Phone conference held on Friday 17th August 2012 between Rod Campbell, Jeff Bennett and Rob Gillespie concerning affidavits submitted in relation to the Warkworth Extension Project. The object of the phone conference was to identify substantive points of difference between the experts on matters of fact and opinion and to see whether these issues could be resolved prior to the matter being heard. The summary and Table below records:

- the substantive points of difference between the experts where agreement could not be reached;
- areas where the experts reached agreement on substantive issues raised in the submitted reports; and
- points of clarification arising from the phone conference.

If points of difference have not been noted in relation to specific statements in a report, it should not be assumed that the other experts endorse the statements.

Rod Campbell

Rob Gillespie

Jeff Bennett
Main points of agreement:

- The most appropriate scope for benefit cost analysis is national and global, with sub national assessment being problematic.
- The inclusion in the Project BCA of the costs of acquiring 7 properties identified in the EA as being within the acquisition zone overstates the economic costs of dust and noise experienced by these properties. There may also be consumer surplus loss associated with noise and dust impacts on these properties.
- The costs associated with noise and dust impacts on residents outside the zone of acquisition have not been included in the BCA.
- The Project BCA is concerned with the aggregation of costs and benefits associated with the Project. It does not provide any advice on the equity (‘fairness’) of the distribution of those costs and benefits.
- It is difficult and not practicable to measure all non-market impacts of projects. No estimate of environmental services/ecosystems services was included in the BCA. It is difficult to say whether there would be any impact on environmental service values as a result of the Project. No description of the project’s impacts on environmental services (alternatively referred to as ‘ecosystem services’) was included in the information in the Project CM study. The extent to which respondents included any consideration of environmental services in their responses to the CM questions is unknown.

Main points of disagreement:

Overall Benefit Cost Analysis related points:

- Assumed level of Australian ownership used in the calculation of Australian net benefits
- The internal consistency of the calculations of Australian and NSW net benefits
- Inclusion or omission of increased GHG emissions caused by the project

Choice Modelling related points:

- Specification of the status quo scenario
- Specification of the attribute levels
- Extrapolation of the estimated values over NSW or Australian population
- Use of the social value related to impact on rural communities
- Use of the of the social value of employment
- Use of the environmental value of ecological offsets
Our discussion was structured around the Affidavit of Bennett and Gillespie and paragraph references are to that document.

<table>
<thead>
<tr>
<th>Paragraph</th>
<th>Subject matter</th>
<th>Agreement or disagreement</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>Introduction to BCA</td>
<td>Agree</td>
<td>We note that the Project BCA is focused on economic efficiency. This does not incorporate considerations of ‘equity’ or what is considered to be “fair”.</td>
</tr>
<tr>
<td>3-5</td>
<td>Definition of society</td>
<td>Agree</td>
<td></td>
</tr>
</tbody>
</table>
| 6         | Definition of society – perspective of BCA | Disagree                  | **Campbell:** The original BCA did not take a consistent national and global perspective. I agree that the amended BCA in the Bennett and Gillespie affidavit largely corrects this. I maintain that several non-market values relating to the CM study have national relevance but have been taken from a strictly NSW perspective. I agree that identifying the affected population for a CM study is difficult.  

**B&G:** The project BCA was undertaken from national and global perspective. Non-market values were estimated at the NSW level as this was considered the relevant population that may hold values from impacts that are not considered of national significance. The Project CM used to estimate the non-market values surveyed the NSW population. Extrapolation of results beyond that population is not appropriate. |
|   | Definition of the project – BCA should measure the impacts for which the project is seeking approval, ie mining and transport to port. | Disagree | **Campbell:** BCA should compare “with project” and “without project” scenarios, including all impacts that the “with project” scenario creates. One of the impacts of this project is to increase the use of coal. The damages associated with the increase in coal use caused by the project, ie greenhouse gas emissions, should be included in the BCA. Limiting a BCA to analyse only the impacts for which approval is being sought is incorrect in my opinion.

**B&G:** BCA examines the costs and benefits of a specified Project. It is inappropriate to confound the consideration of the costs and benefits of the Project with the costs and benefits of other Projects e.g. projects to generate electricity in coal-fired thermal plants in China. This is referred to as excessive aggregation in the definition of the scope of the Project and is to be avoided.

|   | Definition of the project – BCA should measure the impacts for which the project is seeking approval, ie mining and transport to port. | Disagree | **Campbell:** Agree that building a coal-fired power plant in China is a separate project and that the emissions from such a project should be considered under that project’s BCA. The Warkworth Project, however, results in an expansion of coal supply, a resulting decline in price and a subsequent increase in the amount of coal consumed. The GHG associated with this increase in coal consumption should be included in the BCA of this project. Hypothetical Chinese consumer surplus relating to electricity consumption would be relevant to the BCA of the power-plant. External benefits of electrification are relevant only to projects that expand electricity distribution infrastructure.

