

ARTC Explanatory Guide 2010 HVAU

Appendix 2 - ARTC revised remaining mine life estimate

AUSTRALIAN RAIL TRACK CORPORATION LTD

HUNTER VALLEY ACCESS UNDERTAKING

**ARTC REVIEW OF THE PROPOSED HUNTER VALLEY REMAINING MINE
LIFE TO ADDRESS ACCC CONCERNS EXPRESSED IN THE DRAFT
DECISION**



JUNE 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 estimates for average remaining mine life in relation to coal mines served by the Hunter Valley coal network for the purpose of determining depreciation under the HVAU.

The relevant section in the HVAU (section 4.6) provides that

- '(a) Depreciation is to be calculated at the beginning of each calendar year, using a straight line methodology (unless otherwise agreed with an Access Holder or accepted by the ACCC) with respect to specific assets and the estimate of the remaining useful life of the assets.

- (b) The useful life of a Segment or group of Segments is to be determined having regard to:
 - (i) the average remaining mine life of Hunter Valley coal mines utilising the Pricing Zone of which that Segment or group of Segments forms part;

 - (ii) average mine production levels anticipated during the Term having regard to Coal Chain Capacity at any time; and

 - (iii) marketable coal reserves estimated for each mine existing at the time of the determination or expected to commence during the 5 year period following the time of the determination.

The average remaining mine life of Hunter Valley coal mines utilising a Pricing Zone may vary between Pricing Zones as approved by the ACCC.'

In order to obtain an estimate, ARTC engaged transport consultants Booz & Co (Booz) to undertake an assessment of remaining life of existing and prospective coal mines that are served by the Hunter Valley coal network. Booz (formerly Booz Allen Hamilton) had undertaken equivalent assessments for the Independent Pricing and Regulatory Tribunal of NSW (IPART) in 1999, 2004, as well as for ARTC in 2008, under the requirements of the NSW Rail Access Undertaking (NSWRAU).

The approach proposed in the HVAU is not substantially different to that under the NSWRAU. The assessment undertaken was essentially an extension of the equivalent assessment

undertaken for ARTC in 2008. Key aspects of the approach adopted by Booz in order to determine their estimates are as follows:

- determine an estimate of average remaining mine life to be applied from 2009
- determine all existing mines expected to utilise the Hunter Valley coal network as well as mines due to come into operation over the period 2009-14
- for each mine determine an estimate of marketable reserves using available public information (where Booz used mid 2008 marketable reserves estimates where available) or otherwise derived from other available information and reasonable assumptions
- utilise forecasts of future annual production for each mine made available to ARTC by producers
- determine a production based weighted average remaining for mine life for each Pricing Zone
- undertake sensitivity analysis in relation to:
 - the impact of any coal chain capacity constraints on production forecasts
 - the impact of including known prospective developments planned beyond 5 years

Key Booz conclusions were:

- 4 options were considered:
 - Option A - unconstrained production all mines in operation 2009-14
 - Option B – constrained production all mines in operation 2009-14
 - Option C – unconstrained production all mines including prospective mines (beyond 2014)
 - Option D – constrained production all mines including prospective mines (beyond 2014)
- Average remaining mine life estimates were determined as shown in Table 1 below.

Table 1

Pricing Zone 1	Option A	Option B	Option C	Option D
1 Ports – Muswellbrook	23.6 years	24.1 years	23.6 years	24.1 years
2 Ulan line	21.5 years	21.8 years	21.5 years	21.8 years
3 North of Muswellbrook	20.0 years	20.2 years	32.5 years	32.5 years

- Booz (and ARTC) proposed estimates determined under Option B where it was considered reasonable to incorporate forecasted coal chain constraints on production and exclude the impact of prospective developments beyond the 5 year regulatory period.

2. The ACCC Draft Decision

In order to assist the ACCC with its assessment, the ACCC engaged consultants, Marsden Jacob Associates (MJA), to undertake a review of ARTC’s original proposal and the study undertaken by Booz.

Using the MJA study, the ACCC made the following conclusion in its Draft Decision.

‘The ACCC’s preliminary view is that section 4.6(b) of the Undertaking is unclear and due to this the operation of section 4.6 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 the proposed mine lives 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 ARTC revised the mine lives to address the ACCC’s concerns, the revised mine lives would be more likely to be appropriate.’

and

‘In relation to the comments by MJA on the Booz & Co report, the ACCC has the following comments:

- In relation to new mines that are not yet in production and are highly uncertain, it does not seem inappropriate to exclude these mines from the mine life calculation as there is no

guarantee these will ever come into production. To the extent these do come on line in future years, these could be considered in future mine life estimates;

- In relation to clearly identified errors in the data used by Booz & Co, ARTC will need to update its estimates to reflect corrections for clear errors. This will include accounting for domestic coal consumption to the extent this affects the estimated mine life;
- In relation to the discrepancy between ARTC estimates of production based on mining information and ABARE estimates, it does not seem unreasonable for ARTC to use the higher production figures. The ACCC notes these figures are based on miners own production estimates and the use of higher more conservative figures should further reduce any stranding risk facing ARTC;
- As noted above, the ACCC does not consider that it is inappropriate to exclude non coal traffic from the estimation of assets lives.

If ARTC submits revised asset lives to the ACCC which address the issues identified above, the revised asset lives are more likely to be considered appropriate.'

Following release of the ACCC's Draft Decision in March 2010, ARTC undertook a review of the Booz assessment in light of the results of the MJA assessment and the ACCC's concerns stated in the Draft Decision. The results of the review and revised remaining mine life proposal was provided to the ACCC for consideration in June 2010 and (with confidential information removed) has been provided below.

3. The ARTC Review

a. Processes and Assumptions

ARTC has undertaken a review of the Booz assessment in light of the results of the MJA assessment and the ACCC's stated concerns. In particular, ARTC has sought to confirm:

- advice provided by MJA in relation to mine reserves for all mines included in the Booz assessment;
- advice provided by MJA in relation to mines (or prospects) that MJA claim were not incorporated in the Booz assessment (or separately identified by the NSW Minerals

Council (NSWMC) consulted by MJA) and any detail in relation to those mines and prospects.

In addition, ARTC has sought to separately identify domestic coal production, and coal transported to locations outside of the Hunter Valley. It should be noted however that reserves information is not separately classified into export and domestic product, and coal is consumed at a mine irrespective of whether it is intended for an export or domestic market. Nevertheless, coal chain capacity constraints (and particularly those around Newcastle port) should be assessed against Newcastle export coal throughput only. ARTC has sought to address this.

Booz adopted a 'line in the sand' approach in relation to the point at which reserves would be measured, being 1 July 2008. This was because reserves information was available for that time in many cases. As time passes, such information is more likely to be available or improved. In many cases, MJA presented advice that would not have been available to Booz at the time. Similarly, mining prospects become known over time. Knowledge and information in relation to recent mining prospects would more likely to have been available to MJA.

