NSW Government Independent Planning Commission
BYLONG COAL PROJECT D532-18
SUBMISSION

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Summary

1. There is too much uncertainty across too many elements of this mine proposal for it to proceed.
2. The DPE Report (Oct 2018) does not address the central concern of PAC review.
3. Additional modelling of water impacts still only produces "medium confidence" in predictions. This level of confidence is too low for real life decision making of this nature.
4. MWRCA economic benefits, especially job creation, are much lower than generally acknowledged.
5. The conclusion of the DPE Report that the project benefits outweigh costs is not supported by analysis.

Thank you for the opportunity to provide a submission on the proposed KEPCO Bylong Coal Project. Water security is the critical issue in this mine proposal. No amount of computer modelling has been able to provide sufficient confidence in ongoing water security in the region should the mine proceed. Further, whilst economic benefits to KEPCO appear healthy, returns to Federal and NSW governments are very modest. More worryingly, benefits to the wider MWRC area are likely over-estimated especially with regard to employment, whilst significant and potentially permanent negative impacts to the Bylong Valley are consistently downplayed.

NSW Department of Planning and Environment: *Bylong Coal Project Final Assessment Report* October 2018

As with any other major project and its attendant reams of documentation, in the Bylong mine proposal some important detail in documents has become buried under a crust of executive summary.

Analysis of facts and figures distributed through documents suggests little uncertainty, but varying levels of benefit, to KEPCO, NSW and Federal governments from the Project. On the other hand there is high uncertainty regarding benefits to the MWRC area. Project costs across a wide range of criteria are borne heavily by one region of the MWRC area: the Bylong Valley.

Numerous significant problems and issues with the Project have been identified and elaborated persuasively by experts and others elsewhere. My comments below are additional to, not a repetition of, those reports.

1 The DPE's *Final Assessment Report* ("the DPE Report") claims to focus on concerns identified by the (then) PAC's Review Report of 25 July 2017 ("the PAC Report"). Yet despite covering a range of detail regarding individual issues, the DPE Report does not engage with the central issue of the PAC Report:

> "that the effect of many step changes, albeit argued to be individually acceptable, may when taken together, constitute a profound and substantial transformation of the valley's social, economic, heritage and landscape values" (PAC Report 2017, ii).

Nothing in comprehensive subsequent reports has been able effectively to address or alleviate this concern. It is therefore not possible to support the DPE Report's conclusion that "the benefits of the project outweigh its costs" (page xv).

2 Economic Costs and Benefits

Costs and benefits vary for the entities and people most affected by the mine development: KEPCO, the Australia Federal government, the NSW government, the MWRC area, and the pivotal region of this council jurisdiction around which this project turns, the Bylong Valley.

(i) KEPCO. In the absence of any clear figures provided by KEPCO it is reasonable to assume that the company would not be prosecuting this proposal if it were not going to make a very satisfactory return on its investment. Based on figures that are available, and conservative assumptions, it is possible to estimate that the return on investment to KEPCO could be around 12% per annum.[1]

(ii) Federal Government. Company tax of $270 million (present value) over the life of the project. Compare this modest figure with the $702 million that KEPCO has already invested in the Project.

(iii) NSW Government. Royalties of $278 million over the life of the project (KEPCO Revised Mine Plan, in DPE Report, page iv). Again this is not a significant sum. Annual Project royalties would be approximately 0.79% of NSW annual coal royalties, based on the 2017/18 figure of $1.7 billion, 90% of which were from coal (*Fin Review* 6 June 2018); that is, $1.53 billion.

(iv) MWRC Area. The Council is in favour of the mine. Of course there will be economic benefits flowing to some of the local area. But the important question is, how significant will these benefits be? The DPE Report (page iv) estimates that the mine should generate significant regional economic activity, citing figures of $602 million annually in business turnover. But the assumptions underpinning these claims are very hard to verify.

Compare these estimates with actual figures published in November 2018 by Wilpinjong Coal mine. Wilpinjong mine has twice the employees and double the mining output of the proposed Bylong mine. But its published "local business spend" in 2017 was $26 million (visitmudgeeregion.com.au). Of course, turnover and "value added" are not the same as "local business spend", but there is an enormous difference in the scale of actual and estimated economic benefit to the Mudgee region apparent in these figures.

