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Springvale Colliery Extension Proposal

Submission
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Introduction

The Australia Institute welcomes the opportunity to make a submission on the Springvale Colliery Extension Proposal. Our submission relates to the Economic Impact Assessment of the proposal by consultants AIGIS Group, included as Appendix O to the Environmental Impact Statement (EIS).

The Economic Assessment of the Springvale project does not comply with Australian and NSW government guidelines for economic assessment and makes basic technical errors in its application of cost benefit analysis and environmental economic techniques.

The assessment fails to discuss the major costs and benefits of the project, giving decision makers no insight into the financial strength or otherwise of the project and the reliability of the estimates of economic benefit.

One major technical error is the inclusion of all wages in the benefit calculations of the project. This assumes that all employees would otherwise be unemployed for the duration of the project, an assumption that is not realistic at any time other than during a deep economic depression, which is clearly not the case in NSW.

Royalty revenue is the main financial benefit of the project, but calculations are not transparent in the economic assessment. From what can be ascertained the analysis does not consider the range of royalty deductions that are available to the proponent, which serves to heavily overstate the royalties the project may generate.

Attempts have been made to evaluate the environmental impacts of the project. While these attempts are welcome and some of the references used are important studies, the application of environmental economic techniques does not meet standards expected in the economics profession. Environmental costs seem heavily understated.

Due to the overstatement of the project's benefits and the understatement of its costs, it is likely that the project represents a net economic loss for the NSW community. We urge decision makers to reject the project on this basis.

Main costs and benefits

A key shortcoming of the AIGIS Group cost benefit analysis is that it does not discuss most of the key costs and benefits of the project. There is no discussion, reference or working shown for important issues such as:

- Capital costs
- Operating costs
- Coal prices and revenues

It seems that these values are referred to in the assessment as being commercially sensitive:

> *The financial appraisal process and its outputs are highly commercially sensitive. As such this material is unsuitable for presentation in a document which is intended for public exhibition and is excluded from this Economic Assessment on that basis. The economic aspects assessed in this report are those that allow the community to*

> *consider the project in the context of social, economic and biophysical factors that are relevant to them, as required under the EP&A Act.*[1]

The suggestion that the financial strength of the project is not important to the NSW community is incorrect. The community and decision makers should have an understanding of the project's economics to ensure that the claimed benefits – such as jobs and royalty revenues – actually do materialise. Where projects are financially weak, they fail to provide these benefits but still impose costs on the community.

For example, the Stratford coal project in Gloucester is under heavy financial pressure, as was evident from its EIS and submissions on it. The recent Planning and Assessment Commission (PAC) consideration of that project paid close attention to the economics of the project and the implications for the community:

> *The direct employment figures need to be viewed in the light of the economic pressure identified above. As the [Department of Planning's report] points out at p.50 the workforce at Stratford has already been reduced from 125 to 71 in response to the current economic conditions. Given the forward coal price projections included in Campbell's submission it would seem reasonable to assume that there may be a number of occasions in the proposed life of the Stratford mine when substantial cutbacks would occur.*[2]

Discussion of project economics, including costs and benefits, is important for decision makers. Transparent analysis which gives decision makers confidence that the proponent will be financially strong enough to provide employment, pay royalties and comply with conditions is of the utmost importance. This is emphasised in the NSW Treasury *Guidelines for use of Cost Benefit Analysis in mining and coal seam gas proposals*:

> *Benefits and costs should be estimated where possible as those that accrue for New South Wales. In the first instance, it will generally be most practical to assess all major costs and benefits to whoever they accrue and then adjust to estimate the proportion of these attributable to residents of the State.*

Decision makers should note that nearly every other coal project in NSW has provided a considerable level of detail on costs and benefits without compromising their commercial confidentiality requirements. For example:

- Maules Creek Coal Project
- Bulga Optimisation Project
- Ashton South East Open Cut
- Stratford Coal Project
- Cobbora Coal Project[3]

It is essential that more details of the economic and financial aspects of this project are provided to decision makers and the community to ensure confidence in the economic assessment.

