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6 November 2015

Submission: Bylong coal project Environmental Impact Statement

Thank you for the opportunity to make a submission to the Environmental Impact Statement for this project.

KEPCO propose to construct a large open cut and underground mine in a river valley with a productive agricultural industry dependent on a limited water resource. They propose constructing fifteen long wall panels and two open cut pits, a workforce accommodation facility and other surface infrastructure. We strongly believe that coal mining is not an appropriate land use in the Bylong Valley, and that the experiences of communities in nearby Wollar and Ulan, and in the Wybong Valley, indicate clearly that the impact of opening up greenfield coal mining will be far greater than is anticipated in the Environmental Impact Statement provided for public feedback.

More generally, it is clear that the Government's failure to set aside strategic agricultural lands as off-limits to coal mining is attracting strong community disapproval. It is a blunder that should not be allowed to continue.

On reading the Environmental Impact Statement, it is clear to us that the impacts of this project on water, agricultural land and social amenity are likely to far outweigh its expected economic benefits and that it is not in the public interest for it to proceed. However, we are also well aware that the failures of NSW planning policy and development assessment may not currently provide a clear framework that ensures this project will be stopped. There is no policy in place to prevent the dramatic depletion of a highly productive alluvial aquifer or the tearing up of highly productive agricultural soils and land identified as part of a critical industry cluster. There are not clear boundaries established to ensure that the air quality and noise impacts of this mine do not spread across the rural Bylong Valley and further empty it of people and activity other than mining, or to require the proponent to operate within only daylight hours and at a scale that would lessen the chance of this occurring. There is not a clear policy that prevents an area claimed by a mining proponent as a biodiversity offset site from also being part of the area of biodiversity that they are degrading and harming by their mining activity.

It is our firm view that before this project proceeds to the assessment stage and is referred to a Planning and Assessment Commission for review, that these policy areas be rectified, clarified and tightened. Too much good floodplain and farming land has been slated for removal. Too much critically endangered woodland has been cleared. Too many mistakes have been made that allow unacceptable impacts on water resources and the social fabric of rural communities to proceed in the name of short-term mining profits. This must be changed. This project should not proceed.

Nevertheless, we have some comment on the detail of the project as outlined in the EIS in the spirit of constructive engagement.

Summary of key concerns

Land use

- The mine has not been designed to prevent unacceptable impacts on agriculture, water, heritage and biodiversity, instead the proponent several times argues that mine plan decisions have been made because the mine would not otherwise be viable. If mining in the Bylong Valley in a way that does not fatally compromise other land and water uses in the area is not viable, then it is clearly not an appropriate land use in the area.
- Land mapped as biophysical strategic agricultural land and critical industry cluster land should be off limits to open cut coal mining.

Social impact

- The social impact assessment for this project should be revised with improved guidelines and accurate inputs, taking into account the experience of social impacts that have been felt in communities that already have large-scale open cut coal mining nearby.
- Workers camps are disruptive and do not facilitate integration of the mine workforce into the local community. The scale and pace of construction should be amended for a more orderly arrival of the workforce so that this camp is not needed.
- 24 hour operation is not appropriate in the Bylong Valley's rural environmental and social context and the company must be required by the NSW government to design its operation to suit that context by closing operations overnight and not employing a shift-base workforce.
- The commitments from the company to ameliorate its social impact are welcome, but such commitments are easily abandoned, as social commitments from mining companies have been in the past, so they cannot be accepted as adequate mitigation of the impacts of the project.
- The Government must require the company to ensure that there are no noise and air quality impacts beyond the project boundary, so that no further acquisition needs to take place, rural amenity is maintained and the properties already owned by KEPCO can be rented without causing serious health and amenity concerns for renters.

Water

- The scale of impact on of the two open cut mining area on the alluvium and on baseflow to the Bylong River are not acceptable. These pits should not be allowed to proceed in this area.
- We seek clarification from DPI Water over the proponent's claim that it does not require surface water licences in the Bylong Water Source to account for the reduction in baseflow anticipated to be caused by the mine. In our view, loss of baseflow should require the proponent to hold a surface water licence.
- The EIS presents alarmingly misleading statements about alluvial draw down. It is repeatedly stated that the minimum impact criteria in the AIP is less than 2m at private bores, but excludes its own bores from this evaluation. This is completely unacceptable and contrary to the Aquifer Interference Policy, which applies the minimum impact criteria to "any water supply work."
- There appear to be around 20 bores in the quaternary alluvium that will experience more than the 2m minimum impact. Most of these are will experience 10m draw down as a result of the proponent mining the floodplain adjacent to the aquifer and extensive pumping.
- However, we have not been able to find a map in the EIS that accurately depicts this impact and believe the EIS is deliberately misleading in this regard. The Department of Planning and Environment and DPI Water should not have allowed this EIS to be exhibited in this state.

- The Bylong alluvium is heavily constrained. Water users describe it as being over-allocated by perhaps 100%. If that's the case, utilisation by the proponent of its half of the total aquifer licences in the Bylong Water Source may deplete the aquifer entirely.
- A cumulative impact assessment of water and several assessment items requested by the Gateway Panel were not completed.

