

Planning Secretary's Environmental Assessment Requirements

State Significant Development

Section 4.12(8) of the *Environmental Planning and Assessment Act 1979*
 Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*

Application Number	SSD 8642
Proposal	<p>The Mangoola Coal Continued Operations Project, which involves:</p> <ul style="list-style-type: none"> • continuation of open cut mining at Mangoola Coal Mine (currently approved under PA 06_0014); • development of a new open cut pit north of the existing mine to extract approximately 52 million tonnes (Mt) of run-of-mine coal over a period of approximately 8 years; • extension to the approved mine life to 2030; • continued use of existing mine infrastructure and facilities; • establishment of additional out-of-pit emplacement areas; • construction of a haul road overpass over Big Flat Creek and Wybong Road; • realignment of a section of Wybong Post Office Road; and • progressive rehabilitation of the site.
Location	Wybong Road, Wybong
Applicant	Mangoola Coal Operations Pty Ltd
Date of Issue	15 February 2019
General Requirements	<p>The Environmental Impact Statement (EIS) for the development must comply with the requirements of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>.</p> <p>In particular, the EIS must include:</p> <ul style="list-style-type: none"> • a stand-alone executive summary; • a full description of the development, including: <ul style="list-style-type: none"> – historical mining operations on and nearby the site; – the resource to be extracted (size and quality), demonstrating efficient resource recovery within environmental constraints; – the mine layout and scheduling; – coal production rates (run-of-mine and product); – coal processing and transport arrangements; – infrastructure and facilities (including any existing infrastructure or infrastructure that would be required for the development, but the subject of a separate approval process); – workforce requirements during all phases of the development (on a full-time equivalent basis); – surface disturbance footprint; – a waste (overburden, coarse rejects, tailings, etc) management strategy; – a water management strategy; – a rehabilitation strategy; – the likely interactions between the development and any other existing, approved or proposed mining development or power station in the vicinity of the site; • a strategic justification of the development focusing on site selection and the suitability of the proposed site; • a list of any other approvals that must be obtained before the development may commence; • an assessment of the likely impacts of the development on the environment, focusing on the key issues identified below, including: <ul style="list-style-type: none"> – a description of the existing environment likely to be affected by the development, using sufficient baseline/background data;

	<ul style="list-style-type: none"> - an assessment of the likely impacts for all stages of the development, including any cumulative impacts, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice; - a description of the measures that would be implemented to avoid, minimise, mitigate and/or offset the likely impacts of the development, and an assessment of: <ul style="list-style-type: none"> o whether these measures are consistent with industry best practice, and represent the full range of reasonable and feasible mitigation measures that could be implemented; o the likely effectiveness of these measures; and o whether contingency measures would be necessary to manage any residual risks; - a description of the measures that would be implemented to monitor and report on the environmental performance of the development; • a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS; • consideration of the development against all relevant environmental planning instruments (including Part 3 of the <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>); • the reasons why the development should be approved, having regard to: <ul style="list-style-type: none"> - relevant matters for consideration under the <i>Environmental Planning and Assessment Act 1979</i>, including the objects of the Act; - the biophysical, economic and social impacts of the project, including the principles of ecologically sustainable development; - the suitability of the site with respect to potential land use conflicts with existing and future surrounding land uses; and - feasible alternatives to the development (and its key components), including the consequences of not carrying out the development; • a signed statement from the author of the EIS, certifying that the information contained within the document is neither false nor misleading. <p>While not exhaustive, Attachment 1 contains a list of some of the environmental planning instruments, guidelines, policies, and plans that may be relevant to the environmental assessment of this development.</p> <p>In addition to the matters set out in Schedule 1 of the <i>Environmental Planning and Assessment Regulation 2000</i>, the development application must be accompanied by a signed report from a suitably qualified and experienced person that includes an accurate estimate of the capital investment value (as defined in Clause 3 of the <i>Environmental Planning and Assessment Regulation 2000</i>), including details of all the assumptions and components from which the capital investment value calculation is derived.</p>
<p>Key Issues</p>	<p>The EIS must address the following key issues:</p> <ul style="list-style-type: none"> • Land Resources – including: <ul style="list-style-type: none"> - an assessment of the likely impacts of the development on the soils and land capability of the site and surrounds, paying particular attention to any strategic agricultural land; - an assessment of the agricultural impacts of the development; and - an assessment of the compatibility of the development with other land uses in the vicinity of the development, in accordance with the requirements of Clause 12 of <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>, paying particular attention to agricultural land uses in the region; • Air Quality – including: <ul style="list-style-type: none"> - a detailed assessment of potential construction and operational air quality impacts, in accordance with the <i>Approved Methods for the Modelling and Assessment of Air Pollutants in NSW 2016</i>, and with a particular focus on particulate matter emissions (PM_{2.5} and PM₁₀)

