



## **AUSTRALIAN RAIL TRACK CORPORATION LTD**

**Ref No:**

23 June 2009

Rail Access – Review of the rate of return and remaining mine life from 1 July 2009  
Independent Pricing and Regulatory Tribunal  
PO Box Q290,  
QVB Post Office NSW 1230

### **IPART Review of Rate of Return and Remaining Hunter Valley Mine Life**

#### **IPART Response to IPART Draft Decision**

ARTC welcomes the opportunity to provide a response to IPART in relation to its Draft Decision dealing with the Rate of Return and remaining mine life to apply to the Hunter Valley Coal Network for a five year period from 1 July 2009.

ARTC has previously provided proposals to IPART in relation to both of these matters on which IPART has undertaken public consultation since December 2008. ARTC has provided further advice through participation at a public hearing, as well as through a response to IPART's Issues Paper and other additional information formally provided to IPART.

#### **Rate of Return**

ARTC has sought to respond to the Draft Decision in Attachment 1. ARTC has recently expressed its concerns to IPART (at a meeting with IPART officers) in relation to the approach taken by IPART to further consider (post the Draft Decision) the impact on the Rate of Return of the recent Australian Energy Regulator's (AER) Final Statement of Regulatory Intent, and of the global financial crisis. Whilst ARTC accepts that timing was such that IPART was unable to fully consider these impacts in the Draft Decision, the resulting uncertainty surrounding the extent to which IPART may seek to address these impacts in its Final Decision, and the resulting Rate of Return makes it difficult to respond to the Draft Decision.

Nevertheless, Attachment 1 seeks to respond to IPART's Draft Decision address each of the WACC parameters, and IPART's broader approach for setting Rate of Return. Broad conclusions include:

- ARTC generally supports IPART's current approach to determine a range of feasible returns and then select a Rate of Return within this range, incorporating consideration of asymmetric risks facing the access provider.
- ARTC considers that the Rate of Return determination should explicitly recognise stranding risk faced by ARTC. This is particularly the case should IPART be minded to adopt the alternative approach to estimated remaining mine life proposed by LECG, which ARTC believes materially increases stranding risk compared to the approach currently used.
- ARTC continues to support 6% - 7% as being a reasonable range for the long term value of the market risk premium (MRP).
- ARTC does not support a move to an alternative approach to determining debt margin as proposed by IPART in favour of the existing approach (or a similar one) that uses an independent, transparent and credible provider to estimate the 10 year BBB yield to enable the debt margin to be calculated. ARTC has expressed its concerns in relation to IPART's proposed options in a separate response to IPART.<sup>1</sup> ARTC notes a recent determination by the Economic Regulation Authority in WA of a BBB- credit rating (with a debt gearing of 30%) for the bulk railway (The Pilbara Infrastructure railway)<sup>2</sup>.
- In relation to gamma, ARTC is not of the view that the evidence relied upon by the AER supports a value of gamma of 0.65. ARTC's arguments are expressed in the attached paper. Even in its report to the AER the author of one of the studies relied upon by the AER concludes a reasonable estimate for gamma is within the range of 0.3 to 0.7.<sup>3</sup> ARTC further maintains that there are a number of recent reputable studies that suggest that gamma is zero. This should not be dismissed in favour of the limited evidence used by the AER in its review. ARTC accepts that there is still substantial uncertainty surrounding the value of gamma, and

---

<sup>1</sup> IPART, Estimating the debt margin for the weighted average cost of capital', ARTC response to IPART discussion paper.

<sup>2</sup> Economic Regulation Authority (ERA) of WA, The Pilbara Infrastructure (TPI) – Final Determination on the 2009 WACC for TPI's Railway Network, June 2009.

<sup>3</sup> Handley, J. (2009), Further Comments on the Valuation of Imputation Credits, Report prepared by the AER, 15 April, p41.

does not believe that the AER review changes this. A range of 0 – 0.7 could be argued as feasible given the gamut of conclusions drawn from recent studies. Such a range is, however, of limited value in the context of this Rate of Return assessment. Given all of this, ARTC would not object to IPART retaining its draft decision on gamma having a range of 0.3 – 0.5.

### **Hunter Valley remaining mine life**

In relation to the review of remaining Hunter Valley mine life, IPART engaged the services of a consultant (LECG) to review ARTC's proposal. In addition to the proposal, ARTC has provided further information, including a spreadsheet model used by ARTC's consultants (Booz), that underpinned the calculation of the proposed mine life.

Of concern to ARTC was the position taken by the LECG, and supported by IPART in its Draft Decision, in relation to:

1. the assumptions in relation to Hunter Valley coal chain constraints on capacity from around 2012 onwards; and
2. the use of production-weighted average mine life as the basis for estimating remaining mine life, and proposal of an approach that bases remaining mine life on the life of the longest-life significant mine in a part of the network.

### **Hunter Valley coal chain capacity assumptions**

ARTC is particularly concerned that LECG may have misinterpreted the Booz spreadsheet provided by ARTC. The broad assumption made by Booz in relation to coal chain capacity was that after 2012, forecasted coal production in the Hunter Valley would not be constrained by the coal chain. This assumption was made in recognition of the steps that were being taken, and continue to be taken, by the Hunter Valley coal industry and service providers to develop a new approach to the operating and commercial arrangements by ensuring certainty of access to producers for both existing and forecast coal volumes in the long term. Such certainty would require investment being made to ensure that the coal chain had sufficient capacity to enable forecasted coal volumes to be delivered.

ARTC confirms, as it has previously at the hearing and in earlier submissions to

IPART that the capacity of the coal supply chain assumed by Booz beyond 2012 is aligned to the coal production forecasts (provided by producers in almost all cases) in any year for those mines that had not already depleted reserves (and were assumed to have ceased production) earlier. These forecasts (and assumptions) were provided to IPART at Attachment 1 of the mine life submission provided by ARTC in response to IPART's Issues Paper.

This shows that the maximum level of production forecast (and so assumed coal chain capacity) was assumed by Booz to be around 217Mtpa (for one year) in the case of the Option B (excluding long term prospective developments) [which is ARTC's proposed option] and around 230Mtpa (including these developments) in the case of Option D. ARTC maintains that the additional coal chain capacity in Option B will be necessary to permit movement of the substantial additional volumes contemplated in the prospective developments without significant compression of volumes from existing operations. This is a stated desire of the industry and objective of the new approach described above.

The Hunter Valley coal industry has for some time sought to substantially increase production for export. This is well documented. It is seeking coal chain service providers to provide certainty of delivery of coal chain capacity expansion to meet its demand forecasts. ARTC's investment strategy over the five years and beyond has been developed around planned port expansions such that rail and port capacity will be sufficient to achieve system capacity ahead of demand. ARTC considers it important that IPART ensure that its remaining mine life estimate is based on assumptions that are aligned to the industry's growth and investment plans. LECG has proposed an alternative capacity expansion scenario which delivers capacity at a slower rate than that planned by the industry. To second guess the industry's coordinated expansion plans may serve to undermine industry confidence and discourage the necessary investment.

Previous decisions by IPART in relation to remaining mine life contemplated much lower levels of annual coal chain throughput (around 50% lower) than is now being planned by the industry. This doubling of throughput must result in a significantly lower remaining mine life for the Hunter Valley network, without a commensurate increase (doubling) in the amount of coal that could be economically extracted and exported from the Hunter Valley. Booz have assumed a moderate increase in reserves in line with available information. Whilst ARTC accepts that it is possible, even likely, that some of the identified coal resource may eventually become economic, it is difficult to imagine circumstances being such that a doubling in

marketable reserves would be possible, particularly given broader risks to the global use of coal as an energy source in the long term.

*Importantly, Booz did not assume coal chain capacity beyond 2012 to be at levels in excess of 260Mtpa, and up to 300Mtpa, as suggested by LECG.*

ARTC considers that this misinterpretation of the assumptions around coal chain constraints is fundamental to the position finally taken by LECG (and supported by IPART) in the Draft Decision.

In Attachment 2, ARTC has revised the Booz estimates of mine life for Options B and Options D to align annual Hunter Valley coal extraction (production) coal chain to port capacity. *This revision results in an increase in the remaining mine life estimate for Option B from 22.8 years to 23 years and, for Option D, from 25.5 years to 25.9 years.* The later estimate (25.9 years) is substantially less than the equivalent estimate determined by LECG in the draft report of 34 years.

Further details are provided in Attachment 2.

#### Approach to estimating remaining mine life

ARTC expresses strong concerns with LECG's proposed alternative approach in that:

- No stakeholder has in any submission, or at the 1 April hearing, sought an alternative to the Booz approach.
- Adopting an alternative approach would be inconsistent with IPART's stated preference for consistency in regulation over time.
- Depreciation is sought to be included in the revenue ceiling so that ARTC can recover a return of investment in a part of the network over time. ARTC can only achieve recovery of all capital costs where the mines using that part of the network are paying full economic cost (the network is constrained). Whilst a line may be held open to service one or two more significant longer life mines, it is by no means certain that ARTC will be able to recover full economic cost with only one or two mines in operation. If depreciation were based on the life of the longest life significant mine, there is a risk that ARTC will only recover a part of the depreciation associated with investment in that part of the network (whilst there is sufficient volume on the network for full economic cost to be recovered).

- Basing the estimated mine life for the Hunter Valley or a region around the reserves and production forecasts of a few mines greatly increases the risk of under or over-estimation.

ARTC recognises that no approach is perfect however (as pointed out by LECG), the current production weighted average approach used by Booz in this assessment, and previous assessments, provides for a more stable regulatory outcome over time, and reduces the risk that depreciation associated with ARTC's intended investment in the Hunter Valley will not be recovered after the closure of the bulk of the mines underpinning that investment.

ARTC has provided more detailed comments in relation to both of these matters in Attachment 2.

Finally, ARTC notes that IPART continues to review the Rate of Return, and remaining mine life, in the context of ARTC's submission of its draft Hunter Valley Access Undertaking to the ACCC, and the likelihood that IPART's setting of Rate of Return and remaining mine life will be relatively short. ARTC has previously expressed its concerns with IPART's approach in this regard and provided its reasons in its response to IPART's Issues Paper.

In recent times, there seems to be a greater recognition of the impact that current global market conditions and volatility are having on investor appetite for risk and return. This impact is being felt in all markets, including the mining sector. In WA, the ERA has determined a regulatory rate of return of 11.09% real, pre-tax for the TPI railway, serving the iron ore export markets. Whilst ARTC recognises market and commercial differences of the Hunter Valley coal network compared to the TPI railway, this return is higher than ARTC's originally proposed Rate of Return (10% real, pre-tax), is substantially higher than IPART's Draft Decision (7.5% real, pre-tax), and is more than double the NSWMC position (5.25% real, pre-tax).

If IPART was minded to make its Final Decision on the basis that now may not be the appropriate time to undertake a substantial revision to the current regulatory approach such as the substantial revision to the remaining mine life proposed by ARTC<sup>4</sup>, then ARTC requests that this clearly be stated as a relied upon consideration in IPART's Final Decision, such that any future decision in relation to Rate of Return and remaining mine life is aware of this provision.

---

<sup>4</sup> IPART Draft Decision, p54.

If you have any queries in relation to this submission please contact myself on 0882174314, [sormsby@artc.com.au](mailto:sormsby@artc.com.au) or Glenn Edwards 0882174292, [gedwards@artc.com.au](mailto:gedwards@artc.com.au).

Yours sincerely



Simon Ormsby  
General Manager Commercial

#### Attachments

1. IPART 2009 REVIEW OF RATE OF RETURN - ARTC SUBMISSION TO IPART DRAFT DECISION
2. IPART 2009 REVIEW OF REMAINING MINE LIFE ON THE HUNTER VALLEY COAL NETWORK - ARTC SUBMISSION TO IPART DRAFT DECISION







## **ATTACHMENT 1**

# **Rate of Return to Apply Under NSW Rail Access Undertaking**

Response to Draft Decision

June 2009  
Synergies Economic Consulting Pty Ltd  
[www.synergies.com.au](http://www.synergies.com.au)

**Disclaimer**

Synergies Economic Consulting (Synergies) has prepared this advice exclusively for the use of the party or parties specified in the report (the client) and for the purposes specified in the report. The report is supplied in good faith and reflects the knowledge, expertise and experience of the consultants involved. Synergies accepts no responsibility whatsoever for any loss suffered by any person taking action or refraining from taking action as a result of reliance on the report, other than the client.

In conducting the analysis in the report Synergies has used information available at the date of publication, noting that the intention of this work is to provide material relevant to the development of policy rather than definitive guidance as to the appropriate level of pricing to be specified for particular circumstance.

## Executive Summary

ARTC has requested Synergies Economic Consulting (Synergies) to respond to IPART's Draft Decision in relation to the review of the rate of return that is applied to its Hunter Valley coal network.

The key issues that we have identified with the Draft Decision are as follows:

1. The global financial crisis remains a relevant consideration. This is not reflected in the Draft Decision but will be considered in the context of the Final Decision. The main adjustment that has been proposed in recognition of the crisis is the addition of a convenience yield to the nominal risk-free rate.