Biodiversity

- The proponent proposed to create an offset site above its longwall operation. This is not acceptable. Panels LW101, LW102, and LW201-06 should be removed from the mine plan and this woodland preserved.
- The short section on cumulative impacts in the ecological assessment in Appendix J makes no attempt to quantify the cumulative impact of recent mining approvals to clear habitat and woodlands that will also be cleared for this mine, such as the Regent honeyeater and Box gum woodland.
- Like for like offsetting is required for the critically endangered and nationally listed entities and this should extend to condition. Much of the offset area for the Box Gum woodland is derived native grassland and do not support the hollow trees that will be lost to the mine clearing, so the offsets do not replace this community like for like.

Culture and heritage

- The heritage values of the Bylong Valley, both for European and Aboriginal heritage, inhere in the landscape, not in isolated buildings and artefacts that can be moved without losing their mystique. Mining will unacceptable alter the listed Bylong Valley Conservation Area and its indigenous cultural landscapes.
- Significant indigenous cultural heritage features will be unacceptably impacted by this mine. The ochre quarry, the grinding grooves and the significant sandstone formations are located in the area that will experience significant subsidence, putting them at high risk of damage.
- Furthermore, the quarry and one of the formations are located in Bylong State Forest, which means that they are currently accessible to local Aboriginal people for cultural practice and teaching, and the broader community for sharing historical teaching and understanding.
- Modification of the longwall plan should be made to avoid undermining the grinding grooves in the eastern portion of the underground proposal and in the western portion to avoid undermining the ochre quarry. The proponent must also devise the mine plan in a way that ensures continued access to these sites for the Aboriginal community, and the broader public should the Traditional Owners wish it.

The Valley

The project is proposed in an idyll rural landscape surrounded by World Heritage National Parks. The mine will demolish a 100 year old school, the former post office/general store, community hall and Catholic church with cemetery holding the interred remains of a number of the early European settlers of the Valley. The Bylong Valley Landscape Conservation Area was listed on the National Trust register in August 2013 for its agricultural and exceptional scenic value, for its scientific significance, as the place where natural sequence farming was invented, for its rich Aboriginal history for three Aboriginal tribes and a major trading route between the coast and the western plains.

Approval and construction of an open cut and underground coal mine in the area will radically change the Valley and irreparably alter its agricultural, cultural and ecological character and values. All this is not worth sacrificing for 6.5 tonnes a year of saleable coal for 23 years, after which mining will be over, but the impacts continue.

Most of the coal is to be mined underground. The proponent claims that "due to Project viability considerations, two open cut mining areas are proposed for the efficient recovery of identified marketable seams within the coal resources" (Main Report 36). Just a quarter of the coal, 33Mt of the 123Mt being targeted, will be recovered using the most damaging and intensive method, pulling up the best soils, adjacent to the alluvial aquifer, on the floodplain. To access this coal, they will remove 152 million bank cubic metres of overburden, which will be piled precariously near the Bylong River. The equation does not stack up. It is our firm view that the policy settings for rural land use ought to be set by the requirements for the healthy and long term sustainable functioning of communities and the environment in regional New South Wales. The design and management of a high impact, short-term project such as this should follow the constraints and needs of the social, environmental and economic context in which it is proposed, not the other way around. In short, it is not appropriate for the proponent to claim that they must do irreparable damage to the environment and a rural community in order for their venture to be viable. If mining in the Bylong Valley in a way that does not fatally compromise other land and water uses in the area is not viable, then it is clearly not an appropriate land use in the area.

We reject the proponent's ridiculous claim to have already made a "major concession" in not proposing *seven* open cut mining areas. (Main Report 38) and call on the Government to require the proponent to more appropriately tailor the mine to suit the environmental and social constraints of the Bylong Valley or abandon the project altogether. We note, too, the ominous reference the proponent makes to further mining beyond the life of the project as currently proposed.[1] Perhaps the proponent intends to propose the additional five open cut mining areas over the next ten years as modifications to the project, or new expansion projects, as other mining companies in the Hunter and Western mining fields have done. We challenge the Government to urgently amend mining and planning systems and policies to halt this insidious incrementalism whereby open cut coal mining takes on a scale of operation and impact not foreseen and explored at the moment the projects are initially designed and approved, as this has become a pattern that is doing significant environmental and social harm in mining areas.

Social impact

We are very concerned that social impact assessment for major mining projects is not accurately identifying the negative social effects that mines are creating in the broader Hunter region, and recommend that the social impact assessment for this project be revised with improved guidelines and accurate inputs, taking into account the experience of social impacts that have been felt in communities that already have large-scale open cut coal mining nearby.

Exploration and preparation for mining has already had a devastating impact on the Bylong Valley, depopulating the area as large swathes of land, including most of the large holdings in the area, have been bought by the company. This observation is recorded in the social impact assessment as having been raised by the remaining residents. The effect of this on social infrastructure is profound, notably in the closure of Bylong Upper Public School and the thinning and wearing of the social fabric that provides services, and social and economic activity. The Social Impact Assessment (SIA)

[1] "In the event that future approvals are not sought to continue mining at the end of PY 25…" (Main Report 45)

states that 10% of the estimated total population of Bylong Valley have moved as a result of acquisition so far, and that only a further six people are likely to move, but we consider this to be an underestimation of the population loss that will be experienced, given the evidence from other areas.

