

NSW



**DEFENDING THE ENVIRONMENT
ADVANCING THE LAW**

Submission on draft *Guidelines for the Economic Assessment of Mining & Coal Seam Gas Proposals*

prepared by

**EDO NSW
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Successful environmental outcomes using the law. With over 25 years' experience in environmental law, EDO NSW has a proven track record in achieving positive environmental outcomes for the community.

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Summary comments and recommendations

General comments

1. We welcome the Department's commitment to improve the **robustness and consistency of economic assessments** that are designed to inform communities and decision-makers about mining projects, including by way of the Guidelines.
2. The draft Guidelines need **significant further development, consultation and additional peer-review** before being finalised.
3. The Department of Planning and Environment should develop a **Consultation Charter** to ensure upfront, inclusive and equitable consultation with all stakeholders on important law and policy changes.
4. The Department should design and adopt a more **independent, arms-length and quality-controlled development assessment framework**.
5. We strongly support an **independent panel to peer-review** all economic analyses of mining projects. We further recommend:
 - a. **Panel membership** should allow for transferrable economic assessment experience in related fields, include environmental and ecological economists, with all advice informed by a thorough understanding of the environmental impacts being considered.
 - b. Peer-reviews should be **published** online when received by decision-makers.
 - c. The federal **Independent Expert Scientific Committee** under the EPBC Act is a good statutory model for expertise, transparency, process and rigour.
 - d. An equivalent panel should be extended to cover **all major projects** in time.
6. The Guidelines should be **independently reviewed** within 18 months of commencing. The peer-review Panel should be consulted on systemic issues.

Introduction to the Guidelines

7. The Guidelines should note that the **public interest** (in the deciding whether to grant consent) includes considering the objects of the Environmental Planning and Assessment Act 1979 (NSW) (**EP&A Act**). The Guidelines should specifically outline the principles of **ecologically sustainable development (ESD)**. The precautionary principle, intergenerational and intra-generational equity, biodiversity as a fundamental consideration, and full valuation of environmental costs, are all pertinent to be given effect in the Guidelines.
8. The Guidelines need clearer upfront guidance on the **role of cost-benefit analysis** in the decision-making process, and a statement that a positive cost-benefit analysis is important but not sufficient to an approval. Other matters such as significant risks,

equity and fairness (distribution of costs and benefits), and full consideration of the EIS are all important parts of decision-making in the public interest.

9. The Guidelines need clearer guidance on how to present **qualitative information** in a way that meaningfully informs all stakeholders and, importantly, decision-makers in weighing up qualitative and quantitative aspects of an economic assessment and Environmental Impact Statement (EIS).
10. The Guidelines must recognise the **limitations of economic valuation** in order to inform consultants, decision-makers and the public. This could include clear statements where certain techniques are considered inappropriate; or do not fully account for impacts; and examples of best practice.
11. Part 2 (Establishing the base case) places too much emphasis on using changes in market value of land and property to 'estimate the forgone value of the existing land use' (p 12). Various dimensions of social and environmental amenity 'forgone' are unlikely to be captured by property value changes.

Cost Benefit Analysis (CBA)

12. **Remove Option 2** from the cost-benefit analysis process. The 'minimum threshold analysis' option is not transparent enough to assist decision-makers and creates inconsistencies in the CBA process. Full cost benefit analysis is necessary.
13. The CBA should include public costs of **tax concessions** such as Fuel Tax Credits.
14. The Guidelines need additional mechanisms to **build-in risk and uncertainty** into the economic analysis. For example, it cannot be assumed that all mitigation measures will be fully successful, even if existing policies on social and environmental protection are applied. Where the risks and uncertainties are greatest, a precautionary approach is needed.
15. The Guidelines need additional requirements to assess and report on **equity and distribution** of costs and benefits across society and over time, consistent with ESD principles of intra-generational and inter-generational equity. This should include:
 - a. clearer explanation of which groups in society bear costs, benefits and risks;
 - b. estimated timelines showing which benefits and costs are expected when;
 - c. discount rates that better account for long-term future costs.
16. Adopt **lower discount rates** for social costs that better account for the long-term impacts of mining on the landscape and communities, as is done internationally.
17. Require the **cost of government regulatory compliance** to be built-in to economic assessments. This is consistent with the Grafton peer-review recommendation; and the Chief Scientist and Engineer's 2014 report on NSW coal seam gas regulation (recommendation 4 – full cost-recovery of mining industry regulation). Regulatory cost estimates could draw on the EPA's risk-based licensing categories.

18. Build-in the full costs and risks of **mine rehabilitation** to the economic assessment. There is little detail in the draft Guidelines as to how this should be accounted for, and current approaches are prone to undervaluation. This is a major cost and a liability that should be borne by project proponents, rather than NSW taxpayers and local residents (via clean up costs and loss of amenity or future use).

Local Effects Analysis (LEA)

19. The Guidelines should state that LEAs must be **objective, accurate and balanced**.
20. **Criteria and guidance** are needed on issues to prioritise and include in LEAs.
21. The Guidelines should not use **input-output multipliers** to account for the flow-on effect of local spending by mining employees in creating further employment. The approach is too uncertain, unreliable and not fit-for-purpose. It has been criticised by the ABS, the Productivity Commission and the NSW Land and Environment Court.

Environmental and Social Impacts

22. The Guidelines should not be finalised without further independent **peer-review of specific components** relating to environmental and social impacts, including:

- Aboriginal cultural heritage (to be agreed by Indigenous stakeholders);
- air quality and public health;
- noise impacts;
- biodiversity (including ecosystem services*);
- greenhouse gas emissions and climate change;
- groundwater;
- non-Aboriginal heritage:
- surface water;
- social impact assessment (equity and fairness, lifestyle and wellbeing);*
- mine rehabilitation;*
- cumulative impacts.*

* not dealt with in detail in the draft Guidelines.

23. The approach to **Aboriginal cultural heritage** requires detailed consultation with indigenous stakeholders, broader interpretation of cultural heritage, and integration with any forthcoming state-wide law reforms;
24. Further expert input is needed on **air quality and public health**, including from local health professionals in areas experiencing impacts, and the NSW Ministry of Health.
25. Consideration of **noise impacts** must fully account for on-ground experience. For example, the Guidelines should assess noise impacts from mining in the same way as air quality, where a cost is associated with every increase in noise, instead of being limited to how noise levels relate to the Industrial Noise Policy.

