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Dear Carl,

Comments on the PAC report and recommendations regarding the proposed Coalpac Consolidation Project - open-cut coal mine in Ben Bullen State Forest

Refusal of the Coalpac open-cut mine proposal will not harm the energy market, electricity production or employment in the mining industry of the Lithgow region

There is no urgent need to develop the Coalpac proposal to ensure coal security for the electricity producers in the Lithgow Region. There are many decades of coal available for electricity generation.

In the Lithgow and Rylstone Regions there are two different coal seams, the Lithgow seam and the Katoomba seam, which are mined largely by underground techniques (Industry Profile, 2008, page 51). Coal mining is confined to areas where relatively clean coal occurs over a height of 1.5-2.5 metres, the so-called "working section". Compared to the Lithgow and Katoomba coal seams, the Lidsdale and Irondale seams are inferior in quality, and the others, the Middle River and Moolarben seams, are hardly worth mining. These latter seams are only worked by open-cut mining methods.

It should be noted, however, that in the last three decades most of the coal exploration effort and investment in coal mining infrastructure has occurred in the Ulan section of the Western Coalfield where very thick coal seams are mined by open-cut methods. At Ulan, very large open-cut mines work a **12 metre coal thickness** known as the Ulan seam. The coal from the Ulan mine is transported by the custom-built 150km Sandy Hollow railway to Muswellbrook and thence to Newcastle. During the 1980s the Department of Mineral Resources carried out several large coal drilling programmes in the Western coalfield. This Government exploration has shown that the

thickness of coal increases from Rylstone northwards towards Ulan. The Lithgow Region does not have anything like this potential for future open-cut coal production and electricity generation must take these differences into account.

Further, power generators in Asia are purchasing thermal coal from underground coal mines in the Lithgow region at a higher price than Tru-Energy/Energy Australia (a Chinese owned company) has asserted it is willing to pay to supply the Mt Piper and Wallerawang Power Plants. The claim by Tru-Energy/Energy Australia that the days of electricity generation from coal sourced from underground mines are over are contradicted by NSW's growing thermal coal exports from the Lithgow Region. The thermal coal exported from underground mines in the Lithgow part of the Western Coalfield is used for power generation in Japan, Korea and Taiwan. This underground coal resource can also provide for electricity generation in the Lithgow Region, with a considerable transport cost advantage.

The remarks by Tru-Energy/Energy Australia in relation to the Coalpac proposal and underground coal resources should be construed as a wish to maximise profit from Mt Piper Power Plant, not as an absolute production constraint. The export market spot price for thermal coal is half what it was before the Global Financial Crisis in 2008. Local consumers, like Tru-Energy/Energy Australia, are now advantaged and long term contracts can be more readily secured for coal produced by Lithgow's underground mines.

Of course higher ash, lower quality, unwashed thermal coal from Coalpac's Invincible and Cullen Bullen mines is cheaper than export quality thermal coal. However, quality thermal coal from underground mines has the benefit to Tru-Energy/Energy Australia of producing fewer greenhouse gases per megawatt hour of electricity generated. Burning quality thermal coal from underground mines improves the thermal efficiency of the power plant[1]. Quality thermal coal would then have a carbon tax benefit because less coal would be needed per kilowatt hour of energy produced and that discounts the coal's higher cost. This is the carbon tax at work.

As DoPI would be well aware, in 1993 the Springvale Colliery was specifically developed for the needs of Mt Piper Power Plant and is connected to it by a conveyor belt. The Angus Place Colliery has a purpose built haul road to this power plant. Springvale and Angus Place coal mines have the capacity to produce up to 8.5 million tonnes of coal a year (Coal Industry Profile, 2010). In 2006-07 the combined measured coal resources for these two mines was 154.3 million tonnes and the combined indicated resources were 171.2 million tonnes, giving a total of 325.5 million tonnes of coal. In recent years the coal resource at these two mines has expanded with development and exploration. The 2008-09 combined measured coal resources for these two mines had increased to 195.3 million tonnes and the combined indicated resources were 245.3 million tonnes, giving a total of 440.6 million tonnes of coal.

In fact the Atlas of NSW states that the "southern sector of the Western coalfield, between Lithgow and Ben Bullen, supplies coal to the local power stations and the export thermal market. The Lithgow seam is most important followed by the Katoomba seam that is mined east of Lithgow" (http://atlas.nsw.gov.au/public/nsw/home/topic/article/coal.html).

[1] Thermal efficiency is influenced by the design, age and condition of a power plant, **as well as by the quality of coal used** (my emphasis). A new state of the art power station can expect to achieve a thermal efficiency in excess of 45 per cent (from NSW Auditor-General's Report, Volume Four, page 35, 2011, DELTA ELECTRICITY).

These data demonstrate that the Springvale and Angus Place mines could provide coal to both the Mt Piper and Wallerawang power plants for decades. The Mt Piper Power Plant burns at the most 2.2Mt coal/year, at a maximum demand of 250 tonnes of coal per hour and the Wallerawang Power Plant consumes about 30% less, approximately 1.6Mt coal/year when fully operational.

Further, the Airly Colliery (98.2 million tonnes of indicated reserves), currently in care and maintenance, and the Clarence Colliery (236.6 million tonnes measured and indicated reserves) can augment the coal resources that could be purchased for the Mt Piper Power Plant. The claim that coal in Coalpac's proposal area is essential to the on-going operation of Mt Piper Power Plant is incorrect.

Employment will not decrease if the Coalpac Consolidation proposal is refused development consent as other coal producers would increase production to supply the needs of these power plants.

Refusing consent is likely to increase employment as a greater proportion of high quality thermal coal would be provided by underground coal mines that employ more miners. Carbon tax costs to the energy supplier would be reduced by burning quality thermal coal and this reduction would partly compensate for the higher price paid by the generators for the better quality coal sourced from underground mines. In other words, refusal of Coalpac's environmentally damaging mine would benefit mine workers, enable the protection of a unique natural environment, ensure the health and amenity of Cullen Bullen residents, as well as in a small way help reduce greenhouse gas emissions.

