NSW EDO

DEFENDING THE ENVIRONMENT
ADVANCING THE LAW

Submission on Stage 1 of the Integrated Mining Policy

prepared by

EDO NSW
9 July 2015

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Successful environmental outcomes using the law. With over 25 years' experience in environmental law, EDO NSW has a proven track record in achieving positive environmental outcomes for the community.

Broad environmental expertise. EDO NSW is the acknowledged expert when it comes to the law and how it applies to the environment. We help the community to solve environmental issues by providing legal and scientific advice, community legal education and proposals for better laws.

Independent and accessible services. As a non-government and not-for-profit legal centre, our services are provided without fear or favour. Anyone can contact us to get free initial legal advice about an environmental problem, with many of our services targeted at rural and regional communities.

EDO NSW is part of a national network of centres that help to protect the environment through law in their states.

Submitted to:

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Introduction

EDO NSW welcomes the opportunity to comment on Stage 1 of the Integrated Mining Policy (**IMP**). Our comments form part of a significant body of policy and law reform work concerning planning, mining and biodiversity offsets in NSW.

While the purpose of this submission is to address specific elements of the IMP, we wish to reiterate that legislative reform is necessary if the environmental and social impacts associated with large-scale mining in NSW are to be managed consistently with the principles of ecologically sustainable development (**ESD**).[1]

This submission addresses the following components of the IMP:

- **Part 1**: Policy Framework for Biodiversity Offsets for Upland Swamps and Associated Threatened Species (**Swamps Offset Policy or Policy**).
    1. Why upland swamps should be red flag areas
    2. Comments on the Upland Swamps Policy

- **Part 2**: Mine Application Guideline (**Guideline**), Standard Secretary's Environmental Assessment Requirements (**SEARs)** and Frequently Asked Questions (**FAQs)**.

Part 1: Swamps Offset Policy

EDO NSW does not support the Swamps Offset Policy. Our objections are based on specific elements of the Policy itself, as well as flaws in the underlying policy framework. These flaws are canvassed in our submission responding to the Draft NSW Biodiversity Offsets Policy for Major Projects (**Major Projects Offsets Policy**) and the Draft Framework for Biodiversity Assessment (**FBA**).[2]

Our objections are set out in two sections. The first section outlines why upland swamps are unsuitable for offsetting and should be classified as red flag areas. The second section comments on specific elements of the Swamps Offset Policy.

1. Why upland swamps should be 'red flag' areas

High value biodiversity under threat

EDO NSW has consistently argued that any successful offsets policy must include red flag areas where development is simply not permissible. Our argument is based on the well-supported premise that some species, habitat and ecosystems are simply not amenable to offsetting due to their high biodiversity value. Rather, and in accordance with ESD, these

[1] Our submissions, briefing notes and discussion papers concerning mining are available at: http://www.edonsw.org.au/mining_coal_seam_gas_policy

[2] Submission available online at: http://d3n8a8pro7vhmx.cloudfront.net/edonsw/pages/1455/attachments/original/1400219519/140516_NSW_Biodiversity_Offsets_Policy_for_Major_projects_-_EDO_NSW_Submission.pdf?1400219519

areas should be protected outright and in perpetuity. Upland swamps are of high biodiversity value and in need of protection for the following reasons:

- A significant number of upland swamps threatened by longwall mining are listed as endangered ecological communities (**EECs**) under either the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) or the *Threatened Species Conservation Act 1995* (NSW) (**TSC Act**). **Appendix 1** provides further details regarding these listings.

- Upland swamps of high biodiversity values extend well beyond listed communities. For example, the former Australian Government was advised to remove the existing elevation criteria (>600 metres above sea level) for listing under the Temperate Highland Peat Swamps on Sandstone. This would in turn 'facilitate the inclusion of many similar swamps in New South Wales, particularly in the lower elevation areas (<600 metres above sea level), such as the Woronora Plateau, south of Sydney, above the Southern coal field.'[3] To that end, we recommend that red flag areas include all swamps of high biodiversity value, listed or otherwise.

