

ARTC Explanatory Guide 2010 HVAU

Appendix 3 - ARTC revised Rate Of Return proposal

AUSTRALIAN RAIL TRACK CORPORATION LTD

HUNTER VALLEY ACCESS UNDERTAKING

ARTC REVISED RATE OF RETURN PROPOSAL



AUGUST 2010

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1. ARTC's Original Proposal

In April 2009, ARTC voluntarily submitted its ARTC Hunter Valley Coal Network Access Undertaking (HVAU) for ACCC assessment. As part of its application, ARTC proposed rates of return to apply to the Hunter Valley coal rail network. Specifically, ARTC proposed separate rates of return to apply to assets existing as at the commencement date of the HVAU and to investments undertaken during the term of the HVAU.

Broad considerations underpinning ARTC's original proposal included:

- The outcome of a review of ARTC's Weighted Average Cost of Capital (WACC) by Synergies Economic Consulting in April 2009.

In coming to its conclusions, Synergies recognised:

- ARTC is expecting to spend nearly \$1.5 billion on infrastructure enhancements and upgrades to the network over the next five years, relative to an existing Regulated Asset Base of approximately \$640 million.
- Apart from the impact of the global financial crisis on conditions for capital raising, ARTC is expected to commit significant new capital for assets with very long useful lives (and no alternative use) in an extremely risky climate. The demand environment has changed very quickly from an unprecedented boom to one of considerable uncertainty as to the extent and duration of any slowdown in growth.
- The importance in giving due regard to the statistical imprecision of beta, and the asymmetric consequences of regulatory error. It is generally recognised that if prices are set too low, the resulting under-investment is worse from an economic and social perspective than if prices are set too high.
- ARTC only has certainty in relation to the revenue it will earn for the duration of the regulatory period. Beyond this, it remains exposed to the risk of a reduction in demand. This risk is not compensated via the WACC (nor is it compensated elsewhere) given the CAPM assumes that returns are normally distributed, whereas stranding risk is asymmetric, notwithstanding that some of the drivers of asset stranding risk are systematic in nature.

- Apart from the total size of the investment planned by ARTC, much of the demand for additional capacity is being created as a result of new mines that are being developed some distance from the port.
- ARTC's systematic risk is underpinned by the risk profile of its customers. The systematic risk of coal mining companies is particularly high. This is driven by a number of factors, including the sensitivity of these companies' revenues to exchange rates given they influence the competitiveness of Australia's coal exports. Demand for ARTC's services will also be influenced by this, although ARTC's revenues are protected under the revenue cap, at least for the term of the regulatory period.
- The riskiness of the investment climate currently faced by ARTC has been highlighted with the recent global financial market downturn. There are now significant concerns regarding future world economic growth, including growth in China, which has been fuelling much of the current boom in the demand for coal. This impact has already been seen in commodity prices and the implications for coal remain uncertain. Even if the demand outlook remains positive, these events have highlighted the potential vulnerability of this outlook over the longer term. However, it is unlikely that this has moderated expectations on ARTC to undertake significant investments that will enhance the performance of the coal supply chain, which is in the public interest.
- The most recent determination by IPART regarding the rate of return to apply to the Hunter Valley network.

Synergies conclusions were:

- It is reasonable to provide ARTC with at least some compensation for stranding risk. However, the key question is how this compensation can be appropriately determined and applied. Whilst an imperfect solution, selecting the beta estimate from towards the upper bound of a reasonable range ensures that sufficient incentive is provided to ARTC to invest, recognising that investment in essential infrastructure to support Australia's export capability is in the public interest. It should not result in over-compensation provided the beta is selected from within the bounds of a reasonable range.

- The ten-year Commonwealth Government bond yield is the most commonly used proxy for the risk-free rate given it is readily observable and reflects the long-term horizon that is assumed under the CAPM. However, following the global financial crisis, these yields are currently at historically low levels. This reflects the significant impact of 'non-risk' factors on the returns on sovereign government debt, which are largely driven by the 'flight to quality' that has been observed with the credit crisis and continued deterioration in the world economy. The premium that investors are willing to pay in such circumstances increases Commonwealth Government bond prices and compresses yields. While these non-risk factors have always influenced yields on Commonwealth Government bonds, this impact has increased considerably in recent times.

As a consequence, Commonwealth Government bond yields underestimate the required return on the risk-free asset under the CAPM, given the influence of non-risk factors that are not recognised as part of the CAPM framework. An adjustment for this compression in yields due to non-risk factors (which is often termed the 'convenience yield') should be made, at least for the duration of the global financial crisis (or, until the convenience yield reverts to its long-term average).

As the 'convenience yield' has always been present to some extent, adjustment is only sought for the recent spike that has occurred in recognition of the abnormal market conditions resulting from the global financial crisis. This increase is estimated to be in the order of 60 basis points¹, which is added to the current estimates of the risk-free rate.

- In relation to the market risk premium, there is no clear economic or empirical justification for a fall in the value of the market risk premium relative to historical values. Most long-term studies of historical returns produce estimates well in excess of 6% - most likely around 7% - which shows that the assumption that has been consistently adopted by regulators has been too low. Following the global financial crisis, expectations for the MRP suggest that it may be even higher, at least in the short to medium-term. A range of between 6% and 7% remains appropriate.
- The value of gamma is zero, recognising that since the introduction of the 45-day rule, franking credits are now worthless to the marginal foreign

¹ Competition Economics Group (2008), Establishing a Proxy for the Risk-free Rate, A Report for the APIA, ENA and Grid Australia, September.

investor. This is evident from recent reputable studies, as well as our own analysis which rejects the hypothesis that gamma has a value other than approximately zero (and also demonstrates that franking credits do not have a value, such as 0.5 or 1). While franking credits may have had some value prior to this tax law change (which may be reflected in estimates from studies that have spanned this decision), this is no longer the case. The early regulatory decisions which adopted a value of 0.5 (which has since become precedent) were also made prior to the introduction of the 45-day rule. There is sufficient evidence to now review the fundamental basis of this assumption.

