



# ARTC Access Undertaking Hunter Valley Rail Network

Response to ACCC's Issues Paper  
and ARTC & Synergies'  
submissions on the WACC

Prepared for the NSW Minerals Council

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Economics Policy Strategy

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# 1 Introduction

This submission has been prepared by ACIL Tasman on behalf of the NSW Minerals Council.

The purpose of the submission is to respond to the ACCC's Issues Paper on the ARTC's proposals regarding the Hunter Valley Rail Network Access Undertaking, with a particular focus on the issues surrounding the cost of capital and the Regulatory Asset Base in terms of the proposed loss capitalisation approach and the treatment of grants and contributed assets. The paper comments on the proposals put forward by Synergies and ARTC regarding the appropriate cost of capital for ARTC's Hunter Valley Coal Network. It also responds to the Issues for Comment set out by the ACCC in the Issues Paper.

Section 2 discusses methodological considerations regarding the weighted average cost of capital (WACC). Section 3 examines Synergies's proposed parameters and Section 4 summarises our proposed recommendations on the WACC and our responses to ACCC's Issues for Comment. Section 5 addresses issues concerned with the RAB roll forward, in particular ARTC's proposed Loss Capitalisation Approach and the treatment of grants and contributed assets.

## 2 WACC Methodological Considerations

### 2.1 Formulation of the WACC

ARTC and Synergies propose the use of a post tax nominal methodology for estimating the WACC, using the “Vanilla” cost of capital formulation. Under this approach, all tax effects are taken into account in the cashflows, including the effect of imputation credits.

We support the use of a Vanilla WACC on the basis that it:

- is consistent with the approach used in the ARTC’s Interstate Access Undertaking,
- is consistent with the methodology advocated by the ACCC – for example within the Post Tax Revenue model – and
- provides a better measure of the tax costs facing the business than the alternative formulation of a pre-tax real WACC.

When estimating the cost of equity for use within the WACC, we also support ARTC’s proposal to use the domestic CAPM.

### 2.2 Asymmetric consequences of regulatory error

The statement by the Productivity Commission regarding the consequences of setting a cost of capital which is too low has been widely quoted by incumbent infrastructure providers.

However, it is the case that over-investment is costly also. In a report to the ESC, NERA suggested that<sup>1</sup>:

*...both under-investment and over-investment are costly, and it is not at all clear which is preferable. If over-investment gives rise to capacity that will not be utilised by reasonably anticipated future demand, the resources dedicated to overbuilding that asset could presumably have been better utilised elsewhere, eg, in the provision of alternative infrastructure services for which the consumer welfare associated with their provision may be equal or greater.*

Synergies quote the example of QCA’s review of the Dalrymple Bay Coal Terminal (DBCT) Access Undertaking in 2004/5 as supporting the importance of a WACC sufficient to encourage efficient investment in infrastructure. While we agree with this general principle, we note that such incentives are

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<sup>1</sup> NERA, March 2004, Alternative Approaches to “light-handed regulation”.

provided by the choice of an appropriate point estimate for WACC. While uncertainty may influence the choice of individual parameters, we do not believe that it should bias the choice of the overall WACC to a point above the mid-point of the reasonable range. Most regulators, including the ACCC, determine an estimate of the cost of capital by reference to the most appropriate estimate of each parameter in preference to a range.

## 2.3 Stranding risk

### Synergies proposal

Synergies suggest that ARTC is subject to asset stranding risk which is not remunerated by CAPM.

The stranding risk is said to arise because ARTC is about to commit to a major investment program and does not have certainty of revenue beyond the duration of the regulatory period. The need for the additional capacity is being created by the development of new mines, which are some distance from the port. Synergies suggest that these new mines are more vulnerable to adverse changes in exchange rates because they face higher transport costs. This is said to give rise to a higher level of systematic risk and a greater risk that assets become stranded. Synergies propose that ARTC be compensated for the stranding risk by selecting a beta factor from the upper end of the range.

### Little or no stranding risk

It is our view that the stranding risk put forward by ARTC doesn't exist or at the most is very limited for the following reasons.

The first point to make is that the ARTC's assumption about more remote mines closing first is not necessarily true as rail transport costs are a relatively small proportion of FOB costs and could be outweighed by other positive cost factors that might favour some mines over others (such as coal quality, stripping ratio, productivity and other operational factors). In its Draft Decision on the NSW Access Undertaking, IPART<sup>2</sup> agreed that the cost of rail access to the mines is a small proportion of the total export price of coal<sup>2</sup>.

Although thermal coal has lower margins than coking and PCI coal, at recent coal prices many of Hunter Valley mines have been quite profitable. Even with the significant escalation in mining costs during the past two years, there is scope for the mines to take a considerable price decrease before mine closures would be contemplated. Moreover Australian and Hunter Valley coal is good quality, is mined efficiently and uses efficient rail infrastructure. It is located close to many major Asian markets and is strongly competitive in

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<sup>2</sup> IPART, May 2009, New South Wales Rail Access Undertaking – Review of rate of return and remaining mine life from 1 July 2009, p43

world terms. In the event of a major downturn in demand for coal, Australia and the Hunter Valley are likely to be among the least affected.

Moreover the production of coal in Australia, while occupying a large share of the world seaborne coal trade, is only a very small proportion, less than 5%, of world production. This means that provided Australia remains at the low end of the world cost curve then continued expansion can be expected.

The reserves to the west of the Hunter Valley are very substantial, and require very substantial investment by the mining companies to develop. By comparison, the amount of rail infrastructure required to support the mines is relatively small, and does not make a significant difference to the total cost of extracting the coal.

In addition, decisions to develop, or to continue to develop new mines are being made by the mining companies in full knowledge of the current global economic position. The downturn may mean that plans for more marginal mines will be shelved. This in itself makes it less likely that new mines will be closed down after they have been developed. The mining companies will be examining the economics of new mines very carefully, and ARTC will be able to probe its customers about mine prospects before committing to extension of the rail infrastructure. We understand that a reassessment of the capacity expansions of coal rail and port capacity in Queensland is already happening. Even if the downturn hits proposed projects and expansions, projects under development have so far survived with the fall in the A\$ partially offsetting the US\$ fall in prices. Likewise subsequent improvements in the \$A have reflected increased optimism regarding global recovery and the demand for resources.

Table 1 **Committed coal projects in NSW**

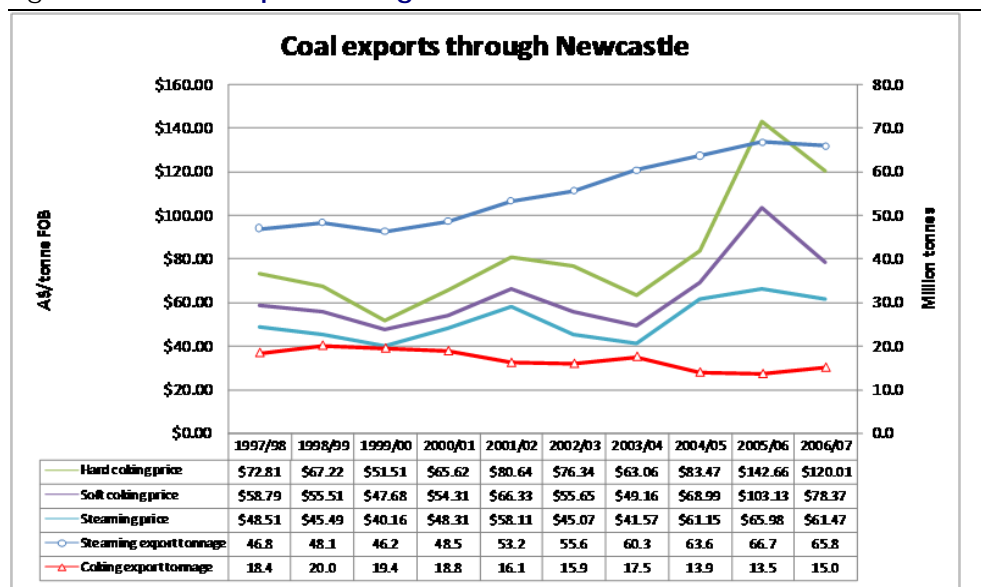
Year of commencement	Expected production
2009	3
2010	14.7
2011	29.5
2012	5
2013	8.5
Beyond 2013	17.3
Total	78

*Data source:* ABARE, October 2008, Major Australian minerals & energy development projects at [http://www.abareconomics.com/publications\\_html/data/data/data.html](http://www.abareconomics.com/publications_html/data/data/data.html)

In October 2008, ABARE identified 15 projects with around 78mtpa of projects that are under construction or committed in NSW. The ABARE data is summarised in the above table and suggest a reasonably gradual ramp up of coal production. Moreover not all major potential new projects and expansions are on the ABARE list.

Exports of thermal and coking through the port of Newcastle over the past decade and the associated FOB export prices are shown in the following graph. The strong price increase since 2004/05 is clearly evident. However coking coal exports have gradually declined even with the high prices which suggest the presence of resource or infrastructure limitations or lack of market growth. Thermal coal export tonnage has been growing since 1999/00, well before the coal prices began to move upwards. Again the higher coal prices have not been matched by acceleration in the growth of exports, most likely due to rail and port infrastructure constraints.

Figure 1 Coal exports through Newcastle



Data source: DPI, 2008 New South Wales Coal Industry Profile.

This data does not support the claim made by Synergies that tonnage in NSW responds to price. It shows the opposite in fact, with tonnage growth in NSW being associated with market growth and infrastructure capacity additions.

**Avoidance/mitigation of stranding risk**

Importantly, even if stranding risk exists, it can be mitigated or avoided altogether by requiring capital contributions from new mines requesting extensions to the network and/or the agreement of long term take or pay contracts.

ARTC’s Draft HVAU proposes a 15 year minimum access contract term with a large Take or Pay (“TOP”) component of access prices covering ARTC’s new investment and other fixed costs. Under this contract ARTC is not obliged to commit to new capital investment projects unless it has contractual access commitments covering the extra capacity resulting from the capital investment. This lowers risk to ARTC because the contract term is longer than the five or less years of most access contracts under the current Undertaking, and there is a TOP component unlike the current contracts.