26. *Full valuation of biodiversity impacts can't rely solely on **biodiversity offset policies**. There are a range of benefits and values that existing policies do not address.*
27. *Costs and impacts of **greenhouse gas emissions** should quantify 'Scope 3' emissions, and the cost of climate change responses should be considered.*
28. *More work is needed to quantify and consider **groundwater impacts**, including considerations beyond water quality.*
29. ***Heritage impacts** and risks beyond the project site should be identified and considered.*
30. *The Guidelines need additional mechanisms to address and account for **other social impacts** that are not captured by **visual amenity**, including health and wellbeing; quality of life and sense of place; community cohesion; and adjustment, legal and negotiating costs.*

Introduction

Thank you for the opportunity to comment on the Department of Planning and Environment's draft *Economic Assessment Guidelines for Mining and Coal Seam Gas Projects* (**draft Guidelines**) and for the November briefings and discussions.

EDO NSW is an independent community legal centre specialising in public interest environmental and planning law. As environmental lawyers we have many years' experience helping local communities understand the environmental, social and economic impacts of mining and coal seam gas (**CSG**) projects in their area. This includes through community workshops, guides to mining and gas laws, law reform work and public interest court proceedings, such as the recent *Bulga* (2013), *Fullerton Cove* (2013) and *Ashton* (2014) cases.¹ We also have practical experience and ongoing discussions with Government on policies that the Guidelines rely on.

Economic analysis is one important dimension of environmental impact assessment of mining projects. In our experience, on one hand the economic analysis that underpins mining and gas proposals has had too little quality control, arms-length oversight, scrutiny or community understanding. On the other hand, economic data on benefits and costs has significant bearing on decision-making and approvals.

Accordingly, this submission provides comments that seek to improve empirical robustness, ensure clear context and guidance for consultants and decision-makers, and maximise environmental protection, public transparency and community involvement. These are essential components of a planning and decision-making framework that aims to achieve ecologically sustainable development (**ESD**).

We are particularly interested in how the Guidelines 'on paper' translate to and account for actual community experiences. This includes the Guidelines' ability to properly account for environmental, social and economic impacts in accordance with ESD principles, while recognising that some impacts are not reducible to a dollar value.

Decision-makers, proponents and communities need more guidance on how such *qualitative* impacts are to be considered, and how economic analysis (including cost benefit analysis) is weighed in the context of other parts of an Environmental Impact Statement (**EIS**).

Our submission makes **30 recommendations (summarised above)**, and generally reflects the draft Guidelines' structure. The submission is divided into the following sections:

¹ See past cases at: http://www.edonsw.org.au/mining_coal_seam_gas_cases.

- A. General comments
- B. Introduction to the Guidelines (Part 1)
- C. Establishing the Base Case and Defining the Project (Part 2)
- D. Cost Benefit Analysis (Part 3)
- E. Local Effects Analysis (Part 4)
- F. Appraisal of Environmental and Social Impacts (Part 5)

A. General comments

EDO NSW strongly supports efforts to improve the consistency, transparency and the ability to replicate economic assessments of mining and coal seam gas projects in NSW. Having said this, we have significant concerns with the draft Guidelines and the level of community engagement that has informed them to date.

We have appreciated Department of Planning staff making themselves available for briefings and discussions during the public consultation period. However, the overall consultation approach on these important and complex guidelines would have benefited from much earlier input from key stakeholders and communities. Equitable consultation with all groups would have set and managed expectations upfront.

With further work, the Guidelines will improve on the current practice of economic assessment for mining and gas projects. Nevertheless, as long as proponents appoint and pay their own consultants there will remain a risk of 'optimism bias', and the perception or risk of actual bias, in the preparation of Environmental Impact Statements (**EIS**). Overcoming this problem requires a more independent, quality-controlled assessment framework.²

In the meantime, we strongly support the Department's proposal for an independent peer review panel. It is also very important that peer-reviews are made publicly available (along with their terms of reference). This is consistent with the practice of the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development that assesses water impacts under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**).³

The Guidelines need to provide additional transparency and data quality assurance. In particular, all worksheets must be publicly available as part of the EIS process. Economic formulas must be available for expert and public review but protected from

² See for example, EDO NSW, *Submission to the Planning Review White Paper* (June 2013).

³ The Independent Expert Scientific Committee reviews and assesses impacts of mining projects on water resources under the EPBC Act; and reports publicly to governments to inform decision-making.

unauthorised or accidental changes. In sum, results need to be replicable based on the information that is presented publicly.

We have an overarching concern that the draft Guidelines rely excessively on assumptions that, taken as a whole, are likely to overstate the benefits and understate potential costs and risks to local communities, the State of NSW and beyond. We give two key examples that are dealt with in more detail below.

First, the draft Guidelines assume that *existing impact mitigation measures and policies will always be successful* (such as for cultural heritage protection, noise mitigation and biodiversity offsets); will *'fully compensate'* people for losses; and that only *'residual' impacts* need to be assessed (and then only in a few cases). We submit that these assumptions are unrealistic in practice. The Guidelines need to build in mechanisms to account for failure, or only partial success of these measures, to properly capture environmental impacts and communities' experience.

The second, related example is that the draft Guidelines give no specific guidance on how *risk* should be incorporated and weighed-up in the economic analysis – either by consultants or decision-makers. For example:

- What is the risk that the mine could go into care and maintenance for several years and impact on the project's profitability?
- What is the likelihood that the project footprint will expand in 10 years, via a mine modification application?
- What is the risk that the costs of mine rehabilitation were severely underestimated, and that taxpayers or the environment may bear the cost of more derelict mines?

Where the risks and uncertainties are greatest, a precautionary approach is needed.