- Numerous upland swamps contain habitat for individually listed species. For example, the Newnes Plateau Shrub Swamp provides habitat for threatened species including the Giant Dragonfly and the Blue Mountains Water Skink.[4]

- The documented threats to upland swamps reinforce that they are in urgent need of protection. Compellingly, 'alterations to the natural flow regimes of rivers and streams and their floodplains and wetlands' is listed as a key threatening process under the TSC Act. Most swamps are particularly susceptible to changes in hydrology. This is supported by comments made by the NSW Scientific Committee in their final determination for the Coastal Upland Swamp in the Sydney Basin Bioregion. Specifically, their recommendation that this swamp be listed as an EEC was partly based on evidence that '[s]ubsidence and warping of the land surface associated with longwall mining of underground coal seams potentially changes hydrological processes involving both ground water and surface water.'[5]

- Finally, these threats are compounded by the fact that safeguards under the TSC Act (such as the need to prepare a threatened species impact statement or in the alternative, apply Part 7A of the Act) do not apply to State Significant Development (**SSD**). This is counterintuitive insofar as SSD is by definition likely to have a high impact on the environment.

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[3] Commonwealth of Australia 2014, *Temperate Highland Peat Swamps on Sandstone: evaluation of mitigation and remediation techniques, Knowledge report*, prepared by the Water Research Laboratory, University of NSW, for the Department of the Environment, Commonwealth of Australia, p. 18.

[4] NSW Scientific Committee – *Final Determination for the Newnes Plateau Shrub Swamp in the Sydney Basin Bioregion – endangered ecological community listing*. Available at http://www.environment.nsw.gov.au/determinations/NewnesPlateauShrubSwampEndSpListing.htm (accessed 26 June 2015).

[5] NSW Scientific Committee – *Final Determination for the Coastal Upland Swamp in the Sydney Basin Bioregion – endangered ecological community listing.* Available at: http://www.environment.nsw.gov.au/determinations/coastaluplandswampfd.htm'. (accessed 26 June 2015).

To summarise, upland swamps – listed or otherwise – are fragile, unique environments under serious threat from longwall mining. This threat is exacerbated by the fact that SSD is not subject to the full suite of safeguards available under the TSC Act.

Inability to rehabilitate swamps

A report prepared for the Australian Government[6] evaluating mitigation and remediation techniques in respect of longwall mining beneath the Temperate Highland Peat Swamps on Sandstone concluded that:[7]

- The only strategy that has been proven to effectively mitigate the impacts of longwall mining is to change the mine plan layout.
- There were no examples upland peat swamps impacted by longwall mining that have been remediated. That is, it is not possible to remediate peat.
- Existing remediation techniques 'are unproven and appear insufficient without the destruction of the surface environment.'

Red flag areas must therefore be complemented by legislation requiring all mines be designed so as to avoid impacts on upland swamps. It is our understanding that further research is required to determine the buffer zone required to protect each swamp from the impacts associated with subsidence. Accordingly, a full study of local aquifers and geology is needed to determine the appropriate buffer zone for each affected swamp, rather than the generic distances specified in the Policy.

Furthermore and as outlined in our submission on the Major Projects Offset Policy, EDO NSW objects to rehabilitated mine sites being recognised toward the calculation of offsets. We are particularly concerned that any swamp located above a mining operation could be defined as part of the mine site, and to that extent available as an offset. This is entirely inappropriate given peat swamps cannot be rehabilitated.

Major Projects Offset Policy and FBA focus on clearing of vegetation

The Major Projects Offset Policy and FBA focus on the removal of native vegetation and associated impacts on fauna. The Policy explicitly states that it:

> *does not provide guidance around certain impacts of a project on biodiversity that are not associated with clearing of vegetation. Examples of these impacts include … subsidence and cliff falls associated with mining developments…*[8]

[6] Prepared on the advice of the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development.
[7] Commonwealth of Australia 2014, *Temperate Highland Peat Swamps on Sandstone: evaluation of mitigation and remediation techniques, Knowledge report*; prepared by the Water Research Laboratory, University of New South Wales, for the Department of Environment, Commonwealth of Australia, p. 7.
[8] Major Projects Offset Policy, p. 9.

