

AUSTRALIAN RAIL TRACK CORPORATION LTD
REVISED 2010 HUNTER VALLEY ACCESS UNDERTAKING
REVISED INTERIM INDICATIVE ACCESS CHARGES



APRIL 2011

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1. INTERIM INDICATIVE ACCESS CHARGES

The Access Pricing Principles in the revised 2010 HVAU (**2011 HVAU**) provide for ARTC to develop Indicative Access Charges for Indicative Services for Coal Access Rights. Section 4.14(a) of the 2011 HVAU requires ARTC to establish Indicative Access Charges having regard to the delivery of optimal Coal Chain Capacity in consultation with the Hunter Valley Coal Chain Coordinator (**HVCCC**), given certain coal chain assumptions agreed with the HVCCC.

ARTC recognises that, at the Commencement Date, it may be unable to determine Indicative Services and Indicative Access Charges in accordance with the Access Pricing Principles. This largely relates to the early stage of development by the industry of the concept of Coal Chain Capacity and determining the 'optimal' use of Coal Chain Capacity. To address this uncertainty in the 2011 HVAU, ARTC has proposed to develop Interim Indicative Access Charges for a number of prescribed Interim Indicative Services in the Hunter Valley intended to represent the existing predominant coal train service configurations.

The 2011 HVAU provides for ARTC, in consultation with the HVCCC, to develop Indicative Service characteristics and Indicative Access Charges and submit for ACCC approval. This would be done within a reasonable period of time after ARTC being reasonably satisfied that HVCCC modelling is sufficiently robust to enable an efficient train configuration that optimises Coal Chain Capacity to be accurately determined. ARTC is still considering what would be a reasonable time frame for development and submission of Indicative Service characteristics and Indicative Access Charges with the ACCC. Until the Indicative Service and Indicative Access Charges are approved by the ACCC (**Interim Period**) ARTC will determine in each calendar year Interim Indicative Access Charges (**IIACs**) for the prescribed Interim Indicative Services.

ARTC has developed and proposed IIACs which it considers are consistent with the relevant aspects of the Access Pricing Principles.

ARTC has proposed that the IIACs apply during the calendar year commencing 1 January 2011. The Access Pricing Principles provide for ARTC to determine revised IIACs for Coal Access Rights with Interim Indicative Service characteristics for each calendar year of the Interim Period. ARTC recognises that, given anticipated timing of an ACCC Decision in relation to the 2011 HVAU, it is likely that the proposed IIACs may apply for only the second half of the 2011 calendar year.

The 2011 HVAU provides for a process to be undertaken to develop 2012 IIACs at Section 4.19.

1.1 Proposed Interim Indicative Access Charges

ARTC has proposed IIACs to apply from 1 January 2011 for all Interim Indicative Services prescribed at clause 4.18(c) of the 2010 HVAU, as described in Table 1 below.

Table 1: Proposed IIACs For 2011

Segments	Non-TOP \$/kgtkm (ex GST) ^{#1}	TOP \$/kgtkm (ex GST) ^{#1}	Interim Indicative Service Assumptions
In Pricing Zone 1			
Interim Indicative Service 1	0.935	7.563	30 tonne maximum axle load 60kph maximum speed (loaded) 80kph maximum speed (empty) 91 wagon train length section run times as per applicable Hunter Valley standard working timetable
Interim Indicative Service 2	0.935	7.563	30 tonne maximum axle load 60kph maximum speed (loaded) 80kph maximum speed (empty) 74 wagon train length section run times as per applicable Hunter Valley standard working timetable
Interim Indicative Service 3	0.935	7.563	25 tonne maximum axle load 80kph maximum speed (loaded) 80kph maximum speed (empty) 72 wagon train length section run times as per applicable Hunter Valley standard working timetable
In Pricing Zone 2			
Interim Indicative Service 1	0.572	7.563	30 tonne maximum axle load 60kph maximum speed (loaded) 80kph maximum speed (empty) 91 wagon train length section run times as per applicable Hunter Valley standard working timetable
Interim Indicative Service 2	0.572	7.563	30 tonne maximum axle load 60kph maximum speed (loaded) 80kph maximum speed (empty) 74 wagon train length section run times as per applicable Hunter Valley standard working timetable
In Pricing Zone 3			
Interim Indicative Service 1	0.769	5.575	25 tonne maximum axle load 80kph maximum speed (loaded) 80kph maximum speed (empty) 72 wagon train length section run times as per applicable Hunter Valley standard working timetable

#1 TOP = Take or pay

The proposed IIACs update previously proposed IIACs (forming part of the 2010 HVAU) as a result of more accurate information in relation to volumes and expenditure becoming available.

It should be noted that the proposed IIACs have been developed by ARTC using spreadsheet modelling that is based on 2011 calendar year, forecasts and assumptions

based on information available to ARTC as at December 2010. The spreadsheet modelling has been provided to the ACCC on a confidential basis, so that the ACCC can satisfy itself that the proposed approach and methodology for determining IIACs at clause 4 of the HVAU is reasonable, and that IIACs have been determined in accordance with that approach and methodology.

It should be noted that ARTC provided to the ACCC financial modelling and other documentation supporting the IIACs proposed in the 2009 HVAU in October 2009 and in the 2010 HVAU in September 2010. The ACCC has reviewed this financial modelling in coming to its Draft Decision and Position Paper. The financial modelling provided to the ACCC in support of IIACs proposed as part of the 2011 HVAU is fundamentally the same with only input data being updated as described earlier and minor formatting and reporting changes being made.

It is important to recognise that the modelling has been prepared by ARTC in order to determine 2011 pricing based on relevant forecasts and assumptions for that year. Both the existing NSW Rail Access Undertaking (**NSWRAU**), and the 2011 HVAU provide for a further opportunity for Independent Pricing And Regulatory Tribunal (**IPART**) or the ACCC, as applicable, to carry out an Annual Compliance assessment of the revenue collected by ARTC in 2011. This assessment will be based on actual volume and cost information, where the relevant regulator will be able to satisfy itself that Access revenue has been collected in accordance with the NSWRAU or 2011 HVAU as applicable.

Further detail in relation to the forecasts and assumptions is provided in section 1.3.

1.2 Pricing Approach and Modelling

The approach that ARTC has adopted to develop the 2011 pricing is similar to that used in the past in order to determine whether revenue collected, which is based on pricing and volumes satisfies the ceiling test. That is, ARTC has sought to develop pricing in 2011 such that, if 2011 volumes forecasted by producers to exist in the latter half of 2010 (as forecast in December 2010, and aligned to ports capacity in 2011) materialise and ARTC's 2011 operating and capital budgets are achieved, revenue collected by ARTC will be close to the ceiling limit, thereby minimising any unders or overs for 2011. To the extent actual outcomes vary from producer forecasts or expenditure budgets, an under or over will arise which will be allocated to Access Holders.

To this end, ARTC has noted that, for the first few months of 2011, actual volumes are significantly less than the volumes assumed for price modelling (aligned to port capacity). Should this trend continue for the remainder of 2011, it is likely that actual volumes will be well short of volumes assumed for price modelling. This is likely to result in an 'under' of substantial magnitude for the first half of 2011, where prices are based on volume. In the second half of 2011, assuming that the 2011 HVAU takes effect early in that period, and take-or-pay contracts are executed on a timely basis, ARTC expects this situation to be largely mitigated in that period.

The pricing model proposed in the 2011 HVAU is essentially a standard 'building block' model. ARTC's cost base, giving rise to a ceiling revenue limit, consists of maintenance expenditure (variable and fixed), network control and terminal management, an allocation of asset management (engineering) and corporate overheads, depreciation based on proposed remaining mine life estimates, and a return on assets based on proposed asset valuation and proposed rate of return.

ARTC has sought to develop the 2011 cost base and ceiling limit in accordance with the Pricing Principles proposed at section 4 of the 2011 HVAU. The approach adopted is not substantially different from that currently used to demonstrate compliance with the ceiling under the NSWRAU.