We note the increase in the ten year Commonwealth Government bond rate that has occurred in recent weeks. We therefore consider that such an adjustment may no longer be necessary, at least at the current time. Given the considerable uncertainty in relation to the path of domestic and global economic recovery, we recommend that this situation is monitored between now and the Final Decision.

2. IPART has indicated that more reliance may be placed on the AER's final SoRI in the Final Decision. It is not clear if and how this may impact the rate of return.
3. While we endorse IPART's ongoing recognition of the asymmetric consequences of error by continuing to select the rate of return from above the mid-point, the significant issue of stranding risk has not been addressed in the Draft Decision. We are also of the view that ARTC's stranding risk may increase if IPART confirms its proposal to realign mine lives with the remaining economic life of the most significant mine on each line segment.
4. We have identified some concerns with the practical implications of IPART's decision to reference economists' forecasts as a 'cross-check', while using inflation-indexed swaps to derive an estimate for inflation.
5. We remain of the view that a range of 6% to 7% is a reasonable range for the long-term value of the MRP.
6. We have significant issues with IPART's proposed approach to determine the debt margin, particularly its proposal to reference bonds that do not have a BBB credit rating. Recognising the issues that currently exist in sourcing ten year BBB bond yields, we consider that debt margins should continue to be sourced

from yield curves that are constructed by independent, reputable data providers. We believe that given the significant divergence between CBA Spectrum and Bloomberg (and a lack of clarity as to which data source provides the most appropriate estimate in the current environment), an average of the two should be used at the current time. If CBA Spectrum data cannot be obtained, Bloomberg estimates should continue to be utilised, noting that they are likely to underestimate the cost of ten year BBB debt at the current time.

7. We are of the view that if a range for gamma is to be applied, the lower bound should be set at zero, in recognition of a number of recent reputable studies that have concluded that this is the most likely value for gamma. We have significant concerns with the evidence relied upon by the AER in arriving at a value of 0.65, and are of the view that this evidence should be ignored.



## Contents

<b>Executive Summary</b>	<b>3</b>
<b>1 Introduction</b>	<b>8</b>
<b>2 General</b>	<b>9</b>
<b>3 WACC Parameters</b>	<b>12</b>
3.1 Risk-free rate	12
3.2 Inflation	15
3.3 Market risk premium	16
3.4 Debt margin	17
3.5 Gamma	20
<b>4 Conclusion</b>	<b>24</b>



## 1 Introduction

ARTC has requested Synergies Economic Consulting (Synergies) to respond to IPART's Draft Decision in relation to the review of the rate of return that is applied to its Hunter Valley coal network.

The case for ARTC's proposed WACC is detailed in the submission provided to IPART on 1 December 2008, including the accompanying report by Synergies, which was prepared in December 2008 (WACC Report). Further responses were also provided in April 2009 following the release of a Discussion Paper by IPART (Response to the Discussion Paper). It is not intended to reproduce information already submitted in detail here.

This report is structured as follows:

- section 2 makes some general comments regarding the decision;
- section 3 comments on issues with respect to specific parameters; and
- section 4 concludes.



## 2 General

IPART has flagged that there are two key areas that have not been reflected in the Draft Decision but may be considered in the Final Decision. The first is the impact of the global financial crisis. One of the key implications of this has been the considerable uncertainty in financial markets, as observed by IPART. While there is evidence to suggest that the Australian economy will not be hit as hard as some of the other major economies, it is unclear as to whether the bottom of the cycle has yet been reached. In his most recent statement (2<sup>nd</sup> June) in relation to monetary policy the Reserve Bank Governor stated:

Confidence, while improving, nonetheless remains fragile and balance sheets are under pressure from the effects of economic weakness on asset quality. Credit remains tight. Continued progress in restoring balance sheets is essential for a durable recovery.<sup>1</sup>

The reasons why an adjustment should be made were set out in our Response to the Discussion Paper and are considered further below in the context of the risk-free rate. As outlined below, we have observed a further increase in ten year Commonwealth Government bond yields since this Response was prepared.

The second is the impact of the Australian Energy Regulator's (AER's) Final Statement of Regulatory Intent (final SoRI). Concerns with placing reliance on this decision were expressed in the Response to the Discussion Paper, noting that the SoRI was only in draft form at the time. We will set out some more specific concerns with the final SoRI in this response.

We also note that IPART has sought to adopt a consistent approach in relation to the determination of parameters such as gearing, the market risk premium, beta and gamma in order to maintain regulatory certainty. IPART states that the rate of return:

...has been derived using an approach which is consistent with the 2005 decision. Given the likelihood that ARTC will be regulated by the ACCC in the near future, IPART considers that there is merit in maintaining regulatory certainty at this point rather than adopting substantial change.<sup>2</sup>

---

<sup>1</sup> Reserve Bank of Australia (2009), Statement by Glenn Stevens, Governor – Monetary Policy, Media Release No. 2009-12, [www.rba.gov.au](http://www.rba.gov.au).

<sup>2</sup> Independent Pricing and Regulatory Tribunal (2009), New South Wales Rail Access Undertaking – Review of Rate of Return and Remaining Mine Life from 1 July 2009, Rail Access – Draft Report and Draft Decision, May, p.5.

IPART has proposed changes to the methodology used to determine inflation and the debt margin. Reference is made to our more detailed responses that have been lodged in response to IPART's consultation on each matter.

Finally, we endorse IPART's decision to continue to select the WACC from above the mid-point of the range. We note that the primary rationale for this is recognition of the asymmetric consequences of error. However, one issue that has not been responded to in any detail in the Draft Decision is the issue of stranding risk, which remains particularly significant given the size of the investment program that is being undertaken in the current environment.

In relation to the concurrent assessment of Hunter Valley remaining mine life being conducted by IPART, we also note that a revised approach to determining remaining mine life is being contemplated. IPART's consultant (LECG) has proposed an alternative approach to estimating remaining mine life, being the life of the longest-lived significant mine on the line. IPART has indicated in its draft report that it:

...considers that LECG's alternative methodology may provide more appropriate estimates of the likely remaining mine life for the purpose of determining the useful life and the rate of depreciation of the associated rail infrastructure.<sup>3</sup>

Aligning the rate of recovery of depreciation and the mine life estimate to the life of the longest-lived significant mine on a line may be feasible where it is assumed that the infrastructure provider will keep a line open for a remaining significant mine, and that the infrastructure provider will be able to recover depreciation during the period when all other mines have ceased operations. The assumption that the infrastructure provider will keep the line open for a remaining significant mine may be reasonable as it could be assumed that the infrastructure provider might recover avoidable cost if the mine was significant. However, the recovery of full economic cost (and hence the recovery of capital costs including depreciation) from a remaining significant mine is far less likely, and creates significant risk of asset stranding for the infrastructure provider.

We assume that IPART has previously addressed stranding risk in rate of return decisions in the context of the remaining mine life estimate being based on an average of relevant mine lives. Changing the approach to determining remaining mine life to that currently being contemplated would, in our view, materially increase stranding risk for the infrastructure provider. This increase in stranding risk would need to be

---

<sup>3</sup> *ibid.*, p.54.

considered in determining the type and magnitude of any treatment (relative to previous decisions) used to address stranding risk in determining the rate of return.

### 3 WACC Parameters

#### 3.1 Risk-free rate

##### 3.1.1 Proposed convenience yield adjustment

The only adjustment that has been proposed by ARTC in response to the global financial crisis has been the addition of a 'convenience' yield to the observed risk-free rate. The rationale for this was outlined in our Response to the Discussion Paper.

IPART has rejected making such an adjustment for a number of reasons, which we will address here. First, proposing an adjustment for the compression in Commonwealth Government bond yields that has occurred since the crisis is not intended to suggest that these yields are themselves biased. The key issue, as we have previously highlighted, is that in the current market conditions they serve as an unacceptably poor proxy for the risk-free rate under the CAPM. This is because of the significant impact that non-risk factors – particularly the 'flight to quality' – is currently having on sovereign government bond yields.

The Commonwealth Treasury has previously recognised that Commonwealth Government bond yields are used as a proxy for the risk-free rate:

The CGS yield often is considered a proxy for the risk-free rate of return in Australia, as yields are unlikely to be affected significantly by credit and liquidity risk.<sup>4</sup>

Conceptually, the rate of return earned on the risk-free asset should be uncorrelated with the returns on risky assets. That is, there should be no variance around the expected return.<sup>5</sup> In particular, there should be no credit or default risk.

The reality is that sovereign government bond yields can be affected by idiosyncratic characteristics that are not contemplated under the CAPM. These characteristics include their increased desirability during times of crisis, particularly given their high liquidity. The significant reduction in yields that has occurred since the

<sup>4</sup> Commonwealth Treasury, Commonwealth Debt Management Review, <http://debtreview.treasury.gov.au/content/discussion/html/CCSMReview-04.asp>.

<sup>5</sup> A. Damadoran (2008), What is the Risk Free Rate? A Search for the Basic Building Block, December, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1317436](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1317436).

commencement of the crisis evidences the premium that investors are willing to pay (or the reduction in yield that they are prepared to accept) for these characteristics.

As highlighted by the Competition Economists Group (CEG) in its report submitted to the AER on behalf of the Joint Industry Associations, the liquidity characteristics of Commonwealth Government securities are not necessarily reflective of the liquidity characteristics of the risk-free asset under CAPM. This issue is particularly relevant at the current time when liquidity is arguably one of the dominant characteristics driving the attractiveness of Commonwealth Government bonds relative to other assets.

There is clear evidence of the convenience yield when comparing the yields on Commonwealth Government bonds with the yields on other AAA-rated instruments that should have the same (or very similar) levels of default risk. CEG highlights the following comparisons:

- Commonwealth Government guaranteed bank debt trading at 178 to 248 basis points above Commonwealth Government debt;
- an unprecedented blow-out in the spreads between AAA state government debt and Commonwealth Government debt (to over 100 basis points);
- a reduction in the spread between Commonwealth Government indexed bond yields (which are highly illiquid) and nominal bond yields.

These differences cannot be attributed to default risk, but instead, reflect the perceived differences in liquidity which is valued particularly highly in such difficult economic conditions. Again, this is something that is not contemplated when considering the proxy for the risk-free asset under the CAPM.

Notwithstanding the concerns with the use of the Commonwealth bond yield as a proxy for the risk-free rate, it is acknowledged that there are potential limitations with other alternatives. We are therefore not proposing to replace it with an alternative.

We also note the AER's reasoning for rejecting the convenience yield as cited by IPART, which was that:

...such ad-hoc adjustments are inconsistent with a sustainable, long-term method to estimating the cost of equity capital which creates regulatory uncertainty.<sup>6</sup>

First, we refute that such an adjustment is ad hoc, given the difference between the yields on Commonwealth Government bond yields and other instruments of similar

---

<sup>6</sup> Independent Pricing and Regulatory Tribunal (2009), op.cit.

default risk (such as those cited above) can be readily observed and measured and can also be independently verified.

Second, the reason it is being proposed is because in our view, the unique circumstances presented by the current environment means that application of the 'sustainable, long-term method' will under-compensate regulated businesses whose rates of return are being set in this environment. This is particularly the case where this outcome is being locked in for the term of the regulatory period.

Finally, IPART raises a practical concern to the extent that this is only seen as a temporary adjustment that is made for the duration of the crisis. In our view, the adjustment is even more pertinent where the business is exposed to the risk of having a compressed risk free rate locked in for the duration of the regulatory period. The objective of adding the convenience yield to the risk-free rate is to adjust the current observed yields for the estimated impact of the idiosyncratic, non-risk factors. In other words, the objective is to come up with an estimate of what the long-term, forward-looking risk-free rate should be, if it were not for the impact of the global financial crisis. It is therefore unnecessary to 'remove' this adjustment mid-period, given it is the absolute rate that is locked in for the term of the regulatory period.

As investors will always have some preference for holding Commonwealth Government securities for the reasons outlined above, there will always be some premium paid (or yield discount accepted) relative to other instruments, in other words, the convenience yield will always be positive. As outlined in our Response to the Discussion Paper, the adjustment of 60 basis points that has been proposed is the estimated increase in the convenience yield that has occurred as a consequence of the change in financial market conditions (not the absolute level of the convenience yield).

One way that increased rigour could be added to the process is establishing the 'average' long-term value of the convenience yield, which could be done by observing historical market data based on the preferred proxy/ies (for example, the long-term average difference between the yield on AAA-rated semi-government securities and Commonwealth Government securities) and only triggering an adjustment for the convenience yield when it increases above a certain threshold (and the only when this increase has been maintained over a certain time period). The quantum of the adjustment would then always depend on the difference between the yield on the preferred proxy and the yield on Commonwealth Government securities less the long-term value of the convenience yield.

We therefore maintain the view that a convenience yield adjustment may be appropriate if a regulated business is facing a rate reset during a period that is characterised by unusual market volatility, for example, following a major economic

shock. This assessment can be done based on the process outlined above. The question is whether such an adjustment remains appropriate for ARTC at the current time.

### **3.1.2 Current Commonwealth Government bond yields**

Ten year Commonwealth Government bond yields reached a historical low in December 2008/January 2009, when they fell below 4%. They have continued to trend upwards since then, reaching 5% on the 19<sup>th</sup> of May. The twenty day average ten year Commonwealth Government bond yield as at the 5<sup>th</sup> of June 2009 was 5.2%. We therefore acknowledge that based on this current data, an adjustment for the convenience yield may no longer be warranted.