[1] We are informed that open cut coal resource is 26% of the mine, which is worth more than $2 billion, based on the export value of the total coal resource of $8.7 billion. (DPE Report, p vi). KEPCO's capital investment is $1.5 billion (PAC Review 2017, p 2). Assumptions: coal price $72.50 p/t; 120 million tonnes extracted over 23 years; weighted average royalties 7%; average 250 employees per year @$100,000 per annum each over 25 years

Jobs

It is important to be aware that anticipated employment for local people in the MWRC area may not be nearly as high as is generally discussed. The following figures are well-known:

1. Project timespan 25 years.
2. Peak construction months 9 to 20 (KEPCO *Response to Submissions*, 2016 page 13). Ie peak construction a total of 11 months at around PY2.
3. Peak construction workforce in PY2 = 665 employees[2].
4. Peak operational workforce in PY9 = 450 employees.
5. Workforce during 16 years of underground operations (PY9-25) = 275 (KEPCO *EIS*, 2015, p69).

However it is less widely known that only about 15% of these jobs will go to local people. KEPCO advised in its *Environmental Impact Statement* (2015, p 69) that:

> "the majority of the workforce associated with both construction phases is expected to be Non-Local Hires (ie those sourced from outside the one hour commute zone). .. Approximately 85% of the operations phase workforce is expected to be NLHs."

As 85% of the operational workforce will be sourced outside the local area, this means that:

1. For 16 years of the mine operation, there will be only **41 jobs** available annually for local people (275 x 15% = 41). There will be 234 jobs for NLHs.

2. For 1 year (PY9) there will be **67 jobs** for local people. There will be 383 jobs for NLHs.

3. If "majority" is also taken as 85%, for 11 months of the project (PY2), there will be only **99 jobs** for local people. The other 566 jobs for that year will be NLHs.

Finally, the KEPCO EIS (2015, p 368) refers to "a potential local labour force of 672", then states that "it appears the MWRC LGA will be able to absorb the proportion of the jobs created by the Project, thereby improving the social environment of this area." This claim is clearly at odds with earlier comments in that document about 85% non local hires.

Claims by KEPCO and a widespread belief by MWRC area residents that the mine will soak up unemployment, particularly in economically depressed towns such as Rylstone and Kandos, are therefore highly unlikely.

Social Impacts

The DPE Report states that KEPCO removed the WAF (page x), but it was actually removed because of objections by the MWRC area. The Council not unnaturally would like mine employees to contribute to local revenues and business.

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[2] This widely quoted figure should actually be 645. The KEPCO Response to Submissions (2016), notes that the figure includes 20 staff who were to be running the WAF - which is now not proceeding.

But there are problems with this plan. Estimates of housing availability show that the mine employees will at times be competing for accommodation with other big earners for the local government area: tourists, workers from other mines, and other projects (KEPCO Response to Submissions, 2016, Table 3, p 14).

Further, with mine workers housed in Mudgee, there is a big issue not only with competition with local traffic, but also with mine worker safety. The commute along the Wollar Road is quite dangerous, particularly at night. When I drove that road from Bylong to Mudgee in November 2018 at around 8:00pm, I had to stop or swerve for a dozen kangaroos. That one hour commute would be much more difficult if it were at the beginning and end of a 12 hour shift. Traffic conditions stipulated in the DPE Report (p 90) make no mention of these safety issues.

The MWRC desire for economic benefits from employees living in Mudgee might inadvertently be at the cost of mine worker safety.

3 Water and Agriculture

The DPE Report states (p vii) that it "accepts that the groundwater assessment provides a conservative and robust assessment of drawdown impacts".

But all aspects of water security with regard to the mine proposal are worrying. Loss of water supply to the Valley, and the cumulative discharge effects of another mines within the Goulburn River catchment (covered by expert hydrologists in other submissions), are issues with consequences that can't be mitigated, made good or compensated. This is the key reason why the mine proposal should not be approved.