In other words, the underlying policy framework was not drafted with a view to creating offsets for upland swamps. This is entirely logical insofar as upland swamps are complex ecosystems which do not lend themselves to offsetting.

Variation of like-for-like and supplementary measures

EDO NSW has expressed considerable concern about the broadening of the like-for-like methodology and the inclusion of supplementary measures in the Major Projects Offset Policy. Both of these changes are likely to seriously undermine the preservation of upland swamps should the Swamp Offset Policy be given effect.

EDO NSW is concerned that given the nature and location of swamps, few are likely to be available for offsets credits. This being the case, only two possibilities remain: to offset impacts with a 'variation'[9] from the same vegetation formation or to purchase Tier 1 supplementary measures.[10] In order to purchase supplementary measures, the proponent must demonstrate that 'all reasonable steps have been taken to secure the number and type of species credits impacted at the development site'.[11] However, the FBA does not specify what constitutes 'all reasonable steps.' Consequently, the Government has absolute discretion to determine whether or not the proponent has satisfied this requirement. Furthermore, as the requirement is enshrined in policy (not law), third party appeal rights are limited.

EDO NSW is therefore of the view that supplementary measures (which may technically account for 100% of a proponent's contribution under the Major Projects Policy and FBA) are likely to be purchased by proponents in lieu of actual offsets. This is an unacceptable outcome which reinforces the need for red flag areas protecting upland swamps.

Offset sites may be mined

Assuming a proponent is able to purchase an upland swamp as an offset, there is a real risk that the offset site will be impacted by longwall mining. This is particularly likely for two reasons. First, many upland swamps sit above or adjacent to coal seams.[12] Second, there is no legislated requirement to protect offset sites in perpetuity. While the Major Projects Offset Policy requires an offset site to be secured with a Biobanking agreement,[13] under the TSC Act these may be varied or terminated by the Minister in order to facilitate mining exploration

[9] The Major Projects Offset Policy only exempts species or communities listed as critically endangered from the variation rules (p. 19). No upland swamps are listed as critically endangered ecological communities. As such, they are subject to variations.

[10] Only a critically endangered species that has not been excluded in the SEARs OR a threatened species or population nominated in the SEARs as likely to become extinct or have its viability significantly reduced, are exempted from supplementary measures (FBA, 9.5.1, 10.5.7.5).

[11] FBA, 10.5.7.5.

[12] Commonwealth of Australia 2014, *Temperate Highland Peat Swamps on Sandstone: evaluation of mitigation and remediation techniques, Knowledge report*, prepared by the Water Research Laboratory, University of NSW, for the Department of the Environment, Commonwealth of Australia, pp. 27-32.

[13] Ibid, p. 12.

or production.[14] Furthermore, the Warkworth case has clearly demonstrated the Government's willingness to allow mining to be undertaken on offset sites.

Recommendations

- Upland swamps should be classified as red flag areas. An appropriate buffer zone around each swamp should be included in the red flag footprint.
- Impacts on red flag areas are to be avoided by ensuring that mine layout is appropriately adapted to the environment.
- A full study of local aquifers and geology is needed to determine the appropriate buffer zone for each affected swamp.

2. Comments on Upland Swamps Policy

EDO NSW reiterates that it does not support the offsetting of upland swamps. Nevertheless, we consider it important to engage with the particularities of this Policy and to provide specific recommendations where relevant.

Recommendation

- A definition of 'upland swamp' should be included in the Policy.

Nil or negligible impacts

We note that the Swamps Offset Policy contemplates the possibility that a longwall mining project may have 'nil or negligible consequences for upland swamps and threatened species', in which case no up-front offset is required. The Policy goes on to state that a 'negligible environmental consequences' performance measure must be included as a condition of consent, with monitoring 'required to measure compliance with this performance measure, with a focus on shallow groundwater monitoring in swamps.' If monitoring indicates that mining has 'significantly impacted' a shallow groundwater aquifer in a swamp and that impact has stabilised for a period of 12 months, then an offset must be purchased within six months.

