Submission – Draft Guidelines for the economic assessment of mining and coal seam gas proposals

As discussed in the following, the Draft Guidelines contain a number of errors and omissions. These make the guidelines vulnerable to challenge on conceptual grounds, and undermine the reliability of the results.

1 Absence of an overarching framework

The NSW Draft Guidelines for the economic assessment of mining and coal seam gas proposals are not based on a consistent and rigorous economic framework. Such a framework would unambiguously define the (net) benefits to NSW that might arise from a resources proposal. In contrast, the Draft Guidelines appear to be based on an ad hoc approach that is not based on a formal framework and that therefore misclassifies or omits important economic variables.

As a matter of economics, the public benefit of a project to a country or jurisdiction is measured with reference to ‘value added’. Value added is the additional value of goods and services that are newly created in an economy, and that are available for domestic consumption or for export.\(^1\)

Value added is a central concept in the Australian System of National Accounts (ASNA), where it is referred to as ‘gross value added’ to emphasise that this measure is gross of the consumption of fixed capital (that is, depreciation). Gross value added is the difference between output and intermediate inputs (the value created by production), and equals the contribution of labour and capital to the production process. Subject to adjustments that need to be made to ensure that valuations are internally consistent by accounting for various taxes and subsidies, the sum of gross value added across all industries in a country or state equals gross domestic product (GDP) or gross state product (GSP), respectively.

Using this framework, the economic impact of a project should therefore evaluated with reference to its contribution to NSW GSP. The change in GSP as a result of a proposal being approved captures the incremental benefits accruing to NSW from:

- the additional salaries and wages paid to NSW employees and long-term contractors of the Project;

the share of the Project’s ‘gross operating surplus’ (GOS) that can be attributed to NSW, including coal royalty payments to NSW and Commonwealth income taxes that can be attributed to NSW residents; and

the additional payroll taxes, land taxes and local government rates paid to NSW and local government.

These benefits need to be offset against various costs accruing to NSW, including additional infrastructure costs and the costs associated with external effects, and others.

While the Draft Guidelines contain a number of the above components, they are not explicitly referenced on the above framework. This accounts for a number of conceptual errors.

2 Specific issues

The following describes material errors and omissions identified in the Draft Guidelines. In addition, a number of data concerns are identified.

The Draft Guidelines state (P.5): “Consistent with NSW Treasury Guidelines for Economic Appraisal (2007), the public interest in these guidelines is the collective public interest of households in NSW.” It should be noted that no such statement is made in the NSW Treasury Guidelines. As a matter of economics, welfare is maximised by maximising the sum of producer and consumer surpluses; that is, of households and businesses.

1.1 Components of net benefits (direct and indirect) attributed to NSW (P.14 ff.)

The Draft Guidelines omit two important benefits that accrue directly to different levels of government:

- land taxes (State Government); and
- council taxes/shire rates (Local Government).

1.2 Royalty rates for coal (P.15ff)

In practice, coal mines may operate at different depths and produce different coal mixes of product over their working life. The Draft Guidelines and the royalty calculation routine in the ‘Cost Benefit Analysis Workbook’ published by the NSW Department of Planning and Environment does not appreciate these subtleties.

1.3 Payroll taxes (P.16)

Payroll taxes are mischaracterised in the Draft Guidelines and are (mistakenly) not included in the ‘Cost benefit Analysis Workbook’.

The Draft Guidelines state (P.16): “Note that a new mine will also pay other taxes, such as payroll tax and personal income tax. The majority of these taxes will have been generated without the
project, as people would have been employed elsewhere.” This statement is not correct. Any incremental increase in employment by a coal mine will also generate additional payroll taxes. While some of the employees in a new project may have been employed in another firm previously, that other firm will continue to pay payroll tax to the State of NSW (once the employees have been replaced). In addition, the new project will also pay payroll tax. Incremental payroll taxes therefore need to be included in any CBA calculation.