The path of any economic recovery remains highly uncertain. While we acknowledge that an adjustment may not be warranted at the current time based on the most recent data, we would recommend that this issue is revisited prior to the Final Decision if there is a reversal in the current trend.

## **3.2 Inflation**

IPART's preferred approach is to retain the use of a market-based approach to estimate inflation, using inflation-indexed swaps. A separate response to the discussion paper released by IPART has been submitted and we do not intend to reproduce that detail here. Overall, we maintain our view that while we also advocate the use of a market-based approach where it can be estimated in a robust way, we have significant concerns with the reliability of using inflation-indexed swaps.

In response to the concerns raised by stakeholders IPART is proposing to use economists' forecasts as a 'reasonableness' check. While this appears a reasonable approach in theory, it is not clear how this will work in practice, in particular:

- which economist's forecasts will be used, noting that there can be a range of views at any one point in time (which is one reason why limiting the forecasts to RBA forecasts has been preferred);
- what sort of divergence between the market-based approach and forecasts would warrant a concern; and
- if this was the case, how it would be resolved (i.e. would more reliance be placed on the forecasts or the market-based approach).

This does create some uncertainty as to how this will be treated going forward.

### 3.3 Market risk premium

IPART has chosen to maintain its preferred range of 5.5% to 6.5%, which is also consistent with its 2005 decision for rail access. IPART observes that it has based this range on the following long-term academic studies.

**Table 1 Academic studies of the MRP relied upon by IPART**

Source	Methodology	Period	MRP (%)
AGSM	Arithmetic average, incl. Oct 1987	1974-1995	6.2
	Arithmetic average, excl. Oct 1987	1974-1995	8.1
	Arithmetic average, incl. Oct 1987	1974-1998	6.2
	Arithmetic average, excl. Oct 1987	1974-1998	7.9
	Arithmetic average, incl. Oct 1987	1974-2000	6.1
	Arithmetic average, excl. Oct 1987	1974-2000	7.6
	Arithmetic average, incl. Oct 1987	1974-2003	5.8
	Arithmetic average, excl. Oct 1987	1974-2003	7.1
Officer	Arithmetic mean	1882-1987	7.9
	Arithmetic mean	1882-2001	7.2
	Arithmetic mean	1946-1991	6.0-6.5
Hathaway	Arithmetic mean	1882-1991	7.7
	Arithmetic mean	1947-1991	6.6
Dimson, Marsh and Staunton	Arithmetic mean	1900-2000	7.6
Gray	Arithmetic mean	1883-2000	7.3

Source: Cited in Independent Pricing and Regulatory Tribunal (2009), New South Wales Rail Access Undertaking – Review of Rate or Return and Remaining Mine Life from 1 July 2009, Rail Access – Draft Report and Draft Decision, May, p.21.

The studies that we relied on in recommending a range of 6% to 7% were presented in the Synergies WACC Report. This included a number of the above studies.

In our view, we question how a range of 5.5% to 6.5% can be concluded from the above data. Only one study produced an estimate of below 6%. Another five studies produced an estimate of between 6 and 6.5%. A further ten studies – including a number of very long-term ones – produced an estimate above 6.5% (which is IPART's upper bound), with nine in excess of 7%. On balance, a simple inspection of the above evidence suggests that the true MRP could well be above 7%. Hence, an upper bound of 7% (as per our recommended range) could indeed be conservative.

As noted in our WACC report, some of the lower estimates that have been mooted have been based on survey data or estimates over shorter horizons (noting that the MRP is very volatile in the short-run). Our concerns with these approaches were set out in detail in this report.



IPART has also noted the AER's proposed value of 6.5% in the final SoRI, which was seen as appropriate given the potential impact of the global financial crisis on the forward-looking MRP. In our view, putting the effects of the crisis aside, 6.5% (being the mid-point of our recommended range) is a more reasonable estimate of the long-term MRP. We are therefore concerned that IPART's lower bound is outside of the bounds of what could be considered a reasonable range, and that a range of 6% to 7% is more appropriate.

### **3.4 Debt margin**

IPART has released a separate discussion paper in relation to estimating the debt margin (the Debt Margin Discussion Paper). We have prepared a separate response to this paper on behalf of ARTC.

IPART's review considers the most appropriate methodology and data to use to estimate the debt margin. Estimating the debt margin for a BBB benchmark firm has become problematic in recent times (particularly since the sub-prime crisis) given the lack of liquidity in the BBB corporate bond market. IPART also notes that access to CBA Spectrum, which had been previously referenced by IPART, is no longer available to non-CBA customers.

Our response to the Debt Margin Discussion Paper examined three alternative methods being considered by IPART. One of the approaches being considered here is to use an alternative portfolio of utility-type securities that have credit ratings ranging from BBB to AAA. This is based on concerns that a debt margin based on current observed BBB bond yields may not be representative of the actual cost of debt for a regulated utility. IPART states:

For example, since the onset of the crisis, a company's industry sector appears to be more important than its credit rating in determining the debt margin.<sup>7</sup>

No evidence is presented to support this statement. It is certainly not clear to us that a firm's industry sector has become more important in determining the debt margin and if so, why that might be the case.

There is also no evidence to suggest that utilities are finding it any easier to raise capital in the current market environment compared to other businesses. In its submission to the Australian Energy Regulator (AER), the Joint Industry Association provided evidence that was fundamental in the AER reversing its decision to increase

---

<sup>7</sup> Independent Pricing and Regulatory Tribunal (2009), Discussion Paper – Estimating the Debt Margin for the Weighted Average Cost of Capital, May, p.2.

the benchmark notional credit rating from BBB+ to A- (this included showing that the higher ratings of the government-owned utilities that had been relied upon by the AER were largely reflective of their implied government support, and were not stand-alone ratings). It also noted the following observations from Standard and Poor's:

Australian utilities rated by Standard & Poor's Ratings Services continue to face a challenging environment. Key challenges over the next two years include constrained credit markets, higher debt-funding costs, significant capital-expenditure plans, the expected introduction of a carbon-pollution-reduction scheme (CPRS), and the fallout from any sale of the New South Wales (NSW) government-owned energy retailers. Our recent rating actions and distribution of rating outlooks for the sector support the negative tone: eight of the nine rating actions in the past six months have been negative, while about half of the 33 Australian utilities we rate have negative outlooks. The increasingly negative ratings trend reflects a combination of concerns regarding balance-sheet management, capital-expenditure funding, and operational issues...<sup>8</sup>

While some of the challenges cited above are specific to energy, many of them are not.

One issue that is also not clear to us is whether IPART is implying that a notional credit rating of BBB is too low. No such inference was made in the Draft Decision. We have no reason to believe that a BBB rating is not appropriate for ARTC, with this assumption having been consistently applied across other regulated businesses in Australia.<sup>9</sup> However, if IPART wishes to consider this issue in more detail, we would request that ARTC is given the opportunity to respond more fully.

In our more detailed response to the Debt Margin Discussion Paper, the main observations that we have made in relation to this are:

- the cost of debt is driven by credit rating. It is not appropriate to estimate the benchmark cost of debt for a BBB rated firm based on the cost of debt for firms with higher credit ratings;
- a number of these higher rated issues are likely to have been credit enhanced. If these issues are to be referenced, the cost of credit enhancement needs to be included in the cost of debt (this has been acknowledged by IPART, although not investigated in any detail). These costs are not transparent and would be difficult to reliably estimate;

---

<sup>8</sup> Standard and Poor's (2008), cited in Joint Industry Associations (2009), JIA Response to AER WACC Draft Decision, February, p.131.

<sup>9</sup> The exception to this historically has been electricity transmission, although the AER's final Statement of Regulatory Intent affirmed that a credit rating of BBB+ for these businesses will now apply.

- it could be implied that the hypothesis that IPART is testing is that a BBB rated utility has a different cost of debt to other BBB rated firms. In our report, we have examined this issue using data from the more liquid US market and observed that there is neither a material nor consistent difference here.

IPART also proposed a methodology proposed by its consultant to adjust for term structure (which is an issue given the longest BBB rated bond issue in Australia is currently less than ten years). While we acknowledge the benefits of attempting to find a more robust way of adjusting for term structure, in our view this is outweighed by the disadvantages, which is that the method is not transparent or able to be easily replicated by participants. It has also not been tested in the unique market conditions that have been experienced recently.

In our view, the most appropriate approach remains being able to reference a BBB yield curve that has been derived by an independent data provider. However, we agree that the lack of liquidity in the BBB market presents significant difficulties. For example, as at the 10<sup>th</sup> of June 2009 the longest maturity bond referenced by Bloomberg in deriving its eight year yield curve (being its longest curve) was six years. Given the term structure of interest rates is generally upward sloping, using these rates will under-estimate the ten year BBB bond yield.

Given the differences that have emerged between Bloomberg and CBA Spectrum (with the former potentially under-estimating the BBB bond yield and the latter over-estimating), we are of the view that taking an average of the two is the most appropriate method to use at the current time. As noted in our more detailed response, the difficulties that are currently being experienced that have led to such a divergence between the two are only considered temporary. We would expect the gap between Bloomberg and CBA Spectrum estimates to narrow when liquidity returns to the BBB corporate bond market.

If CBA Spectrum data cannot be sourced, Bloomberg data will have to be relied upon. We would recommend continued application of the methodology that has been employed by the AER and ACCC, which is to use the eight year BBB yield and adjust for term structure based on the difference between the ten year and eight year A rated yields. While we acknowledge the issues with this approach, in our view this is better than using a method that is not transparent and cannot be easily replicated.

Given the liquidity issues at the current time, it is expected that this method will continue to understate the actual cost of debt for a benchmark BBB bond. The estimate should therefore be regarded as conservative.

### 3.5 Gamma

IPART is proposing to maintain its range for gamma of between 0.3 and 0.5. While we maintain that the value of gamma is zero (the reasons for this having been set out in our WACC report), IPART's range gives at least some recognition to a number of recent reputable Australian studies that have shown that the value of gamma is less than the regulatory precedent of 0.5 (with a number concluding that the value may be zero).

Observing the recent studies cited by IPART in the Draft Decision, six of the seven estimates suggest that the value of gamma is less than 0.5, with three of these producing a value of zero. IPART's recommended range suggests that a value of zero is outside of the bounds of a reasonable range. In our view, even if our recommendation that gamma is set at zero is not accepted, the evidence clearly points to it at least being set as the lower bound.

IPART also refers to the AER's decision to adopt a value of 0.65 in the final SoRI. IPART has indicated that will undertake further analysis of this decision prior to releasing its Final Decision. This decision is considered particularly controversial as not only was it one of the first decisions to depart from the value of 0.5 that has been applied by most regulators in the past, it moved in the opposite direction to the evidence suggested by a number of recent reputable Australian studies. We have a number of significant concerns with the methodology and assumptions underpinning the AER's decision, which we will briefly set out here.

The AER relied on two studies in coming up with its range for the value of gamma. The lower bound of the AER's range is based on a single study, being the 2006 paper by Beggs and Skeels, which has also been cited by IPART. The second is a 2008 study by Handley and Mahesawaran, which is also referenced by IPART. We will deal with each of these in turn.

Handley and Mahesawaran's study seeks to ascribe a value to gamma by analysing tax statistics. The study has been instrumental in increasing the value of gamma to 0.65 (the other key assumption driving this was the assumed distribution rate of 100%, which is discussed further below). In our view, the reliance that is placed on this study is fundamentally flawed.

Taxation statistics measure the quantum of corporate taxation, the amount of credits distributed and the amount of credits claimed. The amount of credits claimed is not the value of those credits. It does not take into consideration the risk that shareholders bear in earning the dividends and credits. Therefore it merely establishes a hypothetical

upper bound for theta (as the value must then be \$1 per \$1 of credits) which is higher than the 'true' upper bound.

Tax statistics analysis cannot be used to provide a *value* for gamma. The only way it can be done is using market data, such as the dividend drop-off studies cited in IPART's Draft Decision (although they are also vulnerable to multicollinearity problems, as set out in our WACC Report). It is therefore misleading to present results from tax statistics analysis along with the results of market-based studies where the objective is to ascribe a value to gamma.

We also have concerns with the reliability of Handley and Maheswaran's results. While they have not presented the data they have relied upon in their paper, our interpretation of their results is that they may have only looked at the amount of credits distributed to shareholders. Not all distributed credits are redeemed by shareholders. It is the amount of credits redeemed that is the maximum possible amount of imputation credits that have been claimed by taxpayers, noting that this does not in itself provide a value for gamma, as outlined above.

Significant concerns have also been raised with the Beggs and Skeels (2006) study, which is the only other study that has been relied upon by the AER in its decision. Two consultants' reports submitted to the AER by the Joint Industry Associations identified problems with this study (one was prepared by SFG Consulting (SFG) and the other was by Synergies – Synergies' report was a peer review of the former)<sup>10</sup>.

The Beggs and Skeels study sought to estimate a value for theta<sup>11</sup> over a number of different sub-periods or regimes. Different estimates were produced for each sub-period. In particular, the AER relies on evidence presented by Beggs and Skeels to suggest that there was a structural change following the tax law changes in 2000, which allowed a full cash rebate to resident investors for unutilised credits. Emphasis is therefore placed on their estimate for the period 1 July 2000 to 10 May 2004, which was the end date of their study. The estimated value of theta over this period was 0.572.

