

24 March 2010

North American Coal

A footprint... to attractive cash returns



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Coverage Change

North American Coal sector initiation

We initiate coverage of Alpha Natural and Arch Coal with Buy-ratings and Peabody and Alliance Resource with Hold ratings. Overall, we favor companies with met coal exposure, but also generating Excess Cash on a sustainable basis – which the markets do not seem to fully appreciate, making Alpha Natural our Top Pick in the sector. Initiating coverage on the North American (NA) coal producers Alliance Resource, Alpha Natural, Arch Coal and Peabody solidifies our Metals & Mining franchise and leads us to cover more than 40% of US coal production.

Deutsche Bank Securities Inc.

All prices are those current at the end of the previous trading session unless otherwise indicated. Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank and subject companies. Deutsche Bank does and seeks to do business with companies covered in its research reports. Thus, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MICA(P) 106/05/2009

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DB positive on coal on strong fundamentals and emerging structural changes

DB is positive on coal noting improvement in global economies, coal plant additions, ongoing electrification trends, infrastructure bottlenecks, and increasing import levels from China (a net importer as of 2009) and India. Our Commodities team calls for steam coal to average \$85/tonne in 2010 and \$100/tonne in 2011 and for met coal to average \$175/tonne in 2010 (though recent quarterly prices settlements point to \$200/tonne) and \$190/tonne in 2011 – though there is a possibility that met coal prices could rise again next year.

Met coal exposure and Excess Cash yields underlying key themes

Spot prices for met coal continue to trend above expectations, providing room for potential earnings upside should prices settle beyond market expectations. Met coal producers – Alpha Natural and Peabody have outperformed. However, we believe that Alpha Natural's share price has more upside potential as its multiple re-rates on new size and scale post transaction – leading us to prefer it over Peabody. Looking at Excess Cash yields of the NA Coals, we note that Alpha Natural and Arch Coal's share price suggest higher upsides should the markets recognize this intricacy.

DB estimates ahead of consensus, PT on forward EV/EBITDA multiples

Average forward EV/EBITDA multiples over past years denote a degree of consistency within each NA Coal producers, despite the rather volatile nature of share prices in the sector. Peabody and Arch Coal have re-rated over the years as the companies grew in size and scale, and more recently Alpha Natural has started to re-rate. We apply a 7x EV/EBITDA multiple to the two leading NA coal producers, Peabody and Arch Coal, fairly in line with their historical average; and a 6x EV/EBITDA to the new emerging leading producer (post its merger with Foundation Coal) Alpha Natural as it re-rates on increased size and scale. We value Alliance Resource using a dividend discount model, which implies a 5x multiple. We note that our 2011 EBITDA estimates are 8% ahead of consensus.

Risks include coal/natural gas prices, China, economy, USD and freight rates

Earnings for NA Coals are highly levered to the average realized coal prices (~9:1 sensitivity), inflationary cost pressures and strong USD. Other risks include pullback in global economy, direction of energy prices and changes in regulation. Other risks include execution on existing and growth projects, funding, permitting, environmental requirements, staffing, and equipment availability. Risks discussed within the Executive Summary Valuation and the Investment Thesis section for each company.

Coverage Change

Top picks	
Arch Coal (ACI.N),USD24.22	Buy
Alpha Natural Resources (ANR.N),USD48.26	Buy

Companies featured			
Arch Coal (ACI.N),USD24.22			
	2009A	2010E	2011E
EPS (USD)	0.37	0.92	2.20
P/E (x)	48.7	26.2	11.0
EV/EBITDA (x)	10.1	8.1	5.6
Alpha Natural Resources (ANR.N),USD48.26			
	2009A	2010E	2011E
EPS (USD)	1.88	3.68	5.45
P/E (x)	15.3	13.1	8.9
EV/EBITDA (x)	5.9	5.8	4.2
Alliance Resource L.P. (ARLP.OO),USD42.12			
	2009A	2010E	2011E
EPS (USD)	3.55	5.03	5.02
P/E (x)	9.7	8.4	8.4
EV/EBITDA (x)	5.0	4.6	4.6
Peabody Energy (BTU.N),USD47.76			
	2009A	2010E	2011E
EPS (USD)	1.91	3.30	4.75
P/E (x)	17.5	14.5	10.0
EV/EBITDA (x)	8.2	7.8	6.0

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Executive summary

NA Coal initiated favoring producers with Excess Cash yields

We initiate NA Coal favoring met coal exposure and large Excess Cash yields; Alpha Natural Top Pick

We initiate coverage on Alpha Natural and Arch Coal with Buy-ratings; and Peabody Energy and Alliance Resource Partners with Hold-ratings. Overall, we favor coal companies with exposure to the metallurgical (met) coal market, but also generating Excess Cash on a sustainable basis – which the markets do not seem to fully appreciate, making Alpha Natural our Top Pick in the sector. Initiating coverage on the North American (NA) coal producers Alliance Resource Partners, Alpha Natural Resources, Arch Coal, and Peabody solidifies our Metals & Mining franchise and leads us to cover more than 40% of US coal production. Key sector themes:

DB positive on coal noting altering trade dynamics as China emerges as net importer status

- **DB is positive on coal** noting improvement in global economies, coal plant additions, ongoing electrification trends, infrastructure bottlenecks, and increasing import levels from China and India. Our Commodities team calls for steam coal to average \$85/tonne in 2010 and \$100/tonne in 2011 and for met coal to average \$175/tonne in 2010 (though recent quarterly prices settlements point to \$200/tonne) and \$190/tonne in 2011.
- **China now a net importer of coal** spurring demand for both steam and met coal and altering established trade patterns and accentuating its own production limitations and insatiable appetite.
- **Infrastructure bottlenecks** pose great challenges in moving additional volumes of coal as demand for product grows. Supply constraints further exacerbated as producing regions potentially increase domestic demand limiting export capacity.

Some additional company-specific themes for NA Coal:

US coal industry at an inflection point as steam and met coal prices seem to have bottomed

- **US coal industry at inflection point** as met coal market bottomed in early 2009 and has experienced considerable improvement since. A rebound in steel output in key global markets has tightened the market. Steam coal market has lagged due to a variety of factors but we now believe that the worst has passed and coal prices have bottomed.
- **PRB gaining more prominence** as recent M&A activity and growth projects emphasize interest to the region. CAPP expansions face challenges, including 404 permitting; with output from this region expected to fall over time.
- **Ample export capacity** in US allows its coal producers to act as swing participants in the Seaborne market, as long as freight rates and the US dollars do not pose a threat.
- **Legislation uncertain for the sector** with possible changes posing a risk to earnings should additional levies and constraints be implemented.

NA Coal producers with access to ports can benefit from global tightening conditions

Figure 1: NA Coal price target and rating summary

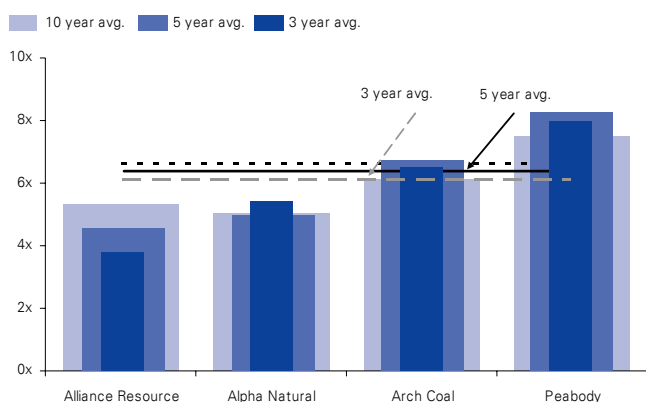
Company	Ticker	Recommendation	Price*	12-month Price Target	Up/(down)side to Price Target	Price Target basis	Target Multiple	PT/NPV**	Implied 2011 P/E
Alliance Resource	ARLP.OQ	Hold	42.12	44.00	4%	DDM	1.1x	1.1x	9x
Alpha Natural	ANR.N	Buy	48.26	65.00	35%	2011 EV/EBITDA	6x	1.3x	12x
Arch Coal	ACU.N	Buy	24.22	32.00	32%	2011 EV/EBITDA	7x	1.3x	15x
Peabody	BTU.N	Hold	47.76	57.50	20%	2011 EV/EBITDA	7x	1.3x	12x
Average					23%	2011 EV/EBITDA	6x	1.2x	12x

*At March 23rd closing prices; **NPV: Net Present Value calculated via Discounted Cash Flow methodology; Source: Deutsche Bank estimates

NA Coal Price Target and valuation rationale

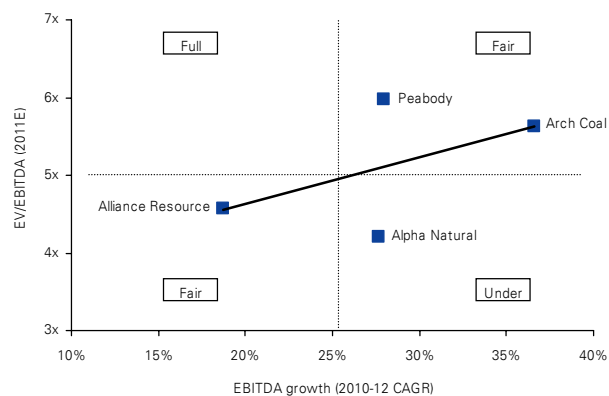
Average forward EV/EBITDA multiples over 10, 5 and 3 years denote a degree of consistency within each of our NA Coal producers, despite the rather volatile nature of share prices in the sector. Out of our three leading NA Coal producers, we note that Peabody and Arch Coal have re-rated over the years as the companies grew in size and scale, and more recently Alpha Natural has started to re-rate. Hence, we apply a 7x EV/EBITDA multiple to the two leading NA coal producers, Peabody and Arch Coal, fairly in line with their historical average; and a 6x EV/EBITDA to the new emerging leading producer (post its merger with Foundation Coal) Alpha Natural as it re-rates on increased size and scale from 5x historical average. Given its MLP status, we value Alliance Resource based on a dividend discount model, but note its historical forward EV/EBTDA multiple has de-rated over the years, perhaps due to its somewhat constrained balance sheet and smaller size.

Figure 2: NA Coal forward EV/EBITDA valuation



Source: Bloomberg, company data and Deutsche Bank estimates

Figure 3: NA Coal EV/EBITDA growth plot



Source: Company data and Deutsche Bank estimates

We rate Alpha Natural and Arch Coal as Buy; Alliance Resource and Peabody as Hold

Alpha Natural is our Top Pick in the sector

- **\$44/share for Alliance Resource (Hold).** We believe that the best way to value Alliance Resource is on expectations of what its required dividend stream will be – which based on our estimates imply a 9% average dividend yield. Our dividend discount model for the company assumes a 10% Ke and 1% terminal growth rate (based on our knowledge of the asset base and expectations of the long-term growth).
- **\$65/share for Alpha Natural (Buy).** We believe that Alpha Natural should trade at 6x 2011E EBITDA, a higher multiple than its historical average of 5x, given its increased size following the recent Foundation Coal transaction, the location of its asset base, operations and mining projects, growth prospects and value extraction potential post transaction. Further, its position in the met coal market bodes well for the company’s earnings potential.
- **\$32/share for Arch Coal (Buy).** We believe that Arch Coal should trade at 7x 2011E EBITDA, the high end of the range the peer group should trade at, given its leading position, the size and location of its asset base, operations, growth prospects and value extraction potential post recent acquisition. Further, flexibility to position itself in the met coal market enhances its earnings potential in the near future.
- **\$57.5/share for Peabody (Hold).** We believe Peabody should trade at 7x 2011E EBITDA, the high end of the range the peer group should trade at, given the size and location of its asset base, operations, and growth prospects – particularly in Australia. Further, its position in the met coal market bodes well for the company’s earnings potential in the foreseeable future. Nonetheless, we believe that Peabody should trade below its historical 8x average multiple given relevant peer group (i.e., Alpha Natural) and larger more diversified mining companies are currently trading below this level.

NA Coal operational snapshot

The operational snapshot table below illustrates cross-comparable metrics for our sample of NA Coal coverage. Key operational themes:

Alpha Natural, Peabody and Arch Coal planning to gain more met coal exposure

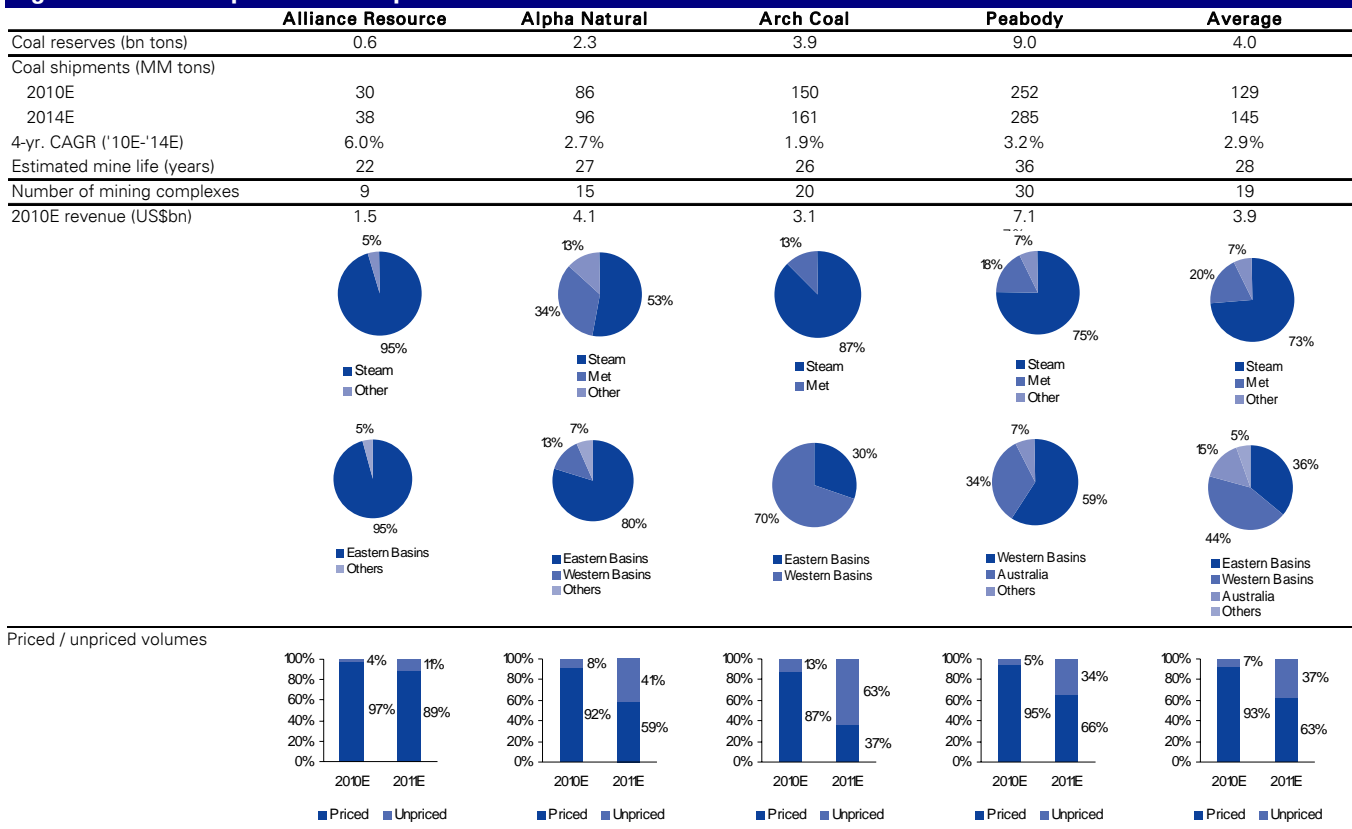
Sector experienced wave of M&A in 2009; more to follow in years to come

PRB offers wealth of reserves and untapped potential

Committed and priced volume levels vary per company

- Gaining met coal exposure.** NA Coal producers planning to capture an increasing piece of higher-priced met coal market – by either increasing met coal production and/or by switching steam coal from the Eastern Basins. Alpha Natural, Peabody and Arch Coal are aiming to catch this wave.
- Pursuing M&A and organic growth.** Alpha Natural merged with Foundation Coal and Arch Coal acquired Jacobs Ranch from Rio Tinto in 2009. Other players have announced more recent acquisitions in 2010, all in the quest of gaining scale – i.e., Massey Energy acquiring Cumberland Resources. Though 2009 resulted in volume cutbacks and project deferrals, NA Coal producers are envisioning better prospects ahead and contemplating several growth projects from within.
- Increasing PRB exposure.** Recent NA Coal M&A transactions increase exposure to the PRB (and in the case of Alpha Natural initiate it to the region). Though containing lower heat values, PRB region offers a wealth of reserves and untapped potential. CAPP expansions face challenges, including 404 permitting; output expected to fall over time.
- Some more exposed than others to market pricing.** Alliance Resource has committed and priced the bulk of its sales this year and next, whereas Arch Coal has the highest percentages to price amongst NA Coal. Notwithstanding, Peabody’s and Alpha Natural’s met coal production denotes higher unpriced percentages

Figure 4: NA Coal operational snapshot



Source: Company data and Deutsche Bank estimates

NA Coal cash generation snapshot

EBITDA, FCF and Excess Cash provide earnings power snapshot

The cash generation capability table illustrates how each of the companies fare in terms of cash flow generation, contrasting not only EBITDA figures (on an absolute and per ton basis), but also considering FCF figures which factors net interest expense, taxes, and capex needed to sustain and grow the business. To take it a step further, we compare the Excess Cash each company is able to redeploy back into the business after dividend payments are made.

However, Excess Cash denote true degree of cash generation

In general, we believe that the coal industry requires quite a bit of digging in order to get to the true cash generation capability of each of the companies. Coal prices tend to vary per region due to the different characteristics each shares. In addition, operating cash costs also vary per region. Looking just at a cash cost curve is not necessarily an indication of how much a producer is able to rake in should prices hover at a certain level. As the NA Coal producers have operations in multiple regions in the US, and in the case of Peabody abroad, we have focused our attention beyond EBITDA each company is able to generate, but also at the FCF and Excess Cash.

Alpha Natural and Arch Coal attractive on FCF and Excess Cash yields

On a FCF and Excess Cash yields Alpha Natural and Arch Coal are currently not reflecting their true cash generation potential, thus we believe that upside potential on these two names is more substantial as the markets begin to reward these two companies.

Figure 5: NA Coal cash generation capability snapshot

	Alliance Resource	Alpha Natural	Arch Coal	Peabody	Average
EBITDA (\$/t)					
2010E	14.47	12.22	4.70	7.38	9.69
2011E	14.65	14.51	6.16	8.96	11.07
2012E	16.19	17.09	7.56	10.33	12.79
FCF (\$/t)					
2010E	3.45	5.55	2.04	2.87	3.48
2011E	4.77	6.95	2.85	3.48	4.51
2012E	8.74	9.10	3.95	5.01	6.70
Excess Cash (\$/t)					
2010E	-3.36	5.55	1.65	2.61	1.62
2011E	-2.55	6.95	2.47	3.24	2.53
2012E	0.66	9.10	3.59	4.78	4.53
EBITDA (\$m)					
2010E	435	1,051	703	1,858	1,012
2011E	450	1,321	957	2,374	1,275
2012E	597	1,632	1,217	2,896	1,586
EBITDA margin (%)					
2010E	28.4%	27.2%	23.0%	26.3%	26.2%
2011E	28.2%	30.4%	27.5%	29.4%	28.8%
2012E	29.4%	33.8%	31.4%	32.1%	31.7%
FCF yield (%)					
2010E	6.7%	8.3%	7.8%	5.7%	7.1%
2011E	9.5%	11.0%	11.3%	7.3%	9.8%
2012E	20.9%	15.1%	16.2%	11.1%	15.8%
Excess Cash yield (%)					
2010E	-6.5%	8.3%	6.3%	5.2%	3.3%
2011E	-5.1%	11.0%	9.8%	6.8%	5.6%
2012E	1.6%	15.1%	14.7%	10.5%	10.5%

Source: Capital IQ, company data and Deutsche Bank estimates

NA Coal EPS and sensitivities

NA Coals are highly sensitive to changes in average realized coal price

On average, more than 90% of NA Coal's volumes are committed and priced in 2010 as of 4Q09 results, with Alliance Resource being the most committed and Arch Coal being the least committed - having the most exposure to an expected upswing in coal prices. The landscape shifts in 2011, with the NA Coal's volumes committed and priced averaging 63% as of 4Q09. Met coal production tends to be less committed and priced than steam coal.

- **A \$1/ton change in average realized coal prices impacts 2010E EPS by 29% for NA Coals.** Hence, sector has a ~9:1 sensitivity to changes in coal prices.

Arch Coal is not only most exposed to the market with unpriced volumes, but also offers operating and financial leverage

Figure 6: NA Coal earnings sensitivity to coal prices

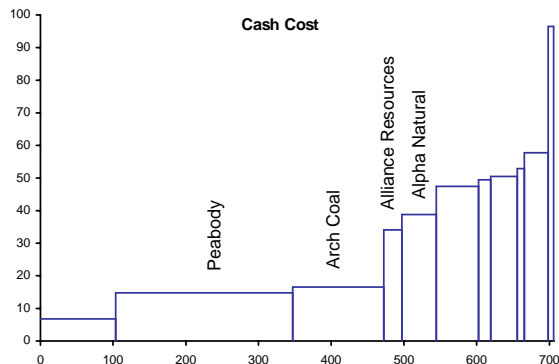
	Alliance	% chg	Alpha	% chg	Arch	% chg	Peabody	% chg
2010E realized coal price (\$/t)	49		42		20		30	
EBITDA	435		1,051		703		1,858	
+ \$1/t to realized coal price	30	7%	86	8%	150	21%	219	12%
EPS	5.03		3.68		0.92		3.30	
+ \$1/t to realized coal price	0.41	8%	0.53	14%	0.69	74%	0.61	19%
2010E % volumes priced	97%		92%		87%		95%	
2010E volumes (MM tons)	30		86		150		219	*
2011E realized coal price (\$/t)	50		45		22		32	
EBITDA	450		1,321		957		2,374	
+ \$1/t to realized coal price	31	7%	91	7%	156	16%	231	10%
EPS	5.02		5.45		2.20		4.75	
+ \$1/t to realized coal price	0.41	8%	0.56	10%	0.72	33%	0.65	14%
2011E % volumes priced	89%		59%		37%		66%	
2011E volumes (MM tons)	31		91		156		231	*

Note: Peabody volumes exclude Trading & Brokerage; Source: Company data and Deutsche Bank estimates

Inflationary pressures have eased, but could become an issue again should markets tighten aggressively

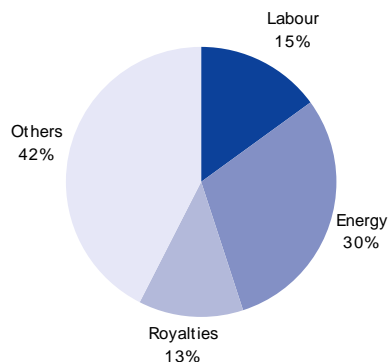
Although cash costs for the industry have slowed their rate of increase, costs remain very sensitive to the price of oil, power, labor, consumables and project engineering and equipment/parts. On average, we estimate cash costs for the top twelve US coal producers to be ~\$40/ton – with Alliance Resource and Alpha Natural lying close to the sector average, the former due to its exposure the higher cost Eastern Basin (particularly the Illinois Basin) and the latter due to its product mix (includes a higher portion of met coal than peers). However, we anticipate that Alpha Natural's average cash cost should come down over the years due to the inclusion of PRB production post recent transaction. Arch Coal and Peabody lie on the bottom of the curve due to their PRB production exposure.

Figure 7: US coal cash cost curve (2009E)



Source: Company reports and Deutsche Bank estimates

Figure 8: NA Coal cost of goods sold illustration (2009E)*



*Based on averages discussed with companies under coverage but not data readily available from companies in published form; Source: AME, company data and Deutsche Bank estimates

DB estimates versus consensus and 1Q10 calendar

DB EPS +16% vs. 2010
Capital IQ consensus and
+17% vs. 2011

Our average NA Coal EPS estimate is 16% higher than 2010 and 17% higher than 2011 consensus estimates, mainly attributable to DB's coal price estimates. Our estimates incorporate guidance provided by each of the companies.

Figure 9: DB EBITDA and EPS estimates versus consensus

Company name	Currency	DB estimates			Consensus			Difference		
		2010E	2011E	2012E	2010E	2011E	2012E	2010E	2011E	2012E
EBITDA:										
Alliance Resource	US\$m	435	450	597	419	445	446	4%	1%	34%
Alpha Natural	US\$m	1,051	1,321	1,632	903	1,159	1,431	16%	14%	14%
Arch Coal	US\$m	703	957	1,217	652	896	1,170	8%	7%	4%
Peabody	US\$m	1,858	2,374	2,896	1,691	2,169	2,411	10%	9%	20%
Simple average								10%	8%	18%
EPS:										
Alliance Resource	US\$	5.03	5.02	7.60	4.57	4.68	5.89	10%	7%	29%
Alpha Natural	US\$	3.68	5.45	7.48	2.96	4.39	5.77	25%	24%	30%
Arch Coal	US\$	0.92	2.20	3.51	0.83	1.87	2.96	12%	18%	18%
Peabody	US\$	3.30	4.75	6.21	2.85	4.06	4.54	16%	17%	37%
Simple average								16%	17%	28%

Source: Capital IQ (as of March 23, 2010) and Deutsche Bank estimates

Peabody should be the first to report 1Q10 results

Within our NA Coal coverage, Peabody kick's off the earnings season on Thursday, April 15.

Figure 10: 1Q10 earnings calendar and coverage call details

Company name	1Q10 results	Conf. call	Time
Alliance Resource	27-Apr	27-Apr	Pre-market open
Alpha Natural	6-May	6-May	Pre-market open
Arch Coal	23-Apr	23-Apr	Pre-market open
Peabody	15-Apr	15-Apr	Pre-market open

Source: Bloomberg and Deutsche Bank estimates

NA Coal 1Q10 EPS -16% vs Capital IQ consensus

We estimate our NA Coal stocks to report an 11% q/q decline in EPS results in 1Q10 on average, reflective of seasonally lower shipments. Further we note that at large 4Q09 results included a series of inflating one-off non-operating items. We do expect to hear confirmation that pricing and volumes post 1Q10 are at an inflection point, leading to q/q increases thereafter.

Figure 11: DB 1Q10 EBITDA and EPS estimates versus consensus

	DB 1Q10E	Consensus	difference	4Q09	q/q	1Q09	y/y
Alliance Resource EBITDA (US\$m)	91	96	-5%	82	11%	108	-15%
Alliance Resource EPS (US\$)	0.89	1.03	-14%	0.70	27%	1.56	-43%
Alpha Natural EBITDA (US\$m)	185	191	-3%	197	-6%	110	69%
Alpha Natural EPS (US\$)	0.44	0.52	-16%	0.51	-13%	0.66	-33%
Arch Coal EBITDA (US\$m)	140	142	-2%	138	2%	112	26%
Arch Coal EPS (US\$)	0.06	0.08	-28%	0.11	-46%	0.21	-72%
Peabody EBITDA (US\$m)	301	308	-2%	329	-8%	317	-5%
Peabody EPS (US\$)	0.38	0.41	-7%	0.43	-12%	0.50	-24%
Coverage EBITDA total	718	738	-3%	745	-4%	646	11%
Coverage EPS Average			-16%		-11%		-43%

Source: Capital IQ (as of March 23, 2010), Company data and Deutsche Bank estimates

DB steam and met coal outlook summary

DB positive on steam and met coal outlook on tightening market conditions

Deutsche Bank is positive on bulk commodities, particularly coal noting tightening conditions on the supply chain as well as inventory draw-downs as the much anticipated global economic recovery unfolds. DB Commodities team calls for steam coal prices to settle at \$85/tonne in 2010. Although not yet a benchmark 2010 met coal contract prices have settled at \$200/tonne for the next quarter. DB calls for steam coal prices to settle at \$100/tonne in 2011 and met coal at \$190/tonne. LT steam and met coal forecasts are \$84/tonne and \$120/tonne, respectively. Our estimates for NA Coal capture DB's Commodities team views on coal prices published in its Commodities Quarterly dated January 12th. However, for 2010 met coal prices we have marked-to-market recent price settlements at \$200/tonne for the quarter as a proxy to the year, which compare to DB's official forecast of \$175/tonne. Key themes include:

DB forecasts steam coal prices at \$85/tonne in 2010 and \$100/tonne in 2011

- **Steam Coal.** Forecasts at \$85/tonne and \$100/tonne for 2010 and 2011, respectively. China has swung from net exports to net imports in 2009. Upside pricing rests on Chinese demand remaining robust. DB views steam coal as one of the fundamentally strongest commodity markets globally in the asset class.

Though not yet a benchmark, 2010 coking coal prices have settled at \$200/tonne for next quarter

- **Coking Coal.** Key support is provided by Chinese domestic prices which although at a discount on a delivered basis are likely to rise. The LV PCI market has tightened up considerably. Infrastructure constraints are re-emerging in the coking coal market. Although not yet an industry benchmark, recent three-month price settlements at \$200/tonne for hard-coking coal for April through June 2010 have set the stage and confirm tightening conditions.

DB forecasts natural gas prices at ~\$6.00/mmBtu for next three years

- **US Natural Gas.** DB expects natural gas prices to average \$6.00/mmBtu in 2010 and believes prices should average close to this in 2011 and 2012 as well. With ample supplies available from the shale plays and imported LNG, we no longer expect a return to a long-term 8-10 to 1 oil/gas price ratio.

- **Oil.** DB expects that 2010 will mark the transition back to the traditional fundamentals relating to oil supply, demand and inventories in contrast to financial, currency and equity market drivers that we believe dominated oil price trends last year. DB believes that rallies in the oil price above \$80/bbl will only become sustainable in 2011.

Figure 12: DB commodities price estimates summary

March 23, 2010	Spot	2005	2006	2007	2008	2009	2010E	2011E	2012E	2013E	2014E	LT
Steam coal (\$/tonne)												
Calendar Year	94	51	52	55	108	85	82	96	96	91	90	86
Japanese Fiscal Year	94	53	52	56	125	71	85	100	95	90	90	84
Met coal (\$/tonne)												
Calendar Year	220	110	119	101	249	172	164	186	190	160	150	128
Japanese Fiscal Year	220	127	116	96	300	129	175	190	190	150	150	120
Oil & gas												
Natural gas (\$/MMBtu)	4.1	9.1	6.9	7.2	9.1	4.1	6.0	6.0	6.3	6.5	6.5	6.5
Oil - WTI (\$/bbl)	82	57	66	72	100	62	65	80	85	90	90	90
US steam coal prices (\$/ton)												
CAPP	58	60	52	45	92	53	66	73	81	69	69	69
IB	42	36	36	32	60	47	40	43	45	44	44	44
NAPP	64	52	42	46	100	55	59	63	68	61	61	61
PRB	12	10	13	10	14	9	12	13	14	12	12	12
WBIT	40	31	37	29	48	52	43	46	46	44	44	44

Benchmark used: Steam coal = Japanese Benchmark Thermal Coal; Met coal = Premium Hard Coking Coal; CAPP = Central Appalachia 12,500 Btu, 1.2 SO₂ Coal; NAPP = Northern Appalachia 13,000 Btu, <3.0 SO₂ Coal; IB = Illinois Basin 11,800 Btu, 5.0 SO₂ Coal; PRB = Powder River Basin 8,800 Btu, 0.8 SO₂ Coal; WBIT = Uinta Basin 11,700 Btu, 0.8 SO₂ Coal
Source: Bloomberg and Deutsche Bank estimates

Natural gas and oil price forward curves are upwards sloping

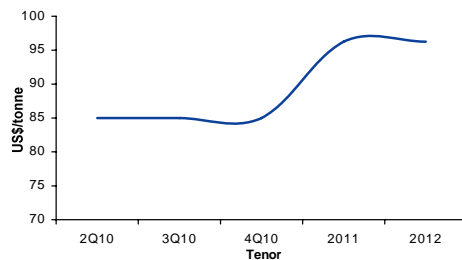
DB steam and met coal price estimates incorporate tightening conditions

Graphs point to inflection point and expectations of improving market conditions in the years to come

DB forecasts point to upward sloping curves

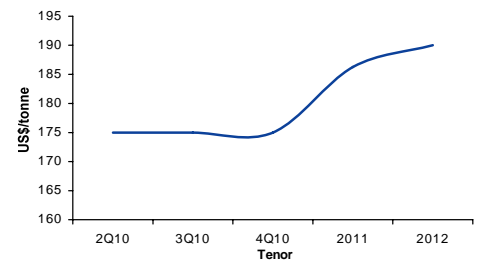
Forward curves for both natural gas and oil are upward sloping, although at different degrees. We believe that these curves reflect future expectations about global growth, market dynamics, exchange rates, interest rates, inflation and are by no means static. DB natural gas prices are currently above those implied by the forward curve, whereas oil prices are below. These prices affect the market's expectations on coal prices – reflecting market conditions and incentives to switch between fuel alternatives should prices increase or decrease beyond a certain level. Having said this, coal is an abundant and relatively inexpensive key energy component throughout the world sometimes moving to the tune of its own beat. Met coal dynamics in particular tend to reflect underlying trends in the steel market, which for the past years had moved at an aggressive clip until 2009, though steel capacity utilizations have dramatically improved from the lows seen last year.

Figure 13: Steam coal



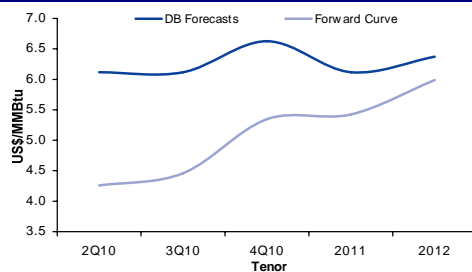
Benchmark used: Japanese Benchmark Thermal Coal
Source: Deutsche Bank estimates

Figure 14: Met coal



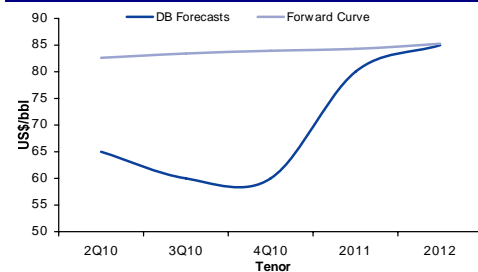
Benchmark used: Premium Hard Coking Coal
Source: Deutsche Bank estimates

Figure 15: Natural gas



Benchmark used: US Nymex Henry Hub Natural Gas, prices as of Mar 23, 2010
Source: Bloomberg and Deutsche Bank estimates

Figure 16: Oil



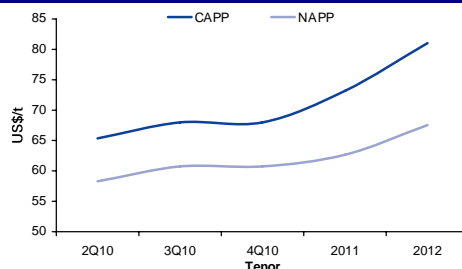
Benchmark used: WTI Cushing, prices as of Mar 23, 2010
Source: Bloomberg and Deutsche Bank estimates

Coal prices in the US set to improve

We anticipate power consumption increases and reduced pressure of the coal to natural gas switching by utility companies in the US should result in improving steam coal prices in the foreseeable future as the US recovers. However, we acknowledge that coal inventory levels at utility companies, having decreased, remain fairly high and low natural gas prices pose a risk. Recent quarterly met coal price settlements point to tight market conditions.

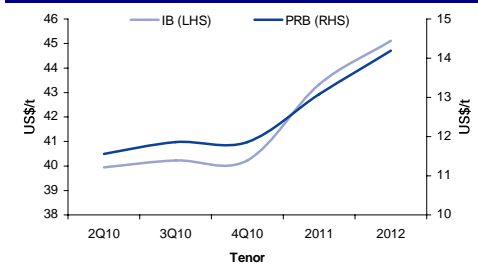
Coal prices in Eastern Basins tend to set the stage for other basins influenced by international prices

Figure 17: CAPP and NAPP coal



Benchmark used: CAPP = Central Appalachia 12,500 Btu, 1.2 SO₂ Coal; NAPP = Northern Appalachia 13,000 Btu, <3.0 SO₂ Coal
Source: Deutsche Bank estimates

Figure 18: IB and PRB coal



Benchmark used: IB = Illinois Basin 11,800 Btu, 5.0 SO₂ Coal; PRB = Powder River Basin 8,800 Btu, 0.8 SO₂ Coal
Source: Deutsche Bank estimates

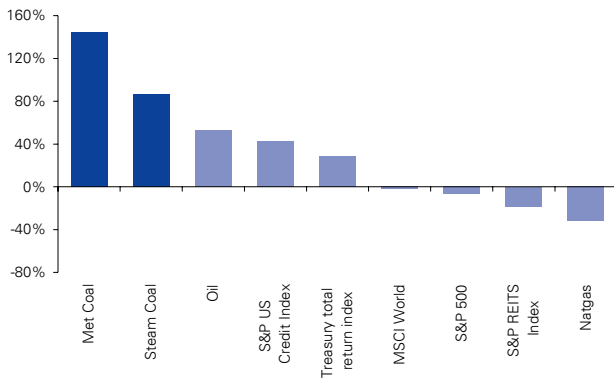
Price performance

Performance of coal vs. other assets and metals

Met and steam coal prices have outperformed vs. other asset classes in past 5 years

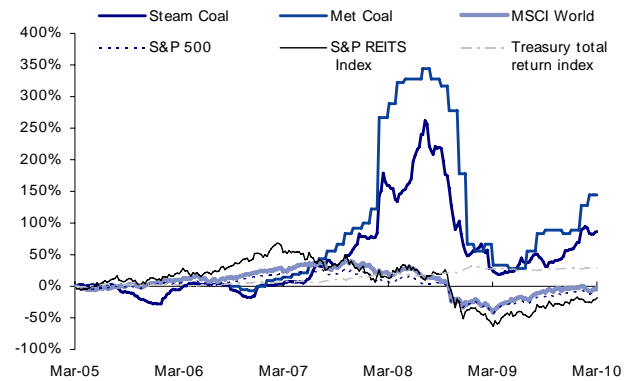
Met and steam coal prices have both outperformed most major asset classes over the last five years by meaningful amounts. From March 2005 through March 2008, both steam and met coal reached new heights on ongoing US dollar weakness and Chinese metals consumption on an upswing until the collapse of the financial markets changed the landscape with focus turning to evaporating demand from tight supply conditions and insatiable appetite for commodities coming from BRIC economies. After reaching troughs in 2009, both met and steam coal have started to outperform yet again other asset classes.

