



22 July 2009

**The Director-General
NSW Department of Planning**

Submission on Major Project Application Cadia East Project Project Application No. 06_0295

1. Introduction

Environmentally Concerned Citizens of Orange (ECCO) has prepared a submission on the above project application. In preparing the submission, ECCO has taken a number of steps to inform itself about the project and to seek community input. These include:

- reviewing the Environmental Assessment (EA) for the Cadia East Project,
- organising a public meeting about the project on 1 July 2009,
- inviting representatives of Cadia Valley Operations to attend and present at the meeting,
- facilitating a question and answer session at the meeting to clarify aspects of the project application and to obtain input from members of the general community in attendance,
- discussing and endorsing the submission at ECCO's General Meeting on 22 July 2009.

Based on our investigations, ECCO has serious concerns about the Cadia East Project which are summarised under three headings below – impact on water resources, impact on fauna and flora, and impact on energy consumption.

2. Impact on Water Resources

Groundwater Impacts: ECCO believes that the modelling and hydro geological assessments, as presented, do not provide conclusive evidence that impacts on groundwater resources will not extend beyond an 8 km zone to the north and north-east. The impacts could therefore pose a threat to aquifers that support local landholders, and to bores, streams and springs that supply the City of Orange's potable water supplies.

Evidence from local sources indicate that significant groundwater interconnection occurs between the Lachlan and Macquarie catchments through north–south

paleochannels in the basalt aquifers, and that drawdowns will occur over a large area due to mining operations and water extractions for Cadia East.

Recent bore testing in the Spring Terrace area to the north of Cadia East in the Orange water catchment, indicated that drawdowns occurred on bores many kilometres from the test bores.

Fracturing that will occur in the subsidence zone of the panel caving mining is likely to cause impacts on groundwater movements into the subsidence zone that could well exceed the predicted amounts, leading to earlier and far greater drawdowns than estimated.

A major concern post-mining, is the formation of the permanent groundwater sink in the Cadia East subsidence zone and Cadia Hill open pit. These large open water bodies of acid saline water will, as a consequence of evaporation, become more concentrated, continue to source water from adjoining aquifers, and could after high rainfall events pose a serious pollution risk to downstream surface water systems.

Surface Water Impacts: The EA indicates significant impacts on surface water resources with reduced surface water quality, reduced flows in local streams, and changes in flows in the Belubula River. These impacts will occur both during the life of the mine, and post-mining.

Post-mining impacts will be a legacy for all time, as loss of groundwater contributions and base flows into local creeks will be a consequence of the permanent open pit and subsidence zone water-filled voids.

ECCO is of the opinion that the mitigation measures proposed will not overcome the impacts particularly during prolonged low rainfall events when environmental flows are essential to maintain the biodiversity of local streams and rivers.

Reliance on Treated Sewage Effluent: Cadia Valley Operations (CVO) currently sources, for no payment, all of Orange City Council's treated sewerage effluent which provides up to 12% of Cadia's water requirements. CVO proposes to continue to use this effluent as an integral component of its water access strategy for the life of the Cadia East project.

ECCO believes this should not be permitted as this effluent would otherwise be returned to Summerhill Creek in the Macquarie River catchment.

3. Impact on Fauna and Flora

Overview: ECCO also has serious concerns that the proposal will have significant adverse consequences for fauna and flora biodiversity in the region, despite proposed off-set and impact-mitigation measures.

The project will clear 238 hectares of remnant woodland communities, including Endangered Ecological Communities (EECs), and directly impact on 10 threatened woodland fauna species known to the site including Squirrel Gliders, Superb Parrots, Yellow-bellied Sheathtail Bats, Eastern Bent-wing Bats, Swift Parrots and Turquoise Parrots. A number of these are dependent on tree hollows for nesting and/or shelter.

In addition, the EA does not make clear whether the 255 hectare subsidence zone is to be cleared of all vegetation prior to subsidence, or whether it will be left undisturbed until such time as subsidence occurs. Both options have consequences

for the region's flora and fauna. If left undisturbed, there is a high likelihood wildlife (particularly mobile and territorial species) will move into or recolonise the site, become entrapped in the subsidence area and perish inhumanely.

Specific Issues: ECCO is concerned about the impact of the clearing of remnant woodland communities on State and Federal level EECs such as White Box Woodland and Blakely's Red Gum, and the consequent impact on the region's fauna.

The EA states that the project is unlikely to lead to the extinction of any threatened species or ecological community, or place any at risk of extinction. However, ECCO is concerned that there are no data presented showing that those species adversely affected by the project are 'secure' in the district.

As an example, there are no other Squirrel Glider populations known within 50km of the proposed site (as indicated in the EA) and in the view of ECCO members, the proposed translocation program is highly unlikely to be successful. Consequently, the new mine project will probably result in a local extinction of Squirrel Gliders from the region.