The Western Coalfield has extensive coal resources and can afford to protect the crucial pagoda habitat and associated representative sample of rich and diverse woodland on undulating Permian Illawarra Coal Measures as proposed for reservation by OEH in the Coalpac proposal area.

There are no unique coal resources that will be sterilized and the security of the national power grid will not be affected if the Coalpac Consolidation Proposal is refused development consent. Such claims have no basis. The following examination of the coal resources of the Western Coalfield establishes that there are decades of alternative coal resources available for the needs of the Mt Piper and Wallerawang Power Plants.

Notes on the relationship between the proposed Coalpac open-cut mine, the Western Coalfield of NSW and the Gardens of Stone Stage 2 Reserve Proposal

The Coal Industry in the Western Coalfield is Healthy

The coal industry in the Western Coalfield continues to be healthy. In the last thirty years production of raw coal has increased five times and employment has also grown, albeit much more slowly.

Comparative figures for the three mining centres in the Western Coalfield are presented on the following page:

Employment

	1979-80	1991-92	2006-07	2008-09
ULAN	150 approx	562	558	348
RYLSTONE	150 approx	143	120	129
LITHGOW	930	1,195	1,064	1,348
TOTAL	**1,230**	**1,900**	**1,742**	**1,825**

Raw Coal Production (MT)

	1979-80	1991-92	2006-07	2008-09
ULAN	0.52	6.79	9.44	13.5
RYLSTONE	-	-	1.12	1.0
LITHGOW	3.55	6.77	11.13	10.32
TOTAL	**4.67**	**14.18**	**21.7**	**24.8**

Coal Reserves

In the last 30 years despite a production increase from 4.67 million tonnes to 24.8 million tonnes of coal annually, coal reserves in the Western Coalfield have risen from 250 million tonnes in 1962 to nearly 1,000 million tonnes of recoverable coal in 1991-92, to 1,793.25 million tonnes of recoverable coal reserves in 2006-07 (Coal Industry Profile data, 2008) and holding steady at 1,769.6 million tonnes in 2008-09 (Coal Industry Profile data, 2010).

For the Western Coalfield including the proposed Gardens of Stone reserve proposal, the most recent semi-detailed information available is still the Sniffin, M. Sayers, P. and Beckett J., 1986, *NSW Coal Resources and Reserves* report prepared by the Department of Mineral Resources.

Total coal resources in the Western Coalfield are 4,340 million tonnes based on the 1986 report and note that *almost half this figure includes inferred reserves*. The measured and indicated reserves are shown in the table below. This figure refers to coal within coal mining and exploration tenements, although the figure apparently does not include large areas held by the Department of Mineral Resources, for example those resources north of Rylstone.

COAL RESOURCES (million tonnes, 1986 data)

	Western coalfield	NSW
Measured and indicated reserves	**2,630**	34,356

WESTERN COALFIELD COAL RESOURCES (million tonnes, 2006-07 data)

	Measured reserves	Indicated reserves	Total
ULAN	405.8	995.3	**1,401.1**
RYLSTONE	43.4	23.2	**66.6**
LITHGOW	378.5	377.7	**756.2**
TOTAL	827.7	1,396.2	**2,223.9**

WESTERN COALFIELD COAL RESOURCES (million tonnes, 2008-09 data)

	Measured reserves	Indicated reserves	Total
ULAN	657.4	630.6	**1,288.0**
RYLSTONE	9.5	6.7	**16.2**
LITHGOW	307.3	570.7	**878.0**
TOTAL	974.2	1,208	**2,182.2**

Allowing for production growth, these data above indicate that there is sufficient coal available to meet power station demand of up to 8 million tonnes per year for the foreseeable future.

Substantive response to the recommendations of PAC1 regarding the Coalpac Consolidation Project

Introduction

The Coalpac Consolidation Project is a complex proposal involving the integration and considerable expansion of two smaller existing open-cut coal mines over an area where most of the coal that could be extracted by underground methods has been removed over the last 100 years. In other words, this proposal seeks to remove mostly low quality coal remnants, the high quality coal having already been mined out.

The proposal is widely accepted to be in an area of high conservation value that has been identified for reservation by the Office of Environment and Heritage (OEH).

This proposal is not a 'finely balanced' one, where an adjustment of the proposal could produce an acceptable approval outcome. The proponent has made it clear in its dealing with the Planning Assessment Commission (PAC) that variation of the proposal which would further reduce the coal take would not acceptable to them.

In response to concerns of PAC Commissioners, the proponent should have moved the open-cut area well back from the town of Cullen Bullen and from the environmentally sensitive elements of the Ben Bullen State Forest. If such measures were taken, however, it becomes apparent that insufficient second-rate thermal coal resources would remain available to justify the development.

No mining jobs would be lost upon closure of Coalpac operations. Other coal mines would expand production, such as at Mt Airly, which is currently in care and maintenance. The demand for coal by Mt Piper Power Plant would be provided by these other mines in the southern part of the Western Coalfield. As most of these mines are underground operations, employment is likely to increase, not

decrease, in order to meet the needs of the Mt Piper power plant. Nor will the cost of wholesale electricity increase by 42%, a ludicrous allegation.

Given the vast range of problems with this proposal, the PAC recommendations should be the justification for the refusal of this proposal, rather than the basis for framing the consent conditions. This proposal cannot be adjusted to ensure the amenity and health of affected neighbours or the protection of the natural environment. It should be refused consent.

[Note: The comments by the Colong Foundation on the PAC recommendations listed below are *italicised*.]

Air Quality (Section 5.1)

Recommendation 1: The Commission recommends that the emission estimate predictions should be updated and reconfirmed using the most relevant emission variables as recommended by the EPA prior to any determination of the project.

The Colong Foundation considers that enough information is available to indicate that the central part of the proposal in the Invincible and East Tyldesley open-cuts and the southern part of Cullen Valley must be excised from the open-cut proposal if it is to meet dust, noise and vibration criteria. The recommendation's proposed review of emission parameters will only confound the associated dust issues with new conflicting information and delay decision-making.