**B&G:** BCA examines the costs and benefits of a specified Project. It is inappropriate to confound the consideration of the costs and benefits of the Project with the costs and benefits of other Projects e.g. projects to generate electricity in coal-fired thermal plants in China. This is referred to as excessive aggregation in
the definition of the scope of the Project and is to be avoided.

<table>
<thead>
<tr>
<th></th>
<th>Net production benefits</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Net production benefits – threshold value.</td>
<td>Disagree</td>
</tr>
<tr>
<td>13</td>
<td>CM study undertaken</td>
<td>Agree</td>
</tr>
<tr>
<td>15</td>
<td>CM study population</td>
<td>Disagree</td>
</tr>
</tbody>
</table>

**Campbell:** 31% Australian ownership figure is not sourced or explained. The project website and Rio Tinto documents suggest Australian ownership could be as low as 10%. Benefits that accrue to Australians and should be considered in a national-perspective CBA could therefore be much lower.

**B&G:** This is the figure that was provided by the project proponents based on the level of ownership of Rio Tinto in Warkworth Mining Limited and the Australian ownership percentage in Rio Tinto Ltd.

**Campbell:** Disagree with net production benefits estimate. The division of this national benefit by number of households in NSW or the Hunter Valley goes against the agreed national-global perspective.

**B&G:** The BCA attempts to include all costs and benefits that accrue to the Project. These occur at different geographic levels. While net production benefits accrue nationally and globally, environmental, social and cultural impacts largely accrue at the regional and State level. Because the threshold value is interpreted in the context of the WTP of households for the unquantified externalities of the Project and these are considered likely to occur at the regional and State level, the relevant population for interpreting the threshold value is the region and State.

**Campbell:** Agree that determining the relevant population is difficult, but disagree that people outside NSW would not hold some of these values, in particular the value placed on the welfare of rural communities. Community and mining conflict
is a current topic relevant in all states and it seems likely all Australians may hold some non-market value for this attribute.

**B&G:** Because the Project’s environmental and social impacts were not considered to be of national significance the most appropriate population to survey was that of NSW. Instead of aggregating the values estimated from the Project CM across the proportion of NSW households represented by the survey response rate, they were aggregated to the proportion of the NSW households represented by the survey response rate plus one third of the non-response rate i.e. 50% of the population.

<table>
<thead>
<tr>
<th>16-17</th>
<th>CM study description</th>
<th>Disagree</th>
</tr>
</thead>
</table>

**Campbell:** Agree with description of CM process, in particular that CM surveys should present respondents with a “status quo”. Respondents to the project CM study were not presented with a “status quo”, or “no project scenario”. Instead they were presented with the project proceeding with no mitigation measures as the status quo and levels of mitigation measures as their options. Note that other Gillespie Economics CM studies also share this problem.

**B&G:** The status quo for choice sets in the Project CM questionnaire was the continuation of mining as currently planned (representing the Project). Change alternatives in the choice sets took on attribute levels that represented the Project not being approved or being partially approved. This approach was necessary so that the choices facing respondents required them to pay for a lessening of the social and environmental impacts of the mine. Using a ‘no mine’ status quo would have required respondents to indicate their willingness to accept (WTA) compensation for the mine’s impacts. The US National Oceanic and Atmospheric Administration (NOAA) report on this matter recommends against the use of WTA questionnaires as they are likely to deliver unreliable results because of the lack of a budget constraint for respondents.
<table>
<thead>
<tr>
<th>18-20</th>
<th>CM study description</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-23</td>
<td>Noise and dust impacts</td>
<td>Agreement reached</td>
</tr>
</tbody>
</table>

**Campbell:** Property acquisition does internalise some of these impacts, though there may still be consumer surplus losses felt by acquired households.

Management techniques such as double glazing do help to internalise some of the costs on non-acquired households. However, these techniques are unlikely to fully compensate for this loss. The BCA does not include the impacts of noise and dust on properties outside acquisition zone not mitigated by management techniques. This omission is relevant to additional noise from the project as distinct from noise from current operations. Noise modelling suggests there will not be additional noise relating specifically to the extension project while the existing project operations would be continuing, though local residents may disagree. Beyond that point, there is a ten year period of impact for which the BCA does not include a figure, beyond that of management techniques.

