Submission on Major Project Assessment Processes

Prepared by

Economists at Large Pty Ltd

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Report prepared by:

Economists at Large Pty Ltd
Melbourne, Australia
www.ecolarge.com
info@ecolarge.com

Phone: +61 3 9005 0154 | Fax: +61 3 8080 1604
65 Bevan St, Albert Park, Vic 3206, Melbourne, Australia

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Report author(s):

Roderick Campbell

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Introduction

Economists at Large is like "economists without borders", a network of economists who regularly contribute time and expertise to economics-related issues in the public interest. Over the past few years we have regularly been asked by community groups in several states to advise on and contribute to submissions on major projects. We have advised on and made submissions to around twenty different major projects in NSW, Queensland, Victoria and Western Australia. This work is conducted on either an entirely pro-bono basis, or heavily discounted, depending on the resources available to the client.

The majority of these projects have been coal mining projects in NSW and Queensland. Our work has predominantly consisted of submissions on Environmental Impact Statement (EIS) economic appendices or their terms of reference (ToR). Occasionally we have been asked to conduct independent analysis or to appear as expert witnesses in legal appeals. A summary of the most relevant projects to this submission is provided in the appendix. We are happy to provide copies of our submissions and other documents on all of these projects to interested parties. Most are currently on our website, www.ecolarge.com.

We have significant concerns about the Development Assessment and Approvals (DAA) processes in Australia and believe there are several ways in which they can easily be improved. Our key points outlined in this submission are:

- Economic assessment currently plays an inadequate, late and minor role in DAA processes.
- Earlier and more thorough economic assessment has the potential to improve DAA processes by allowing decision makers to assess project costs and benefits at a stage before proponents are heavily invested in the projects.
- The content of economic assessments of major projects are inadequate, often lacking cost benefit analysis.
- Cost benefit analysis that is commissioned by proponents regularly has shortcomings relating to:
    - Scope
    - Alternative projects
    - Environmental values
    - Health impacts
    - Greenhouse gas emissions
    - Social value of employment
    - Transparency of calculations
- Commissioned assessments often lack independence and are not subject to suitable review.

While we agree that there is significant room for improvement in Australia's DAA processes, we do not endorse parts of the Business Council of Australia paper that forms the "genesis" of the Commission's investigation, in particular relating to the cost of delays and cost of compliance. We believe these costs have been overstated in the Business Council's analysis.

Role of economic assessment in DAA processes

Economics is fundamentally about allocation of resources. As the Commission is no doubt aware, economics has a range of tools to assist with assessing if projects represent an efficient and desirable allocation of resources. Chief among these is cost benefit analysis, which, with its basis in welfare economics, seeks to assess if a project increases the welfare of society and is therefore desirable.

We believe this is the first question that should be asked and comprehensively answered in the project DAA process – does the project increase the welfare of society. Economic assessment, particularly cost benefit analysis, can be carried out early in the DAA process at minimal cost to proponents, the community and regulatory bodies. Indeed, it is the economic effects of major projects that are most prominently discussed by their proponents.

So it is of great concern to us, as economists and as people involved in the DAA process, that economic assessment is not conducted at the start of the process, but is usually relegated to an obscure appendix of an EIS. Some examples include:

- Maules Creek Coal Project (NSW) – Appendix Q (Gillespie Economics, 2011a)
- Cobbora Coal Project (NSW) – Appendix R (Gillespie Economics, 2012a)
- China First Coal Project (Qld) – Appendix 24 (AEC group, 2010)
- Watermark Coal Project (NSW) – Appendix AF (Gillespie Economics, 2013)

In this last example of the Watermark project, there are thirty-one other appendices including Stygofauna Impact Assessment (appendix U), Transient Electromagnetic Geophysical Survey (appendix V) and Geotechnical and Geomorphological Investigation of Grinding Groove Sites (appendix Q), which come before the economic assessment. Significant work, time, money and expertise goes into these appendices, before anyone has asked the question of "is this project even in the public interest?".

We believe this is a major shortcoming of DAA processes in all states at this time. Economic assessment is not conducted at an early *assessment* stage of the process, but as an appendix to a late *approvals* stage process. At this stage proponents have already invested considerable effort into their project and its assessment. There is already an expectation that the project will be approved. This is not the ideal part of the process to be asking if a project is desirable for the public.