	<p>emissions, and having regard to the <i>Voluntary Land Acquisition and Mitigation Policy 2018</i>; and</p> <ul style="list-style-type: none"> - an assessment of the likely greenhouse gas emissions of the development; <ul style="list-style-type: none"> • Rehabilitation and Final Landform – including <ul style="list-style-type: none"> - a description of final landform design objectives, having regard to achieving a natural landform that is safe, stable, non-polluting, fit for the nominated post-mining land use and sympathetic with surrounding landforms; - a description of how any outstanding rehabilitation obligations for the existing Mangoola Mine would be satisfied or altered by the development; - an analysis of final landform and post-mining land use options for the site, including the short and long-term cost and benefits, constraints and opportunities of each, and detailed justification for the preferred option; - a detailed description of the progressive rehabilitation measures that would be implemented over the life of the development and how this rehabilitation would be integrated with surrounding mines and land uses; - a detailed description of the proposed rehabilitation and mine closure strategies for the development, having regard to the key principles in <i>Strategic Framework for Mine Closure</i>, and the: <ul style="list-style-type: none"> o rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria; o decommissioning and management of surface infrastructure; o nominated final land uses, having regard to any relevant strategic land use planning or resource management plans or policies; and o potential for integrating the rehabilitation strategy with any other offset strategies in the region; and - the measures which would be put in place for the long-term protection and/or management of the site and any biodiversity offset areas post-mining; • Noise & Blasting – including: <ul style="list-style-type: none"> - a detailed assessment of the likely construction, operational and off-site transport noise impacts of the development in accordance with the <i>Interim Construction Noise Guideline</i>, <i>NSW Noise Policy for Industry</i> and the <i>NSW Road Noise Policy</i> respectively, and having regard to the <i>Voluntary Land Acquisition and Mitigation Policy 2018</i>; - an assessment of the likely rail noise impacts of the development under the <i>Rail Infrastructure Noise Guideline</i>; - proposed blasting hours, frequency and methods; and - a detailed assessment of the likely blasting impacts of the development (including ground vibration, overpressure, visual and odour) on people, animals, buildings, infrastructure and significant natural features, having regard to the relevant ANZEC guidelines; • Visual – including a detailed assessment of the likely visual impacts of the development on private landowners in the vicinity of the development and key vantage points in the public domain, paying particular attention to any new landforms, and to minimising the lighting impacts of the development; • Waste – including estimates of the quantity and nature of the waste streams that would be generated by the project (including tailings and coarse rejects) and any measures that would be implemented to minimise, manage or dispose of these waste streams; • Water – including: <ul style="list-style-type: none"> - a detailed site water balance, including a description of site water demands, water disposal methods (inclusive of volume and frequency of any water discharges), water supply infrastructure and water storage structures; - identification of any licensing requirements or other approvals under the <i>Water Act 1912</i> and/or <i>Water Management Act 2000</i>;
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- demonstration that water for the construction and operation of the proposed development can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any relevant Water Sharing Plan (WSP) or water source embargo;
- an assessment of any likely flooding impacts of the development;
- the measures which would be put in place to control sediment run-off and avoid erosion;
- an assessment of the likely impacts of the development on the quantity and quality of existing surface and groundwater resources including a detailed assessment of proposed water discharge quantities and quality against receiving water quality and flow objectives;
- an assessment of the likely impacts of the development on aquifers, watercourses, riparian land, water-related infrastructure, and other water users; and
- an assessment of the likely impacts of the development on a water resource, in relation to coal seam gas development and large coal mining development under the *Environment Protection and Biodiversity Conservation Act 1999* (see Attachment 3);
- **Biodiversity** – including:
 - an assessment of the likely biodiversity impacts of the development, paying particular attention to threatened species, populations and ecological communities and groundwater dependent ecosystems, and having regard to the *Framework for Biodiversity Assessment* and *Biobanking Assessment Methodology*;
 - assessment of the likely impacts of the development on listed threatened species and communities under the *Environment Protection and Biodiversity Conservation Act 1999* (see Attachment 3); and
 - a strategy to offset any residual impacts of the development in accordance with the *NSW Biodiversity Offsets Policy for Major Projects* or the Biodiversity Offsets Scheme under the *Biodiversity Conservation Act 2016* (as relevant for Commonwealth matters);
- **Heritage** – including:
 - an assessment of the potential impacts of the development on Aboriginal heritage (cultural and archaeological), including consultation with relevant Aboriginal communities/parties and documentation of the views of these stakeholders regarding the likely impact of the development on their cultural heritage; and
 - identification of historic heritage in the vicinity of the development and an assessment of the likelihood and significance of impacts on heritage items;
- **Traffic & Transport** – including:
 - an assessment of the likely transport impacts of the development on the capacity, condition, safety and efficiency of the road and rail networks; and
 - a description of the measures that would be implemented to mitigate any impacts, including concept plans of the proposed overpasses and road realignment, developed in consultation with the relevant road authorities;
- **Hazards** – including an assessment of the likely risks to public safety, paying particular attention to potential bushfire risks, blasting impacts and the handling and use of any dangerous goods; and
- **Social** – including a detailed assessment of the likely social impacts of the development on the local and regional community in accordance with the *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development 2017*; and
- **Economic** – including a detailed assessment of the likely economic impacts of the development, in accordance with the *Guidelines for the economic assessment of mining and coal seam gas proposals 2015*, paying particular attention to:
 - the costs and benefits of the project; identifying whether the development as a whole would result in a net benefit to NSW,