Pattern of water use

KEPCO, by its own calculations, with be using up to 1,835 million litres of water per year over the life of the mine (KEPCO Response to Submissions, 2016: 22). To understand how much water that is, consider that an olympic swimming pool contains about 2.5 million litres of water. KEPCO will therefore be using up to two olympic sized swimming pools of water every day, 365 days per year, for at least 25 years.

This is a relentless draw down on a water resource crucial to the survival of the Valley. The water will be taken regardless of rainfall, season, or drought. The draw down pattern is entirely different from and incompatible with the way in which that scarce resource has been managed cooperatively over many decades by the farmers who rely on water for their livelihood.

It is far from certain that there will be sufficient water for mine operations, let alone for other landusers in the Valley. For example, KEPCO has stated:

> Under the extremely dry climatic conditions and the very unlikely uncertainty modelling scenarios, the Project may potentially require the utilisation of up to an additional two bores **within the most productive part of the alluvial aquifer** in addition to the eight bores proposed within the Supplementary RTS to meet Project demands. (KEPCO *Response*, 2018 p 22)

With regard to the Permian aquifer, KEPCO states in its *Response* (2018, p 28) that the DPI-Water confirmed that similar to other water sharing plans, the water allocations for this water source will be available on the open market in the future.

But DPI-Water says:

> "Should this application be approved, the proponent will need to obtain the remaining 1,596 shares from the water market to account for the predicted maximum take. If a licence for 2,093 shares is not issued upon project approval, the full 3,689 ML would need to be obtained from the market....
>
> Controlled Allocations for this water source **may not be available** in the future to account for the Permian water required for the project" (DPI-W 12 Feb 2018).

These comments are very concerning.

Modelling

KEPCO has commissioned numerous expert hydrology reports. They have examined aquifer size; water flows; dry and wet years; recharge rates and many other parameters. The end result however is that there is no guarantee that there will be sufficient water for landholders in the Bylong Valley, or indeed, to allow mining to run as planned through the life of the project.

The KEPCO Response to PAC Report, Appendix K - Groundwater Response to Planning Assessment Report ("the Groundwater Report") was prepared for non-specialists in groundwater. But it is not reassuring. The Groundwater Report states that "The inherent uncertainty in model parameters introduces uncertainty in the model predictions"(p 8). Not only that, we are told that subjective judgments are required as to available evidence to enable us to arrive at a level of "confidence" in a model's predictions (p12).

Its central point is that "because the project is a greenfield site, there is limited or at best medium evidence on the likely impacts. .... When these judgements are applied ... it indicates the confidence in the predictions is at around the medium level." (page 12)

Medium confidence in predictions, illustrated by the scale at Fig 1, is actually not strong. That confidence level may be acceptable for some types of decisions, but this is not a theoretical excerise. Surely it is insufficient when you are talking about the lifeblood of an entire Valley.

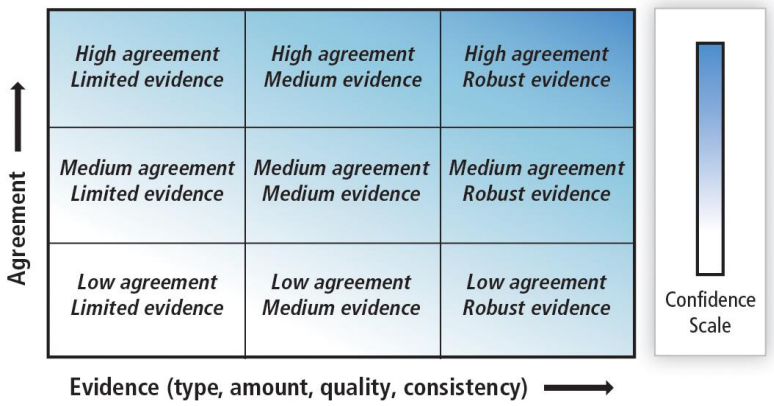

Fig 1: Mastrandrea et al (2010) Confidence Scale

Modelling vs Actual Inflows: Wilpinjong coal mine at Wollar

The Groundwater Report then discusses nearby Wilpinjong mine, providing it as an example of a satisfactory match between "medium confidence" in modelling, and actual water inflows. However, Fig 2-7 "Wilpinjong predicted and actual estimated inflows" (page 13) shows that in two years of higher than expected rainfall (2011-12), inflow was not zero as predicted, but more than 2,000ML.