The lack of importance attached to economic assessment gives an implicit assumption that all projects that a proponent proposes and deems financially feasible to them are in the public interest. This is clearly not the case logically, and most of our submissions demonstrate that proponents and their consultants are regularly overstating the benefits of proposals to the public.

We believe this is an opportunity to easily improve Australia's DAA processes. Economic assessment should be made compulsory at the early stages of project proposals, carried out with full transparency and subject to peer review. This would give decision makers and communities an opportunity to reject projects with dubious social benefits at a stage where proponents have less invested in the project, reducing some of the most tense standoffs. Conversely, with early, thorough assessment, proponents of desirable projects could build support for their project within the community and reduce much of the suspicion that surrounds various approvals today.

Thorough CBA early in the planning process will allow for projects that clearly demonstrate a benefit to society to proceed more rapidly into the detailed approvals process, while projects with minimal or dubious benefits can be eliminated without lengthy delays and legal appeals. This could ease pressure on other parts of the planning process and ultimately lead to a more efficient planning process.

Promising signs of change are emerging in NSW, where the state Treasury has released draft guidelines for assessment of coal and coal seam gas (CSG) projects, which would see cost benefit analysis included in the "gateway" part of the assessment process (NSW Treasury, 2012). Unfortunately, this would only apply to applications for coal and CSG projects on "strategic agricultural land" and even then would only be optional. We feel this is a mistake. By making CBA optional at this stage, proponents with projects of dubious wider benefit, or involve impacts that are difficult to value, eg destruction of habitat or risk to an aquifer, have no incentive to conduct this analysis.

We urge the Productivity Commission to recommend that economic assessment, through cost benefit analysis, be a compulsory part of early assessment processes.

Problems with major project economic assessments

Cost benefit analysis is the preferred method of economic project assessment by nearly all economists and government departments, including the Federal (Department of Finance and Administration, 2006), most state and territory departments, see for example (NSW Treasury, 2007)(Qld DIP, 2011), the Business Council of Australia (BCA, 2012a), the World Bank (World Bank, 2010), OECD (Pearce, Atkinson, & Mourato, 2006) and a long list of academic and consulting economists, for example (Dobes & Bennett, 2009)(Ergas, 2009).

Despite this rare unanimity from the economics profession, cost benefit analysis is routinely omitted from major project assessment in Australia. We know of no recent, formal cost benefit analysis of a major project in Queensland. Instead, economic assessments are based on impact assessments. See for example:

- Kevin's Corner Coal Project (Economic Associates, 2011)
- Alpha Coal Project (Economic Associates, 2010a)
- Alpha Railway Project (Economic Associates, 2010b)
- Carmichael Coal Project (GHD, 2012)
- Great Keppel Island Redevelopment Project (Forsight Partners, 2011)

All of these projects economic assessments are based on input-output modelling, despite the requirements of Queensland's own planning department, which recommends against this. The Department of Infrastructure and Planning's Project Assurance Framework states:

> *The primary method of economic evaluation of public sector policies and projects is cost-benefit analysis. Input-output methodology (or the use of multipliers) is not a preferred methodology for economic evaluations.* (Qld DIP 2011, p18)

It is important to realise that projects involving the sale of publically owned resources, such as minerals, or that impact heavily on environmental and social assets are also "public sector projects" and should be treated in the same way.

The reason proponents prefer analysis based on input-output models is that they always serve to overstate the impact of a project, presenting it in a favourable light. This is perhaps best demonstrated with an example. The Warkworth Coal Project (NSW) will employ between 148 and 951 workers depending on the stage of its operations (Gillespie Economics, 2009a). However, the economic impact assessment of the project, conducted with input-output modelling by (HVRF, 2009), estimated that:

> *a further 44,675 jobs will be generated in the Hunter Region economy from Year 1 (2011) to Year 21 (2031) because of the Warkworth extension.*

This figure of nearly 45,000 jobs was eagerly adopted by proponents in their push for the mine's rapid approval, but it relied on IO modelling and a definition of "job" that meant employment for one year.