	<p>including consideration of fluctuation in commodity markets and exchange rates; and</p> <ul style="list-style-type: none"> - the demand for the provision of local infrastructure and services.
Consultation	<p>During the preparation of the EIS, you must consult with relevant local, State and Commonwealth Government authorities, service providers, Aboriginal stakeholders, community groups and affected landowners.</p> <p>In particular you must:</p> <ul style="list-style-type: none"> • consult with: <ul style="list-style-type: none"> - affected landowners; - local community groups; - Muswellbrook Shire Council; - Office of Environment and Heritage (including the Heritage Branch); - Environment Protection Authority; - Division of Resources and Geoscience within the Department; - NSW Resources Regulator; - Department of Primary Industries (including NSW Forestry, Agriculture and Fisheries); - Department of Industry (including the Lands and Water Division); - Roads and Maritime Services; - NSW Rural Fire Service; - NSW Health; - NSW Dams Safety Committee, - Hunter Local Land Services; - Australian Rail Track Corporation and the Hunter Coal Chain Coordinator; and - any affected electricity distribution authority; and • operate a Community Consultative Committee for the project (or utilise the existing Mangoola Community Consultative Committee) in accordance with the <i>Community Consultative Committee Guidelines for State Significant Projects</i> and consult with the committee during the preparation of the EIS. <p>The EIS must:</p> <ul style="list-style-type: none"> • describe the consultation process used and demonstrate that effective consultation has occurred; • describe the issues raised by public authorities, service providers, community groups and landowners; • identify where the design of the development has been amended in response to issues raised; and • otherwise demonstrate that issues raised have been appropriately addressed in the assessment.
Further consultation after 2 years	<p>If you do not lodge a development application and EIS for the development within 2 years of the issue date of these requirements, you must consult further with the Secretary in relation to the preparation of the EIS.</p>