The reports by SFG and Synergies both found that the supposed evidence of a structural break following the year 2000 tax law change was due to sampling error. Hence, there is no robust evidence to demonstrate that such a break has occurred (and accordingly, that the value of theta has increased since this time).

<sup>10</sup> SFG Consulting (2009), The Value of Imputation Credits as Implied by the Methodology of Beggs and Skeels (2006), Report Prepared for ENA, APIA and Grid Australia, February; Synergies Economic Consulting (2009), Peer Review of SFG Consulting Reports on Gamma, A Report to the ENA, APIA and Grid Australia, January.

<sup>11</sup> The value of gamma is the product of theta and the assumed distribution rate.

SFG was able to replicate Beggs and Skeels' results over that same time period. However, when SFG excluded the 1% of most influential observations (being only eleven out of 1,389) to improve the consistency of estimates through time, the value of theta fell to 0.19. SFG also extended the sample period to 30 September 2006 but made no other adjustments to the sample or methodology used by Beggs and Skeels. This resulted in an estimate of theta of 0.37. In all cases, SFG found that the theta estimate only has a positive value if cash dividends are assumed to be less than fully valued.

The results of this analysis therefore cast significant doubt over the reasonableness of assuming that 0.572 is the most appropriate value for theta. In our view, apart from the issues that have been identified with this study, the exclusion of the results of other recent reputable Australian studies is not justified.

Another assumption that has proven particularly controversial is a 100% distribution rate, which differs from Hathaway and Officer's estimated market average of 71%<sup>12</sup>. A 71% distribution rate is most commonly applied in practice.

In arriving at its conclusions the AER has relied on a further paper by Handley, "Further Comments on the Valuation of Imputation Credits"<sup>13</sup>. We have a number of fundamental concerns with this report, including issues of fact. For example, in relation to the distribution rate of 100%, Handley assumes that:

- Officer's (1994) framework assumes a perpetuity and hence a 100% distribution rate. It is true that the framework is a perpetuity model however we dispute that this implies a 100% distribution rate – instead it implies a constant payout rate (that we observe is around 70%); and
- the assumption of 100% is also consistent with the Miller and Modigliani framework. While Miller and Modigliani allowed the payout ratio to vary to illustrate the irrelevance of dividends this is not an explicit assumption of their model.

In conclusion, we are not of the view that the evidence relied upon by the AER supports a value for gamma of 0.65. The AER suggests that while the valuation of gamma has been contentious in the past, this evidence is sufficiently robust to enable a more definitive estimate to be made.

---

<sup>12</sup> N. Hathaway & B. Officer (2004), *The Value of Imputation Credits – Update 2004*, Capital Research Pty Ltd, November 2004.

<sup>13</sup> J. Handley, (2009), *Further Comments on the Valuation of Imputation Credits*, Report Prepared by the Australian Energy Regulator, 15 April.

In arriving at its final estimate the AER acknowledges the considerable complexities associated with valuing gamma that have been recognised by market practitioners (and have also been the source of contention in previous regulatory debates). However, it is now of the view that...it is indeed possible to arrive at a reasonable empirical estimate of the value of imputation credits taking into account all the available evidence.<sup>14</sup>

However, we also observe that Handley's most recent report to the AER concludes that a reasonable estimate for gamma is within the range of "0.3 to 0.7".<sup>15</sup> This clearly *does not* support the notion that a definitive value for gamma can now be determined. As noted above, a number of recent reputable studies suggest that the value of gamma is zero and this evidence has been dismissed by the AER in favour to two single studies, one of which cannot be used to estimate a value for gamma.

In conclusion, therefore, we are not of the view that the results of the AER's review should be relied upon by IPART.

---

<sup>14</sup> Australian Energy Regulator (2009), Final Decision: Electricity Transmission and Distribution Network Service Providers - Review of the Weighted Average Cost of Capital (WACC) Parameters, May, p.410.

<sup>15</sup> Handley, J. (2009), Further Comments on the Valuation of Imputation Credits, Report Prepared by the Australian Energy Regulator, 15 April, p.41.

## 4 Conclusion

The key issues that we have identified with the Draft Decision are as follows:

1. The global financial crisis remains a relevant consideration. This is not reflected in the Draft Decision but will be considered in the context of the Final Decision. The main adjustment that has been proposed in recognition of the crisis is the addition of a convenience yield to the nominal risk-free rate. We note the increase in the ten year Commonwealth Government bond rate that has occurred in recent weeks. We therefore consider that such an adjustment may no longer be necessary, at least at the current time. Given the considerable uncertainty in relation to the path of domestic and global economic recovery, we recommend that this situation is monitored between now and the Final Decision.
2. IPART has indicated that more reliance may be placed on the AER's final SoRI in the Final Decision. It is not clear if and how this may impact the rate of return.
3. While we endorse IPART's ongoing recognition of the asymmetric consequences of error by continuing to select the rate of return from above the mid-point, the significant issue of stranding risk has not been addressed in the Draft Decision. We are also of the view that ARTC's stranding risk may increase if IPART confirms its proposal to realign mine lives with the remaining economic life of the most significant mine on each line segment.
4. We have identified some concerns with the practical implications of IPART's decision to reference economists' forecasts as a 'cross-check', while using inflation-indexed swaps to derive an estimate for inflation.
5. We remain of the view that a range of 6% to 7% is a reasonable range for the long-term value of the MRP.
6. We have significant issues with IPART's proposed approach to determine the debt margin, particularly its proposal to reference bonds that do not have a BBB credit rating. Recognising the issues that currently exist in sourcing ten year BBB bond yields, we consider that debt margins should continue to be sourced from yield curves that are constructed by independent, reputable data providers. We believe that given the significant divergence between CBA Spectrum and Bloomberg (and a lack of clarity as to which data source provides the most appropriate estimate in the current environment), an average of the



two should be used at the current time. If CBA Spectrum data cannot be obtained, Bloomberg estimates should continue to be utilised, noting that they are likely to underestimate the cost of ten year BBB debt at the current time.

7. We are of the view that if a range for gamma is to be applied, the lower bound should be set at zero, in recognition of a number of recent reputable studies that have concluded that this is the most likely value for gamma. We have significant concerns with the evidence relied upon by the AER in arriving at a value of 0.65, and are of the view that this evidence should be ignored.



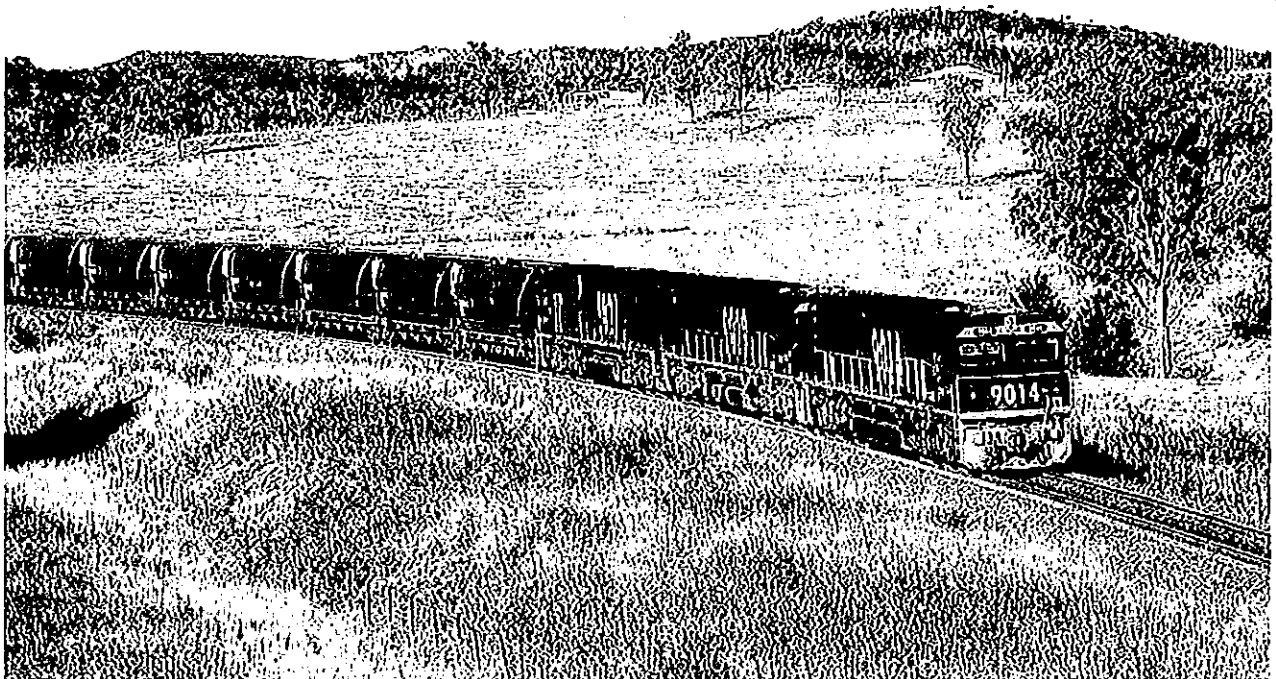


AUSTRALIAN RAIL TRACK CORPORATION LTD

## **ATTACHMENT 2**

# **IPART 2009 REVIEW OF REMAINING MINE LIFE ON THE HUNTER VALLEY COAL NETWORK**

## **ARTC SUBMISSION TO IPART DRAFT DECISION**



1.	Introduction .....	3
2.	Estimate proposed in December 2008 .....	5
3.	IPART's draft decision and LECG advice .....	7
4.	ARTC's response to the IPART draft decision and LECG advice. ....	9

#### **ATTACHMENTS**

1.	Corrected LECG Examples	37
----	-------------------------	----

## **1. Introduction**

In accordance with the NSW Rail Access Undertaking ("NSWRAU"), the Independent Pricing and Regulatory Tribunal ("IPART") is required to undertake a review of remaining mine life of Hunter Valley coal mines utilising Sector of the Hunter Valley Coal Network.

Under the NSWRAU, the initial estimate of mine life is 40 years from 1 July 1999. IPART reviewed the estimate in 2004 and determined that a mine life of 35 years would apply from 1 July 2004. Both estimates were determined based on recommendations of reports by consultants (33 years and 27.5 years respectively), Booz Allen Hamilton, as well as consideration of stakeholder views on those recommendations.

In undertaking its current review, IPART sought ARTC to provide a submission to it detailing a proposal in relation to the remaining life of Hunter Valley coal mines utilising the Hunter Valley Coal Network managed by ARTC (as required by the NSWRAU) to apply for five years from 1 July 2009. ARTC provided its proposal to IPART for consultation on 1 December 2008, recommending a remaining mine life of 22.8 years.

Following a period of consultation in relation to ARTC's proposal, and in relation to IPART's Issues Paper, IPART has released a Draft Report and Draft Decision in May 2009. IPART's draft decision is that the remaining mine life from 1 July 2009 is 30 years, and supports the key conclusions of advice provided by consultants, LECG, in its draft report on the matter.

ARTC notes the context of IPART's Draft Decision stated by IPART as:

'..., this decision could be IPART's last on the remaining mine life of the Hunter Valley coal network and it is also highly likely that this decision will not be in effect for the full five years for that part of the network leased by ARTC.'<sup>1</sup>

---

<sup>1</sup> IPART, NSWRAU- Review of Rate of Return and remaining mine life from 1 July 2009, Draft Report and Draft Decision, May 2009. p4.

In this regard, IPART has indicated:

'... now may not be the appropriate time to undertake a substantial revision to the current regulatory approach such as the substantial revision to the remaining mine life proposed by ARTC.'

## **2. Estimate proposed in December 2008**

### **Booz Methodology and Assumptions**

In developing its proposal (prepared by Booz & Co.), ARTC sought to adopt broadly the same methodology used in previous reviews, but improve on previous estimates by recognising and addressing valid concerns expressed by some stakeholders in relation to previous assessments. Key similarities with the previous methodology included:

- Adoption of a similar preferred approach to incorporate in the assessment those mines currently in existence or expected to be in operation over the 2009-14 time frame as a reasonable representation of the of Hunter Valley coal mines utilising the Hunter Valley Coal Network managed by ARTC (as required by the NSWRAU).
- Testing of the impact of 'prospective' mines (mines that do not currently utilise the Hunter Valley Coal Network, nor will utilise it over the period to which the estimate would apply, but are currently in early stages of development by coal producers and may come into existence at some point after the relevant five year period). As was the case in previous assessments, such mines were excluded from the preferred options given the current uncertainty around their development, forecasted volumes and production. It is important to recognise that several prospective mines that are closer to commencement (within the 5 year regulatory period) have been included in the mine life estimate, where forecasted volumes and production may have been better established. Having said that there is a degree of uncertainty even about these developments.
- Production weighted averaging of mine life over the region.