EDO NSW has serious reservations about this component of the Policy. In the first instance, the Policy does not clarify what constitutes a 'negligible' impact, perhaps because there is no accepted definition of this term in relation to upland swamps. In any case, available evidence indicates that the impact of longwall mining on these swamps tends to be significant.[15] Indeed, it has been noted that 'when the relationship between groundwater and longwall

[14] TSC Act, s. 127S.

[15] Commonwealth of Australia 2014, *Temperate Highland Peat Swamps on Sandstone: evaluation of mitigation and remediation techniques, Knowledge report*, prepared by the Water Research Laboratory, University of NSW, for the Department of the Environment, Commonwealth of Australia, pp. 42-63.

mining is considered, the question is not *if* impacts will occur, but *when* they will occur.'[16] As such, the concept of negligible impact is meaningless in discussions of upland swamps.

Further to this point, impacts – significant or otherwise – are generally only detected once irreversible damage has occurred or will inevitably occur. As noted in a report prepared on the advice of the IESC,[17]

> *Recent literature…has discussed the delay between undermining of upland peat swamp and other systems, such as streams, and the observations of impacts. Two problems are associated with this delay: it is not known immediately if mining has had an impact, and, by the time remediation is necessary, the swamp may be irreversibly damaged.*

Second, the Policy simply states that a prediction of 'nil or negligible consequences' must be supported by 'evidence.' It does not qualify or quantify what sort of evidence is required to substantiate the claim. As these details are not suitable for inclusion in the SEARs[18], they should be included in the Policy itself.

Recommendations

- 'Negligible impacts' should be removed from the Policy.
- The evidence required to substantiate a 'nil impacts' prediction should be outlined in the Policy.
- The only effective means of avoiding impacts on upland swamps is appropriate mine layout. The Policy should therefore clearly outline the 'avoid, mitigate, offset' hierarchy and explicitly state that avoidance must focus on appropriate mine design.

Calculating the 'maximum predicted offset liability'

Damage to swamps arises from a complex chain of interactions. Specifically, subsidence and cracking of valley floors and creeks alter surface and groundwater hydrology,[19] which in turn causes destruction of peat, which results in loss of flora and fauna.[20] EDO NSW therefore questions whether a partial impact to a swamp is likely (as opposed to more generalised damage).

[16] Ibid, p. 40. Citing Pells and Pells (2012).
[17] Ibid, p. 66.
[18] As they only apply to a discrete number of State Significant projects.
[19] Commonwealth of Australia 2014, *Temperate Highland Peat Swamps on Sandstone: evaluation of mitigation and remediation techniques, Knowledge report*, prepared by the Water Research Laboratory, University of NSW, for the Department of the Environment, Commonwealth of Australia, p. 36.
[20] Ibid, p. 67.

Recommendation

- Given the high probability of irreversible damage, it would be prudent to assume that the entire swamp will be impacted and to calculate offsets on that basis. This would be consistent with ESD, and in particular the precautionary principle.

Securing an appropriate offset for predicted impacts

EDO NSW objects to the delay surrounding the securing of offsets. Specifically, the Swamps Offset Policy states that '[t]he offsets identified in the Biodiversity Offset Strategy are only required to be secured or credits retired once the outcomes of mining are confirmed through agreed monitoring.' While proponents must demonstrate how they can 'legally secure the proposed offsets', this is not tantamount to purchasing and retiring credits. Nor does it provide any security if monitoring shows that impacts exceed predictions. This is particularly problematic as we have been advised that proponents frequently underestimate the likely impacts of subsidence on upland swamps. **Appendix 2** provides a specific example of impacts exceeding predictions.

Recommendation

- Proponents should be required to purchase and retire offsets before commencing development. Furthermore, they should be required to demonstrate that they can legally secure additional offsets to account for unintended impacts. This would arguably create a greater incentive to focus on avoidance measures.