Differences to the approach currently used for compliance assessment in the Hunter Valley, arising from the proposed Pricing Principles include:

- The introduction of 3 Pricing Zones.
- The inclusion of infrastructure between Dartbrook mine and The Gap.
- The exclusion of Segments included in the IPART evaluation but not included in the HVAU Network.
- The specification of two part prices (non-Take or Pay (variable) and Take or Pay (TOP)).

Aspects of the current approach used for compliance assessment in the Hunter Valley that have remained largely unchanged include:

- Establishment of variable and fixed maintenance expenditure for each segment.
- The approach used to allocate engineering and corporate overheads to the Network and its Segments.
- The approach used to roll forward the asset base.
- The application of the stand-alone combinatorial test to establish the Constrained Group of Mines and the Constrained Network.

It should be noted that the development of pricing assumes that the 2011 HVAU will become effective mid 2011. In the Explanatory Guide to the 2010 HVAU, ARTC proposed transitional arrangements (for the purposes of annual compliance assessment) that will assume that the pricing principles detailed at Schedule 3 of the NSWRAU are operable for the period up to 31 December 2010, and the HVAU Pricing Principles are operable from 1 January 2011 subject to some minor transitional adjustments intended to ensure stakeholder interests are recognised.

It should be noted that arrangements for transition between regulatory instruments, in particular the scope of compliance assessments undertaken by IPART and the ACCC over the period is not yet resolved, and may, to some extent, depend on the actual Commencement Date of the 2010 HVAU. The greater likelihood currently is that the pricing principles detailed at Schedule 3 of the NSWRAU will be operable for the period up to

30 June 2011, and the HVAU Pricing Principles are operable from 1 July 2011 subject to some minor transitional adjustments intended to ensure stakeholder interests are recognised.

It should also be noted that, as pricing is being developed for the likely year in which the Term of the 2011 HVAU will commence, the approach proposed by ARTC to capitalise economic losses (**Loss Capitalisation**) has no direct bearing on the pricing outcomes. The 2011 HVAU provides for Loss Capitalisation to only apply in Pricing Zone 3 where revenue remains well below a building blocks ceiling. Despite this, it has little bearing on the pricing decision for coal in that Pricing Zone in the calculation of the IIACs for 2011.

As such, ARTC has elected not to incorporate the Loss Capitalisation approach in the roll forward of the asset base for the purposes of development of 2011 IIACs. ARTC will however, incorporate the approach for asset roll forward in developing a financial model supporting its 2011 asset roll forward and ceiling test compliance submission to the ACCC in early 2012.

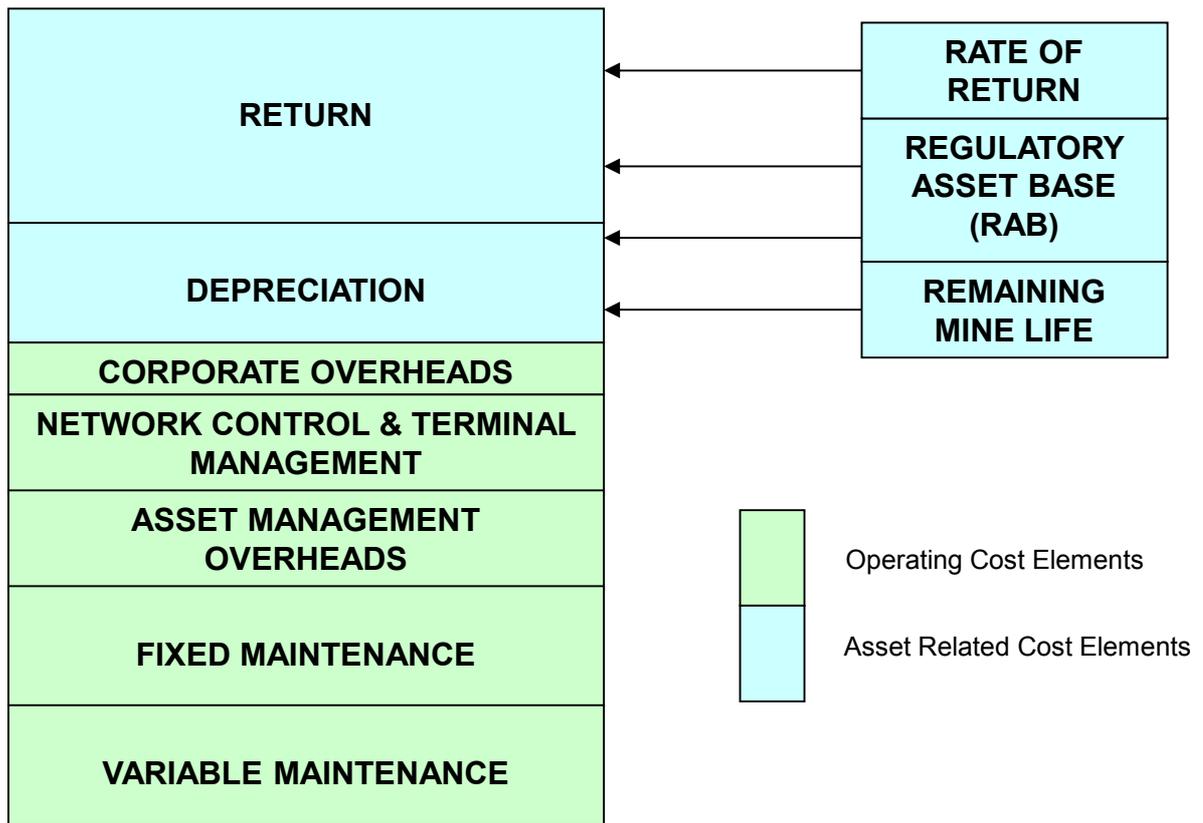
It should also be noted that ARTC intends to provide illustrative 10 year forecasts of costs, asset base and pricing to give some indication to stakeholders of future variation in access pricing given materialisation of a number of assumptions upon which the forecasts are based. As Loss Capitalisation may have a bearing on forecasted costs and asset value in Pricing Zone 3, Loss Capitalisation has been incorporated in the forecast modelling for that Pricing Zone.

The following sections will provide explanation of each of these cost elements forming the 2011 cost base.

1.3 Operating Cost Elements

Figure 1 below shows the cost elements that make up ARTC forecasted cost base for 2010.

Figure 1: Cost Elements Included In Forecast Cost Base



1.3.1 Maintenance Expenditure (costs directly attributed to a Segment)

Maintenance expenditure includes major periodic maintenance (“MPM”) and reactive corrective routine maintenance (“RCRM”). Actual MPM cost, rather than a ‘levellised’ cost has been used, in line with current accepted practice. Both RCRM and MPM costs have been budgeted for each Segment of the Network, and so are directly associated with Segments. These costs are included in the Economic Cost of a Segment in accordance with section 4.5(a)(i) of the 2011 HVAU. These costs are also budgeted in terms of specific maintenance activities numbering over 100 (e.g. inspections and patrols, rail grinding, ballast cleaning). ARTC Hunter Valley asset management senior engineers classified each maintenance activity as:

- variable with volume over a segment,
- fixed with respect to volume, or
- both (where the activity exhibits both fixed and variable characteristics with respect to volume on a segment).

In the latter case, for each activity, the engineers determined the proportion that is variable with respect to volume and this has been used to apportion those activities into their fixed and variable components.

For each Segment, expenditure associated with each activity is classified as variable or fixed, resulting in total variable maintenance and total fixed maintenance for each Segment.

In order to determine maintenance cost applicable to Hunter Valley coal on a stand alone basis, the total GTK (for all coal and non-coal traffic) for each Segment is applied to the variable maintenance cost for each Segment to determine a variable maintenance unit cost (c/GTK). Then only the coal allocation of variable maintenance (coal GTK x variable maintenance unit cost) is retained in cost base.

Table 2 shows the variable and fixed maintenance expenditure, based on the above methodology, included in the 2011 forecast cost base for the Network and Constrained Network.