Figure 19: Returns of selected asset classes (5 yr)



Benchmark used: Steam Coal = Newcastle fob, Met Coal = Australian spot HCC fob, Oil = WTI, Natgas = US Nymex Henry Hub Natural Gas
Returns calculated using 5 year prices through March 5, 2010
Source: Bloomberg and Deutsche Bank

Figure 20: Performance of selected asset classes (5 yr)

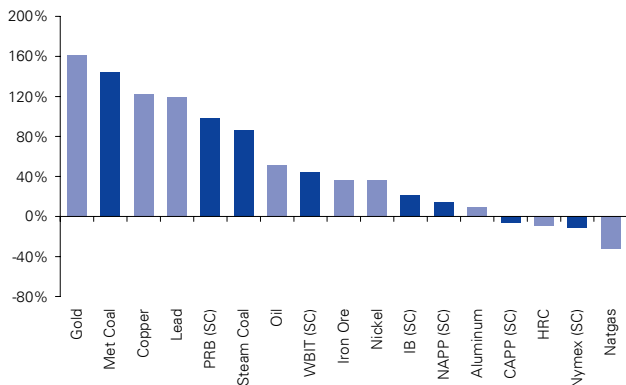


Benchmark used: Steam Coal = Newcastle fob, Met Coal = Australian spot HCC fob
Source: Bloomberg and Deutsche Bank

Both met and steam coal benchmark prices outshone by gold in past 5 years

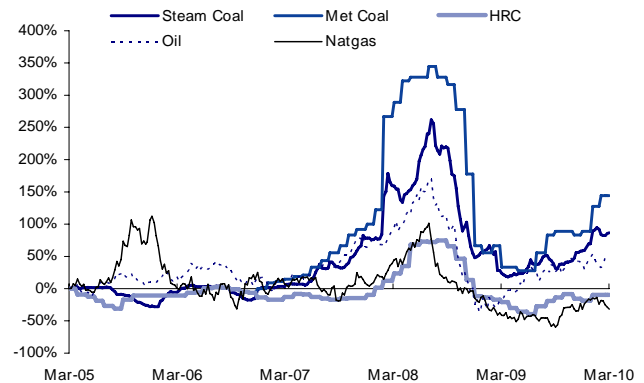
Though subject to the vagaries of other fuel prices – such as oil and in particular natural gas, met and steam coal benchmark prices have not only outperformed these two commodities by meaningful amounts, but also a number of others, though gold emerges as the winner over the last 5-year period. In the case of US coal prices by basin, the Western Basins (i.e., PRB and WBIT) appear to have gained more traction vis-à-vis the Eastern Basins. We believe that a reversal of fortune in oil and natural gas prices to previous levels bodes well for coal's future.

Figure 21: Returns of major commodities (5 yr)



SC = Steam Coal, MC = Metallurgical Coal; Benchmark used: Steam Coal = Newcastle fob, Met Coal = Australian spot HCC fob, Oil = WTI, Natgas = US Nymex Henry Hub Natural Gas; Iron Ore = China C&F spot
Returns calculated using 5 year prices through March 5, 2010
Source: Bloomberg and Deutsche Bank

Figure 22: Performance of major commodities (5 yr)



Benchmark used: Steam Coal = Newcastle fob, Met Coal = Australian spot HCC fob, HRC = Hard Rolled Coil US Midwest, Oil = WTI, Natgas = US Nymex Henry Hub Natural Gas
Source: Bloomberg and Deutsche Bank

Steam and coal benchmark coal prices at higher levels than DB estimates

Commodity 1Q10 performance – on an upswing

Recent steam and met coal prices denote levels that are higher than our current expectations for the year on tightening market conditions – with prices up 25% q/q and 44% y/y. These figures compare quite favorably with the natural gas and oil gas price increases – up 3% q/q and 46% y/y. One of our concerns lies in the still anemic natural gas prices – which could dampen the picture in the US should utility companies opt to switch to fuel alternatives. In the US, the PRB region has posted the most meaningful q/q increase, as inventory levels seem to have dwindled to more normalized levels vis-à-vis some of the other basins. Having said this, overall coal inventory levels at the utility plants remain fairly high compared to historical averages.

Figure 23: Commodity price performance (4Q08-1Q10)

March 23, 2010	QTD chg**	y/y chg*	q/q chg*	1Q10**	4Q09	3Q09	2Q09	1Q09	4Q08
Steam coal (\$/tonne)	10%	31%	23%	95.19	77.48	71.90	65.20	72.51	93.43
Met coal (\$/tonne)	26%	57%	27%	214.55	168.46	156.92	116.54	136.92	253.85
Average steam and met	18%	44%	25%						
Natural gas (\$/MMBtu)	-8%	14%	4%	5.12	4.90	3.40	3.80	4.49	6.32
Oil WTI (\$/bbl)	-2%	78%	2%	77.77	75.93	68.32	60.15	43.72	58.19
Average oil and gas	-5%	46%	3%						
CAPP (\$/ton)	12%	-2%	12%	58.98	52.59	47.90	50.10	60.13	83.46
IB (\$/ton)	-5%	-18%	-4%	43.94	45.60	43.68	43.19	53.31	71.12
NAPP (\$/ton)	7%	-15%	11%	57.59	51.67	46.94	48.58	68.04	98.54
PRB (\$/ton)	23%	-2%	29%	11.30	8.73	7.93	8.52	11.54	13.44
Average US coal	9%	-9%	12%						
US HRC	18%	15%	11%	649	585	538	439	562	803

*Calculated based on quarterly average prices; **Average of prices through March 22, 2010

Benchmark used: Steam Coal = Newcastle fob; Met Coal = Australian spot HCC fob; CAPP = Central Appalachia 12,500 Btu, 1.2 SO₂ Coal; NAPP = Northern Appalachia 13,000 Btu, <3.0 SO₂ Coal; IB = Illinois Basin 11,800 Btu, 5.0 SO₂ Coal; PRB = Powder River Basin 8,800 Btu, 0.8 SO₂ Coal

Source: Bloomberg and Deutsche Bank

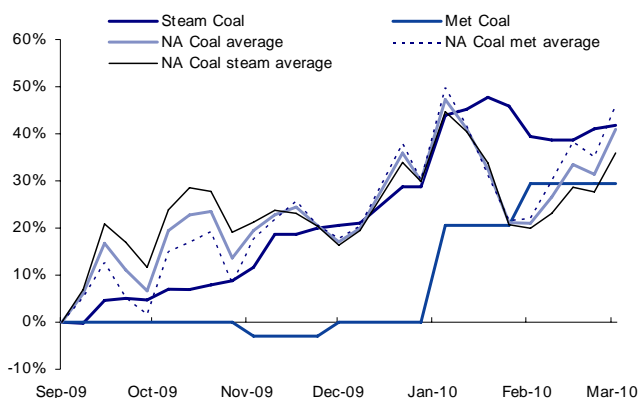
Met coal producers leading the pack

Met coal producers outperforming steam coal peers

With met coal prices once again surpassing the \$200/tonne levels last seen in 4Q08 as prices rolled over with the rest of the economy, it is no surprise to see that the NA Coal met producers group – defined as Alpha Natural and Peabody, has outperformed its NA Coal steam coal producers group – defined as Alliance Resource and Arch Coal. In fact the NA Coal met producer group has outperformed its peers over the past 6 months, 1 year and 5 years. However, the NA Coal steam producers outperformed during the past 10 years.

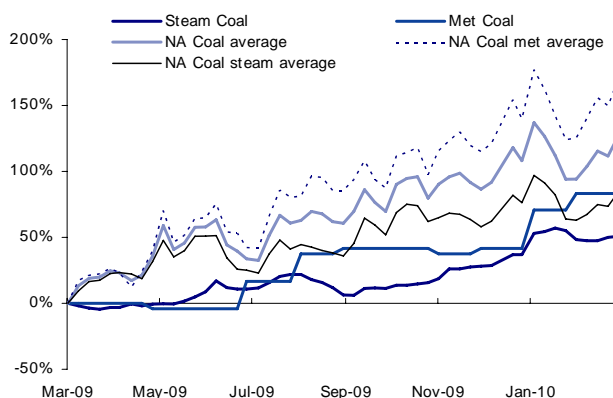
In our view, coal stocks tend to react not only to company-specific events, but also to the following drivers: 1) sentiment towards energy sector, 2) global dynamics shaping the seaborne market, 3) price levels of coal prices and other fuels – oil and natural gas, 4) coal production and inventory levels at utility companies, 5) direction of USD and freight rates, among others, and 6) news flow on the regulatory framework.

Figure 24: Equities vs coal price relative performance (6 mo)



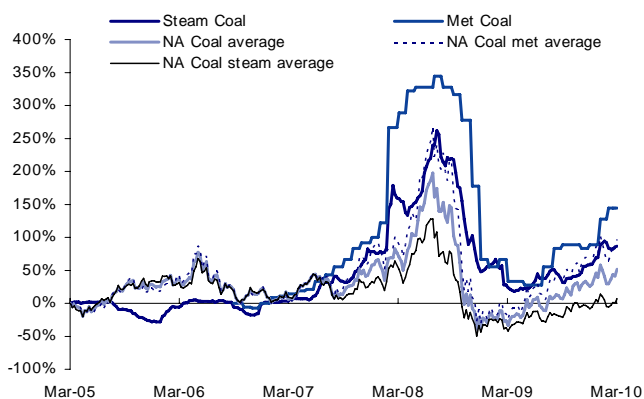
Benchmark used: Steam Coal = Newcastle fob, Met Coal = Australian spot HCC fob, NA Coal met average = Average of ANR and BTU prices, NA Coal steam average = Average of ARLP and ACI prices, NA Coal average = Average of ARLP, ANR, ACI and BTU prices
Source: Bloomberg and Deutsche Bank

Figure 25: Equities vs coal price relative performance (1 yr)



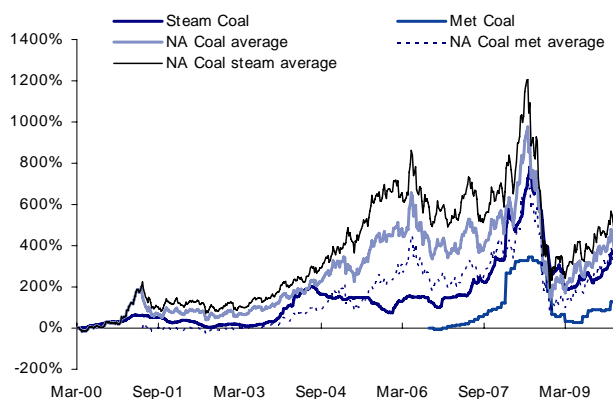
Benchmark used: Steam Coal = Newcastle fob, Met Coal = Australian spot HCC fob, NA Coal met average = Average of ANR and BTU prices, NA Coal steam average = Average of ARLP and ACI prices, NA Coal average = Average of ARLP, ANR, ACI and BTU prices
Source: Bloomberg and Deutsche Bank

Figure 26: Equities vs coal price relative performance (5 yr)



Benchmark used: Steam Coal = Newcastle fob, Met Coal = Australian spot HCC fob, NA Coal met average = Average of ANR and BTU prices, NA Coal steam average = Average of ARLP and ACI prices, NA Coal average = Average of ARLP, ANR, ACI and BTU prices
Source: Bloomberg and Deutsche Bank

Figure 27: Equities vs coal price relative performance (10 yr)



Benchmark used: Steam Coal = Newcastle fob, Met Coal = Australian spot HCC fob, NA Coal met average = Average of ANR and BTU prices, NA Coal steam average = Average of ARLP and ACI prices, NA Coal average = Average of ARLP, ANR, ACI and BTU prices
Source: Bloomberg and Deutsche Bank

NA Coal price performance

NA Coal has gained 96% in past year, outperforming the 48% increase in the S&P

Supported by a 44% average rise in coal prices (steam and met), the average coal stock in our coverage has gained 96% over the past year and has outperformed the 48% increase in the S&P. Over the past year Alpha Natural was the top performer returning 168% and Alliance Resource, the laggard at 44% (though not including dividend payments).

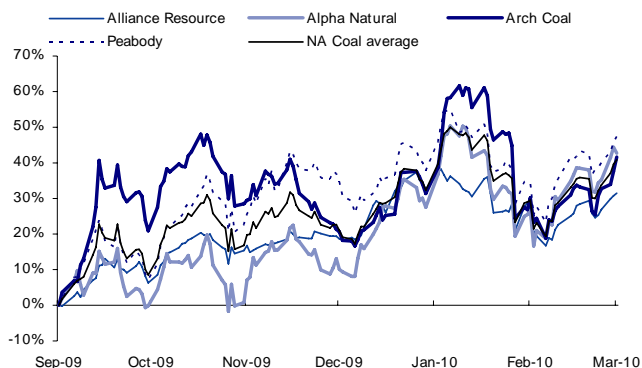
Though coal share prices tend to be rather volatile on a daily basis, the group as a whole tends to track the underlying coal commodity prices which it has exposure to – with company specific events aiding the outperformance or underperformance vis-à-vis its peers. We attribute part of the volatility to the lower market caps in the sector versus other industries including oil and natural gas majors and super majors.

Figure 28: NA Coal price performance

March 23, 2010		52 W	52 W	Close	Absolute Performance					
Company	Ticker	High	Low	Price	1W	1M	3M	6M	12M	YTD
Alliance Resource	ARLP.OQ	45.2	28.9	42.1	-3%	0%	-3%	16%	44%	-3%
Alpha Natural	ANR.N	52.7	16.2	48.3	-6%	3%	9%	27%	168%	11%
Arch Coal	ACI.N	27.4	12.6	24.2	-7%	8%	8%	7%	73%	9%
Peabody	BTU.N	50.9	24.4	47.8	-2%	2%	3%	25%	77%	6%
NA Coal simple average					-4%	3%	5%	22%	96%	7%
S&P 500 Index					1%	6%	5%	10%	48%	5%

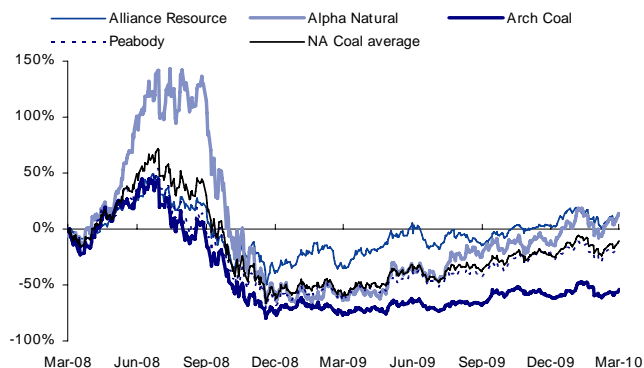
Source: Deutsche Bank

Figure 29: NA Coal relative performance (6 mo)



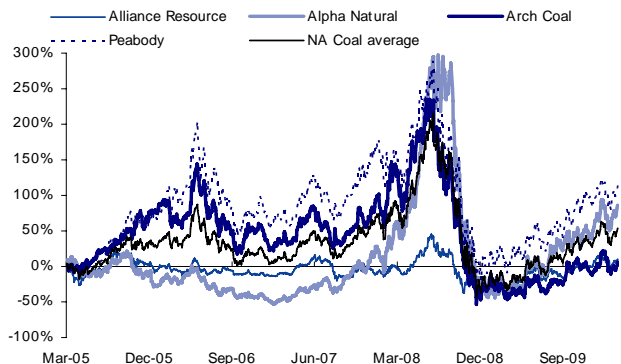
Source: Bloomberg and Deutsche Bank

Figure 30: NA Coal relative performance (2 yr)



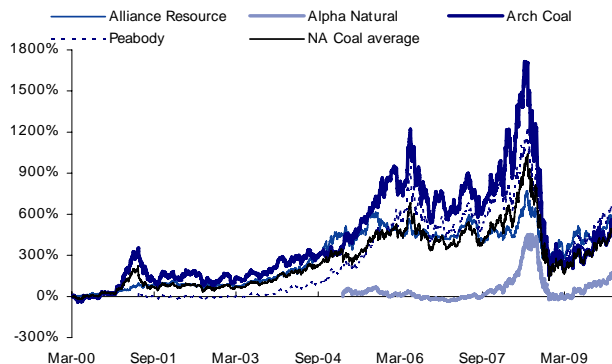
Source: Bloomberg and Deutsche Bank

Figure 31: NA Coal relative performance (5 yr)



Source: Bloomberg and Deutsche Bank

Figure 32: NA Coal relative performance (10 yr)



Source: Bloomberg and Deutsche Bank

Global coals (excl. NA Coals) have outperformed the S&P by almost 6x in past year

Overall global coals (including the NA Coals) are up 192% over the past 12 months, outperforming the S&P 500 returns of 48%. Amongst the global coals group, Rospadskaya and Macarthur Coal have been the outperformers over the same time period rising by 699% and 285%. The group on a global basis has outperformed the larger diversified miners.

Figure 33: Global coal sector price performance

March 23, 2010		52 W	52 W	Close	Target	Absolute Performance						Relative Performance					
Company	Ticker	High	Low	Price	Price	1W	1M	3M	6M	12M	YTD	1W	1M	3M	6M	12M	YTD
Alliance Resource.	ARLP.OQ	45.2	28.9	42.1	44.0	-3%	0%	-3%	16%	44%	-3%	-5%	-8%	-13%	-10%	-80%	-7%
Alpha Natural	ANR.N	52.7	16.2	48.3	65.0	-6%	3%	9%	27%	168%	11%	-7%	-4%	0%	0%	44%	7%
Arch Coal	ACI.N	27.4	12.6	24.2	32.0	-7%	8%	8%	7%	73%	9%	-8%	1%	-1%	-19%	-51%	4%
Peabody Energy	BTU.N	50.9	24.4	47.8	57.5	-2%	2%	3%	25%	77%	6%	-3%	-5%	-6%	-1%	-47%	1%
NA Coal average						-4%	3%	5%	22%	96%	7%	-5%	-4%	-4%	-4%	-28%	2%
Centennial Coal Co	CEY.AX	4.2	1.7	4.1	4.7	7%	6%	10%	23%	123%	3%	6%	-1%	1%	-3%	-1%	-1%
Macarthur Coal Ltd	MCC.AX	12.3	3.4	12.1	10.0	1%	12%	24%	28%	285%	7%	0%	4%	15%	1%	161%	3%
Rospadskaya	RASP.RTS	7.1	0.9	6.9	7.0	5%	28%	48%	125%	699%	47%	4%	21%	39%	99%	575%	43%
Europe + CIS + Australia average						4%	20%	35%	81%	489%	29%	3%	13%	26%	55%	365%	24%
BANPU	BANP.BK	636.0	213.0	612.0	740.0	1%	15%	6%	41%	194%	6%	-1%	8%	-4%	15%	70%	2%
Bumi	BUMI.JK	3,375.0	800.0	2,325.0	2,100.0	-7%	1%	2%	-31%	214%	-4%	-8%	-6%	-7%	-57%	90%	-9%
China Coal Energy	1898.HK	15.9	5.7	11.6	15.6	-2%	-2%	-15%	8%	111%	-18%	-3%	-9%	-24%	-18%	-13%	-23%
China Shenhua En.	1088.HK	41.0	17.4	32.1	41.0	-1%	-3%	-13%	-8%	95%	-16%	-2%	-10%	-22%	-34%	-29%	-20%
Indo Tambangraya	ITMG.JK	36,750.0	9,900.0	36,250.0	40,900.0	6%	16%	20%	47%	270%	14%	5%	9%	11%	21%	146%	9%
PT Bukit Asam	PTBA.JK	18,300.0	6,750.0	16,150.0	21,500.0	2%	2%	-5%	13%	143%	-6%	1%	-6%	-14%	-13%	19%	-11%
Asia average						-1%	-1%	-10%	-2%	113%	-13%	-2%	-8%	-20%	-28%	-11%	-18%
Anglo American	AAL.L	2,897.0	1,081.0	27.2	31.0	1%	11%	3%	33%	144%	0%	0%	4%	-6%	6%	21%	-4%
BHP Billiton	BLT.L	2,247.5	1,287.5	22.4	20.6	2%	10%	17%	31%	72%	12%	1%	3%	8%	5%	-51%	8%
Rio Tinto	RIO.L	3,823.0	1,784.4	38.2	40.2	3%	10%	19%	45%	150%	13%	2%	3%	10%	18%	27%	8%
Xstrata	XTA.L	1,247.0	425.0	11.6	15.3	0%	6%	11%	25%	205%	4%	-1%	-1%	2%	-1%	81%	-1%
Diversified Miners average						2%	10%	15%	34%	120%	10%	1%	3%	6%	8%	-4%	5%
Global wtd. average						1%	7%	9%	26%	124%	5%	0%	0%	0%	0%	0%	0%
S&P 500	SPSA	1,174.2	787.5	1,174.2		1%	6%	5%	10%	48%	5%						

Source: Bloomberg and Deutsche Bank estimates

Company comparison

Top coal producers by production in Seaborne market for coal

Though a fraction of total production, seaborne market relevant for setting benchmark prices

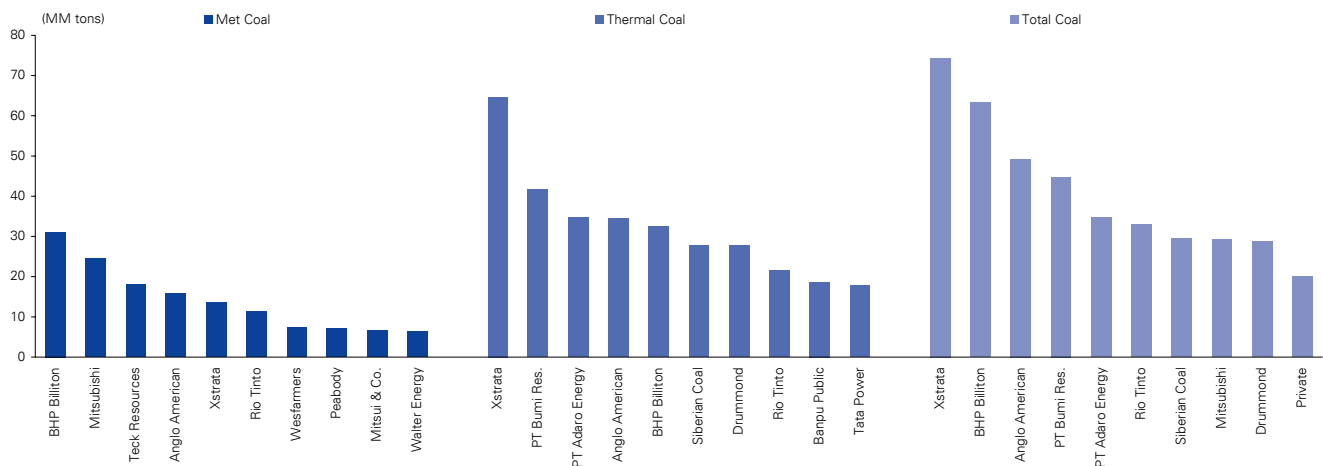
Though total annual global coal production averages ~7bn tons, the seaborne market averages less than 1bn tons, which is about the same amount that is produced and consumed in the US. Nonetheless, the seaborne market plays a key role in setting benchmark prices, as well as supplying the spot market. These dynamics have ramifications in every region across the globe – especially in those that can act as swing producers in the seaborne market, as these prices can trigger local producers to sell abroad if the economics merit such move, indirectly affecting the regional supply conditions and regional pricing.

Xstrata and BHP Billiton leading coal producers in the coal market

Xstrata and BHP Billiton, leading diversified mining companies with exposure in numerous commodities, are the top producers by contribution in the seaborne market for coal with ~74MM and ~63MM tons of sales volume in 2009 – representing in total ~14% of total traded volume. The “Top 3” coal producers in the seaborne market account for less than 20% of the volumes traded (this figure would be almost insignificant when compared to the total annual global coal production), denoting a fairly low degree of concentration vis-à-vis other metals & mining commodities, such as iron ore (~70% for Top 3), diamonds (~50%), and even gold (~21%) which is a fairly low concentrated industry. The Top 10 producers in the seaborne coal market represent slightly more than 40% of the total traded volume.

Coal denotes a fairly low degree of concentration vis-à-vis other metals & mining commodities

Figure 34: Top 10 coal producers by coal grade, 2009



Source: Company data and AME Mineral Economics (AME)

Seaborne market for steam coal is 3x larger than met coal

The seaborne market for steam coal is almost 3x larger than that for met coal. Xstrata is the largest contributor to the steam coal market with ~65MM tons of sales volume, and the sixth largest contributor to the met coal market with ~10MM tons. BHP is the fifth largest contributor to the steam coal market with ~32MM tons, but commands the met coal market with ~31MM tons, tending to be the price setter for yearly contracts.

Among NA Coal producers, Peabody ranks among Top 10 met coal producers

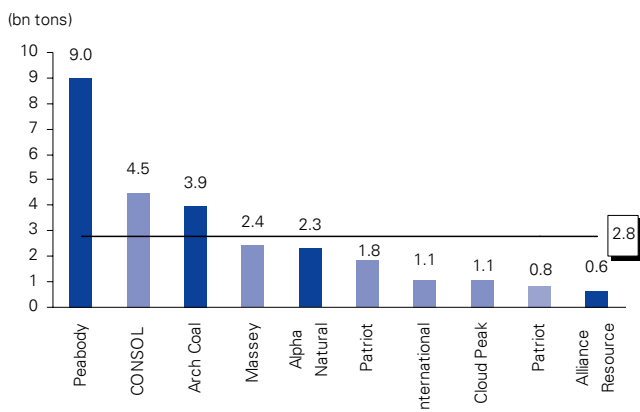
Among the NA Coal producers that we follow, Peabody is the only one that ranks within the Top 10 in the met coal seaborne market, exporting ~7MM tons annually from Australia (primarily to Asia). Given its proximity to this burgeoning market, Peabody has its goals set in growing its coal production destined to the seaborne market by 13 to 20MM tons within the next five years (8 to 13MM tons in met coal and 5 to 7MM tons in steam coal). All else equal, this run up in met coal production could place Peabody among the Top 3 players.

Top US coal producers by reserves and production

NA Coal coverage includes among the Top 10 US producers by reserves and production

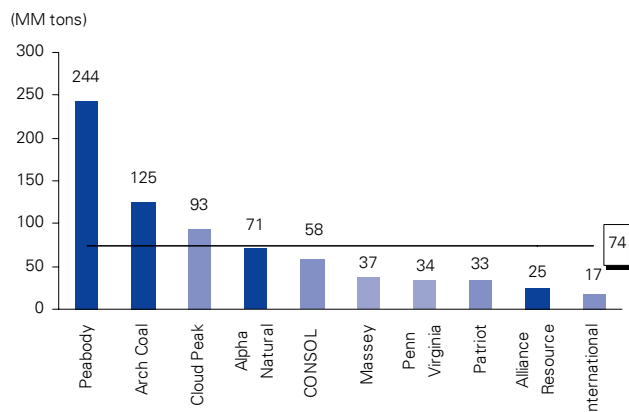
At 9.0bn tons of coal reserves and 244MM tons of production, Peabody is the world’s largest private sector coal company with operations in the US and Australia, accounting for ~3% of total mined coal production. With 192MM tons of coal produced in the US, Peabody commands ~18% of the total US production. Adding North American (NA) Coal coverage (Peabody, Arch Coal, Alpha Natural, and Alliance Resource) leads us to now follow the top producers in the US and more than 40% of US mined output – taking into consideration Peabody’s US production and normalized production for Alpha Natural (post merger with Foundation Coal) and Arch Coal (post acquisition of Jacobs Ranch). Our coverage provides us with a perspective among the different producing basins in the US – Central Appalachia (CAPP), Northern Appalachia (NAPP), Illinois Basin (IB), Powder River Basin (PRB), Western Bituminous (WBIT), as well as in Australia and the steam and met coal seaborne market.

Figure 35: Top 10 US coal producers by reserves, 2009



Source: Company data and Deutsche Bank estimates

Figure 36: Top 10 US coal producers by production, 2009

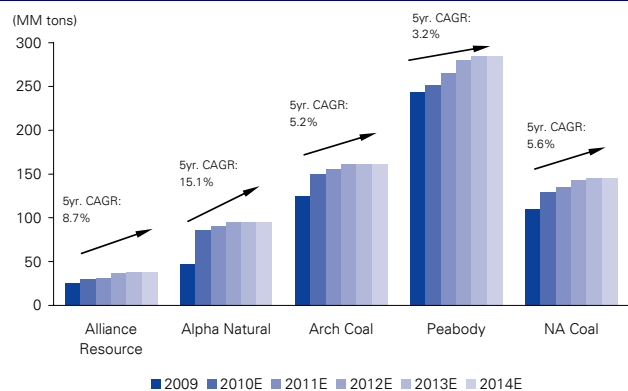


Source: Company data and Deutsche Bank estimates

Top four US coal producers produce ~100MM tons a year

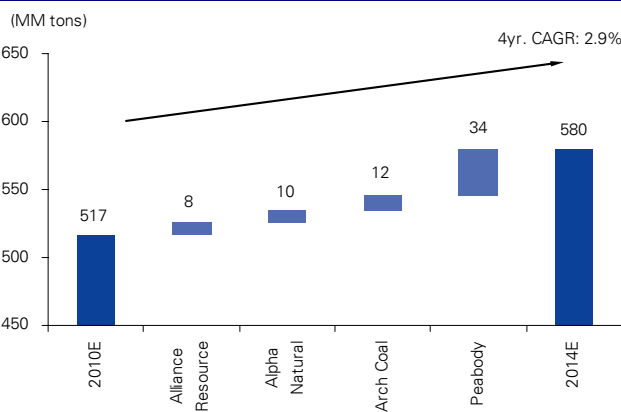
There is a large drop-off between the top four coal producers in the US (Peabody, Arch Coal, Cloud Peak, and Alpha Natural), which on a normalized basis produce ~100MM tons a year and the #5-10 producers which average ~35MM tons. Arch Coal solidified its second position following its Jacobs Ranch acquisition, and Alpha Natural catapulted into the third/ fourth spot (depending on consideration) following its merger with Foundation Coal. These transactions explain the fairly high 5.6% CAGR in coal output in next 5 years (from 2009) for our 4-stock coverage, which also include each company’s growth projects. The 2.9% CAGR in coal output over next 4 years (from 2010) better illustrates the growth post-transactions.

Figure 37: NA Coal production growth profile



Source: Company data and Deutsche Bank estimates

Figure 38: NA Coal production growth profile



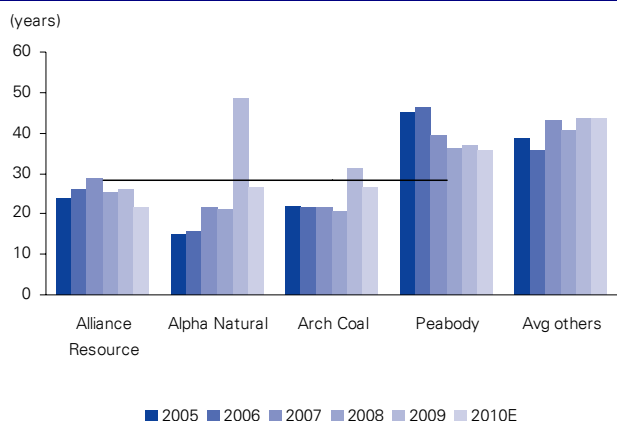
Source: Company data and Deutsche Bank estimates

NA Coal growth analysis

Mining companies must replenish exhausted reserves in order to keep operating

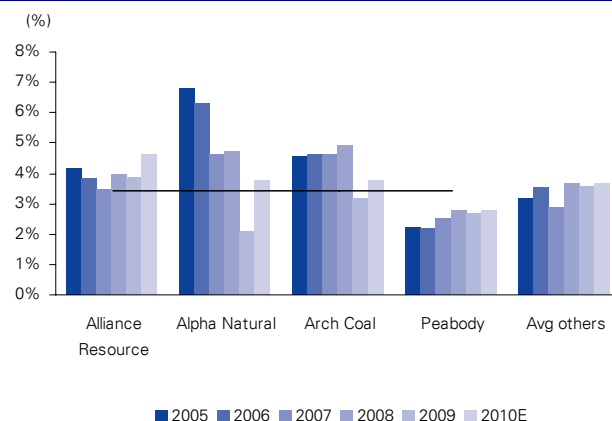
Our NA Coal coverage sample of Alliance Resource, Alpha Natural, Arch Coal and Peabody have ~28 year of mine life (assuming reserves as of December 2009 and expected 2010 production, as we believe this better reflects normalized levels post transactions). Put another way, the net attrition of NA Coal (annual production/mine reserves in a given year) is ~4%, so companies must grow reserve base by this amount to replace current production without further reducing mine life (higher rate considering increased production ahead). Nonetheless, given current growth expectations at each of the companies, we believe that this level of mine life provides each of the company with enough ammunition to keep operations afloat for years to come and afford them the flexibility to grow production from within. Still, companies like Arch Coal have been acquiring "options" in additional reserves could be developed in years to come, confirming the fact that mining is a finite life business and additional resources need to be added to be further developed.

Figure 39: NA Coal mine life vs. other coal producers



Source: Company data and Deutsche Bank estimates

Figure 40: NA Coal net attrition vs. other coal producers

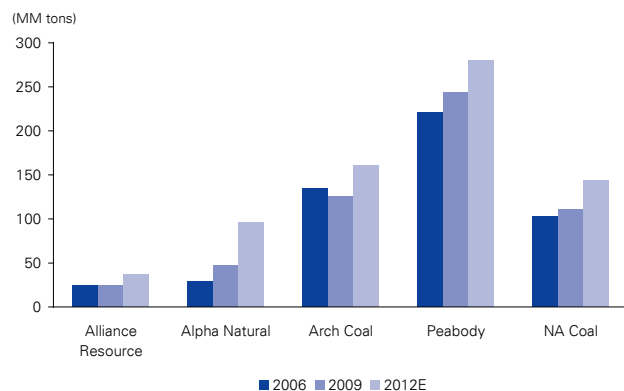


Source: Company data and Deutsche Bank estimates

Peabody and Arch Coal to add most in tonnage, though growth rates muted by larger production base

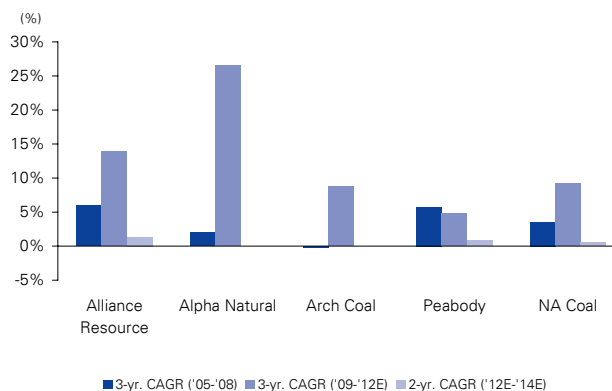
Within our NA Coal coverage, we expect Alpha Natural to triple its production by 2014 from levels prior to the Foundation Coal transaction – transaction alone adds ~70MM tons, explaining the 15.1% CAGR in coal output in next 5 years (from 2009). Alliance Resource also denotes a fairly high growth rate (8.7% 5 year CAGR from 2009), reflecting the impact of its growth projects (i.e., River View and Tunnel Ridge) from its lower production base. In fact, Peabody and Arch Coal could potentially add more meaningful tonnage amounts (34MM tons and 12MM tons, respectively), but impact is muted given the larger production base.

Figure 41: NA Coal production profile



Source: Company data and Deutsche Bank estimates

Figure 42: NA Coal production growth



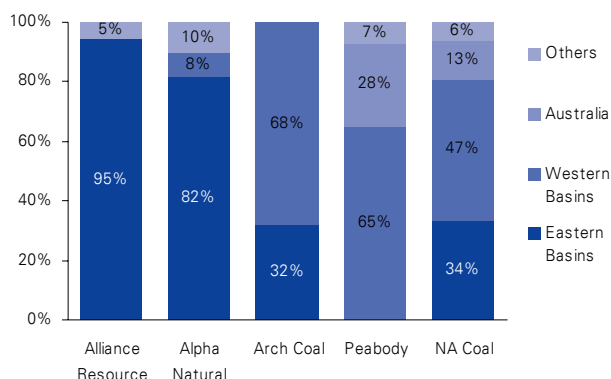
Source: Company data and Deutsche Bank estimates

NA Coal revenue mix by region and metal

NA Coal producers lead aces in regions of production, though Western Basins gaining momentum

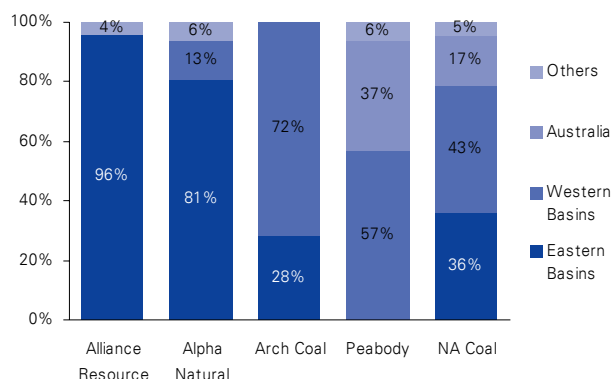
Geographically, NA Coal producers command leading positions in the regions where they currently produce coal – with Peabody and Arch Coal leading the charts in the Western Basins and Alpha Natural and Alliance Resource in the Eastern Basins. Peabody sells almost 30% of the total production coming out of the PRB and WBIT, and Arch Coal follows selling almost 20%. Alliance Resource sells almost 20% of the total production coming out of IB. Alpha Natural has solidified its position in CAPP and NAPP following its merger with Foundation Coal, and consequently has now gained exposure to the PRB. Over the years, we estimate that production coming out of the Western Basins will increase as projects are developed and logistics improve – with Alpha Natural, Arch Coal and Peabody gaining traction. Though Peabody has been developing projects in the US, the company is currently targeting increasing production in Australia over the years in order to take advantage of its proximity to the Asian market.

Figure 43: NA Coal revenue by region, 2009



Source: Company data and Deutsche Bank estimates

Figure 44: NA Coal revenue by region, 2014E

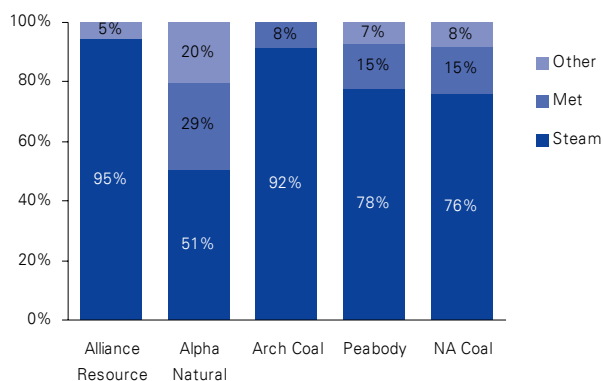


Source: Company data and Deutsche Bank estimates

Growth projects at Alpha Natural, Arch Coal and Peabody to increase met coal exposure in 5 years

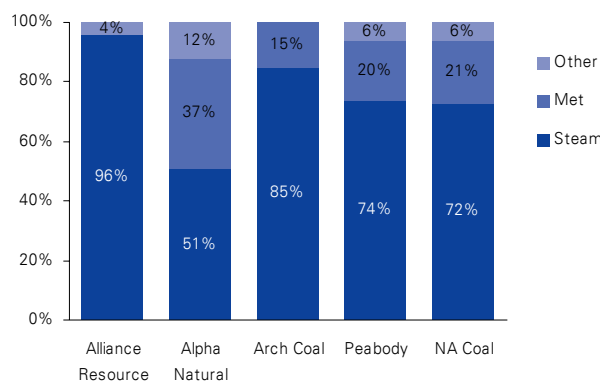
Tightening conditions bode well for both products globally and in the US. Nonetheless, NA Coal producers plan to capture an increasing piece of higher-priced met coal market – by either increasing met coal production and/or by switching steam coal from the Eastern Basins. Alpha Natural is the leading exporter of met coal in the US, Peabody is among the Top 10 producers in the met coal seaborne market, and Arch Coal is able to switch its high-volatility steam coal into met (planning to increase sales of the latter), albeit at a cost.

