

Response to questions raised by DES

1. The Department of Environment and Science has reviewed the information provided about the power station and has determined that there remains insufficient information to assess the impacts of a proposed 1050 MW power station. Also, the information provided does not include sufficient information for DES to develop recommended conditions to adequately manage the impacts and risks associated with the power station.
 - a. Given the extensive EIS adequacy process and the multiple rounds of submissions, this comment comes very late in the process to be asking for substantial new information on a piece of infrastructure within the mine site which has clearly been part of the mine since the project's initial advice statement was issued in 2012. MacMines remains of the belief that the EIS contains all the necessary information on which to make an informed assessment about the power station and to enable conditioning of the power station, as well as the mine.
2. The major deficiencies are summarized below:

The table containing a breakdown of the power demands for different components of the mining activity does not explain how the emissions for each component compare to best practice and/or include the use of energy efficient equipment and machinery.

 - a. It isn't clear what DES is asking for here.

The table shows the demand of the electrical equipment used to replace the majority of a diesel powered fleet. (2/3 of the power demand). The economic impact of this was clear as was stated in the power station note (see Addendum).

The change from a usual truck and shovel fleet to In-Pit Crusher Conveyor reduces our diesel consumption by 50%. Without IPCC, the project will use 140 million litres of diesel per year.

The environmental impact of this is very clear – if the B Seam coal was sitting on a reject pile it will still emit carbon dioxide through natural oxidation; The project uses the energy contained within the B Seam rejects to generate cheap power and replace diesel. The internal combustion engines are replaced by electric motors..
3. Name plate best practice performance of the preferred 350 MW super critical generating unit and likely emissions rates from burning high ash content rejects coal has not been provided. Section 5.3.1 of Appendix L – Air Quality of the draft EIS referred to by the proponent in the cover letter accompanying the addendum to the additional information on the draft EIS states that the final specifications of the power station have not been confirmed. Therefore, nameplate best practice



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performance of the power generating units has not been considered in the air quality assessment presented in the draft EIS.

- a. As indicated in Section 5.3.1, the power station will be built to conform to the stack emission limits specified in Section 2.5. As indicated in Section 2.5, these limits are based on NSW Clean Air Regulations. The EIS has provided an assessment of the likely emission rates as they are currently understood and the basis of the emissions limits are clearly explained in the air quality report. The need to provide “name plate best practice conformance” has not been requested previously.
4. The assessment of alternatives to the power station is limited to a comparison with the costs of obtaining electricity supply directly from the Queensland electricity grid. Information was not provided on alternatives such as solar farms, or a combination of a single 350 MW power station and solar farm and/or diesel powered generators to offset the limited periods of peak electricity demand during the life of mining.
- a. The mine requires reliable proven technology to ensure continuous operation. The suggestion that we run a coal mine on solar power when there is a viable energy source on site is incredible. Does DES have any examples of large mines (as China Stone Coal Project will be one of the biggest mines in the world) running on solar power?
- Diesel Powered generators are reliable but expensive to run, they would add to the diesel consumption of the project, have high maintenance and come at a maximum size of about 10 MW. Operating efficiencies for diesel are about the same as supercritical coal fired power.
5. A comparison of the solid, liquid and gaseous waste streams generated by alternative means and how each waste stream would be avoided, minimised, recycled, handled, stored and treated and any associated environmental impacts, has not been provided. Some information has been provided about solid waste (e.g. fly ash) disposal from the power station in Chapter 7 of the draft EIS. However, insufficient information has been provided on gaseous waste disposal from the power station based on name plate best practice performance information required in the second dot point above.
- a. Gas emissions are proposed to be released to the atmosphere, as assessed in the EIS air quality report.

6. Furthermore, information has not been provided in the draft EIS about the liquid waste stream from the power station and liquid waste treatment and/or disposal from the power station.
 - a. This is an air cooled power station and the Chinese design is for a zero discharge liquid waste plant. Input water will need to undergo filtering and demineralization. MacMines has used publicly available data on the level of Total Suspended Solids (TSS) in water in the Burdekin Falls Dam and the Belyando catchment. TSS ranges from about 300 mg/l to 1250 mg/l depending on seasonal effects. The mean value quoted in the data is 530 mg/l. If all of the 3 Gl/yr water consumed was treated, the annual output would be in the order of 1,500 tpa or 30 tonnes per week (dry basis). This is an insignificant amount of waste material and can be readily handled in the existing tailings or fly ash disposal facility. Other mineralization contributing minerals in the water data are measured in µg/l and will be an insignificant quantity. Liquid waste associated with this stream will be used for other purposes in the power station, separate from stream generation.

7. The need for redundancy (i.e. construction of an additional 350 MW unit that would be only used when the other units are out of operation) has not been adequately justified. Due to the extended lead time in bringing a coal fired power station up to full generating capacity, and the costs involved, typically coal fired power stations do not shut down and have an operating life of around 50 years.
 - a. China Stone is in one of the most remote locations in Australia. If MacMines felt that it could get away with a single unit we would adopt that approach. CFB power stations have a higher operating maintenance schedule than pulverized coal plants due to the nature of the coal feed. MacMines has chosen to only use coarse feed to reduce the maintenance cycle but this still requires additional downtime.
Typical build time for a 350 MW unit in China is 24 months, half the time as built in Australia. The company plans to use as much modular construction as transport will allow.

8. The source of up to 3000ML per annum of water required to run the power station, estimated water reliability, security and risk of failure of water supply has not been provided. Section 13.5.6 of the draft EIS proposes to secure an allocation of water from the Cape River or the Belyando/Suttor River water harvest schemes. However, it is unclear whether either of these schemes will proceed or when they would be commissioned. Given that the draft EIS predicts a water deficit at the project site,



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detailed information about the reliability and security of an off-site water supply is critical to demonstrate the feasibility of the power station as a viable electricity supply option.

- a. In terms of the water allocation, this is addressed in the EIS. Total annual water consumption for the whole project is in the order of 14 GI/annum.. The project cannot proceed without a water supply, much like it cannot proceed without a rail line or power supply either. The importance of water is no greater or less than rail or power.

9. Management of waste water from the power station has not been addressed.
 - a. See 6a.

I reiterate my opening comments that this power station is integral to the mine and is essential to enable the mine to proceed. MacMines believes that the EIS adequately addresses the concerns raised by DES and we would welcome an opportunity to discuss the above points with the Department.

Yours faithfully,

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