Table 2: 2011 Forecast Variable & Fixed Maintenance Expenditure

	Network \$m	Constrained Network (Ports – Ulan) \$m
Variable Maintenance (coal only)	23.1	21.5
Fixed Maintenance	22.6	19.4

Ongoing drivers of maintenance expenditure in the Network are normally:

- network volumes (particularly in relation to variable maintenance, and less so in relation to fixed maintenance);
- wages and material inflation;
- maintenance productivity;
- labour and equipment availability; and
- network availability (that is, the frequency and nature of possession opportunities, can impact significantly on the cost of undertaking a maintenance activity, where ARTC, in undertaking its maintenance program, is committed to working with the industry with a view to minimising impact on coal throughput).

1.3.2 Non-Segment Specific Costs (allocated to Segments in accordance with section 4.6(a)(ii) and (iii) of the 2011 HVAU)

Costs incurred by ARTC to operate the Network that are not directly identifiable with Network Segments include costs associated with ARTC's Asset Management, Network Control, Terminal Management, and Corporate Management and Support functions.

Asset Management expenditure included in the cost base relates to:

- maintenance related expenditure that cannot be directly identified with Hunter Valley Segments (e.g. provisioning centres);

- Hunter Valley asset management and support (for example, management, project staff, office support staff);
- NSW asset management and support (as above); and
- ARTC asset management and support (e.g. management, asset performance, systems and standards).

This type of expenditure is often identified as relating to a part of the ARTC network (e.g. Hunter Valley, Newcastle region, NSW region or ARTC network-wide) and is incurred at certain locations (e.g. Newcastle, Sydney, Adelaide etc). Depending on these elements, asset management expenditure will be allocated over certain parts of the ARTC network on the basis of GTKs in accordance with section 4.6(a)(iii)(A) of the 2011 HVAU.

For example, asset management expenditure incurred at Newcastle relating to the Newcastle lease region will be allocated to the Network on a prorate basis of $\text{GTK}(\text{Network})/\text{GTK}(\text{Newcastle lease region})$. A further example is asset performance expenditure incurred in Adelaide. As this relates to the whole of the ARTC network, it is allocated to the Network on a prorate basis of $\text{GTK}(\text{Network})/\text{GTK}(\text{whole of ARTC network})$.

Expenditure identified as relating exclusively to other parts of the ARTC network in NSW, or outside of NSW is not allocated to the Network.

Expenditure allocated to the Network is then allocated to Segments on the basis of GTK.

Network Control & Terminal Management expenditure primarily includes labour related expenditure associated with delivery of network and yard control, terminal management, signalling, path scheduling and incident management.

Expenditure is primarily incurred in Newcastle and Port Waratah (terminal). Network control costs are apportioned to the Network on the basis of area of coverage of the network control and signalling function and where this is not relevant, on a train kilometre basis. Terminal management expenditure is identified as a stand alone cost of operation of the Hunter Valley coal network.

Both network control and terminal management apportioned to the Network have been allocated to Segments on the basis of train kilometres in accordance with section 4.6(a)(iii)(B) of the 2011 HVAU.

In recent year's both the network control & terminal management functions have been rationalised by ARTC as part of a wider NSW Train Control Consolidation Project completed by ARTC in 2006-07. The project involved the following key elements:

- Modernisation of signalling and communications systems in NSW to enable the remote operation of control functions performed at 30 locations in NSW.
- The consolidation of network control positions of train controller, signaller and area controllers.

- Consolidation of the network control function into Northern and Southern centres operated by ARTC.
- The transfer of terminal management functions performed under contract by Pacific National to ARTC.
- The direct employment of network control and terminal management staff by ARTC. The resource to perform these functions was previously provided by Pacific National (under contract) and Rail Infrastructure Corporation (secondment).

A key project benefit was a reduction in expenditure associated with delivery of these functions in NSW. This benefit has manifested in reduced network control and terminal management expenditure associated with the Hunter Valley coal network in subsequent years. However, some fluctuation in this expenditure remains as the new approach to these functions resulting from the project is bedded down.

Corporate Management and Support expenditure primarily includes labour related expenditure associated with ARTC's information systems, property management, legal services, human resources and training, billing/credit and financial management, security and property management, safety and risk management, executive, research and regulation, customer and access contract management functions and the Board. Expenditure also includes some non-labour related expenditure such as insurance, external consultancies and systems.

This type of expenditure is often identified as relating to a specific part of the ARTC network (e.g. Newcastle region, NSW region or ARTC network-wide) and is incurred at certain locations (e.g. Newcastle, Sydney, Adelaide etc). Depending on these elements, corporate overhead expenditure will be allocated over certain parts of the ARTC network on the basis of train kilometres in accordance with section 4.6(a)(iii)(B) of the 2011 HVAU.

For example, corporate overhead expenditure incurred at Newcastle relating to the Newcastle lease region will be allocated to the Network on a prorate basis of train kilometres (Network)/train kilometres (Newcastle lease region). A further example is expenditure relating to ARTC's Executive incurred in Adelaide. As this relates to the whole of the ARTC network, it is allocated to the Network on a prorate basis of train kilometres (Network)/train kilometres (whole of ARTC network).

Expenditure identified as relating exclusively to other parts of the ARTC network in NSW, or outside of NSW is not allocated to the Network.

Expenditure allocated to the Network is then allocated to Segments on the basis of train kilometres.

Importantly, ARTC's approach seeks to ensure that:

- Expenditure that does not relate to the Network is not allocated the Network; and
- Expenditure that is related to the Network is allocated to the Network on an appropriate prorate Train Km basis in accordance with the 2011 HVAU.

The approach used by ARTC is consistent with the approach used to allocate overhead expenditure to the interstate network covered by ARTC's Interstate Access Undertaking in confidential financial modelling provided to the ACCC as part of its application in 2007, and subsequently endorsed by the ACCC in 2008.

The approach is also consistent with the approach used to allocate overhead expenditure underpinning the cost base submitted by ARTC to IPART as part of its annual revenue compliance assessment under the NSWRAU in each year since ARTC's lease on NSW commenced. The approach was endorsed by IPART initially in 2004-05 as part of a detailed public review of ARTC's costs in that year to satisfy stakeholder concerns. ARTC is not aware of any further concerns in relation to the approach in subsequent years.

Table 3 shows the Non-Segment Specific Costs allocated to the Network and Constrained Network, based on the above assumptions, included in the 2011 forecast cost base.

Table 3: Non-Segment Specific Costs

	Network \$m	Constrained Network (Ports – Ulan) \$m
Non-Segment Specific Costs	40.5	36.5

Ongoing drivers of Non-Segment Specific Costs allocated to the Network are normally:

- changes in Network volumes (GTK) and activity (train kilometres) compared to other parts of the ARTC network;
- wages inflation;
- changes in activities (e.g. level of regulatory and customer interaction); and
- productivity improvements.

1.4 Asset Related Cost Elements

1.4.1 Asset Valuation and Roll Forward of the Regulatory Asset Base (RAB)

The 2011 HVAU provides for ARTC to determine RAB Floor Limit values to be used for the calculation of a return on assets to be included in the cost base, as follows.