Monitoring

While the Policy states that a 'minimum of two years pre-mining piezometric data should be used to establish the baseline shallow groundwater regime within 400m of longwall mining' it contemplates the possibility that less than two years baseline data will be collected. A report prepared on the advice of the IESC concluded that *at least* two years' worth of baseline data must be collected in order to understand natural variations within the system.[21] As most monitoring has historically 'been focused on channel hydrology and flow at the downstream boundary' it is further recommended that 'future monitoring be conducted within a broader catchment focus, including hydrological and water balance data for the entire upland peat swamp, rather than just the downstream channel.'[22]

[21] Commonwealth of Australia 2014, *Temperate Highland Peat Swamps on Sandstone: ecological characteristics, sensitivities to change, and monitoring and reporting techniques, Knowledge report*, prepared by Jacobs SKM for the Department of the Environment, Commonwealth of Australia, p. 10.

[22] Commonwealth of Australia 2014, *Temperate Highland Peat Swamps on Sandstone: evaluation of mitigation and remediation techniques, Knowledge report*, prepared by the Water Research Laboratory, University of NSW, for the Department of the Environment, Commonwealth of Australia, p. 72.

Recommendations

- A minimum of two years baseline data *must* be collected before mining is permitted to commence.
- A full BioBanking Assessment under the FBA methodology must be produced prior to the commencement of mining in order to have baseline data. This is in addition to the BACI monitoring mentioned in the Policy.
- The calculation of Biodiversity credits requires vegetation plot data to assess quality, type and area size of each community. Due to the footprint of the potential impact being unknown before the mining operations commence, the vegetation of the whole swamp as well as a sizeable buffer area (to be defined by experts) should be surveyed.
- Catchment-scale monitoring should be undertaken with a view to obtaining water balance data for the entire upland peat swamp.
- All baseline data should be made available to the public.

Consideration of actual and predicted outcomes

As noted above, we are of the view that offsets should be purchased prior to the commencement of development, and that an additional bank should be legally secured to account for any exceedance of predicted outcomes (which we are advised is common). We note that the Policy only considers changes groundwater 'within 400 m of the swamp' as a relevant measure of impact to the swamp itself. EDO NSW questions this demarcation, particularly in light of the recommendation that monitoring be conducted across the catchment in order to obtain water balance data for the entire swamp. Furthermore, 12 months (after the cessation of mining activities) may be an insufficient period to determine whether impacts have been definitively avoided.

Recommendations

- Offsets are to be purchased prior to the commencement of development. Additional offsets should be legally secured to account for any exceedance of predicted outcomes.
- The 400m rule should be replaced by studies aimed at fully understanding local hydrogeology and hydrology processes with a view to determining the appropriate buffer for each swamp.
- The 12 month rule should be replaced by ongoing monitoring until local hydrogeology and hydrology processes have reached a new, dynamic equilibrium post-mining.
- Work should be stopped when impacts exceed predictions.

Part 2: SEARs, Guideline and Frequently Asked Questions

While our recommendations relate to specific elements of the Guidelines and SEARs, we wish to restate (consistently with previous submissions and reports)[23] that legislative reform is required in order reduce the environmental and social impacts associated with large scale mining projects.

Recommendations

Environmental Impact Assessment (EIA) - SEARs and Guideline

- For the sake of clarity, all information regarding the contents of an EIA should be contained in the SEARs document[24]. The SEARs document should indicate that Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (**EPA Regulation**) also outlines mandatory EIA requirements.

- A single document outlining the contents of a Preliminary Environmental Assessment (**PEA**) would provide greater clarity. That is, the EIA requirements and PEA requirements should be specified in separate documents.

- More generally, legislative reform is needed to streamline EIA requirements. Ultimately, SEARs should be included in the EPA Regulation.

- The SEARs should be amended to:

    - include a requirement to assess whether impacts on matters of national environmental significance are likely, and what those impacts will be.

    - include a requirement to assess scope 1, 2 and scope 3 greenhouse gas emissions. This is consistent with international best practice principles for impact assessment.[25]

    - ensure that cumulative impacts are assessed across all impact areas (including water and biodiversity, which are currently omitted). An assessment of cumulative impacts must take into account all development (not just mining development) impacting on the same environmental features.

    - require air dispersal monitoring for all projects.

    - state that subsidence considerations are not limited to significant features but extend to all surface impacts.

    - ensure that genuine (not prescriptive) consultation with traditional owners is mandatory.