Figure 45: NA Coal revenue product mix, 2009



Source: Company data and Deutsche Bank estimates

Figure 46: NA Coal revenue product mix, 2014E



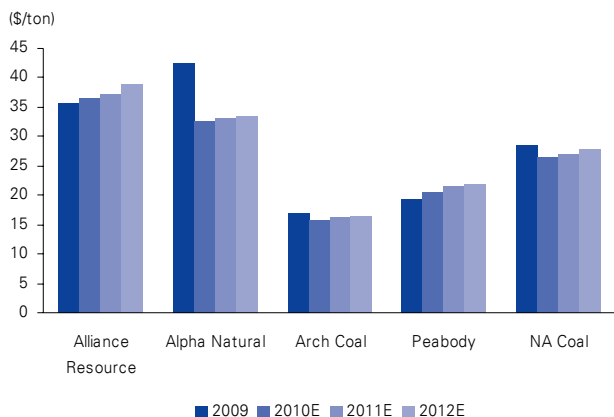
Source: Company data and Deutsche Bank estimates

NA Coal operating cash costs, margins and cash generation

Differing prices and costs per regions complicates cross comparisons across the sector

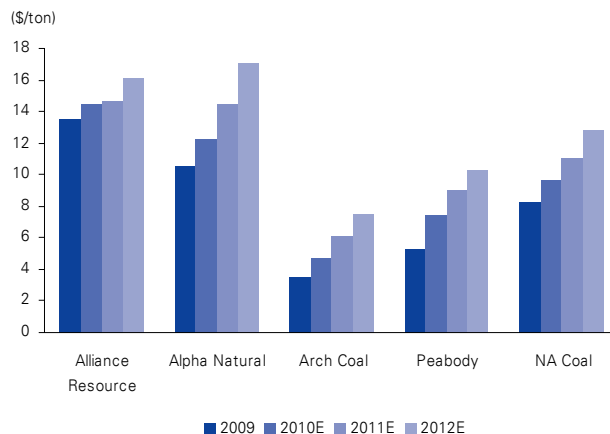
The coal industry requires quite a bit of digging in order to get to the true cash generation capability of each of the companies. Coal prices tend to vary per region due to the different characteristics each shares. In addition, operating cash costs also vary per region, a reflection of mining methodology predominantly used, processing requirement (if any), infrastructure in place and access to its end consumers. Thus, looking just at a cash cost curve is not necessarily an indication of how much a producer is able to rake in should prices hover at a certain level. Prices and costs tend to be higher in the Eastern Basins vis-à-vis some of the Western Basins. As the NA Coal producers have operations in multiple regions in the US, and in the case of Peabody abroad, we have focused our attention not just into the EBITDA per ton each company is able to generate, but also at the FCF per ton, which factors net interest expense, taxes, and capex needed to sustain and grow the business. To take it a step further, we compare the Excess Cash each company is able to redeploy back into the business after dividend payments are made.

Figure 47: NA Coal operating cash cost per ton



Source: Company data and Deutsche Bank estimates

Figure 48: NA Coal EBITDA per ton

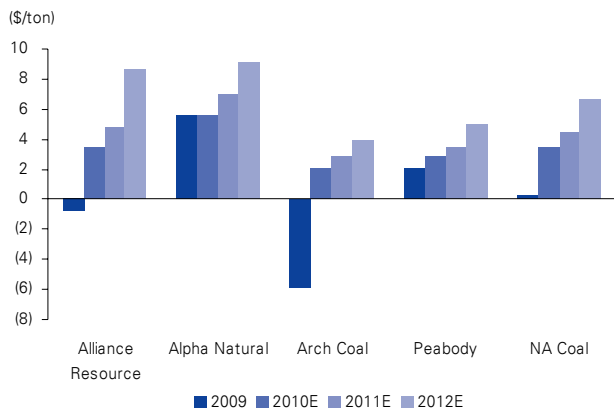


Source: Company data and Deutsche Bank estimates

NA Coal producers barely broke even in 2009; however prospects seem brighter

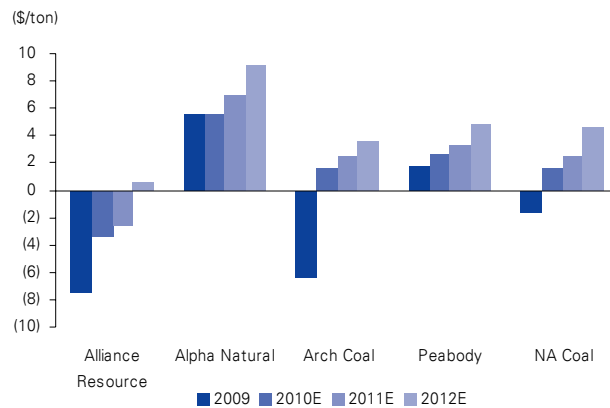
On average, the NA Coal producers generated ~\$8/ton in 2009 based on our calculations. However, after taking into consideration investments of ~\$7/ton, net interest expense of ~\$1/ton, and dividends of \$2/ton, Excess Cash was limited, with the exception of Alpha Natural and Peabody. As market conditions improve, we anticipate that EBITDA for the group could increase to ~\$13/ton by 2012; and FCF to average ~\$7/ton and Excess Cash ~\$5/ton.

Figure 49: NA Coal FCF per ton



Source: Company data and Deutsche Bank estimates

Figure 50: NA Coal Excess Cash per ton



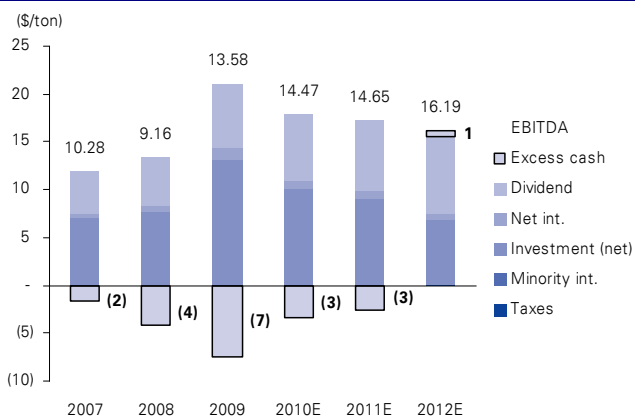
Source: Company data and Deutsche Bank estimates

Sources and uses of cash per company

Digging into the nitty gritty allows us to evaluate what the companies have done and could deliver over the years

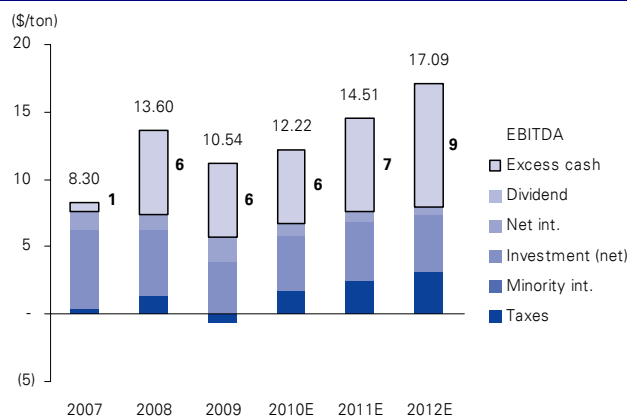
As we cut through the layers, we conclude that Alpha Natural, which currently does not have a dividend policy in place nor does it pay a dividend, leads the group as you dig deeper, and based on our estimates, we believe that it should continue to do so in years to come. However, should it decide to start rewarding dividends to its shareholders, the playing field would level out. To our surprise, while Arch Coal should generate the lowest EBITDA per ton among the group due to its exposure to the PRB, it could generate FCF per ton and Excess Cash per ton which could rival those of Peabody, based on our estimates. Part of the reason stems from the fact that Arch Coal’s capex for the next few years is actually lower than the investments made over the past years, whereas Peabody has a 5-year growth plan in place in Australia, as well as a few projects in the US. Nonetheless, Peabody is able to benefit from its leading position and from its exposure to the seaborne market in Asia. On the other hand, we anticipate that Alliance Resource should generate high EBITDA per ton, but given its status as an MLP, it is required to pay handsome dividends to its shareholders – leaving the company, in our view, with limited amount of financial flexibility after these have been made, even though the company pays virtually no taxes.

Figure 51: Alliance cash sources and uses per ton



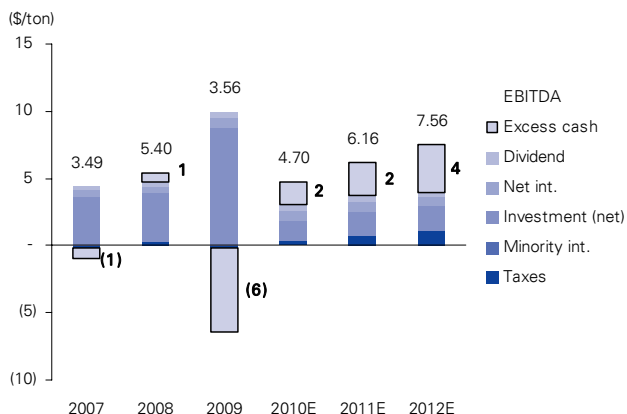
Source: Company data and Deutsche Bank estimates

Figure 52: Alpha Natural cash sources and uses per ton



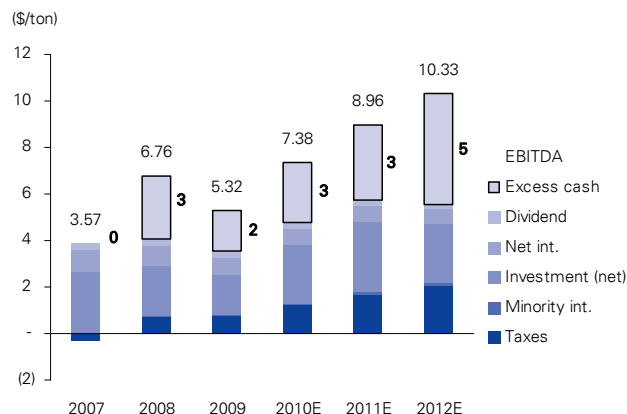
Source: Company data and Deutsche Bank estimates

Figure 53: Arch Coal cash sources and uses per ton



Source: Company data and Deutsche Bank estimates

Figure 54: Peabody cash sources and uses per ton



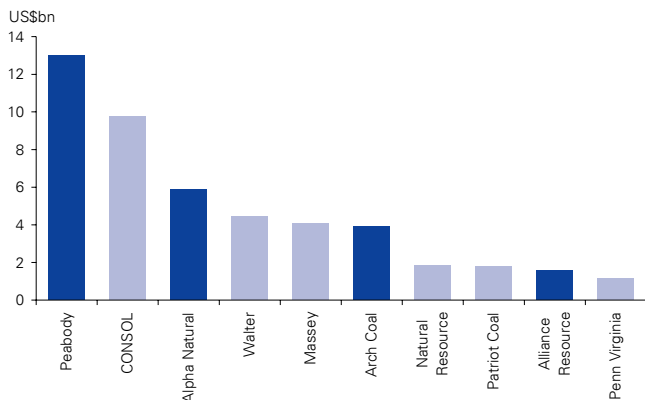
Source: Company data and Deutsche Bank estimates

Valuation

NA Coals offer investors a leverage play to economy and optionality on company-specific growth prospects

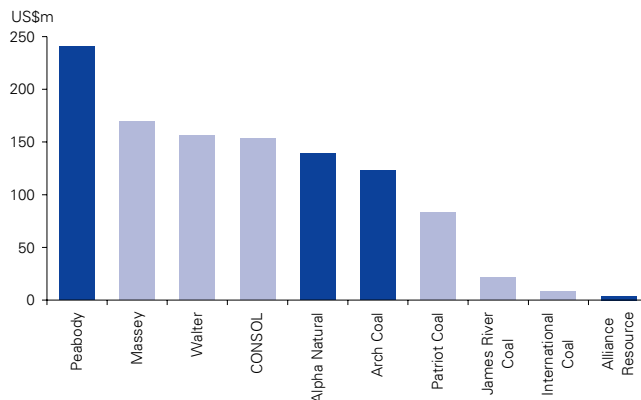
Our NA Coal coverage ranks within the top 10 US coal companies, both in terms of market capitalization and liquidity. Peabody leads the charts, Alpha Natural and Arch Coal are somewhere in the middle, and Alliance Resource lags behind. Peabody is the most liquid NA Coal with an average daily traded volume of \$243 million, followed by Alpha Natural (\$139 million), Arch Coal (\$118 million), and Alliance Resource (\$4 million). Our group at large has free float ratios, averaging 99.2% excluding Alliance Resource (88.4% including); and provides investors with leverage to the economy – reflected in underlying coal prices and optionality on company’s particular production growth profiles.

Figure 55: Top 10 US coal producers market cap, Mar 2010



Source: Company data and Deutsche Bank estimates

Figure 56: Top 10 US coal producers’ trading volume (6mth)

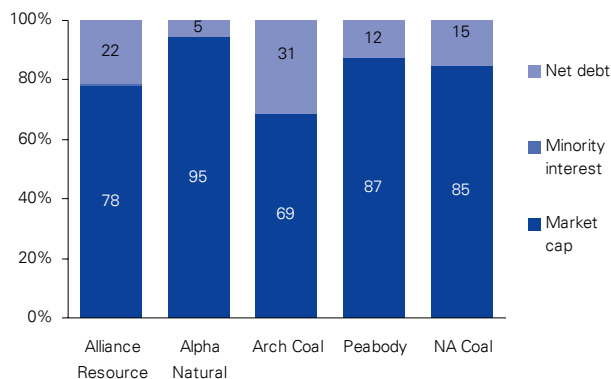


Source: Company data and Deutsche Bank estimates

NA Coals offer straightforward balance sheets and ownership structures

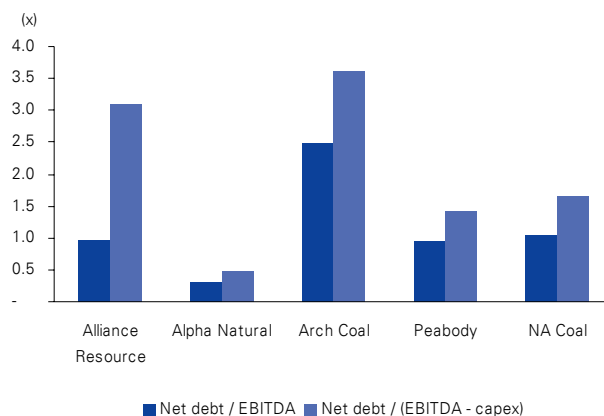
NA Coals offer fairly straight forward balance sheets and ownership structures. With little or no minority interests, there is no need to pro-rata production in order to derive attributable EBITDA, as is sometimes the case with other mining companies having complex ownership structures sharing mining operations. However, capital structures vary across the NA Coals, with Alpha Natural having a fairly debt-free balance sheet on one end of the spectrum and Arch Coal holding larger-than-average net debt and leverage ratios. Notwithstanding, based on our earnings expectations, should our expectations materialize, Arch Coal denotes a de-leveraging story, on fairly subdued capex over the next few years.

Figure 57: NA Coal EV composition



Source: Company data and Deutsche Bank estimates

Figure 58: NA Coal leverage



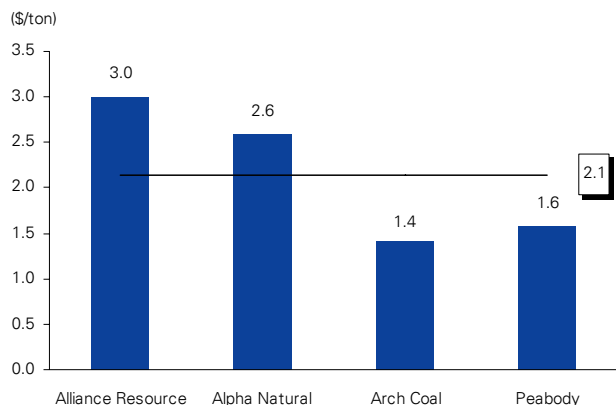
Current net debt over 2010E EBITDA and capex; Source: Company data and Deutsche Bank estimates

NA Coal valuation metrics

Higher EBITDA/ton generators garner higher multiples based on reserves and production

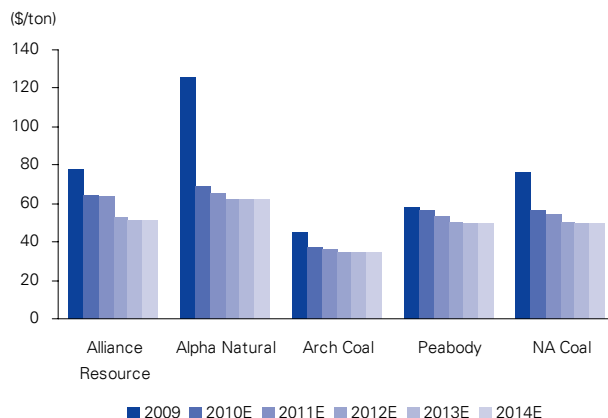
There are a number of valuation metrics that we have analyzed carefully in an attempt to cross-check our Price Targets. We believe that Enterprise Value (EV) multiples to reserves and production provide a snapshot of the underlying mining assets and general expectations of what the market anticipates these assets could potentially generate. In our opinion, cross comparing some of these multiples could tend to be a bit of a daunting task, as they do not always capture the scale of the operations nor what we believe are the true cash generation capabilities of each of the companies or embedded costs in growing operations or keeping operations at current production rates. Nonetheless, we highlight that the NA Coal group trades within a range where the higher EBITDA/ton generators garner higher multiples, perhaps a corroboration that the market focuses on EBITDA as a valuation tool.

Figure 59: NA Coal EV per ton of reserve



Source: Company data and Deutsche Bank estimates

Figure 60: NA Coal EV per ton of production

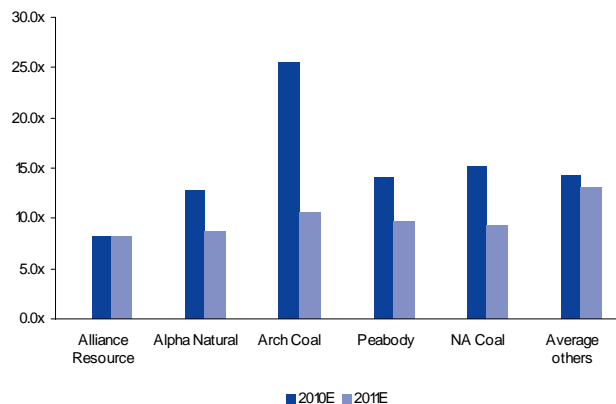


Source: Company data and Deutsche Bank estimates

Larger sized companies tend to trade at higher P/E and EV/EBITDA multiples

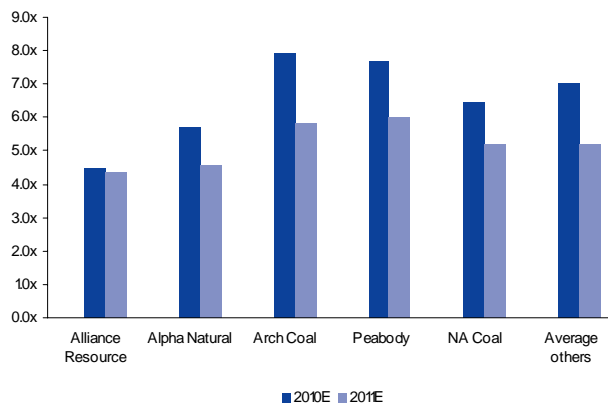
Forward P/E and EV/EBITDA multiples by no means truly reflect the cash flow capabilities each company can garner as these exclude ongoing costs to sustain or grow the business. Nonetheless, we believe that investors closely monitor these metrics due to their ease of use. Further, while not necessarily reflecting the LT prospects for each company, P/E and EV/EBITDA multiples bake expectations what market exposure each of the companies has – how much volume has already been priced in vis-à-vis movements in the spot market. On these metrics, the larger companies tend to trade at higher multiples – reason why we believe Alpha Natural should re-rate from its historical multiple given its new size and scale.

Figure 61: NA Coal PE comparison vs. peers



Source: Company data and Deutsche Bank estimates

Figure 62: NA Coal EV/EBITDA comparison vs. peers



Source: Company data and Deutsche Bank estimates

FCF and Excess Cash calculations better reflect cash generation capability and staying power

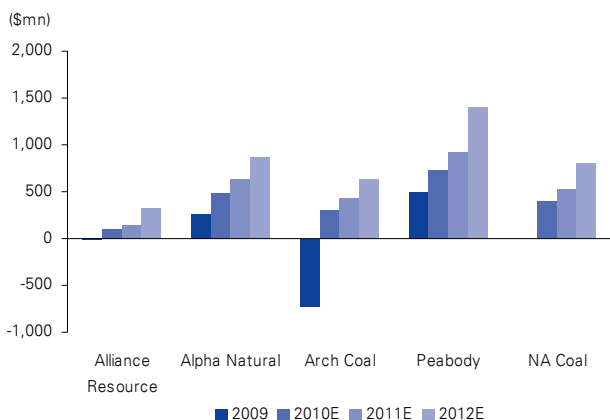
Cash flow metrics denote a different perspective worth digging into

As mentioned in our Company comparison section, we note that high EBITDA per ton does not always translate into high FCF per ton or Excess Cash per ton for that matter. In our view, FCF per ton ratios denote how much each of the NA Coal companies is able to generate and potentially distribute as dividends to shareholders and redeploy back into the business after taking into account capex, interest expense and taxes. However, it is the Excess Cash per ton ratio that provides us with an idea of how the financial flexibility of the company should evolve if our operating assumptions materialize in the future. On an absolute basis, Peabody leads in terms of FCF generation and Excess Cash, followed by Alpha Natural.

On FCF and Excess Cash yields, Alpha Natural and Arch Coal seem overlooked by the market

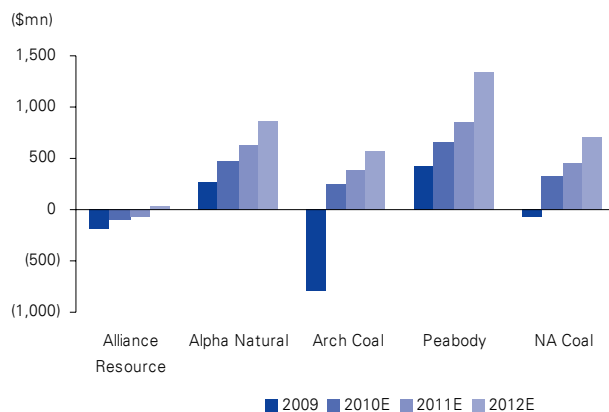
We believe that FCF and Excess Cash yields provide us with a different lens to cross compare the companies and see whether the market reflects the true cash generation power that some of these companies have. Based on these parameters, Alpha Natural and Arch Coal do not seem to currently reflect their true cash generation potential. Thus, we believe that more upside potential to its share price is warranted (vis-à-vis its peers) as the markets begin to reward these two companies on these metrics. While we acquiesce with the fact that Peabody is an undeniable leader in the space, we believe that the market is already factoring this into the current share price. Although Alliance Resource FCF yields are hard to overlook, yield goes to pay required dividends that ultimately limits the company's financial flexibility as denoted in its Excess Cash yields.

Figure 63: NA Coal FCF generation



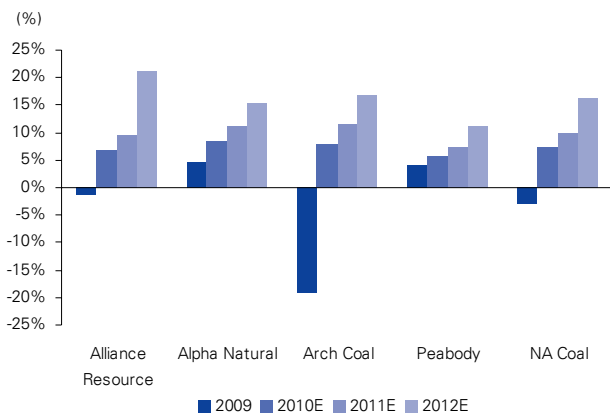
Source: Company data and Deutsche Bank estimates

Figure 64: NA Coal excess cash



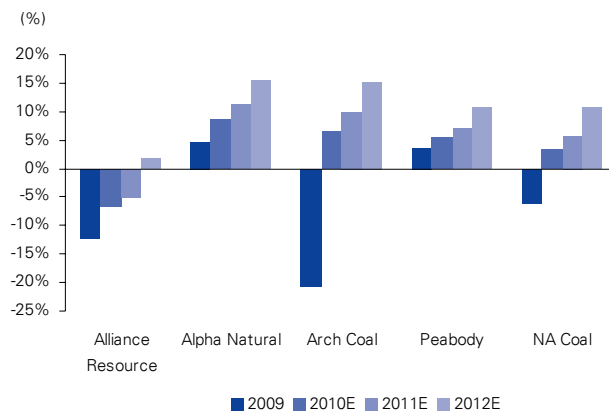
Source: Company data and Deutsche Bank estimates

Figure 65: NA Coal FCF yield



Source: Company data and Deutsche Bank estimates

Figure 66: NA Coal excess cash yield



Source: Company data and Deutsche Bank estimates

NA Coal Price Target derivation and risks

**PT based on 6-7x 2011
EV/EBITDA multiples for
leading NA coal producers**

Average forward EV/EBITDA multiples over 10, 5 and 3 years denote a degree of consistency within each of our NA Coal producers, despite the rather volatile nature of share prices in the sector. Out of our three leading NA Coal producers, we note that Peabody and Arch Coal have re-rated over the years as the companies grew in size and scale, and more recently Alpha Natural has started to re-rate. Hence, we apply a 7x EV/EBITDA multiple to the two leading NA coal producers, Peabody and Arch Coal, fairly in line with their historical average; and a 6x EV/EBITDA to the new emerging leading producer (post its merger with Foundation Coal) Alpha Natural as it re-rates on increased size and scale from 5x historical average. Given its MLP status, we value Alliance Resource based on a dividend discount model, but note its historical forward EV/EBITDA multiple has de-rated over the years, perhaps due to its somewhat constrained balance sheet and smaller size.

**We rate Alpha Natural and
Arch Coal as Buy; Alliance
Resource and Peabody as
Hold**

- **\$44/share for Alliance Resource is based on 1.1x DDM of \$39/share.** We believe that the best way to value Alliance Resource is on expectations of what its required dividend stream should be – which based on our estimates imply a ~9% average dividend yield. Our dividend discount model for the company assumes a 10% Ke and 1% terminal growth rate (based on our knowledge of the asset base and expectations of the long-term growth). We rate Alliance Resource a Hold.

**Alpha Natural is our Top
Pick**

- **\$65/share for Alpha Natural is based on 6x 2011E EBITDA of \$1.3 billion.** We believe that Alpha Natural should trade at a higher multiple than its historical average of 5x given its increased size following the recent Foundation Coal transaction, the location of its asset base, operations and mining projects, growth prospects and value extraction potential post transaction. Further, its position in the met coal market bodes well for the company's earnings potential. Significant upside to our PT leads us to rate Alpha Natural a Buy.

- **\$32/share for Arch Coal is based on 7x 2011E EBITDA of \$1.0 billion.** We believe that Arch Coal should trade at the high end of the range of its peer group given its leading position, the size and location of its asset base, operations and mining projects, growth prospects and value extraction potential post recent acquisition. Further, flexibility to position itself in the met coal market enhances its earnings potential in the foreseeable future. Significant upside to our PT leads us to rate Arch Coal a Buy.

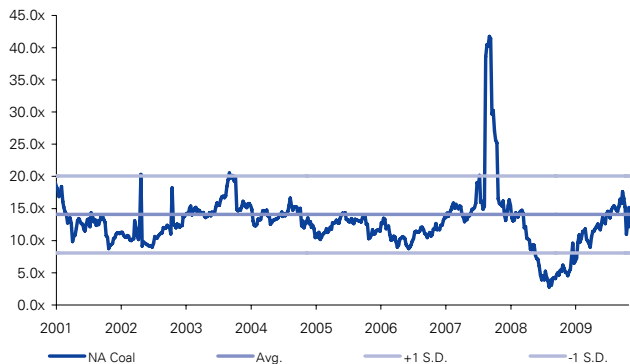
- **\$57.5/share for Peabody is based on 7x 2011E EBITDA of \$2.4 billion.** We believe Peabody should trade at the high end of the range of its peer group, given the size and location of its asset base, operations and mining projects, growth prospects – particularly in Australia. Further, its position in the met coal market bodes well for the company's earnings potential in the foreseeable future. Nonetheless, we believe that Peabody should trade below its historical 8x average multiple given relevant peer group (i.e., Alpha Natural) and larger more diversified mining companies are currently trading below this level. We rate Peabody a Hold.

**Sector risks include:
Economic growth, technical
and operational risks for
existing and new mines,
funding risk, fiscal or mining
legislation changes,
environmental
requirements, labor, and
difference between spot and
contracted pricing in place**

NA Coal sector risks

Key risks to our sector outlook include pullback in global economic growth, slowdown in energy and/or steel consumption, coal inventory increase at utility companies, direction of energy prices – which could translate to switching between fuels, changes in energy and/or carbon policy and consequent ramifications in switching fuels. These dynamics tend to set the stage for global coal supply and demand fundamentals, and ultimately on the dynamics unfolding in the US. In general, the sustainability of current production and potential increases from current levels, depend on market conditions, volatility of currencies, definition of reserves, permitting, environmental requirements, staffing and equipment availability. Other risks are associated with the direction of input costs, fiscal regime and mining legislation. Further risks for the coal companies stem from contract pricing in place vis-à-vis the direction of spot prices.

Figure 67: NA Coal forward PE



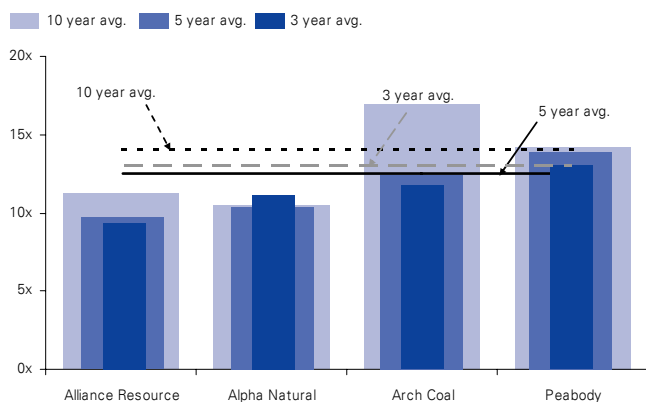
Source: Capital IQ and Deutsche Bank

Figure 68: NA Coal forward EV/EBITDA



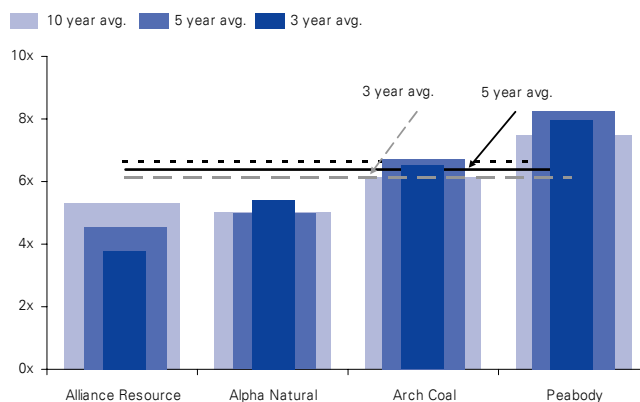
Source: Capital IQ and Deutsche Bank

Figure 69: NA Coal forward PE



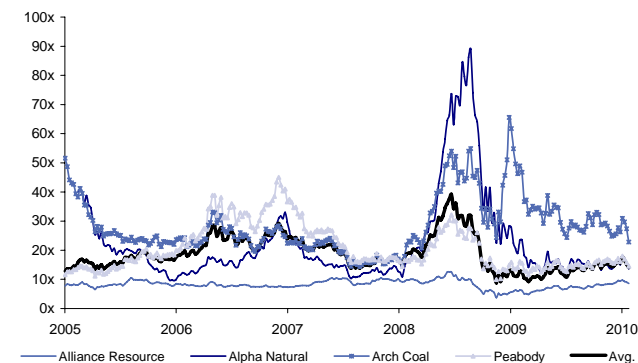
Source: Capital IQ and Deutsche Bank

Figure 70: NA Coal forward EV/EBITDA



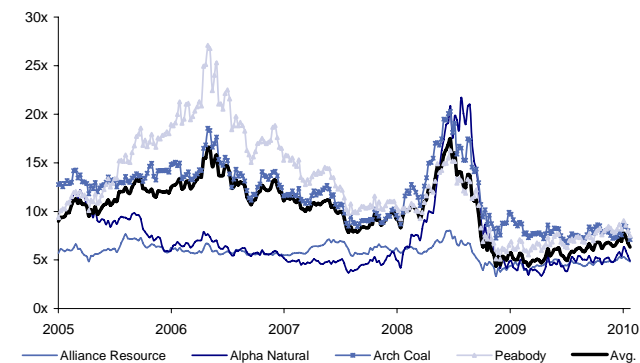
Source: Capital IQ and Deutsche Bank

Figure 71: NA Coal forward PE (5yr)



Source: Company data and Deutsche Bank estimates

Figure 72: NA Coal forward EV/EBITDA (5yr)



Source: Company data and Deutsche Bank estimates

NA Coal sector valuation

NA Coals trading at a P/E ratio of ~10x PE and 5.4x EV/EBITDA on 2011E

We believe 2011 forecasts are the relevant price target setting metric, as stocks tend to discount earnings potential 12-18 months ahead in our experience. Based on DB estimates, our NA Coal coverage is trading at a P/E multiple of ~10x 2011E earnings, and an EV/EBITDA multiple of ~5.4x. Multiples are below sector's recent 3 year forward average of 12x and 6x, respectively.

NA Coals trading at discount to international peers, but at premium to diversified mining companies

The NA Coal sector is trading at lower multiples relative to its international peers, which are currently at a P/E multiple of ~11x 2011E earnings, and an EV/EBITDA multiple of ~6x. Relative to the diversified mining companies, which typically benefit from a low cost base due to the scale of their operations, as well as to a myriad of commodity prices, some of which have already doubled or tripled from last year's low, the NA Coal sector is trading at higher multiples than the 9x P/E and 5x EV/EBITDA multiples.

Figure 73: Global coal valuation matrix

March 23, 2010		Rep	Close	Target	Mkt cap	EV/EBITDA		P/E		P/BV	Div. Yld	ROE	FCF Yld	ND/Eq.		
Company	Ticker	Rec	Ccy	Price	Price	(US\$m)	2010E	2011E	2010E	2011E	2010E	2010E	2010E	2010E	2010E	
Alliance Resource	ARLP.OQ	Hold	USD	42.1	44.0	1,544	4.6	4.6	8.4	8.4	4.1	8.3	48.9	6.7	115	
Alpha Natural	ANR.N	Buy	USD	48.3	65.0	5,866	5.8	4.2	13.1	8.9	1.9	0.0	14.7	8.3	11	
Arch Coal	ACI.N	Buy	USD	24.2	32.0	3,947	8.1	5.6	26.2	11.0	1.8	1.5	6.8	7.8	79	
Peabody Energy	BTU.N	Hold	USD	47.8	57.5	12,785	7.8	6.0	14.5	10.0	2.8	0.5	19.3	5.7	40	
Americas average						24,142	7.2	5.4	15.7	9.8	2.5	1.0	18.1	6.7	44	
Centennial Coal Co	CEY.AX	Buy	AUD	4.1	4.7	1,490	10.0	5.4	21.5	9.9	2.2	1.6	11.2	-8.3	43	
Macarthur Coal Ltd	MCC.AX	Hold	AUD	12.1	10.0	2,877	11.3	4.9	19.8	8.2	2.7	1.7	12.9	2.6	-18	
Raspadsкая	RASP.RTS	Buy	USD	6.9	7.0	5,372	8.6	6.2	13.8	10.4	3.4	0.4	24.8	6.1	-9	
Europe + CIS + Australia average						9,740	9.6	5.7	16.8	9.6	3.0	1.0	19.2	2.9	-4	
BANPU	BANP.BK	Buy	THB	612.0	740.0	5,144	9.1	5.2	10.9	7.6	2.4	2.9	22.0	5.1	18	
Bumi	BUMI.JK	Sell	USD	2,325.0	2,100.0	4,949	5.7	3.3	11.9	7.8	1.7	0.0	14.2	5.5	67	
China Coal Energy	1898.HK	Buy	CNY	11.6	15.6	19,848	6.8	5.0	12.3	9.4	1.7	2.4	14.1	5.6	-29	
China Shenhua En.	1088.HK	Buy	CNY	32.1	41.0	93,531	9.6	7.5	16.7	13.3	2.7	1.7	16.7	1.4	0	
Indo Tambangraya	ITMG.JK	Buy	USD	36,250.0	40,900.0	4,494	8.3	4.3	14.7	7.7	5.1	4.2	34.0	6.6	-54	
PT Bukit Asam	PTBA.JK	Buy	IDR	16,150.0	21,500.0	4,082	8.6	4.9	13.7	8.6	5.1	3.9	36.6	6.2	-74	
Asia average						132,049	8.8	6.6	15.5	12.0	2.7	1.9	17.6	2.6	-5	
Anglo American	AAL.L	Buy	USD	27.2	31.0	51,101	5.7	4.0	10.8	7.0	1.5	1.3	14.3	2.6	33	
BHP Billiton	BLT.L	Hold	USD	22.4	20.6	188,644	8.1	5.9	14.3	10.1	3.9	2.5	28.3	1.5	17	
Rio Tinto	RIO.L	Buy	USD	38.2	40.2	113,551	6.3	4.8	11.2	8.6	2.1	1.6	18.5	7.7	16	
Xstrata	XTA.L	Buy	USD	11.6	15.3	51,113	5.4	3.5	9.3	5.6	1.2	0.3	12.7	0.8	22	
Diversified Miners average						404,408	7.0	5.1	12.4	8.7	2.7	1.8	21.8	3.3	19	
Global weighted average						570,340	7.5	5.5	13.3	9.5	2.7	1.8	20.7	3.3	14	
Global simple average							7.6	5.0	14.3	9.0	2.7	2.0	20.6	4.2	16	
Alliance vs. wtd avg.								-39%	-17%	-37%	-12%	50%	361%	137%	105%	700%
Alpha vs. wtd avg.								-22%	-23%	-1%	-7%	-31%	nm	-29%	153%	-23%
Arch vs. wtd avg.								8%	3%	97%	16%	-35%	-17%	-67%	137%	446%
Peabody vs. wtd avg.								5%	9%	9%	6%	2%	-72%	-6%	73%	174%

Source: Bloomberg and Deutsche Bank estimates

NA Coal Price Targets sensitivities to multiples

NPVs incredibly sensitive to minor changes in operating assumption, LT growth rates and discount rates

The following table highlights that our Price Targets for the NA Coal producers based on a 6x 2011 EV/EBITDA multiple, translate to about 12x 2011 P/E and 1.2x our NPVs calculated under a DCF methodology (except for Alliance Resource, which is based of a dividend discount model). These multiples serve as a cross check to our numbers. Our DCFs take into consideration a 9% WACC, with 10% Ke and 5.6% post-tax Kd, and a conservative assumption of 1% LT growth. In addition, we include what our Price Targets would translate to should different multiples than those currently being used are taken as a proxy.