According to the Environmental Assessment, the open-cut coal mining proposal is only just able to meet dust standards by adopting a complex chain of pollution controls. These controls are unlikely to be all achieved at the levels necessary to deliver the predicted outcomes. In these circumstances it is necessary to excise a large part of the proposal to ensure compliance.

Deferral of decision-making to allow a subordinate process and further consideration will almost certainly ensure that the necessary buffer areas for compliance with dust standards are not established. The time for decisions is now, as enough information is available to estimate the physical set backs necessary for the open-cut mine areas in order to protect the health and amenity of the residents of Cullen Bullen.

Recommendation 2: The Commission recommends the current acquisition criterion for PM10s, 150 µg/m3 24-hour average from all sources, should be reviewed from a health perspective given the NEPC criteria of 50 µg/m3 and more recent advice from NSW Health about mortality and morbidity impacts. This should be done in consultation with NSW Health and the EPA prior to any final approval for the Coalpac project.

This proposed dust assessment will re-identify the unacceptable proximity of the proposed open-cut to the town of Cullen Bullen but this extra assessment is not designed to resolve the problem.

The implicit and erroneous assumption for the proposed dust assessment is that the Coalpac proposal can utilise the entire output of dust allowed for emissions and that other sources, including future dust from other open-cut mines, are minor. This is the wrong approach as other mines and proposed mines, as well as the Mt Piper power plant needs to be considered in the dust assessment.

If all dust sources generate the maximum set down by the dust emission standard, then this approach to the emission standard will see it exceeded.

Discussions should determine what parts of the proposal need to be excised to ensure that only 30% of the dust emission standard is contributed by this proposal. Any higher level will not enable cumulative impacts to be adequately addressed.

Recommendation 3: The Commission recommends the NSW long-term acquisition criterion for annual average particulate matter less than 10 microns (PM10) of 30 µg/m3 should be reviewed against the WHO goal of 20 µg/m3 for this parameter.

Clearly the time to establish a new standard is now before the southern part of the Western Coalfield becomes as dusty as the lower part of the Hunter Valley.

Remember, the Lithgow Region is not a broad expanse, like the Hunter Valley. It's a narrow airshed, confined to the west by an escarpment. As the DoPI would appreciate, the Lithgow Region has had problems with wood-fired stoves in the recent past because of its airshed parameters.

The PAC did not seem to expressly consider the narrow, confined nature of this airshed and significant air temperature inversions that the Lithgow Region suffers from and which will further confine dust emissions.

Recommendation 4: The Commission recommends that any approval for the project should include the relevant condition from the Ashton South East Open Cut Coal Project determination relating to air quality exceedences at mine owned residences. These conditions relate to adequate notification of the tenant, termination of the tenancy without penalty, air mitigation measures and ongoing monitoring information and notification of the owners of the land with an option for acquisition.

These provisions need to ensure the health of resident children and other sensitive people, such as asthmatics. Dust sensitive people should not be residents in mine-owned housing.

Recommendation 5: The Commission recommends that blasting should only be conducted when the wind will transport fumes away from the Cullen Bullen School, Cullen Bullen village and any residences.

This provision is a further indicator of unacceptable proximity of the proposed open-cut mine.

Recommendation 6: The Commission recommends the proposed Air Quality Management Plan (AQMP) should include key performance indicators and outcomes across the full range of potential sources of air emissions. The AQMP should be developed in consultation with the EPA and be approved by the Director-General of the Department prior to commencement of works associated with the development. Specific attention should be given to the performance outcomes to achieve the air quality criteria.

The AQMP can not mitigate the elevated ambient dust levels from the mine being too close to the town of Cullen Bullen. It can only reduce peaks in dust emission levels through adaptive management. The AQMP is not an appropriate substitute to a minimum set back of open-cut coal mines from the town, such as the five kilometre set back criteria proposed by the National Party in its submission to the SRLUP.

Recommendation 7: The Commission recommends that the total area of active mining and unrehabilitated dumps should not exceed 180 hectares at any one time.

A disturbance area of 1.8 kilometres square is excessive and it seems to be an arbitrary figure. The PAC report notes that 'the potential for particulate emissions increases dramatically as the area of disturbed surface is increased.' The minimum disturbance area should be much smaller than 180 hectares given the dust problems identified by the EA and the PAC. The disturbance area should be as small as possible.

Recommendation 8: The Commission recommends that operational conditions are sufficiently rigorous to ensure the Real Time Air Quality Management System is used predictively and that failure to do this amounts to non-compliance.

Exceeding dust standards should be treated as a non-compliance with the pollution licence. The RTAQMS risks being a weasel mechanism that 'tolerates' high levels of dust through studies and monitoring. These mechanisms can become a substitute to effective controls, and effective controls should be embedded in the development consent. As in the opinion of the PAC Commissioners all practical dust suppression measures are already proposed, it is necessary that the proposed open-cut be set back the mine from the town.

Recommendation 9: The Commission recommends that auditing requirements are imposed to assess compliance and to assess whether additional management responses are required. It is also necessary to ensure long-term commitment to effective use of the Real Time Air Quality Management System.

These management responses to dust mitigation will not happen. All practical measures have already been proposed in the EA. The RTAQMS seeks to defer the consequences of non-compliance and explain away the high levels of dust with studies, when the decision-maker must instead exclude large areas of the proposal to protect the health of town residents.

Recommendation 10: The Commission recommends that shutting down of operations should be adopted as a management response in this airshed to ensure the air quality criteria are met.

This action will be deflected by studies and assessments through the RTAQMS weasel mechanism, contrary to recommendation 8. Once development consent is issued, the pollution licence regulators cannot 'unscramble the egg' and stop the contingent dust pollution.

Recommendation 11: The Commission recommends restriction of hours as well as production limits to be included if the Real Time Air Quality Management System doesn't deliver all required outcomes.

Unfortunately this will never happen because the regulatory environment is not robust enough to ensure compliance. Again this recommendation implies that this proposal will not comply with dust standards, because it is too close to the town.