Finally, there are a number of matters that the draft Guidelines do not address in detail, but that nonetheless have significant economic, social and environmental costs and benefits. In brief, these include:

- ecosystem services benefits provided by biodiversity (threatened and non-threatened) such as carbon storage and water, salinity and erosion protection;
- social impacts on quality of life, health and wellbeing, and sense of place;
- impacts on Matters of National Environmental Significance under the EPBC Act (as the scope of cost benefit analysis focuses on the State of NSW); and
- cumulative impacts of past, present and likely future activities (this is an area of ongoing deficiency in planning and development assessment – this must go beyond including other projects as part of the baseline impacts for later projects (p 35)).

B. Introduction to the Guidelines (i.e. Part 1)

The draft Guidelines (p 5) note that they seek to inform the consent authority in relation to public interest and likely impacts of the development. We agree that these are two principal considerations. However, the language is too categorical in suggesting that ‘estimating the net present value of the project to the NSW community’ equates to the public interest. This is only one aspect of public interest. The CBA will not be able to quantify or properly consider all costs.

Public interest should refer to ESD principles

The Guidelines should note that the public interest includes considering relevant objects under the *Environmental Planning and Assessment Act 1979* (NSW) (**EP&A Act**); specifically including the object to ‘encourage ecologically sustainable development’ (**ESD**) and its component principles.⁴

The Guidelines should set out the principles of ESD as they are particularly pertinent to mining. These include:

- the precautionary principle (dealing with *risk*),
- intergenerational and intra-generational equity (dealing with *distribution*),
- conservation of biodiversity (which is to be a *fundamental consideration*), and
- full valuation of environmental costs (including the polluter pays principle – that those who generate waste or benefit from environmental damage should bear the cost of avoidance, mitigation and restoration).

This submission gives examples of how the Guidelines can link to these principles.

Qualitative costs and benefits

As the Chief Judge of the Land and Environment Court has noted (extra-judicially):

*Traditional cost benefit analysis tends to squeeze out qualitative ‘soft’ values in favour of quantifiable ‘hard’ values. Undue attention and weight are given to quantifiable data to the detriment of unquantifiable data.*⁵

In our view, this criticism applies equally to the draft Guidelines. The Guidelines can begin to better account for qualitative values in three ways.

First, the Guidelines must clearly emphasise the passage in the Grafton peer-review (p 3) that the ‘CBA of a project represents just one component of an EIS’; and that a

⁴ EP&A Act, s 5(a)(vii). The EP&A Act adopts ESD and its principles as set out in the *Protection of the Environment Administration Act 1991* (NSW), s 6.

⁵ The Hon. B.J. Preston SC, ‘The adequacy of the law in satisfying society’s expectations for major projects’, International Bar Association Annual Conference, 22 October 2014, Tokyo, Japan, p 17.

positive Net Present Value (**NPV**) is a necessary pre-requisite for approval, but does not mean the project should be approved.⁶ It is inappropriate to generate a CBA that primarily seeks to identify a project's NPV without clearly specifying what impacts haven't been quantified.

Second, the Guidelines need to provide clear upfront guidance to consultants on how they are required to *present qualitative information*, in ways that are useful to the community and the decision-maker. For example, stating that the benefits cannot be discussed without equal discussion of unquantified costs and uncertainties. The draft Guidelines currently contain very little guidance on unquantified impacts (see p 24).

Third, the Guidelines (or other policy or regulations) need to give decision-makers clear guidance on how to *weigh up qualitative impacts* and risks alongside quantitative data. As this weighing-up is informed by the economic analysis and EIS, the Guidelines need to require clear and sufficient information to support an appropriate balancing of costs and benefits.

Intrinsic environmental values and limits to non-monetary valuation

Step 4 in the 'Key steps in a CBA' overstates the ability to accurately put a monetary value on environmental and social impacts, 'as they would be valued in money terms by the individuals who experience them' (Table 1.1, p 7). Many environmental assets are not reducible to (or fully accounted by) a monetary value, even by relying on various economic modelling options available. These approaches also exclude the intrinsic and broader value of environmental assets beyond the CBA's chosen scope.

Economic assessments of mining projects have not used these non-monetary valuation (**NMV**) approaches well to date. An example is the inadequate 'choice modelling' to price the loss of Endangered Ecological Communities in the Warkworth Coal Mine Extension proposal. The Land and Environment Court was particularly critical of this economic analysis in the Court's rejection of the proposal in 2013 (which was affirmed by the Court of Appeal).⁷ This example highlights some significant limitations of NMV, also discussed below under Part 5 (Biodiversity).⁸

⁶ The Guidelines could expressly include this passage from R.Q. Grafton 'High-level Peer Review of Guidelines for the economic assessment of mining and coal seam gas proposals' Sustainable Environment Group (2015) p 3
A CBA of a project represents just one component of an EIS. Thus, a positive NPV for a given discount rate is not sufficient information for a project to proceed. Ultimately, NSW government decision makers must weigh up the expected social, economic and environmental costs and benefits, as well as the risks and the distribution of costs and benefits, to be able to make an informed decision in the public interest.

⁷ *Bulga Milbrodale Progress Association Inc v Minister for Planning and Infrastructure and Warkworth Mining Limited* [2013] NSWLEC 48, at 470: <https://www.caselaw.nsw.gov.au/decision/54a639943004de94513da836>.

⁸ The Productivity Commission notes that the validity of such 'stated preference methods' remains 'contentious': *A Guide to Non-Market Valuation* (2014) at www.pc.gov.au/research/supporting/non-market-valuation. E.g. (p 2):

- 'there are many elements that practitioners need to get right to produce meaningful results
- 'value estimates are likely to be less reliable when respondents are asked about environmental assets that are especially complex or relatively unfamiliar to them.'

The Guidelines must recognise these limitations in order to inform consultants, decision-makers and the public. This could include clear statements where certain techniques are considered inappropriate; or do not fully account for impacts; and examples of best practice.