1.4 Direct benefits and costs of a project considered when estimating net producer surplus (P.17)

Table 3.5 incorrectly defines producer surplus. The producer surplus – referred to as gross operating surplus (GOS) in national accounting terms – is the difference between gross output (revenues) and the sum of intermediate consumption (gross value added), net of compensation of employees, and taxes less subsidies on production and imports. GOS is calculated before deducting depreciation, dividends, interest, royalties and land rent, and direct taxes payable: ²

Output - Intermediate consumption
= Gross value added
- Compensation of employees
- (+) Other taxes (subsidies) on production
= Gross operating surplus

Table 3.5 incorporates two errors. First, it mistakenly includes capital costs (including land costs) in the surplus calculation. Second, Table 3.5 additionally double counts capital costs by including financing costs. For example, if a firm were to purchase a coal loader for $100 and finance this asset by entering into a loan with repayments of $12 per annum over 10 years, Table 3.5 would suggest that both of these expenditures should be counted, i.e. $100 + $120 = $220 in total (which is clearly wrong). The same applies to the inclusion of land costs.

1.5 Attribution of indirect benefits to NSW residents (P.18)

Table 3.7 assumes that it would be possible to identify, by state or by country of origin:

- the ownership of NSW landholdings; and
- the ownership of suppliers.

In practice, this type of analysis is simply not possible. While landholdings and businesses can be identified by location (i.e. by postcode), there are simply no data in the public domain as to the ultimate ownership of either. Hence, a retail store might be owned by NSW or interstate residents, while a large supplier may be owned by a diffuse group of shareholders.

1.6 Economic benefit to workers (P.19)

The discussion of economic benefits accruing to workers is not correct. Employees at a new resources project can originate from the following sources:

1. they may have been employed in a different business in NSW;
2. they may enter full-time employment in the workforce for the first time;
3. they may be drawn from the unemployment pool; or
4. they may have moved to NSW from interstate/overseas.

For each group, assumptions then have to be made about these employees’ earnings in the counterfactual (where they would not have been employed by a new resources business). Specifically, for groups 2., 3. and 4., any wages and other benefits paid to these employees are unambiguously additional.

The Draft Guidelines state (P.19): "The economic benefit to workers migrating to NSW should not be included in the CBA for NSW.” This is not correct. People who have migrated to NSW to take up employment opportunities become part of the NSW population and employment pool. An increase in the state workforce constitutes an unambiguous benefit to NSW, in terms of an increase in disposable income within the state and additional taxation revenues that flow to the State (directly or indirectly).

1.7 Undertake sensitivity analysis (P.23)

The Draft Guidelines list a number of sensitivities that should be undertaken. The list omits a crucial variable that is determinative of royalty and company taxation outcomes – commodities prices and exchange rates. The requirement to undertake a royalty and company taxation sensitivity analysis should be removed and replaced with a requirement to test various coal or other output price sensitivities, reflecting varying commodity prices and exchange rates. Commodity price and exchange rate sensitivities will in turn inform the Department of the potential variability in royalty and taxation outcomes.

1.8 Multiplier analysis (P.28ff.)

At a local level, multiplier analysis is inherently uncertain, because it relies on data on ‘imports’ and ‘exports’ that is not reliably available at that level. ‘Type IA’ multipliers include only ‘initial’ and ‘first round’ effects arising from an increase in demand from the Project: the immediate subsequent impacts on income, employment or value added from all industries whose output is required to produce the additional output. Type IB and Type IIA multipliers encompass additional ‘industrial support’ effects, and ‘consumption induced’ effects, respectively.

While, from a theoretical perspective, the total (Type IIA) multiplier is the appropriate choice for calculating flow-on effects (since this measure takes into account the full adjustment of the economy to a change in economic activity), total multipliers are calculated in a manner that compounds any measurement errors and breaches in the assumptions that underpin the analysis.
For example, total multipliers are calculated as a progression of first, second and successive round effects, with each embodying any errors in earlier effects. A more conservative and reliable approach is to rely only on multipliers that capture first round effects (Type IA multipliers).