Recommendation 12: The Commission recommends that an evaluation should be conducted of Real Time Air Quality Management Systems (RTAQMS) including their effectiveness in controlling emissions from open-cut mines. This should include investigation of the relationship between

suppression of peak emission levels and the effect (if any) on annual average emission levels from open-cut mines in NSW.

This recommendation needs to be undertaken by independent experts from or commissioned by the Department of Health.

Noise (Section 5.2)

Recommendation 13: The Commission recommends the proposed review of the Industrial Noise Policy include a review of the minimum default background noise level of 30dBA.

Strongly support this measure, the existing standard is unacceptably high for quiet rural communities.

…

Recommendation 15: The Commission recommends that the proposed exemptions for the highwall miner from some of the management zone recommendations should be justified before any final determination of the project.

The highwall mining operations should be removed from this proposal, unless restricted to operate in valley bottoms, as specified by the current development consent. The proposed location of highwall mining operations to elevated areas of the landscape, such as talus slopes, will produce unacceptable noise impacts. The protection zone proposed by Blue Mountains Conservation Society that precludes highwall mining under the pagodas has the benefit of limiting noise pollution from the highwall miner.

Recommendation 16: The Commission recommends the Proponent should stop or modify operations under certain weather conditions where noise criteria are predicted to be exceeded and should stop noise generating operations if acceptable noise criteria are exceeded. In addition the Proponent's performance should also be independently audited.

This PAC recommendation replicates similar provisions proposed for dust (recommendation 10). As the proposal is too close to Cullen Bullen, this recommendation has been proposed. The appropriate solution is to excise large areas of the mining proposal around the town, to ensure compliance rather than propose complex arrangements that may never produce satisfactory noise amenity. The EPA should not be burdened with likely noise pollution contingencies that should be avoided in the framing of the consent.

…

Recommendation 18: The Commission recommends that road haulage of export coal to Port Kembla should not be permitted once the rail facility has been constructed.

The consent conditions also should set a date for construction of the rail facility.

Recommendation 19: The Commission recommends that road haulage of export coal to Port Kembla before the rail facility is operational should be not be permitted without further assessment of the traffic impacts.

Road haulage of coal to Port Kembla through Blue Mountains villages is unacceptable to Blue Mountains City Council as it would create a major truck traffic problem. Other collieries would then seek concessions based on this proposed precedent, as Clarence Colliery has attempted in the past. In no time at all the Great Western Highway would be choked with coal trucks. This proposed recommendation is not appropriate or necessary, the haulage should not be permitted under any circumstances.

…

Recommendation 30: The Commission recommends there should be no increase in production until the Real Time Noise Management System is established and demonstrated to be operating effectively under all weather conditions, including temperature inversions.

The RTNMS does not prevent persistent noise, and is best at identifying acute problems.

Recommendation 31: The Commission recommends a comprehensive evaluation of the effectiveness of real time monitoring and proactive and reactive management systems used for air and noise management in mines in NSW.

The Colong Foundation does not accept that second order determination processes, such as RTNMS and RTAQMS, can appropriately determine pollution controls for important pollution issues, like noise and dust, especially when the proposal is on the border of being non-compliant with the relevant standards. Such arrangements ensure that the controls for these key amenity and health factors are deferred until after the issue of the development consent. Such deferral of key factors in pollution regulation would defeat the purpose of consent conditions that are intended to protect the health and amenity of the public. Given that the noise and dust are estimated to be high in the town area, this proposal should be refused consent.

The PAC consent authority should not rely on these second order processes to deliver adequate outcomes by hypothetical measures yet unspecified, especially when all practical measures, other than set backs from the town, have already been proposed. The consent authority should ensure certainty of outcome for health and amenity. The proposed approach will not ensure health and amenity of the residents in Cullen Bullen and is opposed.

Recommendation 32: The Commission recommends an independent audit should be conducted at the end of 12 months and then every three years to investigate and report on the effectiveness of the Real Time Noise Management System in maintaining noise levels within the relevant criteria.

As previously stated once development consent is issued, the regulatory authorities cannot 'unscramble the egg'. In the Colong Foundation's experience, such processes can lead nowhere but to further studies, decades of debate and regulatory failure.

Recommendation 33: The Commission recommends any approval for the project should include a condition that the mining only proceed in stages until it demonstrates compliance with the noise criteria.

Staged approvals also do not 'unscramble the egg' once consent has been issued. In the case of the Dendrobium Colliery in the Southern Coalfield, for example, changes in consent have wound back protection of swamps in Area 3 that were established by the initial Commission of Inquiry. Staged

approval unfortunately operates on the premise of an on-going operation, somewhat defeating its purpose of continual improvement in environmental performance.

Staged consents must be made contingent upon improvement of environmental performance. If there is no rule that subsequent consents will better protect the environment and amenity, they may instead lead to environmental degradation.

See also comments to the above recommendations 32 and 33.

Blasting (Section 5.3)

Recommendation 34: The Commission recommends ground vibration criteria for Aboriginal heritage rock shelters should not be greater than the criteria set out by the Proponent, that is half the recommended ground vibration criteria and 3dB below the overpressure criteria. The Blast Management Plan should demonstrate how blasting can occur with negligible mining-induced damage of the Aboriginal rock shelter RCK2-10.

Aboriginal rock shelters are irreplaceable assets and merit a zero tolerance of damage, identical to the standards applied in recommendation 35 below.

Recommendation 37: The Commission recommends that the Proponent's approach to controlling noise and vibration from blasting at residences by reducing the MIC and increasing the number of blasts to be rejected as imposing an unreasonable impact on the residents. Any exceedence of the ANZECC guideline for blasting frequency should be strictly limited, particularly when the expected noise or vibration levels are likely to be at or close to the limits.

Exceedences of the blasting frequency limit in these circumstances would be unacceptable as a development consent condition. Exceedences could perhaps be tolerated in an existing mine where the standard had changed. To assume exceedences at this proposed open-cut mine is to assume unacceptable impacts on resident amenity.