- A capital structure range of between 50% and 55% is appropriate for ARTC. This conclusion was reached after reviewing other regulatory decisions, as well as capital structures maintained by firms in similar industries.
- The recommended parameter estimates for the WACC for ARTC's Hunter Valley coal network are summarised in the following table:

Parameter	Lower bound	Upper bound
Risk-free rate ^a	4.95%	4.95%
Debt to total value	50%	55%
Equity to total value	50%	45%
Debt margin ^b	3.36%	3.36%
Debt raising costs	0.125%	0.125%
Market risk premium	6%	7%
Gamma	0	0
Tax rate	30%	30%
Asset beta	0.5	0.6
Debt beta	0	0
Equity beta ^c	0.99	1.32
Cost of equity	10.88%	14.16%
Cost of debt	8.44%	8.44%
Post-tax nominal WACC	9.66%	11.01%

a Based on a 20 day average for the period ending 31 March 2009, plus 60 basis points.

b Based on a 20 day average for 8 year BBB bonds plus the margin between and A-rated 8 and 10 year bond, for the period ending 31 March 2009. Before debt-raising costs.

c Based on the Monkhouse formula.

- It is also recommended that:
 - An allowance for equity raising costs is included in the cash flows, based on an estimate of at least 5%. This is considered a lower

bound as it only captures the direct costs of raising equity, not the indirect costs; and

- Interest during construction is capitalised into the asset base during the construction period, based on the WACC.

- Following on from Synergies conclusions, ARTC proposed to apply a different rate of return to existing assets to that for new assets in order to recognise the different risk profile in relation to new assets. ARTC acknowledged that this is a less than perfect solution to this issue given the key difference in risk between the existing and new assets is stranding risk (otherwise, the systematic risk is the same). However, the reality is that ARTC is not compensated for this risk (under the CAPM-determined WACC or otherwise). In the absence of any readily accepted method to value stranding risk ARTC was of the view that providing some uplift for new assets ensures that it has sufficient incentive to invest in this extremely risky investment climate. ARTC noted that an 'uplift' in WACC was provided to the Dalrymple Bay Coal Terminal by the Queensland Competition Authority in its 2005 decision, in recognition of the significant expansion it is undertaking in the same climate.

- **Assets existing as at the Commencement Date**

In formulating rate of return for assets existing as at the Commencement Date, ARTC adopted a range of feasible WACC advised by Synergies and has adopted a Rate of Return lying at the 60th percentile within that range. This is consistent with ARTC's proposal to the NSW regulator in its review of rate of return under the NSWRAU. In that proposal (applying to the Hunter Valley assets as a whole) a rate of return set at the 70th percentile has been proposed (consistent with existing settings under the NSWRAU). ARTC expected that around one third of the Hunter Valley asset value will relate to existing assets with a lower degree of stranding compared to new assets. When combined with the percentile setting for new assets below, the overall asset setting would be consistent with the existing percentile setting under the NSWRAU.

- **Assets commissioned during the Term**

In formulating a rate of return for new assets commissioned during the Term, ARTC adopted a range of feasible WACC advised by Synergies and has adopted a Rate of Return lying at the 75th percentile within that range. This is consistent with the ARTC's proposal to the NSW regulator in its review of rate of return under the NSWRAU. In that proposal (applying to the Hunter Valley assets as a whole) a rate of return set at

the 70th percentile has been proposed (consistent with existing settings under the NSWRAU). ARTC expects that around two thirds of the Hunter Valley asset value will relate to new assets with a higher degree of stranding risk compared to existing assets. When combined with the percentile setting for existing assets above, the overall asset setting would be consistent with the existing percentile setting under the NSWRAU.

- Inflation has been set at the underlying RBA target, as considered appropriate by the ACCC in its Decision on the 2008 ARTC Interstate Access Undertaking.
- The table below shows parameters underpinning ARTC’s proposed rate of return to apply to assets existing as at the Commencement Date and new assets commissioned during the Term.

ARTC PROPOSAL (HUNTER VALLEY ACCESS UNDERTAKING)			
		Synergies LOWER BOUND	Synergies UPPER BOUND
		May-08	May-08
Rf (nominal)		4.95%	4.95%
Debt		50%	55%
Equity		50%	45%
D/E		1.00	1.22
BBB bond rate (nominal)		8.31%	8.31%
Debt margin (nominal)		3.36%	3.36%
Debt raising costs		0.125%	0.125%
Cost of debt (Nominal)		8.44%	8.44%
MRP		0.060	0.070
Gamma		0.00	0.00
Inflation		2.50%	2.50%
Tax rate		30%	30%
Asset beta		0.50	0.60
Debt beta		0.00	0.00
Equity beta		0.99	1.32
ke		10.88%	14.16%
kd		8.44%	8.44%
Vanilla WACC* Range		9.66%	11.01%
Pre-tax real** Range		9.26%	10.97%
Proposed Rate of Return applicable to assets commissioned during the Term			10.47%
Proposed Rate of Return applicable to assets existing as at the Commencement Date			10.67%

* A nominal post-tax framework is adopted by the ACCC

** A real pre-tax framework has been adopted in the Hunter Valley historically and is proposed for determination of Full Economic Cost in annual ceiling test compliance.

2. The ACCC Draft Decision

In its Draft Decision, the ACCC took the following positions in relation to ARTC’s original Rate of Return proposal.

‘The ACCC’s preliminary view is that ARTC’s use of multiple RABs and WACCs for existing and new investment is unlikely to be appropriate when having regard to the factors under section 44ZZA(3) of the Act.’