Moreover, there is no enforceable **obligation** on ARTC to perform (i.e. to supply the capacity contracted or at the times contracted) under the proposed access contracts and only a modest **incentive** to perform (in the form of loss of the TOP revenue) relative to the loss suffered by the access holder if the capacity is not supplied (i.e. loss of sales revenue for the coal).

Similarly, it is likely that capital contributions will be made by major new coal users of the Muswellbrook-Gunnedah line to support the major upgrading (such as the Liverpool Ranges tunnel etc) needed for traffic to increase above the current 12-15Mtpa capacity.

Finally, we note that IPART considered the arguments put by ARTC and Synergies regarding stranding risk as part of its determination on the rate of return under the NSW Rail Access Undertaking. In its August 2009 Final Decision, IPART concluded that no compensation for asymmetric or stranding risk was warranted<sup>3</sup>.

## Conclusion

In conclusion, we do not believe that the new investment faces significant risk of asset stranding. Transport costs make little difference to the viability of a mine, and decisions to invest in new mines are being made on a rigorous basis and in full knowledge of the current world outlook. Importantly there are a number of actions that can, and are, being taken by ARTC to reduce its revenue risk through TPO contracts and capital contributions. As discussed in the following section, the operation of the regulatory regime also serves to reduce the risk faced by ARTC.

## 2.4 Appropriate treatment of asymmetric risk

If, notwithstanding the above, the ACCC considers that ARTC does face an element of stranding risk, it is necessary to consider how such risk is best addressed. Arguments regarding the treatment of asymmetric risk, including stranding risks, have been considered by a number of regulators in different jurisdictions.

For example, in its 2004 Final Decision on NSW Electricity Distribution Pricing, IPART stated<sup>4</sup>:

*The Tribunal has previously acknowledged that the CAPM is based on a number of assumptions that are unlikely to hold perfectly in the real world. It uses the model because it is generally recognised to be the best model currently available. However, it does not consider it theoretically correct to increase the equity beta*

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<sup>3</sup> IPART, August 2009, NSW Rail Access Undertaking – Review of the rate of return and remaining mine life from 1 July 2009, p42

<sup>4</sup> IPART, June 2004, 2004 Final Decision on NSW Electricity Distribution Pricing, p231

*within the CAPM based on the argument that the assumption of normally distributed returns is violated. It believes that if asymmetric risk represents a truncation of returns and consequently violates the CAPM assumption of normally distributed returns, a different model should be used. In the absence of a better model and sufficient evidence that asymmetric risk is the only risk that violates the assumption of normally distributed returns, the Tribunal considers it correct to account for these risks elsewhere in the building block model where necessary.*

#### Self-insurance allowance

Consistent with that approach, a number of regulators have agreed that asymmetric or truncated returns can be adjusted for via the cash flows. The addition of a “self-insurance premium” to operating costs ensures that the WACC is applied to cashflows which reflect the true expected value of outcomes, as required by the CAPM.

Thus the ACCC, ESCOSA and QCA have all considered the incorporation of a self insurance premium to allow for asymmetric risks. However there are strict requirements for costs to be recognised as asymmetric. In particular, the regulated business needs to demonstrate that it has resolved to self-insure for the identified events, and will not make any future claims to recover the costs in the event of the adverse event occurring.

For example, in the SPI Powernet decision, the ACCC set out the following requirements<sup>5</sup>:

*As a general matter, the Commission is required to apply an incentive based form of regulation under the code. After careful examination of the merits of self-insurance on efficiency grounds, the Commission has determined that the following matters must be established prior to considering a self-insurance application:*

- *confirmation of the board resolution to self-insure;*
- *a report from an appropriately qualified insurance consultant that verifies the calculation of risks and corresponding insurance premiums;*
- *relevant self-insurance details that unequivocally set out the categories of risk the company has resolved to assume self-insurance for. This would need to clearly establish what the insured events and exclusions are so as to avoid any future debate as to whether or not an event was a self insured one and form the basis for actuarial assessment noted above;*
- *a regulated entity’s resolution to self-insure would also be expected to explicitly acknowledge the assumed risks of self-insuring (i.e. in the event of future expenditure required as a result of an insurance event such costs would not be recoverable under the regulatory framework as the relevant premiums would have already been*

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<sup>5</sup> ACCC, Dec 2002, Decision: Victorian Transmission Network Revenue Caps 2003-2008, p78-9.

*compensated for within the operating and maintenance element of the allowed MLAR and funded by users, eg if a 1 in a 100 year event occurs in year 1 then the business will need to have the financial ability to restore assets out of own resources).*

*Board resolution and corporate governance requirements are fundamental issues. Risk management strategy of an entity and approaches to events that could affect the overall risk profile of the entity are matters for Board consideration. This is important because it may require parent entity/ shareholder support to self-insure and/ or affect debt covenant requirements of lenders.*

In both the SPI Powernet decision and its GasNet decision, the ACCC concluded that a number of claims for asymmetric risks were not justified when assessed on these criteria.

Protection under the regulatory regime

ARTC recognises that the operation of the regulatory regime serves to protect its revenues for the duration of the regulatory period. However ARTC claims that it has revenue certainty only for the duration of the regulatory period and not beyond. In our view this is not the case. The rules for determining ceiling revenues are well defined and will continue to be so beyond the current regulatory period. Moreover, the ACCC has made it clear that it does not favour re-valuing existing assets<sup>6</sup>:

*The ACCC strongly believes that revaluation should not normally be allowed under a DORC framework because periodic revaluation:*

- *may not be necessary for the regulated firm to be fairly compensated over the life of its assets;*
- *may create unnecessary uncertainty for regulated firms and the users of regulated services;*
- *may encourage gaming of the regulator on revaluation estimates; and*
- *increases ongoing regulatory costs.*

The ACCC also made it clear that it considered the roll forward of the RAB by inflation and the additional of capital expenditure at actual cost creates adequate incentives for investment<sup>7</sup>.

The presumption, therefore, is that ARTC's assets will not be written down should there be a future diminution in coal freight. In that event, the access pricing arrangements in the HVAU allow ARTC to raise prices to remaining customers in order to protect its revenues, in line with the rules on ceiling costs.

<sup>6</sup> ACCC, Apr 2008, Draft Decision Access Undertaking – Interstate Rail Network Australian Rail Track Corporation, p143

<sup>7</sup> ACCC, Ibid, p140

The operation of the under and over payments regime also serves to provide some revenue protection, as they enable revenue on a route to be averaged year on year. Thus underpayments can be offset against overpayments which would otherwise be “truncated” by the revenue ceiling. In addition reductions in revenue from the scaling down or closure of a mine can in effect be recovered from other operators using that line segment.

The protection offered by the regime is evidenced by ARTC’s ability to set access charges annually at a level to recover full economic costs, irrespective of changes in traffic levels, for the constrained network (i.e. for Pricing Zones 1 & 2 which carry 90-95% of current coal traffic) and its intention to do the same for the unconstrained network (i.e. Pricing Zone 3) when traffic levels from the coal fields to the northwest of the Hunter Valley increase, as coal producers and ARTC project they will to meet market growth. ARTC is further protected by the capacity of coal users to pay higher access charges in the event that traffic levels fall, even substantially.

#### Shorter depreciation lives

The then WA rail regulator IRAR considered the issue of stranding risk in its 2003 WACC determination for WNR. WNR suggested that stranded asset risk arose given the long term nature of the investment in rail infrastructure. However, the Authority considered that the stranded asset risks identified by WNR were adequately protected through:

- *the Costing Principles where the Regulator has allowed WNR to calculate the annuity based on a shorter life where WNR can demonstrate that the economic life of an asset is dependent on the life of a specific business, such as a mine;*
- *the re-determination of the ceiling costs with the review of the GRV of the asset base every three years, which could also take account of changed asset lives in cases of potential asset stranding;*
- *the ability of WNR, if affected by asset stranding, to surrender the rail line (if it is not one of the main lines) under the terms of the Lease Agreement or receive compensation from the State Government to maintain the rail line in question; and*
- *the ability to minimise asset stranding through contractual agreements in access agreements.*

Taking all these factors into account, IRAR did not support WNR’s request for an incremental increase to its WACC to reflect asymmetric risk (including stranding risk).

ARTC is proposing relatively short depreciation lives for the existing HVCN, allowing accelerated depreciation to be recovered in line with the expected life of mines rather than the economic lives of the rail assets. ARTC’s Draft Undertaking also provides for 5 yearly determinations of remaining mine life.

#### Conclusion

The operation of the regulatory regime, coupled with the capacity of coal producers to pay, serve to protect ARTC from the risk of reduced revenues.

The operation of the regulatory regime mitigates any potential risk, through the roll forward of the RAB, the ability to average revenues within line segments, the operation of the over and under payments regime, and the use of a depreciation profile that reflects the economic life of the mines on each segment.

Moreover this protection does not cease at the end of the forthcoming regulatory period as claimed by Synergies.

The discussion above also indicates that there is not any strong regulatory precedence for choosing an equity beta on the high side of the range to compensate for asymmetric risk. The preferred regulatory solution is to allow for asymmetric risk through the calculation of a self-insurance premium. However, as instituted by the ACCC in other determinations, this places strong requirements on the regulated business to show that the business has resolved to self-insure the identified events, and is prepared to cover the consequences of an event occurring. In this instance, it is far from clear whether and how ARTC would in fact bear the consequences of “self-insured” asset stranding since the operation of the regulatory regime would enable the ARTC to recover lost revenues from other operators on any given line segment.

## 2.5 Separate WACCs for existing assets and new investment

### ARTC proposal

The ARTC has proposed that two separate WACCs be applied for the purpose of calculating ceiling costs<sup>8</sup>, one for existing assets and one for new investment. ARTC’s proposal is intended to ensure that the rail infrastructure provider is given adequate incentives to undertake new investment, given the presence of the stranding risks claimed by synergies. Specifically, ARTC has proposed a cost of capital at the 60<sup>th</sup> quartile of the range for existing assets, and a cost of capital at the 75<sup>th</sup> quartile for new assets.