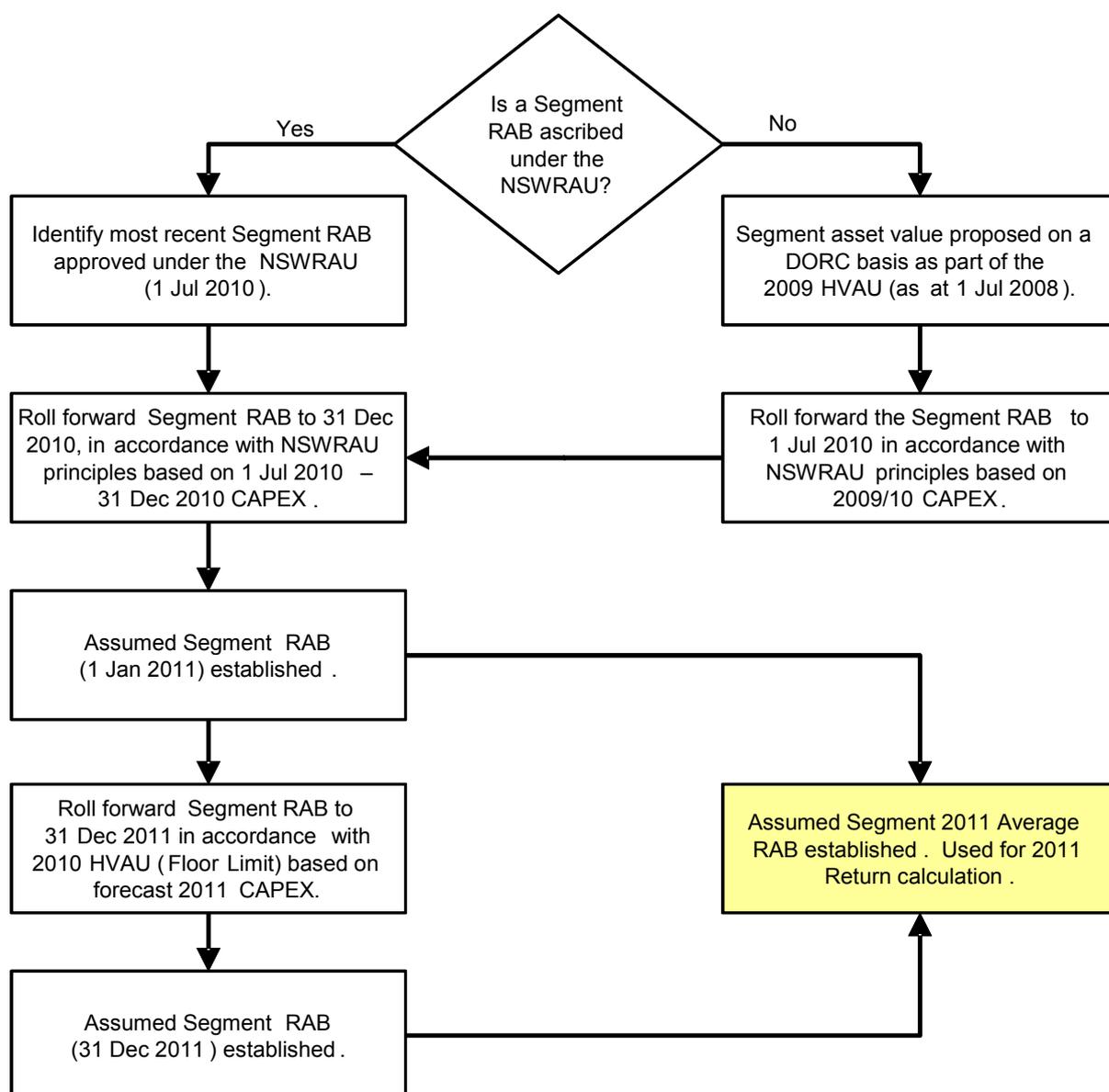
- Separation of the RAB Floor Limit into Pricing Zones.
- Setting RAB Floor Limit (as at the Commencement Date) for assets in those Segments that have been ascribed a regulatory asset value in accordance with the NSWRAU to the value of those assets that would be determined in accordance with the NSWRAU as at the Commencement Date.
- Setting RAB Floor Limit (as at the Commencement Date) for assets in those Segments that have not been ascribed a regulatory asset value in accordance with

the NSWRAU to a value determined on a depreciated optimised replacement cost (DORC) basis.

As stated earlier, ARTC has assumed that the 2011 HVAU will become effective mid 2011. The initial IIACs are for the 2011 calendar year and are based the opening RAB value as at 1 January 2011 and closing RAB value as at 31 December 2011.

To develop 2011 IIACs ARTC has undertaken the following steps (Figure 2) in order to establish RAB Floor Limit values for each Segment forming the Network for 1 January 2011, then RAB Floor Limit values for 31 December 2011, in order to establish the average 2011 RAB Floor Limit. As stated earlier, ARTC has elected not to incorporate Loss Capitalisation in the modelling, as it is not considered to have any direct bearing on 2011 IIACs development.

Figure 2: Development of Segment RAB Values For 2011



Regulatory Asset Base valuation and roll forward in each year has been undertaken in accordance with the NSWRAU and 2011 HVAU as is most applicable for pricing purposes in that year, using the roll forward formulae prescribed in each undertaking. It should be noted that the mechanics of the roll forward is not significantly different in each case. The assumption made in determining RAB Floor Limit for 2011 pricing is that actual and forecast capital expenditure is endorsed under the respective undertakings.

Assumptions in relation to each parameter used in the roll forwards (as applicable) are as follows:

1 July 2010 opening RAB Floor Limit.

For assets in Segments ascribed a RAB under the NSWRAU, the closing RAB value for 2009-10 approved by IPART as part of ARTC’s 2009-10 ceiling test submission have been taken as the 1 July 2010 opening RAB.

2009-10 closing RAB values for each Segment are detailed at Attachment 1.

For assets in Segments not ascribed a RAB under the NSWRAU, the 1 July 2008 RAB value is equivalent to the DORC valuation proposed by ARTC as part of its 2009 HVAU application. These values are shown at Table 4. These values have been rolled forward to determine a 1 July 2010 opening RAB in accordance with the approach under the NSWRAU.

Table 4: DORC Value for Segments without A RAB Value under the NSWRAU

Pricing Zone	Segment	Description	1 July 2008 \$m #1	1 July 2010 RAB \$m #2
3	0401	Dartbrook – Werris Creek	135.1	136.0
3	0402	Werris Creek –The Gap	4.2	4.2

#1 As per Booze & Co report, June 2008.

#2 Value using the RAB roll forward process as though part of the network under the NSWRAU, as described in this paper. This value will remain an estimate until such time as it is approved or amended through the transition regulatory process. The valuation, though referenced in the IPART annual compliance audit for 2009/10 under the NSWRAU, was not reviewed for approval as the Segments fall outside of the network being considered in the IPART decision.

Some segments are included in the unconstrained coal network under the NSWRAU that now form part of the network covered by the ARTC Interstate Undertaking. While these segments are no longer part of the network covered by the NSWRAU, the Segments have been retained in the RAB calculation to maintain continuity of the roll forward given the expectation that the roll forward under the NSWRAU will continue for a limited period until the approval of the HVAU. For the purpose of valuing the RAB under the HVAU, these Segments need to be excluded. The excluded Segments and their closing values in the 2010 pricing model are shown in Table 5.

Table 5: Segments Not Included In 2011 HVAU Network

Segment	Description	2010 Closing Value ^{#1} \$m
940	Maitland – Telarah	2.5
312	Telarah – Stratford	69.3
921	Waratah – Sandgate (via Main)	0.0 ^{#2}
911	Woodville Jct – Islington Jct	4.9
912	Islington Jct - Waratah	1.7
919	Bullock Island and Morandoo	0.0 ^{#3}
923	Walsh Point	0.0 ^{#3}

^{#1} Closing value in the 2020 pricing model

^{#2} Segment never separately valued.

^{#3} These segments have never formed part of the optimised coal network. ARTC has decided to remove these segments from the HVAU following the ACCC's view in the Position Paper that such segments should be valued at zero.

CPI

CPI assumptions used for RAB roll forward in each period is described in Table 6.

Table 6: CPI Values Used To Escalate RAB Values

Period	CPI Value Used	Comment
1 Jul 2010 – 31 Dec 2010	1.17%	50% of 2009-10 CPI determined in accordance with NSWRAU using actual values.
2011 Calendar Year	2.75%	Estimated annual increase from the September 2010 quarter as required for the Ceiling Limit under the HVAU. ^{#1}

^{#1} The actual difference between the September values for 2011 and 2010 would be used in the annual reconciliation process which is carried out after the close of the 2011 calendar year.

Additions

Apart from inclusion in the 1 July 2010 opening RAB value of estimated 1 July 2010 asset values for Segments 0401 and 0402 that had no previous DORC value under the NSWRAU, there have been no additions assumed over the period.