Distributional impacts

We support and welcome Step 7 of the 'Key steps in a CBA': 'Assess *the distribution of costs and benefits across different groups.*' The Guidelines need to provide substantive guidance on how and why this should be done. For example:

- a timeline of when different costs and benefits are expected to occur (as recommended by the Grafton peer-review, pp 9-10);
- specific analysis of which social groups will receive benefits or carry burdens (within and across generations);⁹ and
- statements addressing the equity and fairness of these distributional impacts, for example:
 - Would the project maintain or enhance the health, diversity and productivity of the local environment for the benefit of future generations?
 - Would the project reduce the ability of local residents and biodiversity to live in and enjoy a clean and healthy environment?¹⁰

Distributional impacts are important to the ESD principles of inter-generational equity and intra-generational equity.¹¹ The Chief Judge of the Land and Environment Court, speaking extra-judicially, gives instructive guidance based on the *Bulga* case:

The Court held that the BCA and Choice Modelling did not determine whether the project, if approved, would 'maintain or enhance the health, diversity and productivity of the local environment at Bulga for the benefit of future generations or the value of doing so'. The assessment also failed to consider adequately the burdens that would be placed on ... the residents of Bulga and the components of [biodiversity] in the Bulga environment, and the ability of those entities to live in and enjoy a clean and healthy environment. The Court concluded that the failures to consider adequately inter-generational and intra-generational equity limited the utility of the BCA and Choice Modelling to the Court 'for the purposes of evaluating, weighting and balancing the relevant matters to be considered in determining the Project Application.'¹²

⁹ For example, NSW shareholder benefits; compliance costs to government agencies; local employment benefits (and costs); costs or risk to Traditional Owners who may lose cultural heritage; private and public mine rehabilitation liabilities; opportunity costs to future generations from loss of biodiversity or land use options.

¹⁰ Preston (2014, above n 5, p 20), quoted in full below.

¹¹ On intergenerational equity see *Protection of the Environment Administration Act 1991* (NSW), s 6; on intragenerational equity see *Telstra Corporation Ltd v Hornsby Shire Council* [2006] NSWLEC 133 at 117.

¹² Preston (2014, above n 5, p 20). Emphasis added, citations omitted.

Discount rate devalues intergenerational equity

Distribution of costs and benefits over time, including between generations, are intrinsically linked to *discount rates*.¹³ While annual discounting is a widespread economic convention, it can also have distorting effects, by rapidly devaluing future social and environmental costs (and benefits) relative to the present.

The draft Guidelines propose (p 8): ‘A discount rate of 7 per cent per annum with sensitivity testing at 4 per cent and 10 per cent per annum should be used.’

We share the concern expressed in the Vivid Economics peer-review of the draft Guidelines in relation to this choice of discount rates:

The guidelines follow the whole of government guidelines on discounting, to ensure consistency across government. Seven per cent is a high figure compared with the figures used in other jurisdictions. The UK uses 3.5 per cent declining slowly after 30 years and France uses 4 per cent declining immediately to 2 per cent after 30 years. The Office of Management and Budget in the US uses both 3 per cent and 7 per cent but allows lower discount rates to be used for intergenerational impacts. The consequences of using high figures are that the government takes a short-term view in its decision making and that questions of intergenerational equity are discarded. Projects with high up-front costs and long-term benefits are disadvantaged and those with high future costs are advantaged.¹⁴

We recommend the draft Guidelines adopt lower discount rates that more realistically reflect the multi-decade impacts of mining on the landscape and communities. As noted above, this is being done internationally. We query whether a 10 per cent annual discount provides any meaningful consideration of future social costs and benefits.

High discounting of future environmental costs and land use opportunities seems particularly inappropriate, if it is accepted that the costs of climate change mitigation, adaptation and preventing species extinctions are likely to accelerate. A high discount rate shrinks the weight of future costs in decision-makers’ minds, whereas the significance of those costs is actually likely to grow.

¹³ Discounting attempts to put a ‘present dollar value’ on future impacts. It does so by reducing the estimated value of these impacts by a certain percentage for each year.

¹⁴ Vivid Economics, *Peer review of the Guidelines for the Economic Assessment of Mining and Coal Seam Gas*, October 2015, at 2.2.9.

Timeframes for economic assessment

The Guidelines need to be clearer about the timeframes that must be considered (to take account of long-term environment impacts and uncertainties), and avoid a situation where use of discounting assumes future costs have no present-day value.

The current drafting on timeframes for evaluation is ambiguous and of concern. The draft Guidelines (p 8) need to more clearly emphasise that ‘the evaluation period should be long enough to capture all costs and benefits’ of the project (such as impacts on biodiversity, groundwater and future land use) – not just ‘the expected economic life of the principal asset’ (the mine).

The suggestion that a long-term project should consider costs for 30 years from when the mine begins operating is inappropriate. For example, success of rehabilitation beyond the life of the mine will affect air quality and dust impacts in the future; and groundwater can take hundreds of years to recover. It is unclear how a ‘residual value for impacts beyond that period’ (30 years) will adequately take account of impacts on future generations.

C. Establishing the base case and defining the project (Part 2)

Part 2 of the draft Guidelines on establishing the base case places too much emphasis on using changes in market value of land and property to ‘estimate the forgone value of the existing land use’ (p 12). Various dimensions of social and environmental amenity ‘forgone’ are unlikely to be captured by property value changes.

D. Cost Benefit Analysis (Part 3)

‘Approach 2’ should be removed

We oppose the inclusion of Approach 2 (‘minimum threshold analysis’) as an alternative to full cost benefit analysis (**CBA**). Only a full CBA should be allowed. We note three reasons for this.

First, by reducing the amount of information required, it is unclear what public benefit this alternative approach provides to the community or the decision-maker.

Second, having two alternative approaches defeats the aim of improving consistency of economic analysis, which is otherwise one of the Guidelines’ potential strengths.

For example, the Vivid peer-review notes the ‘partial CBA’ in Approach 2 is ‘unconventional and may lead to confusion’ (Vivid Economics at 2.1).

Third, by not requiring proponents to provide information on estimated revenues and financial costs (net producer surplus), Approach 2 would weaken the economic assessment and legitimise some of the community’s strongest concerns with the current system. Historically, assumptions used in economic assessments have been a source of significant contention. This information is vital to ensuring public transparency and decision-making, including for public interest considerations.

Royalties, taxes and deductions

Allowable deductions (p 15) should be explicitly quantified so it is clear what the real royalties are likely to be. This will also allow continuous improvement of estimates. A table of royalty deductions should be included for transparency (see Table 3.3).