### Response

As recognised by the NSW Minerals Council (NSWMC), significant new investment is important to improve the efficiency and expand the capacity of the coal supply chain, making the provision of appropriate incentives essential. However the discussion above indicates that ARTC’s concern over stranding risk is misplaced, and that the ARTC does not face significant asymmetric risk of asset stranding in regard to new mines. Moreover any such risk can be mitigated by ARTC (through contributions and TOP contracts) and the operation of the regulatory regime itself.

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<sup>8</sup> ARTC (2009) Explanatory Guide – Hunter Valley Access Undertaking 2009, p108

We are concerned also that the ARTC has conflated new investment in general, with new investments designed to support new mines. In practice, a relatively small component of the investment program is aimed at extending the network at its extremities in order to reach the new mines. Much of the new capital expenditure is to expand/upgrade the capacity of existing line segments to handle traffic level increases. Some of this increased traffic will come from the new mines, and some from the expansion of existing mines.

It is true that an increasing proportion of traffic will come from the more distant mines entering the rail network on the existing Ulan and Gunnedah line segments and then traversing the Muswellbrook to Newcastle segment. However a significant proportion of the traffic increases will come from the closer mines (between Singleton and Muswellbrook).

Moreover, the phased nature of the growth and the shared nature of the route means that the investment risk is less clear cut than as presented by ARTC. It is not appropriate for the ARTC to assume that a higher investment risk applies to all new investment, as relatively little of the investment is solely devoted to serving the new mines at the extremities of the network.

Secondly we note that the new investment will serve to reduce the taxation costs faced by ARTC. If a differential return is provided, the tax effects also need to be differentiated. Given the size of the capital program, these tax impacts are potentially significant.

For example, tax writing down allowances could result in little or no tax payments being attributed to the line segments subject to major capital expenditure. If that were the case, the ceiling cost for the new lines could end up lower than the ceiling for existing lines. While this is in the nature of timing, rather than a permanent difference, application of the ACCC's post tax revenue model would indicate that it should be taken into account nonetheless.

Moreover, taxation is calculated for the business as a whole. It would introduce a further layer of complexity to introduce rates of return and taxation costs which are differentiated according to existing and new assets.

Accordingly, we consider that it is not appropriate to allow separate WACCs for existing and new asset values. We note that it is standard regulatory practice to identify the rate of return required for the regulated business as a whole, and are not aware of any instance where different rates of return have been applied to asset groupings within a single industry.

## 2.6 Rate of return period

ARTC's draft HVAU proposes that the cost of capital be reviewed by ARTC after five years and, if necessary, a revised Rate of Return be proposed for ACCC approval<sup>9</sup>.

NSWMC has submitted to the ACCC that it is not acceptable for ARTC to have the option of only seeking a change if it would suit ARTC (i.e. be an increase) and that there must be a review after 5 years. Formal five yearly reviews are consistent with the current access arrangements under the NSW Rail Access Undertaking and in other States such as WA and Queensland.

In addition, the ARTC is proposing that the risk free rate and the debt margin be reset every 12 months to reflect current market conditions.

Regulatory practice varies on this issue. In the WA Access Regime, ERA updates its cost of capital estimate each year for the risk free rate and inflation, with a full cost of capital review being undertaken every five years. By contrast, IPART disagreed with annual updating on the grounds that it would not provide ARTC and its customers with regulatory certainty<sup>10</sup>.

On balance the NSW Minerals Council believes that it is appropriate for market-based parameters to be up-dated on an annual basis as it reduces the risk that the assessed cost of capital gets out of line with the market. The updating should be on the basis approved by the ACCC for the initial undertaking.

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<sup>9</sup> ARTC (2009) Hunter Valley Access Undertaking section 4.7(c) on page 29.

<sup>10</sup> IPART, May 2009, Op cit, p45

## 3 WACC Parameters

### 3.1 Risk free rate and inflation

#### Synergies proposal

Synergies propose that the nominal risk free rate be assessed as the average of implied returns on 10 year nominal Commonwealth government bonds over a 20 day averaging period. Synergies calculate the 20 day average for the period ending on 31<sup>st</sup> March 2009 to be 4.35%.

In addition, Synergies argue that current financial conditions have accentuated the so-called convenience yield that is claimed to attach to Commonwealth government bonds. Synergies suggests that the risk free rate should therefore be adjusted upwards by 60 basis points, to reflect the spread between ten year Commonwealth Government bond rates and the yields on credit default swaps.

#### Use of 10 year Commonwealth bonds

Synergies's proposal for assessing the nominal risk free rate using the average of ten year Commonwealth bond rates is consistent with the approach used by the ACCC in its determination on ARTC's Interstate Access Undertaking, and the final recommendations of the AER in its proposals for the revised WACC parameters to be used in determining transmission and distribution prices/revenues<sup>11</sup>. We therefore support this approach for the assessment of the risk free rate.

#### No convenience yield adjustment

We do not consider that any adjustment is required to account for the "convenience yield". In its December Statement of Regulatory Intent on WACC parameters, the AER concluded there was no significant bias in using nominal yields as a measure of the risk free rate, and found that arguments regarding the existence of a 'convenience yield' were questionable and not adequately supported by the evidence<sup>12</sup>. In its May 2009 Final Decision, the AER confirmed its view that there is no persuasive evidence to suggest that CGS yields exhibit any downward bias<sup>13</sup>. Moreover in its August 2009 Final Decision in relation to the NSW Rail Access Undertaking, IPART noted that Synergies had concluded that an adjustment for the convenience yield may no longer be necessary due to increases in the ten year Commonwealth bond

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<sup>11</sup> AER, May 2009, Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters: Final Decision.

<sup>12</sup> AER, Dec 2008, Electricity transmission and distribution network service providers: statement of the revised WACC parameters (transmission): statement of regulatory intent on the revised WACC parameters, p97

<sup>13</sup> AER, May 2009, Op cit, p139.

rate<sup>14</sup>. IPART concluded that 10 year CGS yields remained the most appropriate proxy for the risk free rate.

Regulatory practice is that the cost of capital should be assessed using the risk free rate, and other time-varying parameters such as expected inflation and the debt margin, that have been up-dated as close as possible to the time of regulator's decision.

#### Forecast inflation

Strictly speaking, an estimate of forecast inflation is not required to identify a nominal Vanilla cost of capital. However it is useful to enable comparison with other regulatory determinations that adopt a real approach to the cost of capital. Recent decisions by the AER and ERA have based inflation forecasts on the RBA's forecasts and target band combined with market forecasts. In a recent decision<sup>15</sup>, IPART concluded that it was preferable to use a market-based approach for estimating inflation. In its August Final Decision on the NSW Rail Access Undertaking, IPART used Australian inflation-indexed swaps to calculate an estimate of inflation, with cross checks provided by RBA forecasts/target and breakeven inflation adjusted for scarcity<sup>16</sup>.

#### Recommendation

The nominal risk free rate will need to be up-dated closer to the date of final approval of ARTC's Access Undertaking. A 20 trading average ending on 16<sup>th</sup> July 2009 of yields on 10 Commonwealth Government Securities provides a nominal risk free rate of 5.45%. IPART's estimate of inflation estimated at the same date was 2.7%.

## 3.2 Gearing

#### ARTC proposal

The report by Synergies reviews previous regulatory decisions on the appropriate benchmark capital structure, and collects data on the capital structure for businesses in similar industries to ARTC. Synergies conclude that a range of between 50% and 60% is reasonable as a starting point, but recommends an upper bound of 55% because the business risks faced by a coal rail network is regarded as greater than that of an energy transmission company.

#### Response

For its August 2009 Final Decision, IPART assumed a range for gearing of 50 to 60%. This range is consistent with IPART's 2005 Determination. IPART considered that this range was appropriate given that US rail infrastructure

<sup>14</sup> IPART, Aug 2009, Op cit, p13

<sup>15</sup> IPART, May 2009, Adjusting for expected inflation in deriving the cost of capital: Analysis and Policy Development — Final Decision

<sup>16</sup> IPART, Aug 2009, Op cit, p17

companies had debt funding levels below 50%, while other Australian regulators have used assumed gearing of 35% to 60%

In its 2006 Determination of Queensland Rail's coal reference tariffs, the QCA accepted QR's proposal to maintain its existing capital structure of 55% debt and 45% equity. In its proposed access undertaking for 2009 (submitted in September 2008), QR considered that the assumption of 55% gearing remains an appropriate long term target<sup>17</sup>. This was despite QR forecasting a significant capital investment program.

It should be acknowledged that the scale of QR's investment program relative to the opening RAB is lower than that expected by ARTC. Thus QR is proposing capital expenditure over the next access undertaking period of some \$1 billion, compared to a proposed opening RAB of just under \$3 billion. However, the absolute scale of the investment program is similar to that proposed by the ARTC (\$1.15 billion).

Moreover, we note that the ESC previously rejected arguments that high levels of investment relative to the value of the RAB created additional risk for the Victorian regional water authorities. In particular, the rural water authorities were given an initial RAB of zero. Nonetheless, the same 60% gearing ratio was assumed for the rural business as was previously determined for the urban businesses, which had a combined opening RAB of some \$9 billion<sup>18</sup>.

The sample of rail firms over which an average capital structures was calculated by Synergies included a range of traffic types, including inter-modal freight, grain, bulk minerals and passengers. Railways serving intermodal freight are generally acknowledged to have a higher degree of systematic risk than bulk freight<sup>19</sup>, and hence might be expected to have a lower level of gearing.

The above discussion suggests that 50 to 60% provides a reasonable range for the benchmark level of gearing. We consider that the most relevant comparator to ARTC's Hunter Valley coal network is QR's coal network, which suggests a point estimate of 55% as the most appropriate gearing level. This is consistent with IPART's recommended range of 50% to 60%. However given current capital market conditions, we would endorse moving to the bottom of Synergies's proposed range (ie 50%) to provide an appropriately conservative gearing benchmark.

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<sup>17</sup> QR, Sep 2008, QR's Access Undertaking (2009) Vol 2, p72

<sup>18</sup> See ESC, 20 June 2006 Media release, No 10/2006

<sup>19</sup> ACG, Oct 2007, Railways (Access) Code 2000: Weighted Average Cost of Capital: 2008 WACC Determinations, p28

## 3.3 Equity beta

### 3.3.1 ARTC's proposal

Synergies discuss a number of influences on a firm's degree of systematic risk in its First Principles analysis. Synergies then use a set of comparator companies to derive a range for the asset beta appropriate for ARTC's coal network. Synergies also highlight the statistical imprecision involved in estimating beta and repeats its view that the consequences of under-estimating the cost of capital are more severe than the consequences of over-estimation.