'The ACCC's preliminary view is that it is likely to be appropriate for ARTC to use a single RAB for each Pricing Zone and a single WACC for the Undertaking when having regard to the factors under section 44ZZA(3) of the Act.'

'The ACCC's preliminary view is that the WACC parameter values proposed by ARTC are unlikely to be appropriate when having regard to the factors under section 44ZZA(3) of the Act.'

'The ACCC's preliminary view is that if the WACC parameter values proposed by ARTC are revised according to ACCC's suggestions, it is likely to be appropriate when having regard to the factors under section 44ZZA(3) of the Act.'

ARTC's proposal to apply a different Rate of Return to assets existing as at the Commencement Date and assets commissioned during the term of the HVAU

Broad considerations and conclusions of the ACCC were:

- Increased capacity is likely to be relatively more risky than lower capacity all else equal because as capacity increases the firm is likely to be serving more marginal customers and therefore demand is likely to be more variable and as firms expand capacity they are likely to face more volatile marginal demand for services generally.
- A regulated firm may require a higher level of compensation on the investment for increased capacity relative to the existing capacity.
- For most "standard" regulatory areas such as gas and electricity transmission and distribution, the difference in risk between new and old capacity is likely to be relatively small, particularly if operating under a revenue cap. These businesses generally face extremely limited systematic risk driven cash flow variations under their regulatory regimes. For the most part they also face virtually no asset stranding risk. Therefore, there is unlikely to be any strong benefit in using multiple RAB and related WACC values in these areas.
- Generally regulators have implicitly set the weighted average cost of capital for regulated firms taking into account the required return on new investment in a given industry.

- The major regulatory concern with having multiple RAB values for different assets of the same regulated service is the added complexity and inherent regulatory uncertainty this is likely to create.
- This form of proposal is likely to result in a substantial increase in the level of regulatory risk facing regulated firms and in particular, for firms in upstream and downstream markets.
- The apparent benefit of having multiple RAB for different assets is that a more accurate WACC can be applied to different investments facing different risks.
- In relation to applying different returns for different tranches of capacity, this presumes the risks for different tranches of capacity can be differentiated, and the difference is significant enough to warrant differentiation.
- The difference between ARTC's two requested nominal pre-tax returns is only 0.25 per cent.
- Given the apparent limited benefits versus the costs of separating the RAB into tranches in this situation and the fact the different risks are unlikely to be accurately differentiable, there seems to be little merit in this facet of ARTC's HVAU. The extra regulatory uncertainty and risk that would be created by having separate RAB values for existing and new investment, and the effect this extra risk could be expected to have on competition in upstream and downstream markets, seems likely to outweigh any perceived benefits of having separate RAB values in this situation.

ARTC's Rate of Return proposal

Broad considerations and conclusions of the ACCC were:

- **Risk Free Rate**
 - No objections to the choice of CGS as the risk-free asset proxy.
 - The 'convenience yield' adjustment is not considered appropriate.
 - The averaging period of twenty trading days is appropriate.

- **Inflation**

- The use of an inflation estimate based on the most up to date RBA estimates for the purpose of calculating a real annual WACC is likely to be appropriate.

- **Cost of Debt**

- There is sufficient evidence that a proxy bond with a BBB credit rating is appropriate for estimating ARTC's WACC.
- It is likely to be appropriate for ARTC to:
 - Take the longest maturity BBB bond fair yield estimate available from Bloomberg; and
 - add to this an estimate of the term premium going from the maturity of the longest dated BBB bond out to ten years as estimated from the next (higher) credit rating Bloomberg fair yield curve quoted out to at least ten years.
- The ACCC will reassess whether the use of Bloomberg fair yields and ARTC's proposed methodology is appropriate closer to the final decision, in light of current market conditions prevailing at that time.
- Use of a 20 day averaging period is appropriate.

- **Debt Issuance Cost**

- Allowance of approximately 9.5bp for debt raising costs is a reasonable benchmark.

- **Asset Beta**

- During the term of the Undertaking, ARTC's revenues are generally protected under the revenue cap/floor regime.
- ARTC will be extensively protected from risk under take-or-pay arrangements for the duration of the contracts.

- The loss capitalisation model provides further protection from under-recovery of revenue in given years by allowing over recovery in later years and this should provide extensive protection beyond the regulatory term and beyond the duration of the contracts by in effect passing systematic risk through to the access seekers.
- For the years beyond the Undertaking, a significant amount of evidence indicates that demand for thermal coal will remain strong beyond the regulatory period and ARTC's stranding risk will not be excessive. This evidence includes:
 - demand for thermal coal is expected to remain strong in the medium to long run;
 - complementary sunk investment in ports and mines by the mining companies and coal customers should provide a further buffer which reduces stranding risk;
 - the capex approval process for the Hunter valley coal network should reduce stranding risk;
 - the 'loss capitalisation' approach permits returns in excess of the maximum conventional building block (BB) ceiling in later periods in order to recover earlier period's return deficits (relative to the BB ceiling for these periods) as return deficits can be capitalised into the regulatory asset bases reducing systematic risk; and
 - stranding risk will be further reduced due to conservatively estimating its regulatory asset lives.
- An asset beta estimate of 0.5 points is based on the upper bound of most regulatory decisions on commodity networks, and considers this appropriate to account for any residual stranding risk that may exist for the Hunter Valley rail network.
- It is appropriate for greater conservatism to be used here than is arguably required in other regulatory areas such as electricity, due to a lack of direct proxies for ARTC and greater uncertainty with respect to demand and stranding risk.

- **Equity Issuance Costs**

- Benchmarks indicate that 3 per cent is the efficient cost for equity raising costs.

- **Market Risk Premium**

- Given recent regulatory determinations and the improvements in global economic outlook and financial markets, an MRP of 6 per cent is likely to be appropriate.

- **Capital Structure and Gearing**

- A debt equity ratio of 50 per cent debt to 50 per cent equity is appropriate given ARTC's assets and operations.