Similarly in this review, ARTC would have the benefit of more publicly available information and could improve on the MJA advice. ARTC has continued to use 2008 as the line in the sand. At this time, ARTC would have had a similar level of information (or lack of information) in relation to say 1 July 2009 reserves information as Booz had. Retaining 2008 as the time of measurement has meant that much of the estimation undertaken by Booz where reserves information was not available (eg. applying historic production levels to historic reserves data) is no longer necessary. ARTC understands that Booz's approach to updating reserves information where necessary concerned MJA.

ARTC has made every effort to establish JORC compliant 1 July 2008 marketable reserves for each mine, even for those mines where MJA was unable to establish an amount. ARTC has achieved this for the majority of mines. For mines where ARTC has been unable to establish a figure it has applied the following methods and assumptions.

- Where reserves information was established, but not marketable reserves, (eg recoverable reserves), ARTC has assumed this higher total reserves figure. This results in a longer (conservative) mine life estimate.

- Where ARTC has been unable to establish reserves information, but resources information is available (often the case for prospects) ARTC has applied a uniform 30% resources to reserves conversion factor. This factor was used by Booz and was based on an average view from evidence found in resources/reserves figures for a number of mines.
- In some cases, marketable reserves information was only available for 31 December 2008 (calendar year reporting). In such cases, ARTC has added back tonnage based on a pro rate of actual 2008 production from ARTC records.

ARTC has updated the production forecasts used by Booz based on more recent producer forecasts align to port allocations and close to what producers may be expected to commit to in long term take-or-pay contracts. Where more recent information has not been available, ARTC has retained the original forecasts used by Booz.

In the Draft Decision, the ACCC indicates that in relation to 'new mines that are not yet in production and are highly uncertain, it does not seem inappropriate to exclude these mines from the mine life calculation as there is no guarantee these will ever come into production. To the extent these do come on line in future years, these could be considered in future mine life estimates.'

It could be construed here that it is not unreasonable to exclude any mine that does not currently exist. There is obviously a degree of risk associated with any new mining prospect, and the probability that a prospect will come into production will vary with the prospect and the time horizon. ARTC does not consider the past practice of drawing a line on the time horizon of five years, where it is assumed there will be a 100% likelihood that prospects of less than 5 years will come into production, and a 0% likelihood that prospects of more than 5 years will come into production, as unreasonable. An alternative of attaching a probability against each prospect is subjective and uncertain. In the HVAU, ARTC has proposed to continue with past practice in this regard.

Consistent with this approach, ARTC sees no need to re-investigate known prospects beyond 2014 (Caroona, Watermark, Maules Creek) in this review.

ARTC also notes that MJA (and the NSWMC) have identified a number of mines that were not incorporated in the Booz assessment. ARTC notes that many of these mines either do not use the ARTC network or are still undergoing exploration. In many

cases where a prospect has been identified by MJA or the NSWMC, and despite the uncertainty, ARTC has taken a conservative approach of assuming such prospects will firm and become productive before 2014 and therefore have been included. This would have the effect of extending mine life further.

ARTC notes from the Booz assessment that there is only a small difference (4 years) between the remaining mine life estimates for each of three Pricing Zones. Also, in the HVAU previously submitted to the ACCC, ARTC proposed to differentiate between assets in relation to other capital related elements such as Regulatory Asset Base (RAB) and Rate of Return. ARTC notes the ACCC's concerns in relation to applying differential treatment for different assets in the Hunter Valley coal network. As a result it is now ARTC's intention to propose to apply a single RAB and Rate of Return for the Hunter Valley coal network. Consistent with this approach, and reflecting the small difference in remaining mine life between Pricing Zones, ARTC now proposes a single estimate of remaining mine life for the Hunter Valley coal network. ARTC will however seek to retain the option of separate estimates for Pricing Zones in the HVAU, should a future assessment reveal more substantial differences between Pricing Zones.

A single estimate for the Hunter Valley coal network is consistent with the existing approach under the NSWRAU.

b. Reserves comparison with MJA assessment

ARTC notes that MJA have included Appendix C which contains a list of all mines identified by MJA or the NSWMC. In many cases a prospect has been identified, but MJA have been unable to identify any relevant information in relation to the prospect. In Table 2 below, ARTC has shown for every mine or prospect in MJA's Appendix C, a comparison of the original Booz reserves estimate, the MJA estimate where provided, ARTC proposed revised estimate, and an explanation of ARTC's proposal for a revised estimate.

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Table 2 ARTC proposed remaining mine life treatment

Mine	Owner	BAH	MJA		ARTC	Comment
			Proved	Probable		
PRICING ZONE 1						
Abel	Donaldson Coal	0	?	?	45	45mT Proved and Probable Reserves (1Jul08) - NSWCIP09. Combined with Tasman in Mine Life Calculation Spreadsheet. [c-i-c information has been redacted]
Ashton (O/C & U/G)	Felix Resources Ltd	46.2	45.0	27.7	72.7	Confirm MJA estimate. [c-i-c information has been redacted]
Austar	Yancoal Australia Pty Ltd	42.2	?	?	36.7	36.7mT Proved and Probable Marketable Reserves (1Jul08) – NSWCIP09. [c-i-c information has been redacted]
Awaba East	Centennial Coal	0	48.3		48.3	Now called Newstan Lochiel. Confirm MJA estimate. Mine undergoing feasibility assessment (Centennial website). Assume commencement 2009-14 and so included in mine life estimate. [c-i-c information has been redacted] Combined with Newstan in Mine Life Calculation Spreadsheet.
Awaba	Centennial Coal	0	0.0		1.4	1.4mT Marketable Reserves (1Jul08) – NSWCIP09. Combined with Newstan in Mine Life Calculation Spreadsheet.
Bloomfield	Bloomfield Group	22	?	?	21.8	Retain original BAH estimate [c-i-c information has been redacted]. 21.8mT Proved and Probable Reserves (1Jul08) – NSWCIP09
Bulga (formerly Saxonvale)	Xstrata Coal	79.4	132.7	30.5	163.2	Confirm MJA estimate. [c-i-c information has been redacted].
Beltana (Part of Bulga)	Xstrata Coal	0	?	?		Combined with Bulga in Mine Life Calculation Spreadsheet.
Blakefield (Part of Bulga)		0	?	?		Combined with Bulga in Mine Life Calculation Spreadsheet.
Camberwell	Camberwell Coal Joint Venture	9.6	?	?	4.0	4.0mT Marketable Reserves (1Jul08) – NSWCIP09. NSWMC advise as closed. [c-i-c information has been redacted]
Chain Valley	Excel Coal Ltd		?	?		Does not use ARTC assets. Excluded.
Cumnock No 1	Xstrata Coal	1	1.1	163.4	0.0	Confirm MJA estimate. Decision pending on proceeding with production. Assume commencement 2009-14 and so included in mine life estimate. Remove Cumnock No. 1 as a mine in Mine life Calculation Spreadsheet and include as Ravensworth OC (see below).
Donaldson	Donaldson Coal	15.7	?	?	5.0	5.0mT Marketable Reserves (1 Jul08) – NDWCIP09. [c-i-c information has been redacted]
Drayton	Anglo Coal Australia (ACA)	50.6	18.5	10.1	30.6	Confirm MJA estimate (31Dec08). [c-i-c information has been redacted]
Duralie	Gloucester Coal (through subsidiary Duralie Coal Pty Ltd)	17	26.8		27.3	Confirm MJA estimate. [c-i-c information has been redacted].
Glendell	Xstrata Coal	23.5	33.1	1.2	34.3	Confirm MJA estimate. [c-i-c information has been redacted]
Integra O/C & U/G (was Glennies Creek)	AMCI Australia Pty Ltd (American Metals and Coal International Inc)	37.9	?	?	34.5	34.5mT Marketable Reserves (1Jul08) – NSWCIP09. [c-i-c information has been redacted]
Grant & Chainey	Gloucester Coal Ltd		?	?		Exploration License only. Inferred Resources 33mT (1Dec08). ¹ Unknown whether mine will be developed. Excluded.
Hunter Valley Operations	Coal & Allied Industries	290	267.4	62.8	336.8	Confirm MJA estimate. [c-i-c information has been redacted]