We note the effect of the Moolarben, Ulan and Wilpinjong mines on Wollar and Ulan has been devastating. Wollar's population has been decimated and the community is struggling to maintain its social functions in raising money to maintain the hall and other spaces, keep services in the area, populate the fire brigade and other core social roles. It is clear from the Social Impact Assessment for this Project that this effect is already occurring in Bylong as a result of acquisition and upheaval for the coal mine. The annual Mouse Races did not take place last year and there are only one or two RFS volunteers available (Appendix AC 155). The assessment cites a study that has found that existing mining projects are already having an impact on the availability of volunteers for emergency services in the Mudgee area (Appendix AC 156).

To accommodate the 85% of the workforce that KEPCO anticipates will be non-local, they propose to construct a temporary "Workforce Accommodation facility" for six years. In the first two years, the proponent expects to employ between 600-800 people (Main Report 69). It is claimed that this facility is "essential for the viability of the project" (Main Report 70). The proponent notes that money provided via the Resources for Regions project to Mid-Western Regional Council to seal Wollar Road will reduce the travel time between Mudgee and the project to within an acceptable time for their safety and fatigue management, but that if this upgrade is not completed, the workers accommodation camp will be used for the life of the mine. The camp will provide catering for 300 people and 300 medium term beds. This is equal to the estimated full time workforce. Workers camps are disruptive and do not facilitate integration of the mine workforce into the local community. The scale and pace of construction should be amended for a more orderly arrival of the workforce so that this camp is not needed.

The mine proposes 24 hour operation for both the construction and mining phases. We believe this is not appropriate in the rural environmental and social context and that the company must be required by the NSW government to design its operation to suit that context by closing operations overnight. Admittedly, this has not been required of mines before, but in our experience it is the noise and light pollution of night time operations that cause some of the most serious social and amenity impacts of large scale mines in the greater Hunter Valley and Gunnedah Basin. Indeed, more of the social ill-effects of the project could be better managed or ameliorated by requiring the company not to employ a shift-base workforce. It was identified in the SIA that increasing proportions of the local population being employed in shift-based mining work is discouraging volunteering for emergency services, which are a crucial part of the fabric of the community. Should the project be approved to go ahead, having regular working hours would also lend itself to the coal mine workforce participating more fully in normal social and economic life of the village of Bylong.

The Social Impact Assessment flatly states that, "The Project will not impact the operation of key facilities located in Bylong Village including the Bylong General Store, sportsground and St Stephen's Anglican Church" (Appendix AC x). This is not a credible claim, especially given the evidence from Wollar and the impact that acquisition of property for the project and depopulation has already had on social infrastructure in Bylong. People from Bylong interviewed by the consultants raised concerns about "rural character and amenity, community sustainability and long term cohesion, accessibility die to changed road conditions, and increased traffic" (Appendix AC xi). They are already experiencing some of these effects but their concerns are likely also generated by observation of small communities near them that have suffered these impacts due to mines already operating.

We acknowledge that the Social Impact Assessment makes commitments that the proponent will help its employees integrate into the community at Bylong with BBQs, encouragement of volunteering and participation in community groups and events. However, these commitments are easily abandoned, as social infrastructure commitments from mining companies have been in the past, so it is difficult to accept them as adequate mitigation of the impacts of the project. More appropriate mitigation would be a commitment to run the mine in a way that did not create the negative social consequences. This would mean: do not operate overnight, keeping people awake and requiring a shift-based workforce; ensure that there are no noise and air quality impacts beyond the project boundary, so that no further acquisition needs to take place and the properties already owned by KEPCO can be rented without causing serious health and amenity concerns for renters.

Water

Groundwater

Proposed open cut mining for this project is less than 200m from the alluvium and is 200m from the Bylong River. The Dry Creek alluvium will be undermined, but KEPCO claims it is not a highly productive groundwater source (Main Report 202). The gateway panel anticipated significant impacts on highly productive groundwater and noted that more detailed evaluation of the surface and groundwater connectivity was required. KEPCO found in their EIS that "the weathered zone rock that is adjacent to and underlying the alluvium is saturated" (Main Report 202). This means that "the potential for the weathered zone to act as a conduit for flow from the alluvium during mining appears high in the northern portion of proposed Eastern Open Cut and the eastern edge of the proposed Western Open Cut" (Main Report 202). It is our strong view that these open cut pits should not be allowed to proceed in this area, given the scale of impact on the alluvium that they may wreck.

The model predicts upward flow of water from the Permian bedrock to the alluvial aquifers of 1.1-8.5ML per day in the absence of mining (Main Report 205). This is over 3,000ML per year if the rate is consistent year round. KEPCO concedes that this upward flow will reduce within the large zone of depressurisation, which extends up to 2.4km from the longwall panes and 2.3km from the open cuts (Main Report 205) and that this will also lead to reduced baseflow to the Bylong River of up to 918ML per year (Main Report 208). Appendix M reveals that the proponent has removed this baseflow loss from licence calculations "because this take is already accounted for in water pumped from the borefield due to the 'short circuiting' of water from the highly connected surface water" (Appendix M 138). We seek clarification from DPI Water that this conclusion is appropriate: in our view, loss of baseflow should require the proponent to hold a surface water licence.