It is important to understand the difference between cost-benefit analysis and input-output models. As the Department of Infrastructure and Planning explains:

> [Cost-benefit analysis should] *comprehensively identify and estimate as many costs and benefits of a project as can reasonably be measured, including those which can be thought of as social and environmental,* [in order] *to rank project options according to their net economic benefit.* (p18)

Whereas economic impact assessment, such as Input-Output modelling:

> *typically measures the impact of a project on the volume of economic activity in a region (e.g. on gross domestic product or employment),* (Qld DIP 2011, p23)

The NSW Treasury confirms these interpretations:

> *Model based economic impact assessment is not a substitute for a thorough economic analysis of a policy. The appropriate method for analysing policy alternatives is benefit cost analysis (BCA). BCA considers the best use of resources and as such treats labour inputs as a cost. An I-O based economic impact analysis is best seen as a complement to a BCA and does not provide evaluative guidance. An I-O model will estimate flow on impacts irrespective of the qualities of the policy triggering those impacts.* (NSW Treasury 2009, p4)

The shortcomings of IO modelling for project assessment are spelled out by the (ABS, 2011):

> ***Lack of supply–side constraints:*** *The most significant limitation of economic impact analysis using multipliers is the implicit assumption that the economy has no supply–side constraints. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.*
>
> ***Fixed prices****: Constraints on the availability of inputs, such as skilled labour, require prices to act as a rationing device. In assessments using multipliers, where factors of production are*

assumed to be limitless, this rationing response is assumed not to occur. Prices are assumed to be unaffected by policy and any crowding out effects are not captured.

Fixed ratios for intermediate inputs and production: *Economic impact analysis using multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. As such, impact analysis using multipliers can be seen to describe average effects, not marginal effects. For example, increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount;*

No allowance for purchasers' marginal responses to change: *Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.*

Absence of budget constraints: *Assessments of economic impacts using multipliers that consider consumption induced effects (type two multipliers) implicitly assume that household and government consumption is not subject to budget constraints.*

In fact, the use of overstated impacts from input-output modelling to justify projects was a key reason the ABS stopped publishing tables of I-O coefficients:

> *Production of multipliers was discontinued with the 2001–02 issue for several reasons. There was considerable debate in the user community as to their suitability for the purposes to which they were most commonly applied, that is, to produce measures of the size and impact of a particular project to support bids for industry assistance of various forms.*(ABS, 2011)

Some other projects have relied on computable general equilibrium (CGE) models for their economic assessment, for example:

- China First Coal Project (Qld) (AEC group, 2010)
- Australian Formula One Grand Prix (Victoria) (Ernst and Young, 2011)

While these models are an improvement over input output models, they are not a substitute for cost benefit analysis in assessing if the projects make the public better off. As Ernst and Young noted:

> *We note that the scope of the Assessment is limited to an economic impact analysis, and as such, it is difficult to make judgements as to whether the event leaves Victoria "better (or worse) off" from a welfare perspective. Economic impact analyses only measure the changes to overall economic aggregates. To understand whether the Grand Prix delivers net welfare improvements to Victoria, a full cost benefit analysis would need to be prepared (to include non-market benefits to society such as civic pride). A cost benefit analysis is outside the scope of the Assessment. (p55)*

In this quote Ernst and Young illustrate the crux of the problem – cost benefit analysis was outside the scope of their assessment. They were not asked or required by the project proponents or the Victorian Government to conduct a cost benefit analysis. The terms of reference (ToR) for major projects routinely direct consultants to conduct economic impact assessment, rather than cost

benefit analysis. See for example the ToR of the Carmichael Coal Project, section 5.1.2 (Queensland Coordinator-General, 2011):

> *Describe both the potential and direct economic impacts including:*
> - *estimated costs, if material, on industry and the community by assessing the following: property values; industry output; and employment*
> - *potential land severance issues as a result of proposed rail infrastructure and proposed mitigation measures (including rail crossings)*
> - *the indirect impacts likely to flow to other industries and economies from the development of the project (and the implications of the project for future development)*
> - *Include the volume of extractive materials to be used (particularly limited local resources) and any measures proposed to mitigate identified impacts*
> - *the distributional effects of the proposal including proposals to mitigate any negative impact on disadvantaged groups*
> - *mitigation strategies to manage project impacts through relevant Government policies and programmes*

While cost-benefit analysis is not explicitly excluded from the ToR, the emphasis on "impacts", "output", "employment" and "indirect impacts" are clearly directing consultants to this sort of analysis. We have made or assisted with several submissions on ToR of major projects in Queensland (specifically Teresa Coal Project, China Stone Coal Project and New Acland Coal Project) urging the government to require cost benefit analysis, in line with the State's own guidelines, thus far with no success.