There is no alternative but for the proposed mining to be set back from Cullen Bullen residents sufficiently to ensure protection for the residents. Such set backs are just as necessary for the protection of geodiversity as specified under recommendation 38.

Recommendation 38: The Commission recommends that there should be no impacts to the pagodas and cliff lines from blasting. The Commission does not accept that a 50m buffer will guarantee this outcome, but is unable to determine a satisfactory buffer distance from the available information. To accommodate this situation the Commission recommends that no blasting occur within 300m of the pagodas or cliff lines without an independent geotechnical surveyor certifying that the blasting proposed will not cause impact to the pagodas or cliff lines. In any event a minimum stand-off distance of 100m must be maintained for blasting from all pagodas, cliffs and other rocky outcrops.

The open-cut should be set back at least 300m from the pagodas, the escarpment and cliff lines. No adequate research is available to determine the appropriate amount of blast vibration movement. The vibration criteria for heritage buildings and structures are the available analogues to consider regarding acceptable levels.

Bridges Acoustics adopts the ANZECC guideline vibration criteria at 5mm/s PPV (PAC report pg 135). This guideline also recognises that blast effects cannot always be controlled accurately and therefore allows a higher limit of 10mm/s PPV for up to 5% of blasts in a 12-month period. Such criteria are 10 and 20 times more stringent than the vibration movement proposed for pagodas of 100 mm/s. Pagodas and talus slopes are unlikely to be protected by the proposed 100mm/s blast criteria.

The Blue Mountains Conservation Society has advocated a 310m buffer zone on the basis that the highwall equipment has the capacity to 'drill' 300m from the face. The extra 10m is proposed to give a Factor of Safety, which ensures no undermining of pagodas and their associated cliff lines (see Recommendation 46).

The Colong Foundation also supports the remarks of Dr Washington regarding more recognition of joints and cracks in pagodas which blasting may activate and lead to collapse. The Foundation agrees that the 300 metre set back is consistent with the habitat buffer prescription and this is a minimum that should not be subject to a possible reduction by a more narrowly-based geotechnical assessment, even if it is independently undertaken. The precautionary principle should not be replaced with a risk management model where mining is intensified until damage to the geodiversity occurs. Such an approach is inappropriate for two reasons. The pagodas are of international significance and so should not be damaged by so-called risk management. In addition the ecological requirements of wildlife that utilise the pagodas need to be considered.

Recommendation 39: The Commission recommends that strict monitoring requirements which allow detection of any blasting-induced impacts to pagodas, cliff lines or rocky outcrops be required in the event that the project proceeds.

Recommendation 39 does not require protection of geodiversity and alteration of mining operations if any damage occurs.

Never in the three decades that the Colong Foundation has been involved in coal mine regulation have monitoring requirements resulted in improved environmental protection for the features monitored. Monitoring simply records the environmental damage with no adapation of mine operations if damage occurs. The Colong Foundation does not support monitoring of damage to geodiversity as a substitute for requirements that would ensure adequate environmental protection, such as recommendation 38.

Recommendation 40: The Commission recommends that the Department review the mechanism used to assess complaints of blast damage to private property with a view to providing the residents with confidence that their claims are being assessed by a qualified person who is transparently independent from the Proponent.

Common law rights protect private property and require compensation for damage. The natural environment has no such rights.

Visual Impact (Section 5.4)

Recommendation 41: The Commission recommends that the Proponent should provide the Department with the construction schedule for the noise and visual mitigation bunds as well as specifications and other technical details prior to construction.

The precedent of severe visual blight set by this proposal will not be mitigated by earth bunds.

The scenery of the Lithgow region will be severely degraded and the future tourism potential will be lost if open-cut coal mining along the talus slope is approved. Such mining will be atrociously ugly and very difficult to rehabilitate to a stable landform.

The proposed Coalpac open-cut mining would, if approved, set the precedent of open-cut mining along the western facing slopes of the Great Dividing Range to within 50 metres of the pagoda studded sandstone cliff lines. Such ugly mining may then expand along the escarpment from Capertee Valley to Hartley Valley (see Recommendation 47 that protects the Lithgow region from visual blight).

Recommendation 42: The Commission recommends that the onsite treatments outlined in the EA, Volume 1, Section 8, pp.151-152 be developed as conditions of approval.

The visual blight that will be caused by open-cut coal mining of talus slopes on part of the Great Dividing Range in an area of outstanding natural scenic beauty would be an act of vandalism, especially given the poor quality remnant of thermal coal resource proposed for mining.

Recommendation 43: The Commission recommends that the Proponent be required to report to the Department and the local community on a regular basis on the implementation of rehabilitation and mitigation measures, with the frequency and the extent of reporting to be determined by the Department.

Rehabilitation can't replace the lost woodland ecosystems, it is cosmetic work that produces a fragmented vegetation cover comprising some of the more hardy plant species and not a functional ecosystem. Rehabilitation on steep slopes will not be very effective or stable. Steep slopes are difficult and expensive to rehabilitate. As a result the rehabilitation will be a poor substitute for the natural environment that will be destroyed.

Recommendation 44: The Commission recommends that the construction hours of operation should form a condition of any approval, in part to alleviate light pollution impacts on residents and other users of the area.

Mine construction should be constrained to daytime hours.

Pagodas and Associated Environments (Section 6.2)

Recommendation 45: The Commission recommends that the pagodas and the associated escarpments be considered natural features of special significance and that they be fully protected from any mine-induced impacts.

Full protection from mine-induced impacts must be precisely specified. A similar generally stipulated recommendation was made by Commissioner Simpson in regard to the protection of cliffs and pagodas following the Commission of Inquiry for Angus Place Colliery in the early 1970s. It was ignored by the mining company. Instead of compliance, cliff falls were monitored at the Angus Place mine, and incidentally reported back to Commissioner Simpson in 1991 at the Airly Colliery Commission of Inquiry as an example of monitoring compliance. Full protection needs to be specified

in detail if the recommendation is to be complied with, otherwise compliance will take the form of monitoring environmental degradation.