We support the inclusion of various other taxes and deductions (p 16) provided this is based on accurate data. While we cannot comment on the details of this, it is unclear why certain benefits and costs have been included (such as company tax payments) but others are not (such as Fuel Tax Credit concessions).

For example, the Guidelines should require the public cost of concessions under the Fuel Tax Credits Scheme (**Fuel Scheme**) to be included in the CBA. The Fuel Scheme allows mining companies to pay less for diesel fuel, which itself has environmental impacts. Like company tax, the Fuel Scheme is a federal program, but the concessions are partly funded by NSW taxpayers. According to the Australian National Audit Office, ‘The cost of the Fuel Scheme in 2009–10 was some \$5 billion,’ and the ‘mining industry was the main claimant group, by value’ receiving around \$1.7 billion in rebates.¹⁵ On these figures, it can be estimated that NSW taxpayers contributed around \$544 million to mining industry Fuel Scheme rebates in one year.

Regulatory compliance costs

We support the recommendation of the Grafton peer-review (p 5) that ‘Incremental compliance costs associated with projects, both before they are agreed to after they begin must be included as part of the overall assessment.’ It is important to recognise that regulation, monitoring and enforcement by departments and agencies including the EPA is a ‘societal cost’ (Grafton, p 5). This is also consistent with recommendation 4 of the NSW Chief Scientist’s review of CSG laws:

That the full cost to Government of the regulation and support of the CSG industry be

¹⁵ Australian National Audit Office (ANAO) Audit Report, *Fuel Tax Credits Scheme* (2011): <http://www.anao.gov.au/Publications/Audit-Reports/2010-2011/Fuel-Tax-Credits-Scheme> pp 12, 25-6.

*covered by the fees, levies, royalties and taxes paid by industry, and an annual statement be made by Government on this matter as part of the Budget process.*¹⁶

Mine rehabilitation costs and risks

Relatedly, the inadequacy of current mine rehabilitation frameworks, including full valuation of costs and liabilities, has been acknowledged by the NSW Audit Office,¹⁷ the Productivity Commission,¹⁸ and industry experts.¹⁹ The current calculation process focusses on short-term expenses and is highly likely to undervalue true long-term costs. Any discount rate applied to these costs must not undervalue future liabilities.

In addition to full valuation of *costs*, the Guidelines need to account for *risk of failure*. The summary of costs and benefits (Table 3.5) is an example where the draft Guidelines do not adequately account for risk over extended timeframes. For example, under 'Benefits', residual value of land (p 17) should account for the uncertainty of success in achieving the rehabilitation standard promised, both for natural areas and for land capability.

Benefits to workers

The calculations for economic benefit to workers (p 19) need to be publicly available. Concerns about use of multipliers are discussed under Local Effects Analysis below.

Public infrastructure

As mining and gas projects affect traffic flows, they can also affect the way infrastructure funds are allocated and prioritised. Public infrastructure costs (p 22) therefore needs to account for the fact that mining projects may divert funds from areas that may otherwise have been a priority (regionally or locally).

¹⁶ M. O'Kane, NSW Chief Scientist & Engineer, *Final Report of the Independent Review of Coal Seam Gas Activities in NSW*, September 2014.

¹⁷ NSW Audit Office, *Managing Contaminated Sites* (2014), 'Key findings' and 'Executive Summary':
Of the [38] high risk sites, seven large derelict mines on Crown land are potentially a high risk to the environment and public health, and may need to be notified to the EPA.
DTIRIS is yet to develop a long-term strategy for its other sites and is yet to recognise a liability for contamination in its financial report.

¹⁸ Productivity Commission, *Major Project Development Assessment Processes* (2013), pp 226-227:
Governments must ensure that efficient and effective measures are in place to guard against the risk that a mine operator might default on their obligations, and to protect the community from the cost of rehabilitating mine sites (including abandoned legacy mines). Experience with operation of the new [Mine Rehabilitation Fund] system in Western Australia is expected to offer valuable insights for other jurisdictions.

¹⁹ Lamb, D., Erskine, P. and Fletcher, A. (2015) 'Widening gap between expectations and practice in Australian minesite rehabilitation' *Ecological Management & Restoration* 16(3): 186-195.

Sensitivity Analysis

The Grafton peer-review of the draft Guidelines noted the need for more sophisticated sensitivity analysis (pp 4, 7). We understand this analysis is central to testing the model's uncertainties and the risk that its assumptions do not hold true. While we cannot comment on the further specific recommendations (Monte Carlo analysis etc), the Department should consider this and other risk-related concerns.

E. Local Effects Analysis (Part 4)

We note that the aims of the Local Effects Analysis (**LEA**) are to inform communities, identify local impacts and changes (based on the State-wide CBA), and provide information to help develop mitigation plans (p 25).

EDO NSW supports more transparent and accurate information on mining projects for local communities. While the LEA can contribute to this, it is limited in three ways:

- first by the fact that it is a proponent-driven rather than arms-length assessment of local effects;
- second by the significant discretion as to what is included and prioritised; and
- third by the use of unreliable or questionable techniques such as employment multipliers.

LEA is not arms-length or independent

On the first limitation, the Guidelines should state that the LEA must be objective, accurate and balanced. This would be aided by a template format and early peer-review requirement before public exhibition. We also support the Grafton peer-review recommendation (pp 9-10) to require a timeline of expected costs and benefits (including who those costs and benefits apply to).

The introductory section on the LEA emphasises 'two major [economic] effects' – employing people and purchasing goods (p 26). This section should also note significant negative impacts, including environmental and other social and economic impacts. While externalities are dealt with further on (p 31), adding this upfront would emphasise the balanced nature of the analysis required.

Discretion as to contents of LEA

The second issue, discretion, is most prominent in relation to environmental and social impacts (such as effects on local environmental assets, health, amenity and cost of living) including cumulative impacts. We note that the LEA is supposed to translate and align with the state-wide CBA. However, further guidance is needed

on how consultants are to identify '[priority] effects that are perceived to be material at the local level.' (p 9) The Guidelines need to define this process more clearly, and require evidence on why the LEA has included or excluded specified issues.