PT based on 6x 2011 EV/EBITDA multiple, which translate to 12x 2011 P/E and a 1.2x our NPVs

Figure 74: NA Coal valuation snapshot

	Alliance Resource	Alpha Natural	Arch Coal	Peabody	Average
Ticker	ARLP	ANR	ACI	BTU	
Rating	Hold	Buy	Buy	Hold	
Latest price	\$42.12	\$48.26	\$24.22	\$47.76	
Price Target (PT)	\$44	\$65	\$32	\$58	
Target EV/EBITDA multiple	5x	6x	7x	7x	6x
% return	4%	35%	32%	20%	23%
Implied P/E	9x	12x	15x	12x	12x
Implied P/NAV	1.1x	1.3x	1.3x	1.3x	1.2x
Historical EV/EBITDA multiple					
Past 3-years	4x	5x	7x	8x	6x
Past 5-years	5x	5x	7x	8x	6x
Past 10-years	5x	5x	6x	8x	6x
Implied price @2011E EV/EBITDA multiple					
5x	\$50	\$52	\$19	\$38	
6x	\$62	\$63	\$24	\$47	
7x	\$74	\$73	\$30	\$55	
8x	\$87	\$84	\$36	\$64	
% return					
5x	18%	7%	-23%	-21%	-5%
6x	48%	30%	1%	-2%	19%
7x	77%	52%	25%	16%	43%
8x	106%	75%	50%	35%	66%
Historical P/E multiple					
Past 3-years	9x	11x	12x	13x	11x
Past 5-years	10x	10x	12x	14x	12x
Past 10-years	11x	11x	14x	14x	12x
Implied price @2011E P/E multiple					
10x	\$50	\$54	\$22	\$48	
12x	\$60	\$65	\$26	\$57	
14x	\$70	\$76	\$31	\$67	
16x	\$80	\$87	\$35	\$76	
% return					
10x	19%	13%	-9%	0%	6%
12x	43%	35%	9%	19%	27%
14x	67%	58%	27%	39%	48%
16x	91%	81%	45%	59%	69%
NPV per share	\$39	\$51	\$25	\$46	
Implied price @P/NAV multiple					
1.1x	\$43	\$56	\$28	\$51	
1.2x	\$47	\$61	\$30	\$55	
1.3x	\$51	\$66	\$33	\$60	
1.4x	\$55	\$71	\$35	\$64	
% return					
1.1x	2%	16%	14%	6%	9%
1.2x	11%	27%	24%	16%	19%
1.3x	20%	37%	34%	25%	29%
1.4x	30%	48%	45%	35%	39%
DCF assumptions					
Ke (%)	10.0%	10.5%	10.5%	10.5%	10.4%
After tax Kd (%)	7.4%	5.6%	5.6%	5.6%	6.1%
D / (D+E) ratio	40%	30%	30%	30%	33%
Wt. avg. cost of capital	9.0%	9.0%	9.0%	9.0%	9.0%
LT growth rate	1.0%	1.0%	1.0%	1.5%	1.1%

Source: Capital IQ, company reports and Deutsche Bank estimates

DCF assumptions include 9% WACC and 1% LT growth rater

DB US coal outlook

US coal market at an inflection point

Met coal market in an ascent mode, steam coal market has bottomed

We believe the US coal industry is at an inflection point. The met coal bottomed in early 2009 and has experienced considerably improvement since then. Initially, import demand from China led the recovery, but more recently, a rebound in steel output in other key global markets (such as the US) has tightened the market. This tightness is set to intensify as the recovery advances in the developed world. Meanwhile, the steam coal market has lagged due to a variety of factors including weak power demand, excess supply/inventories, depressed natural gas prices, weak export markets, etc. However, we now believe that the worst has passed and coal prices have bottomed, and we expect supply-demand fundamentals to materially improve in the coming quarters.

US coal supply-demand model anticipates recovery from 2009 low

Our summary supply-demand model for the US coal industry is presented below. We expect that the market will improve in 2010 as demand recovers and net exports increase – primarily met coal which is currently experiencing tighter international market conditions.

With this in mind, we expect prices to be on an ascending trend over the next few years.

Figure 75: DB US coal supply-demand model

	2005	2006	2007	2008	2009	2010E	2011E	2012E
Production by region								
Appalachia	396.4	391.1	377.9	389.8	348.6	343.6	353.6	353.6
Interior	149.3	151.2	146.4	146.7	147.5	127.5	147.5	162.5
West	585.1	619.3	621.1	633.7	584.2	569.2	604.2	629.2
Refuse recovery	0.7	0.8	1.2	1.4	1.4	1.4	1.4	1.4
Total production	1,131.5	1,162.4	1,146.6	1,171.6	1,081.7	1,041.7	1,106.7	1,146.7
Consumption by sector								
Electric power	1,037.5	1,026.6	1,045.1	1,041.6	933.9	974.2	998.8	1,010.2
Coking coal	23.4	23.0	22.7	22.1	15.5	19.2	23.0	23.8
Other industrial	60.3	59.5	56.6	54.5	44.6	46.3	47.1	47.1
Other demand	4.7	3.2	3.5	3.5	3.3	3.4	3.5	3.5
Total demand	1,125.9	1,112.3	1,127.9	1,121.7	997.3	1,043.2	1,072.4	1,084.6
Surplus/(deficit)	5.6	50.1	18.7	49.9	84.4	(1.5)	34.3	62.1
US coal trade - net exports								
Exports:								
Steam coal	21.3	22.1	27.0	39.0	21.9	24.0	26.0	27.0
Metallurgical coal	28.7	27.5	32.2	42.5	37.3	45.0	47.5	50.0
Exports	50.0	49.6	59.2	81.5	59.2	69.0	73.5	77.0
Imports	30.5	36.3	36.4	34.2	22.5	23.6	24.3	23.4
Net exports	19.5	13.3	22.8	47.3	36.7	45.4	49.2	53.6
Inventories	144.3	186.9	192.7	199.2	238.1	191.2	176.3	184.7
Days of inventory	47	61	62	65	87.1	66.9	60.0	62.2

Source: U.S. Energy Information Administration (EIA), AME Mineral Economics (AME), and Deutsche Bank estimates

Demand conditions improving – led by met coal and steam coal set to follow

US domestic demand conditions on the mend

DB forecasts that US GDP will grow 3.8% in 2010 and 3.5% in 2011, setting the stage for coal consumption to recover. After declining 11% in 2009, we expect demand to improve nearly 5% in 2010, and continue to grow thereafter albeit at a more moderate level of ~2% for the following two years. The met coal outlook is more robust as we project that US steel output will grow 25% in 2010 and 20% in 2011. Through mid-March 2010, steel production utilization rates have increased to approximately 58% in the US.

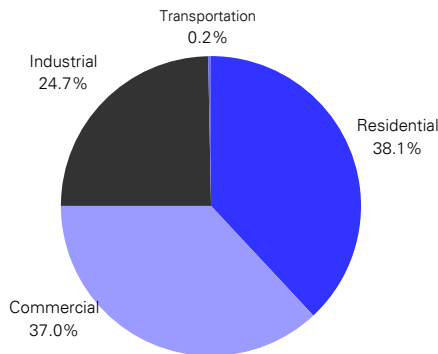
Growth in steam coal demand from the power sector is a bit more controversial but here we expect consumption to increase 4% in 2010 and 3% in 2011, after unprecedented declines last year. In 2009, each consuming market recorded lower demand but the industrial sector was the primary contributor to the 4% decline in power sales. A modest industrial recovery from very low levels supports our assumptions. Additionally, the start-up of new coal-fired generating plants should aid coal demand in 2010 (7GWs) and 2011 (3GWs).

Production bound to decline further before starting to improve at end of 2010

Coal production could possibly decline in 2010 before increases in 2011 and 2012

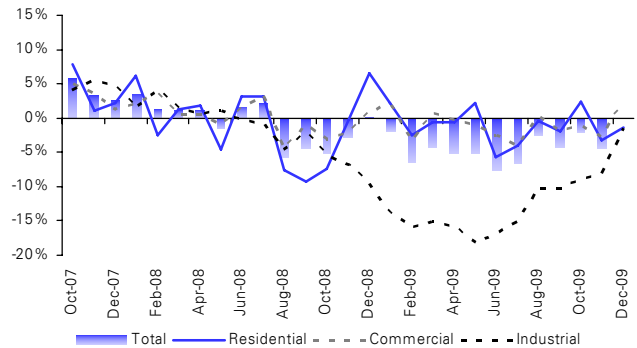
US coal production declined 8% in 2009 and through mid-March, output has contracted by ~10%. While year-over-year comparisons should begin to improve later in the year, we expect production cuts to persist through the balance of 2010. We forecast that US coal production will fall 4% – with the bulk of the decline led by declines in the Interior, before improving 6% in 2011 – with additional production coming from the PRB.

Figure 76: US electric sales mix (FY 2009)



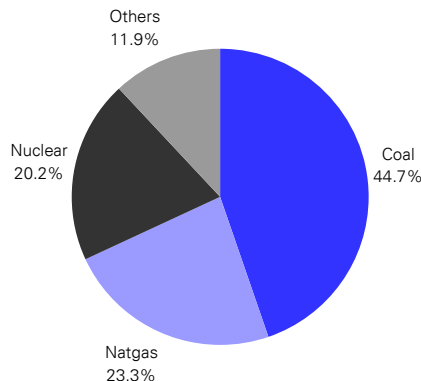
Source: EIA and Deutsche Bank

Figure 77: Electric sales by class (vs. year ago)



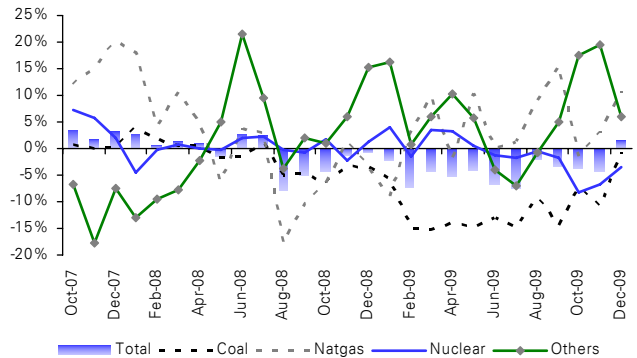
Source: EIA and Deutsche Bank

Figure 78: US generation fuel mix (FY 2009)



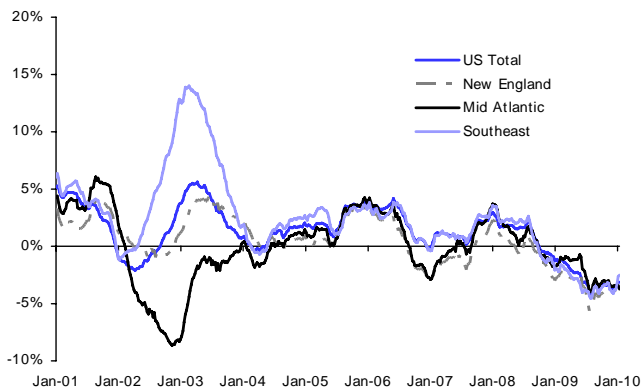
Source: EIA and Deutsche Bank

Figure 79: Electric generation by fuel (vs. year ago)



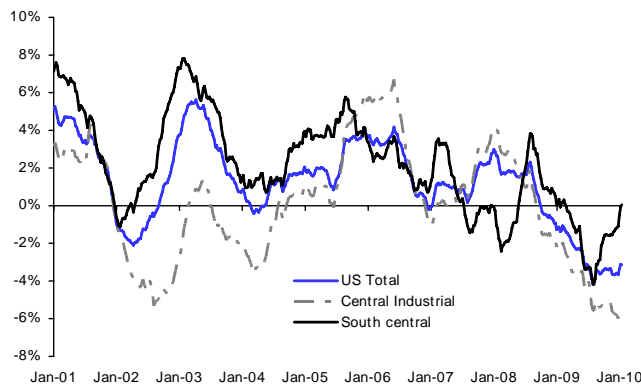
Source: EIA and Deutsche Bank

Figure 80: EEI weekly generation–East (since 2001)



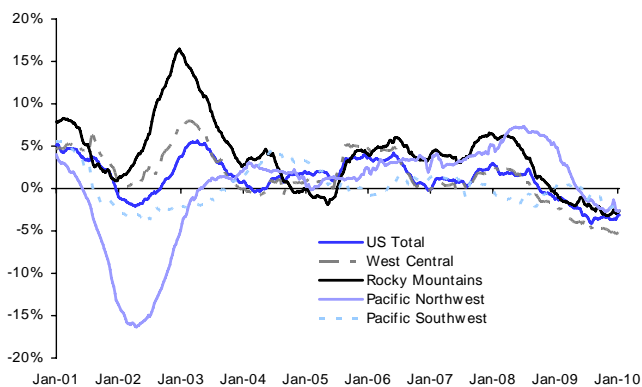
Source: Bloomberg and Deutsche Bank. Note: EEI data is reported weekly versus equivalent week of prior year. Our chart shows this data series on a trailing 12-month basis.

Figure 81: EEI weekly generation–Central (since 2001)



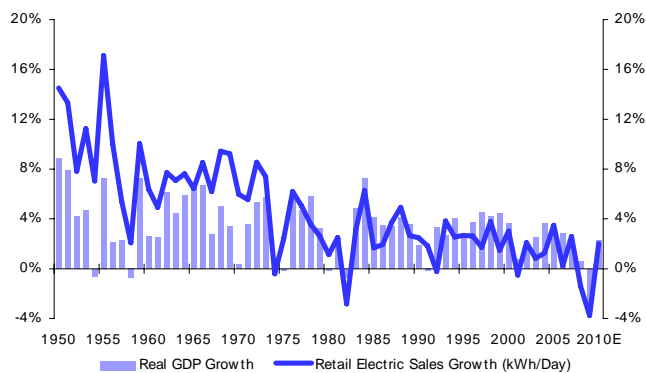
Source: Bloomberg and Deutsche Bank. Note: EEI data is reported weekly versus equivalent week of prior year. Our chart shows this data series on a trailing 12-month basis.

Figure 82: EEI weekly generation–West (since 2001)



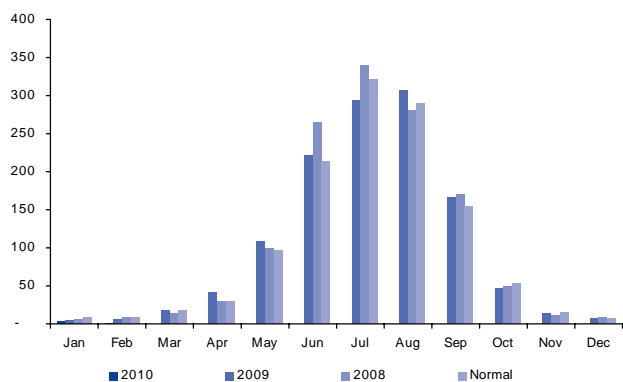
Source: Bloomberg and Deutsche Bank. Note: EEI data is reported weekly versus equivalent week of prior year. Our chart shows this data series on a trailing 12-month basis.

Figure 83: Electric sales & GDP growth (1950-2010E)



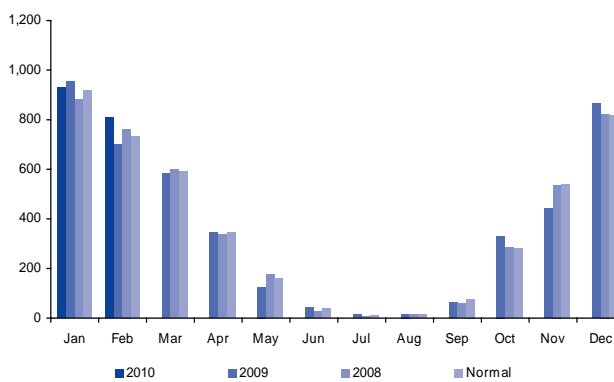
Source: EIA, Capital IQ and Deutsche Bank. Note: Forecast Electric Sales and GDP Growth are EIA estimates.

Figure 84: Monthly cooling days vs. normal



Source: NOAA and Deutsche Bank

Figure 85: Monthly heating days vs. normal



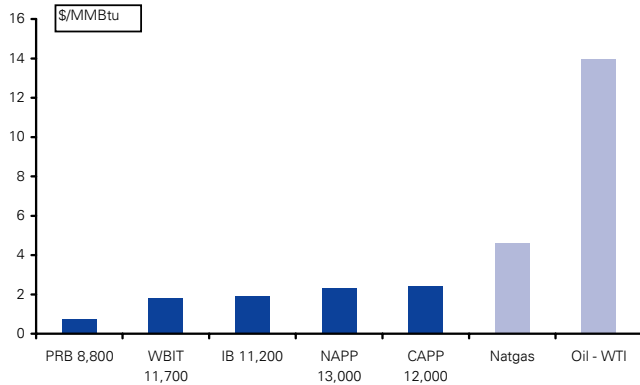
Source: NOAA and Deutsche Bank

**Coal to natural gas
"switching" still pose a
threat as natural gas prices
remain in a lull**

Low natural gas prices exacerbated weakness in US coal markets in 2009

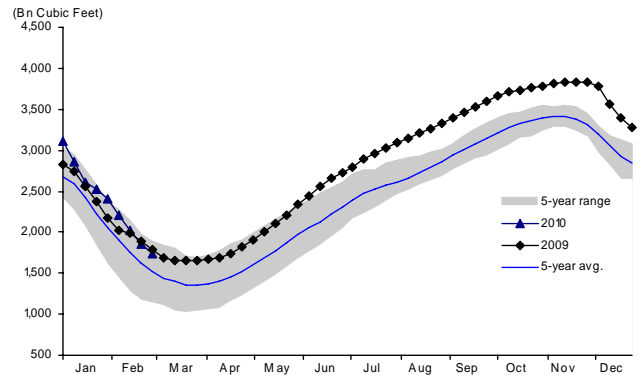
Coal accounted for approximately 45% of power generation in 2009, down nearly 300bps. Natural gas picked-up share and trade estimates suggest that this "switching" reduced coal demand by 30 to 50MM tons, or about 3-5% of total. US natural gas supply continues to surprise to the upside and the gas price remain "depressed" levels versus historical prices. Lower gas prices pose a risk to certain US coal demand, and consequently prices; however, anecdotal evidence suggests the market is nearing a potential bottom. Net-net, we expect less coal volume pressure from "switching" in 2010, though we do not expect this 2009 trend to fully reverse in just one year.

Figure 86: BTU price comparison



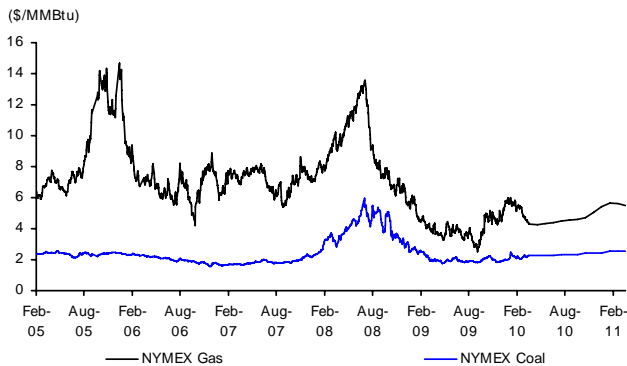
Source: Bloomberg and Deutsche Bank, Note: Prices are as of March 8, 2010

Figure 87: Natural gas storage inventory (2004-YTD)



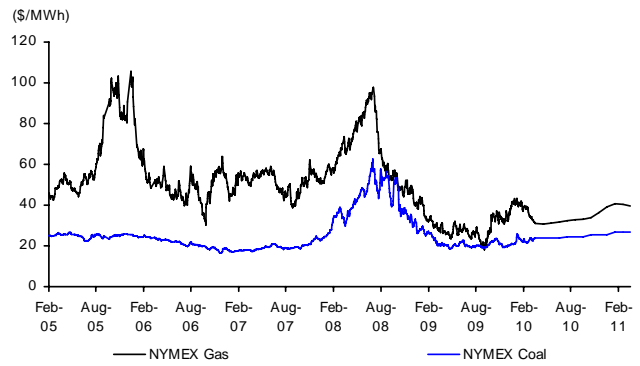
Source: EIA and Deutsche Bank

Figure 88: Natural gas vs. coal prices



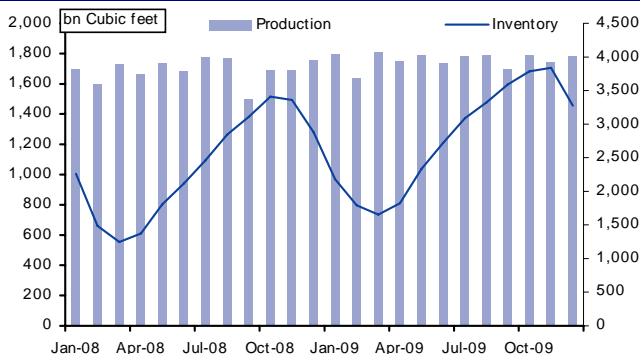
Source: Deutsche Bank; Bloomberg

Figure 89: Natural gas vs. coal generation



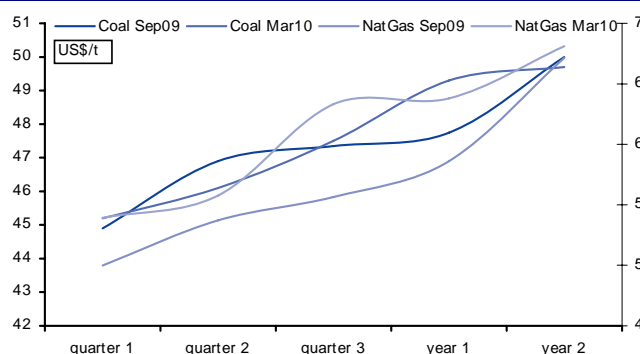
Source: Deutsche Bank; Bloomberg. Note: Conversion to \$/MWh assumes a 7.2 MMBtu/MWh heat rate for natural gas and a 10.5 heat rate for coal; excludes all non-fuel expenses such as O&M and environmental.

Figure 90: Natural gas production and inventories



Source: U.S. Energy Information Administration

Figure 91: Natural gas and coal forward curves (US\$/t)



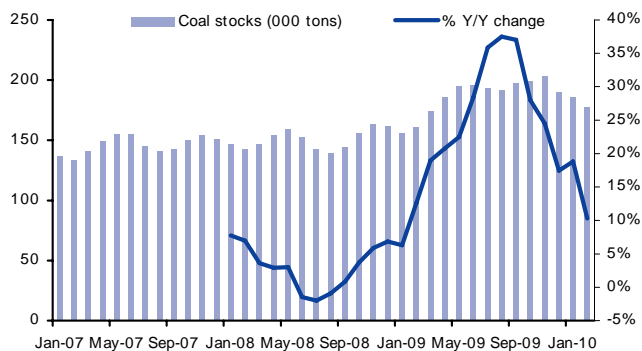
Colorado/Utah 11700 Uinta Basin Utah coal forward
Source: Bloomberg

Coal inventory at utility plants, though decreased, still at lofty levels

Slow to respond at first to slowing demand conditions, producers seem to keep a lid now on production until demand fully ameliorates

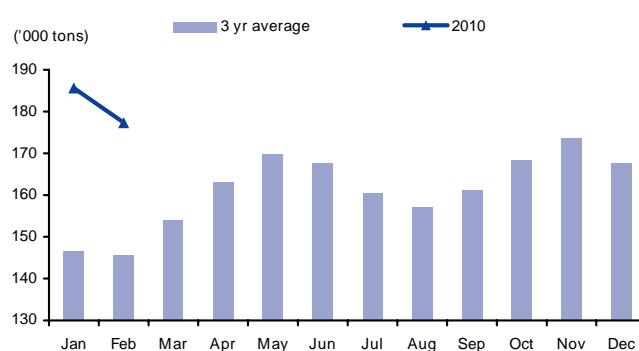
The coal industry was slow to respond to evaporating demand conditions with production cuts in 2009. As a result, inventories levels rose materially throughout the year. Reported inventories finally started to decline – on coal production cuts and first signs of renewed demand in late 2009. However, the supply-chain continues to de-stock and we expect the inventory overhang to persist through the summer cooling season. Additionally, we note that the timing to achieve more “balanced” inventory levels has recently improved, and we see a much improved supply situation in late 2010 – as producers remain cautious in fully increasing utilization rates until clear signs of improving demand conditions are evidenced. According to our estimates, total coal inventories should approximate 190MM tons by the end of 2010, with ~140MM tons at US utility plants.

Figure 92: Monthly US coal inventories – at utility plants



Source: U.S. Energy Information Administration and Deutsche Bank

Figure 93: Seasonality of US coal inventories – at utility plants



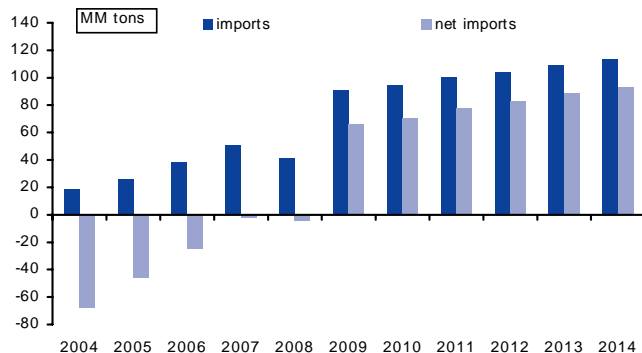
Seasonality is calculated using averages of last 3 years
Source: U.S. Energy Information Administration and Deutsche Bank

With ample export capacity, US coal producers with access to ports could benefit from int'l tightening market conditions

A net coal exporter with ample capacity, US could benefit from international demand

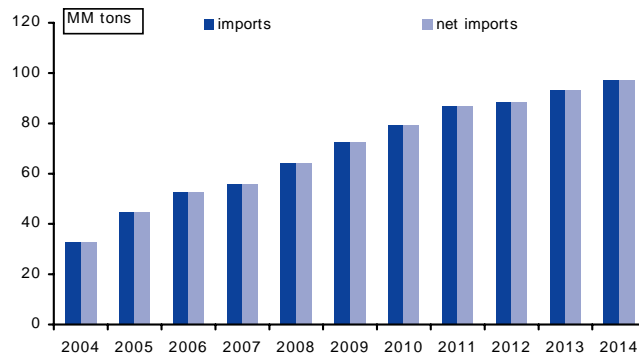
The US is a net coal exporter and we expect exports to be an important catalyst in 2010 - primarily for met coal at this point. Key emerging markets and those adding steel capacity import coal and these countries include China, Brazil and India. China is unique as it maintains a large coal resource base but it has become a net coal importer (for both met and steam) as a result of logistic issues, mine closures and rising operating costs in the country. Its coal resources are largely in the north while consumption is dominant in the southeast and coastal regions, and China’s rail systems is not adequate to meet these demands. Rising imports into these countries, along with supply bottlenecks globally, has provided new export opportunities for US coal producers with access to ports. In total, we forecast that US coal exports will rise 17% in 2010 to 69MM tons and 6% in 2011 to 74MM tons.

Figure 94: Evolution of coal imports by China



Source: AME Mineral Economics and Deutsche Bank estimates

Figure 95: Evolution coal imports by India



Source: AME Mineral Economics and Deutsche Bank estimates

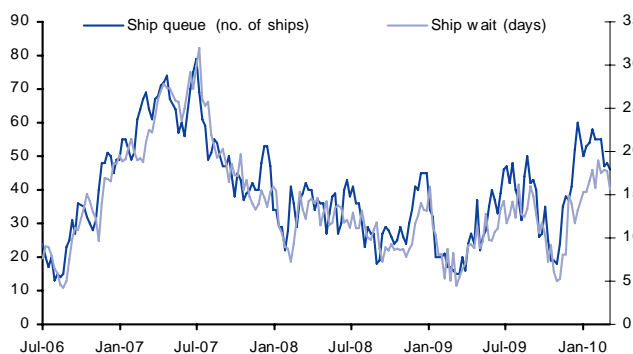
Infrastructure – particularly port capacity, has become ongoing bottleneck theme for coal availability

Global infrastructure has become a constant bottleneck

Infrastructure has become an ongoing bottleneck theme in many areas, particularly in Australia – which is currently one of the largest coal exporters in the world. Over the past years, output from Australia has been constrained due to infrastructure bottlenecks – with port capacity being one of the key problems (particularly at Newcastle) and rail transport being an issue in some areas. As China and possibly India require larger amounts of coal imports, the landscape is bound to change established trade routes and availability of product.

Though annual port capacity in Australia could increase to 367MM tonnes by 2H10, from 354MM tonnes currently (according to AME), any delays in construction of new terminals could be a constraint for Australian coal supply.

Figure 96: Newcastle port queue



Source: Bloomberg and Deutsche Bank

Figure 97: Dalrymple bay port queue



Source: McCloskey and Deutsche Bank

Legislative action poses a hard to quantify risk to the industry at this stage

Legislative action uncertain for coal industry

Legislative action is uncertain for the coal industry and presents a “headline” risk to investors, as it is hard to predict how much the current landscape could change. The items currently under consideration are plentiful with the most topical items including a carbon tax, EPA regulation of Greenhouse Gases (GHGs), 404 permitting, and coal ash. The risks and potential impacts of such action are difficult to quantify. In total, we believe that broad legislation (ie, carbon) is unlikely to be resolved in the near-term.

Figure 98: Key environmental issues in the US

Regulation/Legislation	Expected Time Frame	Description
Federal carbon (CO2) legislation	Could resurface in 2011	Carbon legislation could lead to cleaner-fuel generation and coal retirements. However, efforts have stalled since the U.S. House approved the Waxman-Markey bill in 2009 and other priorities (mid-term elections, healthcare) make legislation unlikely in the near-term. Alternatives are being discussed but outcome remains uncertain (i.e., renewable energy legislation which requires a percentage of power generation from renewables).
EPA Greenhouse Gas (GHG) Regulations	Possibly 2010	The EPA is attempting to regulate and control GHG emissions (CO2, methane, etc) under the Clean Air Act (CAA). The EPA's intent is to require emission reporting and that new plants and those undergoing modification to use the best available technology to reduce emissions. The move is now facing some resistance and certain parties are attempting to block EPA from regulating GHGs.
Clean Water Act; Section 404 Permits	2010	Army Corps Engineers issue the permits which define surface mining and waste-fill requirements. The EPA has challenged issued permits and further delays (or an adverse resolution) may slow mine development.
EPA Coal Combustion Residuals (Coal Ash) Rule	Potentially in 1H10	The EPA has been reviewing storage and disposal of coal ash, and it may propose regulation which impacts the storage and by-product usage of the material.
New EPA CAIR (SO2, NOx) Regulations	Proposed standards: 2010 Final standards: 2011	EPA's Clean Air Interstate Rule (CAIR) was originally issued in 2005, but was struck down in 2008 by the U.S. Court of Appeals. However, these standards (which led to a large number of scrubber installations) remain in place until a revised rule is developed. The new ruling was originally expected to take ~2years from the time of the court decision.

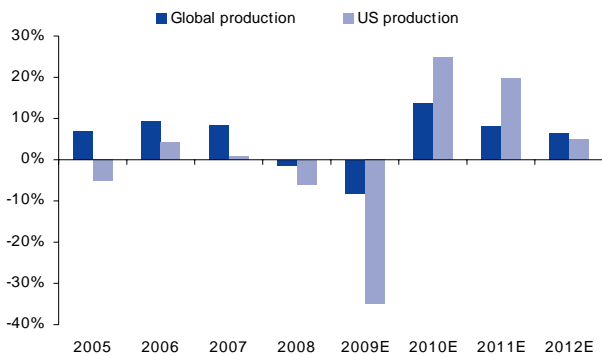
Source: Industry associations and reports, and Deutsche Bank

US met coal market conditions on an upswing

Met coal market fundamentals improving

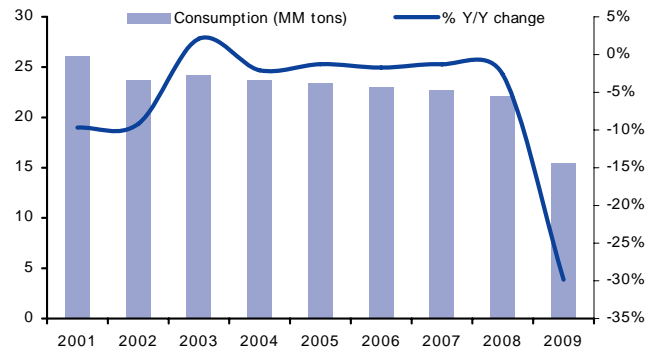
Met coal bottomed in early 2009 and has experienced considerably improvement since then. Initially, import demand from China led the recovery, but more recently, a rebound in steel output in other key global markets (such as the US) has tightened the market. This tightness is set to intensify as the recovery advances in the developed world. In the US, steel utilization rates currently stand at 71% versus the low levels seen in 2009 (hovering near 30%) and more normalized historical levels (upwards of 85%). US coal producers aim to capture an increasing piece of higher-priced met coal market by either increasing met coal production and/or by switching steam coal from the Eastern Basins.

Figure 99: Global and US steel production



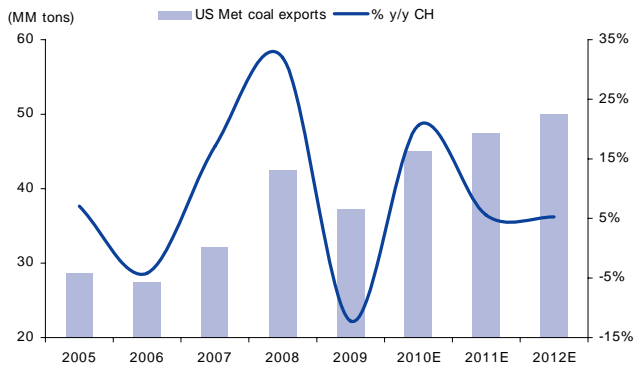
Source: IISI and Deutsche Bank estimates

Figure 100: US met coal consumption



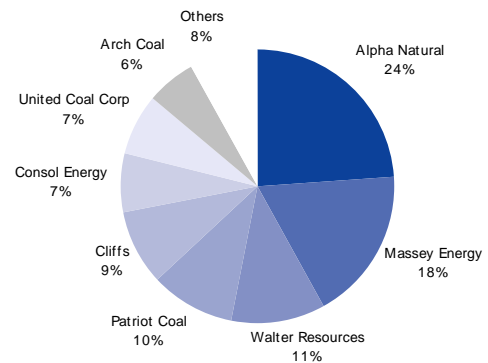
Source: EIA and Deutsche Bank

Figure 101: US met coal exports



Source: EIA and Deutsche Bank

Figure 102: Key met coal players in the US (by capacity)

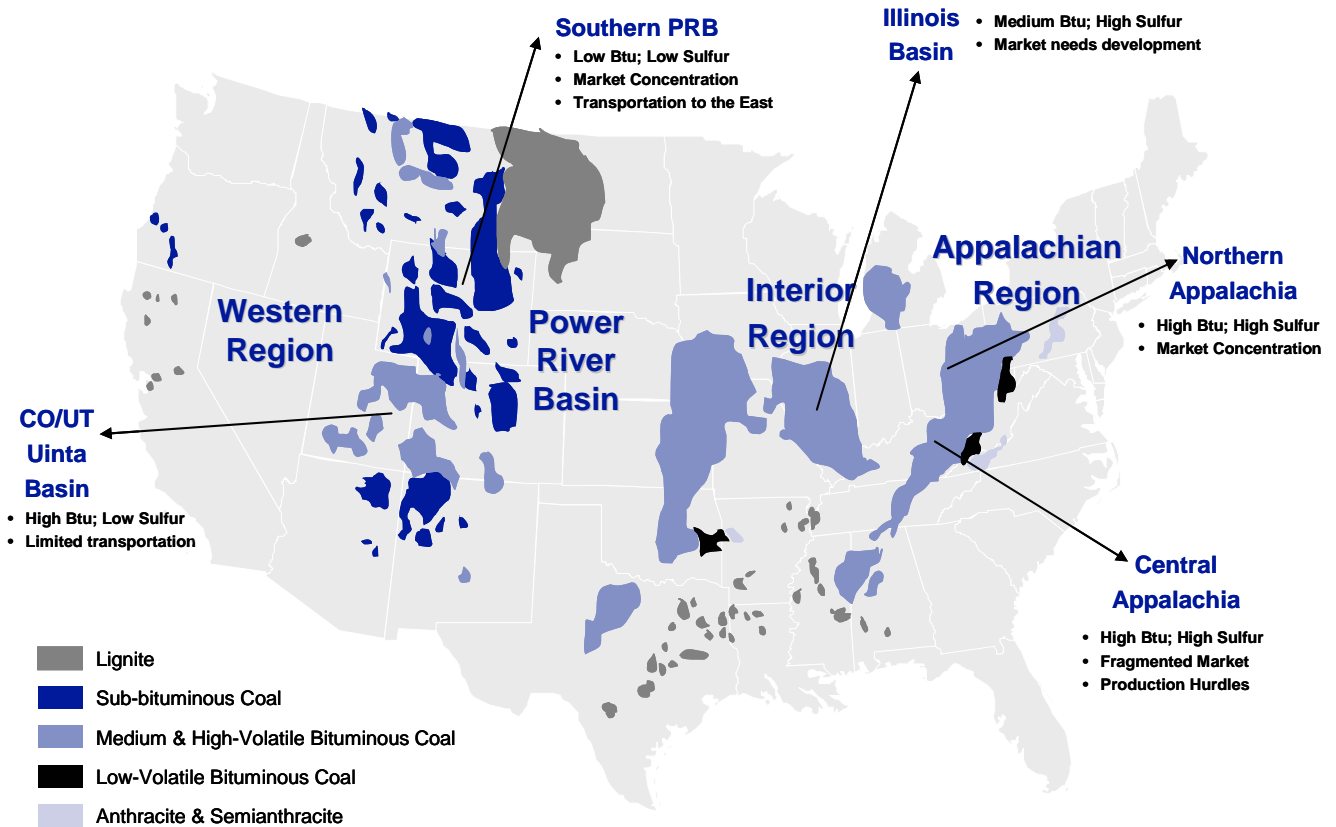


Source: Company reports and Deutsche Bank

US coal market snapshot

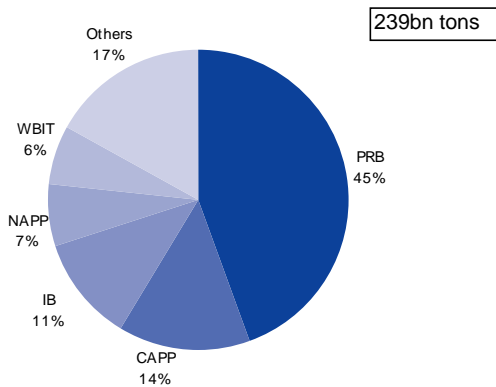
With an abundance of coal – holding 29% of the world’s coal reserves (more than any other country), the US has a long history with coal fueling its energy needs. Based on current reserves and production levels, the US has over 220 years to go.