Capital Expenditure

For the purpose of developing 2011 IACs, ARTC has incorporated actual and forecast capital expenditure for each Segment over the period from 1 July 2010 to 31 December 2011 as shown in Attachment 2.

Actual capital expenditure incurred in 2009-10 has been endorsed to be included in the 2009-10 RAB roll forward under the NSWRAU other than for new Segments 0401 and 0402. ARTC has assumed actual capital expenditure for the period between 1 July 2010 and 31 December 2010 will be approved in the RAB roll forward under the NSWRAU. ARTC has

assumed that actual and forecast 1 July 2010 to 31 December 2011 capital expenditure will be endorsed to be included in the roll forward under the NSWRAU or 2011 HVAU as applicable.

ARTC understands that these are assumptions only and that capital expenditure may not be endorsed or incurred as planned. This is a normal occurrence that may give rise to unders and overs at the end of 2011.

In each year, capital expenditure assumptions for each Segment include expenditure associated with ARTC's annual minor capital program in the Hunter Valley as well as expenditure associated with major projects undertaken by ARTC consistent with the Hunter Valley Corridor Capacity Strategy.

ARTC has also included at Attachment 2, details of capital expenditure assumptions in each Segment for major projects. For the purposes of 2011 pricing, ARTC has not included any financing costs associated with major projects that may arise through delivery over extended periods in the capital expenditure assumptions.

The 2011 Financial Model also includes an amount of \$1.8m that has been included in the overhead expenses for preliminary work on projects in the Network. The Rail Capacity Group determined that the funds expended to date should be expensed. The project costs are incorporated in overheads which split into Constrained and Unconstrained by tonnes in each category and then allocated to traffics and Segments by GTK.

Note that Attachment 2 includes \$23.5m capital expenditure in Pricing Zone 3

Depreciation

Both the NSWRAU and the 2011 HVAU provide for depreciation to be calculated on a straight line basis based on the remaining mine life. Remaining mine life assumptions used are consistent with current settings under the NSWRAU (as approved by IPART), or as proposed under the 2011 HVAU as applicable. Consistent with current practice and the 2011 HVAU section 4.7(d), depreciation with respect to assets commissioned in a year will be based on half a year for the year of commissioning.

Remaining mine life parameters used in the RAB/RAB roll forward in each period are detailed in Table 7.

Table 7: Mine Life Parameters Used To Determine Depreciation (Years)

Period	Pricing Zone 1	Pricing Zone 2	Pricing Zone 3
2009-10 Financial Year	30	30	30
1 Jul 2010 – 31 Dec 2010	29	29	29
2011 Calendar Year	21	21	21

For the half year roll forward, only half depreciation (i.e. 25% compared to the 50% that would apply for a full year roll forward for new assets commissioned during the year) has been assumed.

It should be noted that it is appropriate to use the 2011 HVAU proposed mine life parameters in determining the 2011 IIACs as this best reflects the level of pricing to be applied when the 2011 HVAU comes into effect, albeit that this may only be for around half of 2011. Pricing until that point (under the NSWRAU) will reflect the NSWRAU approved mine life estimates.

Disposals

For the purposes of 2011 pricing, ARTC has not assumed any write-off of assets disposed that may result from capital expenditure over the period from 1 July 2010 to 31 December 2011. Disposals will be incorporated in any ceiling test submissions provided by ARTC to the regulator under the NSWRAU or 2011 HVAU.

1.4.2 RAB roll forward results

The closing values for the Network and Constrained Network Applying for 2009-10 and the period 1 July 2010 to 31 December 2010 have been determined in accordance with the roll-forward formula under the NSWRAU.

The results are summarised in Table 8 below.

Table 8: RAB Roll Forward Values to 31 December 2010 #1

2009-10 RAB roll forward (NSWRAU)	Element Of Calculation	Network (\$m)	Constrained Network(\$m)
Opening Value (1/7/09)	RAB_{t-1}	692.1	601.1
CPI increase	$RAB_{t-1} * CPI_t$	21.4	18.6
Capital Expenditure #2	$Capex_t$	194.2	194.2
Depreciation	Dep_t	(26.8)	(23.6)
Disposals	$Disp_t$	(1.4)	(1.4)
Closing Value (30/6/10) Approved By IPART	RAB_t	879.7	788.8
Additional Segments For HVAU #3		140.2	0
Removal of Non HVAU Segments #4		(78.7)	0
HVAU Closing Values		941.2	941.2
1 Jul 2010 – 31 Dec 2010 (half year) RAB roll forward (NSWRAU) (\$m)		Network (\$m)	Constrained Network(\$m)
Opening Value (1/7/10)	RAB_{t-1}	941.2	788.8
Additional Sectors/Segments	Add_t	0	0
CPI increase	$RAB_{t-1} * CPI_t$	11.0	9.2
Capital Expenditure	$Capex_t$	44.4	19.9
Depreciation	Dep_t	(16.6)	(13.8)
Disposals	$Disp_t$	0	0
Closing Value (31/12/09)	RAB_t	980.0	804.2

#1 Figures subject to rounding.

#2 The Capital Expenditure reported in this table matches the values approved by IPART for its 2009/10 annual compliance audit under the NSWRAU. An additional \$23.5m was incurred on Segments 401 and 402 in Pricing Zone 3 that was outside of the scope of the IPART audit. This amount is included in the values shown in Attachment 2 for those Segments and is included in the amount reported in the above table at the item "Additional Segments for HVAU".

#3 These values represent Segments 401 and 402 for Pricing Zone 3. See Table 4 for further details.

#4 See Table 5 for details.

Applying the roll forward formulae in accordance with the 2011 HVAU to the relevant starting values for 2011, the closing values for the Network and Constrained Network can be determined. The roll-forward will be a simple roll forward as prescribed under section 4.4(b) of the 2011 HVAU. The formula is the same as that used for RAB roll forward as prescribed under the NSWRAU. The results of the 2011 RAB Floor Limit roll forward are summarised in Table 9.

Table 9: RAB Roll-Forward Values to 31 December 2011 #1

2011 RAB Floor Limit roll forward (HVAU)	Element Of Calculation	Network (\$m) #2	Constrained Network(\$m)
Opening Value	RAB_{t-1}	979.1	804.2
Additional Sectors/Segments	Add_t	0	0
CPI increase	$RAB_{t-1} * CPI_t$	26.9	22.1
Capital Expenditure	$Capex_t$	99.3	60.7
Depreciation	Dep_t	(50.3)	(40.8)
Disposals	$Disp_t$	0	0
Closing Value	RAB_t	1,055.0	846.2
2010 Average RAB	$(RAB_t + RAB_{t-1})/2$	1,017.1	825.2

#1 Figures subject to rounding.

1.4.3 Depreciation

Refer Section 1.4.1.

Depreciation for the Network and Constrained Network, based on the above assumptions, included in the 2011 cost base for pricing development is as shown in Table 9 above.

1.4.4 Rate of Return

The Rate of Return used to develop the 2011 IIACs is shown in Table 10 along with the previous rates applicable under the current NSWRAU. All rates are shown on a real, pre-tax basis.

Table 10: Rate of Return Used In Determining 2011 Ceiling

Period	Rate Used	Comment
2009-10 Financial Year	8.00%	As per 2009 review under NSWRAU.
1 Jul 2010 – 31 Dec 2010	8.00%	As per 2009 review under NSWRAU.
2011 Calendar Year	9.10%	2011 HVAU proposal.

It should be noted that it is appropriate to use the 2011 HVAU proposed Rate Of Return in determining the 2011 IIACs as this best reflects the level of pricing to be applied when the 2011 HVAU comes into effect, albeit for around half of 2011. Pricing until that point (under the NSWRAU) will reflect the NSWRAU approved rate of return.

1.4.5 Return

Under the 2011 HVAU, the return included in the 2011 cost base is determined by applying the Average 2011 RAB Floor to the relevant Rate of Return. Consistent with current practice, return with respect to assets commissioned in 2011 will be based on the assumption that the assets were commissioned for half of 2011.