¹ <http://media.wotnews.com.au/asxann/00954013.pdf>

Mine	Owner	BAH	MJA		ARTC	Comment
			Proved	Probable		
Hunter Valley South	Coal & Allied Industries	300	?	?		Project only, approved by NSW Government March09. No recent information available. Marketable reserves estimated by C&A at 101.8mT (Hunter Valley Operations South Coal Project, Environmental Assessment Report (2006) Part A – Background, p30 – C&A website). [c-i-c information has been redacted] ARTC has therefore assumed that production is unlikely in the period 2009-14 and so have excluded this project.
Liddell	Xstrata Coal	66.7	44.4	15.4	59.8	Confirm MJA estimate. [c-i-c information has been redacted]
Mandalong	Centennial Coal		102.1			Does not use ARTC assets. Excluded.
Mannering	Centennial Coal		10.9			Does not use ARTC assets. Excluded.
Mitchells Flat	Xstrata Coal		?	?		Proposed operation only. No detail other than resource estimate of 510mT. Uncertain commencement and production. Exclude.
Mount Arthur	BHP Billiton (through subsidiary Hunter Valley Energy Coal Ltd)	228	168.0		168.0	Confirm MJA estimate. [c-i-c information has been redacted]
Mt Arthur Southern Pit	BHP Billiton		?	?		Proposed development only. Development approval granted Jan08. Not separately identified in company reporting or other sources. Assumed any Resources/Reserves associated with Southern Pit expansion are consolidated in Mt Arthur OC reported figures (168mt above).
Mt Arthur U/G	BHP Billiton		?	?	282.0	Proposed project. Development approval granted Dec08. Assume commencement 2009-14 and so included in mine life estimate. 941mT Measured and Indicated Resources (30Jun08) – BHP Billiton 2008 Annual Report p88. In the absence of anything better, ARTC proposes to use 30% conversion factor determined for other mines. 282mT Proved and Probable Reserves assumed. Combine with Mt Arthur in Mine Life Calculation Spreadsheet. [c-i-c information has been redacted]
Mt Thorley	Coal & Allied Industries	19.6	20.6	3.2	25.8	Confirm MJA estimate. [c-i-c information has been redacted]. Assume existing volumes to Pt Kembla continue.
Mt Thorley U/G			?	?	14.4	Proposed project. Assume commencement 2009-14 and so included in mine life estimate. 48mT Measured and Indicated Resources (31Dec08) – C&A 2008 Annual Report. In the absence of anything better, ARTC proposes to use 30% conversion factor determined for other mines. 14.4mT Proved and Probable Reserves assumed. Combine with Mt Thorley in Mine Life Calculation Spreadsheet. [c-i-c information has been redacted]
Mt Owen	Xstrata Coal	209.9	36.0	15.7	51.7	Confirm MJA estimate. [c-i-c information has been redacted]
Muswellbrook	Idemitsu		?	?	16.0	16mT Proved and Probable Marketable Reserves (1Jul08) – NSWCI09. [c-i-c information has been redacted]
Myuna	Centennial Coal		23.1		4.6	Confirm MJA estimate. Predominantly domestic coal not using ARTC assets. Assume 20% export via Newstan. Combine with Newstan in Mine Life Calculation Spreadsheet.
Ravensworth UG (was Newpac no 1)	Xstrata Coal	56	31.5	0.2	31.7	Confirm MJA estimate. [c-i-c information has been redacted]
Newstan	Centennial Coal	0.4	18.4		18.4	Confirm MJA estimate. Combine with Awaba, Awaba East, Myuna (as Newstan) in Mile Life Calculation Spreadsheet. [c-i-c information has been redacted]
Ravensworth East (Mt Owen)	Xstrata Coal	7.1	10.6	0.3	10.9	Confirm MJA estimate. [c-i-c information has been redacted]
Ravensworth OC (Cumnock No.1)	Xstrata Coal	13.7	15.3	25.5	164.5	Includes Cumnock No. 1 (164.5mT) when producing. Confirm MJA Reserves estimates. [c-i-c information has been redacted] Ravensworth West and Narama do not use ARTC assets. Excluded.
Rixs Creek	Bloomfield Group	35.3	?	?	60.1	60.1mT Proved and Probable Reserves (1Jul08) – NSWCI09. [c-i-c information has been redacted]
Saddlers Creek (O/C & U/G) (to be Drayton South)	Anglo Coal Australia (ACA)	25	?	?	161.0	Project only. Assume commencement 2009-14 and so included in mine life estimate. 536.8mT Measured and Indicated Resources (31Dec08) – AngloAmerican plc Annual report 2008 p163. Unable to locate any further Reserves information. BAH estimate represents a nominal conversion to Reserves. In the absence of anything better, ARTC proposes to use 30% conversion factor determined for other mines. 161mT Proved and Probable Reserves assumed. [c-i-c information has been redacted]