- **Imputation Factor (Gamma)**

- On the basis of studies², the ACCC is of the opinion that the expected imputation payout ratio is 1 for valuation purposes and this is appropriate to use in the estimation of gamma.
- The use of a gamma of zero by ARTC is not appropriate and results in revenue ceilings that are too high, given current studies on the value of imputation credits to shareholders.

² 1. A 2004 study by Hathaway and Officer, based on Australian tax office data, estimated a payout ratio of around 0.7 for imputation credits in Australia for the period 1988 to 2002. 2. In a report for the ACCC, Lally (2002) examines the payout ratio for the eight largest listed firms in Australia: Telstra; News Corporation; NAB; Westpac; Commonwealth Bank; ANZ; Rio Tinto; and, BHP Billiton. (Lally, M., The Cost of Capital Under Dividend Imputation, A Report Prepared for the ACCC, 2002.) Using their recent financial statements he found that the contemporary payout ratio was equal to one. 3. In a recent report prepared for the AER (Handley, J., A Note on the Valuation of Imputation Credits, Report prepared for the Australian Energy Regulator, Final, 12 November 2008(d), p.5.), Handley (2008) states that for valuation purposes the payout ratio should be set to one, consistent with an assumption of full distribution of free cash flows. Handley stresses that this assumption does not imply an actual imputation credit payout ratio of 100 per cent each period. Rather, the standard assumption for valuation purposes is that a firm will distribute 100 per cent of its free cash flows, and therefore for consistency a 100 per cent payout of imputation credits is appropriate. In recent advice prepared for the AER (Handley, J., Further comments on the valuation of imputation credit, Report prepared for the Australian Energy Regulator, 15 April 2009, p.5.), Handley reiterates views from his earlier report regarding the appropriate payout ratio. Handley recommends that the simpler Officer (1994) framework should be adopted whereby a payout ratio of 1.0 is applied for valuation purposes.

- A reasonable range of theta, with a lower end of 0.57, based on the best estimate of theta inferred from market prices, and an upper end of 0.74, based on the best estimate of theta from tax statistics.
- Given a payout ratio of one, the ACCC currently estimates a fair value for gamma of 0.65, consistent with the 2008 AER review of WACC parameters for electricity transmission and distribution network service providers.
- In comparison to IPART's decided range on gamma of 0.3 to 0.5 and a midpoint of 0.4 (Hunter Valley coal network), after accounting for an asset beta of 0.5, the increase in gamma from 0.40 to 0.65 results in a drop in the pre tax real WACC of 4 basis points.

- **Taxation Rate**

- The applicable taxation rate should be assessed with respect to a benchmark efficient service provider.
- ARTC's particular circumstances should not be assumed to apply to such a firm.
- The ACCC does not object to the use of the statutory tax rate by ARTC in this situation.

The ACCC concluded that an appropriate pre tax WACC could be calculated based on the above assessments in relation to the CAPM parameters above, and shown in the table below.

Parameter	ACCC Draft Decision
Rf (nominal)	4.35% ³
Debt to total value	50%
Equity to total value	50%
D/E	1.00
BBB bond rate (nominal)	7.71%
Debt margin (nominal)	3.36% ⁴
Debt raising costs	0.095%

³ Estimated at 31 March 2009. The difference arises because the convenience yield adjustment suggested by Synergies is removed. To be updated closer to the final decision.

⁴ Estimated at 31 March 2009. To be updated closer to the final decision.

Parameter	ACCC Draft Decision
MRP	6.0%
Gamma	0.65
Inflation	2.50%
Tax rate	30%
Asset beta	0.5
Debt beta	0.0
Equity beta	1.0
Ke	10.33%
Kd	7.81%
Post-tax nominal Vanilla WACC	9.07%
Pre-tax nominal WACC	9.67%
Pre-tax real WACC	7.00%

3. ARTC's Response to the Draft Decision

ARTC's response⁵ to the ACCC's Draft Decision is summarised below:

- ARTC is in the process of investing heavily in the Hunter Valley Network and has a large future investment program. The level of the rate of return proposed by the ACCC is of great concern to ARTC. The ACCC has proposed a rate of return that is 225 basis points below the low end of the range proposed by ARTC.
- ARTC's proposed Interim Indicative Access Charges for 2010 are determined in accordance with the Pricing Principles in the HVAU, and based on the Rate of Return proposed by ARTC, the average level of Interim Indicative Access Charges for 2010 remained at similar levels to the access pricing applied under the NSW Rail Access Undertaking in 2009.
- A substantial reduction in the average level of access pricing on the constrained network will arise with the application of the Rate of Return and underlying parameters incorporated in the Draft Decision. ARTC estimates the decline in the average level of access pricing on the constrained network as a result of the lower proposed Rate of return will be around 15%. This equates to a reduction in access pricing on the

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<http://www.accc.gov.au/content/item.phtml?itemId=921594&nodeId=d8fedf5a01925864e9c908d128eaf6c&fn=ARTC%20Submission%20-%2031%20March%202010.pdf>

constrained network of around 20c/tonne, compared to the current coal price of around \$100/tonne.