For the above reasons the buffer of 310m and prohibition of highwall mining under cliffs and pagodas must be specified to protect pagodas from the blasting associated with open-cut mining and subsidence from highwall mining. The 300m buffer ensures protection of wildlife dependent on the pagoda habitat.

Recommendation 46: The Commission recommends that highwall mining not be permitted under the pagodas or escarpments in the project area.

The Blue Mountains Conservation Society has advocated a 310m buffer on the basis that the highwall mining equipment has the capacity to 'drill' 300m from the face and the extra 10m was proposed to give a Factor of Safety, which ensures no undermining of pagodas and their associated cliff lines.

Protection is justified by the significance of pagoda landscapes and its surrounding woodlands.

Recommendation 47: The Commission recommends that to provide adequate protection for threatened species and other fauna that use the pagoda landform, a minimum setback distance of 300m be maintained from the open-cut highwall to the pagodas and the escarpments.

See additional scientific material provided in Appendix A. The Colong Foundation for Wilderness supports the ecological requirements of wildlife determining buffers for the open-cut areas. The Colong Foundation agrees with Dr Washington that a 500 metre habitat buffer would seem essential to prevent adverse impacts on the pagoda landform fauna. This proposed buffer would protect the threatened fauna for most of their entire ranges and also protect mapped vegetation of significance and concern.

The proposed 310m set back requirement is a compromise and it may not be adequate given edge effects associated with open-cut mining. The 310m set-back would also help to prevent visual blight, and protect pagodas, escarpments and cliffs from blasting and subsidence impacts.

Cumulative impacts of the proposed open-cut mine, including cumulative impacts on flora and fauna need to be addressed. The proposal will have significant impacts on high conservation values and this alone justifies the refusal of the development consent, especially given the poor quality of the proposed remnant coal resource and the availability of ample alternative coal resources.

Recommendation 48: The Commission recommends that, given the significance and sensitivity of the pagodas and the pagoda landform environment, before the project is submitted for determination the uncertainties in the Proponent's supporting information identified in section 6.2 are resolved and the caveats and qualifications on the various commitments are removed so that the Determining Authority has an unequivocal understanding of what the outcomes will be and the risks associated with them.

The PAC Commissioners have concurred that the pagodas are of international significance and merit the highest level of protection. The DoPI would recall that protection of pagodas has been required for all modern underground coal mines. Protection zones are stipulated around pagoda formations to completely protect these features from surface subsidence during underground coal mining.

The Commissioners' language in this recommendation seems to be based upon risk management rather than that of the precautionary principle that was the basis of the previous recommendations. Risk management of this nature is not compatible with the highest levels of protection or with past practice as applied to pagoda protection zones associated with underground mining, where the so-called 'angle of draw' defines the no surface subsidence boundary limit of the protect zone.

Open-cut coal mining should also fully protect pagodas. The absence of adequate data to give full protection of the pagoda rocks and associated wildlife habitats requires the application of the Precautionary Principle. The entire pagoda habitat should be protected, with a buffer of 500m.

The Colong Foundation does not agree with the application of risk management principles as interpreted by the mining industry to pagodas or pagoda habitats. Risk management is taken by the mining industry to mean risk taking, and has in this case produced the unacceptable 50m buffer and 100mm/sec blast vibration criterion. Such risk taking will cause damage, as acknowledged by the environmental assessment though the use of conditional language when expressing the level of protection offered by the proposed buffer and blast provisions.

Terrestrial Ecology (Section 6.3)

Recommendation 49: The Commission recommends that concerns about the adequacy of the flora assessment and identification of the vegetation associations present in the project area be resolved to the satisfaction of OEH prior to approval of any extension to open-cut mining in the project area and prior to any assessment of adequacy or otherwise of the biodiversity offset package.

The Colong Foundation supports the finding by the Commissioners that the flora in the proposal area is generally intact and diverse, and the acknowledgement that rare (ROTAP listed) species in addition to threatened species and cumulative impacts upon them are important considerations.

The Foundation believes Cumberland Ecology wrongly mapped the 'Exposed Blue Mountains Sydney Peppermint – Silvertop Ash Shrubby Woodland' vegetation community. This community is named after the two most commonly found eucalypt trees in the Greater Blue Mountains Region. The same locations within the project area were mapped by Benson and Keith in 1990 as the 'Tablelands Grassy Woodland Complex', which is a poorly reserved plant community.

The 'Tablelands Grassy Woodland Complex' located in the project area should be reserved. The Colong Foundation considers that the large areas mapped by Cumberland Ecology as 'Exposed Blue Mountains Sydney Peppermint – Silvertop Ash Shubby Woodland' (a very common woodland type) incorrectly characterises the vegetation.

The Gardens of Stone National Park located two kilometres to the north is mostly Permian sedimentary rocks of the Shoalhaven Group, underlain by a basement of Palaeozoic metamorphic rocks and even some Silurian limestone, not the rocks of the Illawarra Coal Measures that develop different vegetation types. The Illawarra Coal Measures rocks do not outcrop extensively in the Gardens of Stone National Park or the Mugii Murum-ban State Conservation Area. Where these strata do outcrop in these reserves they do so on steeply sloping talus slopes that develop different vegetation, mapped by Benson and Keith as the well conserved Talus-slope Woodland, not the poorly conserved 'Tablelands Grassy Woodland Complex'.

Recommendation 50: The Commission recommends that, given the acknowledged high quality and species richness of the native vegetation present in the project area, the assessment focus should be on the overall quality of the habitat under threat and its biodiversity value rather than just on the threatened species component which is the focus of the EA.

The Colong Foundation believes that the proposal area contains one of the best remnants of 'Tablelands Grassy Woodland Complex' on rolling landforms developed upon Permian sedimentary rocks of the Illawarra Coal Measures. Comparisons of the project area's vegetation with the vegetation in the Gardens of Stone National Park, Marangaroo National Park, Kanangra-Boyd National Park and Winburndale Nature Reserve are largely irrelevant because these parks are on different geologies. Different geologies and terrain produce different ecosystems.

Recommendation 51: The Commission recommends that calculation of edge effects be required to the satisfaction of OEH before the project is submitted for determination.