Key improvements in the methodology, which ARTC believes has resulted in a more reliable estimate than previously may have been the case, were:

- Consideration and incorporation of forecasted start dates and production levels over the life of a mine.
- To further mitigate the potential for under-estimation, ARTC has considered production forecasts in the context of any coal chain capacity constraints that either currently exists or could be expected to exist. To this end, ARTC modelled the impact of coal supply chain constraints during the period 2009-14. ARTC assumed that, because the exact nature of any coal chain capacity expansion beyond 2014 was uncertain and subject to industry endorsement, delivery of supply chain capacity was aligned to forecasted production beyond five years. This is consistent with stated industry expectation to ensure sufficient supply chain capacity was in place to meet demand, and underpins current coal chain planning and commercial strategies. This is evidenced in the recommendations following the Greiner Review and in the Implementation Memorandum for a long term capacity allocation and investment solution that has been submitted by Port Waratah Coal Services and Newcastle Coal Infrastructure group to the ACCC for approval.

ARTC believes that the methodology and assumptions used in its assessment result in a much more robust and reliable estimate of the remaining mine life of coal mines utilising the Hunter Valley Coal Network managed by ARTC, and results in a strong case for moving from the 2004 estimate to an estimate supported by ARTC's proposals.



### **3. IPART's draft decision and LECG advice**

IPART's draft decision is that the appropriate remaining mine life from 1 July 2009 is 30 years. IPART indicated that it has considered the views of stakeholders, ARTC's proposal, and the views of the NSW Mineral's Council ("NSWMC"). IPART also indicated that it considered and agreed with the advice provided by LECG, in particular its key conclusions that:

- 'The Booz approach to modelling the effect of coal chain capacity constraints on mine life understates the likely influence of these constraints and therefore underestimates the mine life. Imposing a more realistic constraint on capacity would increase the mine life to 27 years.
- The exclusion of large new mine projects in the Gunnedah basin, such as Maules Creek, Caroon, and Watermark is justified by Booz may not be reasonable and that including these mines would add an additional 2.7 years to the mine life, under the Booz methodology.
- The weighted average mine life would be 33.9 years if both the alternative, more realistic capacity constraints were applied, and the post-2015 prospective mines were included. This result, 11.1 years more than the ARTC-recommended mine life, is obtained without modifying the Booz production-weighted average methodology.'

Further IPART considered concerns expressed by LECG in relation to Booz's production-weighted average mine life methodology and indicated 'caution should be used in relying on Booz's results'. IPART considered that LECG's alternative methodology [to use the life of the longest-lived substantial mine on a given section of railway] may provide more appropriate estimates of the likely remaining mine life for the purpose of determining the useful life and rate of depreciation of the associated rail infrastructure.

Finally, IPART considered the context of the review, in relation to ARTC lodging its Hunter Valley access undertaking with the ACCC for its approval. IPART indicated that"

'... now may not be the appropriate time to undertake a substantial revision to the current regulatory approach such as the substantial revision to the remaining mine life proposed by ARTC.'

#### **4. ARTC's response to the IPART draft decision and LECG advice.**

##### **4.1 ARTC's and other stakeholder submissions**

Since providing its proposal in relation to remaining mine life to IPART in November 2008, ARTC has made a number of further submission to IPART in order to better inform IPART (and stakeholders) as to the assumptions and methodology used by Booz in coming to their conclusions. Submission made to IPART included:

1. Submission 1 - Additional Information sought by the NSW Minerals Council in relation to IPART consultation on Hunter Valley Rate of Return and remaining mine life. (6 February)
2. Submission 2 - ARTC Response to IPART Issues Papers. (9 April)
3. Submission 3 - IPART Request for Further Information. (27 April)

ARTC is aware of only one substantive issue raised by other stakeholders in relation to the matter of remaining mine life. This was raised by the NSWMC at the 1 April public hearing where it expressed a view that remaining mine life should be 30 years. It seems this view was largely based on the NSWMC understanding at the time that the Booz estimate of remaining mine life assumed a coal chain capacity, and therefore a rate of depletion of Hunter Valley coal reserves, of around 240-260Mtpa beyond 2012. At the hearing, the NSWMC expressed some concern that assuming coal chain capacity (and coal depletion) at a rate above known port capacity expansion was inappropriate and would result in an under-estimate of remaining mine life. The NSWMC estimated that assuming a depletion rate aligned to known port capacity beyond 2012 (which the NSWMC indicated at 211Mtpa beyond 2013) would have the effect of increasing mine life by 4 years. Further if the

prospective developments beyond the regulatory period were included this would add a further 3 years. The combined affect of the NSWMC assumptions would increase estimated mine life to 30 years.

Beyond these assertions, the NSWMC did not provide any subsequent material through submissions to substantiate its assertions or its view that remaining mine life should be 30 years.

The position taken by the NSWMC at the public hearing came as somewhat of a surprise to ARTC given the extent of industry support for commercial arrangements (described earlier) that are intended to ensure certainty of capacity availability at the ports in light of current mine expansions and new mine developments over the longer term. A port capacity constraint implied by the NSWMC at the hearing would suggest that a continuation, in the long term, of the current uncertainty of port capacity and compression of existing access is foreseen.

ARTC is not aware of any other significant concerns in relation to the Booz methodology or results being raised by stakeholders during the consultation.

#### **4.2 ARTC response**

ARTC will provide a response in relation to the key conclusions made by LECG and the NSWMC position.

In broad terms, it would seem that both LECG and the NSWMC<sup>2</sup> have proposed a remaining mine life of 30 years based largely on making an upward adjustment to the Booz recommended Option B result of 22.5 years to reflect what it considered to be more realistic assumptions about coal chain capacity (and so Hunter Valley coal reserve depletion rate) beyond 2012. Both LECG and the NSWMC<sup>3</sup> have claimed an assumption of around

---

<sup>2</sup> The NSWMC did not lodge a submission in relation to mine life and as such ARTC is relying on the position put forward by the NSWMC at the 1 April hearing.

<sup>3</sup> Ibid.

211Mtpa capacity would result in slower depletion of reserves and increased remaining mine life by around 4-5 years.

To further support an increase, both LECG and the NSWMC<sup>4</sup> included the impact of prospective mines to conclude a remaining mine life of around 34 years and 30 years respectively.

LECG further proposed an alternative methodology to determine remaining mine life of a part of the network, basing it on the life of the longest-lived substantial mine on the network, which it claimed further supported a 30 year remaining mine life.

As such, both the LECG key conclusions and the view of the NSWMC<sup>5</sup>, upon which IPART seems to have heavily relied as a basis for its draft decision, hinge upon:

- an assertion that Booz based its remaining mine life estimate on coal chain capacity, and a mine reserve depletion rate of well in excess of known port capacity expansions, beyond 2012, at around 240-260Mtpa.
- inclusion of prospective developments beyond the five year regulatory period (although in LECG's case, this was not ultimately used in its estimate of 30 years, as it concluded that inclusion of these developments would result in an estimate of around 34 years).
- the alternative LECG methodology being a reasonable estimate of remaining mine life for the purpose of determining depreciation over the regulatory period.

The following provides comment on each of these elements that have been relied upon by the NSWMC, LECG and ultimately IPART.

---

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

**4.2.1 Assertion that Booz based its remaining mine life estimate on coal chain capacity, and a mine reserve depletion rate of well in excess of known port capacity expansions, beyond 2012, at around 240-260Mtpa**

In the Booz report underpinning ARTC's proposal to IPART in December 2008, Booz indicated that, beyond 2012 there are no definitive estimates of how future coal chain capacity would increase. In the analysis it assumed that both the NSW Government and the coal industry will work to ensure that the Hunter Valley coal chain capacity will be capable of meeting demand.<sup>6</sup> In other words, Booz assumed that there would be no capacity constraint on coal production. As such, an estimate of remaining mine life would rely solely on forecasts, largely provided by producers, of post-2012 mine production for those mines expected to be in production in the years beyond 2012. That is, the mines where production forecasts had not previously consumed reserves.

Annex C of the Booz report shows that under all Options considered, there were a number of mines that were expected to deplete reserves during the period up the 2012 and beyond.

***The total of Hunter Valley production forecasts beyond 2012 for those mines in production beyond 2012 reaches a maximum of around 217Mtpa in 2013 (excluding prospective developments) in the preferred Option B). This drives the rate of depletion of mine reserves in Booz's modelling, and results in the estimates of remaining mine life for each option.***

This is substantially less than the capacity levels asserted by the NSWMC and LECG of 240-260 MTpa and 300MTpa<sup>7</sup> respectively.

In its submissions to IPART and in its response at the 1 April hearing, ARTC has sought to make it clear that, for all of the options put forward by Booz, it did not

---

<sup>6</sup> ARTC Submission for IPART Consultation, Appendix B, p7.

<sup>7</sup> LECG, Draft Report – Remaining Mine Life Hunter Valley coal network, Chart 1, p13.

assume an annual depletion rate in the order of 240-260Mtpa as asserted by The NSWMC or 300Mtpa as asserted by LECG.

This is evidence by the following statements made by ARTC.

Statement made at the IPART 1 April 2009 hearing in response to a view put forward by Mr. Geoff Andrews, NSWMC.

*'Perhaps one thing we could mention is I think Geoff mentioned that we used production levels somewhere in the order of 240, 260 million tonnes based on the forecasts of production that we provided, I think the highest it gets to is about 211 million tonnes.'*<sup>8</sup>

This was reinforced in ARTC's response to IPART Issues Papers on 9 April 2009 as follows:

*'To assist understanding of the production forecasts and impact of assumed capacity constraints, ARTC has provided graphs of production and capacity impact assumptions for each of the options used at Attachment 1.'*<sup>9</sup>

Further in the same submission, ARTC, in response to the specific issue raised by the NSWMC at the hearing, stated:

*'The NSWMC based its assertion of 240-260mTpa on the graph of Hunter Valley coal chain capacity provided in the Booz report. Booz assumed that coal chain capacity would be sufficient to meet demand beyond 2013. The actual production forecasts used in the Booz study are shown at Attachment 1. These show that for the option not including speculative developments, the highest annual level of production is around 211mTpa (aligned to known ports development). Only where the speculative developments are included does*

---

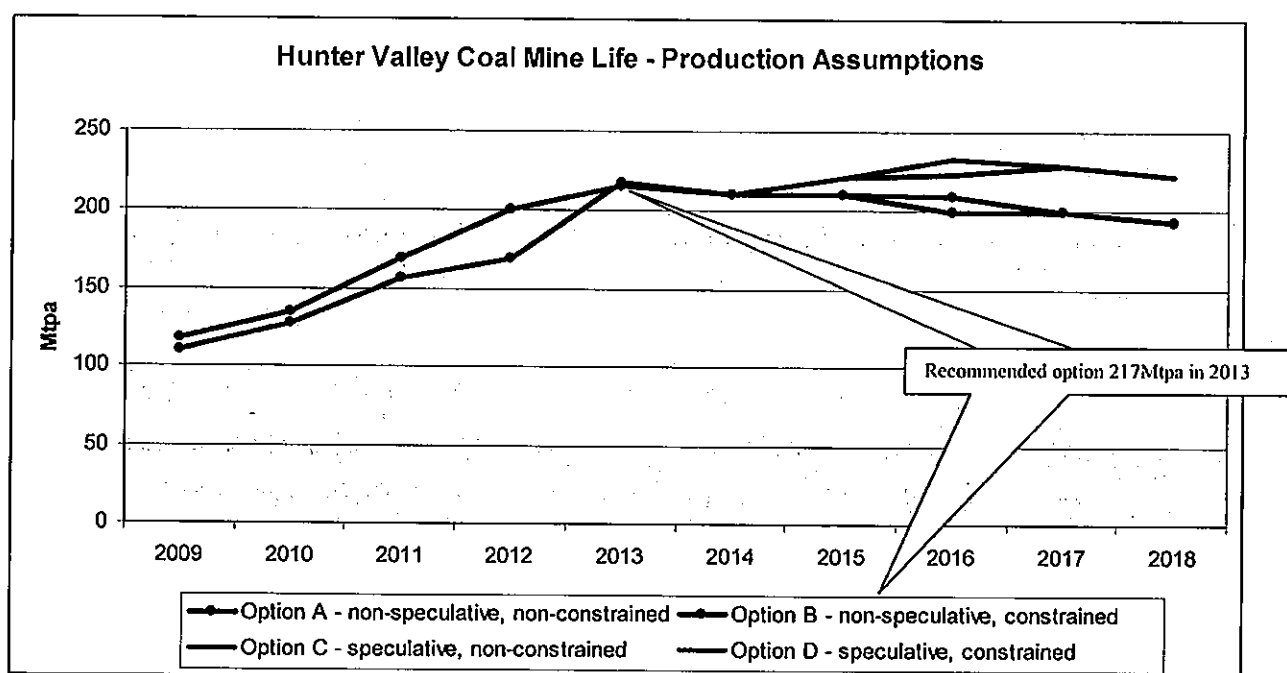
<sup>8</sup> IPART 1 April 2009 Hearing Transcript, Statement by Mr. Edwards ARTC, p25.

<sup>9</sup> ARTC Response to IPART Issues Papers, Attachment 2, p5.

annual production (unconstrained) increase to 230mTpa. The coal chain capacity estimates beyond 2013 provided in the report are based on coal chain investment strategies presumably designed to meet the additional demand placed on the system by these speculative developments.<sup>10</sup>

These statements in ARTC's submission both refer to Attachment 1 of the Remaining Mine Life attachment to the submission, reproduced below (Figure 1).