- ARTC considers that this represents a favourable short term outcome for the industry that is unnecessary in the current climate, and comes at a cost of creating increased uncertainty around ARTC's ability to deliver its investment program, to the extent that the Rate of Return understates ARTC's cost of capital.
- Whilst ARTC is not seeking to be overcompensated for its risk in investing, it notes that the outcome resulting from an under-estimate of Rate of Return is far worse than that resulting from an over-estimate. Where the Rate of Return has been underestimated, the potential risk of under-investment is high and the benefit of reduced pricing is low. On the other hand, where there is an overestimate of Rate of Return, the impact of higher pricing and possible over-investment is low compared to the benefit of increased likelihood that the investment will occur.
- ARTC asserts that this should be an important consideration in ensuring that the regulated Rate of Return is right in the prevailing industry circumstances.
- It is ARTC's intention to propose a revised Rate of Return based around the proposals below in any revised undertaking.
 - **Risk Free Rate**
 - To address the ACCC's concern, ARTC proposed a risk free rate that excludes the 'convenience yield'.
 - **Cost of Debt**
 - ARTC sought Synergies to consider an alternative methodology that might result in the best proxy, in light of the currently available approach, and that was broadly consistent with the ACCC's recommendation above.
 - Based on Synergies' recommendation (including consideration of alternatives), ARTC proposed to use an alternative proxy for the 10 year BBB benchmark as follows:

- start with the indicative seven year BBB rate available from Bloomberg;
 - extrapolate to a 10 year rate based on the difference between the 5 year rate and the 7 year rate.
 - ARTC recommended the approach described above as the best, most certain available proxy, which was consistent with the ACCC approach proposed in the Draft Decision.
 - ARTC proposed to base its estimate of cost of debt for the purposes of estimating Rate of Return on the proposed methodology above.
- **Debt Issuance Costs**
- ARTC proposed to use debt raising costs of 9.5 basis points per annum for the purpose of estimating the Rate of Return.
- **Asset Beta**
- ARTC sought to make the following points to inform the ACCC in relation to the factors proposed by the ACCC in the Draft Decision which it considered to substantially mitigate ARTC stranding risk in the Hunter Valley.
 - **Strong medium term demand and high coal prices -**
Investment decisions and risks are considered over the long term, whereas the ACCC's demand and pricing considerations appear to be quite short. Current spot and contract prices (and even forward looking prices) do not provide any information regarding the long term outlook for the coal market, nor can they provide investors in supply chain infrastructure with comfort that the assets will not be stranded in the long term. Similarly, particularly given the possibility of structural change that could occur in response to climate change initiatives, caution needs to be exercised in using historical or current prices to make assumptions about future trends. The industry itself⁶ has recognised the impact

⁶ Dr. Nikki Williams, CEO of the NSWMC, Radio interview with Tony Eastley, ABC Local Radio, Wednesday, August 12, 2009.

that an ETS could have on the cost profile of, and risk to, NSW coal mines.

- **Complementary investment** - Whilst investment by the industry in other parts of the coal supply chain may provide some confidence for investors in below rail infrastructure, and reduces the risk that below rail capacity may not be supported by necessary capacity elsewhere in the supply chain, this does not assume that investors in other infrastructure providers do not have concerns regarding the stranding risk associated with their investments. Investor expectations are no doubt recognised in the much higher returns sought for investment in other unregulated parts of the coal supply chain.
- **Capital expenditure approval process** - Whilst the RCG endorsement process incorporated in the HVAU results in certainty that capital expenditure will be incorporated in the RAB, stranding risk is more about ability to recover the investment in the long run. Whether or not an amount has been included in the RAB, ARTC is not guaranteed recovery unless coal volumes and access pricing are such that generated revenue is sufficient.
- **Long term TOP contracts** - The nature of the proposed long term TOP contracting only guarantees ARTC recovery of cost associated with assets in existence at the time of contract execution. There is no guarantee that volumes underpinning future investment will materialise (if market conditions do not permit). Long term TOP commitment only is realised when future capacity is commissioned. As such future ARTC revenues are exposed to the market during and beyond the term of the contracts and the regulatory period.
- **Loss capitalisation** – Loss capitalisation addresses the impact of truncation of returns which is a regulatory risk. Loss capitalisation in itself does not influence long term coal demand and pricing and so does not reduce stranding risk. Where the market is such that volumes and prices are unable

to support revenue in excess of ceiling in the long run, long term recovery of investment cost is not achieved. ARTC still bears stranding risk.

- **Conservative asset lives** - Even though the proposed approach to determining an estimate of remaining mine life may produce an outcome being a lower estimate than is currently the case under the NSW Rail access Undertaking, this should not be taken as being conservative. The lower estimate results from the much higher forecasts of volume throughput than currently exist compared to that underpinning historical estimates. That is, a conservative estimate of remaining mine life will only reduce stranding risk to the extent that the estimate is, in fact, conservative. This is not clear to ARTC.
 - ARTC considered that a review of the mitigating factors in light of these points would suggest that the ACCC setting of asset beta is not conservative (as suggested by the ACCC). An asset beta higher than 0.5 would be appropriate.
 - Even if the ACCC has sought to achieve a conservative outcome in relation to asset beta in order to recognise ARTC's risks and encourage investment, the ACCC's draft decision to move gamma from its current setting to 0.65 effectively obviates any impact that a conservative asset beta setting may have had.
 - Synergies conclude an asset beta of 0.6 is appropriate. ARTC proposed to include an asset beta of 0.55 for the purpose of estimating Rate of Return, consistent with the arguments in this section.
- **Equity Issuance Costs**
 - ARTC proposed to include equity raising costs of 3 per cent of the minimum external equity capital required in its cash flows.

○ **Market Risk Premium**

- The ACCC had regard to the AER's and its own decisions in April 2009 to use 6.5% on the basis that 'capital markets and global economic conditions were extremely uncertain and turbulent at the time.
- Whilst accepting that the worst of the global financial crisis is past, ARTC was far from convinced that global financial markets have recovered to a level of substantial stability, or would be likely to do so in the near future.
- ARTC provided ample evidence supporting a long term forward looking estimate of more than 6% in any event, and believes that it is still appropriate to maintain the position taken by the AER and ACCC to adopt an MRP above 6%.
- ARTC highlighted advice from Synergies that the AER continues to support an MRP above 6% in a draft decision as recently as February 2010.
- ARTC did not believe that there is sufficient compelling evidence as yet to make a clear judgement that financial markets are even close to recovering to substantial stability and agrees with the AER (as evidenced in Synergies advice provided) that the future outlook remains uncertain.
- ARTC proposed to include a conservative MRP of 6.5% for the purpose of estimating Rate of Return.
- A compulsory review of the Rate of Return after 5 years will represent a more appropriate point at which an assessment can be made as to whether capital markets and global economic conditions have returned to stable and sustainable levels.