The Groundwater Report states that despite this, "the agreement between the model predictions and the actual measurements is considered at least a medium level". Wilpinjong Mine is open cut. Modelling done for Bylong mine includes underground mining from PY9 (Fig 2-4 "Likelihood of inflow to mine" page 9).

What would this mean for the Bylong coal mine if predicted "very unlikely" inflows of 6,000 ML/year were more than double predicted, because of unexpected high rainfall years? (Groundwater Report, p 9.)

Would this lead to necessity to discharge water from the mine, against the DPE's condition of "no discharge"? There are numerous examples in NSW alone of mines breaching their conditions of operation.

Compensatory Water Supply Agreement

Landholders are justifiably concerned not only about what would happen to their properties if the mine did affect their water, but also whether those properties would become worthless.

Claims that draft Compensatory Water Supply Agreements are sufficient to assuage landholder worries are disingenuous. Moreover, claims that interim water supplies will be available in a timely fashion are not realistic. Clauses 7 and 8 of the draft Compensatory Water Supply Agreement suggest that interim supplies from KEPCO might not be available for livestock quickly enough to prevent cattle from dying in hot weather.

For example, written notification requirements (Cl 7.1(a)) and investigation periods (7.1(b)) including the option by KEPCO to "investigate... the Landholder's water management practices", followed by "meetings" (Cl 7.3) could take days. And even after that, KEPCO has another 24 hours to provide an interim water supply (Cl 8.1).

KEPCO Commitment to Agriculture Uncertain

The DPE Report states that "KEPCO is committed to ongoing management of agriculture on its landholdings (p ix). Indeed the Department has stipulated a condition that KEPCO must "maintain **or enhance** agricultural production ... and requires that reasonable and feasible steps are undertaken to maintain or enhance production, in line with the commitments made [by KEPCO] during the assessment of the project."(p ix).

Yet in other documentation (NSW Dept Industry - Water 12 Feb 2018) it is noted that:

> The proponent has also acknowledged that if water takes were to exceed their entitlements, contingency measures will need to be implemented including the purchasing of water allocations on the open water market**, redundancy of the proponent's agricultural activities** or the progressive reduction in the mining activities that consume water.

Cessation of agricultural production is not mentioned in the DPE Report as a possibility entertained by KEPCO.

Some observations on Public Meeting 7 November 2018

The meeting in Mudgee on the DPE Report was very well attended. Less than one third of the 60 or so speakers were in favour of the mine. With a few exceptions, their focus appeared to be profit-centred. None of these speakers appeared to be experts in fields relevant to the evaluation and analysis of the mine proposal.

On the other hand, people speaking against the mine from the Bylong Valley were simply asking for a chance to survive. These landowners were understandably very concerned about the viability of their farms should the mine proceed, because of water security issues.

For those speaking against the mine who were not resident in the Bylong Valley, motivations were typically major environmental, heritage, social, and/or practical public issues relating to the mine, at both the "big picture" and the local levels.

Importantly, in contrast to speakers in favour of the mine, a number of speakers against the mine were experts in relevant fields: hydrology, geology, economics, law, environmental issues, not to mention locals who have decades of experience in how water security is maintained in delicate balance in the Valley.

Conclusion

The DPE Report claim of now having "greater certainty" (p xv) about the extensive list of issues raised by the PAC Review is just that - a claim. There is too much uncertainty in predictions about water and other important issues. Benefits for NSW are modest; likely overstated for the MWRC area, and the "predicted residual impacts" (p xv) could be catastrophic for the Bylong Valley. As the PAC review concluded last year, although many step changes may be argued individually to be acceptable, together they constitute profound and substantial changes for the Bylong Valley.