In some places adjacent to the mining area, the flow will be reversed and water be drawn down from the alluvium, extending 1km from the Eastern Open Cut mining area and 2.3km from the underground workings (Main Report 207). Close to KEPCO's borefield, groundwater levels are reduced to 5-9 metres. The Main Report is coy about the level of draw down expected to be experienced in the alluvium during and after mining. Closer investigation reveals that the EIS presents alarmingly misleading statements about this matter.

The proponent repeatedly states that the minimum impact criteria in the AIP is less than 2m at private bores, but excludes its own bores from this evaluation. This is completely unacceptable and contrary to the Aquifer Interference Policy, which applies the minimum impact criteria to "any water supply work." Ownership of the borefield does not absolve KEPCO of responsibility for this impact and from the information it is provided, it appears that open cut operation will have a devastating

impact on the Bylong alluvial aquifer. There appear to be around 20 bores in the quaternary alluvium that will experience more than the 2m minimum impact trigger, and most of these are anticipated to experience 10m draw down as a result of the proponent mining the floodplain adjacent to the aquifer and washing its coal with highly productive alluvial water and water collected from the Bylong River catchment in the raw water dam[2]. This is completely unacceptable. The assessment and approval process, the Aquifer Interference Policy (AIP) and the Government more broadly will have no credibility if this project is allowed to proceed as proposed with this scale of impact on a highly constrained and over-allocated water source.

The proponent has presented misleading information in repeatedly stating that no private bores would experience more than 2m draw down.[3] This is not in fact the case, and neither does the proponent accurately present the relevant criteria from the AIP. Most ordinary members of the public would not be able to glean from the information presented the dire nature of the impact this mine will have on a highly productive alluvial aquifer, and the main source of water for all of the agricultural enterprises in the Bylong Valley.

The proponent of this mine has been investigated before for presenting false information to the Government, in that instance to the Department of Industry. Such misinformation is a breach of trust and we are deeply disappointed that the Department of Planning and DPI Water saw fit to release this Environmental Impact Statement and deem it adequate for public consultation in this state.

The reality is that the Bylong alluvium is heavily constrained. Water users in the Valley anecdotally describe it as being over-allocated by perhaps 100%. This means that the volume of water represented by Water Access Licences in the Valley may not actually be available for use there and utilisation by the proponent of its half of the total aquifer licences in the Bylong Water Source may deplete the aquifer entirely.

The cumulative impact of the project on water with the upstream Wilpinjong, Ulan and Moolarben mines is not assessed “due to the distant location” of those operations (Main Report 14). The proponent states of Wilpinjong: “Given the Project is some 24km from the Wilpinjong Mine a cumulative impact will not occur” (Appendix Groundwater Part 2 31). This conclusion is not supported and the proponent must be required to undertake a cumulative impact assessment of the impact of the mines on the Goulburn River and, downstream, the Hunter. The Hunter is a naturally salty system and much of this salt comes from the weathering of the landforms in the Goulburn River catchment. The mines above Bylong have salt problems, and one has a reverse osmosis plant to deal with this. Moreover, in the pools along the Bylong River adjacent to and north of the proposed open cut mining areas, there is a potential increase in salinity of 12% in the alluvium and connected surface waters, clearly breaching the AIP trigger of no more than 1% increase in salinity in a highly connected surface water source at the nearest point to the activity (Main Report 211). The proponent of this project does not seriously or adequately grapple with the implications of bringing saline groundwater to the surface in a river system and an agricultural area that already has salt challenges.

[2] We have not been able to find a map in the EIS that accurately depicts this impact. We were provided with a map by Bylong landholders that showed the contour lines of draw down in the alluvium, which is what we’re basing these comments on. It is shocking and unacceptable that this map was not included in the EIS, though admittedly, EIS’s are so labyrinthine it is possible that it is buried somewhere we could not find it.

[3] For example, “The proponent has purchased a large landholding surrounding the Project and this means there are no private bores predicted to be impacted by mining.” (Appendix M 152). There are myriad similar claims made.

The Gateway panel asked for an analysis of short and long term geotechnical stability risk of waste emplacement, given that the emplacement areas have been designed with steep slopes to minimise footprint. The Eastern Overburden Emplacement area and the Eastern Open Cut itself, and Sediment Dam 8, which lies between the Eastern overburden area and the Bylong River are alarmingly near the river in our view and a risk assessment addressing the possible collapse of this pile towards the river, and the likely consequences for water quality has not been undertaken. Given the recent experience at the Clarence colliery in the Blue Mountains, where a coal rejects pile collapsed and sent coal fines washing down 15km of the Wallangambe River towards the Blue Mountains World Heritage Area, special attention to such considerations is warranted.