**B&G:** The BCA assumed full property devaluation (through inclusion of acquisition costs - rather than partial property devaluation) for the 7 properties identified in the EA as being in the zone of affectation. No property devaluation was included for 13 properties in the zone of management as these were considered only marginally impacted by noise. We note that, a comparison “with” and “without” the Project, on a consistent policy basis results in no additional properties being in the zone of acquisition and one additional property being in the zone of management.

| 24 - 27 | Impact on small rural community | Disagree |

**Campbell:** Disagree that CM survey referred specifically and exclusively to impacts on compulsorily acquired properties. Neither BCA nor CM study use the word “Compulsory”. Disagree that respondents would place value on impacts on compulsorily acquired households but not on other impacted households. I think respondents were placing value on the “social fabric and viability of small rural
"communities" rather than exclusively on numbers of households acquired.

Several households will now be acquired, eg Mobberly affidavit, and these values should be incorporated into BCA. Disagree that a change in acquisition criteria makes this value inapplicable, noting that there was no mention of acquisition criteria in CM survey.

Disagree that this figure should only be applied to NSW population. People outside NSW likely to hold non-market values for people affected by mining projects.

**B&G:** Estimates of value obtained from CM studies are context specific. They relate to the circumstances described in the survey questionnaire. The questionnaire describes the compulsory rights to acquisition process in laypersons’ terms.

The context provided for this attribute in the Project CM Questionnaire means that the value obtained from the Project CM study is only applicable:

* to properties/families significantly adversely affected by noise and dust as a result of the Project relative the “without” Project scenario, using consistent policy settings;
* to properties/families significantly adversely affected by noise and dust to the extent that they obtain the right to request acquisition, trigger this and are acquired;
* to families/properties in the Bulga Village and adjoining areas on the west side of Wollombi Brook (which was described in the questionnaire as a small rural community comprising 175 families on mainly rural residential blocks, a tavern, a cafe/roadhouse, a policy station and a church);
* to between 1 and 15 impacted families as this was the range of levels used for
28. Surface and groundwater impacts | Agree | This attribute in the Project CM study.

29. Visual impacts | Disagree | **Campbell:** Incorporated into above discussion of amenity issues relating to noise and dust.

**B&G:** As stated in the Project BCA, costs of visual impact mitigation measures are included in the BCA. No residual visual impacts costs were estimated for inclusion in the Project BCA as these were expected to be minor.

30. Traffic and transport | Agree | **Campbell:** Agree, although note that in the study of Wallaby Scrub Road, the CM values for EEC were used not in the original context of the CM study. The CM study asked respondents to trade off EEC areas and a coal mine, not EEC values and a road used by local community.

**B&G:** The BCA of the Project included increased travel time, vehicle operating costs and increased vehicle accident costs as a result of the closure of Wallaby Scrub Road.

31. European Heritage | Agree | **Campbell:** Agree, but note that people outside NSW may hold value for these impacts, particularly within the aboriginal community.

32. Aboriginal Heritage | Agree | **B&G:** As identified above, it was considered that because the Project’s environmental and social impacts were not considered to be of national significance the most appropriate population to survey was that of NSW. Instead of aggregating the values estimated from the Project CM across the proportion of NSW households represented by the survey response rate, they were aggregated to the
| 33-36 | Ecological impacts of offsets | Disagree | **Campbell:** Disagree that an offset program always results in environmental enhancement. This overlooks considerable debate between specialists in ecology, botany, etc.

Disagree that CM study respondents can accurately assess ecological value of offsets.

**B&G:** To the extent that offsets negotiated with DECCW achieve their objective, by including the capital and operating costs of the offsets in the BCA, no further biodiversity costs need to be incorporated. Nevertheless, the Project BCA used the results of the Project CM study to show that the offsets proposed do provide an increase in community welfare.

Project CM respondents are capable of expressing their preferences in relation to offsets. They make difficult decisions in complex contexts every day. Focus group testing of the questionnaire demonstrated the capacity of participants to make the type of choices required of Project CM respondents. Results from the Project CM study in relation to offsets, illustrate that people do understand the concept as they value offsets less than original vegetation. Offsets ratio (offset area of vegetation/vegetation cleared for mining) derived are similar to those considered appropriate by scientists.

| 37-39 | Greenhouse Gas emissions | Disagree | As above, see para 7-8 |
| Page | Social value of employment | Disagree | **Campbell:** Disagree that respondents have adequate information
CM survey format does not allow for respondents to give accurate response

**B&G:** Questionnaire design included four focus group sessions in Parramatta to ensure that the information provided to respondents was adequate and that they understood the questionnaire. The questionnaire included following up questions about respondents ability to understand the information in the questionnaire. Only 7% of those surveyed disagreed with the statement “I understood all the information provided” |

| 42-44 | Net social benefits | Disagree | **Campbell:** Disagree with many figures, and note that the benefits to Australia figures in this table are inconsistent with figures presented on p20

**B&G:** Note that the estimate of company tax and net profit in Table 2 should be reversed and that 28% (not 27% as reported in the footnote to Table 2) was used to estimate NSW’s share of Company tax. |