Figure 103: US coal market by basin



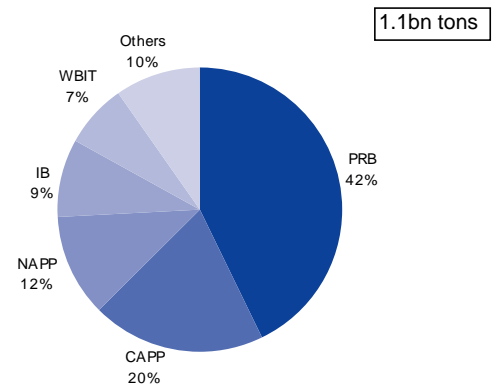
Source: American Electric Power (AEP) Fact book

Figure 104: Reserves by basin, 2008



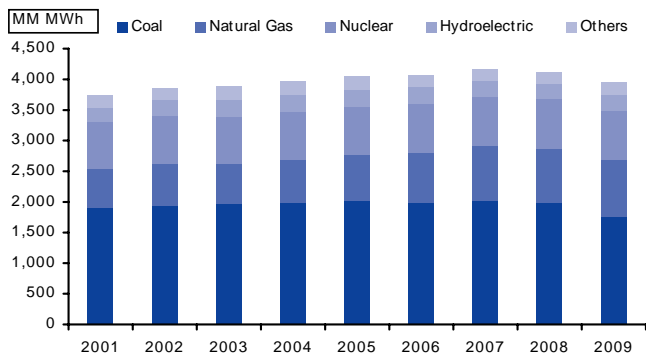
Note: According to EIA, the recoverable reserves at current producing mines are 17.8bn tons. The % breakup in the above figure is based on these reserves.
Source: BP Energy Review June '09 and Deutsche Bank

Figure 105: Production by basin, 2009



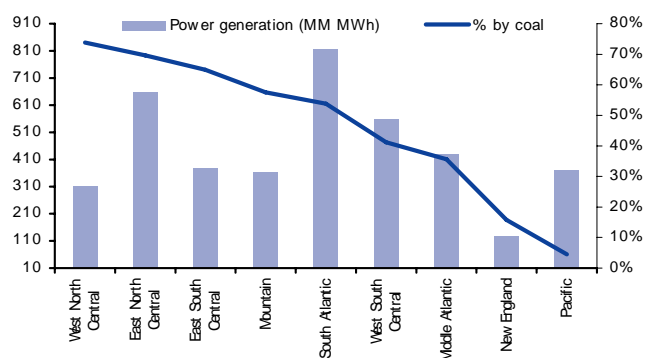
Source: EIA and Deutsche Bank

Figure 106: Power generation from resource



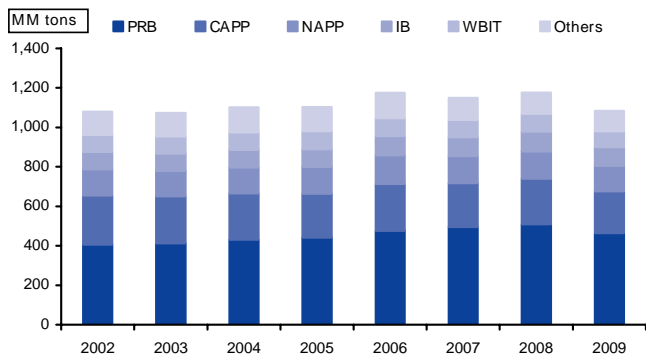
Source: EIA and Deutsche Bank

Figure 107: Power generation by region



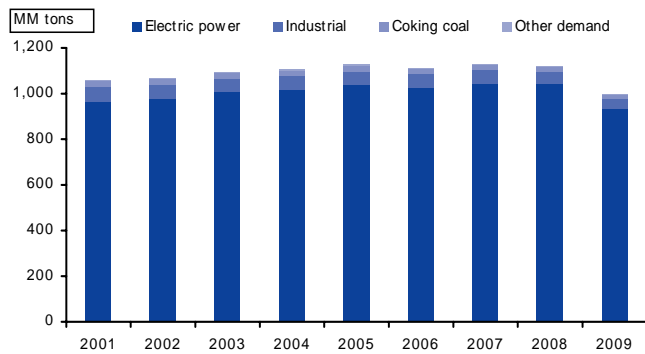
Source: EIA and Deutsche Bank

Figure 108: Evolution of US coal production



Source: EIA and Deutsche Bank

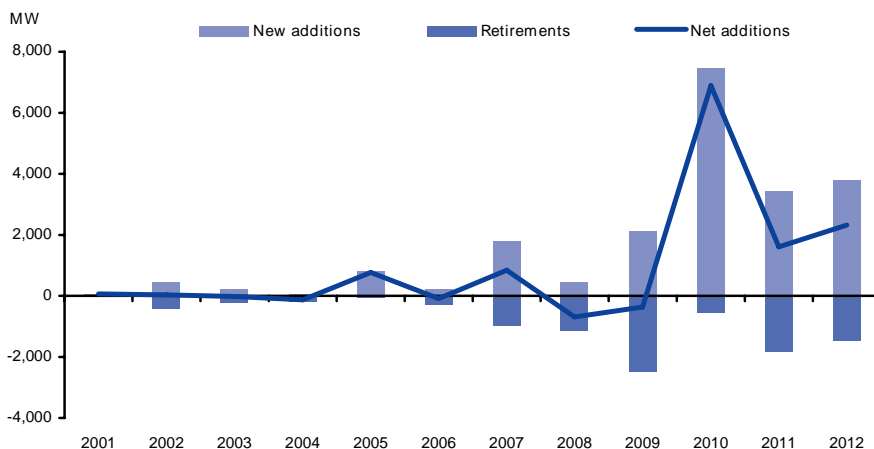
Figure 109: Evolution of US coal demand



Source: EIA and Deutsche Bank

Over the next years, the US could add coal-fired power plant capacity

Figure 110: US Coal-fired power plant additions/retirements capacity



Source: Wood Mackenzie and Deutsche Bank

Global coal market snapshot

Global coal production for 2008 was ~7.4bn tons with the seaborne trade representing only 12% of the total market, as end consumption tends to take place from inland production. The steam market contributes to the lion share of the seaborne market, at 3/4th of the total while met coal contributes about 1/4th.

Figure 111: Snapshot of global coal market (MM tons)

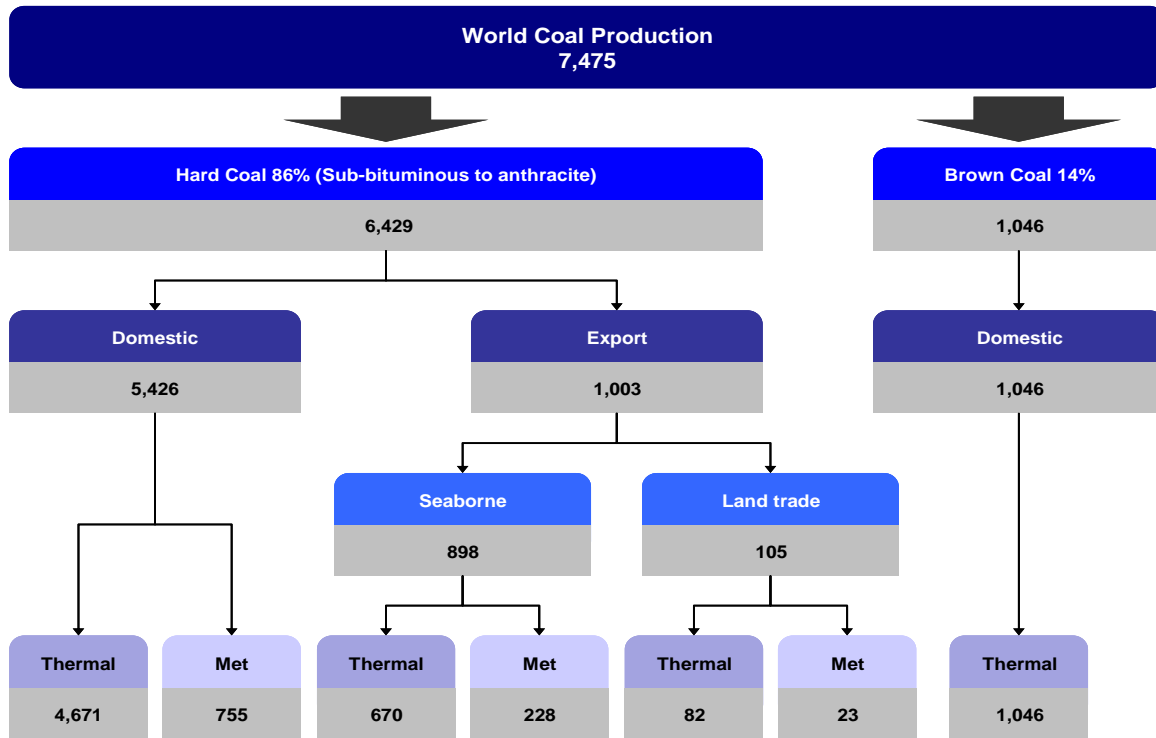
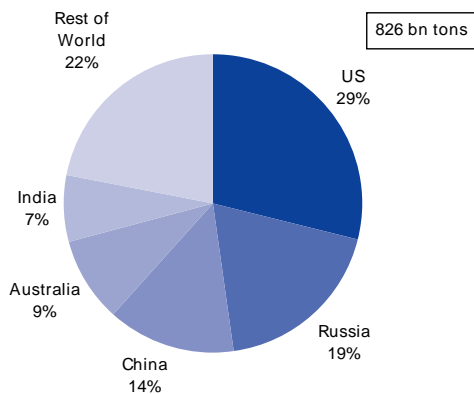


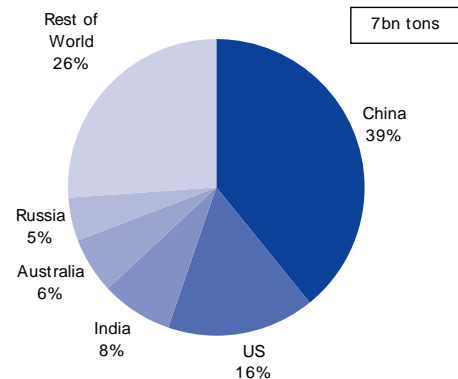
Figure represents data for 2008 and in MM tons
Source: Wood Mackenzie and Deutsche Bank

Figure 112: Global reserves by country, 2008



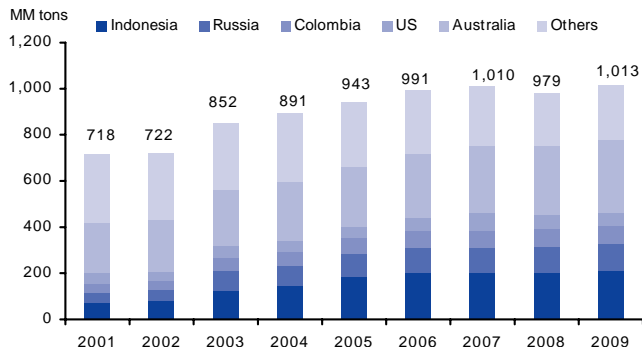
Source: BP Energy Review June'09 and Deutsche Bank

Figure 113: Coal production by country, 2008



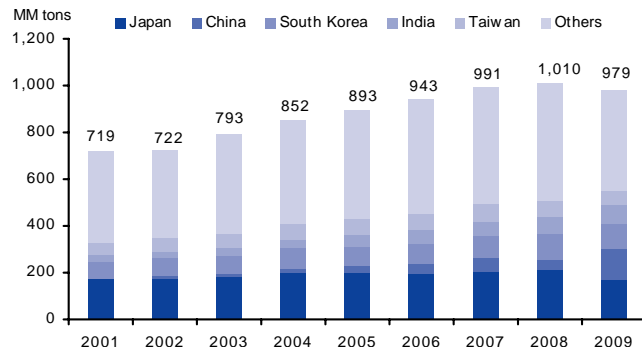
Source: EIA and Deutsche Bank

Figure 114: Evolution of seaborne coal market - supply



Source: AME Mineral Economics and Deutsche Bank

Figure 115: Evolution of seaborne coal market - demand



Source: AME Mineral Economics and Deutsche Bank

Figure 116: Steam coal players in seaborne market, 2009

Company	MM tons	% Share
Xstrata plc	64.7	8.7%
PT Bumi Resources Tbk	41.7	5.6%
PT Adaro Energy Tbk	34.6	4.7%
Anglo American plc	34.5	4.6%
BHP Billiton Ltd	32.4	4.4%
Siberian Coal Energy Co.	27.8	3.7%
Drummond Co. Inc	27.7	3.7%
Rio Tinto Group	21.5	2.9%
Banpu Public Co. Ltd	18.6	2.5%
Tata Power Co. Ltd	17.9	2.4%

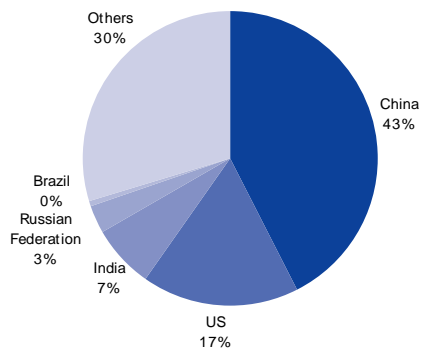
Source: AME Mineral Economics and Deutsche Bank

Figure 117: Met coal players in seaborne market, 2009

Company	MM tons	% Share
BHP Billiton Ltd	31.1	11.7%
Mitsubishi Corp.	24.6	9.3%
Teck Resources Ltd	18.1	6.8%
Anglo American plc	15.8	5.9%
Xstrata plc	13.7	5.2%
Rio Tinto Group	11.5	4.3%
Wesfarmers Ltd	7.3	2.7%
Peabody Energy Corp.	7.2	2.7%
Mitsui & Co. Ltd	6.5	2.4%
Walter Energy Inc.	6.3	2.4%

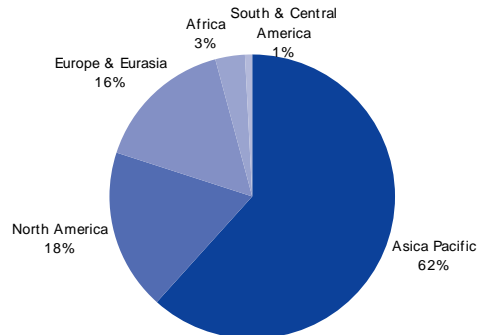
Source: AME Mineral Economics and Deutsche Bank

Figure 118: Global coal demand by country, 2008



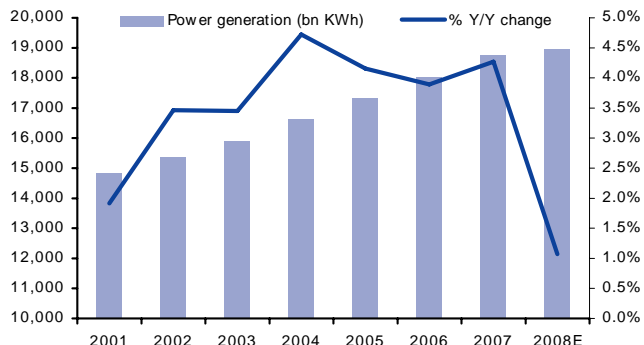
Source: BP Energy Review June'09 and Deutsche Bank

Figure 119: Global coal demand by region, 2008



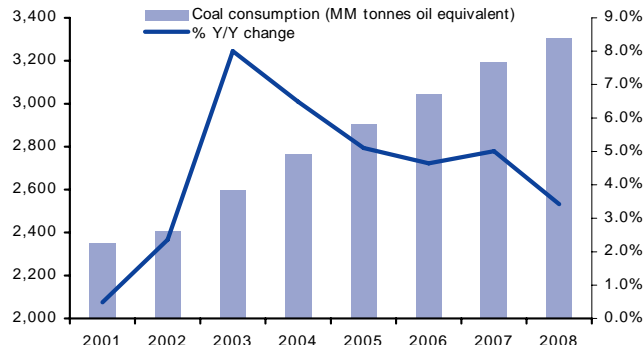
Source: BP Energy Review June'09 and Deutsche Bank

Figure 120: Global power generation



Source: EIA and Deutsche Bank

Figure 121: Global coal consumption



Source: EIA and Deutsche Bank

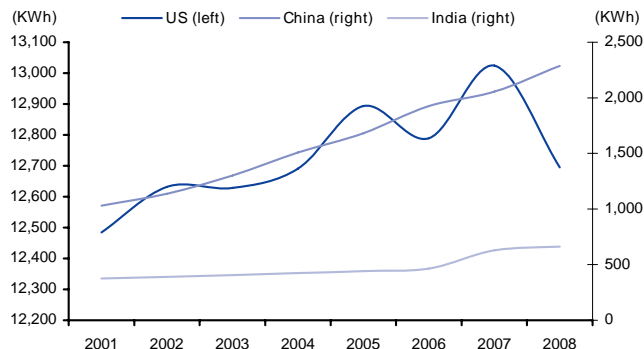
Global electrification envisions coal-fired power plant capacity additions

Figure 122: Coal-fired power generation plant additions globally until 2015

(Giga Watt)	Capacity addition	as % of total
United States	14	6%
China	79	36%
India	69	31%
Rest of Asia	25	11%
Total World	220	100%

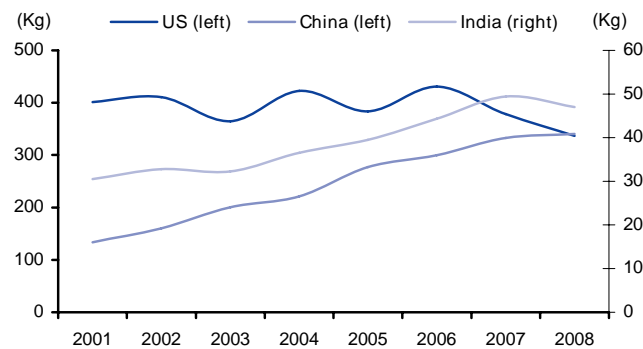
Source: Company reports, Platts and Deutsche Bank

Figure 123: Per capita power demand



Source: EIA and Deutsche Bank estimates

Figure 124: Per capita steel demand (Kg)



Source: World Steel Association and Deutsche Bank

DB global coal outlook

The following contains excerpt from DB's Commodity Quarterly by Michael Lewis and team, published on January 12, 2010, with the Steam Coal and Coking Coal sections written by Brendan Fitzpatrick and the Natural Gas section written by Adam Sieminski.

DB forecasts steam coal prices at \$85/tonne in 2010 and \$100/tonne in 2011

Though not yet a benchmark, 2010 coking coal prices have settled at \$200/tonne for next quarter

DB forecasts natural gas prices at ~\$6.00/mmBtu for next three years

China transition from net exporter of coal to net importer is key change in the seaborne market

DB global outlook for coal and natural gas in US

Steam Coal. Forecasts at \$85/tonne and \$100/tonne for 2010 and 2011 respectively. China has swung from net exports to net imports in 2009. Upside pricing rests on Chinese demand remaining robust. We view steam coal as one of the fundamentally strongest commodity markets in the asset class.

Coking Coal. Key support is provided by Chinese domestic prices which although at a discount on a delivered basis are likely to rise. The LV PCI market has tightened up considerably. Infrastructure constraints are re-emerging in the coking coal market. Although not yet an industry benchmark, recent three-month price settlements at \$200/tonne for hard-coking coal for April through June 2010 have set the stage and confirm tightening conditions – reflective of supply concerns amongst buyers. This is the first time a three month contract is structured, a step that could possibly lead to rolling three month pricing.

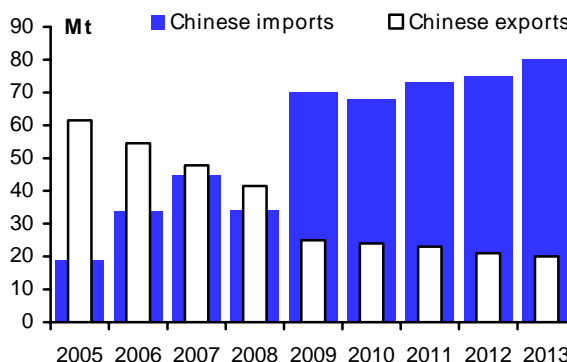
US Natural Gas. We expect natural gas prices to average \$6.00/mmBtu in 2010 and believe prices should average close to this in 2011 and 2012 as well. With ample supplies available from the shale plays and imported LNG, we no longer expect a return to a long-term 8-10 to 1 oil/gas price ratio.

Steam Coal

China no longer a net exporter of coal

The transition of China from a net exporter of coal to a net importer is the key change in the seaborne market. It had net imports about 50MM tonnes of steam coal in 2009, up from 8MM tonnes of net exports in 2008; giving it 7% of global seaborne demand - a level we see more likely to rise than fall with time. This has been driven by both an increase in demand as economic growth and stimulus propel requirements higher and by a curtailment of production; primarily in the Shanxi province as small operations were closed in the name of safety and environmental interests. As a result of this new international demand source, and our expectation of by subsequent demand recovery in other parts of Asia, namely Japan and Korea, we see the Asia-Pacific region as providing a leading price reference.

Figure 125: China swings to net imports



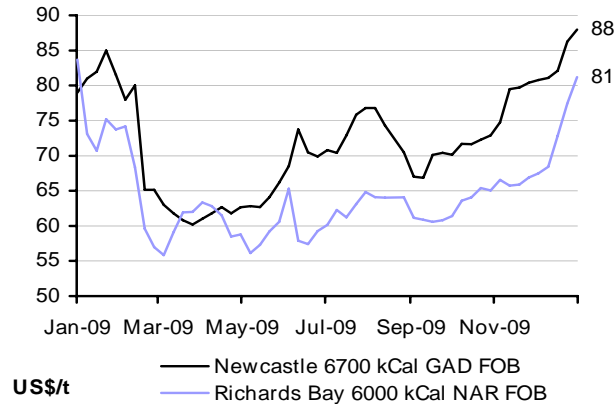
Source: AME, and Deutsche Bank

Small mine closures, snow storms and accident disruptions all contribute to ongoing import demand from China

Market conditions tightening

Spot prices for steam coal out of Newcastle, Australia, have risen 30% from a low of \$62/tonne FOB in April to ~\$86/tonne by the end of the year. A price around this level is what we expect to be see when the JFY10 benchmark price is settled. There may be some upside beyond this price for contracts as small mine closures, snow storms and accident disruptions all contribute to ongoing import demand from China. The chart below shows the upward momentum in the spot prices.

Figure 126: Spot prices on the rise

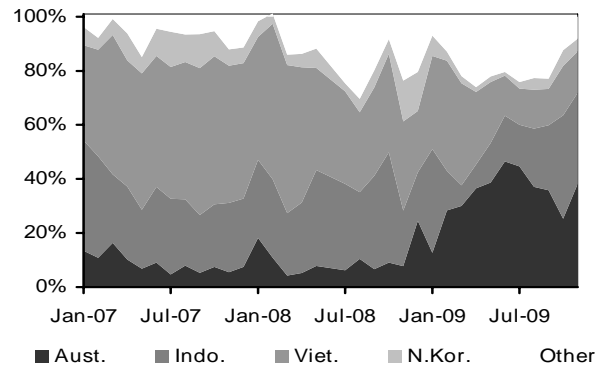


Source: Bloomberg, Deutsche Bank

Strong demand and supply constraint, particularly at the export ports, has tightened markets

Falling freight rates have allowed volumes from South Africa to become more competitive in Asia but most of tonnes have not made it past India which has also been increasing its imports significantly. Strong demand along with concerns about supply constraint – particularly at the export ports – has caused markets to tighten significantly. We view these changes as long-lived in nature.

Figure 127: Share of Chinese import volumes



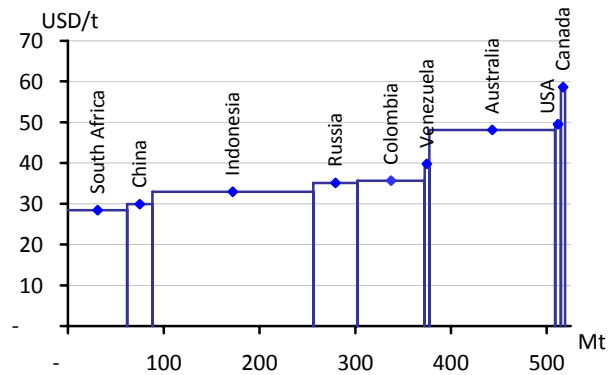
Source: Bloomberg, Deutsche Bank

Indonesia and Australia largest steam coal exporters

Supply: Indonesia and Australia remain largest exporters of steam coal

Indonesia remains the largest single source of steam coal with about 170MM tonnes of exports. Australia is the second largest with about 140MM tonnes of exports, but its collective position at the upper end of the cost curve gives it an influential role in determining the coal price. The US and Canada remain swing exporters.

Figure 128: Simple steam coal cost curve

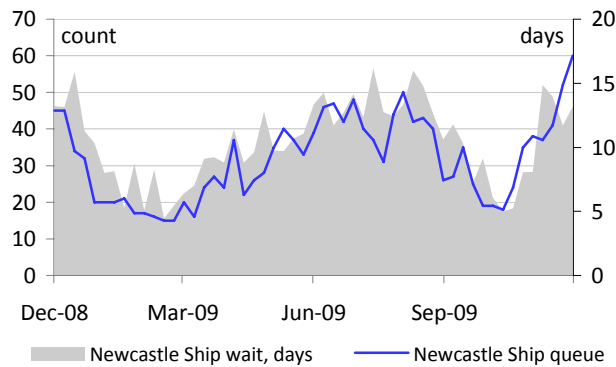


Source: AME, Deutsche Bank

As demand recovers, infrastructure constraints becoming an issue

As demand recovers, infrastructure constraints are once again becoming an issue. At Australia's largest steam coal port, Newcastle, the ship queue recently reached 60 vessels a two year high.

Figure 129: Infrastructure constraints appear again



Source: AME, Deutsche Bank

Domestic Chinese prices supportive of current spot

Chinese domestic prices are supportive of current spot prices. Domestic production costs have risen in China and producer margins have been under pressure. In addition, our expectation that China will remain a net importer is a fundamental driver for higher coal prices.

Closure of numerous small mines in China lead to cost curve to rise

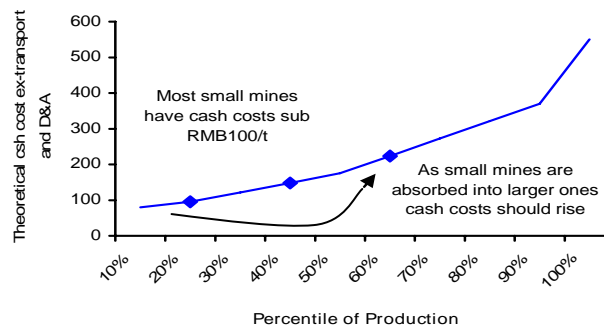
DB analysis has identified that the closure of numerous small mines in China has lead to a rise in the cost curve. This may seem somewhat counter-intuitive but it is a reflection of the lack of spending on non-production related activities, namely safety and environment, at these operations.

Figure 130: Prices comparable after freight, tax, quality

		JFY10	JFY11
Ex-Aust. 6000kCal FOB	US\$/t	85.0	100.0
Freight	US\$/t	12.0	12.0
VAT	US\$/t	17.0	20.0
Unload	US\$/t	3.5	3.5
LANDED	US\$/t	117.5	135.5
Seaborne premium	%	12	12
Equiv. Domestic	US\$/t	103.4	119.2
USD:RMB		6.8	6.8
Domestic Price	RMB/t	703	811
Quality conversion		85%	85%
Domestic Price, 5400kCal	RMB/t	595	686
Domestic Chinese Forecasts	RMB/t	600	635

Source: Deutsche Bank

Figure 131: Chinese cost curve shift



Source: Deutsche Bank, Dec-09

LT price for steam coal is \$84/tonne

Steam coal pricing and supply/demand balance

Our long-term price for steam coal is \$84/tonne, reflective of the price required to support a new greenfield project being commissioned.

Figure 132: Steam coal supply - demand balance (MM tonnes)

	2008	2009	2010E	2011E	2012E	2013E	L/T
Seaborne Demand	675	661	685	711	730	743	762
Seaborne Supply	675	661	678	705	724	752	774
Surplus/deficit	0	0	-7	-6	-6	9	13
	JFY08	JFY09	JFY10	JFY11	JFY12	JFY13	L/T
Steam coal, US\$/tonne FOB	125	71	85.0	100.0	95.0	90.0	84.0

Source: Deutsche Bank estimates/forecasts

Chinese met coal import levels to grow, albeit at a slowing rate

Coking Coal

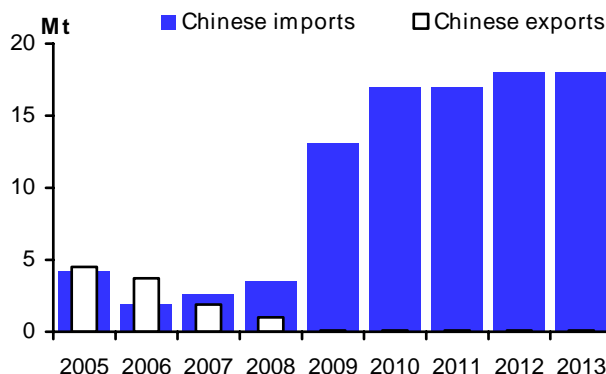
The change in market balance drivers

As with the steam coal market China's net import of met coal jumped last year, increasing from 7MM tonnes to 21MM tonnes. This sees China move past South Korea (16MM tonnes) to become the third largest met coal importer behind India (31MM tonnes) and Japan (49MM tonnes). These four countries consume for ~60% of global seaborne trade (~210MM tonnes in 2010). We expect Chinese import levels will grow more slowly from this point on.

Asia-Pacific region (~60% of global met coal seaborne trade) provide lead price reference

As a result of this new source of demand, and our expectation of by subsequent demand recovery in other parts of Asia, namely Japan and Korea, we see the Asia-Pacific region as providing a leading price reference.

Figure 133: China net imports of met coal jump



Source: AME, Deutsche Bank

As with the steam coal market mine closure in China, particularly the Shanxi province has reduced the domestic supply volumes. China has a large liquid domestic coal market and like with steam coal the domestic delivered prices are supportive of the seaborne FOB prices once freight, taxes and quality differences are factored in.

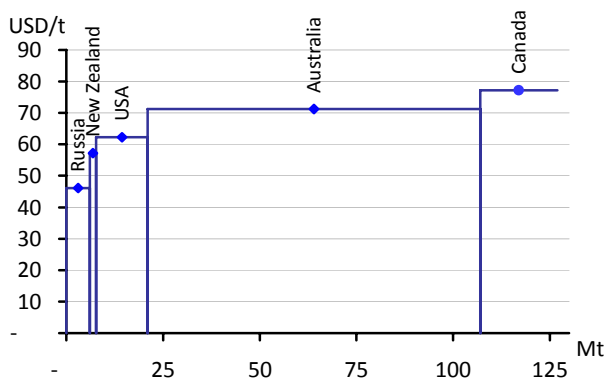
For each of the met coal types we see prices rising again in 2011 by ~10%. One of the key elements behind this view is the dwindling of surplus production capacity from the mines; early in 2009 there was 30-40MM tonnes of idle met coal capacity globally, but by the end of the year this number had halved. When this situation is combined with our expectation for ongoing demand recovery the met coal market is likely to become increasingly tight.

Infrastructure constraints are once again looming as an issue

Supply

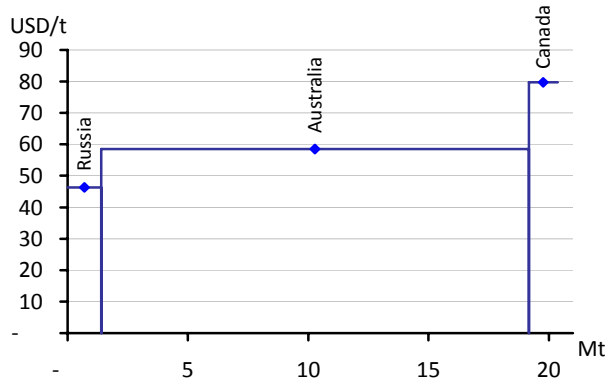
Australia is primary supplier of seaborne met coal volumes, especially in the Coking and Low Vol PCI markets where there is minimal diversity of supply. As with the Steam coal markets infrastructure constraints are once again looming as an issue.

Figure 134: Simple Coking coal cost curve



Source: AME, Deutsche Bank

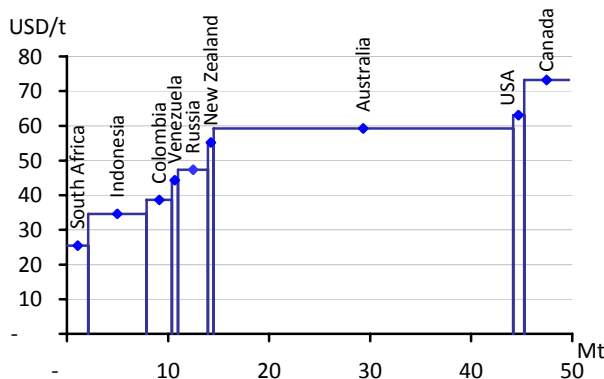
Figure 135: Simple Low Vol PCI coal cost curve



Source: AME, Deutsche Bank

With this in mind it is worth noting the change in the AUD currency that has occurred over the past 12 months. When the last benchmark prices were set the AUD was ~70c. So the coking coal at US\$129/tonne provided about A\$185/tonne. At a price of US\$175/tonne and today's AUD rate of ~90c the converted price is A\$195/tonne. So, in simple terms, the major supply source is only achieving a 5% price increase. Therefore it can be argued that the suppliers are overly benefiting from the seaborne price rises and will be looking to push this point during contract determinations.

Figure 136: Simple Semi-soft coking coal cost curve

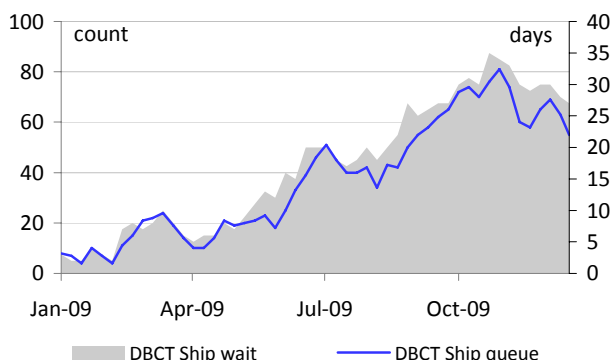


Source: AME, Deutsche Bank

Port capacity once more becoming an issue

The latter stages of 2009 saw the ship queue at Australia’s DBCT terminal in Queensland rise remarkably. Driven by strong demand, rail constraints and port maintenance work. In the latter stages the queue eased, but this was due to additional trains temporarily becoming available as BHP’s nearby Hay Point terminal underwent scheduled maintenance.

Figure 137: Infrastructure constraints appear again



Source: AME, Deutsche Bank

Long-term outlook for coking coal

We believe that Australia will remain central to the export met coal markets but Mongolia, Mozambique and Indonesia are likely to contribute increasing volumes in the future spreading out the cost curve.

Our long-term price for coking coal of \$120/tonne reflects price required to support a new greenfield project being commissioned to commence production in 2015.

LT price for met coal is \$120/tonne

Though not yet a benchmark recent \$200/tonne price settlement for HCC sets the stage for 2010

Figure 138: Coking coal supply - demand balance (MM tonnes)

	2008	2009	2010E	2011E	2012E	2013E	L/T
Seaborne Demand	151	129	140	146	155	160	166
Seaborne Supply	151	129	134	140	151	159	166
Surplus/deficit	0	0	-6	-6	-4	-1	0
	JFY08	JFY09	JFY10	JFY11	JFY12	JFY13	L/T
Coking coal, US\$/tonne FOB	300	129	175	190	190	150	120

Source: Deutsche Bank estimates/forecast

A \$200/tonne HCC price could translate to \$150/tonne in LV PCI coal price and \$125/tonne in SS coking coal

Figure 139: LV PCI coal supply - demand balance (MM tonnes)

	2008	2009	2010E	2011E	2012E	2013E	L/T
Seaborne Demand	35	25	28	30	31	32	33
Seaborne Supply	35	25	26	28	30	32	34
Surplus/deficit	0	0	-2	-2	-1	0	1
	JFY08	JFY09	JFY10	JFY11	JFY12	JFY13	L/T
LV PCI coal, US\$/tonne FOB	245	90	124	136	136	115	95

Source: Deutsche Bank estimates/forecasts

Figure 140: SS Coking supply - demand balance (MM tonnes)

	2008	2009	2010E	2011E	2012E	2013E	L/T
Seaborne Demand	54	43	48	51	54	57	59
Seaborne Supply	54	43	47	49	52	57	60
Surplus/deficit	0	0	-1	-2	-2	1	1
	JFY08	JFY09	JFY10	JFY11	JFY12	JFY13	L/T
SS Coking coal, US\$/tonne FOB	235	75	103	112	112	101	90

Source: Deutsche Bank estimates/forecasts

US Natural Gas

Shale Tale

- US natural gas production was constrained in 2009 by lack of demand and limited storage capacity. Since late 2008, total output flattened, but shale gas production has continued to climb.
- Global LNG markets have loosened considerably as a number of major new LNG export facilities were streamed in Asia and the Middle East.
- We expect natural gas prices to average \$6.00/mmBtu in 2009 and believe prices should average close to this in 2011 and 2012 as well. With ample supplies available from the shale plays and imported LNG, we no longer expect a return to a long-term 8-10 to 1 oil/gas price ratio.

Consumption

We expect US natural gas consumption to be essentially flat in 2010 after declining by circa 2% in 2009. Figure 1 shows our demand forecasts by major sectors: industrial consumption is forecast to be the hardest hit in 2009 as a result of the economic downturn, falling by circa 8%. At the start of 2009, electric utility consumption of natural gas was also expected to decline as a function of less gas required for peaking units, however, according to the DOE, low natural gas prices relative to coal caused substantial switching to natural gas for baseload electric power generation throughout most of 2009.

From a more general perspective, consumption of natural gas in the US is driven by five key factors:

- economic growth
- heating degree days (HDD)
- natural gas prices
- oil prices
- cooling degree days (CDD)

Of these variables, we believe the most important is GDP. The US economics team at Deutsche Bank projects the economy to grow at a 3.5% y-o-y rate in 2010. While this should be sufficient to meaningfully improve the employment situation and ultimately push the Fed into tightening monetary policy, it is actually on the soft side compared to the early stages of previous economic recoveries, which typically average about 6%.