Synergies propose a range for asset beta of 0.5 to 0.6. The lower bound is superficially consistent with the QCA's 2005 decision for QR's coal network. However as discussed below, the QCA decision incorporated a positive debt beta and so in fact was equivalent to an asset beta of 0.44. Moreover the QCA decision was an upper bound rather than a lower bound.

Synergies' proposed upper bound is within the range of asset beta estimates found for other listed (US) rail firms. However these other rail businesses have higher systematic risk than ARTC as they serve intermodal markets.

In support of a beta above the lower bound, Synergies suggest that the size of ARTC's investment program relative to its existing RAB increases risk that is not remunerated elsewhere, and that ARTC should be afforded some compensation for stranding risk. Synergies also suggest that an upper bound beta takes regard of the asymmetric consequences of error in choosing the appropriate WACC, in that under-investment is said to carry more adverse consequences than over-investment.

### 3.3.2 Response

#### Regulatory precedent

We agree with Synergies that past regulatory decisions provide useful guidance on the appropriate range for the asset beta. Table 2 summarises the beta factors determined for rail in recent determinations.

Table 2 **Recent rail regulatory decisions on beta factors**

Regulator	Decision	Date	Asset beta
IPART	Hunter Valley Coal Network	May 2005 Aug 2009	0.32 to 0.46
QCA	Queensland Rail Coal reference tariffs	Dec 2005	0.5, debt beta of 0.12
ESC	Victorian Rail Access Regime	May 2006 (Draft April 2006)	0.50 for PN
ERA	WA Freight and urban networks	June 2008	0.65 for freight
ACCC	ARTC Interstate Access Undertaking	July 2008	0.65



IPART

IPART previously adopted an equity beta in the range 0.70 to 1.0 for its 2005 determination, equivalent to an asset beta of 0.32 to 0.46<sup>20</sup>. In its 2009 Draft and Final Decisions, IPART adopted the same assumption of an equity beta in the range 0.7 to 1.0 and repeated that this was equivalent to a range for asset beta of 0.32 to 0.46<sup>21</sup>. The mid-point of this asset beta range is 0.39.

QCA

As identified by Synergies, QCA's December 2005 determination on the cost of capital for QR's coal network provides a particularly relevant precedent for ARTC's Hunter Valley network. QR originally proposed an asset beta of 0.60 using a portfolio of Australian coal firms to proxy QRs below rail operations. However, QCA argued that Australian coal companies are not appropriate comparators for benchmarking beta, as their explanatory factors for systematic risk are fundamentally different. QCA argued that operating leverage, form of regulation and contractual arrangements were the most relevant factors in assessing QR's beta factor<sup>22</sup>.

On behalf of QCA, consultants ACG were asked to derive an estimated equity beta and examined 32 listed companies from the rail, coal, energy and transport sectors to assess their comparability to QR. ACG suggested that QR's equity beta was likely to lie between the Port of Taurunga's "pre-bubble" average equity beta of about 0.60, and the equity beta of the average Australian electricity network (0.90). Within this range, QCA determined a beta factor of 0.80, based on an asset beta of 0.45, debt beta of 0.12 and gearing of 55%.

Following extensive debates over appropriate comparators, and the degree of systematic risk facing QR, QCA accepted that it was arguable that QR should have the same asset beta (0.5) as had been adopted for the Dalrymple Bay Coal Terminal as they were part of the same coal supply chain. QCA considered that the DBCT faced a higher asset stranding risk than QR, but that this was offset by the regulatory arrangements and lower operational gearing.

As indicated above, an asset beta of 0.5 derived for QR must be levered for ARTC using consistent assumptions for the debt beta. Using a debt beta of 0.12 and our preferred assumptions would give an equity beta of 0.88. Combining an asset beta of 0.44 with a debt beta of 0 would likewise give an equity beta of 0.91, indicating an element of consistency between IPART and QCA assumptions on equity beta.

It should also be noted that the QCA regarded an asset beta of 0.50 as an upper bound. In selecting an asset beta at the upper bound, QCA was

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<sup>20</sup> IPART, May 2005, Report on the Determination of Remaining Mine Life and Rate of Return From 1 July 2004, NSW Rail Access Undertaking, p20.

<sup>21</sup> IPART, May 2009, Op cit, p6

<sup>22</sup> QCA, Dec 2005, Decision: QR's 2005 Draft Access Undertaking, p16

responding to stakeholder concerns about the need to provide incentives for the significant investment program envisaged, concern about the uncertainty involved in estimating beta factors and the risk of asset stranding. Given this, it is not clear why a further margin is required to allow for such issues for ARTC.

#### ERA and ACCC

The asset betas determined for WestNet Rail freight network and ARTC's Interstate Undertaking are higher at 0.65. However these are much less relevant as comparators for ARTC's Hunter Valley network because freight networks serving intermodal traffic are subject to higher levels of systematic risk than railways carrying bulk commodities such as coal.

For example, in the Draft Determination for the WA rail freight network, ERA proposed adjusting the asset beta range downwards to reflect the lower systematic risk of the freight network's bulk minerals and grain business compared to intermodal traffic<sup>23</sup>. Similarly, QCA commented that the ARTC's interstate network is likely to have greater systematic risk than QR's coal network as it is largely involved with domestic freight operations<sup>24</sup>.

ERA has also recently published its Final Decision on the cost of capital for the Pilbara Infrastructure railway network. ERA adopted an asset beta of 1.0 and an equity beta of 1.43, in recognition of the particular circumstances of the railway – namely that it was newly built, remote, servicing a single commodity and a single customer<sup>25</sup>. As IPART identified, however, the particular characteristics of the railway mean that it is not directly relevant for the Hunter Valley coal network<sup>26</sup>.

#### Synergies's rail sample

The same problem applies to the average beta derived by Synergies for a sample of rail companies. Indeed, when advising ERA on an appropriate asset beta for WestNet Rail, ACG cautioned that an asset beta derived from US rail comparators may overstate the asset beta appropriate for WestNet Rail<sup>27</sup>:

*The reason for this is that the comparator businesses would have a greater proportion of revenues derived from intermodal (container) traffic, which would generally be expected to have higher levels of non-diversifiable risk (and higher beta values) than the freight rail system, which as a greater proportion of revenues from bulk transport of grain and mineral products. However, no relevant*

<sup>23</sup> ERA, June 2008, 2008 Weighted Average Cost of Capital for the Freight (WestNet Rail) and Urban (Public Transport Authority Railway) Networks, Final Determination, p25

<sup>24</sup> QCA, Dec 2005, Op cit, p30

<sup>25</sup> ERA, June 2009, The Pilbara Infrastructure (TPI): Final Determination on the 2009 Weighted Average Cost of Capital for TPI's Railway Network, p44

<sup>26</sup> IPART, Aug 2009, Op cit, p39

<sup>27</sup> ACG, Oct 2007, Op cit, p28

*comparator businesses have been identified that have a greater proportion of revenues from bulk commodity traffic.*

Such caution is even more apposite for ARTC's Hunter Valley network, given that most of the revenues are derived from the freighting of coal.

**Contractual and regulatory arrangements**

In assessing the extent of systematic risk, a crucial aspect is the extent to which variations in freight volumes translate into variations in network revenues. The presence of significant take-or-pay contracts will reduce the extent of systematic risk, as will a regulatory regime that provides security of revenue to the infrastructure provider.

For example, in setting an equity beta for WGAR, the passenger rail service provider, the then rail regulator ORAR determined a low asset beta on the grounds that the network had low systematic risk because government contracts largely mitigated WGAR's price, cost and volumes risk<sup>28</sup>.

Similarly for QR, the QCA argued that the take-or-pay arrangements and volume triggers provided revenue protection for QR<sup>29</sup>. The introduction of take-or-pay contracts by ARTC will similarly reduce the extent to which the HVCN is vulnerable to revenue fluctuations that correlate with the market. QCA also suggested that the regulatory arrangements for HVCN did not mitigate the higher systematic risk of the network. However, the regime does in fact provide significant revenue protection to ARTC – as ARTC acknowledge.<sup>30</sup> ARTC's revenue is protected against access pricing risk because it is able to set access charges for each mine each year to recover its estimated full economic costs on the constrained network and the operation of the overs and unders account ensures that occurs in practice.

Given Australian coal's low cost base, we do not believe the industry will suffer major mine closures in advance of exhaustion of reserves. Moreover, the operation of the access regime provides ARTC with assurances that the costs will be shared between the remaining operators in the event of mine closures. The introduction of take-or-pay contracts provides ARTC with additional revenue security. In this context, it is relevant that most of the take-or-pay contracts being negotiated by the ARTC will be evergreen, life-of-mine contracts and the proposed minimum term of 15 years will extend well beyond the 10 year term of the Undertaking, further increasing the revenue protection afforded to the ARTC.

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<sup>28</sup> ORAR, July 2003, Weighted average cost of capital to apply to Westnet rail and The Western Australian Government Railways Commission, p13

<sup>29</sup> QCA, Dec 2005, Op cit, p33

<sup>30</sup> ARTC, 2009, Op cit, p104

### Selection of beta

Synergies argue that beta should be set towards the high end of the range to reflect the risk ARTC faces given its significant investment program. As indicated above, we do not find the arguments put forward by Synergies and ARTC that investment in new mines creates significant asymmetric risk to be convincing. Similarly we consider that Synergies' arguments regarding the scale of the investment program relative to the regulatory asset value are unconvincing also. In the case of the Victorian rural water companies, the initial RAV was set to zero – so that new investment was infinitely greater in scale – yet this was not seen as influencing the degree of asymmetric risk.

Moreover the ARTC has a range of options open to it to mitigate its demand risk, including take-or-pay contracts and customer capital contributions, and the regulatory regime also provides revenue protection to ARTC (in particular the roll forward of the RAB, the presumption against asset write-downs, and the choice of the regulatory depreciation rate). In addition, the ARTC's proposal does not provide any guarantee that the ARTC and not customers would bear the cost should self-insured events arise.