Figure 1



Pertinent observations from the graph are:

- Up until 2012, coal chain capacity (driven largely by port capacity development assumptions provided in previous submissions) constrains production forecasts by around 6-12Mtpa each year during 2009-2011 and around 30Mtpa in 2012. Because production is assumed not to be constrained by system capacity beyond 2012, these differentials result in an impact on remaining mine life of around 0.3

<sup>10</sup> Ibid, p28.



years. ARTC expects that production forecasts, largely provided by producers, in 2009-2012 were tempered by producer expectations that capacity would be constrained over this period and so limited to their expectations around port capacity.

To put some context around the impact the capacity constraints from 2009-12 as described above, totalling around 50Mtpa, if the network were closed for the whole of 2013, causing production of around 200Mt to be delayed one year, this would only have the effect of increasing average mine life by one year.

- Beyond 2012, estimated mine life is assumed not to be constrained and so remaining mine life is driven only by the producer forecasts over this period for those mines in production at the time (that is, those mines where reserves have not been depleted). The graph shows that the total production forecast over 2013-2018 peaks at around 217Mtpa in 2013 and remains at around 200-210Mtpa over the period for mines assumed under the preferred option B. Where prospective development forecasts are assumed (Option D), production is assumed to be higher, peaking at around 233Mtpa in 2016. These production assumptions drive the rate at which coal reserves are depleted at a mine, and the determination of remaining mine life.

In relation to Option D after 2012, ARTC argues that assumed production levels above 211Mtpa (known port capacity expansion to 2012) are reasonable. This is because additional port and coal chain capacity must be assumed to come on in order to accommodate the transport of coal for the prospective developments that have been assumed in Option D.

To assume otherwise would mean that the substantial additional volume resulting from the prospective developments, would need to be accommodated within the port capacity resulting from known expansions (211Mtpa). This would be certain to result

in substantial compression of volumes from existing mines that could be handled at the port.

Such a proposition is wholly inconsistent with the premise upon which new commercial arrangements are being structured, where additional capacity must be developed to cater for additional volumes so as to minimise any compression. Indeed the Implementation Memorandum<sup>11</sup> recently signed by PWCS and NCIG, and developed with producers, before the ACCC, permits only a 5% compression of existing volumes at any time in order to accommodate new volumes, and also contemplates the creation of additional capacity through a fourth terminal specifically intended to enable the port to accommodate additional volumes beyond 2012.

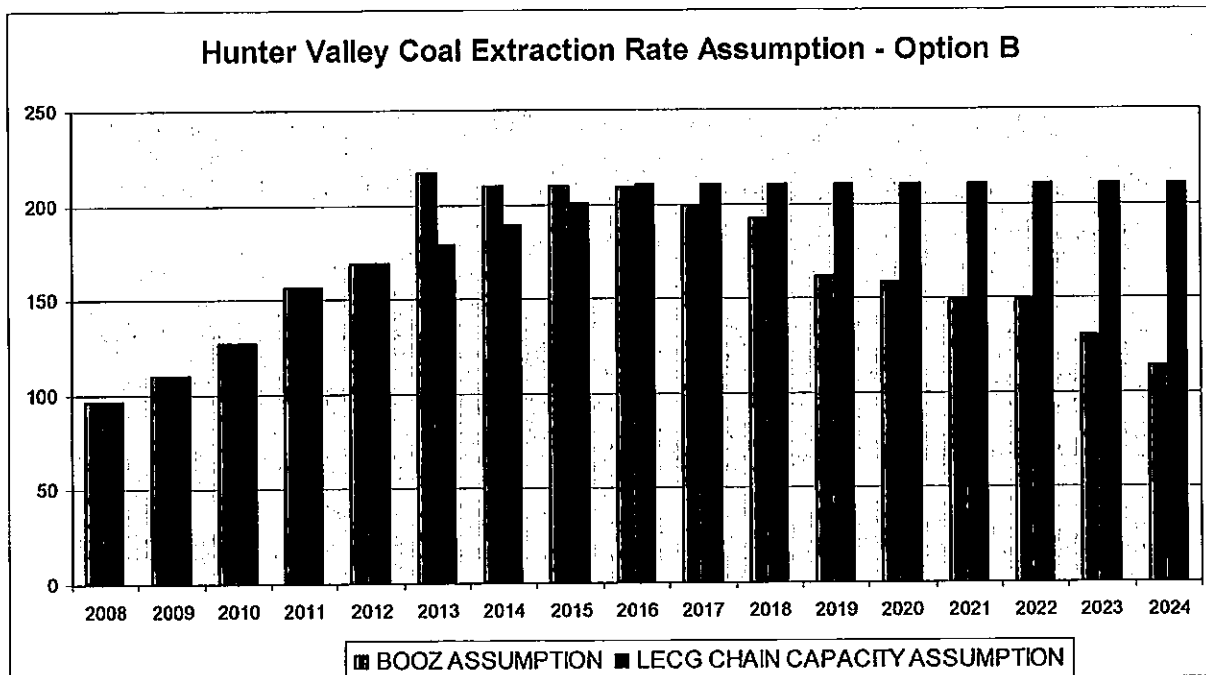
As such, to assume that the prospective developments will come on line (or attach some probability that this may happen as proposed by LECG) must assume consistent assumptions in relation to the capacity of the coal chain to accommodate the related volumes.

The diagrams below show, for Booz's two constrained options, Option B (Figure 2) and Option D (Figure 4), a comparison of the actual coal extraction rates over the 2009-24 period assumed by Booz and assumed by LECG.

---

<sup>11</sup> Implementation Memorandum in relation to the implementation of a long term solution for access to and expansion of export capacity at the port of Newcastle, Draft 6 – executed version, located on the ACCC website.

Figure 2



Under the Booz assumption, production forecasts jump to 217Mtpa in 2013, maintain a level around 210Mtpa for 3-4 years, then decline as mine reserves for some mines become depleted to 2024.

The LECG assumption of even ramp up from 169Mtpa in 2012 to 211Mtpa in 2017 assumes a much more conservative rate of installation of port capacity than has been assumed by Booz (and described in ARTC's response to IPART's issues papers). Booz's assumption in relation to port capacity growth to over 200Mtpa is consistent with assumptions made by ARTC in developing its long term capacity strategies. NCIG on its website<sup>12</sup> has indicated that initial Stage 1 volume is expected to be handled in the first quarter of 2010 and full capacity (30Mtpa) achieved by the first quarter of 2011. This is largely consistent with Booz's assumption.

The average port capacity in 2012 is expected to be around the high 160's during 2012, but should be at 185Mtpa at the end of 2012 (following completion of NCIG

<sup>12</sup> <http://www.ncig.com.au/AbouttheProject/Timetable/tabid/109/Default.aspx>

Stage 2 and the KCT 4<sup>th</sup> dump station and 4<sup>th</sup> ship loader expected in that year). Capacity is then expected to increase to around 200Mtpa at the 3rd quarter of 2013 (following completion of NCIG Stage 3. As such, average port capacity in 2013 should be around 190Mtpa and at least 200Mtpa from 2014 onwards, increasing to the NSWMC target of 211Mtpa presumably in the next year or so. This is well in excess of the ramp up over 2012-2017 proposed by LECG.

Booz's assumptions in relation to port capacity expansion were confirmed by the NSWMC at the 1 April hearing, which supported an assumption of port capacity of 211Mtpa in 2013 (as opposed to ramp up to 2017):

***'A future production rate of no more than the planned future capacity at PWCS and NCIG, which is potentially 211 million tonnes from 2013 onwards, should be used ...'*<sup>13</sup>**

ARTC accepts that the Booz assumption may have resulted in a coal extraction rate that is higher than port capacity in some years (217Mtpa v 190Mtpa in 2013 and 210Mtpa v 200Mtpa in 2014). Having said this, Booz's assumptions are based on producer forecasts that include some domestic coal (to Macquarie Generation from the Ulan line) and so could be up to 10Mtpa higher than actual export coal through the port.

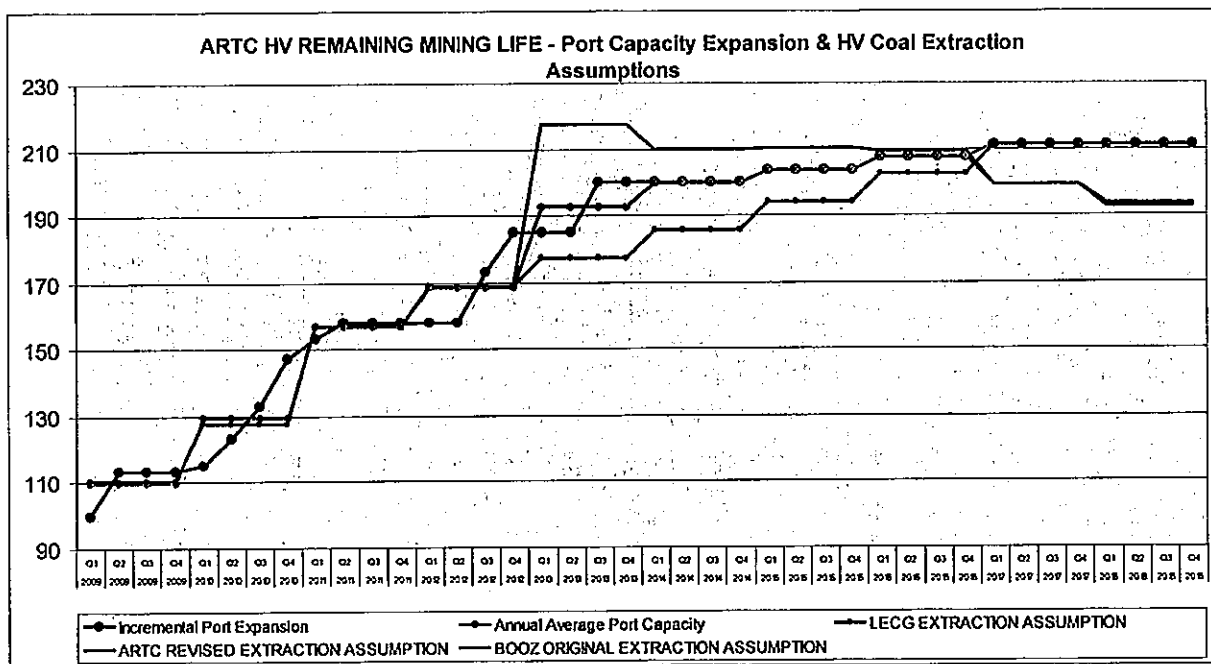
Beyond 2014, ARTC maintains that the extraction rates resulting from the Booz assumption are reasonable, and possibly conservative beyond 2017. Where the forecast coal extraction rates fall below port capacity it is possible that mines may develop or take up additional production capacity in order to consume spare coal chain capacity. This would have the effect of further reducing remaining mine life, so to not assume this possibility is conservative.

---

<sup>13</sup> IPART 1 April 2009 Hearing Transcript, Statement by Mr. Andrews NSWMC, p23.

Irrespective of the presence of domestic coal, ARTC has developed a revision of Option B that limits the assumed coal extraction to average port capacity where it exceeds port capacity in 2013 and 2014 as described above. This revision also conservatively does not assume the possibility of production increases to take up spare coal chain capacity beyond 2017. Figure 3 below shows Option B assumptions in relation to port capacity and coal extraction between 2009 and 2018 on a quarterly basis for LECG, Booz originally, and ARTC as revised.

Figure 3

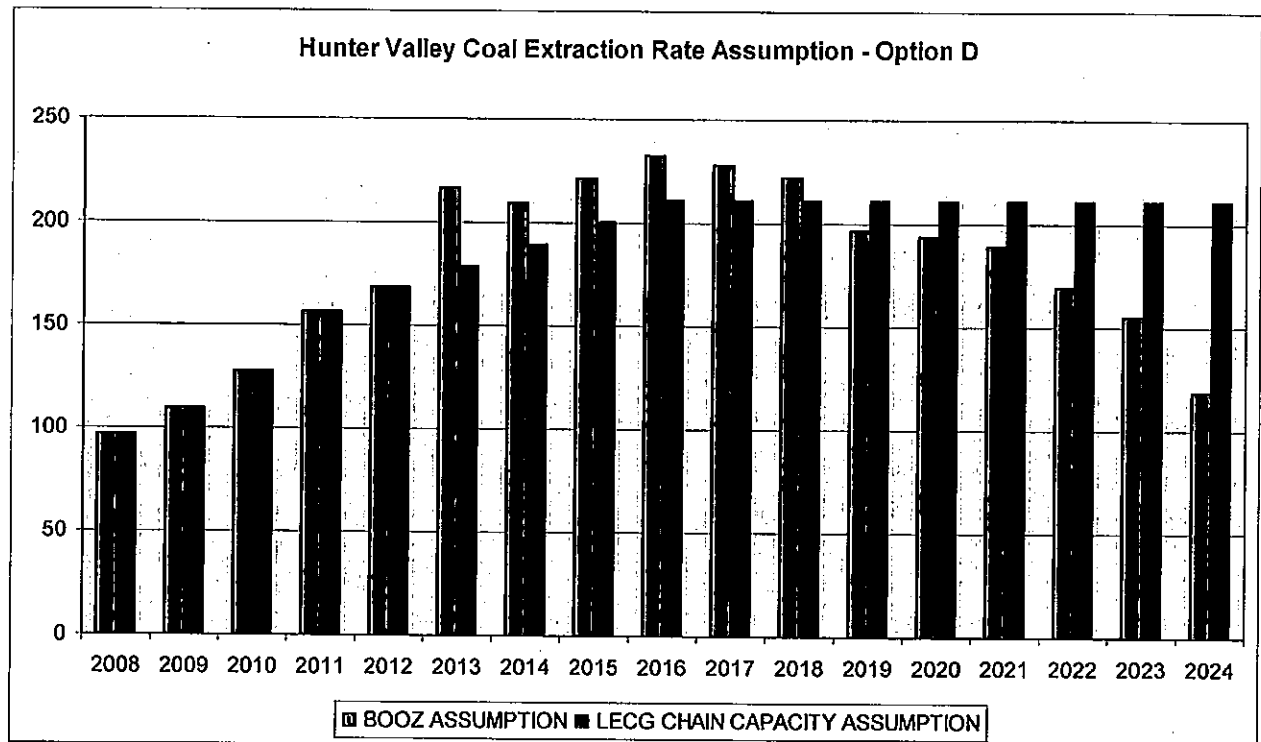


ARTC's revised assumptions shows a reduction in coal extraction rate in 2013-2016 back to assumed port ramp up to 211Mtpa, but higher than the LECG assumption that ARTC believes understates the port capacity ramp up (confirmed by NSWMC).