Return for the Network and Constrained Network, based on the above assumptions, included in the 2011 cost base for pricing development is as shown in Table 11.

Table 11: Return Component

	Network \$m	Constrained Network (Ports – Ulan) \$m
Return	92.5	75.1

1.5 Coal Volume Forecasts

Export coal volume forecasts have been sourced directly from the coal producers for the 2011 calendar year. Since that time, the HVCCC has declared the capacity of the port to be somewhat reduced compared to the initial declaration due to higher than expected system losses. Notwithstanding this, the business model underpinning the HVAU operates on the basis that access holders will each contract for a specific amount of capacity for the calendar year and will pay a TOP charge based on that contracted capacity. Any under-provision caused by ARTC is then rebated through the annual reconciliation process described in clause 5.4 of the Indicative Access Holder Agreement. Where ARTC makes the Network available to meet its contractual obligations, the access holder remains liable for the TOP charge. Therefore, it is appropriate that the IIACs are calculated on the basis of the forecasts of 2011 volumes available in December 2010 (adjusted for declared port capacity in 2011) as these represent the best proxy for what would have been contracted for calendar 2011 had the HVAU business model been fully implemented.

Total 2011 coal volume forecasts are shown in total at Table 12 below. The volume forecasts were provided on a confidential basis. In some instances there are only one or two coal producers in a particular category and publication of volumes at that level could allow one producer to determine the volumes forecast by another producer. To avoid this, the volume data has not be made public on a disaggregated level so as that ARTC does not breach its confidentiality obligations.

For the majority of volumes, the coal associated with each Pricing Zone is sourced from mines in that Pricing Zone. However, in some instances, coal enters the Pricing Zone from outside of the HVAU Network. This is predominantly the case for Pricing Zone 3, where most of the volumes originate from north of The Gap. There are also some volumes included in Pricing Zone 1 that enter the Pricing Zone from the Interstate Network.

Table 12: Coal Tonnes Used In Formulating 2011 IIACs (Tonnes m) ^{#1}

Export	Domestic	Total
125.0	6.6	131.6

#1 Figures subject to rounding.

Forecasts for some export and domestic coal traffics were not provided by producers. In this circumstance the equivalent coal volumes from 2010 pricing model (September 2010) have been assumed to be maintained for calendar year 2011.

1.6 Non-coal volume forecasts

ARTC has modelled calendar 2011 non-coal freight and passenger volumes and trains based on the existing level of operations for the 2010 calendar year with the assumption that these volumes will be maintained through the full 2011 calendar year.

1.7 Determining the Cost Base for the Ceiling Test

As stated earlier, ARTC seeks to develop pricing which will, among other objectives, minimise the likelihood of a substantial under or over arising following the annual compliance assessment to be conducted following the completion of the 2011 calendar year. In order to do this, ARTC has determined a forecast 2011 cost base against which a set of prices can be tested, adopting the combinatorial stand alone approach proposed in the HVAU. This approach and methodology/modelling used for the test are, by and large, the same as that currently used under the NSWRAU and proposed in the 2011 HVAU.

As actual outcomes can deviate from forecast assumptions in relation to volumes, operating expenditure and capital expenditure, a substantial under or over at the end of 2011 could arise in any event.

1.7.1 Constrained Group of Mines and Constrained Network

The nature of the combinatorial, stand alone ceiling test (as proposed in the 2011 HVAU and currently used under the NSWRAU) is such that it is required to test a range of combinations of Access Holders to ensure that the ceiling test is satisfied for all of those combinations.

For each combination, the practical test is to ensure that pricing for all traffics operated by any combination of Access Holders generates revenue that does not exceed the Economic Cost of the Segments utilised by those traffics, on a stand-alone basis (as if those traffics were operated in isolation).

Given the number of Access Holders involved, the number of combinations is extremely large and likely to be beyond the capability of many standard computational resources (such as spreadsheets). However, the experience obtained by ARTC and its predecessor through operating the combinatorial ceiling test as part of annual compliance assessments over a number of years has informed that only a relatively small number of combinations will result in revenue that is near stand alone Economic Cost for that combination. The vast majority of combinations (such as combinations of only a few Access Holders) result in revenue that is only a fraction of stand alone Economic Cost for the combination.

The combinations that result in revenue somewhere near stand alone Economic Cost for the combination include combinations of close to all Access Holders. In practice, testing of combinations is more about removing from the combination of all traffics operated by Access Holders, some traffics often operating near the extremity of the Network.

This approach will result in revenue for a particular combination of coal traffics that is nearest to, or exceeds, the Economic Cost of the Segments used by that combination. Revenue for this combination of traffics must be no more than the relevant Economic Cost or revenue (and prices) is therefore constrained. This combination is known as the Constrained Group of Mines and the Segments covered by the Constrained Group of Mines forms the Constrained Network. Revenue and pricing for all coal traffic occurring entirely within the Constrained Network is constrained to the Economic Cost of the Constrained Network. This would include any coal traffic from mines within the Constrained Network to the Newcastle ports (export), or to domestic coal destinations within the Constrained Network.

With the proposed IIACs, the Constrained Network forecast in 2011 is the same as that in 2009-10. The Constrained Network includes Segments between Newcastle Ports, Muswellbrook and Ulan. These Segments include the majority of Pricing Zone 1 and all Segments in Pricing Zone 2 as defined in the 2011 HVAU. A listing of Segments forming the 2011 forecast Constrained Network is shown at Attachment 3.

1.7.2 Forecast 2011 Cost Base

The forecast 2010 cost base established by ARTC for the purpose of setting 2011 pricing is shown at Table 13 below.

Table 13: Cost Base for 2011 IIACs Pricing #1

	2011 Forecast	
	Network	Constrained
Total Net tonnes (millions)	131.6	115.6
Coal Gross Tonne Kilometres (billions)	27.04	22.70
Coal Train Kilometres (millions)	4.59	3.68
Costs (\$m)		
Segment Specific Costs		
Variable Maintenance	23.12	21.52
Fixed maintenance	22.62	19.39
Non-Segment Specific Costs (allocation)	40.48	36.47
Total Operating Cost	86.22	77.38
Depreciation	50.27	40.79
Net Loss on Disposal	-	-
Total Cost	136.49	118.17
Return on Assets	92.55	75.09
Economic Cost	229.04	193.26
Average Asset Base (\$m)	1,017	825

#1 Figures subject to rounding

1.7.3 Cost Base Comparison

Table 14 shows a comparison of the forecast 2011 cost base with the cost base recently approved by IPART as provided under the NSWRAU, for the Constrained Network.

Table 14: Comparison of 2011 Cost Base with 2009/10 #1

	Constrained Network	
	2011 Forecast	2009-10
Net tonnes (millions)	115.6	93.2
Coal Gross Tonne Kilometres (billions)	22.7	18.8
Coal Train Kilometres (millions)	3.68	3.36
Costs (\$m)		
Segment Specific Costs		
Variable Maintenance	21.52	12.67
Fixed Maintenance	19.39	14.82
Non-Segment Specific Costs (allocation)	36.47	36.8
Total Operating Cost	77.38	64.29
Depreciation	40.79	23.63
Net Loss on Disposal	-	1.14
Total Cost	118.17	89.06
Return on Assets	75.09	55.60
Economic Cost	193.26	144.66
Average Asset Base (\$m)	825.19	694.96

#1 Figures subject to rounding

Price Change Drivers

On a per tonne basis, Economic Cost for the constrained Network has increased from an average of \$1.55 per tonne in 2009-10 to an average of \$1.67 in 2011, an increase of around 7.7% in nominal terms, or 3.6% in real terms¹. The increase arises through the significant increase in the average asset base (\$135m or 19%) coupled with the increased rate of return (9.10% compared with 8.00%). By contrast, the unit cost of maintenance and operating costs has decreased over the same period by 3% on a per tonne basis.

Key drivers of this change in average access pricing for the constrained Network over this 1.5 year period are as follows:

¹ Based on the CPI estimates in Table 6.