Although IPART has chosen a cost of capital in the upper part of the range, IPART was explicit that this was not in response to stranding or asymmetric risk or the effects of the global financial crisis<sup>31</sup>. Rather, IPART followed the precedent generated by its earlier reviews, whereby a WACC above the mid-point of the range was selected in order to encourage new investment. This reflected IPART's view that the risks of underinvestment were significantly greater than the risk of overinvestment.

### Conclusion

The beta factor of 0.32 to 0.46 determined by IPART for the HVCN remains a relevant benchmark for the ARTC's existing network. The equity beta implied by IPART's determination is consistent with that determined by QCA for QR's rail network, which we regard as an appropriate comparator by virtue of the nature of the traffic and the size of anticipated investment program.

In a study for ERA, Allens Consulting Group concluded that precedent from other regulatory decisions, from the ACCC's 2002 ARTC determination, QCA's 2006 approval of QR's access undertaking and the ESC's 2006 determination for the Victorian Rail Access Regime (VRAR), suggested asset betas in the range 0.35 to 0.50 for rail businesses servicing bulk commodity freight<sup>32</sup>. We consider that such a range remains appropriate for the HVCN, and recommend an asset beta of 0.40. We consider that a cost of capital in the middle of the reasonable range is sufficient to remunerate investment adequately. We agree with regulatory precedent, most recently on the part of

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<sup>31</sup> IPART, Aug 2009, Op cit, p39

<sup>32</sup> ACG, Oct 2007, Op cit, p31

IPART, that it is not appropriate to skew the choice of beta for stranding or asymmetric risk.

## **3.4 Market Risk Premium**

### **3.4.1 Synergies proposal**

Synergies suggest that the key difficulty in estimating the market risk premium (MRP) arises from it being an expectation and therefore not directly observable. Synergies begin by examining whether the MRP has changed over time, and refute the argument made in some of the literature that the market risk premium for Australia is declining.

Synergies then examine both survey data and studies of historical averages of the market risk premium for evidence of the appropriate risk premium for Australia. While acknowledging that surveys have the advantage of being forward looking, Synergies found the available survey evidence of limited usefulness.

In examining the historical studies, Synergies address a number of estimation issues. These include the time horizon over which estimates are made and the importance of utilising a longer time period, the choice of arithmetic or geometric averaging and the extent to which deviations from the mean are persistent. Synergies cite a number of studies that have sought to estimate the historical MRP, and suggest that the results for Australia have tended to fall within a range 6 to 8%. Synergies also conclude that the long-run MRP has been at least 6.8%.

Synergies undertook their own analysis based on the period 1901 to October 2007. They found the MRP to be extremely volatile, and concluded that an estimation period of at least 30 years was required for a meaningful estimate. Synergies find that including the most recent period (to December 2008) serves to reduce the estimate of the long run MRP to 5.8%. Synergies propose that 2008 data be excluded on the basis that it is unique and has a strong impact on the results. Synergies could find no empirical evidence to support the suggestion that the MRP will fall in future, and concluded that 6% to 7% constituted a reasonable range for the MRP.

### **3.4.2 Response**

Table 3 shows that other regulators have consistently supported the use of a market risk premium of 6% in previous rail decisions.

Table 3 Recent rail regulatory decisions on the market risk premium

Regulator	Decision	Date	Market risk premium
IPART	Hunter Valley Coal Network	May 2005 Aug 2009	5.5 to 6.5%
QCA	Queensland Rail Coal reference tariffs	Dec 2005	6%
ESC	Victorian Rail Access Regime	May 2006 (Draft April 2006)	6%
ERA	Freight and urban networks	June 2008	6%
ACCC	ARTC Interstate Access Undertaking	July 2008	6%

#### ACCC

ARTC's June 2008 proposed Interstate Access Undertaking proposed a market risk premium of 6.5%, based on historical studies and expert opinion from Synergies. In its determination, the ACCC cited a number of considerations in retaining its assumption of a 6% premium<sup>33</sup>:

- While historical return studies do suggest higher returns, a 2008 Australian study suggested previous studies were biased upwards due to errors in the dividend data used
- UK authors Dimson, Marsh and Staunton suggest that past market risk premia need to be adjusted downwards for unanticipated cash flow growth and unanticipated declines in business and investment risk
- Studies of Australian financial market practitioners involved in capital budgeting show they commonly use 6% per annum as a market risk premium for investment valuations.

#### AER

In its May 2009 Final Decision on cost of capital parameters, the AER examined estimates of the MRP based on historical estimates, survey measures and cash flow based measures. The AER noted that<sup>34</sup>:

- Long term historical estimates (1883-2008, 1937-2008, 1958-2008), 'grossed-up' for a 0.65 value of imputation credits, produced a range of 5.7 to 6.2 per cent. While the AER recognised that the inclusion of 2008 served to reduced estimates of the long term MRP, it preferred the inclusion of the more recent data.
- Survey measures strongly indicated that a MRP of 6 per cent was by far the most commonly adopted value by market practitioners—though these surveys were before the global financial crisis
- Cash flow based measures indicated a forward looking MRP well above 6 per cent. However the AER also noted that up until 2008 these measures consistently indicated a forward looking MRP well below 6 per cent.

<sup>33</sup> ACCC, July 2008, Final Decision ARTC Access Undertaking – Interstate Rail Network, p157

<sup>34</sup> AER, May 2009, Op cit p237

The AER concluded that prior to the onset of the global financial crisis, an estimate of 6 per cent was the best estimate of a forward looking long term MRP, and that under relatively stable market conditions and assuming no structural break has occurred in the market, this would remain the AER's view as to the best estimate of the forward looking long term MRP.

However, the AER recognised that relatively stable market conditions do not currently exist. Taking into account the uncertainty surrounding the global economic crisis, the AER considered that either:

- the prevailing medium term MRP is above the long term MRP, but will return to the long term MRP over time, or
- there has been a structural break in the MRP and the forward looking long term MRP (and consequently also the prevailing MRP) is above the long term MRP that previously prevailed.

The AER concluded that therefore a MRP of 6.5 per cent is reasonable at this time, as an estimate of a forward looking long term MRP commensurate with the conditions in the market for funds over the forthcoming review period<sup>35</sup>.

#### IPART

In its 2005 report on the cost of capital for the NSW Hunter Valley Access Undertaking, IPART acknowledged the uncertainty associated with historical studies of the market risk premium. The Tribunal determined a range of 5.5 to 6.5 per cent having regard to evidence from long term historical market risk premium studies<sup>36</sup>.

In its recent 2009 Draft Decision on the cost of capital, IPART again emphasised the difficulty of using historic data to estimate a forward looking MRP. IPART also noted that the recent fall in equity markets was likely to have reduced the size of the market risk premium. In response to Synergies' proposed exclusion of December 2008 data when estimating the long term MRP, IPART concurred with the AER that it is not appropriate to exclude periods from an approach which is based on long-term historical averages.

IPART concluded that the most appropriate long-term measure of the MRP is likely to be 6%. While IPART had regard to the adjustment made by the AER to increase the MRP by 0.5%, IPART was reluctant to make adjustments that imply that the regulator has better information not available to the market<sup>37</sup>. In its August Final Decision, IPART reaffirmed this range for the MRP, and concluded that no adjustment was warranted for the ongoing impact of the

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<sup>35</sup> AER, May 2009, p238

<sup>36</sup> IPART, May 2005, Op cit, p16

<sup>37</sup> IPART, May 2005, Op cit, p44

financial crisis<sup>38</sup>. IPART's Final Decision therefore recommended a range for the MRP of 5.5 to 6.5%.

#### Recommendation

There is a heavy weight of regulatory precedent in favour of a 6% market risk premium, and agreement by the AER and IPART that the assessed range based on current evidence for the long run MRP is close to 6% (namely 5.7% to 6.2%). The key issue is the implication of the global financial crisis, and whether the MRP is temporarily above its long run level or whether there has been a structural break and the long term MRP has changed.

In the light of the evidence and analysis considered by the AER and IPART, we consider that the range for the MRP proposed by Synergies (of 6% to 7%) is too high, particularly if accompanied by the choice of a cost of capital towards the upper end of the range. We believe the most appropriate long term MRP remains 6%. However the ACCC will need to keep a "watching brief" on the evidence regarding the MRP. If the ACCC believes an adjustment for current market conditions is required, we would recommend that this is best done in a manner consistent with the AER's approach, namely to set an MRP of 6.5%.

### 3.5 Cost of debt

#### 3.5.1 Synergies proposal on debt margin

Synergies have proposed a debt margin based on data from Bloomberg for a BBB rated firm. Since Bloomberg no longer provide information related to 10 year BBB corporate bonds, Synergies propose basing the estimate of the debt margin on the margin for 8 year BBB bonds plus the margin between A-rated 8 year and 10 year bonds. Using a 20 day averaging period to the 31<sup>st</sup> March 2009, Synergies estimate a debt margin of 336 basis points.

#### 3.5.2 Response on debt margin

#### Credit rating

Table 4 summarises recent regulatory determinations on the debt margin and debt raising costs for rail infrastructure providers. The table indicates, with the exception of the ACCC's determination of the ARTC Interstate Access Undertaking, most regulators benchmarked the debt margin using BBB+ or BBB+ to BBB rated securities.

Moreover, IPART recently released a discussion paper on estimating the debt margin, which indicates that most utility regulators for electricity and gas

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<sup>38</sup> IPART, Aug 2009, Op cit, p42

determined the debt margin based on a target credit rating of BBB+ (or A to BBB+ in the case of ICRC)<sup>39</sup>.