Mine	Owner	BAH	MJA		ARTC	Comment
			Proved	Probable		
Sandy Creek	Idemitsu		?	?	18	Proposal only. 18Mt Marketable Reserves (1Jul08) – NSWCIPO9. Assume commencement 2009-14 and so included in mine life estimate. [c-i-c information has been redacted]. NSWMC advise coal to be loaded at Ravensworth. [c-i-c information has been redacted]. Combine Sandy Creek reserves with Muswellbrook in Mine Life Calculation Spreadsheet.
Stratford	Gloucester Coal Ltd		11.2		11.7	Confirm MJA estimate. [c-i-c information has been redacted]. Combine Stratford with Duralie in Mine Life Calculation Spreadsheet.
Tasman	Donaldson Coal	22.6	?	?	5.9	Includes Tasman 19.5mT Resources (1Jul08)– NSWCIPO9 – Reserve data N/A In the absence of anything better, ARTC proposes to use 30% conversion factor determined for other mines Assume Reserves 5.9mT. Combined with Abel in Mine Life Calculation Spreadsheet. [c-i-c information has been redacted]
Teralba	Xstrata Coal	28.6	?	?	0.0	BAH estimate is for West Wallsend mine served by Teralba rail load point.
United	Xstrata Coal	8.2	3.7	0.0	3.7	Confirm MJA estimate. [c-i-c information has been redacted]
Wallarah No. 2	Wyong Areas Coal Joint Venture		?	?		Does not use ARTC assets. Excluded.
Wambo (O/C & U/G)	Peabody Energy	101.7	?	?	150.0	150mT Marketable Reserves (1Jul08) – NSWCIPO9. [c-i-c information has been redacted]
Warkworth	Coal & Allied Industries	245.3	157.2	120.9	281.8	Confirm MJA estimate. [c-i-c information has been redacted]
Westside	Xstrata Coal		2.9			Does not use ARTC assets. Excluded.
West Wallsend	Xstrata Coal	28.6	14.4	14.2		Does not use ARTC assets. Excluded.
PRICING ZONE 2						
Bengalla	Coal & Allied Industries	146.9	69.8	62.0	135.1	Confirm MJA estimate. [c-i-c information has been redacted]. Assume continuation of existing levels of domestic coal.
Bengalla (Wantana)	Coal & Allied Industries		?	?	7.5	Proposed only. Approval granted Dec07 following application for a Bengalla Modification. The company reported the following in relation to that modification: ‘Specifically, the Modification includes: • Extending mining activities to the south into the Wantana Extension which is a 32 hectare area entirely within the existing Mining Leases and Development Application Boundary. Approximately 7.5 million tonnes of Run of Mine (ROM) coal reserves are proposed to be mined over an approximate five year period. No increase in the approved annual production rate is sought.’ ² Unable to locate any further relevant information. Assume commencement 2009-14 and so included in mine life estimate. In the absence of better information, and on the basis of the above, assume marketable reserves 7.5mT, and production is included in company forecasts for Bengalla. Combine reserves with Bengalla in Mine Life Calculation Spreadsheet.
Bylong	Anglo Australia?		?	?	0	Unable to locate any meaningful reserves or production information in relation to this proposal. Excluded.
Mangoola (was Anvil Hill)	Xstrata Coal	115.7	116.6	16.8	133.4	Confirm MJA estimate. [c-i-c information has been redacted]. Assume 2.5mTpa coal for domestic.
Moolarben (O/C & U/G)	Felix Resources Ltd	233.8	84.5	272.3	356.8	Confirm MJA estimate. [c-i-c information has been redacted]
Mount Pleasant	Coal & Allied Industries	349.9	0.0	349.9	349.9	BAH/MJA estimates agree.
Ulan (O/C & U/G)	Xstrata Coal	179.7	118.7	60.2	178.9	Confirm MJA estimate. [c-i-c information has been redacted]
Ulan West U/G			?	?	0.0	Ulan UG West Marketable Reserves included in MJA Ulan (O/C & U/G) estimates – Xstrata Ore Reserves & Mineral Resources Jan 2009.
Wilpingjong	Peabody Energy	245.9	?	?	251.0	251mT Proven and Probable Reserves (1Jul08) – NSWCIPO9 [c-i-c information has been redacted]

² http://www.coalandallied.com.au/documents/Wantana_extension_modification_-_July_2007_newsletter.pdf

Mine	Owner	BAH	MJA		ARTC	Comment
			Proved	Probable		
PRICING ZONE 3						
RocGlen (Belmont)	Whitehaven Coal	10.8	7.6		7.6	Confirm MJA estimate. [c-i-c information has been redacted]
Bickham	Bickham Coal Company Ltd	49.7	?	?	36.0	Reserve estimate based on company plans ³ . [c-i-c information has been redacted].
Blue Vale	Whitehaven Coal		?	?	0.0	Exploration Licence only. Reserves identified late 2009, but Whitehaven Coal Ltd Quarterly Report to 31 December 2009 (Q2 FY 2010) states: 'Whitehaven will be targeting the development of both open-cut and underground coal reserves at Vickery. In the near term, Whitehaven intends to focus on the exploration and definition of an open cut area called Bluevale.' This suggests there is still significant uncertainty as to whether production from the mine will occur between 2009-14. Excluded.
Boggabri	Idemitsu	100	?	?	210.0	210mT Marketable Reserves (1Jul08) – NSWCIPO9. [c-i-c information has been redacted]
Caroona - P	BHP Billiton	100	?	?		Planned mine beyond 2014 – Excluded.
Dartbrook (O/C Planned)	Anglo Coal Australia (ACA)	43.5	?	?	66.6	Project only. Assume commencement 2009-14 and so included in mine life estimate. 222.1mT Measured and Indicated Resources (31Dec08) – AngloAmerican plc Annual report 2008 p158. Unable to locate any further Reserves information. BAH estimate represents a nominal conversion to Reserves. In the absence of anything better, ARTC proposes to use 30% conversion factor determined for other mines. 66.6mT Proved and Probable Reserves assumed. [c-i-c information has been redacted]
Maules Creek - P	Coal & Allied Industries	300	?	?		Planned mine beyond 2014 – Excluded.
Narrabri (North & South)	Whitehaven Coal	300	51.1	51.6	102.7	Confirm MJA estimate.
Sunnyside	Whitehaven Coal	5	?	?	28.0	In the absence of any better information, Marketable Reserves (28mT) as at May 2009 has been used. Mining commenced in late 2008 so no adjustment needed. [c-i-c information has been redacted]
Tarrawonga	Whitehaven Coal	26	7.7		7.7	Confirm MJA estimate. [c-i-c information has been redacted]
Watermark - P	China Shenhua Energy Company	100	?	?		Planned mine beyond 2014- Excluded.
Werris Creek	Whitehaven Coal	7.6	17.6	2.3	19.9	Confirm MJA estimate. [c-i-c information has been redacted]
Canyon (was Whitehaven)	Whitehaven Coal	1.8	?	?		Canyon mine closed in 2009. Whitehaven report there is further exploration in the area, but no identification of resources as at 2010. Uncertain as to any future production in 2009-14. Exclude.

³ http://www.bickhamcoal.com.au/files/wra_files/Vol%201_Part%20A_Part%20B_Part%20C/Vol%201%20Part%20A%20Executive%20Summary%20&%20Key%20Issues.pdf

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Table 3 below shows a summary comparison of ARTC's revised reserves estimate against the original Booz estimates, and against MJA estimates (where provided).