Further to this, the draft Guidelines don't appear to require specific local business surveys or household interviews to test the assumptions made about local effects. We note and strongly support the Grafton peer-review recommendation to include a summary of community consultation that informs the LEA (p 5). Household expenditure surveys or other methods to test employment-related assumptions (Grafton, p 8) should also be considered.

Employment effects should not rely on multipliers as proposed

The third significant issue with LEAs is the proposed use of employment multipliers. We are concerned at the potential for significant inaccuracies and overstatement in this approach. The use of such multipliers has been questioned by institutions such as the Land and Environment Court, Australian Bureau of Statistics, the Productivity Commission, and in the Grafton peer-review of the draft Guidelines (p 8).²⁰

F. Appraisal guidelines for environmental , heritage, social and transport impacts (Part 5)

Introduction – appraisal of environmental and social impacts

As an overarching comment, it is incorrect to assume that under current practice, environmental impacts are *fully mitigated or offset*, and that households *are fully compensated* for negative impacts based on existing government policies. This is a major shortcoming of the draft Guidelines, particularly in Part 5. The introduction of relevant Government policy does not invalidate the lived experience of a local community or overcome the real on-ground impacts.

EDO NSW supports the attempt that the draft Guidelines make to ensure adequate consideration of environmental impacts in economic assessment, however as stated previously, considerably more input is required from experts in each area to ensure that the final Guidelines appropriately capture all environmental costs.

²⁰ See for example, *Bulga Milbrodale Progress Association Inc v Minister for Planning and Infrastructure and Warkworth Mining Limited* [2013] NSWLEC 48, at 454-463; see also ABS, 'Input Output Multipliers' (2013), at <http://www.abs.gov.au/ausstats/abs@.nsf/Previousproducts/5209.0.55.001Main%20Features4Final%20release%202006-07%20tables?opendocument&tabname=Summary&prodno=5209.0.55.001&issue=Final%20release%202006-07%20tables&num=&view=>.

We provide some comments below that are informed by our work with clients and based on previous submissions to Government policy. But we emphasise that this should not be considered an exhaustive list of issues to be addressed.

Aboriginal cultural heritage

We make four comments on Aboriginal cultural heritage under the draft Guidelines.

First, it is unclear how much consultation (if any) has occurred with indigenous stakeholders prior to the public exhibition period. This is an important question given the draft Guidelines set out a detailed appraisal approach for cultural heritage impacts. This policy approach should be informed by the principle of Full, Prior and Informed Consent.²¹ It is also unclear how this approach reflects or intersects with ongoing proposals for wholesale reform of Aboriginal cultural heritage laws in NSW.

As noted in our 2014 submission on those reforms, it has been our clear position and the position of our Aboriginal clients that Aboriginal people must have a greater role and power in the determination of their own culture and heritage. Feedback from our clients clearly indicates that Aboriginal people feel disempowered when impacts on their culture and heritage are decided by a third party, and when legal assessment processes result in their knowledge being considered secondary to the non-Aboriginal survey and analysis of their heritage.²² It is highly concerning if the inputs into the cultural heritage worksheet are a discretionary value judgment by the consultant who is paid by the proponent.

Second, in our experience assisting Aboriginal clients on cultural heritage matters, we have concerns around the process that (some) mining companies use to select individuals being consulted, and whether the views of people with authority to 'speak for country' are given appropriate weight. This can increase local community division and have a real bearing on the social impacts of mining proposals.

Third, there are concerns around the narrow interpretation of cultural heritage in the draft Guidelines. That is, a focus on individual items rather than the significance of landscape, and the place of items within the landscape.

Finally, the discussion of 'partial impact' (p 41) assumes that partly impacting a particular item of heritage only has a partial effect on the value of that heritage. This is not a valid assumption.

²¹ 'FPIC': see the United Nations *Declaration on the Rights of Indigenous Peoples*, at <https://www.humanrights.gov.au/publications/un-declaration-rights-indigenous-peoples-1>.

²² See for example EDO NSW, *Submission on Reforming the Aboriginal Culture and Heritage System in NSW* (March 2014) - [Download PDF](#).

Air quality

EDO NSW has made various submissions on air quality and mining and CSG assessment.²³ This is based on our experience with cases and clients, and scientific expert assistance. We make six comments on air quality and economic assessment.

First, we recommend additional expert input and peer-review of the health assessment chapter by public health experts, local health professionals in areas already experiencing impacts, and from the NSW Ministry of Health.

Second, an area that would benefit from additional consideration is how to incorporate the impact of short-term, high-level exposures to air pollution in addition to long term averages; and how to capture all relevant air quality impacts, including associated transportation.

Third, we support the statement that ‘...appraisal of air quality impacts should evaluate the impacts of the change in air pollution regardless of whether the national standards/goals are met.’ (p 44) This contrasts favourably with other environmental considerations in Part 5, which seem to overlook actual impacts if policy standards are met. However, it is not appropriate to only consider PM2.5 (p 44). PM10 is also known to have demonstrated health impacts and total particulate matter (**TPM**) causes significant amenity issues. Scientific literature that addresses the issue of avoiding ‘double-counting’ of impacts is available and should be considered.

Fourth, we support the economic assessment of impacts from pollutants *other than* particulate matter (p 44). However, more detail is needed on how the impacts of these pollutants are to be valued.

Fifth, only considering morbidity and mortality health impacts is inappropriate – there can be a high burden on the community without it presenting as significant increases in hospital visits. Relying on these useful but limited measures undervalues impacts.

Finally, adopting a single base year for air quality (p 44) will not always be appropriate, as it would be possible to select a base year that significantly affects prediction of future impacts. An independent process for determining an appropriate base year should be included.

²³ See our mining-related submissions at: http://www.edonsw.org.au/mining_coal_seam_gas_policy.