Table 4 **Recent rail regulatory decisions on the debt margin**

Regulator	Decision	Date	Debt beta	Debt margin	Debt raising costs
IPART	Hunter Valley Coal Network	May 2005	0	101 to 110 basis points, BBB+ to BBB rated bonds	Additional 12.5 basis points
IPART	Hunter Valley Coal Network – Final Decision	Aug 2009	0	2.0 to 3.4%, based on BBB+ to BBB rated securities	Inclusive of an allowance of 12.5 basis points
QCA	Queensland Rail Coal reference tariffs	Dec 2005	0.12	1.3%, based on credit rating of BBB+	Additional 12.5 basis points
ESC	Victorian Rail Access Regime	May 2006 (Draft April 2006)	0	116 basis points, based on BBB+ rated bonds	Additional 12.5 basis points
ERA	Freight and urban networks	June 2008	0	302 basis pts freight based on BBB+ rated bonds	Additional 12.5 basis points
ACCC	ARTC Interstate Access Undertaking	July 2008	0	3.42% based on BBB rating.	Additional 12.5 basis points included, but lower allowance recommended

We consider that a benchmark credit rating of BBB+ would be appropriate for ARTC’s Hunter Valley Coal Network, given the more stable revenue streams and higher levels of cost recovery achieved vis-a-vis the ARTC’s Interstate network.

**Choice of comparison portfolio**

In its May Discussion Paper, IPART also considered whether composition of the portfolio of reference bonds used for the debt margin should be amended. IPART was concerned that the current financial crisis has led to a re-pricing of risk with regard to both industry specific issues (property and financial services) and business specific issues (mainly debt and its refinancing)<sup>40</sup>. IPART found that its traditional approach of referencing BBB+ to BBB rated bonds produced volatile results due to the small number of proxies included.

Moreover, IPART found that the recent increase in yields of utility-issued bonds was less pronounced than the increase for IPART’s traditional portfolio of bonds. Using the traditional methodology of BBB+ to BBB yields, IPART estimated a debt margin of 2.8% to 3.5%. Using a portfolio of utility-issued bonds IPART determined a range of 1.1% to 3.5% for the debt margin.

<sup>39</sup> IPART, May 2009, Estimating the debt margin for the weighted average cost of capital Analysis and Policy Development — Discussion Paper May 2009, p11.

<sup>40</sup> IPART, May 2009, Op cit, p26

In its August Final Decision IPART continued to use the traditional methodology for estimating the debt margin. However IPART indicated that it was still considering the views of stakeholders on its debt margin discussion paper<sup>41</sup>.

In our view, a portfolio of utility bonds would make an appropriate comparator for determining ARTC's debt margin. ARTC's revenue will be up around the regulated ceiling for most of the network, similar to other regulated utilities such as electricity and gas and unlike the Interstate Network. We therefore recommend a debt margin in the centre of the range identified by IPART for a portfolio of utility bonds, namely 2.3%.

#### Debt raising costs

Synergies propose that a further allowance for debt raising costs of 12.5 basis points be added. This is consistent with the past practice of many regulators, including IPART, ACCC, QCA and ERA.

In its draft decision on the ARTC's Interstate Access Undertaking, the ACCC was of the view that a fair allowance for debt issuance costs would be lower, at 8.3 basis points<sup>42</sup>. Synergies challenge this assessment on the grounds that the allowance was based on the costs of a firm issuing its own debt, but excluded the costs involved with establishing and running a treasury operation.

The AER did not explicitly examine debt raising costs in its December 2008 WACC proposals. However, the AER referred to the views expressed in the AER's recent draft decisions on the NSW and ACT transmission and distribution determinations<sup>43</sup>. In the TransGrid draft decision, the ACCC developed a benchmark for debt raising costs based on the costs applicable to Australian companies accessing private debt markets<sup>44</sup>. These costs included gross underwriting fees, allowances for legal and roadshow expenses, credit rating fees and registry and paying charges for each bond issue. The AER assumed refinancing of debt with each (five year) regulatory period. Bond issues were assumed to be for \$200 million, with the cost benchmark found to decrease as the number of bond issues increased. TransGrid was assumed to require 13 bond issues to refinance \$2.54 billion of notional debt<sup>45</sup> over the regulatory period.

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<sup>41</sup> IPART, Aug 2009, Op cit, p27

<sup>42</sup> ACCC, April 2008, Op cit, p152

<sup>43</sup> AER, Dec 2008, Op cit, p257

<sup>44</sup> AER, Oct 2008, TransGrid transmission determination 2009–10 to 2013–14, Draft Decision, p139

<sup>45</sup> Equivalent to the opening RAB times the assumed benchmark gearing.

ARTC plans to spend \$1.4 billion on infrastructure enhancements over the next five years<sup>46</sup>. Assuming this expenditure is spread evenly over the period and applying the AER's methodology to establish an opening notional debt would imply a benchmark debt raising cost of 8.3% (for 6 bond issues) for a five year period.

## 3.6 Taxation and Gamma

### 3.6.1 Synergies proposals on Gamma

Synergies contend that the value of gamma has fallen significantly since the introduction of the 45-day rule, with zero being the best estimate available.

Synergies argue that the marginal investor is foreign. The introduction of the 45-day rule prevents foreign investors from benefiting from franking credits. Accordingly Synergies contend that franking credits will not be accorded a value in the pricing of shares. Synergies cite studies by Cannavan, Finn and Gray<sup>47</sup>, Feuerherdt, Gray and Hall<sup>48</sup> and Gray and Hall<sup>49</sup> as providing empirical support for this proposition.

Synergies review a number of empirical "dividend drop-off" studies to derive an empirical estimate of the value of gamma. The results of these studies varied, with some studies finding that franking credits had some value, but others concluding the value was zero.

Synergies identify a number of methodological issues with the studies - most significant being multi-collinearity between the value of cash dividends and franking credits and the inclusion of data from the period prior to the introduction of the 45-day rule (which would produce an upward bias in results. Synergies cite Cannavan, Finn and Gray<sup>50</sup> as using an arguably more robust methodology than dividend drop-off studies. This study concluded that since the introduction of the 45-day rule, franking credits are of no value to the marginal investor.

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<sup>46</sup> ARTC, July 2009, 2009-2018 Hunter Valley Corridor Capacity Strategy Consultation Document

<sup>47</sup> D. Cannavan, F. Finn and S. Gray (2004), "The Valuation of Dividend Imputation Tax Credits in Australia", *Journal of Financial Economics*.

<sup>48</sup> Feuerherdt, Gray and Hall (2007), "The Value of Imputation Tax Credits on Australian Hybrid Securities", forthcoming publication in the *International Review of Finance*.

<sup>49</sup> S. Gray and J. Hall (2006), "The Relationship Between Franking Credits and the Market Risk Premium", Unpublished Working Paper, University of Queensland.

<sup>50</sup> D. Cannavan, F. Finn and S. Gray (2004), *Op cit*.

To circumvent these methodological problems, Synergies undertook a simple non parametric paired test on a sample of stocks offering franked and unfranked dividends. Synergies conclude that there is insufficient evidence to reject the hypothesis that franking credits are worthless, so that gamma should be set to zero.

### 3.6.2 Regulatory precedent

#### Regulatory precedent

Table 5 shows that previous rail regulatory decisions on gamma strongly support a gamma of 0.5.

Table 5 Recent rail regulatory decisions on gamma

Regulator	Decision	Date	Gamma
IPART	Hunter Valley Coal Network	May 2005 Aug 2009	0.3 to 0.5
QCA	Queensland Rail Coal reference tariffs	Dec 2005	0.5
ESC	Victorian Rail Access Regime	May 2006 (Draft April 2006)	0.5
ERA	Freight and urban networks	June 2008	0.5
ACCC	ARTC Interstate Access Undertaking	July 2008	0.5

Gamma is often assessed using the Monkhouse approach, whereby gamma is defined as the product of the payout ratio and the utilisation ratio (termed theta) where:

- The credit payout ratio is defined as the face value of imputation credits distributed by the firm as a proportion of the face value of imputation credits generated.
- Theta is defined as the value of distributed imputation credits to investors as a proportion of their face value.

#### ACCC determination for ARTC

In the ARTC's 2007 Explanatory Guide to the 2008 Interstate Undertaking, the ARTC presented arguments on gamma similar to the above to the ACCC, based on advice from Synergies. Namely:

*a value for gamma of zero, recognising that since the introduction of the 45-day rule, franking credits are now worthless to the marginal foreign investor (noting that under the vanilla WACC formulation, this will be reflected in the cash flows rather than the WACC);*

In response the ACCC looked at evidence on the payout ratio and the utilisation rate<sup>51</sup>. The payout ratio for the eight largest listed firms in Australia

<sup>51</sup> ACCC, July 2008, Op cit, p161

(including Rio Tinto and BHP Billiton) was 1, while a previous Australian study found an average payout ratio of 0.7. On the utilisation rate the ACCC argued that the CAPM used by Australian regulators is a domestic CAPM model, with all investors being resident domestic investors. Therefore the utilisation rate was assumed to be 1, with gamma in the range 0.7 to 1. The ACCC concluded that a value of 0.5 conservatively favours regulated firms and should ensure future investment is adequately remunerated.

**IPART**

IPART's previous decision for the HCVN likewise took the view that the marginal investor in Australian equities is domestic, and assigned a value to gamma in the range 0.3 to 0.5<sup>52</sup>. In its August 2009 Final Decision, IPART again proposed a range of 0.3 to 0.5, noting that the evidence on gamma was mixed. IPART referred to the recent decision by the AER, but noted that most recent regulatory decisions in other jurisdictions have adopted a value of 0.5<sup>53</sup>.

**QCA**

In its 2005 decision, QCA rejected QR's proposal for a gamma of 0.05. QCA argued that the low benefits attributed to foreign investors should not be attributed within the context of a domestic CAPM model, and that an international CAPM would in all probability result in a lower cost of capital than that proposed by QCA<sup>54</sup>.

**ERA**

In its draft determination on the cost of capital appropriate to TPI's Pilbara railway, ERA commented that<sup>55</sup>:

*Australian regulators are faced with varying and conflicting theory and evidence on the value of franking credits. Evidence on the value of the imputation factor (including the impact of changes in taxation law on this value) supports gamma values anywhere in the range of zero to one.*

ERA concluded that, given the current state of the debate on the value of dividend imputation, that it was appropriate to continue apply a gamma of 0.5.