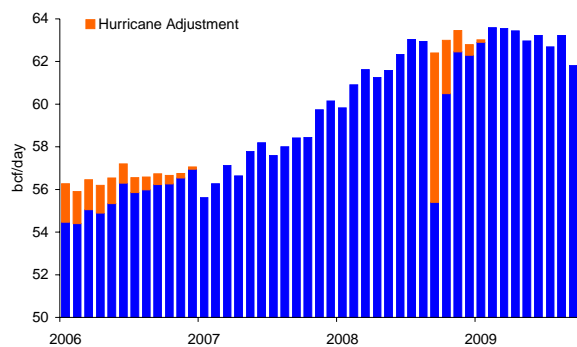
Figure 141: Key US gas statistics

(bcf/d)	2008	2009	2010E	Yr% Chg 2005-2009
Consumption				
Residential	13.0	13.0	13.3	-0.5
Commercial	8.5	8.4	8.5	0.4
Industrial	18.1	16.6	16.9	-1.7
Electric Power	18.2	18.9	18.4	3.3
Other	5.3	5.4	5.3	2.7
Total Demand	63.4	62.2	62.4	0.6
y-o-y % change	0.3	-1.9	0.3	
Dry Gas Production	55.7	57.6	55.8	3.1
y-o-y % change	6.5	3.5	-3.2	
Net Change in Storage	0.1	-1.2	0.3	
Pipeline Imports	9.9	8.8	7.7	-2.9
LNG Imports	1.0	1.3	2.2	-6.0

Source: US DOE/EIA, Deutsche Bank

Production

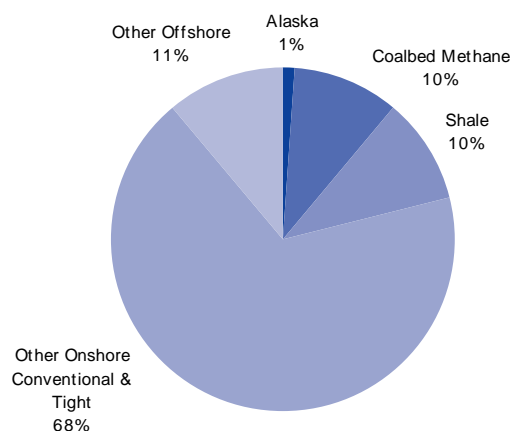
The rising rig count and updated data from producers point to declining threshold economics for US shale plays, which continue to generate greater production per rig and per drilling dollar. These efficiency gains are due to more effective well completions (longer lateral legs, extended stage fracturing, denser fracturing clusters, optimized fluid “recipes”) and pad-based drilling, along with a drop in industry-wide oil field service costs. We believe the gain in the US gas rig count from its mid-July trough serves as direct evidence of this dynamic, and anecdotally note that many US E&P companies have raised, or at least upheld, their capital budget guidance, with most indicating higher planned 2010 well counts.

Figure 142: US gas production gains slow as demand falters during economic crisis

Source: US DOE/EIA, Deutsche Bank

Shale gas

Across the US and Canada, geologists have identified seven high-quality, relatively new, deep gas shale plays that are under development. Vello Kuuskraa, a noted resource analyst has recently referred to these plays as the “Magnificent Seven” – the Barnett play in Texas, the Haynesville on the Texas-Louisiana border, the Woodford-Fayetteville trend that extends from Oklahoma into Arkansas, the Marcellus in the Appalachian region of the US, the Antrim play in Michigan, and the massive Horn River and Montney formations in NW Canada.

Figure 143: US gas production by type

Source: US DOE/EIA, Deutsche Bank

According to the most recent breakdown (2008), US shale gas production grew from circa 3.2bcf/d in 2007 to 5.5bcf/d in 2008 to account for 10% of US gas production of 56bcf/d. We believe that production is likely to have reached 7bcf/d in 2009 and could be 9bcf/d in 2010 and represent circa 16% of domestic output.

Global LNG

The wave of new and ramped-up LNG projects around the globe is still building. Facilities streamed in 2009 include Tangguh, Qatargas 2, Sakhalin 2, Yemen, Ras Laffan 3, Snohvit, NW Shelf- 5, and Atlantic LNG 4. Over the course of 2010-11, we expect significant increases from these projects, as well as Pluto, Algeria, Peru LNG, and NLNG come on line. Wood Mackenzie estimates that in 2009, total global LNG capacity was about 26bcf/d, and that an additional 10bcf/d is likely to stream over the 2010-2011 period.

In 2009, LNG producers responded to the soft market by accelerating maintenance programs, extending repairs, and ramping up at a measured pace. In Europe, piped suppliers (mainly Gazprom) gave up market share in 2009 as flows fell below contract take-or-pay quantities. In 2010 we do not see the same scope for flexibility in pipeline sales. LNG not sold in Asia may find its way to the US, and volumes much in excess of contract minimums (1bcf/d) coming to the US will likely end up either replacing declines in conventional gas production or Canadian imports, or will be absorbed into storage.

US gas price outlook

We are maintaining our 2010 calendar year forecast at \$6/mmBtu, which incorporates a \$5.50 entry price in the current quarter and a modest recovery throughout the year. For 2011 and 2012, we are forecasting \$6 and \$6.25/mmBtu. With ample supplies available from the shale plays and imported LNG, we are no longer expect a return to a long-term 8-10 to 1 oil/gas price ratio. We believe that \$6-7/mmBtu prices are sufficient to generate supply under normal market conditions over the next few years.

Coal sources and uses

Coal is an abundant fossil fuel found in most continents

Coal is an abundant fossil fuel of organic origin containing carbon

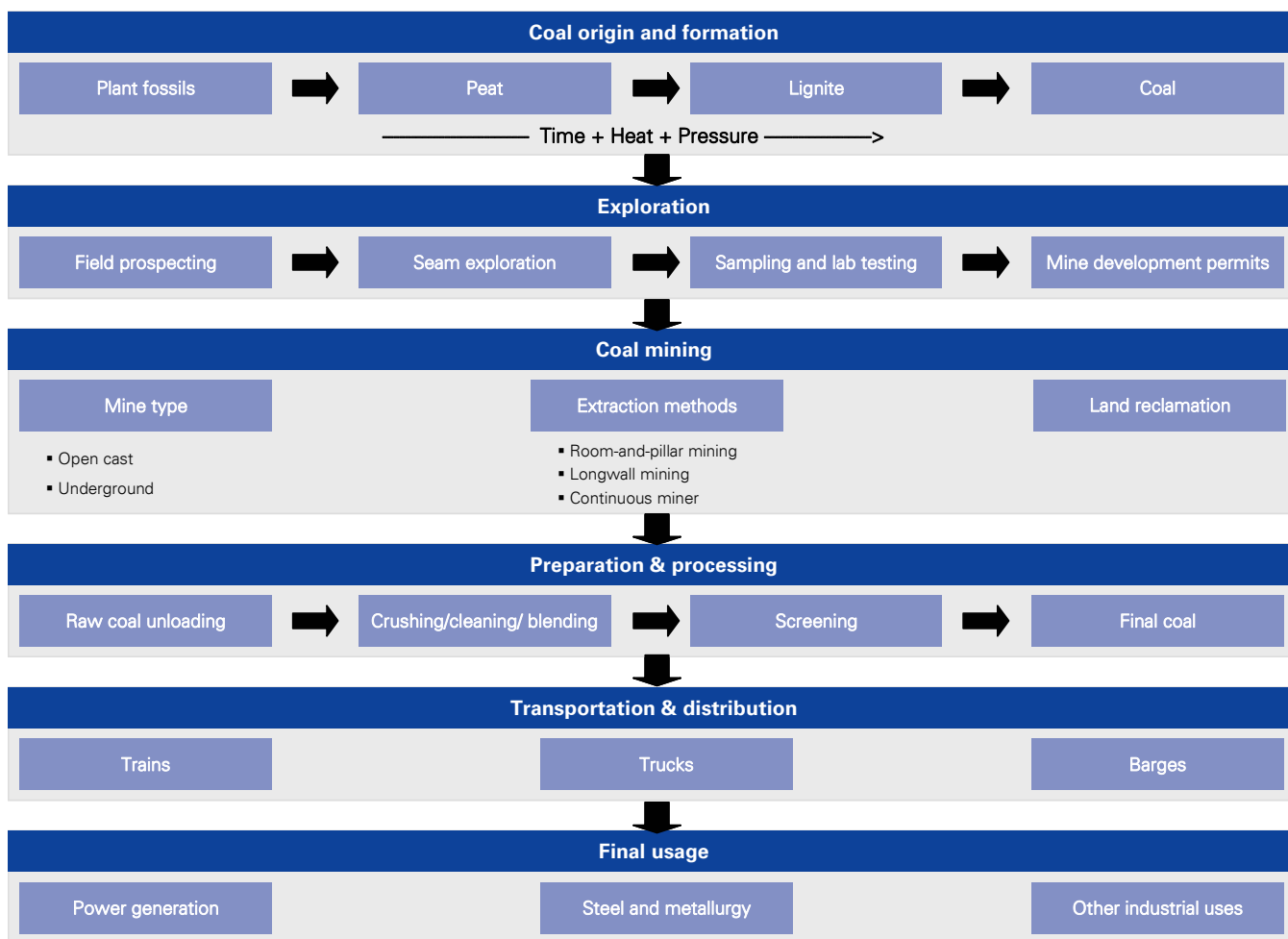
Like crude oil and natural gas, coal is a fossil fuel made up primarily of plant remains that can be burned to release energy. Coal is a burnable brown or black mineral rock considered to be of organic origin that contains large amounts of carbon, as well as other elements such as hydrogen, oxygen, nitrogen, and sulfur.

Coal is the largest source of energy for the generation of electricity

Coal is the most abundant fossil fuel resource in the world as well as the largest source of energy for the generation of electricity. It is also widely used in steel manufacturing and other industrial applications (including among others, cement manufacturing). To its detriment, it is one of the largest sources of CO2 emissions in the world.

The following illustration highlights the basics of coal – from origin and formation, all the way through its final consumption, including the major means of transportation and distribution of the material.

Figure 144: Coal mining flow chart



Source: Industry associations and reports, company reports and Deutsche Bank

Buried and trapped peat stored solar energy that would normally be released as plant decays

Coal created after enduring a slow metamorphic process through passage of time

Coal has been created after enduring a slow metamorphic process through the passage of time before reaching its current state. According to scientists, it all started more than 300 million years ago when the world was largely covered in lush swamplands filled with enormous tropical ferns and giant trees and other organic matter. As new plants and life forms grew, others died and their remains drifted to the bottom of the swamps to form a spongy, nutrient-rich material called peat.

Time, heat and pressure transform nutrient-rich peat into coal

The peat was buried and trapped with layers of sediment which together with tectonic movements created tremendous pressure on the peat. These forces hindered biodegradation and stored the solar energy that would normally be released as plants decay. Over the course of millions of years, the pressure grew and heat built up, transforming nutrient-rich peat into coal. The degree of change that coal undergoes as it matures from peat has important ramifications on its physical and chemical properties, and ultimately on end-use.

Coal deposits typically differ from each other given origin of vegetation and conditions endured

Based on a number of characteristics, coal can be classified into four main types

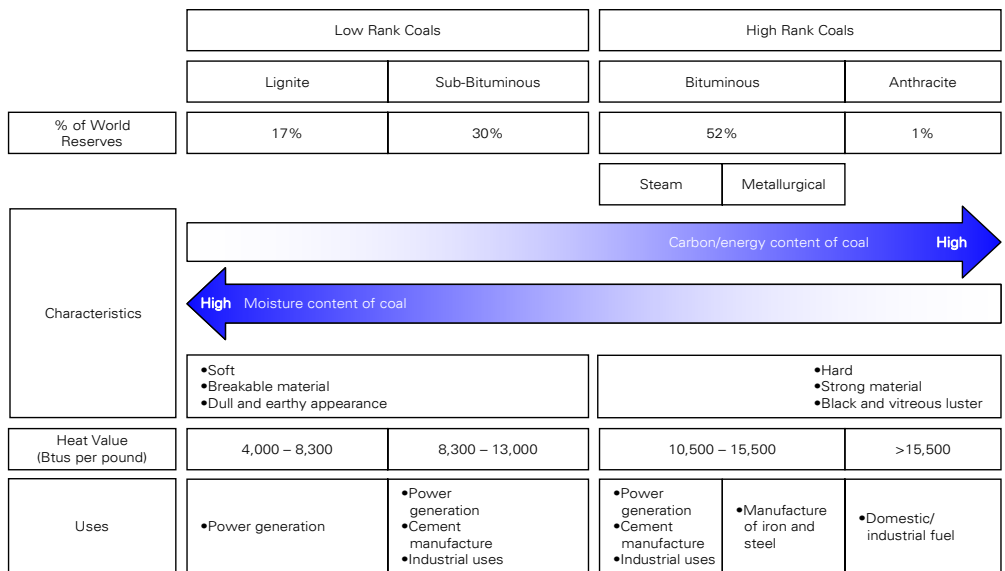
Coal can generally be classified into four types or ranks, based on how it responded to increasing heat and pressure over long periods of time, how deep it lies, and how much carbon it contains. Coal deposits typically differ from each other given the varying degree of vegetation from which it originated and the process that created it.

Organic maturity of coal increases with passage of time – becoming harder, darker and less moist

Initially peat is converted into lignite. With the passage of time, the continuing effects of temperature and pressure progressively increase the organic maturity of the coal and transform it into sub-bituminous coal. Further chemical and physical changes occur until these coals become harder and darker, forming bituminous or hard coal, and under the right conditions and duration could become anthracite. Higher rank coals have less moisture, higher carbon content, and are harder, while the oxygen and hydrogen contents decrease throughout the ranks.

Current world reserves are split between high and low types of coal

Figure 145: Types or ranks of coal



Source: World Coal Institute, American Coal Council, and Deutsche Bank

Higher ranked coal has higher carbon and energy content

Coal can be categorized as either steam or met

End users typically categorize coal as either steam coal or metallurgical (met) coal. Among the characteristics that help producers determine what the best use of a particular coal is are: heat value, sulfur, ash, and moisture content, and in the case of met coal volatility. These characteristics also help determine how to best market and transport the coal.

The following table highlights some of the key attributes and/or consideration for some of the major characteristics of coal.

Figure 146: General characteristics of coal

Characteristics	Comments
Heat value	<ul style="list-style-type: none"> Carbon content supplies most of its heating value Commonly measured in Btus
Sulfur content	<ul style="list-style-type: none"> Chemical composition and concentration of sulfur in coal affects the amount of SO₂ produced in combustion Federal and state environmental regulations limit the amount of SO₂ that may be emitted by coal-fuel power plants Coal-fuel power plants can comply with SO₂ emissions regulations by burning coal with low sulfur content, blending coals that contain various sulfur content, purchasing emission allowances in the open market, and/or using sulfur-reduction technology (such as scrubbers)
Ash content	<ul style="list-style-type: none"> Ash is the inorganic residue remaining after the combustion of coal Impacts boiler performance and electric generating plants must handle and dispose of after combustion The absence of ash is important in the process used to transform met coal into coke
Moisture content	<ul style="list-style-type: none"> High moisture content decreases the heat value and increases the weight of the coal, resulting in more expensive transport Can range from ~2% to over 30% of the coal's weight
Other	<ul style="list-style-type: none"> Fluidity, swelling capacity and volatility to assess the strength of coke produced

Source: Industry associations and reports, company reports, and Deutsche Bank

After detecting anomalies, geologists compile data about coal deposits through drilling and sampling

Coal can be found through ongoing exploration efforts practically on every continent

Deposits of coal exist on every continent – in some countries these are far more plentiful than those of crude oil or natural gas. Nonetheless, it is through ongoing exploration efforts that geologists and prospectors typically detect anomalies that may denote the presence of new mineral deposits. After discovering a coal seam, substantial work is performed through drilling and sampling, in order to amass necessary information that provide indications of the marketability of the coal in order to determine the economics of developing the site. The information compiled includes the possible size of mine, the coal characteristics – such as, heat value, sulfur content, ash content, and moisture content.

Mine plans developed after compiling sufficient information about deposit

A coal seam is simply the layer, or bed, of coal that is thick enough to be mined. Compiling detailed field notes on coal seams, strata above and below the seam, rock types, geologic structures, stream data, and man-made structures provide a means for planning and accomplishing further exploration, development, reclamation, day-to-day operations, and equipment moves.

Developing a mine requires proper funding, permits, and infrastructure

Developing a mine is a substantial undertaking. It requires many steps to be researched, purchased and secured before mining can commence – including but not limited to funding, land leasing or land acquisition, permitting, handling and designing the mine, and assessing processing and transporting the coal.

70% of coal production in the US involves surface mining, 80% in Australia, 40% globally

Surface mining, or open pit mining, and underground mining methods are used to extract coal. Globally, close 40% of coal production involves surface mining. However, surface mining prevails in some important coal producing nations – the US and Australia. In the US, close to 70% of coal production involves surface mining, up from 25% 60 years ago. In Australia, close to 80% of coal production involves surface mining.

Surface mining occurs when the coal is found close to the surface

Surface mining, or open cast mining, occurs when the coal is found close to the surface or on a hillside making it an economically viable method. Mineral deposits are usually covered by overburden – such as, soil and rock, which is first broken up with the usage of explosives and then is stripped off using large machines – such as draglines, wheel excavators, large

shovels, and trucks. Once the coal seam is exposed, it is systematically drilled and fractured. Removed coal is loaded on to large trucks or conveyors for transport to either coal preparation plants or directly to where it will be consumed. After all of the coal has been removed, the area is refilled with the overburden previously removed and is restored to its original condition. This method recovers over 90% of the coal, a higher proportion of the coal deposit than underground mining.

Underground mining occurs when coal is deep beneath the surface or in seams exposed on hillsides

Underground mining occurs when coal is deep beneath the surface or in seams exposed on hillsides. It involves drilling at least two openings – called shafts – into the coal bed. One of the shafts transports up and down the miners and any equipment, and the other brings coal to the surface, sometimes on conveyor belts, after the ore has been broken into chunks – through the use of conventional mining, or either continuous or longwall mining machines – where it can then be broken further into manageable sizes.

There are several methods used to extract coal from underground mines, including among others, room-and-pillar and long wall mining. The choice of mining technique is primarily determined by the geology of the deposit and the economic considerations.

Room-and-pillar mining cuts a network of rooms into the coal leaving behind pillars of coal to support the roof

- **Room-and-pillar.** Coal deposits are mined by cutting a network of rooms into the coal and leaving behind pillars of coal to support the roof of the mine. These pillars can contain up to 40% of the total coal in the seam. This coal can be partially recovered during the last stage of the mine as the pillars are removed and the roof is allowed to collapse. This last phase of the mine is called retreat mining. In conventional mining (the oldest mining method in existence), the coal seam is cut, drilled, blasted, and loaded into cars. In continuous mining, coal deposits are mined using machines with large, rotating cutters that break into the coal (circumventing the need for drilling and blasting) with arms that scoop the coal onto a built-in conveyor belt.

Long wall mining completely extracts coal from exposed seams using mechanical shearer

- **Long wall mining.** Coal is completely extracted from the exposed seam using a mechanical shearer. This is a highly productive underground coal mining technique that occurs when a long wall of coal is mined in a single slice, typically 1-2m thick. Long wall mining machines consist of multiple coal shearers mounted on a series of self-advancing hydraulic ceiling supports. After the coal has been fully extracted, the roof is allowed to fall. This method allows extraction of more than 75% of the coal from the panels. Personnel must be highly skilled and well trained in the use of complex and state of the art instruments and equipment.

After extraction, coal sometimes needs washing in order to remove impurities

Preparing and processing the coal improves the quality to a degree

After the run of mine (ROM) coal has been extracted out of the ground, it sometimes undergo a process known as beneficiation or coal cleaning – also known as washing – in which undesired impurities – like other rocks and dirt – are removed. This is performed in order to ensure consistent quality and enhance the suitability for particular end-uses, as it (1) boosts the heat content of the coal, (2) improves power plant capacity, (3) reduces maintenance costs at the power plant and extends plant life, and (4) reduces potential air pollutants, especially sulfur dioxide.

Coal treatment processes conditional on properties and desired end-uses

Treatment processes are conditional on the properties of the coal and its desired end-use. At times, coal might just require crushing or it may go through complex treatment process to reduce impurities. First, the dirt and slack is separated from the coal, then it is passed over a series of shaker and vibrating screens in which pieces fall according to size. The sizing process differs from one type of coal to another.

- **Larger size fractions.** Typically treated using dense medium separation. In this method, coal is separated from other impurities by being floated in a tank containing a liquid of specific gravity. The impurities tend to settle down, while the coal, being a lighter material, floats.

- **Smaller size fractions.** Treated in a number of ways, based on the different properties of the coal and the wastes. A centrifuge machine turns a container around at rapid speeds creating separation based on masses – this process takes advantage of the difference in mass of coal and wastes. Another process is froth floatation, in which coal particles are removed in a froth produced by blowing air into a water bath containing chemical reagents. The bubbles attract the coal and move to the surface where it is skimmed off in order to recover the coal fines, whereas the waste drifts to the bottom of the tank.

Blending is an alternative to improve characteristics prior to shipping coal

Coal can then be blended with two or more types of coal, in order to improve the overall characteristics of the coal and maximize efficiency. After all is said and done, coal is loaded and sent to its destination.

The main means of transportation include rail, trucks, and barges

Transporting and distributing the coal is not an insignificant component

The transportation of bulk commodities, like coal, end up amounting to a large component, if not the largest component of the delivered cost for end consumers. The transportation mode chosen will depend on the distance the material needs to travel, as well as on the existing infrastructure in place. For short distances, conveyor belts or dumpers are typically used. For longer distances within a domestic market, trains, trucks, and barges are used. For international transportation, ships are commonly used.

Rail is most common mode of transportation

- **Railways.** By far the most common mode of transportation for long-term, long-distance, and high-volume movements of coal. Tracks, railcars, origin and destination points already exist. Assets have a long life with minimum maintenance required. In the US ~68% of the coal is transported by train.

Trucks used for small shipments and short distances

- **Trucks.** Typically used for smaller shipments and shorter haul distances. Off-highway trucks can transport more than 250 tons. On-highway trucks transport smaller loads under 25 tons.

- **Barges.** Often the cheapest mode of transportation. Notwithstanding, barges can't take coal to all of the destinations it needs to go. The number and type of barges that can be towed are usually determined by the dimensions of the waterway, with each barge being able to carry up to 1.5k tons. Although considered to be a highly cost-efficient means of transport, it has lower delivery times than other methods.

- **Ships.** For international transportation, different size ships are used, ranging from Handymax (40,000 to 60,000 DWT), Panamax (60,000 to 80,000 DWT) to Capesize vessels (greater than 80,000 DWT).

Coal is pivotal in electricity generation and steel production

Globally, coal has a number of important uses with the more prevalent being its use in electricity generation and steel manufacturing. Coal is also used in a number of other industrial applications, such as cement, paper, ceramics, and metal products. In addition, coal's methanol and ethylene are widely used to make products such as plastics, medicines, fertilizers and tar.

Steam or thermal coal is mainly used in power generation, whereas metallurgical (met), or coking, coal is mainly used in the production of steel.

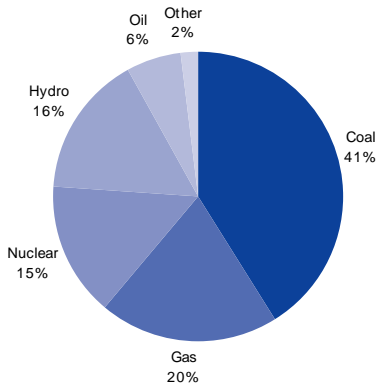
Coal is the largest source of fuel for power generation

Electricity generation should continue to be the main user of coal

Being a reliable, abundant, and low-cost energy source, coal is primarily used to generate electricity, where it plays a pivotal role globally being the largest source of fuel for power generation at ~40%.

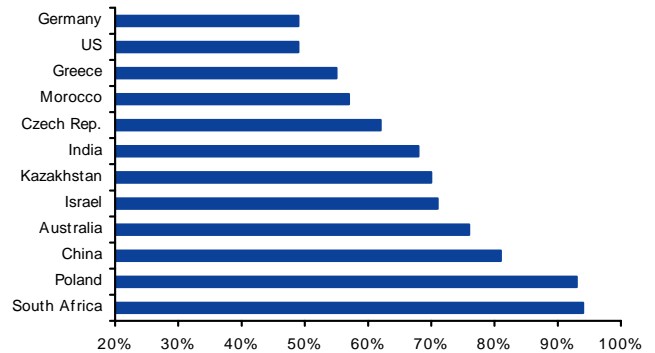
In the US in particular, close to ~93% of the coal consumed is used for electricity generation, with coal being the largest source of fuel for power generation at ~50%.

Figure 147: Global electricity generation by source type



Note: Other includes solar, wind, combustible renewable, geothermal and waste
Source: IEA and Deutsche Bank

Figure 148: Coal in electricity generation

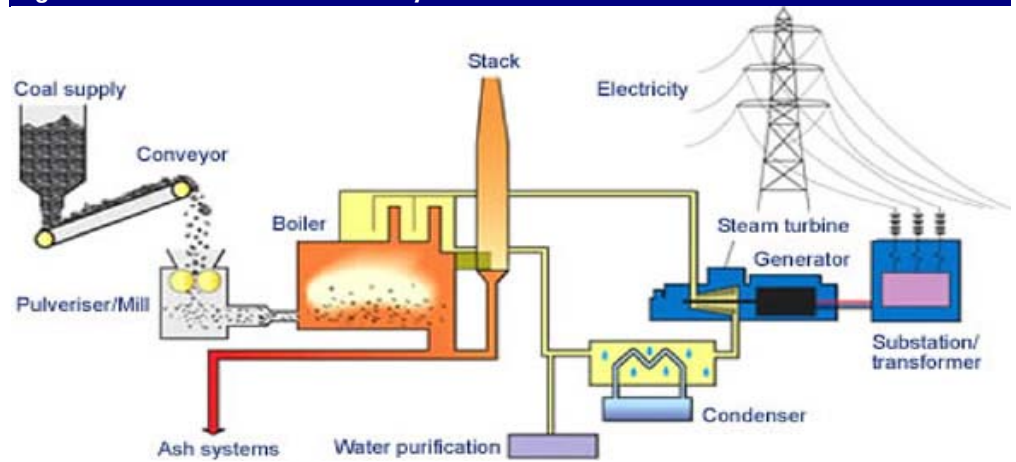


Source: IEA and Deutsche Bank

Coal is first milled to a fine powder in an effort to increase its surface and combustion rate. The powdered coal is blown into the combustion chamber of a boiler where it is scorched at very high temperatures. The hot gases and radiant energy produced convert water in tubes lining the boiler into steam. The high pressure is passed into a turbine containing thousands of propeller-like blades. The steam pushes these blades causing the turbine shaft to rotate at high speed. A generator is mounted at one end of the turbine shaft and consists of carefully wound wire coils. Electricity is generated when these are rapidly rotated in a strong magnetic field. After passing through the turbine, the steam is condensed and returned to the boiler to be heated again.

Generated electricity is transformed into the higher voltages used to transmit via power line grids, and then at the point of consumption by the end user, the electricity is transformed down to safer voltage systems.

Figure 149: Generation of electricity

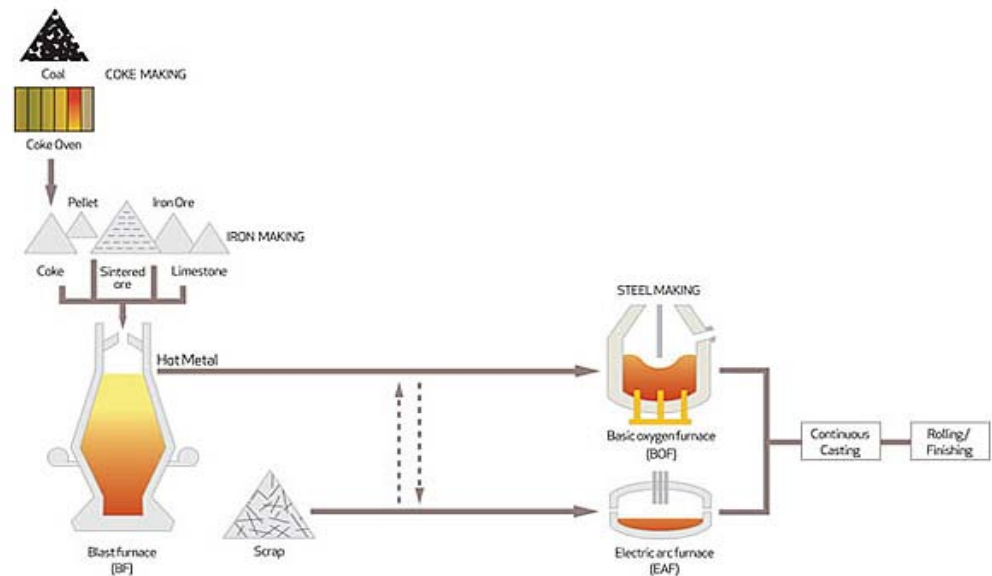


Source: Worldcoal.org and Deutsche Bank

Met coal is a key ingredient in steel production

Coal is also a key ingredient in the steel making process

Coal is also a vital ingredient in the steel making process, where ~70% of the steel produced today uses coal. World crude steel production was 1.3bn tons in 2009, and ~650MM tons of coking coal and Pulverised Coal Injection (PCI) coal was used in the production of this steel. In order to make 1 ton of steel, about 0.6 tons of coal is used. Steel is produced via two main routes, namely: integrated smelting involving blast furnace iron-making followed by basic oxygen furnace (~66% of total world steel production) and electric arc furnaces (~33%).

Figure 150: Production of steel

Source: Worldcoal.org and Deutsche Bank

Steel is an alloy based primarily on iron. As iron occurs only as iron oxides in the earth's crust, the ores must be reduced using carbon, with met or coking coal being the primary source of this carbon when mixed and heated with coke.

Met coal is first converted to coke by driving off impurities to leave almost pure carbon. Coal is carbonized in batteries of coke ovens, where the coal blend is poured into the top of extremely-high temperature ovens, where the volatile contents of the coal are driven off as gas, which is instead used to heat the ovens themselves and as fuel elsewhere in the steel production. Thereafter, the larger sized material goes to the blast furnace, where it (1) supplies carbon as a reducing agent, (2) provides heat to melt the iron, and (3) acts as a load-bearing layer that is permeable allowing the reducing gases to pass through.

Coal is used in other industrial uses

Cement, alumina refineries, paper manufacturers, among others are also users of coal

Other important users of coal include the cement industry, alumina refineries, paper manufacturers, breweries, chemical companies, pharmaceutical, automobiles, lumber, and irrigation. Power plants burn fossil fuels like coal to produce electricity on a large, continuous scale. Plants use a rotating machinery that continuously converts the heat energy into mechanical energy, which in turn keeps an electrical generator going at all times. Companies all over the world have their own internal power plants to fuel the production of tons of items we use every day.

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North America United States
Industrials Metals & Mining

24 March 2010

Alliance Resource L.P.

Reuters: **ARLP.OQ** Bloomberg: **ARLP UW**

Robust and steady dividend payer

Initiating Alliance Resource LP with a Hold and \$44 PT

We are initiating coverage on Alliance Resource LP (ARLP) with a Hold rating and a price target of \$44/share. Alliance Resource is the fifth largest eastern US coal producer and one of the few coal miners incorporated as a Master Limited Partnership in the US. It is a leading producer in the Illinois Basin, holding a 21% market share with 79% of its coal sales volumes coming from this region. Though we believe that anticipated growth seems to be priced in, Alliance Resource offers investors a robust and steady dividend income stream.

DB bullish on bulk commodities as market conditions tighten

DB is bullish on bulk commodities, and in particular coal; backed by increasing net imports by China and India, an improvement in power consumption in the US, and less pressure from coal to natural gas switching at utility plants. Our commodities team calls for Japanese steam coal to average \$85/tonne in 2010 and \$100/tonne by 2011 and for premium hard coking coal to average \$175/tonne in 2010 and \$190/tonne by 2011, which bode well for the US coal market.

Earnings outlook on an upswing on higher average realized coal prices

EPS of \$5.03 in 2010 and \$5.02 in 2011 denote a significant improvement from \$3.55 posted in 2009. Our 2010 and 2011 EPS estimates are 10% and 7% higher than consensus, respectively. A combination of higher average realized coal prices, increasing coal sales volumes, as well as fairly subdued operating cash costs increases to be the main drivers for Alliance Resource earnings results in 2010 through 2012.

Valuation wrap and risks

Our 12-month price target of \$44/share for Alliance Resource is based on a 1.1x multiple to our dividend discount model for the company, which assumes a 10% Ke and 1% terminal growth rate. This translates into an EV/EBITDA multiple of 5x based on our EBITDA estimate of \$450 million for 2011, which is in the lower end of the 5x and 7x range we believe the NA Coal sector should trade at. Main up/downside risks include direction of spot prices vis-à-vis contract pricing in place, better/worse ramp up of new projects in place – including higher/lower investment requirements and/or operating costs. Please see next page for details on Alliance Resource's valuation and risks.

Forecasts and ratios

Year End Dec 31	2009A	2010E	2011E
FY EPS (USD)	3.55	5.03	5.02
P/E (x)	9.7	8.4	8.4
DPS (USD)	2.95	3.48	3.75
Dividend yield (%)	8.6	8.3	8.9
EV/EBITDA	5.0	4.6	4.6

Source: Deutsche Bank estimates, company data

¹ Includes the impact of FAS123R requiring the expensing of stock options.

Hold

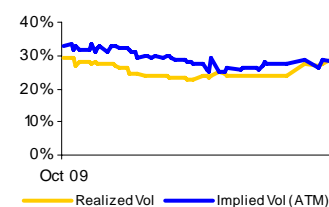
Price at 23 Mar 2010 (USD)	42.12
Price target	44.00
52-week range	45.21 - 28.87

Price/price relative



Performance (%)	1m	3m	12m
Absolute	-0.5	-3.4	44.0
S&P 500 INDEX	6.0	5.0	47.8

Implied & Realized Volatility (3M)



Investment thesis

Outlook

Alliance Resource is the fifth largest eastern US coal producer and one of a few coal MLPs

Alliance Resource, headquartered in Tulsa, Oklahoma, is the fifth largest eastern US coal producer and one of the few coal miners incorporated as a Master Limited Partnership in the US. It is a leading producer in the Illinois Basin, holding a 21% market share with 79% of its coal sales volumes coming from this region. Alliance Resource follows a highly contracted business model with 97% and 89% of expected sales volumes in 2010 and 2011, respectively, committed and priced – a defensive proposition should market conditions deteriorate but limiting upside should market conditions tighten further. Although a fairly small coal player, we estimate that coal sales volumes could reach 37MM tons by 2012 from 25MM tons sold in 2009, a meaningful jump from a low base. As the company completes expansions, free cash flow generation should increase commensurately with production and declining growth capex, resulting in increasing dividend payments. Alliance Resource offers investors a robust and steady dividend income stream – dividend yield of ~9% is estimated for the next three years. Notwithstanding, we believe that the required dividend payments and the fairly high fixed costs and start-up expenses limit the company's financial flexibility, at least in the foreseeable future. We are initiating coverage on Alliance Resource with a Hold rating and a price target of \$44/share.

Valuation

We believe that Alliance Resource should trade at the low end of the range of its peer group

Our 12-month price target of \$44/share for Alliance Resource is based on a 1.1x multiple to our dividend discount model for the company, which assumes a 10% Ke and 1% terminal growth rate (based on our knowledge of the asset base and expectations of the long-term growth). This translates into an EV/EBITDA multiple of 5x based our EBITDA estimate of \$450 million for 2011. This multiple is in the lower end of the 5x to 7x range that we believe the NA Coal sector should trade at, based on historical averages. We believe that Alliance Resource should continue to trade at the lower end of the range of its peer group given the size and location of its asset base, operations and mining projects, as well as its growth prospects. We do acknowledge that its steady and healthy dividend stream could attract investors seeking income rather than capital appreciation. Nonetheless, it is this required dividend stream that somehow constrains the company's financial flexibility despite its ability to generate meaningful free cash flow.

Risks

Main up/downside risk include direction of spot prices vis-à-vis contract pricing in place

Key up/downside risks to our outlook include an acceleration/pullback in global economic growth, acceleration/slowdown in energy consumption, further coal inventory decreases/increases at utility companies, direction of energy prices, changes in energy and/or carbon policy changes and consequent ramifications in switching fuels. These dynamics tend to set the stage for global coal supply and demand fundamentals, and ultimately on the dynamics unfolding in the US. Mining companies can face geologic and operational obstacles. In particular, Alliance Resource growth is contingent on the successful execution of its River View mine (IB) and Tunnel Ridge mine (NAPP) which could come on stream with results ahead of expectations or face delays and not lead to the expected increases in new production, as well as possibly require higher investments and/or face higher operating costs than expected. Other risks are associated with the direction of input costs, fiscal regime and mining legislation, and the successful execution of mining operations. Further risks for coal companies stem from contract pricing in place vis-à-vis the direction of spot prices.

Model updated: 18 March 2010

Running the numbers**North America****United States****Metals & Mining****Alliance Resource L.P.**

Reuters: ARLP.OQ

Bloomberg: ARLP UW

Hold

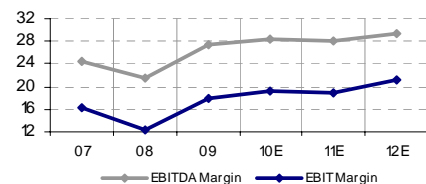
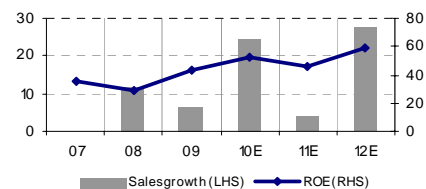
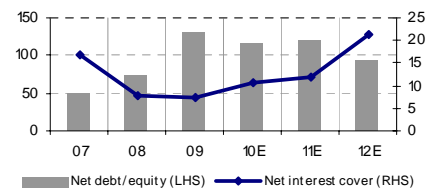
Price (23 Mar 10) USD 42.12

Target price USD 44.00

52-week Range USD 28.87 - 45.21

Market Cap (m) USDm 1,544
EURm 1,157**Company Profile**

Alliance Resource Partners (ARLP) is one of the very few publicly traded Master Limited Partnerships operating in the US coal sector. ARLP is the fifth largest eastern US coal producer. ARLP sold 25MM tons of coal in 2009 and controlled 647MM tons of recoverable reserves of coal at the end of 2009. The company produces only steam coal, mostly high sulfur, at Illinois Basin (79% of 2009 sales volume), Central Appalachia (11%), and Northern Appalachia (11%). The company is listed on the NASDAQ under the symbol ARLP and is headquartered in Tulsa, Oklahoma.