Ambient noise

EDO NSW has made various submissions on noise assessment and mining. Our recent submission on the Industrial Noise Policy may be relevant in that it comments on the appropriateness of criteria used in that Policy.²⁴

The issue of ambient noise is a pertinent example where the draft Guidelines make an unrealistic assumption that compliance with existing policies means that local households will be fully compensated for the impacts they face.²⁵

In our experience, a cost to the community remains even after the Industrial Noise Policy and voluntary land acquisition and mitigation policy is applied. The current approach assumes that people consider having their property acquired or changing their behaviour is an acceptable outcome, which is often not the case. As a result, there are significant amenity issues that remain unaddressed. Standard mitigation measures such as paying to seal a house against noise and dust, and install air-conditioning etc, does not compensate for the loss of homeliness or sense of place that characterised the family's previous rural lifestyle, nor is this captured by proposed assessments of visual amenity, below.

The Guidelines should assess noise impacts from mining in the same way as air quality, where a cost is associated with every increase in noise, instead of being limited to how noise levels relate to the Industrial Noise Policy.

Biodiversity

We have significant concerns that the draft Guidelines undervalue biodiversity impacts by undue reliance on the *NSW Major Projects Offsets Policy (the Policy)* and its methodology (the *Framework for Biodiversity Assessment*). We note four biodiversity issues that should be addressed in the Guidelines.

Shortcomings of Major Projects Offset Policy

First, many shortcomings noted in our 2014 submission on the draft Policy remain.²⁶ Features that make it problematic to rely on as a full valuation of biodiversity include:

- upfront credits can be issued for mine site rehabilitation (discounted at 50%) – this undervalues immediate losses and relies on risky outcomes far in future;

²⁴ Most recently, EDO NSW *Submission on Draft Industrial Noise Guideline* (13 November 2015) - [Download PDF](#).

²⁵ For example, we cannot agree with the statement in the draft Guidelines (p 51) that: 'in most cases noise levels will be limited to acceptable levels through the NSW Industrial Noise Policy and the Land and the NSW Voluntary Land Acquisition and Mitigation Policy'; or the suggestion that there are only 'rare cases' where noise impacts are discernible.

²⁶ EDO NSW, *Submission on the Draft NSW Biodiversity Offsets Policy for Major Projects*, May 2014 - [Download PDF](#).

- a loose interpretation of ‘like-for-like’ offsetting means that values lost and gained may not be equivalent (and irreversible losses may be permitted);
- ability to vary like-for-like rules, or contribute money if offsets can’t be found – this increases uncertainty and risk, as benefits become incomparable to costs;
- if a site proposed for clearing receives a low value score, its impact needn’t be offset – which leads to incremental, cumulative and unaccounted losses;
- the Policy only applies to threatened biodiversity (i.e. listed as endangered) – even though *non-threatened* ecosystems have multiple benefits and values;
- the Policy does not calculate the value of ‘ecosystem services’ that biodiversity assets provide – such as salinity protection, erosion control, water quality, plant pollination and carbon storage (in trees, soil and wetlands);
- the Policy does not assess the values that local communities place on certain ecosystems (e.g. koala habitat), or the fact that offsets do not need to occur near a local population – which deprives communities of access to the asset.

Offsets and Risk

Second, the Vivid Economics peer-review notes that biodiversity offsets ‘involve risk’ (2.2.3). The Department’s response ‘notes’ this but provides for no further action. This lack of engagement with ‘risk’ issues in the draft Guidelines needs to be remedied. There are examples in other circumstances where risk premiums have been applied as an insurance mechanism to account for failure. One is the federal Carbon Farming Initiative, whereby 100 carbon credit units would be issued in exchange for protecting 105 units of land, to address risks like catastrophic bushfire.

Assessment techniques may not fully value loss

Third, the draft Guidelines propose that ‘residual’ biodiversity values may need to be assessed in cases where the Offsets Policy does not apply.

We note the Vivid peer-review’s concerns that non-monetary valuation (**NMV**) approaches ‘may not be reliable for the valuation of biodiversity’ (at 2.2.3). At the same time, the alternative proposed in the Vivid peer-review (‘replacement cost’) is not necessarily suitable either, particularly in the context of unique ecosystems and communities (such as Warkworth Sands Woodland or Cumberland Plain Woodland).

Ecosystem services are not accounted for

Fourth, the draft Guidelines and the current planning and assessment framework undervalue the benefits of *ecosystem services* that biodiversity provides. In short, ecosystem services are the benefits that flow from nature to people.²⁷ Estimating the value of ecosystem services can reveal social costs or benefits that would otherwise

²⁷ US Government, *Memorandum for Executive Departments and Agencies to Incorporate Ecosystem Services into Federal Decision Making*, <https://www.whitehouse.gov/sites/default/files/omb/memoranda/2016/m-16-01.pdf>.

remain hidden. Once identified and understood, these values can be considered and accounted for in the policy and decision-making process.²⁸

The closest NSW has come to this is the *Environmental Outcomes Assessment Methodology (EOAM)* under the *Native Vegetation Act 2003* (soon to be repealed and replaced with a new Biodiversity Conservation Act). The EOAM set a 'maintain or improve' standard for rural biodiversity, salinity, water quality and erosion control.

Other jurisdictions are starting to develop tools to build ecosystem services into decision-making, including the UK National Ecosystems Assessment, the Ontario Biodiversity Strategy and a recent US Government Directive to all executive departments and agencies.²⁹

Greenhouse Gas Emissions

NSW needs to plan for a carbon constrained future. This is consistent with international agreements to avoid dangerous climate change by adopting a 2-degree 'guardrail'.³⁰ As the Government notes: 'Three-quarters of NSW emissions come from the extraction, processing and burning of fossil fuels (primarily coal)'.³¹ The lifecycle of coal and gas assets means that many new (and existing) coal and gas projects could operate up to and beyond 2050.

We therefore welcome the inclusion of greenhouse gas emissions in the Guidelines, and support the use of the US EPA's Social Costs of Carbon methodology to price emissions. We make three comments below to make greenhouse gas considerations in the Guidelines more consistent, transparent and comprehensible.

First, the Guidelines should require a quantitative assessment of Scope 3 emissions, such as 'downstream' emissions from burning coal from the mine. This is consistent with Stage 1 of the Integrated Mining Policy (IMP). The IMP's *Indicative Secretary's Environmental Assessment Requirements* require the EIS for a major mining project to comprehensively report and assess its greenhouse emissions including Scope 3.³²

²⁸ *State of Ontario's Biodiversity, Indicator: Ecosystem Services Policies and Programs* report, http://sobr.ca/_biosite/wp-content/uploads/Indicator-Ecosystem-Services-Policies-and-Programs_May-19-2015.pdf.