ECCO is also concerned that the proposed off-set measures for the EECs are not guaranteed to succeed, given prolonged drought in the region, unknown survivorship of tree plantings, and the duration required for trees to reach maturity. In addition, this strategy does not provide for threatened fauna dependent on these communities until replanted trees reach maturity.

Recommendations if Project Proceeds: If the project is approved, ECCO strongly recommends that any conditions of the consent include strategies to appropriately measure and minimise the impact on the region's flora and fauna. These should include:

- ongoing assessment of population health;
- detailed monitoring of the impact of translocation on relocated animals using spotlight surveys and radiotelemetry;
- installation and long-term maintenance of fencing and entrapment mitigation strategies (for all sizes of wildlife) to prevent re-colonisation and further animal fatalities;
- establishment of a Wildlife Rehabilitation Shelter and refuge area (protected by a predator-proof fence) for temporary housing and rehabilitation of wildlife;
- establishment of an independent team of qualified wildlife ecologists (as fauna monitors) to work closely with clearing teams to identify, rescue, trap, rehabilitate and release wildlife found in the clearance area;
- provision of support to the local WIRES (NSW Wildlife Information Rescue & Education Service);
- provision of funding to establish habitat and wildlife corridors;
- implementation of measures to ensure the survival of the trees planted, and ongoing maintenance until such time as wildlife reserves are well established.

4. Impact of Energy Consumption

ECCO understands that Cadia Valley Operations currently uses approximately 1.5% of NSW's electricity to support its operations. We also understand that the anticipated level of greenhouse gas emissions from the Cadia East Project is in the range of 1.41 megatonnes of carbon dioxide per annum (as quoted by Cadia representatives at the public meeting on 1 July). This means that during its 20 year life, the project will produce 28 megatonnes of carbon dioxide, roughly equivalent to the carbon emissions of 100,000 homes every year.

It is therefore of concern that Cadia appears to have placed a low priority on the environmental impact of their greenhouse gas emissions. That significant greenhouse gas emissions are anticipated is openly acknowledged by Cadia Valley Operations, but there is no mention of carbon emissions among the items listed as being key potential environmental issues in its EA overview. Nor is there any subsequent section providing detailed information about how this issue is to be addressed.

ECCO regards the issue of greenhouse gas emissions to be a major environmental concern when considering approval for the proposed Cadia East Project. ECCO believes that if the project is approved, the subject of greenhouse gas emissions should be addressed through the imposition of conditions dealing with emissions reduction, emissions offsets and the development and implementation of clean, renewable energy sources.

Reduction of emissions: In order to provide reassurance that that greenhouse gases are kept to an absolute minimum, it is desirable that Cadia Valley Operations provide the consenting authority with details as to how this will be achieved, and that the consenting authority provides clear details and information concerning expectations of compliance. Details concerning independent monitoring of these guidelines should also be included.

Offsets: Significant offset measures are beneficial if effective compensation for the amount of greenhouse gases produced by the Cadia Valley Operations is to occur. For this operation to proceed with environmental integrity, it is necessary for Cadia to employ appropriate offset strategies that reflect best practice. As for emissions reduction, it is important that regular independent monitoring is employed to encourage compliance. Offsets are regarded as being desirable, but are secondary to best practice efforts at greenhouse gas reduction and should be used in combination with a viable reduction program.

Green energy: Cadia Valley Operations has at its disposal resources available for the development of green energy production. Consequently, if the Cadia East Project is approved, one of the conditions of consent should be a requirement for Cadia to develop a clean energy source that is sufficient to significantly reduce its reliance on fossil fuel powered energy.

5. Conclusion

ECCO cannot support the Cadia East Project on the basis of information presented in the EA, due to the significant impact of the mining operations on local and regional surface water and groundwater resources, fauna and flora, energy consumption, and the creation of a post-mining groundwater sink and permanent subsidence zone.

However if approval is given for the project to proceed, ECCO advocates that a wide range of conditions be imposed to mitigate the significant impacts of the project and to better address the environmental concerns, including those already canvassed in the submission as well as the following:

1. that mine ore extractions be limited to current levels of 24 million tonnes per annum, thus negating the need for an additional 12% water supply;
2. that groundwater monitoring be increased and trigger points established to minimise the impact on landholders in the region and to ensure that there is no impact on Orange City's potable water supplies;

3. that environmental flows be maintained in all affected rivers and streams;
4. that Cadia Valley Operation be required to relinquish treated effluent supply agreements with Orange City Council;
5. that additional biodiversity offsets be established on rehabilitated farming and grazing land rather than existing native bushland;
6. that carbon emission reduction strategies be implemented as well as emission offsets and renewable energy sources.

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