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[1] (AIGIS Group, 2014)p13
[2] (PAC NSW, 2014) p67
[33] (DAE, 2013; ECS, 2012; Gillespie Economics, 2011)(Gillespie Economics, 2009, 2012a, 2012b; HVRF, 2009)

Labour, wages and opportunity cost

The most significant technical error in the Economic Assessment is the treatment of employment. Decision makers should certainly consider the jobs of the 312 people[4] who work at the Springvale mine and the disruption they would experience if they needed to find other jobs. However, the value of employment is fundamentally overstated in the Economic Assessment.

The Economic Assessment treats all wages earned by workers as a benefit of the project. While wages are beneficial to workers, they are a cost to the mine, so the treatment of wages in cost benefit analysis needs to be carefully considered.

The standard assumption for cost benefit analysis is that workers would work in other jobs if this project did not go ahead, as is made clear in the federal guidelines for cost benefit analysis:

> *As a general rule, it is recommended that analysts assume that labour, as with other resources, is fully employed. Moreover, unless the project is specifically targeted towards the goal of reducing unemployment, it can be expected that many of the jobs will be filled by individuals who are currently employed but who are attracted either by the pay or by other attributes of the new positions.*[5]

Cost benefit analysis only includes wages as a benefit if it can be shown clearly that workers on the project would not otherwise have a job, or be engaged in any productive activity. In times of very high unemployment this may be a possibility, but with NSW unemployment at around 5.8 per cent, this is not an appropriate assumption. To include wages as a partial benefit, it has to be shown that some degree of the labour on the project would otherwise be unused, as is emphasised by NSW Treasury:

> *It can be argued that in times of unemployment the opportunity cost of labour employed on a project is less than the wage costs, and project costs and benefits should be adjusted accordingly. However, in practice such adjustments are not generally made and are not recommended.*[6]

AIGIS Group make no attempt to estimate what portion of workers on the project might otherwise be unemployed and in including the entire wage bill as a benefit, they assume that all workers would be otherwise unemployed for the duration of the project. In a highly skilled industry like mining this is clearly incorrect, as these skills would be used in other mining, construction and engineering projects. This is stressed in discussion of cost benefit analysis commissioned by the proponents of the Maules Creek Coal Project:

> *BCA involves the comparison of the 'with and without' project circumstances. The use of resources with and without the mine must therefore be considered. Without the mine, the resources to be allocated to the mining operation would be engaged in other uses in the economy. These are the opportunity costs of the proposed mine. Given that markets for these resources (land, machinery, labour etc.) in the Australian economy are relatively competitive and not highly distorted by subsidies and regulations, market prices reflect these resources opportunity costs.*[7]

[4] (NSW Trade & Investment, 2013)
[5] (Department of Finance and Administration, 2006) p40
[6] (NSW Treasury, 2007) p48
[7] (Bennett, 2011) p2

The correct treatment of the wages related to the project is to treat them as a cost to the proponents, one that will be covered by revenue from sales. If it can be shown that some portion of this employment would otherwise not exist, some small amount can be included in the cost benefit analysis, however this is not standard practice in NSW or more widely in Australia.

The result of including wages as benefits is that the AIGIS Group cost benefit analysis overstates benefits by present value $648.2 million. Under standard assumptions, none of this amount would be included in a cost benefit analysis.

Royalties and taxes

Little detail is provided on the royalty calculations in the economic assessment. The estimated present value of $201 million seems certain to be an overestimate for several reasons.

Firstly, this sum is based on a 7.2 percent royalty rate. This is correct for underground mines, but does not allow for the many deductions available to producers, which often reduce royalties to a fraction of what this rate would suggest. Allowable deductions include:

- Coal processing expenses (beneficiation)
- Australian Coal Association Research Levy
- Subsidence Levy
- Mine Rescue Levy
- Long Service Leave Levy
- Expenses for insurance, bad debts and others.[8]

Secondly, it is unclear what coal price and mine production assumptions these calculations are based on. If it is made under an assumption of 4.5 million tonnes per year production, over the life of the project, this assumes a coal price of $74 per tonne (AUD). As the quality of this coal is not specified, there must be discussion of why that value is being used.