Cost benefit analysis of NSW coal projects

In NSW most recent major coal projects have been subject to cost benefit analysis. The NSW Department of Planning's Director General's Environmental Assessment Requirements for these projects has generally required:

> *A detailed assessment of the costs and benefits of the Project as a whole and whether it would result in a net benefit for the NSW community.* (Quoting the requirements listed in (Gillespie Economics, 2011a) p4

We feel a similar requirement should be added to the requirements of assessments in all states.

Unfortunately, despite the inclusion of CBA in the DAA process of these projects, the analyses themselves make consistent errors and omissions, which generally result in the value of the project being overstated from the public's perspective. Some of these shortcomings are outlined below, others can be found in our submissions.

Scope

Although the requirements clearly demand assessment of the project from the perspective of the NSW community, the scope of assessments is typically confusing to follow, at times presenting values from a global perspective, other times from a national view and yet others at a strictly state level. This is clearly against recommended practice in economic assessment, as made clear by authors such as Eggert (2001):

> *Let us now turn to … issues that challenge and bedevil practitioners of social benefit-cost analysis. The first challenge is deciding "whose benefits and costs count" …. It sometimes is called the issue of standing--that is, who has standing in the analysis of benefits and costs? This is an issue of scope. Should the analysis include only those costs and benefits affecting residents of the local community? The state or province? The nation? The world? Whether the net benefits of a project are positive or negative often depends on how narrow or broad the scope of the study is.* (p27)

The assessment of the Maules Creek Coal Project provides an example (Gillespie Economics, 2011a). The assessment includes financial profits of the project that accrue to overseas shareholders as a benefit, while most non-market values such as loss of native forests were considered from a NSW perspective. Greenhouse gas emissions were considered from a national viewpoint. Other assessments use similarly confusing analysis, for example Gillespie Economics, 2010, 2011b, 2009a and 2009b). The result of these errors is to overstate the benefits and understate the social costs of the project. This has been confirmed in review commissioned by proponents such as (Bennett, 2011) and to some extent rectified in later assessments such as (Gillespie Economics, 2012a & 2012b).

Assessment of alternative projects

Cost benefit analysis is able to compare and rank several projects or options for a single project. Unfortunately this capacity is not utilised in recent DAA processes that we have observed. Cost benefit analysis of NSW coal projects invariably assesses only the proponent's favoured alternative compared to a baseline "no project" scenario. This disappoints community members who are opposed to that proposal (typically a large open cut mine operating 24 hours per day), but would often be supportive of alternatives which utilised underground mining, smaller pits or reduced hours of operation.

We understand that sometimes these options may be unfeasible to project proponents. The DAA process would be strengthened, however, by including these options in CBA to explain to the community why options that they might prefer are unfeasible. By conducting thorough and transparent CBA of several project options a project that is mutually acceptable may be able to be found.

Unfortunately proponents seem unwilling to explore such possibilities. The Maules Creek Community Council represent residents and landholders near the Boggabri extension coal project. They would support an underground mine, but are opposed to the open cut proposal as it will destroy native habitat and farmland and reduce air quality in the local area. The proponents of the project engaged consultants to analyse an underground mining option, WDS Consulting, (2009). WDS concluded that underground mining was both technically feasible and economically viable. However, in-depth calculations of the underground option were not included in the cost-benefit analysis of the Boggabri Mine as:

> *At the request of* [proponents] *Idemitsu, a full financial analysis was not within* [the consultant's] *deliverable scope. Our primary financial deliverables, … are to be integrated into Idemitsu cost models for internal economic analysis.* (WDS 2009, p7-1)

Despite WDS's findings, the economic assessment of the project did not include assessment of an underground option. The consultants defended this omission by saying that "*alternatives need to be **feasible** to the proponent"* (bold in original) (Gillespie, 2011). We believe the DAA process would be better served by explaining to the public and decision makers why a more acceptable alternative is not feasible rather than insisting that this is the case, even against the opinion of other consultants. This reluctance to assess other alternatives, and reluctance of state governments to demand such assessment, strengthens the view of many in the community that proponents and state governments are interested only in profit maximisation, and care little for neighbouring communities.

Estimates of environmental values

Major projects often have a considerable effect on environmental assets, for example the destruction of areas of native vegetation. The Maules Creek Coal Project for example will destroy a large part of the Laird State Forest, home of nationally threatened species and ecological communities. Cost benefit analysis of projects rarely includes estimates of such values, with the rationale that impacts on flora and fauna will be entirely offset by an ecological offset programme.