Edge effects should be contained within the Coalpac proposal area, not on land managed by other entities. Edge effects are important for managing adjacent land uses, including the proposed Gardens of Stone Stage 2 reserve. Edge effects: weeds, feral animals, trail bikes and fire need to be identified and managed through a site management plan, and should not be calculated as this recommendation proposes to do. Coalpac's poor weed management record and lack of a plan to control the specified edge effects are further evidence that development consent should not be granted.

Recommendation 52: The Commission recommends that the cumulative impacts on the biodiversity values of Ben Bullen State Forest and the region of this project, together with the proposed Pine Dale Stage 2 Extension, be considered before any assessment of this project is finalised.

In determining cumulative impacts DoPI should consider that these also include the destruction of the talus slopes and forested stream flats directly below the Great Dividing Range where the Range swings most easterly and reaches within the Sydney Basin. Surely such an impact will be a significant one for biodiversity.

If the Coalpac proposal is approved, the second part of this recommendation is very unlikely to be undertaken before the environmental assessment for the proposed Pine Dale open-cut is released. ***One cumulative impact will be that electric power generation in the Lithgow Region will become dependent upon poor quality thermal coal from open-cut mines. As a result, the highly scenic Gardens of Stone region will become 'bath ringed' by open-cut coal mining operations, including areas in the headwaters of the Coxs River catchment.***

Recommendation 53: The Commission recommends that the following three principles be accepted as underpinning assessment of biodiversity impacts for this project:

rehabilitation cannot restore the existing vegetation associations or ecological balance of the area;

rehabilitation to mature woodland is unproven for open-cut mines in NSW; and

the impacts on biodiversity from this project are incompatible with reservation proposals for Gardens of Stone Stage II.

The biodiversity assessment should also note that the unique topographic position and geology of the proposal area should be assessed. The 'irreplacability' of the proposal area should be assessed. What other part of NSW contains broadly intact and contiguous areas of 'Tablelands Grassy Woodland Complex' on rolling landforms developed upon Permian sedimentary rocks of the Illawarra Coal Measures?

Recommendation 54: The Commission recommends that, given the considerable uncertainties concerning the likelihood of rehabilitation on this project area being capable of delivering a satisfactory biodiversity outcome, rehabilitation not be given credence as a mitigation strategy in the assessment.

The Colong Foundation encourages all mining companies to improve rehabilitation standards through research, but rehabilitation can never restore a natural area. Once open-cut mined, an area's near-surface groundwater is lowered, the soils are mixed with subsoils, surface drainage increases downwards, and for a natural area, its ecosystems are gone forever.

In regard to biodiversity and restoration of talus slopes, the best rehabilitation merely visually screens the damage done to the natural environment, and to varying degrees, reduces the inevitable erosion and water pollution. The recovery of common species at much lower densities may be possible on talus slopes but such areas will never be suitable habitat for threatened wildlife or suitable for passive recreation.

Recommendation 55: The Commission recommends that, until the baseline biodiversity characteristics of the site have been resolved to the satisfaction of OEH, assessment of the adequacy or otherwise of the revised offset package should not proceed. The Commission also recommends that particular attention be given in the assessment to the essential nature of the trade-off being proposed, i.e. it is a proposal designed to exchange a number of fragmented areas that generally require extensive rehabilitation work and are currently not considered suitable for reservation, for a single area of high quality habitat that adjoins other areas of high quality habitat and is already proposed for reservation.

This is a very prescient recommendation by the Commissioners.

Ecological integrity should be more highly regarded than it is currently, as it is the most endangered aspect of the natural environment. The proposal area can be reserved as part of an interconnected system of national parks and reserves stretching from the Hunter Valley to the Southern Highlands and beyond. This area would make an excellent contribution to the reserve system because of its internationally significant pagodas that are surrounded by poorly reserved woodland and forest communities. There are few reservation opportunities of this quality and potential remaining in NSW, especially where such areas can be easily added to the existing reserve system.

Water (Section 7)

Recommendation 56: The Commission recommends the discharge from Invincible Colliery, Licensed Discharge LDP001, should be discontinued.

This discharge bore should be physically removed and the site in Ben Bullen State Forest rehabilitated so the potential for this open-cut mining proposal to pollute the Coxs River catchment is terminated.

…

Recommendation 58: The Commission recommends the Proponent should reassess predicted depressurisation and groundwater inflows, in consultation with NOW to provide a greater level of confidence that problems will not arise with groundwater or surface water resources. If this cannot be achieved because of insufficient monitoring then production should not be increased for two years while additional monitoring and modelling is carried out to confirm the predictions in the EA.

The boundaries of the underground workings are poorly known and the Colong Foundation supports the exclusion of highwall mining from the proposal to eliminate the risk of depressurising the old workings. The mine water in the old workings is polluted and should not be released into surface waters.

…

Recommendation 63: The Commission recommends the predicted changes in weather due to climate change in NSW should be included in the water balance modeling for the life of the project unless it can be demonstrated the modelling to date has been conservative enough to account for this.

Concur with Dr Washington's remarks.

…

Recommendation 67: The Commission recommends endorsement of DRE's requirement for extinguishment of all subsurface combustion in overburden emplacement areas and underground mine workings to occur before mining is conducted within 1 km of these areas.

The DRE takes a precautionary approach when the issue is mine safety. Environmental protection is of equal importance to mine safety and should also receive a genuine precautionary approach, rather than the compromised form of risk management currently in operation at most collieries.

Traffic and Transport (Section 8.2)

Recommendation 68: The Commission recommends that the concerns about the proposed 13% increase in heavy vehicle movements on the Great Western Highway raised by Blue Mountains City Council and Lithgow City Council be referred to the RMS for advice as part of any further assessment of the project.

A 13% increase in heavy vehicle movements on the Great Western Highway as a result of this proposal is unacceptable due to the impact on the amenity and road safety of Blue Mountains towns and villages.

All coal product from the southern part of the Western Coalfield must continue to be hauled by rail. The incremental increases in road haulage that will inevitable come via various future development consents for coal mining will very unpopular with Blue Mountains residents.