Return on Assets

The return is influenced by the level of investment in the network over the 1.5 year period, as well as the Rate of Return that has been proposed by ARTC. Over the 1.5 year period, the average RAB/RAB Floor Limit (average of opening and closing RAB/RAB Floor Limit for the period) increased by \$130m, or 19%.

Depreciation

Under the 2011 HVAU, ARTC has proposed to base depreciation on an estimate of remaining mine life proposed to be 22 years. This compares to a remaining mine life applicable in 2009-10 under the NSWRAU of 30 years.

Maintenance Expenditure (Segment Specific Cost)

Drivers of maintenance expenditure include:

- network volumes (GTK);
- wages and materials inflation;
- productivity improvements; and
- network accessibility.

Over the last 5 years, national wages inflation has averaged around 3.8% pa².

A further common indicator in inflationary impacts on labour and materials impacts on infrastructure maintenance is the Road and Bridge Construction Producer Price Index³. The index has grown at an average 4.2% pa over the previous 5 years for which figures were available in December 2010. This is likely to reflect significant materials cost increases in recent years (steel, concrete etc). Similarly the Rail Freight Transport Index⁴ grew by 4.8% pa over the same 5 year period demonstrating that rail transport costs generally are increasing at rates substantially above underlying inflation rates.

On a \$/tonne basis, overall maintenance unit cost (including allocated overheads) has increased, in nominal terms, by 15.8% (11% in real terms) over the 1.5 year period. However, caution needs to be exercised in comparing one period with another due to the 'lumpy' nature of major periodic maintenance programs which can significantly increase or decrease the costs associated with a particular Pricing Zone from year to year.

This increase arises through the change in mix of various maintenance programs, the major one being a significant increase in ballast cleaning in Pricing Zone 1

² Australian Bureau of Statistics, 6345.0

³ Australian Bureau of Statistics, 6427.0 Table 16 (4121)

⁴ Australian Bureau of Statistics, 6427.0 Table 19 (471)

Non-Segment Specific Cost (allocated)

As described in section 1.3.2 above, asset management expenditure is allocated to the Network Segments on a GTK basis depending on the type and location of expenditure incurred, whilst non-maintenance related expenditure (including network control, terminal management, and corporate management and support expenditure) is allocated to Network Segments on a train kilometre basis depending on the type and location of expenditure incurred. In 2009/10 Non-Segment Specific Cost included just under \$7m of expensed project related costs whilst, in 2011, there is \$1.8m included. With these removed, the amount of Non-Segment Specific Cost allocated to the constrained Network has increased in absolute terms by 16.2% (increase of 11.86% real) over the 1.5 year period between 2009-10 and 2011. On a unit cost basis, the cost per tonne is 6.7% (9.9% real) below the 2009/10 equivalent.

Drivers of Non-Segment Specific Cost allocated to the Network are normally:

- changes in Network volumes (GTK) and traffic (train kilometres) compared to other parts of the ARTC network;
- wages inflation; and
- productivity improvements (e.g. more efficient train sizes).

The decrease in non-segment specific unit costs remains well below the long term wage escalation rate.

1.8 Determining Interim Indicative Access Charges

The 2011 HVAU Pricing Principles serve to constrain revenue in the Constrained Network (Pricing Zones 1 and 2). Within this constraint, the HVAU permits some flexibility in developing pricing for Coal Access Rights generally and IIACs specifically.

1.8.1 ARTC considerations under the HVAU

In determining the proposed IIACs, ARTC has taken into account a range of considerations, many of which are provided for by the Pricing Principles of the HVAU. Relevant considerations are as follows.

- IIACs are structured as a non-TOP component and a TOP component.
- Both the non-TOP component and the TOP component of IIACs are based on GTKs, with the non-TOP component varying with actual GTK and the TOP component determined based on forecast GTK.
- IIACs are specified for Interim Indicative Services in each Pricing Zone.
- The variable component of costs (**VCC**) being Direct Costs will be recovered through the non-TOP component of IIACs.

- Maximum recovery of fixed and new capital components of costs (**FCC** and **NCC**) is an objective. To this end, IIACs should be set such that revenue closely matches the Ceiling Limit for the Constrained Network. Otherwise, IIACs should be such that revenue is maximised in the circumstances.
- The TOP component of IIACs should aim to recover all of NCC and some or all of FCC (which should otherwise be recovered through the non-TOP component of IIACs).
- The proportion of FCC recovered through the TOP component of IIACs should be applied consistently to all Access Holders holding Coal Access Rights in a Pricing Zone.
- Differentiation between IIACs should have regard to the range of factors specified in sections 4.15 and 4.16 of the 2011 HVAU.

1.8.2 Other ARTC considerations

Other relevant considerations not explicitly provided for in the Pricing Principles of the HVAU are as follows:

- A commitment made to the industry in a letter dated 6 June 2009 that ARTC would not differentiate access pricing (on a per GTK basis) for 74 or 91 wagon coal services operated with maximum axle load of 30T for the next 5 years.
- Avoidance of price shocks for the industry as a result of the introduction of IIACs in 2011. That is, seeking to achieve IIACs that are consistent with the existing level of pricing for Hunter Valley coal in the first instance is seen as desirable.
- The relative competitiveness of Gunnedah Basin coal producers in the Hunter Valley generally.

1.8.3 Resulting characteristics of the Interim Indicative Access Charges

Following its consideration of all of the above, the proposed IIACs have the following characteristics:

- IIACs have been proposed for each Interim Indicative Service prescribed in the table at section 4.18(c) of the 2011 HVAU.
- The proposed IIACs will result in revenue that closely matches the Ceiling Limits at section 4.3 of the 2011 HVAU, subject to the volume and cost assumptions described in this paper. Specifically, if the IIACs were applied to all constrained traffic operated in the Constrained Network, the resulting revenue does not exceed the Economic Cost of the Constrained Network.
- Revenue arising from the application of the proposed IIACs in Pricing Zone 3 falls well short of the Economic Cost of Pricing Zone 3.
- In all Pricing Zones, the non-TOP component of the proposed IIACs is aligned to VCC. In other words, ARTC has not sought to recover any part of FCC through the

non-TOP component of the proposed IIACs in any Pricing Zone. This is consistent with the Pricing Objectives at section 4.13(b) of the 2011 HVAU. The proportion of the proposed IIACs represented by the non-TOP component ranges between 7% and 12% depending on the Pricing Zone.

- Consistent with section 4.13(b)(iv) of the 2011 HVAU, the proportion of FCC recovered through the TOP component of proposed IIACs is consistently applied to all Access Holders holding Coal Access Rights with a Pricing Zone.
- Consistent with section 4.16(b) of the HVAU, the proposed IIACs satisfy the limits on pricing differentiation.
- Consistent with its commitment to the industry in a letter dated 6 June 2009, the proposed IIACs are closely aligned for Interim Indicative Services 1 and 2 in Pricing Zone 1, and also in Pricing Zone 2. These services are not currently operated in Pricing Zone 3.
- The proposed IIACs for Interim Indicative Service 3 (25 Tonne axle load) in Pricing Zone 1 is identical to the proposed IIACs for Interim Indicative Services 1 and 2 in Pricing Zone 1. The higher Gross:Nett ratio for Interim Indicative Service 3 would imply that the cost of access (on a per tonne basis) is higher. ARTC considers this is reasonable and within reasonable scope of charge differentiation proposed at section 4.15 of the 2011 HVAU. ARTC has not, at this time, elected to differentiate pricing for this indicative service type on any other basis.
- ARTC has sought to propose IIACs for Pricing Zone 1 and 2 where the TOP component of the IIACs is very close. This could be expected to give rise to pricing that is closely aligned to the distance from Newcastle ports of loading points in Pricing Zones 1 and 2.
- As the proposed IIACs apply to all Coal Access Rights with Interim Indicative Service characteristics on the Network, there is no differentiation between any type of coal, nor between export and domestic coal carried by Interim Indicative services.
- ARTC has sought to propose IIACs for Interim Indicative Services in 2011 such that differences in 2011 pricing for Coal Access Rights with Interim Indicative Service characteristics operating within Pricing Zones 1 and 2, and current access pricing for the same services is minimal (on a per tonne basis).