We believe this is inappropriate as it ignores the considerable debate between ecologists over the ability of offset programmes to achieve their aims in many cases. See (Bekessy et al., 2010) for example. We suggest it is beyond the expertise of economics consultants to adjudicate in these debates between physical scientists. The allocation of zero values to these external costs is just such a judgement. Environmental economics provides many tools for estimation of such values and alternative decision criteria such as Safe Minimum Standards, for use on occasions where irreversible damage such as species extinction is a risk. Such tools are not used in current DAA processes.

Health Impacts

Despite considerable concern around the health impacts of coal mining and transport operations, see for example (Hendryx & Ahern, 2009), no recent economic assessment of a NSW coal project has included any consideration of such impacts.

Greenhouse gas emissions

Cost benefit analysis should include all significant marginal impacts of a project. This includes greenhouse gas emissions. At present only direct emissions are considered. Projects of significant size will, however, have an impact on the marginal amount of coal consumed in the world and the greenhouse gas emissions associated with this marginal increase should be included in CBA.

This is not the same as arguing, as some environmental groups have, that a project should be responsible for all its downstream or scope three emissions. While the size of downstream

emissions may be an interesting factor from an environmental management perspective, the CBA of the project should consider emissions related only to the marginal increase in coal consumption caused by the project.

Coal industry economists such as Gillespie Economics argue that no downstream emissions are relevant as project coal would be replaced by coal of some other project and are thus not a marginal impact of the project. This implies perfect elasticity of coal supply, a suggestion not supported by the changing nature of coal prices, or by economists such as (Ball & Loncar, 1991).

Social value of employment

Economic assessments of NSW coal projects routinely include a positive external value relating to employment. The rationale for this value is that members of the public hold an existence value relating to employment in these mines, which accrues over and above the wages paid to workers. The idea that people might place an additional value on knowing people are employed in areas where other jobs might not exist is plausible. Indeed, employment initiatives in indigenous communities and other remote areas are routinely subsidised by the public. However, the suggestion that similar values exist for a coal mining jobs through the mining boom does not seem plausible.

Even if the existence of this value did seem certain, the magnitude of the values included in assessments clearly are not. For example, the Cobbora coal project assessment (Gillespie Economics, 2012a) incorporates a value of $192m across the life of the mine, suggesting the people of NSW would be willing to pay more than $325,000 to secure each job. Car industry subsidies attract searing criticism at around $4000. In the case of the Ashton coal project, (Gillespie Economics, 2009b) this external value accounts for nearly one third of the project's estimated net present value.

Economists at Large have not been alone in our criticism of this value. Other prominent economists such as (Deloitte Access Economics, 2012) have found that the value's inclusion is likely to overstate the value of the project. Even reviews commissioned by coal project proponents have urged against this value, (Bennett, 2011):

> *[The] EIA's inclusion of benefits associated with employment [is contentious]. The argument advanced is that people outside of the mine workforce enjoy benefits associated with people having jobs in the mine. The values of this 'existence benefit' of work estimated for the case of a mine in the southern coal field are 'transferred' to the current case. A number of points argue against this approach. First, there is a conceptual issue. In a fully employed economy, it is doubtful that people employed in the new mine would be drawn from the ranks of the unemployed. So people outside the mine are unlikely to hold any existence benefits for the jobs provided by the mine in that case.*

However, the use of this value persists. The Watermark coal project, currently on exhibition, includes a value of $324m, nearly a quarter of the estimated value of the project from an Australian perspective. See (Gillespie Economics, 2013).

Transparency of calculations and figures

Most cost benefit analyses omit data that are important for understanding the project's net benefit on the community. It is difficult for independent parties or decision makers to recreate assessments' calculations and assess the economic merit of the project. For example, the cost benefit analysis of the Cobbora coal project (Gillespie Economics, 2012a) had the following issues:

- Estimate of run-of-mine (ROM) coal, but no estimate of production coal volumes
- No discussion of coal specifications, only that it is of "lower energy value". Any assessment of a coal project should include specifications of likely moisture, ash and sulphur content and estimates of the energy value. These are essential in assessing the coal and the prices likely to be paid for it.
- Discussion of price used in assessment. Coal prices can be volatile and the assessment should consider the variability and likelihood of such movements.
- Sensitivity analysis provides very little useful information, only that the project's value is sensitive to changes in capital and operating costs, the value of coal and the discount rate. Without consideration of the likelihood and extent of these variations and their cumulative effects it is impossible to gauge the range of value of the project.
- The figures presented in the executive summary of both the economic assessment and the overall Environmental Assessment's as the range of net present values possible for the project, $1.94-2.14 billion relate only to the inclusion or exclusion of the social value of employment externality. These values have no relation to the sensitivity testing of the project and are presented in a way likely to mislead unwary readers.

