Mining and Industry Projects
NSW Department of Planning & Infrastructure
GPO Box 39 Sydney NSW 2001

Dear Sir/Madam,

State Significant Project – Angus Place Mine Extension (SSD 12_5602)

The Newnes Plateau is a *unique* place with special biodiversity that is not found anywhere else. It should have been part of the National Parks system, but has not because of mining interests.

It includes the Newnes Plateau Shrub Swamps, which are listed as an Endangered Ecological Community at State and Federal level. The shrub swamps are concentrated in the headwaters of various creeks on the top of the Plateau, especially Carne Creek which has the most swamps and remains as the most pristine example. The Angus Place and Springvale extension proposals are a direct threat to core of the shrub swamp area in the headwaters of Carne Creek.

The shrub swamps are botanically very diverse, and contain many rare, threatened or endangered plants. They are hydrologicaly important in filtering the water in the headwaters of creeks which eventually lead to the drinking water supply.
The other main special feature of the Newnes Plateau is the geodiversity, containing many cliffs, overhangs, caves, and pagoda rock formations.

The Newnes Plateau should be added to the National Parks estate, instead of continuing to suffer a ongoing cumulative degradation from coal mining activities.
Over the last few decades we have seen the expansion and almost merging of three coal mine areas on the Newnes Plateau. i.e. Angus Place, Clarence and Springvale Collieries.

I have been going to the Newnes Plateau for 33 years, have walked all over it, and have witnessed the growing environmental degradation from coal mining.
Sunnyside Ridge used to be a tranquil place with nothing there but the unspoilt bush and the fire trails. Now it has become a nightmare of mining infrastructure far and wide, with the latest Angus Place "Modification 2" consisting of huge clearings (for a power sub-station and VS2) with all manner of construction going on, with an endless stream of vehicles coming and going, including cement trucks which have been going up there literally for years.

There is a large amount of existing surface infrastructure including: drill sites, groundwater monitoring sites, environmental monitoring sites, subsidence monitoring survey lines, water discharge pumping sites, power sub-stations, power lines, water transfer pipelines, dams, tracks, boreholes, shafts, and vents.
The amount and scale of the infrastructure has exponentially grown in the last few years.
And now they want to step it up with even more, including: a 14ha(!) clearing just for one mine vent, seven more dewatering sites (for Angus Place) with power, pipelines and tracks and clearings 90m x 110m, and two more borehole sites (for Springvale). They also want to drill more exploration holes and groundwater monitoring holes, as well as subsidence monitoring activities.

Centennial Coal now wants to expand their longwall coal mining further into large areas of the Newnes Plateau, especially under the headwaters of Carne Creek, which contains the core area of Newnes Plateau Shrub Swamps, and also the largest shrub swamp in Marrangaroo Creek and part of the headwaters of Bungleboori Creek.

Whilst Centennial Coal acknowledges the importance of the biodiversity and geodiversity of the area, the best that they can say is that the subsidence – which by it being a "controlled action" under the EPBC Act says that it "has, will have or is likely to have a significant impact on a matter of National Environmental Significance" – will not cause "significant" impact to the swamps, ground and surface water, and the geological features.

Who is to say what "significant" means, and what is an acceptable level of damage.
Low and Moderate are the next levels down.
To me there is no acceptable level of damage to endangered ecological communities (EEC's), and the precautionary principle of not mining at all under EEC's including the Newnes Plateau Shrub Swamps should be adopted.

Centennial also claim that there will be "no significant impacts" with regard to:
ecology
geology
aboriginal heritage
water courses
water quality
air quality
noise
traffic
visual impacts
Greenhouse Gas Emissions
adjoining conservation areas (i.e. Gardens of Stone NP)

Most of these could be disputed to some extent.
For example:

Ecology – the Environmental Impact Statement **Subsidence Constraints Risk Assessment** states:
ecological impacts - reduced groundwater availability in upper near surface aquifers and perched aquifers can affect groundwater dependent ecosystems and critical fauna habitat. Tilts and strains can increase erosion / sedimentation / ponding potential which may affect an ecosystem. Surface cracking can affect the viability of surface water flows which sustain ecological communities;
Shrub swamps are predicted to experience subsidence up to 1.9m, tilts up to 20mm/m, upsidence up to 750mm and closure up to 1m, as well as hogging and sagging curvatures
Fractures in bedrock are predicted beneath the swamps and drainage lines.
Steep slopes are predicted to experience tension cracking at the top and sides, and compression ridges at the bottom.