Water licencing

The model shows water demand peaking in Year 9, at 2,049ML. This is 35% of the total water entitlement for the Bylong Water Source. The model run presented is for median inflows, and in that scenario, the proponent will need to use groundwater from the borefield in all phases, with demand exceeding available water in three of the five years presented in the EIS. KEPCO claims that its existing Water Access Licences (WALs) will provide it with 2,535ML per annum of water, and that therefore their demands will be met, but do not discuss the possibility that water allocations will be reduced, and mining production therefore ceased if and when local water is not available. The company states that it holds entitlements sufficient to take groundwater even if the available water determination reduces to less than 80% (Main Report 212). The Gateway Panel specifically requested the proponent provide a strategy for complying with the implication of reduced available water determinations and the cease to pump rule (due in 2019). KEPCO claims to have done this in section 12.1 of Appendix M but this is not evident. DPI Water recommended contingency options be identified "given sufficient access to alluvial groundwater may not be available to meet the indicated mine water requirements." Again KEPCO claims to have provided this information in section 10.10 of Appendix M, but again, this is not evident. We have grave concerns that the water demand of this project is not sustainable in the Bylong Valley and that the borefield pumping of the alluvial aquifer will severely impact other water users.

KEPCO claims to hold WALs with an allocation of 2,535ML and that more are likely to be secured. It is not clear how Table 13 of the Main Report has calculated the total volume required from the Bylong Water Source, since the total average predicted take (491ML) and the total maximum annual take (1,149ML) are not the sum of the volumes listed above them. The sum of the maximum predicted annual take from each of the listed parts of the Bylong Water Source appears to be 1,846ML.

In addition to using the Bylong Water Source in the Hunter Unregulated and Alluvial Water Sharing Plan, the company will need a licence for up to 2,093ML per annum of water from the Permian aquifer, which is part of the Northern Fractured and Porous Rock Groundwater Sources for which a Water Sharing Plan is currently in development (Main Report 205). We are disappointed that a draft of this plan has not yet been made available for public exhibition and that an embargo has not been declared for the source while the plan is in development to stop further licences from being issued in what is already, we understand, a fully or over-allocated water source. We seek assurance from DPI Water that KEPCO will not be issued with licences under the Water Act 1912 for this water source and that the company will be instructed to wait until the Water Sharing Plan for Northern Fractured and Porous Rock Groundwater Sources is finalised before seeking licences for it.

Finally, KEPCO are claiming a total of 355MLpa under their harvestable right, based on a total landholding of 5,425ha. They subtract the average capacity of their existing 63 dams from this, to

claim a harvestable right of 266MLpa (Main Report 185). In Table 45, the raw water dam is listed as having a capacity of 300ML, which will be fed by rainfall run off. This exceeds the 266ML harvestable right being claimed, and in the model run for the water balance, rainfall run off inputs in years 5, 7, 9 and 11 are 737ML, 961ML, 563ML and 729ML. But elsewhere KEPCO claims that the maximum runoff capture is 149ML (Main Report 193). This needs clarification.

Biodiversity

This project will remove up to 753ha of native vegetation, 352ha of which is endangered ecological communities, including 135ha of the nationally listed critically endangered Box Gum Woodland and Derived Native Grassland (Appendix J). It's estimated this means the removal of 3,318 hollow-bearing trees (Appendix J 6.7). Furthermore, 1,636ha of woodland will be undermined and at risk of subsidence, of which 672ha is Box Gum Woodland and DNR. Over 1,000ha of KEPCO's proposed Offset Area 5, 70% of the area of the offset which the OEH reportedly informed the company was suitable for inclusion in the National Parks estate, is actually part of the active mining area for the project and will be subjected to subsidence impacts of 2-3m. There were 24 threatened fauna species recorded in the area (Main Report 155) including Regent honeyeater, Spotted-tail quoll, Large-eared pied Bat, New Holland Mouse, Brush-tailed Rock Wallaby and Corbyn's long-eared bat. There are three federally listed plants, including Weeping Myall, which will be removed by the project, and two endangered ecological communities: Hunter Valley Footslopes Slaty Box Woodland and Box Gum Woodland and DNR.

A large proportion of the nationally critically endangered woodland to be affected by this project, and the hollow-bearing trees to be removed, is a contiguous area in the northern part of the proposed underground mine, above panels LW101, LW102, and LW201-06. Parts of this woodland are identified as having moderate potential for groundwater interaction, which indicates that changed hydrology caused by fracturing and other longwall impacts is a considerable risk. This is not adequately addressed in the Main Report of the EIS and only technically considered in Appendix J. Above these longwall panels, too, is 15ha of Blakeley's Red Gum/Apple Riparian Forest that is identified as groundwater dependent and several threatened flora species (Appendix J Figures 3.6 and 3.7). There is expected to be 20 metre draw down of the alluvium in this area. Most of these are proposed to be mined in the last nine years of the mine life. It does not appear to us that the proponent has considered the option of not undermining this area. If it is to be a biodiversity offset, it should not be undermined. If it is to be undermined, then it is part of the impact area, not the offset area.