ATTACHMENT 1

Environmental Planning Instruments, Policies, Guidelines & Plans

Land	
	Interim Protocol for Site Verification and Mapping of Biophysical Strategic Land 2013 (OEH)
	Soil and Landscape Issues in Environmental Impact Assessment (NOW)
	Agfact AC.25: Agricultural Land Classification (NSW Agriculture)
	Guideline for Preparing Agricultural Impact Statements (DPI 2012) and the Agricultural Impact Statement Technical Notes 2013 (DPI)
	Upper Hunter Strategic Regional Land Use Plan 2012 (DPI)
	State Environmental Planning Policy No. 55 – Remediation of Land
	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC)
Water	
Water Sharing Plans	Hunter Unregulated and Alluvial Water Sources 2009
	Hunter Regulated River Water Source
Groundwater	NSW State Groundwater Policy Framework Document (NOW)
	NSW State Groundwater Quality Protection Policy (NOW)
	NSW State Groundwater Quantity Management Policy (NOW)
	NSW Aquifer Interference Policy 2012 (NOW)
	Australian Groundwater Modelling Guidelines 2012 (Commonwealth)
	Hunter Bioregional Assessment 2018 (Commonwealth)
	Information guidelines for proponents preparing coal seam gas and large coal mining development proposals (IESC)
	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	Guidelines for the Assessment & Management of Groundwater Contamination (EPA)
	Hunter River Salinity Trading Scheme (EPA)
Surface Water	NSW State Rivers and Estuary Policy (NOW)
	NSW Government Water Quality and River Flow Objectives (EPA)
	Using the ANZECC Guideline and Water Quality Objectives in NSW (EPA)
	National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Effluent Management (ARMCANZ/ANZECC)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA)
	Managing Urban Stormwater: Soils & Construction (Landcom) and associated Volume 2E: Mines and Quarries (DECC)
	Managing Urban Stormwater: Treatment Techniques (EPA)
	Managing Urban Stormwater: Source Control (EPA)
	Technical Guidelines: Bunding & Spill Management (EPA)
	Environmental Guidelines: Use of Effluent by Irrigation (EPA)
	A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH)
	NSW Guidelines for Controlled Activities (NOW)
Flooding	Floodplain Development Manual (OEH)
	Floodplain Risk Management Guideline (OEH)
Biodiversity	
	Framework for Biodiversity Assessment (OEH)
	NSW Biodiversity Offset Policy for Major Projects (OEH)

	Guidelines for Threatened Species Assessment (DP&E)
	NSW State Groundwater Dependent Ecosystem Policy (NOW)
	Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW)
	State Environmental Planning Policy No. 44 – Koala Habitat Protection
Heritage	
	The Burra Charter (The Australia ICOMOS Charter for Places of Cultural Significance)
	Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (OEH)
	Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW 2010 (DECCW)
	Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW 2010 (DECCW)
	Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW 2011 (OEH)
	NSW Heritage Manual 1996 (OEH)
	Statements of Heritage Impact (OEH)
	Assessing Significance for Historical Archaeological Sites and Relics 2009 (OEH)
	Muswellbrook Local Environment Plan 2009
	Hunter Regional Environmental Plan 1989 (Heritage)
Noise & Blasting	
	NSW Noise Policy for Industry 2017 (EPA)
	Interim Construction Noise Guideline (DECC)
	NSW Road Noise Policy (EPA)
	Rail Infrastructure Noise Guideline (EPA)
	Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments 2018 (DP&E)
	Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZEC)
	Assessing Vibration: A Technical Guideline (DEC)
Air	
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW 2016 (EPA)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA)
	Coal Mine Particulate Matter Control Best Practice – Site Specific Determination Guideline (EPA)
	National Greenhouse Accounts Factors (Commonwealth)
	Voluntary Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments 2018 (DP&E)
Transport	
	Guide to Traffic Generating Development (RTA)
	Road Design Guide (RMS) & relevant Austroads Standards
	Muswellbrook Mine Affected Roads – Network Plan
Hazards	
	State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
	Hazardous and Offensive Development Application Guidelines – Applying SEPP 33
	Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis
	Planning for Bush Fire Protection 2006 (RFS)
Resource	
	Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 (JORC)
Waste	
	Waste Classification Guidelines (DECC)
Rehabilitation	
	Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth)

Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth)

Strategic Framework for Mine Closure (ANZMEC-MCA)

Synoptic Plan: Integrated landscapes for coal mine rehabilitation in the Hunter Valley 1999 (DMR)

Social & Economic

Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals 2015 (NSW Government)

Social impact assessment guideline for State significant mining, petroleum production and extractive industry development 2017 (DP&E)

Environmental Planning Instruments - General

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (Infrastructure) 2007

Muswellbrook Local Environment Plan 2009

Hunter Regional Plan 2036

ATTACHMENT 2

Agencies' Correspondence

ATTACHMENT 3

Commonwealth Department of Environment and Energy assessment requirements

Guidelines for preparing assessment documentation relevant to the EPBC Act for proposals being assessed under an accredited NSW assessment process

Mangoola Continued Operations Project (EPBC 2018/8280) (SSD 8642)

Introduction

1. On 21 January 2019, a delegate of the Federal Minister for the Environment and Energy determined that the Mangoola Coal Continued Operations Project was a controlled action under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act controlling provisions for the proposed action are:

- i. listed threatened species and communities (sections 18 and 18A); and
- ii. a water resource, in relation to coal seam gas development and large coal mining development (section 24D & section 24E).

On 14 February 2019, the same delegate confirmed that the proposed action will be assessed under the State's accredited assessment process under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) in accordance with the bilateral agreement between governments. These guidelines provide information on MNES environmental assessment requirements.

2. The Applicant must undertake an assessment of all protected matters that may be impacted by the development under the controlling provisions identified in paragraph 1. The Commonwealth Department of the Environment and Energy (DoEE) considers that there is likely to be a significant impact on the following:

- i. White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland – Critically Endangered Ecological Community: the proposed action will result in the loss of 24 ha of habitat critical to the survival of this community;
- ii. *Prasophyllum* sp. Wybong – Critically Endangered: the proposed action will result in the removal of approximately 691 individuals, loss of habitat as well as indirect impacts to the remaining population;
- iii. Regent Honeyeater (*Anthochaera phrygia*) - Critically Endangered: the proposed action will result in the removal of key foraging resources which are habitat critical to the survival of this species; and
- iv. Water resources: the proposed action is likely to result in changes to groundwater and surface water and impact on surface water quality.

3. DoEE also considers that the proposed action may result in significant impacts to the following species:

- i. Swift Parrot (*Lathamus discolor*) – Critically Endangered; and
- ii. Grey-headed Flying-fox (*Pteropus poliocephalus*) – Vulnerable

Further information on the total area and quality of habitat to be impacted by the proposed action will be required during the assessment stage, to determine if significant impacts to these species are likely.

4. The Applicant must consider each of the protected matters under the triggered controlling provisions that may be impacted by the action. Noting that paragraphs 2 and 3 may not be a complete list, it is the responsibility of the Applicant to undertake an analysis of the relevant impacts and ensure all protected matters that are likely to be impacted are assessed for the Commonwealth Minister's consideration.

Protected matters can be identified using DoEE's Protected Matters Search Tool <http://www.environment.gov.au/epbc/protected-matters-search-tool> and Species Profiles and Threats Database (SPRAT, <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>).

General Requirements

Relevant Regulations

5. The Environmental Impact Statement (EIS) must address the matters outlined in Schedule 4 of the EPBC Regulations and the matters outlined below in relation to the controlling provisions.

Project Description

6. The title of the action, background to the action of the action and current status.
7. The precise location and description of all works to be undertaken (including associated offsite works and infrastructure), structures to be built or elements of the action that may have impacts on MNES.
8. How the action relates to any other actions that have been, or are being taken in the region affected by the action.
9. How the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts on MNES.