- **Capital Structure and Gearing**

- Consistent with ARTC's position supporting parameter values close to the midpoint of the ranges originally proposed, ARTC would accept a debt to equity ratio of 52.5%.

- **Imputation Factor (Gamma)**

- ARTC provided further advice by Synergies showing strong evidence that the studies relied upon by the ACCC in coming to its conclusions were neither valid nor conclusive. Synergies provided evidence supporting a much lower result from the Beggs and Skeels study than the 0.57 taken by the ACCC in coming to its conclusions.
- Given this and its understanding from many other regulatory WACC assessments, ARTC still considered that there is substantial uncertainty surrounding what is the correct value of gamma. Since the AER decision in April 2009 to adopt a gamma of 0.65, IPART in its July 2009 regulatory decision in relation to the Hunter Valley Coal Network has considered the value of gamma to be used in full knowledge of the AER decision and evidence before the AER at the time. IPART elected to retain a range of 0.3-0.5 on the basis of continuing divergence in results and opinion on this issue.
- It had been the ACCC's historical practice to adopt 0.5 as gamma. This has been used in relation to both previous ARTC undertakings covering the Interstate Network. ARTC considers that evidence exists that could support a gamma value within a range of 0 and 0.56. ARTC does not consider that the balance of reliable evidence necessarily supports a value of gamma at the upper end of this range, or even a value higher than 0.5.
- In light of the value adopted by the ACCC on the remainder of ARTC's Interstate Network (0.5) and in the interests of having consistent treatment across the company's network, ARTC would be prepared to accept a gamma value of 0.5, which is at the upper end of the range currently applicable to the Hunter Valley Coal Network. ARTC intends to use a gamma value of 0.5 for the purpose of estimating Rate of Return.

4. Other Regulatory Developments

2008 Australian Energy Regulator (AER) review of WACC parameters applying to electricity transmission and distribution network service providers⁷

ARTC notes that, in respect of the recommendations made by the ACCC in the Draft Decision, the ACCC made reference to, and had some regard to, regulatory precedent. In the case of its recommendation in relation to the imputation factor gamma, the ACCC appeared to rely heavily on materials available to, and conclusions drawn by, the AER in its review of WACC parameters applying to electricity transmission network service providers in 2008.

In its response to the Draft Decision in relation to the gamma value, ARTC expressed some concern with the ACCC's position in this regard, as described above. In particular, ARTC still considered that there was substantial uncertainty surround the correct value of gamma, consistent with the position taken by some other regulators since the ARTC final decision.

ARTC indicated that, because of this uncertainty, and despite the substantial evidence it had provided supporting a gamma value at, or at least close to, zero⁸, it was willing to accept a gamma value of 0.5 which was consistent with previous ACCC decisions (including that for ARTC's Interstate Network in 2008), and consistent with valuations made by other regulators since the AER final decision⁹.

ARTC now notes that a more recent determination made by the AER in relation to the Queensland electricity distribution, to adopt a value of gamma consistent with the 2008 AER review relied upon by the ACCC, has been challenged by the affected parties before the Australian Competition Tribunal (ACT)¹⁰.

These ACT reviews are yet to be carried out.

⁷ AER, Final Decision: Electricity transmission and distribution network service providers – Review of the weighted average cost of capital (WACC) parameters, May 2009.

⁸ Synergies Economic Consulting, ARTC's Hunter Valley Coal Network, Weighted Average Cost of Capital Review.

⁹ IPART, New South Wales Rail Access Undertaking - Review of the rate of return and remaining mine life from 1 July 2009, July 2009 (gamma 0.3 – 0.5) and Queensland Competition Authority, Draft Decision on QR Network's 2009 Draft Access Undertaking, December 2009 and Draft Decision on QR Network's 2010 Draft Access Undertaking – Tariffs and Schedule F, June 2010. (gamma 0.5).

¹⁰ Energex Limited, Application under Section 71B of the National Electricity Law for a review of a distribution determination made by the Australian Energy Regulator in relation to Energex Limited pursuant to Clause 6.11.1 of the National Electricity Rules (File 2 of 2010) and Ergon Energy Corporation Limited Application under Section 71B of the National Electricity Law for a review of a distribution determination made by the Australian Energy Regulator in relation to Ergon Energy Corporation Limited pursuant to Clause 6.11.1 of the National Electricity Rules (File 3 of 2010).

ARTC considers that the uncertainty surrounding this AER determination creates even greater uncertainty around the 2008 AER review, and in particular, the conclusions of the AER in relation to the value of gamma arising from that review.

ARTC considers that in the face of this uncertainty gamma surrounding the AER's conclusions in 2008 relied upon by the ACCC in the draft decision, and the uncertainty surrounding the valuation of gamma generally, make a strong case for the ACCC to retain its previous position of a gamma value of 0.5. This would be consistent with the treatment of the matter by other regulators as described above.

In addition, ARTC provided further advice¹¹ to the ACCC in its response to the Draft Decision expressing its concerns in relation to the AER conclusions, and the studies relied upon by the AER, in 2008.

Australian Energy Regulator (AER) review of the proposed ActewAGL Access Arrangement for the ACT, Queanbeyan and Palerang gas distribution network, June 2009.

ARTC notes that, in the Draft Decision, the ACCC indicated, in respect of determining a cost of debt to be adopted for determining the Rate of Return to apply under the HVAU:

'the ACCC considers it likely to be appropriate for ARTC to:

- take the longest maturity BBB bond fair yield estimate available from Bloomberg; and
- add to this an estimate of the term premium going from the maturity of the longest dated BBB bond out to 10 years as estimated from the next (higher) credit rating Bloomberg fair yield curve quoted out to at least ten years.