At $74 per tonne, royalties before deductions are $5.32 per tonne. If the proponent is eligible for the full $3.50 per tonne beneficiation deduction and deducts the $0.05 research levy, royalties will be as little as $1.77 per tonne. Assuming 4.5 million tonnes per annum production as mentioned in the Economic Assessment, this results in annual royalties of $8.00 million, or present value of $66.87 million over the life of the project. This is just 33 per cent of the royalties forecast by AIGIS Group.

Decision makers must ask what quality of coal will be produced, what price the proponent is hoping it will command on the market and if any marketing agreements have been made with domestic customers which might reduce royalties to the NSW public – this has been an issue with the Cobbora coal project and several Coalpac projects.[9] As there is no discussion of coal quality and specifications, or of marketing arrangements with domestic and export customers, pricing and royalty calculations are unreliable.

No working is provided for estimates of state and federal taxes. Given the complexities involved in estimating effective corporate tax rates paid by mining companies in Australia, decision makers should place little weight on these estimates. Independent estimates put

[8] See (NSW DII, 2008)
[9] (Economists at Large, 2012)(PAC, 2012)

these as low as 13.9 per cent, far lower than the 30 per cent which seems to have been applied in the economic assessment.[10]

Summary of benefits

The benefits included in the cost benefit analysis are largely overstated or inappropriately used. A summary of these issues is provided in Table 1 below:

Table 1: summary of project benefits from EIS

Benefit	Value ($m)	Comment	Suggested value for inclusion ($m)
Wages	$648.2	Not included in cost benefit analysis as this assumes almost 100 per cent unemployment through the life of the project.	$0
Royalties	$201	Overstated. Includes no consideration of the deductions available for coal producers. Also based on unstated coal price and production assumptions.	$66.9m
Federal taxes	$22	Appears to be based on a 30 per cent effective tax rate and unstated coal price and sales assumptions. Suggest applying an estimate of half this sum in line with Richardson and Denniss (2011)	$11
Biodiversity offset provision	$2.9	Unclear as to why this is considered a public benefit as opposed to a cost of production incurred by the mine. There is no working to suggest that offsets will provide greater environmental value than what they are offsetting.	$0
Project impact controls and mitigation	$28	Entirely unclear as to why mitigation measures are considered a net benefit rather than a cost to the proponents. No justification or working to support this figure.	$0
Total	$902		$77.9

As shown in Table 1, the likely benefits of the project are far less than estimated by AIGIS Group. We suggest decision makers weigh up around $78 million in financial benefits as estimated above with the environmental costs of the project. The proponents estimate these also at around $78m, however, these costs seem heavily understated, as discussed below.

[10] (Markle & Shackelford, 2009; Richardson & Denniss, 2011)

Environmental impacts

Environmental costs associated with the project have been estimated through "benefits transfer". Benefits transfer involves taking the results of environmental valuation studies in one area and applying them to the area in question. Benefits transfer is not ideal – ideally detailed studies would be done relating to the project area. However this is not always practical or possible, so using benefits transfer can be an acceptable way of estimating environmental impacts in monetary terms, particularly where the alternative is to include a zero value for environmental damage.

Great care must be taken, however, to ensure that appropriate studies have been used and that their results have been carefully adapted to the relevant impacts. Analysts must outline why they have chosen particular studies and what they have done to "transfer" these results. Unfortunately no such analysis is provided in the Springvale economic assessment. Studies used in the assessment and some comments are provided in Table 1 below:

Table 2: Environmental valuation in the Springvale EIS

Impact	Study used	Comment
Noise	Day B, Bateman I & Lake I (2010): "Estimating the Demand for Peace and Quiet Using Property Market Data" - Hedonic pricing (impact on dwelling values)	This study is based on property sales data from 1997 in Birmingham in the UK. It is unclear why this study has been used, when similar studies have been conducted in Australia. It is unclear how these 17 year old results have been adapted to current prices in Australian dollars.
Subsidence, soil and water	Streever WJ, Callaghan-Perry M, Searles A, Stevens T & Svoboda P (1998): "Public Attitudes and Values for Wetland Conservation in New South Wales, Australia"	There have been many environmental valuation studies done in NSW since 1998, including in relation to coal projects and subsidence. Why this one is used and how its values have been applied is unclear. Of greater significance, however, a willingness to pay value has been calculated only for households in Lithgow. As the project's subsidence impacts will affect a national park, the willingness to pay of households in the rest of NSW or Australia will be relevant. This heavily undervalues the potential impacts of the project. Why this same study has been applied to estimate impacts on soil, surface water, groundwater and natural heritage impacts is unclear and seems inappropriate.
Air	DEC NSW (2005): "Health Costs of Air Pollution in the Greater Sydney Metropolitan Region"	This is a well-known study and an obvious choice to assist in evaluating this impact. More detail needs to be provided on how values calculated for the entire greater Sydney area have been applied to 17 individuals and whether this is the appropriate approach to

		take in valuing this impact.
Heritage	Allen Consulting Group (2005): "Valuing the Priceless: The Value of Heritage Protection in Australia"	This study relates to a nation-wide survey of attitudes towards heritage protection. Why this study was chosen when studies relating specifically to aboriginal heritage sites exist is unclear. Minimal detail is provided on how the results of this study have been adapted to the Springvale situation.
Biodiversity	Land & Water Australia (2005): "Making Economic Valuation Work for Diversity Conservation":	This reference is not an economic evaluation of biodiversity impacts, but a basic review of environmental economic techniques. The economic assessment seems to base its evaluation from a text box in this report relating to a separate study, Jakobsson K. & Dragun A. (2001) *The worth of a possum: valuing species with the contingent valuation method*. Environmental and Resource Economics 19, 211-227. AIGIS Group appear not to have read this source study and make no comment as to whether it's context in Victoria is applicable to the Lithgow area or how its results were adapted.
Visual	Curtis I.A. (2004): "Valuing Ecosystem Goods and Services: A New Approach Using a Surrogate Market and the Combination of Multiple Criteria Analysis and a Delphi Panel to Assign Weights to Attributes"	Curtis's ecosystems valuation approach is an interesting and important development in ecological economics. However, this study is based on evaluation of all aspects of ecosystems services in the Queensland Wet Tropics World Heritage Area. It is completely unsuitable for evaluation of visual impacts of the Springvale project.

Decision makers should give little weight to the evaluation of environmental costs in the Economic Assessment. It seems likely to heavily understate the value of potential damage to the Gardens of Stone National Park. While some of the studies used to evaluate these impacts are important pieces of research, the level of rigour applied to adapting these results to the Springvale project falls far short of standards expected within the economics profession.

Conclusion

The Economic Assessment of the Springvale coal project heavily overstates the benefits of the project and at the same time understates the costs. The cost benefit analysis makes basic errors in economic theory and fails to comply with various state and federal guidelines.

By not including any discussion of the major costs and benefits of the project, such as capital costs, operating costs and coal sales revenue, the Economic Assessment provides decision makers with no understanding of the project's economics. It is impossible to assess whether,

and under what circumstances, the project will be able to provide the jobs and royalties claimed by the proponents.

Wages are incorrectly counted as a benefit of the project. This is inappropriate as it assumes workers would otherwise be unemployed for the duration of the project – a situation highly unlikely in NSW.

The benefits of the project are the royalty and tax revenues that would flow from the project. While the assumptions of coal price and production behind the proponent's estimates are unclear, we estimate these would be worth around $78 million in present value terms.

The costs of the project are estimated by the proponent at around $78 million in present value terms. However, these seem heavily understated. As a result, the project is likely to represent an economic loss to the NSW community and it should be rejected on this basis.

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