Impacts

10. The EIS must include an assessment of the relevant impacts¹ of the action on the matters protected by the controlling provisions, including:
 - i. a description and detailed assessment of the nature and extent of the likely direct, indirect and consequential impacts, including short term and long term relevant impacts;
 - ii. a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;
 - iii. analysis of the significance of the relevant impacts; and
 - iv. any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

Avoidance, mitigation and offsetting

11. For each of the relevant matters protected that are likely to be significantly impacted by the action, the EIS must provide information on proposed avoidance and mitigation measures to manage the relevant impacts of the action including:
 - i. a description, and an assessment of the expected or predicted effectiveness of the mitigation measures,
 - ii. any statutory policy basis for the mitigation measures;
 - iii. the cost of the mitigation measures;
 - iv. an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;
 - v. the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.
12. Where a significant residual adverse impact to a relevant protected matter is considered likely, the EIS must provide information on the proposed offset strategy, including discussion of the conservation benefit associated with the proposed offset strategy.

¹ Relevant impacts are those impacts likely to significantly impact on any matter protected under the EPBC Act

Key Issues

Biodiversity (threatened species and communities and migratory species)

Comments

13. Significant impacts associated with proposed action on MNES are associated with the removal of native vegetation, in particular the removal of 691 ha of *Prasophyllum sp. Wybong* individuals and the loss of up to 256 ha of habitat critical to the survival of the Regent Honeyeater. These impacts must be appropriately offset for EPBC Act purposes.

Assessment Requirements

For each of the EPBC Act listed species predicted to occur in the project site, and each of the EPBC Act listed ecological communities likely to be significantly impacted, the EIS/biodiversity assessment report (BAR) must provide:

- a) Survey results, including details of the scope, timing and methodology for studies or surveys used and how they are consistent with (or justification for divergence from) published Commonwealth guidelines and policy statements and/or the NSW Framework for Biodiversity Assessment (FBA).
- b) A description and quantification of habitat in the study area (including suitable breeding habitat, suitable foraging habitat, important populations and habitat critical for survival), with consideration of, and reference to, any relevant Commonwealth guidelines and policy statements including listing advices, conservation advices, recovery plans, and threat abatement plans. [Note: the relevant guidelines and policy statements for each species and community are available on the SPRAT website]
- c) Maps displaying the above information (specific to each EPBC protected matter) overlaid with the proposed action. It is acceptable, where possible, to use the mapping and assessment of Plant Community Types (PCTs) and the species surveys prescribed by the FBA as the basis for identifying EPBC Act-listed species and communities. The EIS must clearly identify which PCTs are considered to align with habitat for the relevant EPBC Act listed species or community, and provide individual maps for each species or community.
- d) Description of the nature, geographic extent, magnitude, timing and duration of any likely direct, indirect and consequential impacts on any relevant EPBC Act listed species and communities. It must clearly identify the location and quantify the extent of all impact areas to each relevant EPBC Act listed species or community.
- e) For each of the EPBC Act listed species and communities likely to be impacted by the development, the EIS must provide information on proposed avoidance and mitigation measures to deal with the impacts of the action, and a description of the predicted effectiveness and outcomes that the avoidance and mitigation measures will achieve.
- f) Quantification of the offset liability for each species and community significantly impacted, and information on the proposed offset strategy, including discussion of the conservation benefit for each species and community, how offsets will be secured, and the timing of protection. All suitable habitat for MNES significantly impacted must be offset.

It is a requirement that offsets directly contribute to the ongoing viability of the specific protected matter impacted by a proposed action i.e. 'like-for-like'. Like-for-like includes protection of native vegetation that is the same EEC or habitat being impacted, or funding to provide a direct benefit to the matter being impacted i.e. threat abatement, breeding and propagation programs or other relevant conservation measures.

14. Offsetting impacts to the *Prasophyllum sp. Wybong*: As *Prasophyllum sp. Wybong* is not a threatened species under the *NSW Biodiversity Conservation Act 2016*, DoEE will accept the credit liability generated for *Prasophyllum petilum* as the credit liability for *Prasophyllum sp. Wybong*, subject to being satisfied that the proposed offsets meet the offset requirements under the EPBC Act.