### 3.6.3 2008 AER proposals

**Dividend payout ratio**

In its May 2009 decision on the WACC parameters for electricity distribution and transmission, the AER began by considering the conceptual basis of gamma. The AER noted that under the Monkhouse approach of multiplying a payout ratio with the utilisation rate, it is implicit that retained imputation credits are not valued by investors. Expert evidence by Handley argued that

<sup>52</sup> IPART, May 2005, Op cit, p19

<sup>53</sup> IPART, Aug 2009, Op cit, p34

<sup>54</sup> QCA, Dec 2005, Op cit, p15

<sup>55</sup> ERA, Jan 2009, Op cit

this approach is inconsistent with the standard approach to valuation and the Officer WACC framework<sup>56</sup>. The AER concluded that gamma should be defined as the value of imputation credits created by the payment of corporate tax. This implies a payout ratio of 1.0 for the purposes of estimating gamma<sup>57</sup>.

#### Utilisation rate (theta)

In assessing theta, the AER addressed the issue of the identity of the marginal investor. The AER proposed a conceptual framework of a domestic market of assets with foreign investors recognised to the extent they invest domestically. This conceptual framework recognises the realities implicit in domestic market data, and ensures consistency with the other WACC parameters. Consistent with this framework, the AER proposed that the value of imputation credits be based on a weighted average valuation of all investors in the market, where the weights are based on the wealth invested in the domestic market portfolio<sup>58</sup>.

When estimating theta, the AER considered that the data used should be representative of the current imputation tax regime - ie post-2000 data only given that the July 2000 tax changes allowed a full rebate of unused credits.

In reviewing the most cited empirical studies, the AER placed considerable weight on the Beggs and Skeels (2006) study<sup>59</sup> which derived an estimate of theta of 0.57 from market prices. The results of the most recent SFG (2008) study<sup>60</sup> were given limited weight since the reliability of the results cannot be verified given the absence of statistical test results. The results of the 2004 Hathaway and Officer<sup>61</sup> study were likewise not granted any weight given the lack of statistical diagnostics and the fact that the key estimate of 0.5 was derived using data that referred to an earlier tax regime. The AER concluded that the 2004 Cannavan, Finn and Gray study was not relevant as it covered a period prior to the current imputation tax regime. In addition the results of this study appeared to be inconsistent with other market based evidence, possibly due to clientele effects<sup>62</sup>.

The AER also examined the evidence on theta from tax statistics. The AER considered that 2008 study by Handley and Maheswaran provided a reasonable estimate of theta from tax statistics in the post-2000 period of 0.74, with a

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<sup>56</sup> J. Handley, Nov 2008, A note on the valuation of imputation credits, Report prepared for the Australian Energy Regulator, Final, 12 November 2008(d), p.5.

<sup>57</sup> AER, May 2009, Op cit, p420

<sup>58</sup> AER, Ibid, p425.

<sup>59</sup> D. Beggs and C. L. Skeels, 'Market arbitrage of cash dividends and franking credits', The Economic Record, vol.82, no.258, September 2006

<sup>60</sup> SFG, The impact of franking credits on the cost of capital of Australian firms, A report prepared for ENA, APIA and Grid Australia, 16 September 2008(b).

<sup>61</sup> D. M. Cannavan, F. J. Finn and S. F. Gray, 'Op cit.

<sup>62</sup> AER, May 2009, Op cit, p447

reasonable range of 0.67 to 0.81. The study was seen to have a sound conceptual basis and provide a direct (rather than inferred) estimate of the value of imputation credits across the Australian economy.

The issue of consistency between the gamma and the MRP was an important part of the review. Accordingly, the AER estimated an appropriately ‘grossed-up’ historical estimate of the MRP. The AER also considered the empirical result from dividend drop-off studies that cash dividends are less than fully valued and whether this suggests that the standard CAPM cannot fully explain the reality of differential taxation. The AER considered that there is no convincing evidence that the standard CAPM should be replaced to account for the realities of differential taxation. Therefore the AER did not impose a theoretical adjustment to the empirical results from dividend drop-off studies for CAPM consistency reasons, nor propose replacing the standard CAPM.

#### AER conclusion

On this basis, and after considering the most recent available and reliable empirical evidence, the AER considered that there was persuasive evidence to depart from the previously adopted assumption of a gamma of 0.5. Based on the evidence considered most relevant, reliable, comprehensive and theoretically appropriate, the AER considered that a reasonable range for gamma lies between 0.57 (based on market prices) and 0.74 (based on tax statistics). The AER recommended a point estimate for gamma of 0.65.

#### Commentary on Synergies’s diagnostic test

Lastly we comment on the non parametric paired test undertaken by Synergies. The approach assumes that the characteristics of the two groups of shares are identical (and Synergies make only a limited attempt to homogenise the two groups, by removing trusts).

However failing to adequately control for other factors that can influence the behaviour of share prices means it is possible to draw false conclusions, as these factors may have different impacts on different segments of the sample. The test applied by Synergies would have been much more powerful if it had been applied to franked and unfranked stocks before the introduction of the 45 day rule and discovered a significant difference. As it stands, the failure of the test could be due to a flawed test procedure.

### 3.6.4 Recommendation

The weight of past regulatory precedent is strongly in favour of a gamma of 0.5. However the AER’s extensive analysis concluded that there was sufficient evidence to move away from this estimate. Although the ACCC adopted a gamma of 0.5 in its most recent decision for ARTC’s interstate railway, this decision was published prior to the AER’s deliberations. We believe that the AER’s evidence is sufficient to support a move away from the previous

regulatory assumption employed by IPART and the ACCC and recommend the adoption of the AER's estimate for gamma of 0.65.

### 3.7 Equity raising costs

#### ARTC proposal

Synergies suggest that an allowance for equity raising costs is required given the size of ARTC's investment program over the next five years. Synergies update a previous study undertaken by ACG for the ACCC<sup>63</sup> regarding reported equity raising costs for Australian IPOs. Synergies conclude that for equity raisings of more than \$100 million the average cost of raising equity was 5.01%.

#### Response on equity raising costs

As recognised by Synergies, there is a hierarchy for the funding of new investment. The AER state<sup>64</sup>:

*External equity funding for subsequent capex should be considered only when a case is made that retained earnings and additional borrowings are insufficient provided that the gearing ratio and other assumptions about financing are consistent with the regulatory benchmarks.*

Currently the ARTC has virtually no long term debt. Consequently most if not all of the capital expenditure required over the five year review period can be debt financed while still adhering to ARTC's notional debt level.

Moreover, under the Australian Government's Nation Building package, the ARTC is due to receive a \$1.2 billion equity injection to help finance a \$1.6 billion program of track upgrades and investment. We understand this includes \$580 million for the HVCN<sup>65</sup>. Given this equity investment, the ARTC should not require any external equity raising.

Finally we note that this investment by the Government is in addition to \$1.6 billion committed to rail infrastructure through the Building Australia Program. Much of this investment is in the nature of grant, aimed at supporting businesses in a difficult economic climate.

For all of these reasons, ARTC is extremely unlikely to undertake new equity raising over the period of the undertaking. Accordingly, we see no need for equity raising costs to be included in the cashflows.

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<sup>63</sup> ACG, Dec 2004, Debt and Equity Raising Costs, Report prepared for the Australian Competition and Consumer Commission.

<sup>64</sup> AER, Dec 2008, Op cit, p140

<sup>65</sup> Commonwealth of Australia, Dec 2008, Nation Building: Rail, Road, Education & Research and Business, p6.

### 3.8 Interest during construction

Synergies suggests that capital is invested ahead of a return being earned on the invested capital. Therefore Synergies and ARTC propose that interest during construction (IDC) be capitalised and earn a WACC<sup>66</sup>.

In the proposed HVAU, Section 4.4 (g) provides for the Economic Cost of a Segment to include depreciation and a rate of return “as applicable to Additional Capacity *including interest reasonably incurred during the construction of Additional Capacity*”. Section 6.4 (g) (v) (B) provides that ARTC may propose a staged delivery of a large project or one with an extended delivery time “where, upon commissioning of any stage, *ARTC may expense financing costs in the year of that commissioning*”

However, Sections 4.4 (g) and 6.4 (g) appear to contradict Section 4.3 (b), although the wording is not entirely clear. Section 4.3 (b) implies that capital expenditure is rolled into the RAB in the year that it is incurred, provided the assets are commissioned at any time within the Term of the HVAU. If so, this would obviate the need to allow for interest during construction, as the RAB earns the cost of capital each year. We note also that there is potential for confusion and over-recovery of this capital expenditure if it is subsequently determined that the assets have not been commissioned or the expenditure has not been prudent.

Moreover, Section 4.3 (b) allows ARTC to include any Capital Expenditure in relation to Additional Capacity in the RAB in the year the Capital Expenditure is made, irrespective of whether it delivers Additional Capacity commensurate with the Capital Expenditure being rolled into the RAB or at all.

Such treatment is significantly more generous than the existing NSW Rail Access Undertaking, which rolls capital expenditure into the RAB only once the assets are commissioned<sup>67</sup>. This provides incentives for timely completion, and even completion itself, of projects and assists in ensuring that capital expenditures are not included in the RAB prior to their recognition as being prudent.

We therefore recommend that capital expenditure be rolled into the RAB only once assets have been commissioned. Moreover, also consistent with the NSW Rail Access Undertaking, interest during construction should not be included on such expenditure.

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<sup>66</sup> Synergies, April 2009, Op cit, p97 and ARTC, 2009, Hunter Valley Access Undertaking 2009 Explanatory Guide, p64

<sup>67</sup> Section 3.1.1 of Schedule 3 of the NSW Rail Access Undertaking

## 4 WACC Summary of Recommendations

Table 6 draws together our recommended WACC parameters, and resultant cost of capital, based on the information available to date.

Table 6 **ARTC proposals for WACC**

		ARTC/ Synergies 2009 Proposal to ACCC	Mid-point of range in IPART 2009 Final Decision	NSWMC/ACIL Tasman 2009 Proposal
Parameter assumptions				
Nominal Risk Free Rate	Rf	4.95%	5.4%	5.45%
Inflation rate	f		2.7%	2.70%
Real Risk Free Rate	Rrf			2.68%
Cost of Debt Margin	Dm	3.36%	2.70%	2.30%
Debt raising costs	DRC	0.125%	0.125% included in debt margin	0.083%
Market Risk Premium	MRP	6.0-7.0%	6.0%	6.0%
Proportion of Franking Credits Attributed Value by Shareholders	$\gamma$	0%	40%	65%
Debt to capital	D/V	50-55%	55%	50%
Equity to Capital	E/V	50-45%	45%	50%
Debt Beta	$\beta_d$	0.0	0.0	0.0
Asset Beta	$\beta_a$	0.50-0.60	0.40	0.40
Equity Beta	$\beta_e$	0.99-1.32	0.89	0.80
Tax Rate	Te	30%	30%	10% (estimate)
<b>Calculated WACCs</b>				
Nominal Vanilla WACC		<b>9.66 to 11.01%</b>	9.3%	<b>9.0%</b>
Real Vanilla WACC		6.9 to 8.3%	6.4%	6.2%
Real pre-tax WACC		9.2 to 10.9%	<b>7.4%</b>	6.4%

Note: IPART added 60% points to the mid-point to derive a final cost of capital of 8.0% (pre-tax real).