Geology – some cliffs, pagodas and other rock formations are likely to experience fracturing and spalling. Predicted to affect 1% to 3% of total exposed rockface areas which are located above longwalls.

Water quality – the deep ground water to be discharged to the power stations or alternatively into the Cox's River, is of high salinity and contains metals, and other government authorities have determined that it be classified and used as industrial water only.

Visual impacts – Centennial says there will be little visual impact at their test sites, BUT if you travel to say Birds Rock lookout (one of their test sites) you see numerous examples of their mining infrastructure along the way.

Greenhouse Gas Emissions – Centennial claims a tiny contribution to the amount of State and Federal GHG emissions, but conveniently omit the Scope 3 emissions about which they say:

The greatest emission sources associated with the Project are those related to the downstream combustion of the coal (Scope 3), the management of which is not in Centennial Angus Place's control

Australia is not isolated you know, we are all on the same planet, with the one atmosphere.
Counting the Scope 1-3, Angus Place mine will be producing 1,061,024 tCO2-e/annum, which over the proposed 25 year life of the mine is a huge amount of greenhouse gases. Add on the figures for the Springvale and Clarence mines, and you get another example of a big cumulative effect.
You can't just sweep it under the carpet and pretend it's not there.

Noise – the mines say that the noise of the dewatering pumps can only be heard up to 100m away, but I have experienced differently with existing pumping sites, as the noise can travel much further across valleys, up to about a kilometre. And the pumps run nonstop most of the time.

Traffic – I see increased traffic on the (sometimes) poor quality state forest roads, every time that I go there now. The mines want traffic going there day and night 24/7.

Previous Mining Damage

Some people claim that Lithgow has a proud history of coal mining, which they want to see continue, but I have seen a lot of the Lithgow district close up, and there is an abysmal amount of environmental damage from previous mining. I'd call it a legacy of long term environmental damage. Examples include a shocking amount of cliff/overhang damage caused in recent years by the Baal Bone Colliery, extensive damage in Ben Bullen State Forest by Invincible Colliery and other older mines such a Wallerawang Colliery.
In fact, the whole of the City of Lithgow is in a Mine Subsidence Area cracked by the historic mining. Go up to the Hassans Walls Lookout area and you can see large cracks in the rock walls.

The three mines on the Newnes Plateau have caused environmental damage with their past mining, (including to endangered shrub swamps) such as in Lambs Creek, Kangaroo Creek, East Wolgan Swamp, the Wolgan River, Wollangambe River, and upper Bungleboori Creek).
There are cracked rock pagodas, e.g. at the Temples of Doom in the northern end of the existing Angus Place longwall mining area.

The "Enforceable Undertakings" (in Oct. 2011) by the Angus Place and Springvale mines "without conceding that is has breached the EPBC Act, or any other act" was a virtual admission that they had damaged the East Wolgan Shrub Swamp. They are too scared to legally admit it.

Until just a few years ago, the mines were discharging massive amounts of polluted mine water directly into gullies, most of which contain shrub swamps. Now it has become unacceptable, but back then it was considered industry "best practice". Perhaps what is being done now (and proposed) will be considered unacceptable in the near future.
They were also longwall mining in areas that contain faults and lineaments, which resulted in cracking due to plains of weakness combined with features in the topography such a incised valleys.

I think that any mining under endangered or sensitive areas should be unacceptable.

Cumulative Effects

The area of mining and associated surface infrastructure of the three mines on the Newnes Plateau has been expanding over the years, until they will eventually adjoin and form one huge area of disturbance with associated environmental degradation.
Springvale is expanding east and south, Angus Place is expanding east and north, while Clarence is expanding north, west and east.

When you consider the cumulative impact on ecology, water, air, noise, etc., the effect will be very widespread, and have a huge impact on the integrity of the Newnes Plateau.

The effective doubling of discharge via the water transfer scheme (the SDWTS), with flow of saline ground water to the Cox's River catchment can only have a detrimental effect on the aquatic biota.

Mine Design

Critical width	Removal of a small area of coal will form a small void, into which the roof will rarely fracture sufficiently to subside the surface. This is commonly evident in bord and pillar mines, but is also the case if longwall panels were sufficiently narrow. As these panels widen, they reach a critical width, which is when goafing is sufficient to cause maximum possible surface subsidence. A sub-critical width panel is one which did not allow maximum subsidence.