The short section on cumulative impacts in the ecological assessment in Appendix J makes no attempt to quantify the cumulative impact of recent mining approvals to clear habitat and woodlands that will also be cleared for this mine. Species such as Regent honeyeater and Large-eared pied bat and communities like Box Gum Woodlands have lost or are slated to lose thousands of hectares of habitat to clearing for mining and face extinction by a thousand cuts. Lock the Gate has collated this information and submits it as part of this submission. As shown in Table 1, in the last five years, we estimate that over 17,800ha of native vegetation has been cleared or approved for clearing for coal mining projects. A very large proportion of this vegetation is either listed endangered ecological communities or provides habitat for threatened wildlife, including the critically endangered Regent honeyeater, which has lost extensive areas of habitat to coal mining across several bioregions in the last five years. We estimate that in the greater Hunter Valley and Gunnedah Basin, over 6,200ha of the critically endangered Grassy White-box woodland and derived native grassland has been approved for clearing for mining projects in the last five years alone.

Table 1. Clearing Approvals by Coal Project, Since 2010#

Coal Project	Status	Total Native Vegetation** (hectares)	Box-Gum Grassy Woodland (hectares)
Moolarben Stage 2	Approved 2015.	1,534	123[4]
Bengalla Continuation	Approved 2014	881	535[5]
Vickery Coal Project	Approved 2014	1,748	6[6]
Bulga Optimisation Project	Approved 2014	1,611[7]	
Cobbora Coal Project	Approved 2014	3,161	123[8]
Maules Creek	Approved 2013. Under construction	2,078	754[9]
Boggabri Extension	Approved 2013. Under construction	1,385	624[10]
Shenhua Watermark	Approved 2015	937[11]	738[12]
Ravensworth Operations	Approved 2011	567[13]	
Mount Pleasant*	Approved 29 February 2012[14]	2,591	2,591[15]
Ulan Mine	Approved 30 November 2010	409	69[16]
Mount Arthur Open Cut Ext	Approved NSW 2010. Cth April 2012.	990[17]	693[18]
Total approved for clearing		**17,892**	**6,256**

* This mine has approval but has not begun construction.

This analysis covers most of the major coal mining approvals over the last 5 years, but does not attempt to comprehensively assess every single approval of the last 5 years.

** "Native vegetation" includes woodland and grassland remnants.

In addition, there are literally thousands more hectares of further clearing intended for the next 25 years and being considered under the Upper Hunter Strategic Assessment. Though the details of the 14 mining areas proposed to be given endorsement under that scheme are not yet public, information we have gleaned so far indicates that some expansion areas, such as the further expansions of Mangoola, Bengalla and Warkworth, and the West Muswellbrook project, will involve extensive further clearing of endangered and critically endangered ecological communities. The practice of cumulative assessments is challenging, but it is clear there is a fundamental failure of the project by project assessment approach that is leading to perverse outcomes, not just for biodiversity but in impacts on water resources, and in degraded air quality.

There is dramatic 2-3m subsidence expected above most longwall panels under the entire Bylong State Forest (Main Report 136). The EIS claims that Bylong State Forest "is not readily accessible to the public" (Main Report 140), but there are biodiversity and Aboriginal cultural heritage values in

[4] Moolarben Stage 2 Determination Report. January 2015. page 2.
[5] Bengalla Continuation Project. PAC Review Report. January 2015. page 15.
[6] Vickery Coal Project Environmental Impact Statement, page 4-84
[7] Bulga Optimisation Project. Secretary's Environmental Assessment Report. page 6.
[8] Cobbora Coal Mine Project, PAC Review Report, April 2013, page 30.
[9] Maules Creek Coal Project Environmental Assessment Main Volume, page 122.
[10] Continuation of Boggabri Coal Mine Environmental Assessment Main Volume, page ix.
[11] Watermark Project. PAC Determination Report. January 2015. page 15.
[12] Watermark Project EPBC approval (2011/6201). July 2015. page 2.
[13] Ravensworth Operations Project (09_0176) Director-General's Assessment Report. 2011. page ii.
[14] NSW consent for Mount Pleasant was given in 1999, but *EPBC Act* approval for this clearing was not obtained until 2012.
[15] Mount Pleasant EPBC approval instrument (2001/5795). February 2012.
[16] Ulan Continued Operations. Director-General's Assessment Report. November 2010. Page 2.
[17] Mt Arthur Coal Consolidation Project (09_0062) Director-General's Assessment Report. Sept 2010. page 29.
[18] Mt Arthur Coal Extension Project EPBC approval instrument (2011/5866). April 2012. Condition 1.

the forest that are of special interest to some members of the public and accessibility of this public forest is a matter not at all considered in the Social Impact Assessment.

The EIS identified 30 cliffs within the area that will be affected by subsidence, most of which are in Bylong SF and occur above Longwalls 105-107 and 109 (Main Report 139). Two of these are 30-40m high, and one is 250-300m long. These are both therefore of higher risk of visible mine subsidence movement (Main Report 140). The EIS argues that these cliffs are "screened from reasonable, every-day pubic vantage points" by a ridge at the south west of the area that will experience subsidence. As would be expected, the ecological studies found that "a variety of native fauna occur within the cliff line habitats of the Study Area and these areas are likely used as foraging, breeding, roosting and shelter habitat" (Appendix J 4.5). Nationally threatened species like the Brush-tailed rock wallaby and Large-eared Pied bat were recorded near cliff habitats during surveys for this project. Observations at Ulan mine reveal that undermined cliffs see rock falls over approximately 20% of the length of the cliffs.