Table 3

	Booz*	MJA*	Revised ARTC	Comment
Existing Mines	34	45	35	Against BAH, Teralba/West Wallsend/Canyon excluded; Awaba, Muswellbrook, Myuna, Stratford included. Against MJA, Beltana, Blakefield, Awaba, Cumnock No.1 combined with other mines; 6 mines excluded as not utilising ARTC assets.
Prospects	9	22	14	Against BAH, Abel, Awaba East, Mt Arthur UG, Mt Arthur Southern Pit, Mt Thorley UG, Sandy Creek, Bengalla (Wantana), Ulan West included; Bengalla (Wantana) and Ulan West included in other mines; Hunter Valley South Project excluded (company advises no development plans at this stage). Against MJA, Grant & Chainey, HV South, Mitchells Flat, Bylong, Blue Vale excluded due to uncertainty; Wallarah No. 2 excluded as not utilising ARTC assets; Mt Arthur South Pit, Ulan West combined with other mines.
Marketable Reserves (where MJA have advised an estimate)	2761.6	3023.0	2837.8	Against MJA, revised ARTC estimate excludes 185.3mT relating to mines that do not use ARTC assets; otherwise aligned to confirmed MJA estimates where provided.
Marketable Reserves (all mines/prospects)	3817.7	3023.0	4292.7	ARTC revised estimate is 12% higher largely resulting from aligning to confirmed MJA estimates where provided, and inclusion of some prospects not previously considered (Mt Arthur U/G, Mt Thorley U/G, Saddlers Creek, Sandy Creek and Dartbrook OC).

*Long term prospects Caroon, Maules Creek, Watermark not included.

Table 3 shows that ARTC has now included a number of additional mines, mainly prospects and developments identified by MJA and/or the NSWMC that were excluded in the Booz assessment. Where MJA provided estimates of probable and proven reserves, and ARTC has confirmed the MJA estimates, ARTC has aligned its revised estimates to the MJA estimates.

The combined effect of these adjustments has been to increase the reserves estimates by 12%. At Attachment 2, ARTC has provided a summary listing of all included mines, marketable reserves, and information source.

ARTC now considers that it has addressed the ACCC's issue in the Draft Decision:

'In relation to clearly identified errors in the data used by Booz & Co, ARTC will need to update its estimates to reflect corrections for clear errors.'

c. Treatment of mine production forecasts

The original Booz assessment incorporated forecasts of production levels out 10 years for each mine. Since this time, ARTC has obtained more recent production forecasts that are closely aligned to future capacity allocations at the port. As such, these forecasts are likely to be close to the levels of production committed at the port and for track capacity under long term take or pay contracts.

ARTC has updated the original forecasts in the Booz assessment with these later forecasts where possible.

Because the more recent forecasts are aligned to existing and future port allocations, these forecasts would only relate to mine production for export coal only. Also, due to this alignment, any constraint of the production forecasts due to port capacity would be minimal. In the Mine Life Calculation Spreadsheet, ARTC has separately identified and included domestic and other coal production at each mine as necessary, so that total production can be measured against total reserves.

ARTC considers that the producer forecasts of production are now more robust than those used in the original assessment, and are unlikely to suffer from the impact of producer ambitions where take or pay commitments do not apply.

ARTC believes that the treatment of mine production forecasts is consistent with the ACCC's preliminary view in the Draft Decision:

'In relation to the discrepancy between ARTC estimates of production based on mining information and ABARE estimates, it does not seem unreasonable for ARTC to use the higher production figures. The ACCC notes these figures are based on miners own production estimates and the use of higher more conservative figures should further reduce any stranding risk facing ARTC.'

Indeed the estimates used are now less likely to be 'conservative' and having the effect of reducing stranding risk to ARTC.

d. Treatment of domestic coal and coal transported to other locations

ARTC recognises that coal transported on the Hunter Valley coal network includes coal that is transported to domestic power stations in the region as well as some coal transported from Hunter Valley coal mines to locations outside of the region such as Pt. Kembla.

In the original assessment, any reserves estimates would have included these volumes. ARTC considers this is reasonable given that reserves estimates that are publicly available do not normally separate reserves according to the use or ultimate destination of the coal.

The original assessment also incorporated producers' forecasts of mine production that similarly would not have separately recognised domestic coal and coal to be transported to locations other than Newcastle. The total production at each mine is compared against port capacity. ARTC accepts that this is not strictly correct, but it was unlikely to have had significant impact on the mine life estimate.

In order to address the ACCC's issue in this regard, ARTC, in the Mine Life Calculation Spreadsheet, has retained the original concept of presenting mine reserves and production estimates irrespective of coal use and destination, but has separately estimated production for domestic coal and coal going to locations other than Newcastle. Forecasts of production of coal for domestic or bound for non-Hunter Valley locations have in many cases been aligned to historical production, except where ARTC has better information from producers or other sources.

In some cases, producer forecasts of domestic coal production are not identified with specific mines. In this situation, ARTC has allocated total producer forecast to mines on the basis of relative production levels.

Production forecasts associated with domestic and other coal are then removed from the total mine production forecasts, with production of Newcastle export coal remaining. Unlike the original assessment, it is this level of production only that is compared against port capacity to identify any constraints. The comparison is now correct, and any supply chain constraints will now be correctly identified.

ARTC believes that the separate identification of mine production of domestic and non-Newcastle port coal, and comparison of export mine production against supply chain (port) constraint addresses the ACCC's issue in the Draft Decision:

' ... include accounting for domestic coal consumption to the extent this affects the estimated mine life.'

e. Treatment of supply chain constraints

Consistent with the approach adopted in the Booz assessment, ARTC has compared annual production forecasts against supply chain constraints, where port capacity has been taken as the proxy for supply chain capacity. ARTC's Capacity Strategy is designed to ensure that track capacity remains higher than port capacity.

As was the case in the previous assessment, ARTC has assumed that, beyond 2012, arrangements facilitating supply chain capacity investment sufficient to meet demand will be in place, such as aligned long term take or pay contracts. This is consistent with the objectives of the long term solution.

In this assessment, ARTC has sought where it can to update producer forecasts to reflect forecasts that are aligned to port capacity allocations and so more likely to be committed in long term take-or-pay contracts. In addition to these forecasts, and as highlighted earlier, ARTC has assumed certain developments will become productive in the 2009-14 period and are so included in the assessment. These will not have a material impact on production until 2013. Some of these developments are as yet to be committed in producer forecasts, and there is unlikely to be any port allocation.

Current expectations are that port capacity will increase to 189mTpa by 2013. Beyond 2013, options for further port expansion include a 4th Dump Station at Kooragang or a new terminal T4, but not both. The inclusion of a 4th Dump Station is expected to increase capacity to around 206mTpa from 2014 onwards, and development of T4 is expected to increase capacity to 289mtpa from 2015. Which path is taken by the industry will depend on the materialisation of the included developments as well as longer term developments in the Gunnedah region that are excluded.