The ACCC will assess whether the use of Bloomberg fair yields and ARTC's proposed methodology is appropriate closer to the final decision, in light of current market conditions prevailing at that time.¹²

In its response to the Draft Decision, ARTC proposed an approach to determining cost of debt, following advice from Synergies, as follows:

¹¹ Synergies Economic Consulting, ACCC's Draft Decision re ARTC's Hunter Valley Coal Network, Response re WACC Issues, March 2010.

¹² ACCC, Hunter Valley Coal Network Access Undertaking, Draft Decision, 5 March 2010, p543.

'Based on Synergies' recommendation, ARTC proposes to use an alternative proxy for the 10 year BBB benchmark as follows:

- start with the indicative seven year BBB rate available from Bloomberg;
- extrapolate to a 10 year rate based on the difference between the 5 year rate and the 7 year rate.'

ARTC considers that its proposed approach is consistent with the ACCC's recommended approach, having regard to the available alternatives.

ARTC notes that since the Draft Decision, the AER has made a decision following its review of the proposed ActewAGL Access Arrangement for the ACT, Queanbeyan and Palerang gas distribution network in April 2010.¹³

In that decision, the AER has developed a testing method that it now applies each time it has to estimate the cost of debt as part of a regulatory determination. The AER uses this method to test whether it should apply Bloomberg, CBA Spectrum or an average of the two. In summary, the method involves:

- Defining a population of corporate bonds that closely reflect the characteristics of bonds that would be issued by the benchmark service provider.
- Considering whether any of these bonds should be excluded from the analysis on the basis that the yields for these bonds are not representative of their credit rating.
- Comparing the observed yields of this sample of bonds to the fair value curves of CBA Spectrum, Bloomberg and an average of the two curves, in order to determine which curve aligns most closely to the observed yields.¹⁴

The AER's sample of bonds reflects the maturities that are currently on issue. For the BBB category, the longest maturity has been around six years.

ARTC has a number of specific issues with the AER's approach; however refinements to the approach itself will not alter the underlying problem, which is the absence of actual observed yields on long term corporate bonds. The problem is not confined to BBB bonds. However, as the lowest investment grade credit rating category, in a market that remains plagued by uncertainty, liquidity problems in this category can be expected to remain most

¹³ AER, Access arrangement decision, ACT, Queanbeyan and Palerang distribution network, 1 July 2010 – 30 June 2015, 23 April 2010.

¹⁴ It should be noted that the AER now also includes UBS data in this analysis as an additional data source.

pronounced. A range of alternatives have been considered however none of these alternatives overcome this fundamental problem.

The key weakness of the AER's approach is that it is making a judgment as to which data source is a better predictor based on observed yields on short term bonds. The question that is being addressed is how to estimate a ten year BBB yield in the absence of actual observed yields on long term corporate bonds. In ARTC's opinion, which data source better predicts actual yields on short term bonds, where there are actual trades, gives little, if any information as to whether that data source can be relied upon to estimate yields on long term bonds, where there are no trades.

This assessment can only be made if the method that was used by each data provider to estimate its fair value curves was known. However, this is not known and is unlikely to become known. What is evident is that there can be significant differences between the two methods and the reasons for this are not known, particularly given there are no actual ten year bonds against which the fair value yields can be tested. It is not possible to predict if these differences will persist, what its magnitude will be and which data source will produce the higher or lower outcome. To ARTC, the nature and magnitude of the divergence suggests that there must be a problem somewhere, however it is not possible to establish with any reliability whether that problem is with Bloomberg's method, CBA Spectrum's method, or both.

This weakness is not a trivial one - it is a fundamental problem. The AER's method is seen as appealing because it is seen as robust. It could be considered a robust method if we were seeking to estimate yields on short term BBB bonds. However, ARTC cannot conclude that it is a robust method of selecting which data provider should be used to estimate yields on ten year BBB bonds.

Discussion of this issue in the context of AER's determinations has more recently tended to focus on specific deficiencies with the method. Concerns have previously been raised with the use of the method at all, however as outlined above, the typical response has been along the lines of "at least it is a method". For the reasons outlined above, ARTC does not consider this acceptable if one cannot draw any reliable conclusions from the application of that method.

ARTC also notes that since that AER decision, the ActewAGL has applied for a review of that decision by the ACT. ARTC understands that the grounds for that review related to the decision in relation to determining debt risk premium. This ACT review is yet to be carried out.

The review creates further uncertainty around the AER's decision, and the future of this methodology for determining the debt margin.

Given this, ARTC recommends that the prudent position to take in relation to the HVAU is to maintain the previous position recommended in the Draft Decision and have strong regard for ARTC's proposal in its response which ARTC considers to be consistent with that recommendation.

ARTC has proposed to retain this position in its proposed Rate of Return.

In light of ARTC's discussion above, should the ACCC be minded to move from its previously recommended position, ARTC would accept the adoption of an average of CBASpectrum and Bloomberg approaches.

5. ARTC's revised proposal

ARTC has proposed a position in its response to the ACCC Draft Decision in relation to the parameters used to determine Rate of Return.

Since making its response in late March, and since the ACCC's Draft Decision, ARTC notes widespread economic reporting of a significant slowdown in the recovery from the global financial crisis and, indeed, deterioration in global economic conditions and capital markets over the last few months. There is also now reporting of increased probability of double dip recession and the need for further economic stimulation in many economies.

ARTC considers that this represents a significantly more uncertain economic and financial climate than was the case at the time of the Draft Decision.

ARTC notes that, in the draft decision, the ACCC took views in relation to certain parameters that were influenced to varying extent by a perception at the time that there was strong recovery from the global financial crisis around the world being reported.

