prior Planning Assessment Commission's determination and evaluation of the conservation value of the project site.
- High levels of conservation values associated with the Gardens of Stone State Forest and the proposed project site, with the Pagoda land complexes not limited to the pagoda structures.
- High levels of legacy issues from poor rehabilitation practices at the project site, with low confidence they can effectively be remediated.
- Need to limit / remove environmental protection from the Gardens of Stone State Forest.
- Historic depletion of the Lithgow seam resulting in an impact to extraction that is worse than other coal projects.
- The uniqueness of the Pagoda Ecosystem Complex and the inability for these impacts to be offset through the *Framework for Biodiversity Assessment* or to be replaced through uncertain rehabilitation practices.
- Unrealistic views on the financial requirements for mine rehabilitation and the need for rehabilitation issues to be started now, not postponed for additional mining.
- Need to limit open cut mining in the Garden of Stones State Forest.
- Approval of this project will set a precedent that open cut mining is acceptable in the region and lead to expansion of coal mining in the region, including Manildra's application for access to coal resources in 1,368 hectares around the proposed mine site.

Ground and Surface water impacts

- A limited assessment undertaken by the proponent, with no independent review of the modelling and assessment provided and inadequate baseline data.
- The Department of Planning and Environment Protection Authority have raised concerns about water management that have not been addressed.
- The method for managing ground and surface water impacts should be dealt with prior to approval rather than shifting it to a post approval action.
- Lack of a strategy to manage surface water impacts at the project site.
- Limited consideration of salinity levels in discharge scenarios.
- Unknowns and connections to other unground workings could result in unintended impacts.

Other

- Importance of the project to provide a marginal amount of diversification of coal supply to the Mount Piper Power Station.
- Importance of the Manildra Group in Shoalhaven Starches for jobs in regional Australia.
- Manildra's support for other regional jobs through providers and other contracts.
- Importance of thermal coal for electricity generation.



APPENDIX 4
REQUEST FOR ADDITIONAL INFORMATION

Contact : [REDACTED]
Phone : [REDACTED]
Fax : [REDACTED]
Email : [REDACTED]

Mr Brett Moore
Shoalhaven Coal Pty Ltd
Castlereagh Highway
CULLEN BULLEN NSW 2790

1 December 2017

Dear Mr Moore,

Invincible Colliery Southern Extension Modification (07_0127 MOD 5)

Further to the site inspection, briefings and public meeting, the Commission has been considering the issues raised in those forums. The Commission will continue to receive written comments until Wednesday 6 December 2017. All written comments received will be made available on the Commission's website at that time, should you wish to review and respond to any of those matters raised. In the meantime, the Commission would appreciate some additional information and clarification on the following points.

1. Mine plans for the option 3b proposal – including plans showing the different scenarios of mine progression while extracting at peak capacity and at reduced capacity. The plans should include the progress of rehabilitation that would be completed each year, as well as details of the volume of coal to be extracted and the volume of nut and other coal to be produced;
2. Bathurst Copper Butterfly – including information on: the location/s it was identified (including any sites outside the proposed disturbance area); and analysis of the population present, the impact of mining (including indirect impacts to any retained habitat), the proposed translocation strategy (and likelihood of success), and the proposed offset locations;
3. Details of the consultation undertaken to date and the protocol that would be developed (including any contingencies) to ensure all groundwater take, including increased inflows to the Baal Bone underground workings are appropriately licensed;
4. Economic considerations – clarification of the rehabilitation and environmental costs, noting the concerns raised by the Australia Institute (attached); and
5. Employment considerations – details of the range in the number of jobs that would be generated under potential scenarios for mining at full capacity and at slower rates; and clarification on how many of these jobs would be new, and how many would be filled by the existing workforce of the Manildra Group.

If you have any questions in relation to the Commission process, please call [REDACTED]

Yours sincerely

Paul Forward
Member of the Commission