As such, whilst production associated with the included developments is not contemplated up to 2012, it could be expected that beyond 2012, the options for further expansion described above will deliver sufficient capacity for the included developments

as well as other long term developments. This is consistent with the Booz and ARTC approach beyond 2012.

Further industry developments since the Booz assessment, including the ACCC approval of port access arrangements underpinning the long term solution and development of ARTC's Hunter Valley Coal Network Access Undertaking through the ACCC process underlines the validity of this assumption.

In contrast to the Booz assessment, as described earlier, ARTC has compared only export coal production against port capacity constraint, where the impact of domestic and other coal has been removed. This is a more valid comparison.

Table 4 shows annual production (export only) against expect annual port capacity between 2010 and 2012.

Table 4

	2010 forecast	2011 forecast	2012 Forecast
Annual production forecast (export)	119mT	142mT	164mT
Annual port capacity	120mT	140mT	163mT
Shortfall	-	1%	1%

The minor constraints in capacity in 2011 and 2012 arise because existing port expansion investment is based around committed future volumes. In 2011 and 2012, ARTC has incorporated into its assessment, the first of the developments that are assumed to commence production during 2009-14. Producers are yet to contractually commit to volumes around these developments. ARTC would expect however that when producers did commit to these volumes, the necessary investment in supply chain capacity (including port capacity) would also be committed. As such, in reality, ARTC would expect that the constraints in 2011 and 2012 assumed in this assessment would not materialise. Retaining these constraints would have the effect of increasing mine life, adding more conservatism to the mine life estimate, but would also increase stranding risk.

Figures 1 and 2 show a comparison of the annual production assumptions (for export coal) and port constraint assumptions made by Booz (Figure 1), and now updated by ARTC (Figure 2). The ARTC update now separately identifies domestic/other coal, as well as port capacity assumptions beyond 2012. As stated earlier, to the extent port

capacity is below forecast production (including included developments) after 2012, it is assumed that long term expansion options (4th Dump Station or T4) that deliver sufficient port capacity will materialise, so that production is not constrained.

Figure 1

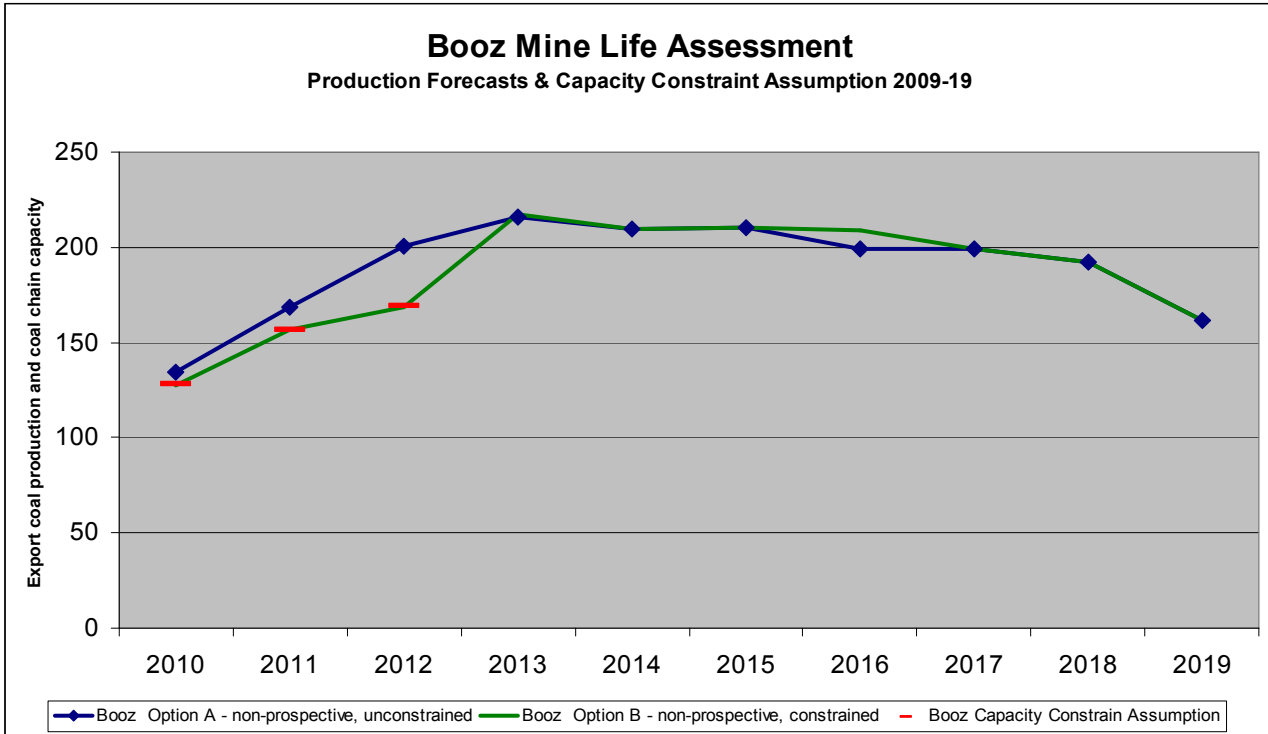
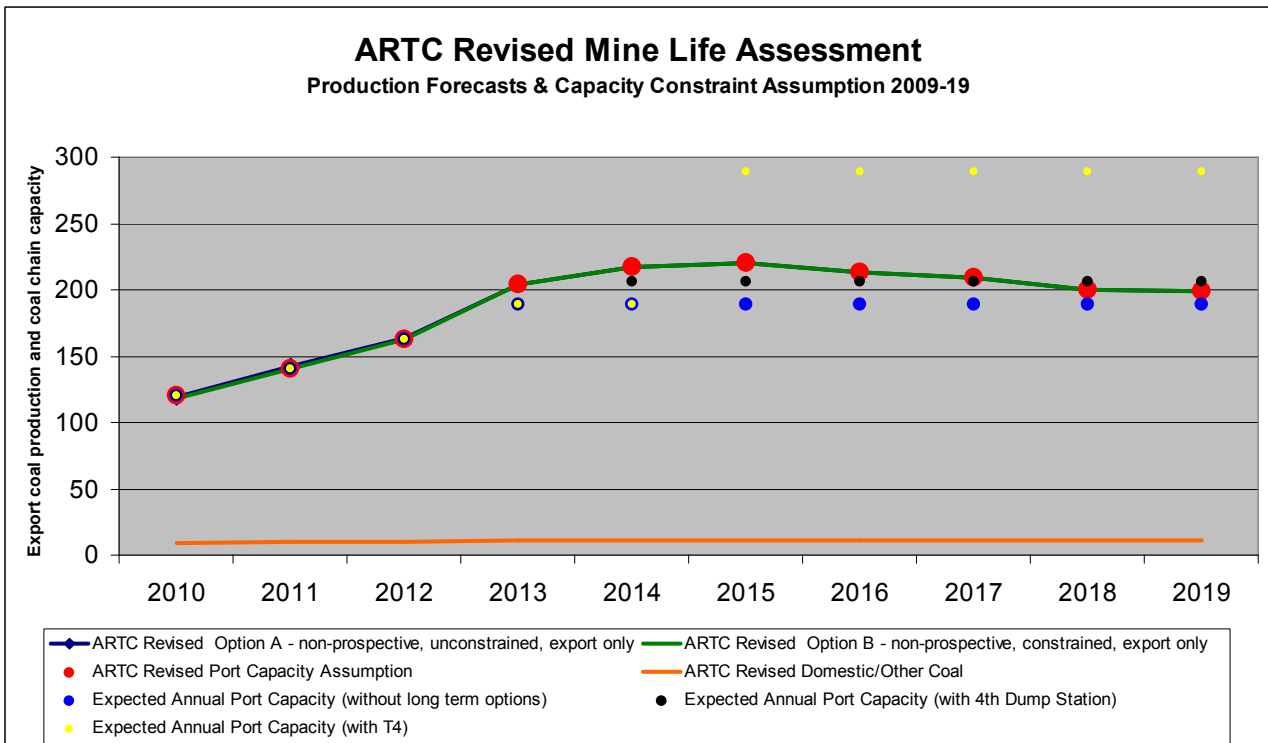