Examples include the position to:

- exclude a 'convenience yield' adjustment to the risk free rate (although in mid 2009 ARTC conceded that such an adjustment may no longer be necessary due to improvement in bond rates at that time).

- reduce the market risk premium determined by the AER (6.5%) in April 2009 to 6%

ARTC now seeks the ACCC to re-consider its position in relation to certain parameters in light of the economic and financial uncertainty that now exists and is likely to continue for some time into the future.

ARTC also considers that more recent regulatory events create significant uncertainty around outcomes for the values of the gamma and debt margin parameters going forward. ARTC considers that where such uncertainty surrounds the approach and value of these parameters, the prudent position would be to retain the existing regulatory position. As such, ARTC has proposed to retain the historical ACCC position on gamma (0.5) and an approach to determining debt margin that is consistent with the Draft Decision.

ARTC proposed parameters and Rate of Return are detailed in the table below.

ARTC REVISED PROPOSAL - HUNTER VALLEY COAL NETWORK ACCESS UNDERTAKING	
	Aug-10
Rf (nominal) ¹	4.97%
Debt	53%
Equity	48%
D/E	1.11
BBB bond rate (nominal)	9.30%
Debt margin (nominal) ²	4.33%
Debt raising costs	0.095%
Cost of debt (Nominal)	9.40%
MRP	0.065
Gamma	0.50
Inflation	2.50%
Tax rate	30%
Asset beta	0.55
Debt beta	0.00
Equity beta	1.15
ke	12.45%
kd	9.40%
Vanilla WACC³	10.84%
Pre-tax real⁴ WACC	9.16%

¹Based on 20 day average for the period ending 31 August 2010.

²Based on proposed ARTC methodology and 20 day average for the period ending 31 August 2010.

³A nominal post-tax framework is adopted by the ACCC

⁴A real pre-tax framework has been adopted in the Hunter Valley historically and is proposed for determination of Full Economic Cost in annual ceiling test compliance.

ARTC recognises that the ACCC may be minded, in determining the relevant parameter values, to have regard to the recent regulatory decisions may by the AER in relation to gamma and debt margin (debt risk premium). Given that the outcomes of reviews into the AER decisions are unknown (and possibly may remain so for some time), ARTC considers it prudent, and in its reasonable business interests, to be able to re-visit the ACCC's

decision in relation to these two parameters where the outcome of these reviews and any result regulatory position becomes known.

ARTC has therefore proposed to incorporate a provision at section 4.7 of the HVAU that gives ARTC the discretion to propose a revised Rate of Return to the ACCC following a decision or direction by the ATC in relation to the relevant reviews (as indicated above) currently before it as at the HVAU Commencement Date. ARTC's review and proposal of a revised Rate of Return would be limited to limited to, and based on, the new or revised methodology for determining the relevant debt margin, and the gamma value, that results from the relevant ACT reviews.

ARTC is in the process of investing heavily in the Hunter Valley Network and has a large future investment program. The level of the rate of return proposed by the ACCC is of great concern to ARTC. In the Draft Decision, the ACCC has proposed a rate of return that is 225 basis points below the low end of the range originally proposed by ARTC.

ARTC estimates that the low end of the WACC range it originally proposed would be 9.75% (real-pre-tax) if measured on the same basis now. ARTC has now reduced its proposal above by around 60 basis points from the low end of its original proposal.

Had the ACCC's proposal in the Draft Decision been measured now (using the AER precedent for gamma and debt risk premium), ARTC estimates that the real, pre-tax return would lie around 7.73%. This is still nearly 150 basis points below ARTC's revised proposal.

The magnitude of the gap between the ACCC's position in the Draft Decision and ARTC's reduced proposal now made is still of great concern to ARTC, particularly with respect to its ability to obtain financing to undertake the substantial investment program expected by the industry in order to meet expected future demand.

ARTC recognises that the revised Hunter Valley Access Undertaking now incorporates, at the industry's request, greater certainty and prescription around the ability of an applicant to fund an investment itself. Nevertheless, it is ARTC's strong expectation that it will be the party that the industry expects to fund, at least, the substantial majority of planned investment program.

Over the last few years the industry, and ARTC, have gone to great lengths, including through the Greiner Review, the development of port access arrangements, and development of ARTC's Hunter Valley Coal Network Access Undertaking, to substantially

improve the commercial framework underpinning the future operation of, and investment in, the Hunter Valley coal supply chain. It has been clear to ARTC that the ACCC has taken an active interest and role in this industry development and has publicly expressed the importance it sees in the role of these developments in the future growth of this supply chain.

ARTC recognises that the ACCC has a role to play in regulating ARTC's activities in the Hunter Valley to ensure that it does not misuse its market power, nor gouge rents from the industry to the detriment of downstream markets.

ARTC recognises the common regulatory practice to rely on efficient benchmarks and precedents in regulatory outcomes in other industries, when determining appropriate levels of return in a particular circumstance. However the ACCC has taken some responsibility for encouraging efficient and timely investment in the coal supply chain and the importance of this objective must be recognised, perhaps even more so than for other regulated infrastructure where the interrelationships with other markets in the supply chain, and growth and investment objectives may be different.

This has already been recognised in regulatory considerations relating to other supply chains with similar characteristics to that in the Hunter Valley.

As stated earlier, the Rate of Return now proposed by ARTC will see the overall level of access pricing in the Hunter Valley fall, in real terms, by around 3.4%. If the ACCC was minded to finally accept a lower Rate of Return consistent with its proposal in the Draft Decision, this may represent a favourable short term outcome for the industry, but increases uncertainty around ARTC's ability to deliver its investment program to the extent that the Rate of Return understates ARTC's cost of capital.

Where the cost of access to the Hunter Valley coal network represents a very small fraction of the current price of coal in international markets (around 1%) the potential risk of under-investment, and detrimental impact on the industry is high compared to the benefit of any reduction in access pricing.