In developing the IIACs for Coal Access Rights with Interim Indicative Service characteristics operating from Pricing Zone 3, ARTC has reduced the TOP component from what would be required to recover VCC and NCC to a level that the increase compared to current (\$ per tonne based) access pricing for these services is sustainable.

ARTC has done this so that introduction of the IIACs under the HVAU in 2011 does not create substantial price shocks for Access Holders in that year.

Due to the confidential nature of current pricing, ARTC is unable to provide a detailed traffic by traffic comparison of proposed IIACs and current pricing.

In Pricing Zone 1 and Pricing Zone 2, variations in access pricing (on a per tonne basis) for Interim Indicative Services operating within the Constrained Network range from a 23% reduction in price to a 20% increase in price, with reduced access pricing for 19% of constrained coal volumes.

The adjustments result primarily from a shift to consistent distance based pricing in these Pricing Zones.

In Pricing Zone 3, the proposed IIACs will not result in pricing for any unconstrained traffic increasing by more than 15%. It should also be noted that the proposed IIACs in Pricing Zone 3 do not generate sufficient revenue to recover the Economic Cost of that part of the Network. As such the proposed IIACs should be taken as being subject to the endorsement by the ACCC of the Loss Capitalisation approach proposed by ARTC as described at section 4.4 of the 2011 HVAU.

For other unconstrained traffics with Interim Indicative Services characteristics that operate for part of their journey on the Network, the IIACs result in reduced cost of access for that part of the journey on the Network. It should be noted that additional charges for such traffics will apply to the remainder of journeys on the ARTC network but not on the Network.

As noted throughout this paper, the proposed IIACs have been developed in the context of information available to ARTC at the present time and actual outcomes that deviate from the forecast data used in this paper may result in unders or overs being generated.

ATTACHMENT 1 1 July 2010 OPENING RAB VALUE ASSUMPTIONS

Segment Code	Description	Opening Value 1 July 2010 \$
970	Muswellbrook To Bengalla Jct	6,670,732
971_972	Bengalla Jct To Sandy Hollow Jct	43,310,196
973_974	Sandy Hollow Jct To Ulan Colliery Jct	131,652,368
962	Muswellbrook To Dartbrook Jct	7,688,045
961	Draytons Jct To Muswellbrook	100,897,928
958	Newdell Jct To Draytons Jct	28,889,810
957	Glennies Creek To Newdell Jct	12,762,238
956	Camberwell Jct To Glennies Creek	10,871,708
955	Whittingham To Camberwell Jct	29,035,059
948	Branxton To Whittingham	80,820,858
947	Farley To Branxton	158,337,823
946	Maitland To Farley	9,878,617
940	Maitland To Telarah	2,440,902
937	Thornton To Maitland (Via Coal)	25,080,778
936	Sandgate To Thornton (Via Coal)	97,540,973
926	Hanbury Jct To Sandgate (Via Coal)	2,715,346
925	Waratah To Hanbury Jct (Via Coal)	4,025,891
915	Islington Jct To Scholey St Jct	1,688,836
917	Scholey St Jct To Waratah (Via Coal)	3,031,634
916	Scholey St Jct To Port Waratah	9,693,961
931	Kooragang East Jct To Sandgate	674,592
927	Hanbury Jct To Kooragang East Jct	1,683,213
930	Kooragang East Jct To Kooragang Island	20,880,301
951	Whittingham To Saxonvale Jct	5,775,814
952	Saxonvale Jct To Mount Thorley	2,176,582
959	Newdell Branch	4,080,550
944	Telarah To Farley	1,137,938

No value ascribed at this stage, not part of coal network.

* Includes Sandgate Flyover.

ATTACHMENT 2 NETWORK SEGMENT CAPITAL EXPENDITURE ASSUMPTIONS 1 July 2010 TO 31 December 2011

Segment	Description	6mth to Dec 2010	Calendar 2011	Comment
974	Wilpinjong To Ulan Colliery Jct	926	444,730	
973	Sandy Hollow Jct To Wilpinjong	15,608,569	19,005,205	Yarrawa & Wilpinjong crossing loops
972	Anvill Hill To Sandy Hollow Jct	(92,404) ^{#1}	1,284,368	
971	Bengalla Jct To Anvill Hill	(8,380) ^{#1}	238,059	
970	Muswellbrook To Bengalla Jct	1,333	20,382,579	Bengalla crossing loop
961	Drayton Jct To Muswellbrook	40,306	230,107	
958	Newdell Jct To Draytons Jct	113,486	180,968	
957	Glennies Creek To Newdell Jct	6,915	442,378	
956	Camberwell Jct To Glennies Creek	4,976	194,369	
955	Whittingham To Camberwell Jct	374,480	455,574	
948	Branxton To Whittingham	800,275	914,884	
947	Farley To Branxton	1,589,825	6,022,679	Maitland Junction upgrade
946	Maitland To Farley	1,410	5,395,078	Maitland Junction upgrade
937	Thornton To Maitland (Via Coal)	1,065,113	966,137	
936	Sandgate To Thornton (Via Coal)	280,728	1,947,598	Reinstatement of Hexham turnout 104
926	Hanbury Jct To Sandgate (Via Coal)	672	323,847	
925	Waratah To Hanbury Jct (Via Coal)	448	296,886	
917	Scholey St Jct To Waratah (Via Coal)	209	255,943	
915	Islington Jct To Scholey St Jct	3,530	28,597	
916	Scholey St Jct To Port Waratah	59,378	379,352	
931	Kooragang East Jct To Sandgate	59,021	295,943	
927	Hanbury Jct To Kooragang East Jct	17,210	598,117	
929	Kooragang East Jct To NCIG	93	38,765	
930	NCIG To Kooragang Island	(2,586) ^{#1}	459,858	
951	Whittingham To Saxonvale Jct	13,790	268,284	
952	Saxonvale Jct To Mount Thorley	30,942	154,350	
959	Newdell Branch	449	82,889	
944	Telarah To Farley	-	-	

965	Werris Creek To Gap	340,108	1,887,916	
964	Murulla To Werris Creek	12,019,157	6,497,630	Rerailing, resleepering
963	Dartbrook Junction To Murulla	11,155,515	10,902,448	Parkville crossing loop, Scone reconfiguration, Rerailing, resleepering
962	Muswellbrook To Dartbrook Jct	1,115	18,735,848	Koolbury crossing loop
	Total	43,486,609	99,311,384	

**ATTACHMENT 3 LISTING OF SEGMENTS FORMING THE 2011 FORECAST
CONSTRAINED NETWORK**

Pricing Zone	Segment	Description
1	916	Scholey St Jct To Port Waratah
1	917	Scholey St Jct To Waratah (Via Coal)
1	925	Waratah To Hanbury Jct (Via Coal)
1	926	Hanbury Jct To Sandgate (Via Coal)
1	929	Kooragang East Jct To NCIG
1	930	NCIG to Kooragang Island
1	931	Kooragang East Jct To Sandgate
1	936*	Sandgate To Thornton (Via Coal)
1	937	Thornton To Maitland (Via Coal)
1	946	Maitland To Farley
1	947	Farley To Branxton
1	948	Branxton To Whittingham
1	951	Whittingham To Saxonvale Jct
1	952	Saxonvale Jct To Mount Thorley
1	955	Whittingham To Camberwell Jct
1	956	Camberwell Jct To Glennies Creek
1	957	Glennies Creek To Newdell Jct
1	958	Newdell Jct To Draytons Jct
1	959	Newdell Branch
1	961	Draytons Jct To Muswellbrook
1	970	Muswellbrook To Bengalla Jct
2	971	Bengalla Jct To Anvill Hill
2	972	Anvill Hill to Sandy Hollow Junction
2	973	Sandy Hollow Jct To Wilpinjong
2	974	Wilpinjong To Ulan Colliery Jct

* Includes Sandgate flyover