Figure 2



Observations with respect to the Booz and ARTC Revised production and capacity assumptions are:

- Producers forecasts for production used by ARTC are lower than that used for the Booz assessment to 2012, but forecasts are higher in subsequent years. Higher forecasts in subsequent years reflect:
 - Catch up of lower earlier forecasts likely to have resulted from lower coal price expectations in the short term and more conservative nature of forecasts aligned to committed port allocations
 - Inclusion of additional developments assumed to commence operation during 2009-14 (mainly after 2012) that were excluded in the Booz assessment.
- With the inclusion of the included developments, there is likely to be constraint on production after 2012 unless options for further port expansion materialise. As stated earlier, the nature of port and track contracts will provide for such expansions when the included developments are committed by producers, eliminating any constraint.

In light of:

- the more conservative nature of producer forecasts, used in ARTC's revised assessment, of production arising from commitment to port and track capacity, and
- the planned port developments before 2012 and options beyond 2012 that are likely to materialise when the higher volumes associated with included developments are committed by producers

ARTC contends that the production forecast assumptions in this revised assessment are consistent with those in the Booz assessment, adopt a more valid comparison with port capacity than that used in the Booz assessment, and are more realistic given planned port expansion and the nature of supply chain development inherent in the 'long term solution'.

f. Revised average remaining mine life estimates

Table 5 shows a comparison of the average remaining mine life estimates for each option adopted in the Booz assessment against the revised ARTC estimates where applicable.

Table 5

Years starting 2008/9	Option A	Option B	Option C	Option D
Booz estimate*				
Hunter Valley coal network	22.4	22.8	25.1	25.5
Revised ARTC estimate				
Hunter Valley coal network	23.9	23.9	N/A	N/A

* Refer Attachment 1

Consistent with the approach used by Booz, ARTC intends to recommend the adoption of the remaining mine life estimates arising from option B that excludes long term prospective developments and factors in the impact of supply chain (port) capacity constraint. As described earlier, ARTC has not revisited detail in relation to long term prospects which are excluded (as supported by the ACCC in the Draft decision). As such Options C and D have not been revised.

The outcome of the revised assessment undertaken by ARTC shows an overall increase in the estimate of remaining mine life of all mines included in the assessment of 1.1 years. In broad terms this arises from the increase in reserves identified in section 3b, partially offset by higher production forecasts beyond 2012 as identified in section 3e. Both the reserves and production increases are at least partly explained by the inclusion of developments identified by MJA and the NSWMC that are still uncertain, but have been assumed by ARTC to materialise in the period 2009-14. This is despite the ACCC preliminary view in the Draft Decision that 'in relation to new mines that are not yet in production and are highly uncertain, it does not seem inappropriate to exclude these mines from the mine life calculation as there is no guarantee these will ever come into production' but consistent with previous mine life assessments.' A number of these developments were excluded from the Booz assessment on the basis that they were unknown at the time or considered too uncertain.

At Attachment 3, ARTC has provided a summary listing of all included mines, remaining mine life estimate and terminal year. At Attachment 4, ARTC has provided the Mine Life Calculation spreadsheet (confidential) it has used to determine an estimate of remaining mine life for each included mine, as well as the Hunter Valley coal network in total. The spreadsheet also contains detailed information in relation to mine production forecasts.

In order to align the estimate of remaining mine life to the expected commencement of the HVAU (2010), the estimate showing in Table 5, which is an estimate of remaining

mine life from 2008, should be reduced by two years to 21.9 years (Option A or B). These essentially represent remaining mine life as measured 1 July 2010.

4. ARTC's revised proposal

As a result of ARTC's revised assessment of the estimate determine by Booz, ARTC now proposes a revised estimate of remaining mine life for the Hunter Valley coal network (in total) of 21.9 years (rounded to 22 years) to apply in 2010. ARTC believes that the revised estimate addresses the issues raised by the ACCC in the Draft Decision.

**MINE LIFE CALCULATION SPREADSHEET USED BY BOOZ INCLUDING TOTAL HUNTER VALLEY
REMAINING MINE LIFE ESTIMATE**

(CONFIDENTIAL)

MARKETABLE RESERVES ESTIMATES FOR INCLUDED MINES

Included mine	Marketable reserves estimate (mT)	Information Source	JORC compliant Marketable Reserves estimate
Abel	45	1	Proved & Probable Reserves
Ashton (O/C & U/G)	72.7	2	Proved & Probable Reserves
Austar	36.7	1	Proved & Probable Marketable Reserves
Awaba East	48.3	2	Marketable Reserves
Awaba	1.4	2	Marketable Reserves
Bloomfield	21.8	1	Proved & Probable Reserves
Bulga (formerly Saxonvale) inc. Beltana/Blakefield	163.2	2	Proved & Probable Marketable Reserves
Camberwell	4.0	1	Marketable Reserves
Donaldson	5.0	1	Marketable Reserves
Drayton	30.6	2	Saleable Tonnes
Duralie	27.3	2	Proved & Probable Recoverable Reserves (31Dec08) [c-i-c information has been redacted]
Glendell	34.3	2	Proved & Probable Marketable Reserves
Integra O/C & U/G (was Glennies Creek)	34.5	1	Marketable Reserves
Hunter Valley Operations	336.8	2	Proved & Probable Marketable Reserves (31Dec08) [c-i-c information has been redacted]
Liddell	59.8	2	Proved & Probable Marketable Reserves
Mount Arthur inc. Southern Pit	168.0	2	Marketable Reserves
Mt Arthur U/G	282.0	2	Not available (project only). Estimated from Resources by application of 30% conversion factor.
Mt Thorley	25.8	2	Proved & Probable Marketable Reserves (31Dec08) [c-i-c information has been redacted]
Mt Thorley U/G	14.4	2	Not available (project only). Estimated from Resources by application of 30% conversion factor.
Mt Owen	51.7	2	Proved & Probable Marketable Reserves
Muswellbrook	16.0	1	Proved & Probable Marketable Reserves
Myuna	4.6	2	Marketable Reserves. Proportion assumed for export.
Ravensworth UG (was Newpac no 1)	31.7	2	Proved & Probable Marketable Reserves