The proponent attempts to claim that 105ha of Whitebox woodland derived native grassland to be undermined, and 63ha of it to be cleared do not meet the EPBC listing criteria. With this exclusion, there is 135ha of Grassy whitebox woodland slated for clearing and a further 672ha that will be undermined (Main Report. Table 39. Page 162). In addition, woodland areas dominated by Grey box (*Eucalyptus moluccana*) and Fuzzy box (*E. conica*) have been excluded from the Box Gum woodland EEC and CEEC, though the Appendix notes that "woodlands dominated by both *Eucalyptus conica* (Fuzzy Box Woodlands) and *Eucalyptus moluccana* (Coastal Grey Box Woodlands) within the Bylong Valley are considered of high conservation significance" (Appendix B of Appendix J East Coast Flora Survey Report 44). Buried in the back of the ecological study, in an appendix to an appendix, comes the admission that "it is more feasible that the Western Hunter Flats Fuzzy Box Woodland forms a highly endangered community in its own right and should not be subsumed into a wide-ranging TEC covering three States" (Appendix B of Appendix J East Coast Flora Survey Report 58). And yet, because this community is not listed under the State or Commonwealth Acts, and because the current practice of assessing, mitigating and offsetting biodiversity impacts concentrates almost exclusively on listed species and communities, five hectares of this community will be cleared, with no proposal to avoid the impact, mitigate or offset it. Thirty-one hectares of Coastal Grey Box woodland is proposed to be cleared. But the offset sites proposed for this project do not support significant areas of these woodlands. Offset Area 5 (which will be undermined) supporters 7ha of Coastal Grey Box woodland and there are 8ha in the other areas combined. Offset area 3 supports less than 1ha of Fuzzy Box woodland.

The EIS claims that there are no groundwater dependent ecosystems in the Study Area (Main Report 150) but then also concedes that the River Oak/Redgum Riparian Woodland and Blakeley's Redgum/Apple Riparian forest present are likely to be at least partly groundwater dependent (Main Report 161). The ecological study notes that there is predicted to be a short period of time that the groundwater within the alluvium will not be available for use by vegetation due to the depressurisation resulting from mining" (Appendix J 6.24).

Offset strategy

Around 70% of Offset Area 5 (over 1,000ha) is actually going to be affected by subsidence from the mine. The area to be affected by subsidence in Offset Area 5 is larger than the total area of each of the other offset areas. A 10% discount has been applied to this area, but we believe that it is wholly inappropriate for a mine-affected area to be included in the offset balance. Undermining will affect the habitat features of that bushland, and ordinarily, this would be counted as an impact the mine

needs to offset, not the other way around. It is not clear to us if the bushland in Offset Area 5 is included on both the impact and offset side of the ledger, but either way, it is an accounting trick that must be removed from the mine plan. Given the proximity to the National Park we recommend that the mine plan be changed so that Offset Area 5 not be undermined at all.

KEPCO claim that OEH have written to them confirming that, "the northern block of Offset Area 5 will potentially be suitable for inclusion within the National Park Estate" (Main Report 166). If this is the case, then it should not be mined, and the proponent should immediately give it to the National Parks and Wildlife Service for inclusion in the Park.

According to Table 40, it appears that 617ha of the 715ha critically endangered box woodland that is present in the five offset areas is derived native grassland. Though this is important remnant vegetation, it does not support the habitat features of mature woodland. Table 42 appears inconsistent with Table 40. In Table 40, it appears there is a total of 715ha of the CEEE Grassy Whitebox/Yellow Box/Blakeley's Red gum woodland and derived native grassland present in the offset areas and that of this area, 617ha is grassland. But Table 41 claims 1,267ha of this community is present in the offset areas.

In addition, Offset Areas 2 and 3 appear to be within the area expected to experience alluvial draw down as a result of open cut mining and Offset Area 4 supports only 33ha of woodland, less than 10% of its area, being mostly derived native grassland. Native grasslands are of course important to preserve and can provide regeneration opportunities, but this cannot replace mature woodlands with extensive hollow bearing trees for many decades.

Furthermore, Table 42 does not appear to include the area of EPBC Box Gum woodland to be undermined in its summary of the area of this community in the disturbance boundary. According to Table 39 and Appendix J, there are 672ha of this community that will be undermined. Presumably, the proponent has included this woodland in the offset tally instead – with a 10% discount. This is not appropriate.

We note that the Regent honeyeater has not been recorded in the offset areas (Table 41), nor Brush-tailed Rock-wallaby. Given that the proponent is only barely providing sufficient biodiversity credits for the Regent honeyeater, and that the most ecologically rich local offset area is also proposed to be undermined, we believe that further requirements should be made of the proponent regarding this species, including changing the long wall mine plan, and avoiding clearing impacts on its habitat.