The haulage of sand by truck from this remote area is also unacceptable.

…

Recommendation 71: The Commission recommends that the Proponent satisfies the Department that transport of sand cannot be undertaken by rail in whole or in part.

Sand haulage by road through the Blue Mountains communities is unacceptable due to the impact on the amenity and road safety of Blue Mountains towns and villages.

The proposed sand mining will delay and increase the complexity of mine rehabilitation. The sand mining proposal should not proceed.

A sand proposal must be subjected to an adequate environmental assessment. There are no details regarding the sand mining proposal.

Adding a sand mine proposal to a coal mine proposal is no way to regulate the environmental impacts of the extractive industry, especially if the sand is from acid forming sandstone rock – the Marangaroo Formation. The management of acid generating sulphide materials within the sandstone has not been explained.

Recommendation 72: The Commission recommends that no export coal is permitted to be carried by road to Port Kembla without further assessment of the potential traffic impacts.

The determination of the development consent is the time when a decision to refuse truck haulage should be made. Rail haulage is a long-standing practice and the only appropriate means to haul coal from the Western Coalfield to Port Kembla. The deferral of decisions of this matter until further studies is, in effect, countenancing a delayed approval of haulage of coal by truck. Impacts on the communities which must suffer more dangerous, noisy trucks are well known and there is no reason for a change in policy by decision-makers. Truck haulage from the Western Coalfield to Port Kembla for coal should not be tolerated.

Recommendation 73: The Commission recommends that approved hours for the transport of coal and/or sand by road be restricted to between 0700 and 2130 hours Monday to Saturday with no transport on Sundays or Public Holidays.

Except for haulage to power plants on an emergency basis, the Colong Foundation opposes these arrangements for mines in the Lithgow Region.

…

Recommendation 75: The Commission recommends that all trucks leaving the project site have their loads covered so as to prevent the spillage of coal and emission of coal dust.

Coal hauled by train is not different from the coal hauled by truck and in both cases the load should be covered to prevent coal dust emissions.

Aboriginal Cultural Heritage (Section 8.3)

Recommendation 76: The Commission supports AECOM's recommendation that a detailed assessment of identified rock shelters is required prior to commencement of any mining operations within 500m of each identified rock shelter.

A qualified independent archaeologist should undertake an assessment of all escarpments in the project area, not just some escarpments as was done for the environmental assessment. The remaining unexamined escarpments need to be walked and examined. Given recent discoveries of Aboriginal heritage in the area, more rock shelters of interest are likely to be found.

Recommendation 77: The Commission recommends that Aboriginal rock shelters in the project area should not be exposed to mining-induced impacts that could produce more than negligible consequences for the rock shelters. The Aboriginal Cultural Heritage Plan and the Blast Management Plan must contain measures to ensure that this outcome is achieved. Failure to achieve this outcome should be clearly identified as a breach of the approval and operations in the vicinity should cease until the project is compliant.

The last part of this recommendation is not logical. Damaged rock shelters cannot be restored. If damage occurs, penalties should be issued. Also, rock shelters must be known to be protected, so a further examination of the project area is necessary.

Recommendation 78: The Commission recommends that a monitoring regime is required that establishes the current condition of the rock shelters, that is capable of detecting any mining induced impacts and that includes comprehensive reporting requirements.

The determining authority must ensure that all rock shelters are identified before this recommendation is applied.

…

Recommendation 80: The Commission recommends that if the Department recommends approval an Aboriginal Cultural Heritage Management Plan (ACHMP) should be required by way of a recommended condition to protect ACH sites and artefacts including the rock shelters. The ACHMP should include elements set out by AECOM (2011), address matters raised by the OEH in relation to the scope of the ACHMP in its submission dated 4 June 2012 and also address relevant matters set out in OEH's letter dated 4 December 2012 including retrieval of information from the rock shelters.

DoPI should not recommend approval.

Non-Aboriginal Cultural Heritage (Section 8.4)

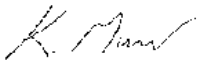
Recommendation 81: The Commission recommends that the standard for blasting to be applied to both the Carleon Coach House and the Cullen Bullen General Cemetery is for 'negligible impact', and this standard and the method to achieve it should be included in any conditions of approval and the relevant management plan(s).

Blasting standards need to be specified to ensure negligible impact to cultural heritage sites, not the proposed ad hoc trial and error approach. The mining industry's risk management approach seeks to maximise coal recovery and minimise environmental protection when precautionary standards are omitted for consent conditions.

…

Thank you for the opportunity to make a submission to DoPI.

Yours faithfully,



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Appendix A

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B. App. Sci.
29/1/2013

Buffer requirements for fauna

Large-eared Pied Bat (Chalinolobus dwyeri)

The Large-eared Pied Bat (as well as the Large Bentwing Bat which also occurs in the area, and is also classified as Vulnerable under the TSC Act), would be severely impacted by any blasting, habitat removal, direct operational impacts, etc., and indirect impacts, e.g. subsidence, altered hydrology, dust, noise and lighting within at least several kilometres of their roost sites.

The CoalPac assessment notes that foraging for this species occurs within close proximity to the roost sites in caves and overhangs on sandstone cliffs. This is in fact, untrue. The author has trapped this species up to 2 kilometres from escarpment habitats, foraging over woodlands and cleared lands – while another researcher has trapped and recorded this species travelling substantial distances along watercourses draining from escarpments. It is not uncommon for bats to fly 5- 10 kilometres while foraging.

If this species is present in the proposed mining area – it WILL be impacted.

Brush-tailed Rock Wallaby (Petrogale penicillata)

Home ranges for Brush-tailed Rock Wallaby have been found to be roughly rectangular around clifflines, ranging from 6 to 30 ha in size (400-900 m along the cliff), with an average of 15 ha (700 m along the cliff). Males appear to have larger home ranges than females, and studies indicate that animals usually move no more than 2 km from their refuges (Lim et al. 1981).

Any buffer less than 2 km from any populations of this species is inadequate.