Water resource, in relation to coal seam gas development and large coal mining development

Assessment Requirements

15. The EIS must include a detailed assessment of the potential impacts of the proposed action on water resources. The water assessment must be undertaken in accordance with the IESC Information Guidelines (<http://iesc.environment.gov.au/publications/information-guidelines-independent-expert-scientific-committee-advice-coal-seam-gas>) and provide the information outlined in these guidelines including:
- a) Hydrogeological assessment:
 - i. Provision of hydrogeological conceptualisations.
 - ii. Descriptions of geology and hydrogeology.
 - iii. Predictions of groundwater changes over the life of the proposed project (e.g. using numerical groundwater models).
 - iv. Predictions of groundwater recovery beyond the life of the proposed project (e.g. using numerical groundwater models).
 - v. Reference all of the above to analysis on groundwater quality and quantity data gathered from the existing project.
 - b) Surface water assessment:
 - i. An assessment of predicted changes to surface water flows and flood extents (e.g. using numerical model).
 - ii. Provision of mine water balances detailing onsite storages and discharge to surface water requirements.
 - iii. Reference all of the above to analysis on surface water quality and quantity data gathered from the existing project.
 - c) Ecological and ecohydrological assessment:
 - i. Conceptualisation of the impacts of water resource regimes and changes on biodiversity.
 - ii. Potential impacts from temporal and spatial changes in terrestrial surface water flows and quality in relation to fine-scale topographic features (e.g. soaks, drainage systems, depressions, soil saturation) for known habitat within the two sub-catchments that currently, or may potentially (future colonization), support *Prasophyllum sp. Wybong*.
 - iii. Potential impacts from temporal and spatial changes and quality of water resources (terrestrial surface and groundwater) in relation to fine-scale topographic features (riparian and flood zones) within the two sub-catchments that support *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland*.
 - iv. In addition to ephemeral creeks, consider potential impacts from temporal and spatial changes and quality of water resources (surface and groundwater) on associated riparian vegetation and aquatic ecosystems (including stream and creek aquatic biota) of the Wybong, Sandy and Alvil Creeks.
 - d) Cumulative impact assessment:
 - i. Identify all surrounding existing and known future operations that could contribute cumulatively to surface water and groundwater impacts.
 - ii. The proposed project area is within the Hunter Subregion of the Northern Sydney Basin Bioregional Assessment (BA) area. While the proposed extension is not within the BA 'additional coal resource developments' pathway, the proponent should consider cumulative impacts with reference to the BA assessment.
 - e) Final landform and rehabilitation assessment:
 - i. Provision of a rehabilitation strategy.
 - ii. Predictions of final void water quality and quantity.
 - iii. Discussion on re-equilibration of groundwater and eventual discharges to the environment.

- iv. Comprehensive risk assessment.

Other approvals and conditions

16. Information in relation to any other approvals or conditions required must include the information prescribed in Schedule 4 Clause 5 (a) (b) (c) and (d) of the EPBC Regulations 2000.

Environmental Record of person proposing to take the action

17. Information in relation to the environmental record of a person proposing to take the action must include details as prescribed in Schedule 4 Clause 6 of the EPBC Regulations 2000.

Information Sources

18. For information given in an EIS, the EIS must state the source of the information, how recent the information is, how the reliability of the information was tested; and what uncertainties (if any) are in the information.

Anticipated Engagement

19. A draft EIS should be provided to DoEE prior to finalisation to ensure the above assessment requirements have been met.

REFERENCES

- *Environment Protection and Biodiversity Conservation Act 1999* - section 51-55, section 96A(3)(a)(b), 101A(3)(a)(b), section 136, section 527E
- *Environment Protection and Biodiversity Conservation Regulations 2000 Schedule 4*
- NSW Assessment Bilateral Agreement (2015) - Item 18.1, Item 18.5, Schedule 1
- *Matters of National Environmental Significance - Significant impact guidelines 1.1* (2013) EPBC Act
- *Environment Protect and Biodiversity Conservation Act 1999 Environmental Offsets Policy* October 2012
- *Information Guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals* (2014)