Included mine	Marketable reserves estimate (mT)	Information Source	JORC compliant Marketable Reserves estimate
Newstan	18.4	2	Marketable reserves
Ravensworth East (Mt Owen)	10.9	2	Proved & Probable Marketable Reserves
Ravensworth OC (Cumnock No.1)	164.5	2	Proved & Probable Marketable Reserves
Rixs Creek	60.1	1	Proved & Probable Reserves
Saddlers Creek (O/C & U/G) (to be Drayton South)	161.0	2	Not available (project only). Estimated from Resources (31Dec08) by application of 30% conversion factor.
Sandy Creek	18	1	Marketable Reserves
Stratford	11.7	2	Proved & Probable Recoverable Reserves (31Dec08) [c-i-c information has been redacted]
Tasman	5.9	1	Not available (project only). Estimated from Resources by application of 30% conversion factor.
United	3.7	2	Proved & Probable Marketable Reserves
Wambo (O/C & U/G)	150.0	1	Marketable Reserves
Warkworth	281.8	2	Proved & Probable Marketable Reserves (31Dec08) [c-i-c information has been redacted]
Bengalla	135.1	2	Proved & Probable Marketable Reserves (31Dec08) [c-i-c information has been redacted]
Bengalla (Wantana)	7.5	2	Not available. In absence of better information, used ROM reserves proposed to be mined.
Mangoola (was Anvil Hill)	133.4	2	Proved & Probable Marketable Reserves
Moolarben (O/C & U/G)	356.8	2	Proved & Probable Reserves
Mount Pleasant	349.9	2	Proved & Probable Marketable Reserves.
Ulan (O/C & U/G) inc. Ulan West U/G	178.9	2	Proved & Probable Marketable Reserves.
Wilpingjong	251.0	1	Proved & Probable Reserves
RocGlen (Belmont)	7.6	2	Proved & Probable Marketable Reserves.
Bickham	36.0	2	Not available (project only). In the absence of better information, have used company estimate proposition of tonnes expected to be produced by the mine.
Boggabri	210.0	1	Marketable Reserves.

Included mine	Marketable reserves estimate (mT)	Information Source	JORC compliant Marketable Reserves estimate
Dartbrook (O/C Planned)	66.6	2	Not available (project only). Estimated from Resources (31Dec08) by application of 30% conversion factor.
Narrabri (North & South)	102.7	2	Proved & Probable Marketable Reserves.
Sunnyside	28.0	2	Proved & Probable Marketable Reserves (May09). Mine commenced late 2008 so no adjustment to 1Jul08 made.
Tarrowonga	7.7	2	Proved & Probable Marketable Reserves.
Werris Creek	19.9	2	Proved & Probable Marketable Reserves.

Sources

1. 2009 NSW Coal Industry Profile
2. Company Report

REMAINING MINE LIFE ESTIMATES FOR INCLUDED MINES

Included mine	Option A		Option B	
	Remaining mine life estimate (years) from 2008	Terminal year	Remaining mine life estimate (years) from 2008	Terminal year
Abel (combined with Tasman)	N/A	N/A	N/A	N/A
Ashton (O/C & U/G)	25	2033	25	2033
Austar	18	2026	18	2026
Awaba East (combined with Newstan)	N/A	N/A	N/A	N/A
Awaba (combined with Newstan)	N/A	N/A	N/A	N/A
Bloomfield	55	2063	55	2063
Bulga (formerly Saxonvale) inc. Beltana/Blakefield	15	2023	15	2023
Camberwell	1	2009	1	2009
Donaldson	3	2011	3	2011
Drayton	8	2016	8	2016
Duralie	14	2022	14	2022
Glendell	33	2041	33	2041
Integra O/C & U/G (was Glennies Creek)	9	2017	9	2017
Hunter Valley Operations	25	2033	25	2033
Liddell	13	2021	13	2021
Mount Arthur inc. Southern Pit	19	2027		2027
Mt Arthur U/G (combined with Mt. Arthur)	N/A	N/A	N/A	N/A
Mt Thorley	9	2017	9	2017
Mt Thorley U/G (combined with Mt. Thorley)	N/A	N/A	N/A	N/A
Mt Owen	7	2015	7	2015
Muswellbrook	38	2046	38	2046
Myuna (combined with Newstan)	N/A	N/A	N/A	N/A
Ravensworth UG (was Newpac no 1)	12	2020	12	2020
Newstan	16	2024	16	2024
Ravensworth East (Mt Owen)	10	2018	10	2018
Ravensworth OC (Cumnock No.1)	25	2033	25	2033
Rixs Creek	45	2053	45	2053
Saddlers Creek (O/C & U/G) (to be Drayton South)	18	2026	18	2026
Sandy Creek (combined with Muswellbrook)	N/A	N/A	N/A	N/A
Stratford (combined with Duralie)	N/A	N/A	N/A	N/A
Tasman	21	2029	21	2029
United	2	2010	2	2010
Wambo (O/C & U/G)	20	2028	20	2028
Warkworth	32	2040	32	2040
Bengalla	16	2024	16	2024
Bengalla (Wantana) (combined with Bengalla)	N/A	N/A	N/A	N/A
Mangoola (was Anvil Hill)	21	2029	21	2029
Moolarben (O/C & U/G)	30	2038	3	2038
Mount Pleasant	44	2052	44	2052
Ulan (O/C & U/G) inc. Ulan West U/G	14	2022	14	2022
Wilpingjong	18	2026	18	2026
RocGlen (Belmont)	9	2017	9	2017
Bickham	25	2033	25	2033
Boggabri	35	2043	35	2043
Dartbrook (O/C Planned)	12	2020	12	2020
Narrabri (North & South)	20	2028	20	2028
Sunnyside	15	2023	15	2023
Tarrowonga	9	2017	9	2017
Werris Creek	12	2020	12	2020

MINE LIFE CALCULATION SPREADSHEET USED IN ARTC REVIEW

(CONFIDENTIAL)