The revision increases remaining mine life for Option B from 22.8 years to 23 years.

For Option D, Figure 4 below shows a comparison of the actual coal extraction rates over the 2009-24 period assumed by Booz and assumed by LECG.

Figure 4



Under the Booz assumption, production forecasts jump to 217Mtpa in 2013, maintain a level around this until 2016 with the assumed commencement of the prospective developments to increase to around 230Mtpa, then maintain this level for 2-3 years, then decline as mine reserves for some mines become depleted to 2024.

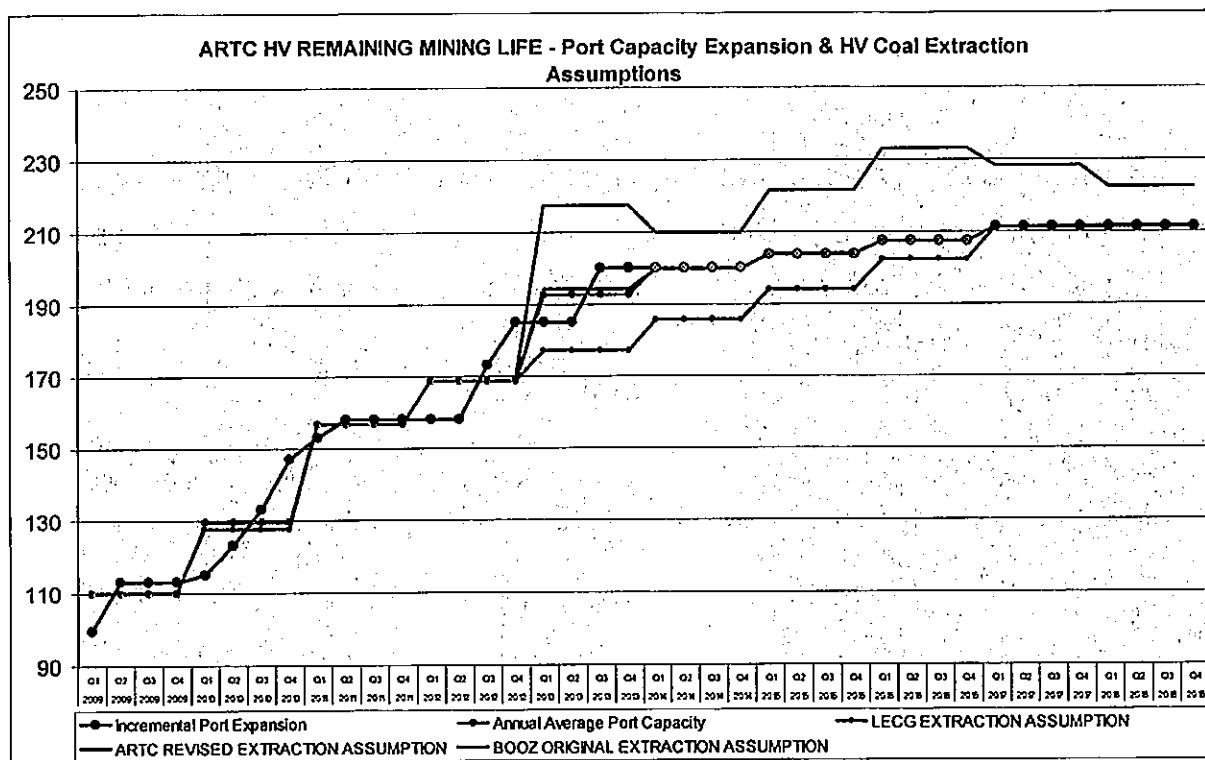
For reasons described earlier:

- ARTC accepts that the Booz assumption may have resulted in a coal extraction rate that is higher than port capacity in some years (217Mtpa v 190Mtpa in 2013 and 210Mtpa v 200Mtpa in 2014).

- ARTC does not consider it reasonable to assume the commencement of production of the prospective developments without some capacity (eg T4) being developed to cater for it. Otherwise, existing volumes (211Mtpa) will need to be compressed in order to permit access to the port for prospective developments.
- Booz has been conservative in not assuming that it is possible that mines may develop or take up additional production capacity in order to consume spare coal chain capacity beyond 2019.

*Despite all of this, and irrespective of the presence of domestic coal, ARTC has developed a revision of Option D that takes the conservative position (the most life extending) in relation to all of these elements. Figure 5 below shows Option D assumptions in relation to port capacity and coal extraction between 2009 and 2018 on a quarterly basis for LECG, Booz originally, and ARTC as revised.*

Figure 5



ARTC's revised assumptions shows a reduction in coal extraction rate from 2013 back to assumed port ramp up to 211Mtpa, but higher than the LECG assumption that understates the port capacity ramp up between 2012 and 2017 (confirmed by NSWMC).

***The revision increases remaining mine life from 25.5 years to 25.9 years.***

In summary, it is ARTC's position that had the Booz assumptions around coal extraction rates been correctly applied to determine the impacts of LECG's capacity assumptions in relation to Option B (excluding prospective developments) the differential (compared to Option A) would be 0.5 years, compared to LECG's assertion of 4.5 years.

Had the Booz assumptions around coal extraction rates been correctly applied to determine the impacts of LECG's capacity assumptions in relation to Option D (including prospective developments) the resulting mine life would be 25.9 years, compared to LECG's assertion of 33.9 years.

***As such, ARTC considers that the correct calculation substantially erodes the treatment of capacity constraints and, for that matter, the inclusion of prospective developments, as a primary basis for arguing a mine life of 30 years, as has been done by LECG.***



**4.2.2 Inclusion of prospective developments beyond the five year regulatory period (although in LECG's case, this was not ultimately used in its estimate of 30 years, as it concluded that inclusion of these developments would result in an estimate of around 34 years).**

ARTC has addressed the issue of impact of the inclusion of prospective developments on estimated mine life.

Further, LECG has asserted that ARTC and Booz have ignored any prospective mine that is not scheduled to come into operation after 2015, and argues that at least some probability should be attached to the commencement of such developments.

The NSWRAU requires that, for the purposes of calculating Depreciation, the useful life of a Sector or group of Sectors is to be determined by reference to the remaining mine life of Hunter Valley coal mines utilising that Sector or those Sectors.

In its narrowest sense, a reasonable interpretation of the wording could contemplate only existing mines. As it stands, the NSWRAU does not explicitly require consideration of mines that do not utilise a Sector or group of Sectors, including those mines that may utilise the Sector or group of Sectors at some time in the future.

ARTC is not sure what the intention of NSW legislators may have been at the time of drafting of the NSWRAU. Given the five year review of mine life provided under the NSWRAU, the narrow or wider interpretations could be considered feasible.

Nevertheless, in carrying out its consultancy, ARTC has had some regard for previous practice, presumably considered reasonable at the time, to include prospects that could come into operation over the regulatory period (5 years), and test the sensitivity of longer term prospects. Historically, the recommendation has been to exclude longer term prospects. The historical approach essentially attaches a 100% probability in relation to the timing, reserves and production capacity of near-term

prospects within the 5 year regulatory period, and a 0% probability against the timing, reserves and production capacity of far-term prospects. This could be considered a 'reasonable compromise' choice from the range of interpretations of the NSWRAU, and the practicalities and risks associated with the accuracy of information in relation to prospective developments. ARTC supports the approach taken in this regard.

LECG does not point out that the approach of attaching probabilities to uncertain future events could be taken much further than simply prospective developments beyond 5 years, in the context of estimating remaining mine life. There are a range of potential uncertainties that could be considered and may have an increasing or decreasing impact on remaining mine life. Some of these have already been mentioned. Such potential uncertainties include:

- The timing, reserves and production capacity of near term prospects.
- Increase in coal chain capacity beyond 211Mtpa to facilitate prospective developments.
- Increase in production capacity of new existing mines to take up any spare coal chain capacity that arises.
- Carbon pricing.
- Alternative fuel development.
- Coal pricing.
- Development of new reserves and resources in the Hunter Valley (or beyond).

To illustrate that caution that should be taken in spreading the horizon on what possibilities and factors should be considered, ARTC provides the following examples in the context of this assessment.

LECG make an example of the Mt Arthur mine, indicating it to be a significant mine commencing in 2004 and intended to produce 20Mtpa at full production. LECG indicated that the Booz approach in 1999 may have considered this mine too uncertain

to include.

ARTC advises that Mt Arthur was included in the Booz 1999 assessment as a prospective mine due to commence in the regulatory period (1999-2004). Mt Arthur was included in the average mine life estimate with a starting year of 2002, 280MTpa reserves, and 5Mtpa full production capacity (approximately a 51 year life). Inclusion of such a large, long life mine would have materially increased the average mine life at the time.

In 2009, Booz have assumed 228Mtpa remaining mine life (based on company data), with production forecasts increasing evenly from 6Mtpa to nearly 30MTpa until reserve depletion in 2018. This results in a 9 year life from 2009 and 14 year life since commencement.

ARTC considers that this serves to highlight the risks of distortion associated with including prospective mines, where a mine only five years from commencement was included in 1999 assessment at roughly 4 times the life now currently expected.

One of the key reasons for a five year review in the NSWRAU is to update the mine life estimate for better information. If Mt. Arthur had not been included in 1999, it would have been in the 2004 review, and probably with better forecasts of reserves and production.

As a further example, Mt Pleasant was also included in the 1999 assessment by Booz as a prospective mine due to commence in the regulatory period. It was expected to commence in 2003 with 285Mtpa reserves and production at 8Mtpa (approximately a 36 year mine life). This would have also materially increased the average mine life.

In 2009, Mt Pleasant is now due to commence operation in 2012 (some 9 years after initial expectation) with an estimated mine life of 26 years. Even though it is expected

to deplete reserves at the same time, it has been factored into (and reducing) depreciation since 1999.

As stated earlier, ARTC believes that the existing approach to use the five year regulatory period as the period for including and excluding prospective developments represents a reasonable balance of interests (given the five year review where improved information about long term prospects can be obtained before inclusion), a reasonable interpretation of the NSWRAU wording, and reduces the type of distortions that can arise as described above.

**4.2.3 *The alternative LECG methodology being a reasonable estimate of remaining mine life for the purpose of determining depreciation over the regulatory period.***

The LECG report highlighted, by way of example, problems associated with the production weighted average life used by Booz and in previous assessments, and proposed a solution being to adopt the longest-lived substantial mine on a line as the economic life of that mine.

ARTC accepts that there are a number of approaches to determining the depreciation. The NSWRAU however requires depreciation to be determined on a straight line basis that is based on the useful life of a Sector or group of Sectors determined by reference to the remaining mine life of Hunter Valley coal mines utilising that Sector or group of Sectors. Given this there is unlikely to be an approach to determining depreciation that will be completely free of drawbacks. As such, one seeks an approach that is reasonably aligned to the economic consumption of an asset, and that does not distort, or reduces distortion of, outputs.

Appropriateness of Booz Approach

The basis of LECG's concern with Booz approach was that average meant depreciation could be recovered well before the last significant mine. To demonstrate this concern, LECG provided examples of Booz's approach which showed long periods where lines would remain open to services mines after return of capital had been recovered. In ARTC's view, LECG did not correctly portray the approach used by Booz. ARTC has provided corrections of LECG's examples at Appendix 1. Whilst ARTC understands that the corrections do not obviate LECG's concerns, the examples provided in the draft report overstated the distortion that LECG was trying to demonstrate to support its proposition for a new approach. This means that even more extreme examples, less likely to exist in reality, would be needed to demonstrate the shortfall in the production weighted average approach to be of serious concern.

Referring to Appendix 1, Table 2 shows effectively only 1 mine remains after mine life exhausted to operate for 5 further years. LECG assertion is that 3 remain to operate for a further 8 years. Similarly Table 3 has been corrected with a similar result.