Due to the lack of data outlined in the economic assessment it is impossible to recreate the present value calculations and check their veracity. For example, calculating the present value of average annual operating costs, reported as $392m, results in a value of $4.5billion (21 years, 7% discount rate) while the economic assessment estimates only $3.2b. This result is unusual as it suggests operating costs will be much greater later in the mine's life.

Our recommendation

We hope the Commission will recommend greater transparency in calculations of economic assessments. To do so need not breach commercial confidentiality, see for example how production and cost timelines are presented in (Economic Associates, 2010a), and could improve public confidence in DAA processes.

Independence and Review

Readers of the above section on CBA of NSW coal projects will have noted that all assessments have been carried out by the same consultancy, Gillespie Economics. We are unaware of any CBA of a NSW coal project carried out by a different consultant since 2009, although some impact assessments through input output modelling have been done by the Hunter Valley Research Foundation. Why there is so little competition in this space is unclear to us, as there is surely no lack of qualified economists in NSW. Given the repeated shortcomings of the assessments outlined

above, we feel that DAA processes could be improved with greater diversity of opinion and peer review.

A review process is essential to ensure that economic assessments reflect the effects of the project as they impact on the community, rather than the way that proponents and their consultants may predict. Several of our submissions have resulted in major revisions of CBA results and further reviews commissioned by proponents (see (Bennett, 2011) or local councils (see (Deloitte Access Economics, 2012). In each of these cases net present value (NPV) estimates were heavily revised downward by proponents:

- Maules Creek Coal Project NPV revised down $3.2 billion (from $8.7 billion to $5.5 billion).
- Warkworth Coal Project NPV to NSW community revised from $1.9 billion to $0.6 billion.

We feel that the only real scrutiny many project assessments have received has been from us and groups within the community. Planning departments do not seem to have the resources to thoroughly review economic assessments. Despite the existence of a $3 billion overstatement in the Maules Creek assessment, no submission from a government department had questioned the economic assessment of that project, see (Hansen Bailey, 2011).

Part of the pressure on planning departments relates to the time they are given to assess submissions and proposals. When we have had conversations with planning officers they always emphasise the number of projects they have to assess and the tight timelines. Another aspect is expertise. Planning departments rarely have trained economists on staff or at advisory levels. For example, the only member of the NSW Planning and Assessment Commission who has an economics background is also a principal of consultancy Evans and Peck who consult heavily to the mining and "hydrocarbons" industries. We feel planning departments could benefit from greater input from economists.

Delay and compliance costs

The Issues Paper for the Productivity Commission's current study is heavily based on work by the Business Council of Australia. In particular, quotes from the Business Council relating to delay and compliance feature on pages 13 and 14 of the Issues Paper. While we agree that DAA processes can be improved, as outlined above, we do not agree with these quotes from the Business Council.

Delay

> [At] *a coking coal price of $200 tonne, a 12-month delay to a 10 million tonne per annum export coking coal mine in Queensland could reduce Queensland royalty revenue by $170 million* (BCA, 2012b)*(p.6)*

Delays in collecting revenue do reduce its value, however not to the extent cited in the example given by the BCA. The proper way to value this cost is the interest rate that Queensland would pay to borrow $170 million or inversely, the interest that could be earned from this money. Based on the Queensland government's long-term bond rate of around 4%, the cost of delaying $170 million of revenue by a year is more like $6.8 million. The same applies for project proponents – profits delayed do not disappear, they are discounted at an appropriate rate based on the opportunity cost

of costs incurred or revenue foregone. Discussing the cost of delays in this incorrect way serves to overstate the cost of delays on all parties and overstate the need for reform.