Price Performance**Margin Trends****Growth & Profitability****Solvency**

David Martin

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Fiscal year end 31-Dec

	2007	2008	2009	2010E	2011E	2012E
Financial Summary						
DB EPS (USD)	3.78	2.41	3.55	5.03	5.02	7.60
Reported EPS (USD)	3.05	2.41	3.59	5.03	5.02	7.60
DPS (USD)	2.20	2.53	2.95	3.48	3.75	4.75
BVPS (USD)	8.68	7.90	8.73	10.28	11.56	14.41
Valuation Metrics						
Price/Sales (x)	1.3	1.2	1.0	1.0	1.0	0.8
P/E (DB) (x)	9.9	15.8	9.7	8.4	8.4	5.5
P/E (Reported) (x)	12.3	15.8	9.6	8.4	8.4	5.5
P/BV (x)	4.2	3.4	5.0	4.1	3.6	2.9
FCF yield (%)	5.7	4.6	nm	12.3	9.5	20.6
Dividend yield (%)	5.9	6.6	8.6	8.3	8.9	11.3
EV/Sales	1.5	1.4	1.4	1.3	1.3	1.0
EV/EBITDA	6.0	6.5	5.0	4.6	4.6	3.4
EV/EBIT	9.0	11.2	7.6	6.8	6.9	4.8

Income Statement (USDm)

Sales	1,033	1,157	1,231	1,534	1,595	2,032
EBITDA	254	249	339	435	450	597
EBIT	169	144	222	293	300	427
Pre-tax profit	172	134	193	265	275	407
Net income	112	88	132	184	184	279

Cash Flow (USDm)

Cash flow from operations	244	261	283	489	422	568
Net Capex	-166	-196	-328	-300	-275	-250
Free cash flow	78	65	-45	189	147	318
Equity raised/(bought back)	1	1	-1	0	0	0
Dividends paid	-111	-136	-167	-205	-225	-298
Net inc/(dec) in borrowings	9	302	-19	41	43	-16
Other investing/financing cash flows	-13	12	9	0	0	0
Net cash flow	-36	244	-223	25	-36	4
Change in working capital	-9	9	-50	86	0	-4

Balance Sheet (USDm)

Cash and cash equivalents	1	245	22	47	11	15
Property, plant & equipment	521	616	823	981	1,106	1,186
Goodwill	0	0	0	0	0	0
Other assets	180	169	207	164	169	201
Total assets	702	1,031	1,051	1,191	1,285	1,402
Debt	156	459	441	481	524	508
Other liabilities	228	281	290	332	337	364
Total liabilities	384	740	730	813	861	872
Total shareholders' equity	318	290	321	378	425	529
Net debt	154	214	419	435	513	493

Key Company Metrics

Sales growth (%)	nm	11.9	6.4	24.6	4.0	27.4
DB EPS growth (%)	na	-36.3	47.3	41.8	-0.2	51.2
Payout ratio (%)	71.7	104.7	82.2	69.1	74.6	62.5
EBITDA Margin (%)	24.6	21.5	27.5	28.4	28.2	29.4
EBIT Margin (%)	16.3	12.4	18.0	19.1	18.8	21.0
ROE (%)	35.3	29.2	43.2	53.0	46.0	58.5
Net debt/equity (%)	48.6	73.8	130.6	114.9	120.7	93.1
Net interest cover (x)	17.0	7.8	7.4	10.5	12.0	21.4

DuPont Analysis

EBIT margin (%)	16.3	12.4	18.0	19.1	18.8	21.0
x Asset turnover (x)	1.5	1.3	1.2	1.4	1.3	1.5
x Financial cost ratio (x)	0.9	0.9	0.9	0.9	0.9	1.0
x Tax and other effects (x)	0.7	0.7	0.7	0.7	0.7	0.7
= ROA (post tax) (%)	16.0	10.2	12.6	16.5	14.9	20.7
x Financial leverage (x)	2.2	2.9	3.4	3.2	3.1	2.8
= ROE (%)	35.3	29.2	43.2	53.0	46.0	58.5
annual growth (%)	na	-17.4	48.0	22.6	-13.1	27.2
x NTA/share (avg) (x)	8.6	8.2	8.3	9.5	10.9	13.0
= Reported EPS	3.05	2.41	3.59	5.03	5.02	7.60
annual growth (%)	na	-21.0	49.1	40.3	-0.2	51.2

Source: Company data, Deutsche Bank estimates

Alliance Resource valuation charts

Figure 151: Alliance Resource forward P/E



Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 152: Alliance Resource forward EV/EBITDA



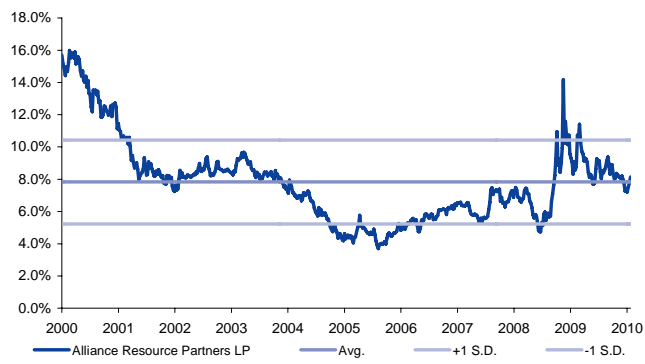
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 153: Alliance Resource forward P/BV



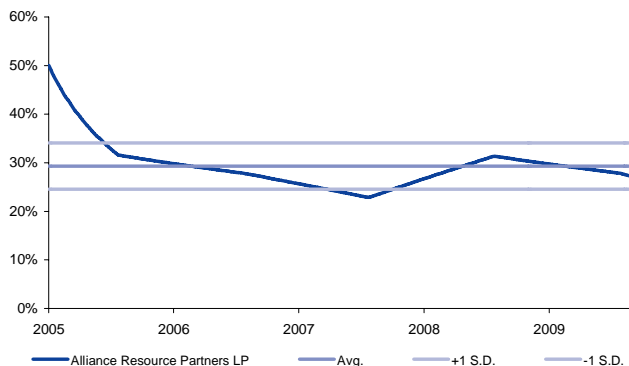
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 154: Alliance Resource forward dividend yield



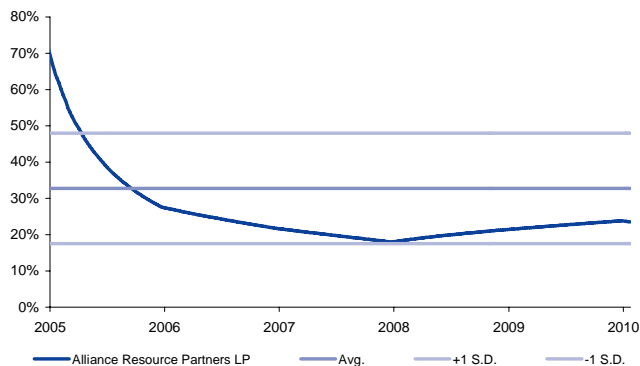
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 155: Alliance Resource forward ROE



Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 156: Alliance Resource forward ROIC



Source: Company data, Capital IQ and Deutsche Bank estimates

Earnings outlook

Alliance Resource EPS to reach \$5.03 in 2010 and \$5.02 in 2011, peaking in 2012 at \$7.60

We estimate that a combination of higher average realized coal prices, increasing coal sales volumes – resulting from an improving economic environment and additional capacity coming on stream, as well as fairly subdued operating cash costs increases to be the main drivers for Alliance Resource earnings results in 2010 through 2012.

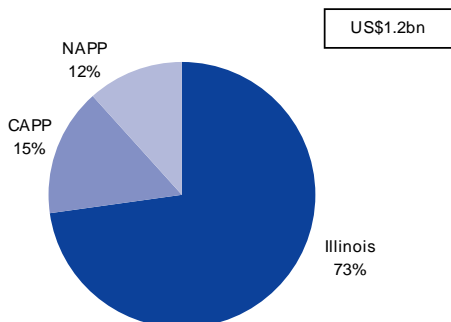
- Revenues.** Revenue should reach \$1.5 billion in 2010 (+25% y/y), \$1.6 billion in 2011 (+4% y/y) and peak at \$2.0 billion by 2012 (+27% y/y). Alliance Resource expects 2010 revenues to reach \$1.5 to \$1.6 billion.
- EBITDA.** EBITDA should follow a similar growth path to revenue coming in at \$435 million in 2010 (+28% y/y) (in line with Alliance Resource guidance of \$410 - \$450 million), \$450 million in 2011 (+3% y/y) and \$597 million in 2012 (+33% y/y). Our 2010 and 2011 EBITDA estimates are fairly in line with consensus (being 4% and 1% higher, respectively). Our 2012 EBITDA estimate is ~34% higher than consensus.
- EPS.** EPS of \$5.03 in 2010 and \$5.02 in 2011 denote a significant improvement from the \$3.55 posted in 2009. Our 2010 and 2011 EPS estimates are 10% and 7% higher than consensus, respectively. Our 2012 \$7.60 EPS estimate is 29% ahead of consensus.
- Sensitivity.** We estimate that a \$1/ton change to our average coal realized price in 2010 should result in a \$30 million change in EBITDA (+/- 7%) and \$0.41 change in EPS (+/- 8%).

Figure 157: Alliance Resource key earnings summary

(US\$m)	2008A	2009A	2010E	2011E	2012E
Sales	1,157	1,231	1,534	1,595	2,032
EBITDA	249	339	435	450	597
EBITDA margin	22%	28%	28%	28%	29%
EPS (US\$)	2.41	3.55	5.03	5.02	7.60
Operating summary					
Shipments (000 tons)	27,170	24,975	30,050	30,700	36,900
Revenue per ton (US\$/ton)	42.57	49.29	51.03	51.94	55.06
Operating cash cost per ton (US\$/ton)	33.40	35.71	36.56	37.30	38.87
EBITDA per ton (US\$/ton)	9.16	13.58	14.47	14.65	16.19

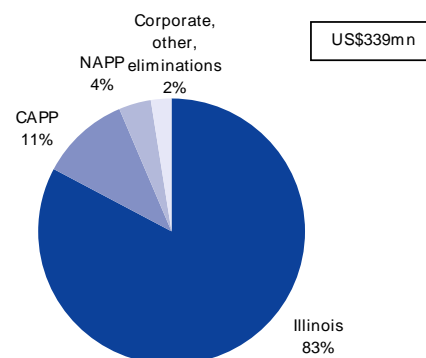
Source: Company data and Deutsche Bank estimates

Figure 158: Revenue breakdown by region, 2009



Source: Company data and Deutsche Bank

Figure 159: EBITDA breakdown by region, 2009



Source: Company data and Deutsche Bank

Operational outlook

Coal sales volumes to hover in the 30MM tons level for next two years, to then jump to 37MM tons in 2012

Volumes. We estimate coal sales volumes to reach 30.1MM tons in 2010 (+20% y/y) following an 8% y/y decline in 2009. Alliance Resource anticipates 2010 sales volumes to come in at 30.3 to 31.0MM tons. Our estimates for 2011 are predicated on a marginal coal sales volume improvement of ~2%. The big jump in volumes is not envisioned until 2012, when River View mine (IB) and Tunnel Ridge (NAPP) should each reach full capacity and add in total 12MM tons annually.

We expect average realized prices to increase 3.5% y/y in 2010 and 2% in 2011

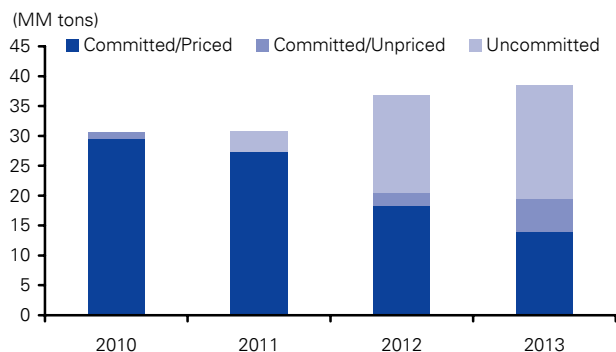
Prices. Despite our expectation of power consumption increases and reduced pressure from coal to natural gas switching at utility plants in the US, which should result in improving steam coal prices in the foreseeable future as the US recovers, we do acknowledge that coal inventory levels at utility companies while decreasing still remain fairly high and low natural gas prices continue to pose a risk. Thus, we anticipate that Alliance Resource average realized prices to increase 3.5% y/y in 2010 and reach \$51.03/ton and increase an additional 2% y/y and reach \$51.94/ton in 2011.

Alliance Resource has committed and priced practically all of its 2010 and 2011 volumes

Contracts. Alliance Resources typically engages in fixed price and fixed volume long-term agreements with many of its customers, with terms greater than one year and maturities ranging from 2010 to 2016. Multi-year contracts usually have specific and possibly different volume and pricing arrangements for each year of contract, with some having variable pricing.

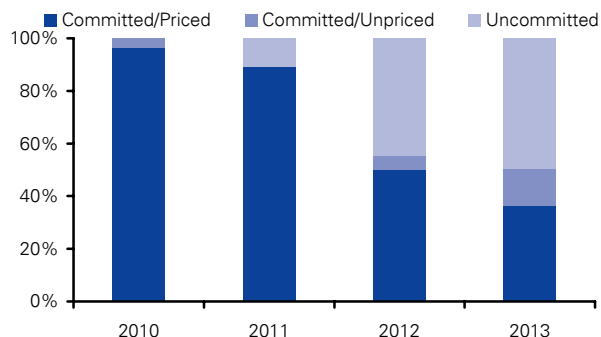
The company has secured commitments for substantially all of its 2010 sales volume (~3% has yet to be priced) and ~89% of its expected sales in 2011. For 2012 and 2013, Alliance Resource has already priced and secured commitments for ~55% and ~51% of its anticipated sales volume.

Figure 160: Committed and priced tonnage



Source: Company data and Deutsche Bank estimates

Figure 161: Committed and priced tonnage



Source: Company data and Deutsche Bank estimates

Operating cash costs. We estimate Alliance Resource operating cash cost to be \$36.56/ton in 2010 (+2% y/y), due to inflationary pressures affecting the industry at large, as well as to the effects of the ramp up of additional production at River View (IB) and Tunnel Ridge (NAPP). Thereafter, we expect operating cash costs to continue to increase at a moderate rate of about 2% per year.

Liquidity and free cash flow estimates

Required sizeable dividends limit financial flexibility despite robust cash flow generation

We estimate that Alliance Resource could generate free cash flow of \$104 million in 2010 and could more than double the amount by 2012 to \$323 million (implying an average FCF yield of ~12% over the 3-year time period), as capex should gradually decline from \$300 million in 2010 to \$250 million by 2012. Notwithstanding, the required dividend payment stream, which we estimate will increase by 2012 from 2010, could prompt the company to seek alternate funding sources other than rely on internal cash flow generation.

As growth projects come to fruition, overall capex should decline over next three years

Capex. We estimate annual maintenance capex to be ~\$120 million (~\$4.0 per ton). In addition, Alliance has a number of projects that add new production, such as River View mine (IB) and Tunnel Ridge mine (NAPP). River View mine which began to produce coal in mid-2009 is expected to incur a total capex of \$250 to \$275 million (~76% has already been disbursed) and Tunnel Ridge mine (NAPP) which is expected to be running from 2011 and is expected to incur total capex of \$285 to \$300 million (~32% has already been disbursed). Thus, taking into consideration the annual maintenance capex and the growth capex, we estimate 2010 capex to be \$300 million (was \$328 million in 2009), with the overall figure gradually declining to \$250 million by 2012, as some of the growth projects come to fruition. Alliance Resource is guiding for 2010 capex to be between \$275 and \$315 million.

As cash flow generation increases, so does the required dividend payments

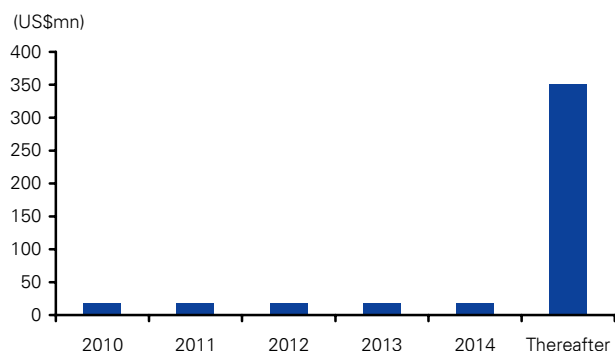
Dividends. As an MLP, Alliance Resource is known for its cash distributions due to 1) the legal requirement to get the MLP tax benefit, and 2) the fact that compensation of managing general partners is dependant on dividend per unit. Due to the second reason managers have vested interest in declaring higher distributions. We estimate that Alliance Resource will pay total dividends of ~\$205 million in 2010 and expect this figure to increase to \$298 million by 2012 (including portion destined to managers). Stripping out what the managers should receive, we estimate that the limited partners (or shareholders) should receive about \$3.48 per unit in 2010 (was \$2.95 in 2009) and expect that this amount to increase by 2012 to \$4.75, implying an average dividend yield for the period of ~9%.

Alliance Resource Incentive Distribution policy with regards to quarterly distribution states a Minimum Quarterly Distribution (MQD) of \$0.250 per unit. The managing general partner is entitled to receive 15% of the amount they distribute in excess of \$0.275 per unit, 25% of the amount they distribute in excess of \$0.3125 per unit, and 50% of the amount we distribute in excess of \$0.375 per unit."

No debt maturities due in horizon, however increasing cash generation flows to dividend payments

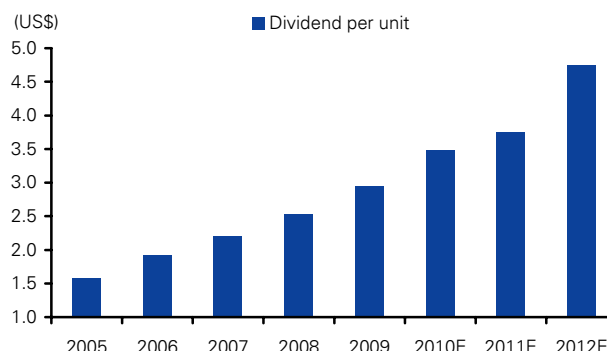
Net debt (cash). Although the company has no major debt maturities coming up in the foreseeable future, it ended 2009 with \$22 million of cash on hand and total debt of \$440 million. Alliance Resource had \$150 million of committed total liquidity of which \$128 million is available under its revolver credit facilities – which does provide some degree of flexibility.

Figure 162: Alliance Resource debt maturities



Data is as of December 31, 2009
Source: Company data and Deutsche Bank

Figure 163: Cash distributions/dividend per unit



Source: Company data and Deutsche Bank

Financial statements and operating assumptions

Figure 164: Alliance Resource summary income statement

(US\$m)	2008A	2009A	2010E	2011E	2012E
Sales	1,157	1,231	1,534	1,595	2,032
EBITDA	249	339	435	450	597
EBITDA margin	21.5%	27.5%	28.4%	28.2%	29.4%
Depreciation	105	118	142	150	170
EBIT	144	222	293	300	427
Interest income/(expense)	-10	-29	-28	-25	-20
Pre-tax income	134	193	265	275	407
Tax-rate	-0.4%	0.4%	1.0%	1.0%	1.0%
Net income	88	132	184	184	279
Net margin	7.7%	10.7%	12.0%	11.6%	13.7%
Shares	37	37	37	37	37
EPS (US\$)	2.41	3.55	5.03	5.02	7.60

Source: Company data and Deutsche Bank estimates

Figure 165: Alliance Resource operating assumptions

	2008A	2009A	2010E	2011E	2012E
Shipments (000 tons)	27,170	24,975	30,050	30,700	36,900
Revenue per ton (US\$/ton)	42.57	49.29	51.03	51.94	55.06
Operating cash cost per ton (US\$/ton)	33.40	35.71	36.56	37.30	38.87
EBITDA per ton (US\$/ton)	9.16	13.58	14.47	14.65	16.19
Capital Expenditure (US\$m)	206	328	300	275	250

Source: Company data and Deutsche Bank estimates

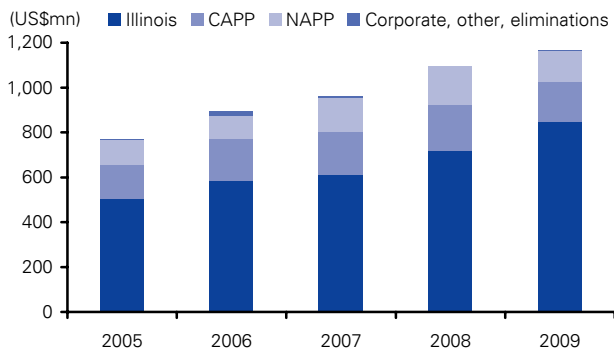
Figure 166: Alliance Resource summary balance sheet

(US\$m)	2008A	2009A	2010E	2011E	2012E
Assets					
Cash & equivalents	245	22	47	11	15
Other current assets	134	171	128	133	165
Long-term assets	652	859	1,017	1,142	1,222
Total assets	1,031	1,051	1,191	1,285	1,402
Liabilities					
Short-term debt	18	18	18	18	18
Other current liabilities	120	120	162	166	194
Long-term debt	441	422	463	506	490
Other long-term liabilities	161	170	170	170	170
Minority interest	1	1	1	1	1
Shareholders' equity	290	321	378	425	529
Total liabilities & equity	1,031	1,051	1,191	1,285	1,402
Net debt	214	419	435	513	493

Source: Company data and Deutsche Bank estimates

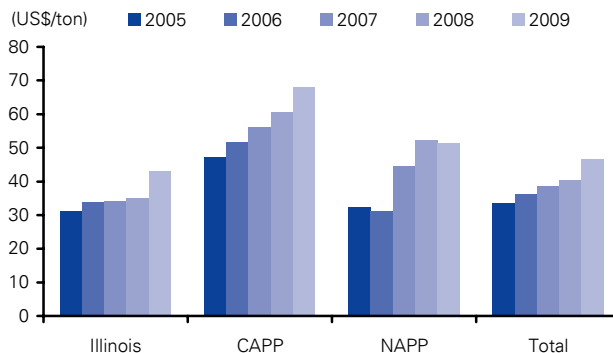
Alliance Resource financial snapshot

Figure 167: Evolution of revenue by region



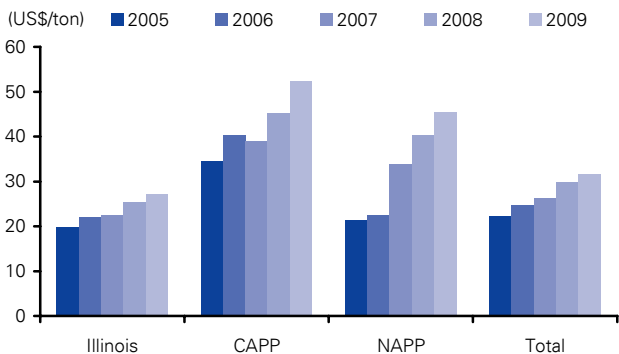
Source: Company data and Deutsche Bank

Figure 168: Evolution of average realized price by region



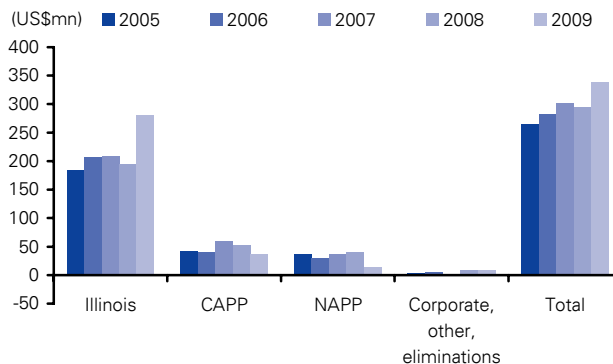
Source: Company data and Deutsche Bank

Figure 169: Evolution of average cost by region



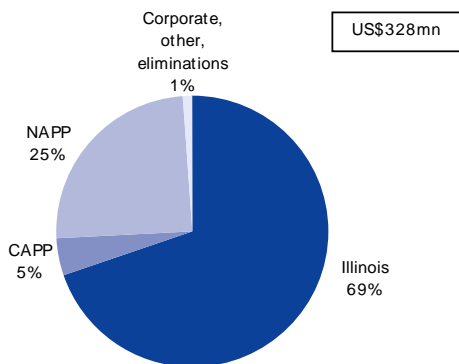
Source: Company data and Deutsche Bank

Figure 170: Evolution of EBITDA by region



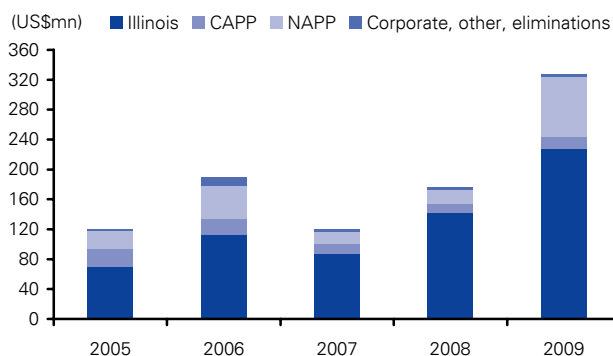
Source: Company data and Deutsche Bank

Figure 171: Capex breakdown by region, 2009



Source: Company data and Deutsche Bank

Figure 172: Evolution of capex by region



Source: Company data and Deutsche Bank

Company profile

Company description

Alliance Resource is the fifth largest eastern US coal producer

Alliance Resource is one of the very few coal MLPs that publicly trade

Alliance Resource Partners (ARLP) is one of the very few publicly traded Master Limited Partnerships (MLP) operating in the US coal sector. Headquartered in Tulsa, Oklahoma; Alliance Resource is the fifth largest eastern US coal producer and controls over 647MM tons of total coal reserves. The company produced 25.8MM tons of coal (primarily steam) in 2009, from its nine mining complexes in three operating regions: Illinois Basin (IB) (78% of 2009 sales volumes), Central Appalachia (CAPP) (11%), and Northern Appalachia (NAPP) (11%). Overall, 10.1% of the coal produced was low-sulfur (<1%), 22.5% was medium-sulfur (1-2%) and 67.4% was high-sulfur (>2%).

Alliance Resource sold 92% of its coal to major electric utilities and industrial users in 2009 – with the bulk of its sales to electric utilities completed under long-term contracts. By year end 2009, the company had ~3,090 employees, entirely union-free. The company is listed on the NASDAQ.

Company history

Started by MAPCO in 1971, a management buyout led to formation of Alliance Coal

Alliance Resource was formed in 1971 when MAPCO Inc, a privately held company at the time, entered the coal production business by acquiring Dotiki mines. After 25 years, MAPCO Coal owned five mining complexes in three states – Kentucky, Illinois and Maryland. In 1996, management formed Alliance Coal Corporation and led a buyout of MAPCO Inc.'s coal operations. Alliance then acquired Hopkins County Coal, a surface/underground operation in Hopkins County, Kentucky and opened MC Mining, an underground mine in East Kentucky.

Alliance Resource started trading on NASDAQ under the ticker "ARLP" in 1999

Alliance Resource started trading on NASDAQ under the ticker "ARLP" in 1999. During February 2003, a public offering of 2.54 million common units was completed, the proceeds were used in part to purchase Warrior Coal, LLC. Warrior operates an underground mining complex located near in Hopkins County, Kentucky. On June 26, 2008, Alliance Resource issued \$205 million of 6.28% Series A Senior Notes and \$145 million of 6.72% Series B Senior Notes maturing in June 2015 and June 2018, respectively, with interest payable semi-annually. The proceeds were used to partially fund the development of the River View and Tunnel Ridge mining complexes and for other general working capital requirements.

Figure 173: Alliance Resource Partners corporate history

1971	MAPCO Inc. entered into coal business by acquiring Dotiki mine
1996	Management created Alliance Coal Corp and bought MAPCO's coal operations
1998	Alliance acquired Hopkins County Coal for \$7 million
1999	Alliance Resource completed its IPO and started trading on NASDAQ
2003	Alliance Resource acquired Warrior Coal, LLC for \$29 million
2008	Alliance Resource issued \$205 million of 6.28% Series A Senior Notes and \$145 million of 6.72% Series B Senior Notes maturing in 2015 and 2018, respectively, with interest payable semi-annually

Source: Company information and Deutsche Bank

Operations overview

Alliance Resource has a broad asset base in the eastern US, with IB representing 78% of sales

Alliance Resource has a broad and diverse asset base in the eastern US, with operations in IB (~78% of 2009 sales volume), CAPP (~11%), and NAPP (~11%). The company has six active mining complexes in IB (~21% market share), two in CAPP (~1%), and one in NAPP (~2%). In total, the company operates nine mining complexes. The River View complex in IB started production in 3Q09 (but is still undergoing further construction) has an expected capacity of 6.4MM tons per year. The Tunnel Ridge complex in NAPP is expected to start production in 2011, with capacity slated to reach 5.5-6.0MM tons per year.

Two development projects in the works, one in NAPP and the other in IB

Alliance Resource also has two mine development projects: Penn Ridge in NAPP, which has initiated the permitting process, and Gibson South in IB, which is undergoing the permitting process. Mettiki (MD) in the NAPP basin has been idled since October 2006, as the mineable reserves became uneconomical. However, the preparation plant of this complex is still operating and is serving the Mountain View mine, which is located near the Mettiki (WV) mine.

Practically all of Alliance Resource's mines are underground

Practically all of the mines are underground, with its IB and CAPP mines utilizing room and pillar, and NAPP using longwall mining methods. The company also owns preparation plants in most of its mining complexes.

We estimate a mine life of 22 years for Alliance Resources, based on the company's total coal reserves of 647MM tons and expected 30MM tons of production in 2010.

Alliance Resource transports 76% of its coal by rail, the remainder by truck and barge

Alliance Resource transports its coal by rail, truck and barge. The bulk of the company's sales volumes in 2009 (~76.1%) were transported from the mines by rail and the remainder by truck. Alliance Resource relies heavily on the CSX railroad which transports ~37% of its volumes. Customers pay the cost of transporting coal from the mine to their plant or delivery point.

Figure 174: Alliance Resource operations overview

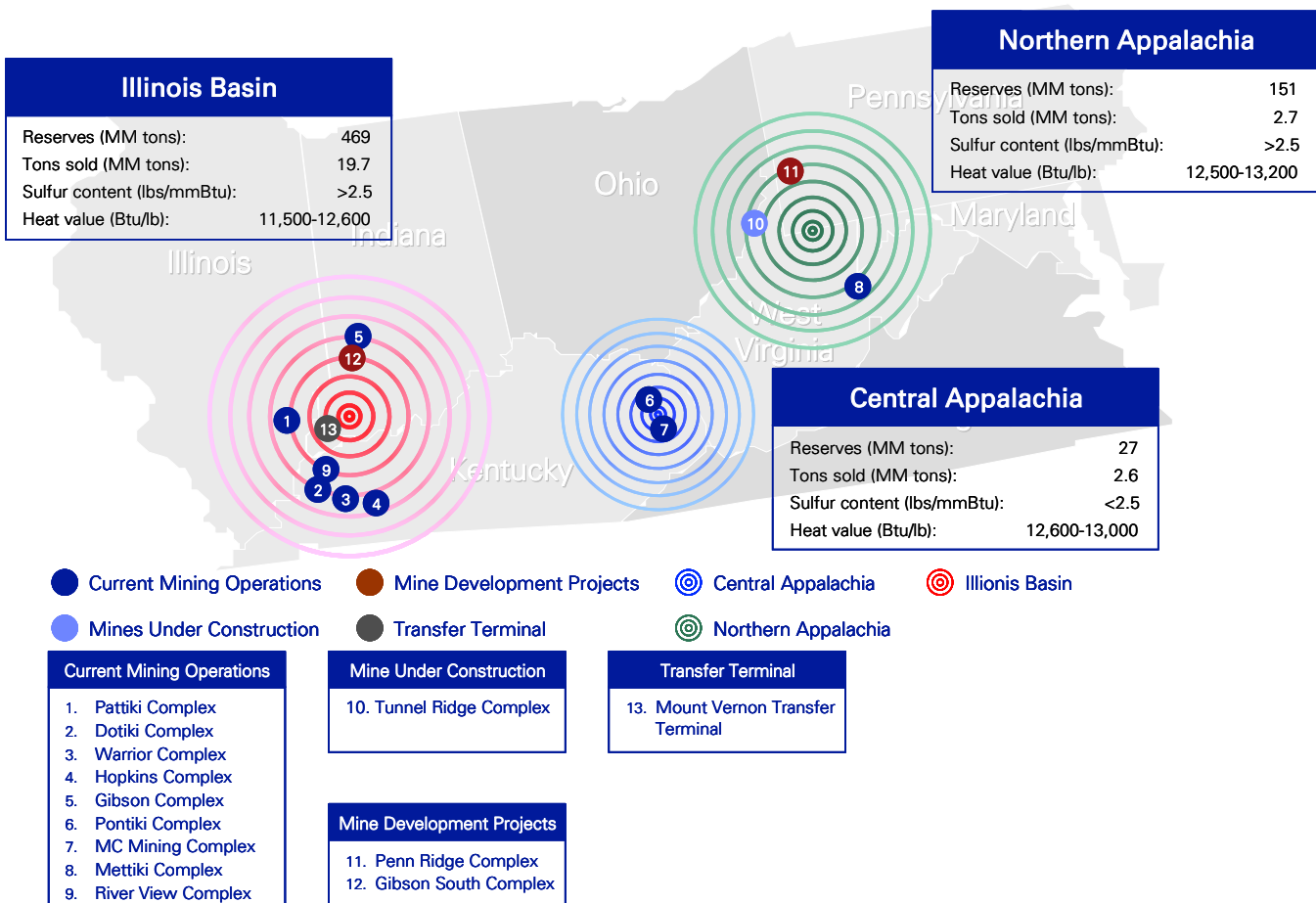
	IB	CAPP	NAPP	Total
Total reserves	469MM tons	27MM tons	151MM tons	647MM tons
Sales volumes ¹	19.7MM tons	2.6MM tons	2.7MM tons	25.0MM tons
Region	Western Kentucky Southern Illinois Southern Indiana	Eastern Kentucky	Maryland West Virginia	
Mining complexes	Dotiki (KY) Warrior (KY) Hopkins (KY) Pattiki (IL) Gibson (North) (IN) River View (KY)	Pontiki (KY) MC Mining (KY)	Mettiki (MD)	
Sulfur content range (lbs/mmBtu)	>2.5	<2.5	>2.5	>2.5
Heat value range (Btu/lb)	11,500 -12,600	12,600-13,000	12,500 – 13,200	12,144

Data is as of December 31, 2009

¹Includes sales of third party purchased coal. Corresponding production volumes for IB, CAPP and NAPP are 20.7MM tons, 2.6MM tons and 2.5MM tons respectively

Source: Company data and Deutsche Bank

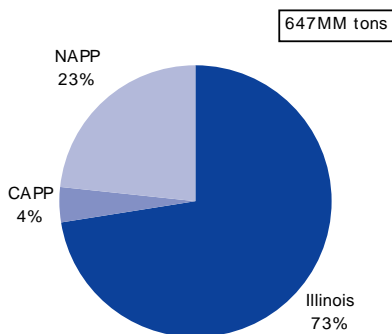
Figure 175: Alliance Resource operations by geography



Data as of December 31, 2009
Source: Company data and Deutsche Bank

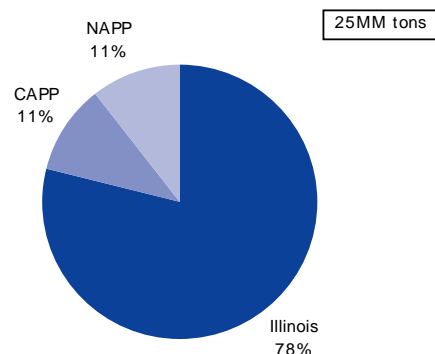
Alliance Resource snapshot of coal mining assets

Figure 176: Reserves by basin, 2009



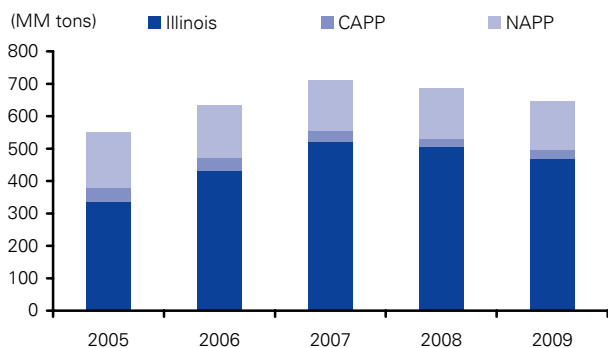
Source: Company data and Deutsche Bank

Figure 177: Shipments by basin, 2009



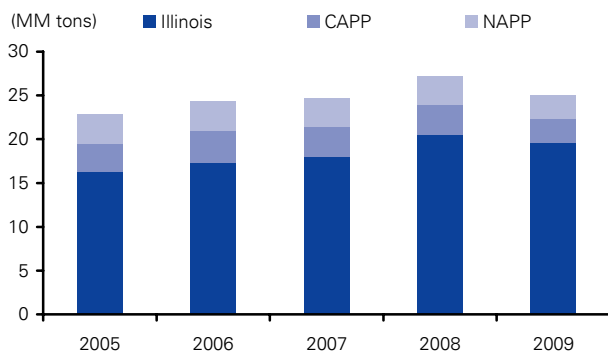
Source: Company data and Deutsche Bank

Figure 178: Evolution of reserves by basin



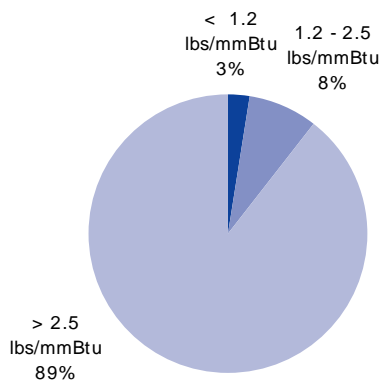
Source: Company data and Deutsche Bank

Figure 179: Evolution of shipments by basin



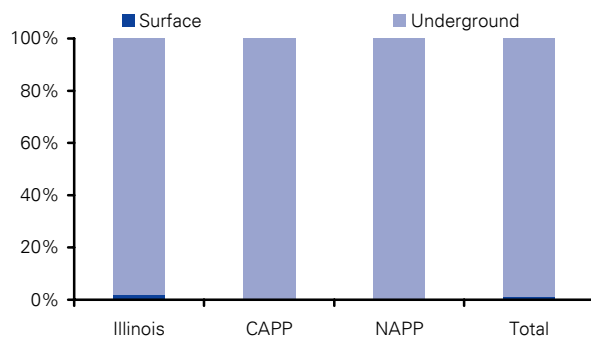
Source: Company data and Deutsche Bank

Figure 180: Sulfur content of reserves, 2009



Source: Company data and Deutsche Bank

Figure 181: Mining method (% of total reserves), 2009



Source: Company data and Deutsche Bank

Figure 182: Alliance Resource mining complex operations, as of December 2009

Basin	IB						CAPP		NAPP			
	Dotiki	Warrior	Hopkins	Pattiki	Gibson	River View	Pontiki	MC Mining	Mettiki	Mountain View	Tunnel Ridge	Penn Ridge
Mining complex												
Location	Webster County, KY	Hopkins County, KY	Hopkins County, KY	White County, IL	Gibson County, IN	Union County, KY	Martin County, KY	Pike County, KY	Garrett County, MD	Tucker County, WV	WV and PA	Washington County, PA
Type of mining ¹	U	U	S / U	U	U	U	U	U	U	U	U	U
Mining equipment ²	CM	CM	CM	CM	CM	CM	CM	CM	CM	CM / LW	LW	CM / LW
Type of coal extracted	steam	steam	steam	steam	steam	steam	steam	steam	steam	steam	steam	steam
Total reserves	97.8MM tons	74.6MM tons	49.0MM tons	47.4MM tons	79.3MM tons	120.8MM tons	9.2MM tons	18.1MM tons	9.6MM tons	14.5MM tons	70.2MM tons	56.7MM tons
Life of mine ³	23 years	12 years	12 years	19 years	12 years	19 years	8 years	12 years	32 years	7 years	12 years	14 years
Tons produced												
2007	4.6MM tons	4.6MM tons	2.6MM tons	2.9MM tons	3.2MM tons	-	1.4MM tons	1.8MM tons	0.4MM tons	2.8MM tons	-	-
2008	4.7MM tons	5.1MM tons	4.0MM tons	2.7MM tons	3.8MM tons	-	1.5MM tons	1.7MM tons	0.4MM tons	2.5MM tons	-	-
2009	4.2MM tons	6.2MM tons	4.0MM tons	2.5MM tons	3.3MM tons	0.5MM tons	1.1MM tons	1.5MM tons	0.3MM tons	2.2MM tons	-	-
Heat value (Btu/lb)	12,200	12,600	12,000	11,500	11,600	11,600	13,000	12,600	13,200	13,200	12,600	12,500
SO ₂ (lb/mm Btu)	>2.5	>2.5	>2.5	>2.5	>1.2	>2.5	1.2 - 2.5	<1.2	>1.2	>1.2	>2.5	>2.5
Transportation used ⁴	CSX, PAL, truck	CSX, PAL, truck	CSX, PAL, truck	EVW, barge	CSX, NS, truck, barge	Barge	NS, truck, barge	CSX, truck, barge	CSX, truck	CSX, truck	NA	NA
Process coal at complex	yes	yes	yes	yes	yes	yes	no	yes	yes	no	NA	NA

¹Type of mining: S = Surface, U = Underground

²Mining equipment: CM = Continuous Miner, LW = Longwall

³Life of mine = Total reserves/2009 production

⁴Railroad, CSX = CSX Railroad, NS = Norfolk Southern Railroad, PAL = Paducah & Louisville Railroad, EVW = Evansville Western Railroad

*Production for part/full portion of these mines is not yet started, life of mine is calculated using estimated annual production

Source: Company data and Deutsche Bank

Priorities

At completion and full capacity both Riverview and Tunnel Ridge could add 12MM tons of capacity

Riverview and Ramp-up of Tunnel Ridge to add 12MM tons of capacity post 2011

Although the Riverview mine in the IB became operational with five production units in 4Q09, it is still undergoing further construction. A sixth unit will be operational in 2Q10 and the remaining two units have been delayed until market conditions strengthen. At full capacity, it is slated to reach ~6.4MM tons per year. Total investment for this operation is estimated at \$250 to \$275 million, of which 76% has already been disbursed. Tunnel Ridge in the NAPP Basin, slated to produce ~6MM tons per year at full capacity, is expected to be completed late in 2011. The total investment for this project should hover around \$285 to \$300 million, of which ~32% was deployed as of 2009.