LECG's alternative approach

ARTC has strong concerns with the adoption of the alternative approach proposed by LECG for the following reasons.

- No stakeholder has in any submission or at the 1 April hearing sought an alternative to the Booz approach.
- Adopting an alternative approach would be inconsistent with IPART's stated preference for consistency in regulation over time.
- Depreciation is sought to be included in the revenue ceiling so that ARTC can recover a return of investment in a part of the network over time. ARTC can only achieve recovery of all capital costs where the mines using that part of the network are paying full economic cost. Whilst a line may be held open to service one or two more significant longer life mines, it is by no means certain that ARTC will be able to recover full economic cost with only one or two mines in operation. If depreciation were based on the life of the longest life significant mine, there is a risk that ARTC will only recover a part of the depreciation associated with investment in that part of the network (whilst there is sufficient volume on the network for full economic cost to be recovered).
- This creates much greater uncertainty for ARTC in relation to achieving a return of its investment in the long run, which may discourage it from investing.

- Basing the estimated mine life for the Hunter Valley or a region around the reserves and production forecasts of a few mines greatly increases the risk of under or over-estimation.

Taking some of LECG's examples:

- **Region 1 mines**

LECG has indicated that 3 larger mines with 24Mtpa production in 2024 would be sufficient to keep this region open. Whilst this may be true (a line may be kept open if it is recovering avoidable cost), the issue is whether mines with this volume would enable capital recovery including return of capital. ARTC's investment in this region over the next 5 years is expected to nearly triple the RAB and increase capacity to in excess of 200Mtpa. The coal industry, in endorsing such investment, presumably signifies some capacity to pay the significant capital costs.

The figures indicated by LECG would indicate a life of at least 35 years for the three larger mines in operation beyond 2024. If these were effectively the only remaining mines beyond this point, ARTC would need to recover the full capital costs from these three mines for around 20 years.

**Region 1**

Existing RAB (\$m)	320
New Investment (\$m)	600
New RAB	920
Annual Inflation	2.50%

For illustration, it is assumed the investment and volumes are achieved in 2009, only the 3 significant mines remain after 2024, and volumes decline evenly from 2019 - 2024.

	2009	2014	2019	2024	2029	2034	2039	2043
RAB (\$m)	920	896	848	772	660	503	290	87
Return (\$m)	74	72	68	62	53	40	23	5
Remaining Life (years)	35	30	25	20	15	10	5	1
Depreciation (\$m)	28	30	34	39	44	50	58	67
Capital Charge (\$m)	100	102	102	100	97	91	81	73
Volume (Mtpa)	200	200	200	24	24	24	24	24
Unit Capital Charge (\$/tonne)	0.50	0.51	0.51	4.18	4.03	3.77	3.38	3.03

The example suggests:

- ARTC will still need to recover a return and depreciation on around 75% of RAB after 2024 from the remaining users.
- There could be an 8-fold increase in capital recovery if ARTC were to recover its capital cost from the remaining three mines. The unit capital charge alone is significantly higher than any access charge currently being paid by Hunter Valley mines (including those currently unconstrained (and presumably unable to afford to pay more)).

On the other hand, adopting a production weighted approach (with a Region 1 specific 24 year remaining mine life as Booz has calculated) (table below) suggests:

	2009	2014	2019	2024	2029	2034	2039	2043
RAB (\$m)	920	829	696	512	438	334	192	45
Return (\$m)	74	66	56	41	35	27	15	4
Remaining Life (years)	24	19	14	20	15	10	5	1
Depreciation (\$m)	38	44	50	26	29	33	38	45
Capital Charge (\$m)	112	110	105	87	64	60	54	48
Volume (Mtpa)	200	200	200	24	24	24	24	24
Unit Capital Charge (\$/tonne)	0.56	0.55	0.53	2.77	2.68	2.50	2.24	2.01

- Initial capital cost recovery is slightly higher (at a time when the ample volume able to pay for it)
- ARTC will need to recover a return and depreciation on around 50% of RAB after 2024 from remaining users.
- Under a production weighted approach, the 5 year review in 2024 (for the remaining mines) would reset life to 20 years, resulting in a lower capital charge to the remaining users after 2024, and increases chance of recovery.
- The combined effect of the above reduces stranding risk and provides for less disruptive pricing.



- **Regions 2 & 3**

ARTC would expect a similar scenario to play out in relation to Regions 2 & 3. ARTC investment in the Ulan line is expect to nearly double the RAB to provide capacity for around 60-70Mtpa. The line north of Muswellbrook should see RAB nearly quadrupling to provide capacity for around 30Mtpa.

Existing volumes on the Ulan line are expected to recover full economic cost in 2007-08 based on the existing RAB. Keeping the line open for Mt. Pleasant with 90% of that volume but with a substantially higher remaining RAB and capital charge may mean a substantially higher charge than is currently the case where users are presumably already paying only what can be afforded.

ARTC agrees that the close proximity of Mt. Pleasant to Muswellbrook would mean that investment beyond Mt. Pleasant would be not be recovered over 30 years if mines beyond Mt. Pleasant have closed. Booz have calculated a Region 2 based 22 year remaining life for the Ulan line. ARTC believes this better addresses this issue where the more distant mines close after 23 years, where the majority of the line would be fully depreciated, and would not result in a substantial depreciation charge to Mt. Pleasant beyond that time. Also, Wilpinjong would not have substantially increased life as proposed, if as a result of applying a 211Mtpa port constraint.

In relation to the Gunnedah Basin mines, current revenues (even without the substantial investment program) fall short of ceiling. Keeping the line open for many years beyond 2024 to service 40% of existing volume will certainly mean ARTC will not recover its cost of capital from these lines.

Booz have calculated a Region 3 based 20 year remaining life for the Ulan line. This should be substantially be recovered from a number of mines before, say, a single mine is left.

In both Regions 2 & 3, LECG's approach will substantially increase ARTC's stranding risk, requiring compensation, presumably through the rate of return.

As a result, LECG's proposed approach causes some serious concerns for ARTC. No stakeholder has questioned the use of the production weighted approach proposed by Booz, which is consistent with previous treatment, and reduces the risk of under or over-estimation. Further, the proposed approach creates much greater uncertainty for ARTC in relation to achieving a return of its investment in the long run, which may discourage it from investing. ARTC believes that application of the production weighted approach with periodic reviews, as is currently the case, at least provides for a balance between permitting reasonable recovery of depreciation (and not resulting in a substantial exposure to asset stranding), and the level of access charges over time.

#### **4.2.4 Coal price impacts**

ARTC's response in relation to a number of assertions made, or views taken, by LECG in its report are as follows:

- *Booz had 'explicitly ignored the effect of future coal prices on the quantum of marketable reserves held by each of their mines in the study.'*

For clarity, Booz stated that a previous study had indicated that actual future production is likely to be closely related to issues of price and demand. It also stated that because the Hunter Valley produces predominantly thermal coal used mainly for household electricity generation in Japan (70%), Taiwan and Korea and therefore contract prices for thermal coal are not expected to decline significantly in 2009.

Using the Booz approach, the remaining mine life estimate is primarily a function of assumptions around future production levels and current estimates of marketable reserves. The vast majority of the information underpinning these assumptions has come from the coal industry itself (producer production forecasts, and marketable reserve estimates from reputable sources and public information, all of which ARTC presumes has been established from coal company information. It should be noted that future production forecasts were not used in previous IPART mine life studies.

It is reasonable to presume that both production and reserve information obtained directly or indirectly from the coal industry itself would have incorporated industry and company forward views in relation to future coal supply, demand pricing and pricing. The production weighted average approach would have the effect of incorporating an industry average view on future supply demand and prices.

As such, whilst Booz may not have explicitly contemplated the impact of coal future coal prices in the study (which is difficult in any regard due to future uncertainty), ARTC contends that the approach used by Booz has *implicitly* contemplated an assumption in relation to future coal supply, demand and prices that is aligned to the average industry present view.

ARTC contends that this may give rise to a better outcome than dealing with this uncertainty explicitly.

- 'It does not appear plausible that a supply increase of this magnitude could occur with no downward influence on the price of export coal in the Pacific. Rather it seems more plausible that the increasing supply capability in the Hunter Valley would lead to price reductions which would lead, in turn, to reductions in the rate of coal extraction from Hunter Valley mines.'<sup>14</sup>

LECG has concluded this from its assessment that an increase in Hunter Valley coal supply of 160Mtpa into the Pacific Rim seaborne coal market trade (459Mtpa in 2006) would represent 35% of the market.

ARTC responds as follows:

- For reasons described earlier, Booz recommended option only assumes around 100Mtpa additional Hunter Valley coal production in the future.
- This additional production is assumed from around 2013 (7 years after 2006).
- LECG's conclusions do not contemplate any growth in demand for coal in the region, likely to translate into coal trade. In March 2009, ABARE

---

<sup>14</sup> LECG, Draft Report – Remaining Mine Life Hunter Valley coal network, p22.

projected<sup>15</sup> that global thermal coal imports will increase at an average annual rate of 2.5% pa to 2014. It cites rising electricity demand in developing Asia as the key driver in thermal coal imports. It could be therefore assumed that 2.5% pa may be conservative in the Pacific Rim context. Even if only 2.5% pa growth in imports was assumed between 2006 and 2014, this would imply an increase in imports of around 100Mtpa in the Pacific Rim region. Given this potential increase in imports, served through overseas trade, ARTC would not expect an increase in thermal coal exports from the Hunter Valley of this magnitude to substantially alter the supply/demand relationship in the region.

- o In March 2009, ABARE also made the following statements in relation to contract prices for thermal trade:

**'Contract prices to decline significantly in Japanese Financial Year (JFY, April – March) 2009 ...'**

The majority of Australia's thermal coal trade is conducted on a contract basis, the terms of which are set until the end of March 2009. Thermal coal contract prices for JFY 2008 were settled at US\$125 a tonne, an increase of 125 per cent on the previous year. Contract prices are likely to fall substantially for JFY 2009 because of the wide gap between spot and contract prices which has developed over the past six months; forecast sharply lower global demand; continued growth in world supply; and an assumed depreciation of the Australian dollar.

**'...but to recover over the medium term'**

While economic growth is assumed to begin recovering in late 2009 and early 2010, it will take time for demand growth to regain pace. Given that contract prices for JFY 2010 will be negotiated in early 2010, the

---

<sup>15</sup> ABARE, Australian Commodities, vol 16 No.1, March quarter 2009, Thermal coal outlook to 2013-14, p150.

potential for slow growth in demand is expected to result in further downward pressure on thermal coal prices. However, from JFY 2011 onward, thermal coal contract prices are projected to increase when economic growth prospects improve, but will remain below the JFY 2008 contract price. Strong demand growth from developing Asia is projected with many countries investing heavily in new coal-fired power generation capacity. However, the effect of climate change policies in some developed economies and uncertainty surrounding the global economic outlook present risks to these projections.<sup>16</sup>

- The current ABARE expectations (which ARTC expects contemplate increased Hunter valley coal exports) would not appear to support the scenario that LECG has proposed.

In summary, ARTC considers that the Booz analysis implicitly incorporates the average industry view in relation to future coal supply, demand and pricing. ARTC does not see any strong reason to believe that thermal coal pricing will sustainably fall to levels substantially below current prices in the foreseeable future. In any event, it could be expected that sustainably lower coal prices would impact on both coal production and in the estimation of marketable reserves in the Hunter Valley. The combination of effect of lower production (extending mine life) and lower reserves (shortening mine life) would further serve to mute the impact of lower coal prices on mine life. LECG recognised these opposing impacts in its report.

---

<sup>16</sup> Ibid, p149.

**CORRECTED LECG EXAMPLES**

Location 1				
Table 2	Reserves (Mtpa)	Extraction rate (Mtpa)	Life	Weighted Average (Booz approach)
Mine 6	100	20	5.0	500
Mine 7	300	20	15.0	4500
Mine 8	400	20	20.0	8000
Mine 9	250	20	12.5	3125
Mine 10	50	10	5.0	250
Weighted Average (LECG Approach)	1100	90	12.2	16375
				14.9

Location 2				
Table 3	Reserves (Mtpa)	Extraction rate (Mtpa)	Life	Weighted Average (Booz approach)
Mine 1	5	2	2.5	12.5
Mine 2	100	10	10.0	1000.0
Mine 3	20	5	4.0	80.0
Mine 4	50	15	3.3	166.7
Mine 5	10	3	3.3	33.3
Weighted Average (LECG Approach)	185	35	5.3	1292.5
				7.0

Location 1				
Table 3	Reserves (Mtpa)	Extraction rate (Mtpa)	Life	Weighted Average (Booz approach)
Mine 6	100	20	5.0	500
Mine 7	300	20	15.0	4500
Mine 8	400	20	20.0	8000
Mine 9	250	20	12.5	3125
Mine 10	50	10	5.0	250
Weighted Average (LECG Approach)	1100	90	12.2	16375
				14.9

Location 2 and Location 1				
Table 4	Reserves (Mtpa)	Extraction rate (Mtpa)	Life	Weighted Average (Booz approach)
Weighted Average (LECG Approach)	1285	125	10.3	17667.5
				13.7