The ACCC raised a number of issues for comment. Our response is as follows:

- Table 6 sets our recommended parameters and proposed WACC
- We do not support different WACCs being applied to the ERAB and IRAB
- A five year period for the review of the WACC is reasonable
- We would support annual revision of the market-based parameters
- We consider that, in this instance, equity raising costs should not be included as ARTC will not need to raise external finance.
- Consistent with the NSWAU, it is not appropriate to include IDC.

## 5 RAB and Loss Capitalisation Approach

### 5.1 Loss capitalisation

#### ARTC proposal

ARTC proposes that the access provider be able to capitalise any “economic losses” and roll these into the Regulatory Asset Base (RAB). Economic losses are defined as revenue less than the ceiling revenue, in other words returns less than WACC times the opening RAB.

Thus ARTC propose that the RAB be rolled forward as follows:

$$RAB_{t \text{ start}} = RAB_{t-1 \text{ end}} = (1 + WACC) * RAB_{t-1 \text{ start}} - \text{Out-turn Revenue}_{t-1} + \text{Out-turn Opex}_{t-1} + \text{Net Capex}_{t-1}$$

In addition, the RAB would be subject to a specified lower limit, based on the standard roll forward method, as follows:

$$RAB \text{ Floor Limit}_{t \text{ start}} = RAB \text{ Floor Limit}_{t-1 \text{ end}} = (1 + CPI_{t-1}) * RAB \text{ Floor Limit}_{t-1 \text{ start}} + \text{Net Capex}_{t-1} - \text{Depreciation}_{t-1}$$

ARTC proposes that the initial RAB for existing assets be the RAB ascribed under the NSW Rail Access Undertaking. Where no value has been attributed to existing assets under the NSW Rail Access Undertaking, ARTC proposes to set the initial RAB at depreciated optimised replacement cost<sup>68</sup>.

Our understanding is that the NSW regime implemented DORC values in 1999, which have since been rolled forward. We also understand that, apart from the Muswellbrook to Dartbrook track segment, no asset value was attributed to railway infrastructure within Pricing Zone 3, since the level of revenue was significantly below the level required to remunerate DORC values.

#### Response

Firstly, as discussed in section 2.5 of this submission, we do not support the separation of the RAB into two components for existing and new assets, as we do not consider that differential returns are appropriate.

Secondly, ARTC’s proposals to revalue Zone 3 assets and to institute a loss capitalisation approach are a major concern. Such an approach assumes that it is appropriate for ARTC to earn a full WACC on a DORC based regulatory asset base.

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<sup>68</sup> ARTC, April 2009, Op cit, p25

A ceiling based on DORC valuations provides a theoretical upper bound on the revenues appropriate for a monopoly infrastructure provider to earn. Returns above that level would provide the incentive for a competitor to enter and take all of the market (under the assumption of a perfectly contestable market).

However, in practice, prices for rail infrastructure markets are often well below the levels implied by DORC valuations, for a variety of reasons. These include the competition provided by road freight services, and the fact that investments in the past may have been made for social reasons which are not justified in economic terms. In a number of jurisdictions, including for rail and water, regulators have adopted a “line-in-the-sand” approach to valuation. Under this approach, the assets are given an initial value at the start of a regulatory regime consistent with current pricing levels (ie an economic value based on continuation of existing pricing policies).

If the line-in-the-sand approach is applied to Zone 3 assets, the RAB would probably be quite low – perhaps zero in 1999 (its value at the start of the NSW Rail Access Undertaking) rolled forward by subsequent capital expenditure of some \$30M for loop extension works newly completed by ARTC<sup>69</sup>. This compares to the DORC of \$139M proposed by ARTC.

The fundamental issues raised by the ARTC’s proposals, therefore, are whether it is appropriate for ARTC to revalue the Dartbrook to the Gap track segment on a DORC basis and to “recover” as losses prices which do not fully remunerate the DORC value of those existing assets, when this has not been achieved in the past nor was necessarily expected for that segment of Zone 3.

The proposed revaluation would not be is it consistent with the ARTC’s intention to use the RAB valuations determined under the NSW Rail Access Undertaking as the starting RAB valuations for Pricing Zones 1 & 2. As the ARTC acknowledges, such an approach avoids any windfall gains or losses accruing to it and “is consistent with the current regulatory view”<sup>70</sup>.

Moreover, to enable such under-pricing to be recovered in the future would not seem equitable between current and future users. There will be perhaps two, three or four major new coal users in perhaps 5-10 years time whose tonnage could be 2, 3 or 4 times the existing total coal tonnage. There doesn’t seem to be any equity or efficiency in requiring them to pick up the majority of the \$50M to \$100M or more of “losses” that could easily accumulate by then, especially considering that they will be paying the highest access charges on the

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<sup>69</sup> Booz and Co, June 2009, ARTC Standard Gauge Rail Network DORC, p19

<sup>70</sup> ARTC, 2009, HVAU Explanatory Guide, p64

HVCN because of their haul distance and because of the major capital expenditure required to upgrade the line for their use (estimated by ARTC at \$400M in its recently issued 2009-2018 Hunter Valley Corridor Capacity Strategy Consultation Document) which they will have to contribute or guarantee in their access charges. Nor is the capitalisation of “losses” required for efficiency reasons, given that the expenditure concerned is sunk, and the regulatory regime provides incentives for efficient future investment.

We therefore recommend that the loss capitalisation approach should not be instituted.

## 5.2 Grants and contributed assets

ARTC’s proposals do not adequately address the treatment of assets funded by third parties or built and gifted to ARTC, or the treatment of government contributions and grants.

Where a customer has built and transferred an asset to ARTC, or paid a capital contribution to ARTC towards the construction cost of the assets, it is not appropriate for the customer to pay a return on and of the asset concerned. This would amount to them paying twice for the use of the assets – through the contribution and then again through the return on and of the asset. Such an offset to the price ceiling is consistent with the approach used in the WA Rail Access Regime, for example.

In its Explanatory Guide, ARTC indicates that the price ceiling applicable to a customer be adjusted (reduced) for the return on asset component of any capital contributions<sup>71</sup>. We note, however, that there is no clear statement to this effect within the HVAU itself.

Notably no reduction is proposed for a “return of” component for the capital contribution. This is inconsistent with the approach taken in other jurisdictions for rail and other network industries. Under the NSW Access Undertaking, capital contributions are deducted from capital expenditure in rolling the RAB forward<sup>72</sup>, which means that the revenue ceiling is reduced by both a return on and return of the contribution. The same is true for the WA Regime, although capital contributions are taken into account through the overpayment rules rather than being incorporated into the ceiling itself.

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<sup>71</sup> ARTC, April 2009, Hunter Valley Access Undertaking 2009 Explanatory Guide, p100

<sup>72</sup> NSW Access Undertaking, Section 3.1.1.

Recognition of a return on and of capital contributions is also standard practice in the water industry<sup>73</sup>. In 2004 IPART considered options for funding capital expenditures made by State Water<sup>74</sup>. The options considered were:

- For State Water to pay for the works out of its own funds and recover the amounts outlaid over the life of the assets from users, through a rate of return approach or a constant amortisation approach
- For users to fund the construction of assets directly through upfront or concurrent contributions (where concurrent payments are made by an annuity reflecting capital expenditure over a defined period such as 30 years).

IPART demonstrated that the NPV of payments made by users under a 30 year annual annuity, a return of return approach (which incorporates a return on and of capital) and a constant amortisation approach were the same.

IPART was explicit that the rate of return approach involved a return of capital to the owner (ie provider of capital) which reflected the consumption of the asset. The approach also provides a return on the investment, used to defray the cost of borrowing and provide a return to the owners of the asset. These principles apply equally to a business investing in its infrastructure assets and a customer providing a capital contribution to fund the construction of an asset on its behalf. If the entity funding the assets (whether this is the owner of the business or the customer) does not receive recognition of both a return on and a return of capital then they will not be adequately compensated for their investment.

In the context of rebates for any capital contributions made to Gladstone Area Water Board, QCA stated<sup>75</sup>:

*The Authority's analysis indicates that, unless the rebate includes both the return on and return of capital, contributors would not be fully compensated for all capital costs...*

In the case of the HVCN, we believe that similar considerations should apply where assets have been funded by customer or Government grants and contributions. Where customers make a capital contribution the ceiling should be reduced, or a rebate taken into account in the under and overpayments regime, equivalent to a return on and of the contribution.

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<sup>73</sup> See for example NWI, Feb 2007, Water Storage and deliver charges in the urban water sector in Australia, Appendices E and F.

<sup>74</sup> IPART, Sep 2004, Bulk Water Prices from 2005/06 Issues Paper, Attachment 4.

<sup>75</sup> QCA, March 2005, Gladstone Area Water Board Investigation of Pricing Practices, p69



Where the government has made a contribution for the purpose of facilitating new infrastructure and does not expect a return on or repayment of the contribution, the price ceiling to customers should be reduced by a return on and of the capital contribution. As discussed in Section 3.7 above, the Building Australian Program is in the nature of a grant or capital contribution and hence should be excluded from the RAB for charging purposes. This approach of excluding government contributions is standard practice in the water industry. For example, in the previously completed water price review in Victoria, the ESC rolls forward the RAB by adding capital expenditure and deducting Government contributions, customer contributions, disposals and regulatory depreciation<sup>76</sup>.

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<sup>76</sup> ESC, June 2008, 2008 Water Price Review, Lower Murray Water Determination, 1 July 2008 – 30 June 2013, p35