Compliance costs

> *An Australian National University study estimated a direct cost to all industries of up to $820 million over the life of the EPBC Act. (p.6)*

The BCA paper quotes the upper end of the range estimated in the source document. The original source for this estimate is (Macintosh, 2009) which presents a range of values for this cost of between $270-$820 million in nominal terms (p.5 and 135). Macintosh surveyed proponents who referred projects under the environmental impact assessment (EIA) regime between 2000 and 2009. The Australia Institute and the Minerals Council of Australia both supported the research.

To understand these costs estimated by Mackintosh (2009), they need to be placed in context. While $270-$820m seems a lot to a casual observer, when presented in the context of the value of project investment in Australia, they are only a small portion. In the BCA paper itself, it is stated "there are around $900 billion of committed and prospective investment opportunities in large-scale projects, mostly in resources and economic infrastructure" (p.5). Such costs as estimated by Macintosh (2009) represent just 0.03% to 0.09% of the value of the current investment pipeline for large-scale projects in Australia.

Conclusion

Australia's DAA processes could be significantly improved by better incorporating economic assessment. Despite the suitability of economic tools such as cost benefit analysis, current processes rarely take advantage of them. When economic assessment is utilised, it is at a late stage of the DAA process. It should be at the start of the process as the purpose of economic assessment is to ask if a project is in the interests of the community.

Earlier and more thorough economic assessment has the potential to improve DAA processes by allowing decision makers to reject proposals that are of dubious public benefit before proponents are heavily invested in the projects. Clearly beneficial projects can have their applications strengthened by this analysis. Current processes lack an early point for such information and decision, resulting in lengthy and indecisive processes.

Cost benefit analysis in particular should be made mandatory for major project DAA processes. Economic impact statements, particularly those done through input output analysis, should be discouraged.

Currently, cost benefit analysis is only consistently carried out in NSW. However, confusion about project scope, alternative projects, non-market values and transparency hinder the usefulness of the analysis.

While there is room to improve DAA processes, we feel the Business Council of Australia overstates the cost of delays and compliance, by citing high end figures in absolute rather than percentage terms and by equating delay with loss of net benefits, clearly against the principles of financial and economic analysis.

We hope the Productivity Commission will take interest in our submission to this inquiry and our work on many major project submissions. We would welcome the opportunity to expand on these points at a later stage.

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Appendix: Major Project reports by Economists at Large

Project	State	Client	Involvement
Boggabri Coal Project	New South Wales	Maules Creek Community Council	Review of economic assessment
			Comments on response to submissions
Maules Creek Coal Project	New South Wales	Maules Creek Community Council	Review of economic assessment
			Comments on response to submissions
China First Coal Project	Queensland	Bimblebox Nature Refuge	Review of economic assessment
Kevins Corner Coal Project	Queensland	Capricorn Conservation Council	Review of economic assessment
			Comments on response to submissions
Teresa Coal Project	Queensland	Capricorn Conservation Council	Submission on ToR
Tarrawonga Coal Project	New South Wales	Maules Creek Community Council	Review of economic assessment
			Comments on response to submissions
			Presentation to Planning and Assessment Commission
Tasman Coal Project	New South Wales	Internal	Review of economic assessment
Warkworth Coal Project	New South Wales	Bulga Milbrodale Progress Association	Expert witness appearance in NSW Land and environment court
Cobbora Coal Project	New South Wales	Mudgee District Environment Group	Review of economic assessment
			Presentation to Planning and Assessment Commission
Victorian coal allocation proposals	Victoria	Environment Vic	General economic analysis
			Review of economic assessment
Terminal 3 Port Development	Queensland	Internal/EDO Qld	Review of economic assessment
China Stone Coal Project	Queensland	EDO Qld	Submission on ToR
Great Kepple Island Tourism Redevelopment	Queensland	Capricorn Conservation Council	Review of economic assessment
Stratford Coal Project		Barrington-Gloucester-Stroud Preservation Alliance	Review of economic assessment

Ashton Coal Project	New South Wales	Hunter Valley Environment Lobby	Currently preparing for expert witness appearance in NSW Land and Environment Court
Carmichael Coal Project economic assessment review	Queensland	North Queensland Conservation Council	Review of economic assessment
New Acland Coal Project	Queensland	Doctors for the Environment Australia	Submission on ToR
Duchess Paradise Coal Project	Western Australia	Mardoowarra Community	General advice
Australian Formula One Grand Prix	Victoria	Save Albert Park	Review of economic assessment
			General economic analysis