²⁹ Above n 28. See also The White House, 'Incorporating Natural Infrastructure and Ecosystem Services in Federal Decision-Making', <https://www.whitehouse.gov/blog/2015/10/07/incorporating-natural-infrastructure-and-ecosystem-services-federal-decision-making>

³⁰ For example, the NSW Government is a member of The Climate Group States and Regions Alliance.

³¹ See: <http://www.climatechange.environment.nsw.gov.au/About-climate-change-in-NSW/NSW-emissions>.

³² Department of Planning and Environment, *Indicative Secretary's Environmental Assessment Requirements for state significant mining proposals* (October 2015), p 18, emphasis added:

Greenhouse gases

(8) *The EIS must include:*

(a) *A comprehensive assessment of, and report on, the project's predicted greenhouse gas emissions (t CO₂e). Emissions should be reported broken down by:*

(i) *direct emissions (Scope 1 as defined by the Greenhouse Gas Protocol - see reference below);*

Economic assessments should be required to note the scale and cost of Scope 3 emissions, whether or not those emissions are formally within scope of Net Present Value for a NSW-focused CBA. These emissions are an important indirect impact of mining projects, precisely because they are often a much larger proportion of the 'carbon footprint' than Scope 1 and 2.³³ This is particularly pertinent if the Guidelines seek to include other indirect impacts such as employment created by mining employee spending.

Second, the economic assessment should discuss, at least quantitatively:

- the social costs of climate change impacts in NSW (including mitigation and adaptation), noting three-quarters of NSW emissions are from fossil fuels;
- the project's contribution to climate change in a carbon-constrained future, including the drawdown of a NSW or national carbon budget to 2050;³⁴ and
- a worst case estimate of greenhouse gas emissions in accordance with a precautionary approach (which should be reflected in the workbook (p 59)).

Third, the Guidelines themselves should provide a clearer explanation of greenhouse gas emissions, climate change impacts and its relevance to economic assessment. The current explanation of Scope 3 emissions (p 58) may be technically correct, but would benefit from a plain-English explanation and examples.

Groundwater

Predicting impacts on groundwater is subject to significant levels of uncertainty, and this is acknowledged to a degree in the draft Guidelines. At the same time, the draft Guidelines note that the EIS 'will be heavily relied on' in the economic analysis (p 63). This section needs further expert peer-review and development in assessing both quantitative and qualitative impacts. As we are not technical groundwater experts, we provide four brief comments below.

First, produced water from CSG extraction remains a major community concern and regulatory challenge in NSW, and modelled costs may be optimistic. In our experience, CSG producers haven't identified appropriate disposal pathways for these large volumes of saline water, yet some projects have been approved before

*(ii) indirect emissions from electricity (Scope 2); and
(iii) upstream and downstream emissions (Scope 3).
before and after implementation of the project, including annual emissions for each year of the project (construction, operation and decommissioning);*

³³ See also World Resources Institute, *Greenhouse Gas Protocol: The Corporate Value Chain (Scope 3) Standard Factsheet*. 'Often, the majority of total corporate emissions come from scope 3 sources.'

³⁴ For example, The Climate Institute and the Climate Change Authority (CCA) have respectively recommended national carbon budgets of between 8 billion and 10.1 billion tonnes CO₂-e, in total, to 2050. See for example CCA, *Reducing Australia's Greenhouse Gas Emissions: Targets and Progress Review – Final Report* (2013).

clear solutions have been developed. The Guidelines need to acknowledge this uncertainty, and ensure it is factored into quantitative and qualitative assessment.

Second, the draft Guidelines and EIS processes refer to and rely on the Aquifer Interference Policy to protect groundwater (p 63). However as we have discussed elsewhere, there are limitations to this Policy, including enforceability and resourcing.

Third, the draft Guidelines on groundwater do not place much emphasis on Aboriginal cultural values, intrinsic values or ecosystem values. For example, cultural significance is briefly mentioned (p 62); and groundwater dependent ecosystems are only referred to in connection with wetlands (p 64).

Finally, the risk matrix seems to undervalue groundwater and potential impacts (pp 69-71). A complete loss of resource should not be the only threshold for a 'large adverse' impact. This is particularly so where people, industries or EECs are dependent on it. This should be considered in the appraisal guidelines, workbook and peer-review.

Non-Aboriginal Heritage

The appraisal of heritage impacts (p 74) focuses on 'heritage sites and objects within [the] project site'. However, impacts can be felt beyond the project boundary, such as vibration or subsidence on heritage buildings. It is therefore important to identify features that may be affected outside the project site, and potential impacts that may be caused by the project.

Table 5.12 assigns different levels of significance to heritage impacts depending on whether an item is of State or local heritage significance. NSW laws (including the *Heritage Act 1977*) also require different levels of scrutiny for state and local heritage impacts. However, a local community may place particular significance on loss or risks to *local* heritage that is not captured in the criteria in Table 5.12; yet there is no specific guidance on discussing local heritage impacts in the LEA.

Surface water

Some of the comments on groundwater above are also relevant to surface water impacts. However, specifically in relation to surface water, it is unclear why the economic appraisal seems to only consider alteration of *water quality* when other impacts are also identified (p 82, Step 5).

Visual Amenity

While we support the inclusion of visual amenity in the Guidelines, there are a number of social impacts that this does not capture, including quality of life, sense of place, and community fabric and cohesion. The Guidelines should address these missing aspects, including with input from experts in social impact assessment.

For example, the draft Guidelines propose to assess visual integration of rehabilitated land (p 92). However, the guidance on 'Visual effect' does not assess the fact that most mines propose a final landform that is a completely different landscape to the pre- mining landscape, particularly in relation to open voids. This permanent change to the landscape may affect other values such as a sense of place.

Conclusion

EDO NSW appreciates the opportunity to comment on the draft Guidelines, and for the briefings and discussions with departmental staff during the exhibition period. We hope these comments assist the Department to progress the Guidelines, and are happy to assist the Government to further improve these important assessment processes for mining and gas proposals.