The width-to-depth ratio (W/H) has been used in the mine design at Angus Place Colliery as an important predictor of subsidence behaviour (refer **Section 8.3.3** for further details). W/H<0.9 (sub-critical longwall panels) cause lower magnitudes of subsidence, 0.9<W/H<1.4 (critical longwall panels) represents cases where yielding of the overburden starts to occur and maximum subsidence is likely to develop if the panel widths are increased further, and lastly, with W/H>1.4 (supercritical longwall panels) yielding of the overburden and maximum subsidence is likely to occur.

- LW1007 to LW1019 will be 350 m wide, with chain pillars 55 m wide. Depths of cover range from 360 m to 420 m. The resulting sub-critical void width to depth ratios are within the range of 0.85 to 1.0, which is similar to those for the previously extracted longwalls at Angus Place.

According to the definitions shown above the "critical" panel width is that at which maximum possible surface subsidence is caused. Critical ratios are 0.9 to 1.4.
Hence some of longwall panels LW1007 to LW1019 are in the *critical* panel width range.
All panels should be sub-critical width to minimise subsidence or to quote the above "not allow maximum subsidence".

Conclusion

▪ I find it incredibly ironic that the Angus Place mine says that the proposed new vent No.3 "cannot be subject to mine subsidence as this may impact on the integrity of the ventilation infrastructure". But they are prepared to compromise the integrity of the biodiversity and geodiversity of the Newnes Plateau, as subsidence is bound to happen above longwall mining.
Just how much subsidence occurs and what affect it has is the question.

▪ Centennial Coal overall concludes that:
"The technical studies have concluded that no significant alteration to the support physical or

hydrological environments is likely to occur as a result of the Project" *and* "The Project can be appropriately managed and result in residual consequences that do not have significant impacts on the receiving environment".
Once again the words "no significant" occur regarding every possible adverse impact of mining.
For the unique and endangered Newnes Plateau environment "no impact" should be only acceptable option. Risk Categories of Low and Moderate impact should not be acceptable.

▪ I don't agree with Centennial Coal that coal mining is "critical" to the socio-economic wellbeing of the Lithgow LGA.
The mining industry only employs 11.6% of the population, and it would be better to nurture growth in industries such as tourism, and encourage visitors to see unique natural places like the Newnes Plateau. That could be of big economic benefit to the region.

▪ Longwall mining causes subsidence, which is predicted to occur extensively (up to 1.9m), which causes fracturing in the bedrock and can affect the groundwater flow and underground aquifers, which in turn affects the endangered shrub swamps and hanging swamps.

▪ As shown above, in the mine design not all the longwall panels are in the sub-critical panel width range, and so subsidence is not being minimised. In fact, at the "critical" width surface subsidence is at a maximum.

▪ Angus Place says that due to a weak roof and a high stress environment longwall mining is the only option. Clarence Colliery successfully uses bord & pillar mining methods. Why not other mines?

▪ I do not want to see the proliferation of *even more* mining surface infrastructure on Newnes Plateau. Why on earth does the proposed downcast ventilation shaft (APC-VS3) require a 14ha footprint?

▪ I do not want to see any more mining under endangered shrub swamps or other sensitive surface features. Damage has occurred to previously undermined swamps and to rock formations, and will very likely happen again. Don't risk it.

▪ I do not want to see longwall mining under Birds Rock Flora Reserve which was created decades ago to preserve an intact piece of the Newnes Plateau, otherwise under threat from mining and logging.

▪ I would not like to see longwall coal mining under the Newnes Plateau for another 25 years, which is what is proposed by Angus Place Colliery.

▪ The cumulative effect of the expansion of the Angus Place, Springvale and Clarence mines on the Newnes Plateau, will result in one huge area of disturbance and degradation from constructed surface infrastructure and subsidence damage from longwall mining.

▪ Finding "like for like" offsets is not possible as the Newnes Plateau is a unique place.
The Newnes Plateau should be added to the National Parks estate to protect it from further damage.

▪ I think that the Proposal must be assessed by the PAC, to get a more independent verdict.

▪ Newnes Plateau and its EEC's should be protected and added to the National Parks estate.

▪ Based on the above, I do not support the Angus Place mine extension Proposal.