[23] Our submissions, briefing notes and discussion papers concerning mining are available at: http://www.edonsw.org.au/mining_coal_seam_gas_policy

[24] At present, information regarding the contents of an EIS is also included in the Guideline. There is some inconsistency between this and the SEARs document.

[25] International Association for Impact Assessment, *Climate Change in Impact Assessment: International Best Practice Principles.* Available at: http://www.iaia.org/publicdocuments/special-publications/SP8%20Climate%20Change_web.pdf

- require proponents to undertake health impact assessment in accordance with specific guidelines (see below).
- require proponents to undertake social impact assessment in accordance with specific guidelines (see below).
- require proponents to undertake community consultation in accordance with specific guidelines (see below).

FAQs

- EDO NSW is concerned by references to 'economic guidelines'. We understand that these guidelines have been made available to both industry and the Planning and Assessment Commission (**PAC**), and that industry is using a draft version of the guidelines to justify inadequate assessment of certain projects. By way of contrast, the NSW Government has not released these guidelines to the community, despite requests to do so. We therefore strongly recommend that they be made available to the community immediately.

Generally

- A standalone document clearly outlining the steps involved in assessing and approving State Significant mining developments would assist the community to understand the complexities of these processes, and when they can engage. A flowchart would be useful.
- A policy of no final void should be established.
- Comprehensive social impact assessment guidelines and health impact assessment guidelines are necessary.
- Based on feedback we have received from the community, comprehensive community consultation guidelines are necessary to improve the quality of these processes.

For further information please contact rachel.walmsley@edonsw.org.au or 02 9262 6989.

Appendix 1: **Listed upland swamps**

Swamp	**Listing**
Temperate highland peat swamp community	• Listed as EEC under EPBC Act. • Listed as EEC under TSC Act (as part of the Montane peatlands and swamps of the New England Tableland, NSW North Coast, Sydney Basin, SE Corner, SE Highlands and Australian Alps bioregional).
Coastal Upland Swamp in the Sydney Basin bioregion	• Listed as EEC under EPBC Act. • Listed as EEC under TSC Act.
Montane peatlands and swamps of the New England Tableland, NSW North Coast, Sydney Basin, SE Corner, SE Highlands and Australian Alps bioregions	• Listed as EEC Under EPBC Act (under the Temperate Highland Peat Swamps on Sandstone). • Listed as EEC under TSC Act.
Newnes Plateau Shrub Swamp in the Sydney Basin bioregion	• Listed as EEC under EPBC Act (under Temperate Highland Peat Swamps on Sandstone). • Listed as EEC under TSC Act.
Blue Mountains swamps in the Sydney Basin bioregion	• Listed as EEC under EPBC Act (under under Temperate Highland Peat Swamps on Sandstone). • Listed as Vulnerable Ecological Community under TSC Act

Appendix 2: Example of impacts exceeding predictions

Narrow Swamp, Newnes Plateau: timeline and impact information from available references.

Key information and observed impacts	References
Undermined by the 265-m-wide longwall 940 (3 July 2007).	Adhikary & Guo 2009; Muir 2010
Greater than expected subsidence (1.456 m), associated with a fault/fracture zone at the northern end of the swamp (reported February 2008).	Muir 2010
Significant reduction in flow has been observed, from 8 ML/day at Springvale's discharge point LDP5, above Narrow Swamp, to 4 ML/day at the weir downstream of Narrow Swamp, amounting to 244 ML over the period May to July 2008.	Muir 2010
Once emergency discharges ceased, the near-surface groundwater fell rapidly below the base of monitoring bores (reported December 2009).	Muir 2010
October 2011: 'Enforceable undertaking' is issued following alleged breach of EPBC Act.	DSEWPaC 2011
August 2012: Referral by Centennial Coal to DSEWPaC of proposed action for remediation and restoration works within Narrow Swamp.	DSEWPaC 2012b

Reference: Commonwealth of Australia 2014, *Temperate Highland Peat Swamps on Sandstone: evaluation of mitigation and remediation techniques, Knowledge report*, prepared by the Water Research Laboratory, University of NSW, for the Department of the Environment, Commonwealth of Australia, p. 46.