Land Use

Contrary to community expectations and rational planning, thoroughbred critical industry cluster land, the floodplain of the Bylong River, will itself be open cut for this project. There is 1,933ha of equine critical industry cluster (CIC) land within the project boundary for this mine, and 1,600ha of biophysical strategic agricultural land (BSAL). The mine will directly impact on 440ha of this BSAL land, including 206ha that will permanently impacted due to open cut mining, overburden piles and roads. A further 171ha of BSAL will be undermined (Main Report 264).

The thoroughbred breeding industry has consistently advocated for CIC lands to be an exclusion zone for coal mining, and is currently proposing a 10km buffer be imposed on all CIC lands where no further mining is permitted, in order to safeguard their industry, which is a significant long-term employer and brings enormous benefit to the Upper Hunter.

It is simply unacceptable that these lands have never been protected from mining. The State Government must amend the mining SEPP prior to any further decisions being made about this

project to firmly exclude all equine and viticultural critical industry cluster land from mining, with the 10km buffer proposed by the thoroughbred breeding industry.

The proponent argues that this land is "isolated" from other equine CIC lands and from Scone, as if that makes its removal acceptable.

There are also a number of sensitive features close to the blasting zone for the two open cut pits, which we have already indicated are not appropriately located, given the drawdown they will cause in the alluvium. Tarwyn Park House is just 190m away, and Aboriginal rock shelter is also nearby.

Cultural heritage

The heritage Bylong Valley Conservation Area will be directly impacted by the mine, in the loss of amenity the impact on Tarwyn Park, and the removal of historic buildings. A Deed poll applies to the Catholic cemetery site, which KEPCO claims will no longer apply if development consent is granted for the mine, by virtue of s28 of the *EP&A Act*.

There is a marked difference in detail and approach between the Aboriginal cultural heritage section and the section dedicated to the "Historic Heritage Impact Assessment" for heritage since the arrival of Europeans. The European heritage section provides a narrative description of the settlement and occupation of the Bylong Valley by pastoralists since the 1820's, and a description of the land use history during that time, providing context for the sites described in the impact assessment. This is not provided for the Aboriginal heritage summary in the Main Report, which lists sites without context or narrative. The entirety of the Aboriginal history of the Bylong Valley is comprised of one sentence in the "key historical developments timeline "Pre-1820s: Occupation by the Wiradjuri speaking Aboriginal people" (Table 68, Main Report 247). Similarly, each of the European heritage sites to be directly impacted are described in Table 69, but no such descriptions are provided for the Aboriginal sites. This amounts to a fundamental failure to provide adequate understanding of the impact the mine will have on the ancient heritage of the Valley.

The Aboriginal Cultural Heritage Assessment in Appendix takes a similarly fragmentary approach to the task, providing lists and percentages, without adequately describing and analysing the cultural heritage value of the area or the impact of the mine on it. So, the consultant ranks the archaeological significance of each of the identified sites, and then counts them and concludes that "only 7 were of high regional significance equating to less than 4% of total number of sites" (Appendix S 56). A quantitative approach of this kind implicitly and falsely downplays the importance of the values present. Appendix S makes mention of a cultural heritage assessment for the Mount Penny Coal Project which the consultant for KEPCO was not able to obtain, but which apparently identified a specific Aboriginal cultural landscape in the area that was assessed as being of high significance and that "the Coggan Creek, Bylong River and Goulburn Valleys have cultural landscape values" (Appendix S 33).

The consultants list and categorise 239 Aboriginal sites without putting these together into a coherent picture of the current or historical cultural and spiritual value of the landscapes that will be torn up for this project. The ochre quarry, for example, shows evidence that red, yellow and purple pigments were procured there (Appendix S 43), and rock formations that resembled a bird's head and a face, as well as sites that may have been used for burial, were identified by Aboriginal people during the course of consultation. The quarry, the grinding grooves and the significant sandstone formations are located in the area that will experience significant subsidence, putting them at high risk of damage. Furthermore, the quarry and one of the formations are located in Bylong State Forest, which means that they are currently accessible to local Aboriginal people for cultural practice

and teaching, and the broader community for sharing historical teaching and understanding. The significance assessment does not consider land tenure and access as components of the cultural and social value of the grinding grooves, rock formations and ochre quarry, but this must be significant.

The ochre quarry was found by the consultants to have high regional significance. They note that such sites are rare, there are only 17 recorded in NSW, but nonetheless determine that it is not of state significance (Appendix S 66). They note that it is "probable" the site "will experience cracking and rockfall under the current mine plan" (Appendix S 76). The consultant's report recommends that "all reasonable and practical steps" be taken to avoid or minimise the impact of the mine on the ochre quarry. We submit that if the project proceeds, the proponent should shorten and reduce the longwall panels and alter gate location for the panels so that undermining of this site and the nearby cultural features does not occur. The same modification of the longwall plan should be made to avoid undermining the grinding grooves in the eastern portion of the underground proposal. The proponent must also devise the mine plan in a way that ensures continued access to these sites for the Aboriginal community, and the broader public should the Traditional Owners wish it.