Recent events

Alliance Resource to sell 5MM tons per year (~18% of 2010E sales) to TVA for next seven years

Sign-up of new contract with TVA to deliver 5MM tons annually for next seven year

Alliance Resource entered into a new coal supply agreement with the Tennessee Valley Authority (TVA) in August 2009, which will increase its annual coal supply to TVA by an additional 2MM tons per year beginning in 2010. Under the new agreement, Alliance Resource will deliver 5MM tons of coal per year (~18% of expected 2010 sales) from its IB operations to TVA over the next seven years. Under the terms of the new agreement, the parties may extend the contract by an additional seven years.

Customers

Top four customers represented ~42% of 2009 total coal sales

Electric utility plants are main customers; top four represent 42% of sales

In 2009, Alliance Resources sold ~92% of its coal to electric utility plants and rest to third-party resellers, industrial consumers and cogeneration plants, all in the US. Some of its largest customers are Louisville Gas and Electric Company, VEPCO, TVA and Seminole Electric Cooperative, Inc., all of which represented ~41.8% of 2009 total coal sales.

Ownership and management

Shareholder structure

Alliance Resource shares are listed on NASDAQ under the ticker symbol ARLP.OQ

Alliance Resource shares are listed on NASDAQ under the ticker symbol "ARLP.OQ". The company has 36.7 million common shares outstanding and a free float of ~55.8%. Insider ownership totals ~44.2%. Daily traded volume averaged ~\$4 million over the past six months.

Alliance Holdings GP, LP, is the company's GP and largest shareholder w/ a 42.4% stake

Alliance Resource is structured in the form of an MLP and its ownership is divided amongst its General Partners (GP) (1%) and Limited Partners (LP) (99%). The GPs represent the management of the company and the LPs the owners. It is the units of LP that are traded on the exchange. Alliance Holdings GP, LP, another MLP that trades on NASDAQ under the ticker: "AHGP", is the company's GP and largest shareholder holding a 42.4% stake.

In addition to Alliance Holdings, PPM America, Inc (4.7% of the shares outstanding), Merrill Lynch & Co. Inc. (3.0%), and BlackRock, Inc (1.8%) are the top shareholders in Alliance Resource.

Figure 183: Alliance Resource shareholder structure, February 2010

Shareholder name	Shares held (in mn)	% outstanding
Alliance Holdings GP, LP	15.5	42.4%
PPM America, Inc	1.7	4.7%
Merrill Lynch & Co. Inc.	1.1	3.0%
BlackRock, Inc.	0.7	1.8%
JPMorgan Chase & Co	0.4	1.1%
Craft, Joseph W.	0.4	1.0%
Fiduciary Asset Management, LLC	0.4	1.0%
Allianz Global Investors AG	0.3	0.9%
Selz Capital, LLC	0.3	0.8%
ICON Advisers, Inc.	0.3	0.8%
Others	15.7	42.6%
Total	36.7	100.0%

Source: Bloomberg, company data and Deutsche Bank

Management

Joseph W. Craft III is the President and CEO of Alliance Resource since 1999

Figure 184: Alliance Resource senior management

Name	Position	Since
Joseph W. Craft III	President, CEO and Director	1999
John P. Neafsey	Chairman of the Board and Director	1996
Robert G. Sachse	Executive VP and Marketing	2006
Charles R. Wesley	Executive VP and Director	2009
R. Eberley Davis	Senior VP - General Counsel and Secretary	2007
Brian L. Cantrell	Senior VP - CFO	2003
Thomas M. Wynne	Senior VP - CPO	2009

Source: Company data and Deutsche Bank

MLP overview

MLPs provide the benefits of a partnership and liquidity to shareholders

A Master Limited Partnership (MLP) is a business entity structured in the form of a partnership whose shares (also called Units) are traded on a stock exchange. This structure provides the benefits of a partnership (including direct ownership in assets) and liquidity to shareholders. This structure is only allowed for certain types of businesses including, among others, real estate, commodities and natural resources.

MLPs must receive at least 90% of their income from "specific sources" from real estate, commodities and natural resources

This unusual arrangement was a result of an Act of Congress, the Tax Reform Act of 1986, which passed with the purpose of encouraging investment in energy development, exploration, and production. After an immediate welter of abusive practice, Congress passed the clarifying Revenue Act of 1987. This required that all publicly traded partnerships receive at least 90% of their income from "specific sources", namely interest, dividends, rents, gains from the sale of real estate, income and gains from commodities or commodity futures, and income and gains from mineral or natural resource activities.

MLPs offer lower after-tax cost of financing assets, low cost of equity and tax-free cash flow returns

The MLP structure offers a lower after-tax cost of financing assets since the partnership is not taxed, has a low cost of equity and a tax-free cash flow return on any asset. High yields also lower the cost of equity by reducing beta.

GPs represent 'Management' and LPs represent the 'Owners'

The ownership of the MLP is divided into two parts: General Partners (GP) and Limited Partners (LP). General Partners are the managing partners of the organization and represent 'Management'. GPs generally own 2% share in the organization and the Limited Partners represent the 'Owners' and own the remaining 98% share in the organization. The LP units are traded on the stock exchange.

Ownership structure

Characteristics of MLP

MLPs distribute most of their earnings in the form of cash

- **High cash distributions** – Due to the legal requirement for MLP structures, these entities distribute most of their earnings in the form of cash. This has been attracting investors looking for high dividend yield. Additionally, the remuneration of MLP managements is typically linked to these distributions.

MLPs do not have to pay corporate taxes and are saved from double taxation

- **Low taxes** – Since MLPs are structured in the form of partnerships, they do not have to pay corporate taxes and are saved from the double taxation, reducing the tax burden on their earnings. Partners are required to report their allocable share of the partnership's items of taxable income, gain, deduction or loss in their individual income tax returns as though each partner had incurred such items directly. When cash distributions are greater than the depreciation-lowered net income, distributions are partially tax-deferred as they represent a return of capital. The portion of the distribution that exceeds net income is treated as a return of capital and simply reduces the cost basis of the units for tax purposes. This provides the limited partner with a deferred tax liability that allows the unit holder to recognize the income when they choose. When the units are sold, the return of capital will be converted into a capital gain over the basis and taxed at the long-term rate if the long-term holding period has been met. The portion of the distribution that is attributable to assets associated with depreciation recapture reduces the cost basis by an amount that is taxed as ordinary income.

MLPs have high cash distributions and keep minimal cash

Distribution policy and management remuneration

MLPs have high cash distributions and keep minimal cash for meeting operating requirements. The remuneration of the management of an MLP, the GPs, is based on the distribution which is predefined under the Incentive Distribution Rights (IDR), published in statutory filings. GPs get a progressive percentage of dividends distributed to LPs every quarter.

The IDR defines the minimum dividends to LPs in any quarter and is called Minimum Quarterly Distribution (MQD). GPs generally get 2% of MQD, and any amount above that gets higher remuneration to the GPs.

Illustration of Alliance Resource target distributions

The following table illustrates Alliance Resource's IDR policy which defines the target quarterly distributions including the share for LPs and GPs. The remuneration of Alliance Resource GPs is based on the distribution to the LPs. This target amount is used to calculate the GPs share but is not used to deduct the amount; the target amount is fully paid to the LPs and represents the percentage of total dividends as shown in the last column.

Figure 185: IDR policy of Alliance Resource

Quarterly distribution	Target amount (US\$ per unit)	Quarterly distribution (US\$ per unit)	GP's share	LP's share
MQD	0.2500	<0.2500	2%	98%
First Target	0.2750	0.2500-0.2750	2%	98%
Second Target	0.3125	0.275-0.3125	15%	85%
Third Target	0.3750	0.3125-0.3750	25%	75%
Above Third		>0.3750	50%	50%

Source: Company data and Deutsche Bank

The following table shows a hypothetical case of the amount distributed to GPs and LPs on a per Unit basis under the IDR policy of Alliance Resource.

Figure 186: Hypothetical case of quarterly distribution by Alliance Resource

Estimated quarterly distribution per LP unit:	\$0.60		
Number LP units:	100 millions		
Distribution per unit (US\$):			
	Payment to LP	Payment to GP	Total payment
MQD	0.2500	0.0051	0.2551
First Target	0.0250	0.0005	0.0255
Second Target	0.0375	0.0066	0.0441
Third Target	0.0625	0.0208	0.0833
Above Third	0.2250	0.2250	0.4500
Total	0.6000	0.2581	0.8581
Total distribution amount (US\$m):			
	Payment to LP	Payment to GP	Total payment
MQD	25.00	0.51	25.51
First Target	2.50	0.05	2.55
Second Target	3.75	0.66	4.41
Third Target	6.25	2.08	8.33
Above Third	22.50	22.50	45.00
Total	60.00	25.81	85.81
Actual share in total distribution:	70%	30%	100%

Source: Company data and Deutsche Bank

North America United States
Industrials Metals & Mining

24 March 2010

Alpha Natural Resources

Reuters: **ANR.N** Bloomberg: **ANR UN**

A fully armored coal producer

Initiating Alpha Natural Resources with a Buy and \$65 PT

We are initiating coverage on Alpha Natural Resources (ANR) with a Buy rating and a price target of \$65/share. Alpha Natural is now the third largest US coal producer post-transaction with Foundation Coal, and the largest US met coal exporter. Alpha Natural has bolstered its presence in the CAPP and NAPP Basins and gained exposure to the PRB, post-transaction. Growth depends on the successful extraction of synergies post-transaction, as well as on execution of new projects. We believe that the company is in an enviable position in met coal having significant volume exposure to current market tightness. In addition, Alpha Natural should generate substantial cash flow over the next years to fund debt payments and projects, and potentially start to pay dividends/repurchase shares.

DB bullish on bulk commodities as market conditions tighten

DB is bullish on bulk commodities, and in particular coal; backed by increasing net imports by China and India, an improvement in power consumption in the US and global steel consumption, and less pressure from coal to natural gas switching at utility plants. Our commodities team calls for Japanese steam coal to average \$85/tonne in 2010 and \$100/tonne by 2011 and for premium hard coking coal to average \$175/tonne in 2010 and \$190/tonne by 2011, which bode well for the US coal market.

Earnings upswing on higher coal prices and benefits post transaction

EPS of \$3.68 in 2010 and \$5.45 in 2011 denote a significant improvement from \$1.88 posted in 2009. Our 2010 and 2011 EPS estimates are 25% and 24% higher than consensus, respectively. We anticipate that a combination of higher average realized coal prices (particularly in met coal), increasing coal sales volumes, subdued operating cash costs increases, as well as potential synergies post integration to be the main drivers for our earnings outlook.

Valuation wrap and risks

Our 12-month price target of \$65/share for Alpha Natural is based on a 6x 2011E EBITDA of \$1.3 billion. Our selected sample of NA coal companies should trade between 5x and 7x forward EBITDA, based on historical averages. We believe that Alpha Natural should trade at a higher multiple than its historical average of 5x given its increased size, growth prospects and value extraction potential post transaction. Further, its position in the met coal market bodes well for earnings potential. Our PT equates with ~1.3x our NAV of \$51/share calculated under a DCF methodology. Main downside risks include direction of spot prices vis-à-vis contract pricing in place, inability to extract full value and synergies integrating Foundation Coal, inability to implement coal growth strategy. Please see next page for details on Alpha Natural's valuation and risks.

Forecasts and ratios

Year End Dec 31	2009A	2010E	2011E
FY EPS (USD)	1.88	3.68	5.45
P/E (x)	15.3	13.1	8.9
DPS (USD)	0.00	0.00	0.00
Dividend yield (%)	0.0	0.0	0.0
EV/EBITDA	5.9	5.8	4.2

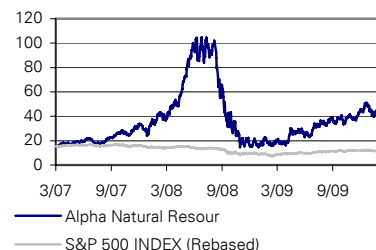
Source: Deutsche Bank estimates, company data

¹ Includes the impact of FAS123R requiring the expensing of stock options.

Buy

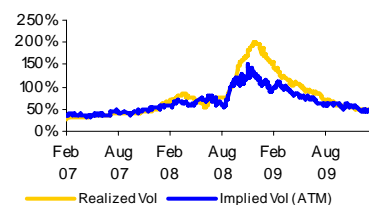
Price at 23 Mar 2010 (USD)	48.26
Price target	65.00
52-week range	52.73 - 16.24

Price/price relative



Performance (%)	1m	3m	12m
Absolute	2.8	9.3	167.7
S&P 500 INDEX	6.0	5.0	47.8

Implied & Realized Volatility (3M)



Investment thesis

Alpha Natural is now the third largest US coal producer and largest US met coal exporter

Outlook

Alpha Natural, based in Abingdon, Virginia, is now the third largest coal producer in the US, following the recent merger with Foundation Coal. Additionally, Alpha Natural is the largest met coal exporter in US. Following the incorporation of Foundation Coal, Alpha Natural has bolstered its presence in the Central Appalachia (CAPP) and Northern Appalachia (NAPP) Basins and gained exposure to the Powder River Basin (PRB). Near term growth depends on the successful extraction of synergies post-transaction, as well as on execution of projects. Further, we believe that the company is in an enviable position by having amongst the highest quality met coal in the US and exporting a meaningful chunk (with ample capacity to increase further), given the tightening international met coal market conditions. Alpha Natural has yet to price 38% of its met coal in 2010 and 85% in 2011, which given where 2010 quarterly prices have settled bode well for potential earnings upside. Based on our estimates, Alpha Natural should generate substantial cash flow over the next years to fund debt maturities, growth projects; and potentially add additional organic growth projects to its pipeline, acquire assets or companies, and/or start to declare and pay dividends / repurchase shares. We are initiating coverage on Alpha Natural with a Buy rating and a price target of \$65/share.

We believe that Alpha Natural should trade at the high end of the range of its peer group

Valuation

Our 12-month price target of \$65/share for Alpha Natural is based on a 6x 2011E EBITDA of \$1.3 billion. Our selected sample of NA coal companies should trade between 5x and 7x forward EBITDA, based on historical averages. We believe that Alpha Natural should trade at a higher multiple than its historical average of 5x given its increased size following the recent Foundation Coal transaction, the location of its asset base, operations and mining projects, growth prospects and value extraction potential post transaction. Further, we believe that its position in the met coal market bodes well for the company's earnings potential in the foreseeable future – especially having meaningful percentages of expected sales volumes to price in the foreseeable future. As a valuation cross-check, we note that our PT equates with ~1.3x our NAV of \$51/share calculated under a DCF methodology (9.0% WACC with 10.5% Ke and 5.6% post-tax Kd, and a 1.0% terminal growth rate [based on our knowledge of the asset base and expectations of long-term growth]).

Main downside risk include direction of spot prices vis-à-vis contract pricing in place

Risks

Key downside risks to our outlook include pullback in global economic growth, slowdown in energy consumption and/or slowdown in steel consumption, further coal inventory increases at utility companies, direction of energy prices, changes in energy and/or carbon policy changes and consequent ramifications in switching fuels. These dynamics tend to set the stage for global coal supply and demand fundamentals, and ultimately on the dynamics unfolding in the US. Mining companies can face geologic and operational obstacles. In addition, Alpha Natural results depend on the full extraction of value and synergies with the integration of Foundation Coal and successfully implementing its growth strategy. Other risks are associated with the direction of input costs, fiscal regime and mining legislation, and the successful execution of mining operations. Further risks for coal companies stem from contract pricing in place vis-à-vis the direction of spot prices.

Model updated: 18 March 2010

Running the numbers

North America

United States

Metals & Mining

Alpha Natural Resources

Reuters: ANR.N Bloomberg: ANR US

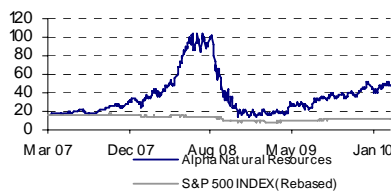
Buy

Price (23 Mar 10)	USD 48.26
Target price	USD 65.00
52-week Range	USD 16.24 - 52.73
Market Cap (m)	USDm 5,751 EURm 4,309

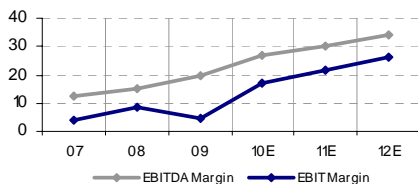
Company Profile

Alpha Natural Resources (ANR) is the third largest coal producer in the US. Additionally, ANR is the largest metallurgical coal exporter in the US. ANR sold 47.2MM tons of coal in 2009, and controlled 2.32bn tons of recoverable coal reserves at the end of 2009. The company produces and trades steam (83%) and metallurgical coal (17%) through its operations in Powder River Basin (44% of 2009 sales volume), Eastern steam (39%) and Eastern metallurgical (17%). The company is listed on the NYSE under the symbol ANR and is headquartered in Abingdon, Virginia.

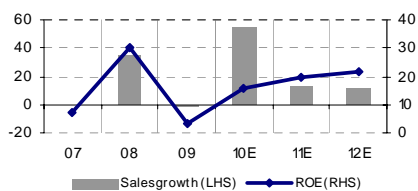
Price Performance



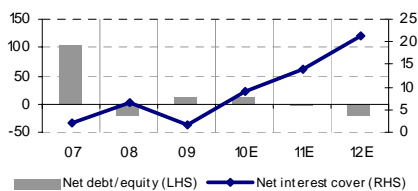
Margin Trends



Growth & Profitability



Solvency



David Martin

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Fiscal year end 31-Dec

	2007	2008	2009	2010E	2011E	2012E
Financial Summary						
DB EPS (USD)	0.43	2.61	1.88	3.68	5.45	7.48
Reported EPS (USD)	0.43	2.36	0.63	3.68	5.45	7.48
DPS (USD)	0.00	0.00	0.00	0.00	0.00	0.00
BVPS (USD)	5.89	10.60	28.58	25.50	31.06	38.68
Valuation Metrics						
Price/Sales (x)	0.7	1.5	1.0	1.5	1.3	1.2
P/E (DB) (x)	46.7	20.7	15.3	13.1	8.9	6.5
P/E (Reported) (x)	47.0	23.0	45.4	13.1	8.9	6.5
P/BV (x)	5.5	1.5	1.5	1.9	1.6	1.2
FCF yield (%)	8.1	9.1	6.5	nm	9.3	13.3
Dividend yield (%)	0.0	0.0	0.0	0.0	0.0	0.0
EV/Sales	0.9	1.4	1.2	1.6	1.3	1.0
EV/EBITDA	7.1	9.3	5.9	5.8	4.2	2.9
EV/EBIT	21.8	16.8	25.0	9.1	5.8	3.8

Income Statement (USDm)

Sales	1,886	2,554	2,496	3,868	4,346	4,822
EBITDA	237	385	497	1,051	1,321	1,632
EBIT	77	213	117	671	951	1,272
Pre-tax profit	37	205	25	597	883	1,212
Net income	28	166	58	448	662	909

Cash Flow (USDm)

Cash flow from operations	226	457	356	336	932	1,166
Net Capex	-120	-121	-186	-350	-400	-400
Free cash flow	105	336	170	-14	532	766
Equity raised/(bought back)	0	165	-9	0	0	0
Dividends paid	0	0	0	0	0	0
Net inc/(dec) in borrowings	-18	93	-281	3	-106	-153
Other investing/financing cash flows	-67	28	-91	0	0	0
Net cash flow	21	622	-210	-12	426	613
Change in working capital	19	11	-24	-492	-100	-103

Balance Sheet (USDm)

Cash and cash equivalents	54	676	466	454	880	1,493
Property, plant & equipment	640	550	1,082	1,052	1,082	1,122
Goodwill	21	21	358	358	358	358
Other assets	496	481	3,217	3,718	3,830	3,942
Total assets	1,211	1,728	5,123	5,582	6,151	6,916
Debt	447	539	790	793	687	533
Other liabilities	382	463	1,741	1,750	1,763	1,772
Total liabilities	829	1,003	2,531	2,543	2,449	2,305
Total shareholders' equity	382	726	2,591	3,039	3,701	4,610
Net debt	393	-137	324	339	-194	-960

Key Company Metrics

Sales growth (%)	nm	35.4	-2.3	55.0	12.3	11.0
DB EPS growth (%)	na	507.0	-28.0	95.9	48.0	37.2
Payout ratio (%)	0.0	0.0	0.0	0.0	0.0	0.0
EBITDA Margin (%)	12.6	15.1	19.9	27.2	30.4	33.8
EBIT Margin (%)	4.1	8.3	4.7	17.3	21.9	26.4
ROE (%)	7.3	29.9	3.5	15.9	19.7	21.9
Net debt/equity (%)	102.7	-18.9	12.5	11.2	-5.2	-20.8
Net interest cover (x)	2.0	6.4	1.4	9.1	14.1	21.2

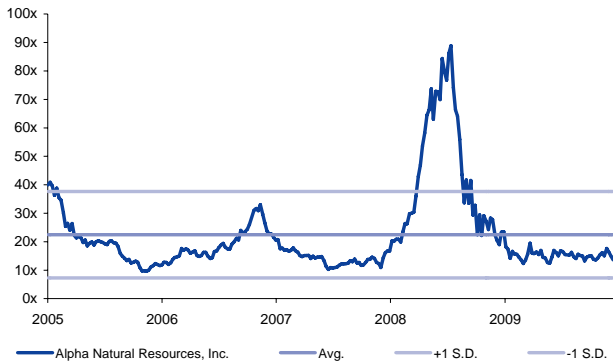
DuPont Analysis

EBIT margin (%)	4.1	8.3	4.7	17.3	21.9	26.4
x Asset turnover (x)	1.6	1.7	0.7	0.7	0.7	0.7
x Financial cost ratio (x)	0.5	0.8	0.3	0.9	0.9	1.0
x Tax and other effects (x)	0.7	0.9	1.6	0.8	0.7	0.7
= ROA (post tax) (%)	2.3	11.3	1.7	8.4	11.3	13.9
x Financial leverage (x)	3.2	2.7	2.1	1.9	1.7	1.6
= ROE (%)	7.3	29.9	3.5	15.9	19.7	21.9
annual growth (%)	na	310.9	-88.3	354.6	23.6	11.3
x NTA/share (avg) (x)	5.9	7.9	18.1	23.2	27.7	34.2
= Reported EPS	0.43	2.36	0.63	3.68	5.45	7.48
annual growth (%)	na	452.3	-73.2	482.2	48.0	37.2

Source: Company data, Deutsche Bank estimates

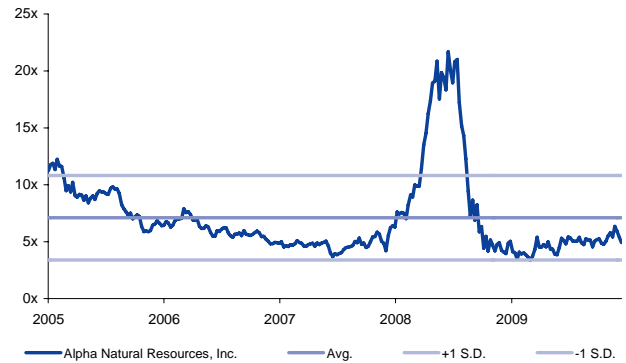
Alpha Natural valuation charts

Figure 187: Alpha Natural forward P/E



Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 188: Alpha Natural forward EV/EBITDA



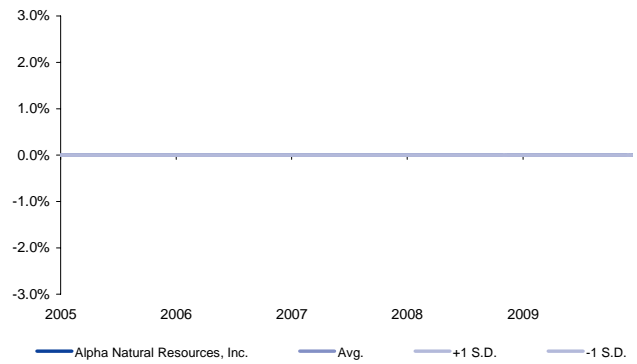
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 189: Alpha Natural forward P/BV



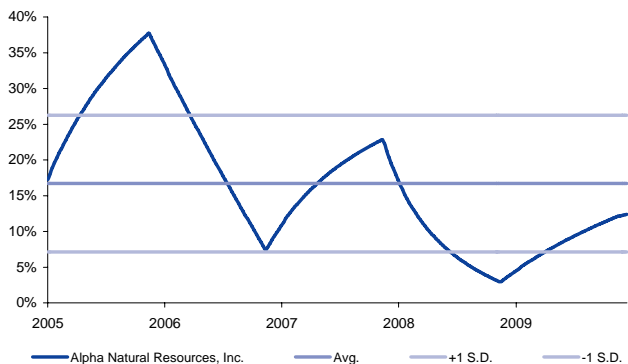
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 190: Alpha Natural forward dividend yield



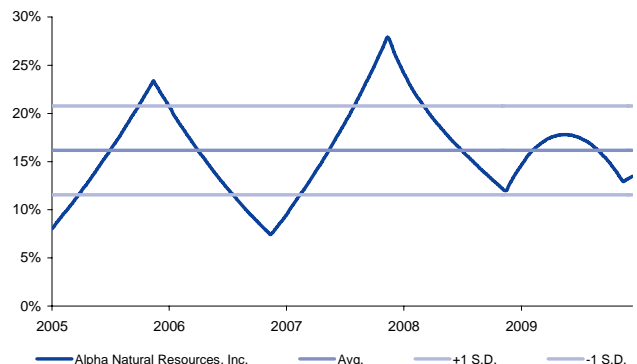
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 191: Alpha Natural forward ROE



Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 192: Alpha Natural forward ROIC



Source: Company data, Capital IQ and Deutsche Bank estimates

Earnings outlook

Alpha Natural EPS to reach \$3.68 in 2010 and \$5.45 in 2011, peaking in 2012 at \$7.48

Results in 2010 should reflect a full year's worth of Alpha Natural and Foundation Coal, following the five months contribution of the latter in 2009. Despite the y/y noise created by the introduction of PRB production into the mix of results, we anticipate that a combination of higher average realized coal prices (particularly in met coal), increasing coal sales volumes – reflective of improving conditions and new capacity, subdued operating cash costs increases, as well as potential synergies post integration to be the main drivers for our earnings outlook.

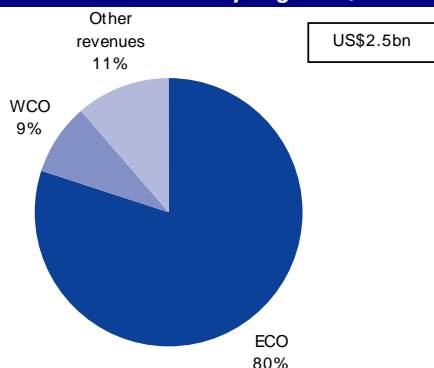
- Revenues.** Revenue should reach \$3.9 billion in 2010 (+55% y/y), \$4.3 billion in 2011 (+12% y/y) and \$4.8 billion in 2012 (+11% y/y). The sizeable jump in 2010 reflects a full year contribution of Foundation Coal as opposed to the five months contribution in 2009, as well as improving market conditions.
- EBITDA.** EBITDA should follow a similar growth path to revenue coming in at \$1.1 billion in 2010 (double the 2009 figure), \$1.3 billion in 2011 (+26% y/y) and \$1.6 billion in 2012 (+24% y/y). Our EBITDA estimates for 2010 through 2012 are between 14 to 16% higher than consensus.
- EPS.** EPS of \$3.68 in 2010 and \$5.45 in 2011 denote a significant improvement from the \$1.88 posted in 2009. We anticipate peak earnings in 2012, with EPS at \$7.48. Our EPS estimates for 2010 through 2012 are between 24% and 30% higher than consensus.
- Sensitivity.** We estimate that a \$1/ton change to our average coal realized price in 2010 should result in an \$86 million change in EBITDA (+/- 8%) and \$0.53 change in EPS (+/- 14%).

Figure 193: Alpha Natural key earnings summary

(US\$m)	2008A	2009A	2010E	2011E	2012E
Sales	2,554	2,496	3,868	4,346	4,822
EBITDA	385	497	1,051	1,321	1,632
EBITDA margin	15.1%	19.9%	27.2%	30.4%	33.8%
EPS (US\$)	2.61	1.88	3.68	5.45	7.48
Operating summary					
Shipments (000 tons)	28,313	47,200	86,000	91,000	95,500
Revenue per ton (US\$/ton)	90.21	52.88	44.98	47.75	50.49
Operating cash cost per ton (US\$/ton)	76.61	42.33	32.76	33.24	33.41
EBITDA per ton (US\$/ton)	13.60	10.54	12.22	14.51	17.09

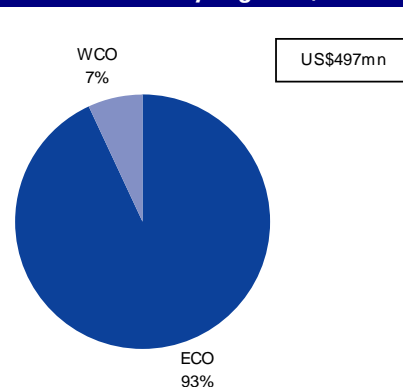
The data till July, 2009 represents only old ANR and thereafter the combined entity (old ANR + FCL); Source: Company data and Deutsche Bank estimates

Figure 194: Revenue breakdown by segment, 2009



Source: Company data and Deutsche Bank

Figure 195: EBITDA breakdown by segment, 2009



Source: Company data and Deutsche Bank

Operational outlook

Coal sales volumes to reach 86MM tons in 2010 and possibly 91MM tons in 2011

We expect average realized prices to decline 15% y/y

Alpha Natural has committed and priced practically all of its 2010 volumes and ~60% of 2011

On the met coal side, Alpha Natural is more exposed to ongoing market conditions

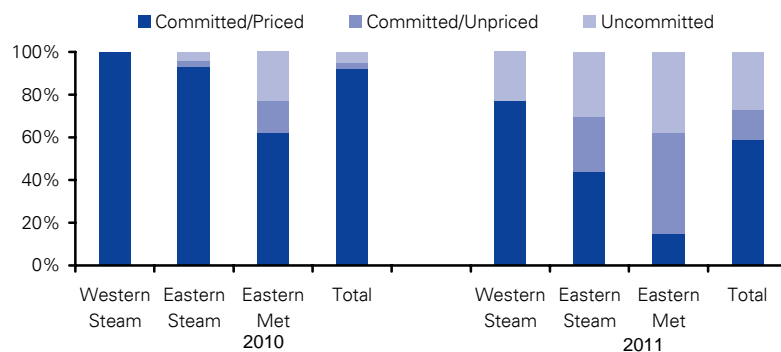
Volumes. We estimate coal sales volumes of 86MM tons in 2010 reflecting a full year contribution of Foundation Coal. Alpha Natural posted coal sales volumes of 47Mm tons in 2009 as only five months of Foundation Coal was incorporated into the result, in what was still a fairly weak time period. Alpha Natural anticipates 2010 sales volumes to come in between 81 and 89MM tons. Our 2011 coal sales volume estimate of 91MM tons takes into consideration normalized production rates at most mines. Alpha Natural anticipates 2011 sales volumes to come in between 82 and 94MM tons.

Prices. Despite our expectation of power consumption increases and reduced pressure from coal to natural gas switching by utility companies in the US, which should result in improving steam coal prices in the foreseeable future as the US recovers, we do acknowledge that coal inventory levels at utility companies while decreasing still remain fairly high and low natural gas prices continue to pose a risk. However, on a more constructive note, recent quarterly met coal price settlements point to tight market conditions. Having said this, Alpha Natural average realized prices are bound to decrease by ~15% y/y in 2010 (following a 41% y/y decline in 2009) and reach \$44.98/ton following the merger with Foundation Coal and the introduction of PRB production into the mix. Thereafter, we anticipate a 6% y/y increase in 2011 and in 2012.

Contracts. Alpha Natural typically engages in fixed price and fixed volume long-term agreements with many of its customers, with terms being greater than one year and maturities ranging from 2010 to 2016. These multi-year contracts usually have specific and possibly different volume and pricing arrangements for each year of contract, with some having variable pricing. Following the release of its 4Q09 results in February 2010, the company stated that it has priced substantially all of its 2010 sales volume (~8% has yet to be priced). For 2011, Alpha Natural has committed and priced 59% of its expected sales volume – leaving 41% exposed to potentially higher prices should market conditions continue to tighten in the foreseeable future.

On the met coal side, the company is more exposed to ongoing market conditions as it has yet to price 38% of its expected sales in 2010 and 85% in 2011.

Figure 196: Alpha Natural committed and priced tonnage



Data is as of February, 2010
Source: Company data and Deutsche Bank

Operating cash costs. Following the merger with Foundation Coal and consequent introduction of PRB production into the mix, we estimate that Alpha Natural’s operating cash cost should average \$32.76/ton in 2010, down 23% y/y (following a ~45% y/y decline in 2009). Thereafter, due to inflationary pressures affecting the industry at large, we expect operating cash costs to increase at a moderate rate of about 1.5% in 2011.

Liquidity and free cash flow estimates

Robust cash generation to fund capex and debt maturities due, and possibly new projects, acquisitions, and/or dividends

Based on our estimates, Alpha Natural could generate free cash flow of \$478 million in 2010 and could almost double the amount to \$869 million by 2012 (implying an average FCF yield of ~11% over the 3-year time period), primarily on increasing and improving operating results as capex should remain at fairly lofty levels ranging between \$350 and \$400 million during the same time period. Although the company has almost \$300 million due in debt maturities over the next two years, we believe that the cash flow generation will be sufficient to comfortably pay this and accumulate cash. In fact, we believe that as the financial flexibility improves, Alpha Natural could consider ramping up additional already-owned projects, go out on an acquisition spree, or declare and pay dividends or repurchase shares to remunerate its existing shareholder base.

Capex could hover between \$350 and \$400 million over next three years

Capex. Alpha Natural has a number of projects that could add new production capacity, such as Deep Mine #41 (CAPP), Harts Creek/Attenville (CAPP), Foundation (NAPP), Freeport (NAPP), or expand existing capacity, such as Belle Ayr (PRB). Taking into consideration these growth projects, we estimate 2010 capex to be \$350 million (was \$187 million in 2009), with the overall figure increasing to \$400 million in 2011 and 2012. Alpha Natural is guiding for 2010 capex to be between \$340 and \$390 million.

Alpha Natural is developing a number of organic opportunities in its portfolio

Alpha Natural has a number of viable organic growth opportunities in its portfolio. We anticipate the ramp up of Deep Mine #41 estimated to add ~1MM tpy at full capacity could come on stream by 2012. We also anticipate that Alpha Natural will bid for the Belle Ayr LBA next year, which if won would sustain production for a longer period of time. We estimate that Alpha Natural could pay between \$160 and \$200 million over the course of five years, assuming a price paid between ~\$0.80 and \$1.00/ton of reserve. We are currently excluding these figures from our capex estimates. The company also has a joint venture gas project in the Marcellus acreage that it could develop.

Depending on market conditions, Alpha Natural could ramp up Foundation and Freeport

Depending on market conditions, Alpha Natural has the flexibility to ramp up additional projects within the next few years, such as the Foundation and Freeport mines. The Freeport mine, which contains high-volatile met grade coal and could flow seamlessly into the steel production region of the US, is currently in the permitting process stage.

Figure 197: Alpha Natural organic growth opportunities, as of Feb 2010

Northern Appalachia		
Mine	Resource Description	Production
Foundation – longwall	Reserve ~420MM tons	7 – 14MM tpy (Pitt #8 + Sewickley)
Freeport - CM	Reserve ~68MM tons	2 – 3MM tpy (met)
Central Appalachia		
Mine	Resource Description	Production
Deep Mine #41	Reserve ~70MM tons	1.0 – 1.2MM tpy (met)
Harts Creek/Atenville	Reserve ~120MM tons	2 –3MM tpy (met potential)
Coal Gas Recovery		
Location	Resource Description	Production
CBM	Resource ~100-200Bcf	~ 5,000 saleable Mcf/Day (current)
Marcellus acreage	~ 18,000 Acres	Entered into JV with Rice Energy 2010
Powder River Basin		
Wyoming Operations	Resource Description	Production
Truck/shovel expansion	NA	+10MM tpy (total capacity 65MM tpy)
Belle Ayr LBA	Reserve ~200MM tons	2011

Source: Company information and Deutsche Bank

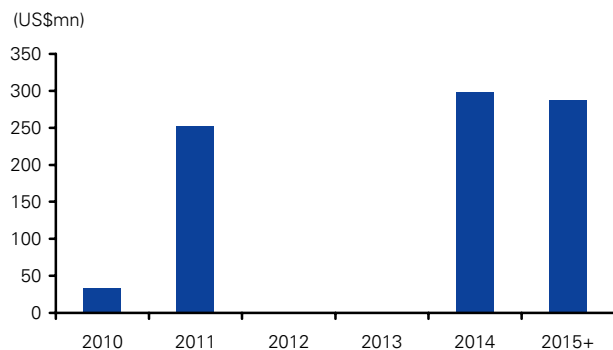
Alpha Natural does not anticipate paying dividends in foreseeable future

Share buybacks/dividends. The Old Alpha Natural never declared or paid a cash dividend and the New Alpha Natural does not anticipate paying any cash dividends in the foreseeable future. Foundation Coal had a history of returning cash to the investors both in the form of dividends and share buybacks. In 2008, Foundation Coal returned ~\$48 million to its shareholders of which ~\$39 million was through share repurchases. With this said, based on the expected cash flow generation in the foreseeable future, we would not be surprised if Alpha Natural starts declaring and paying dividends.

Based on our estimates, net debt position could turn into net cash by 2011

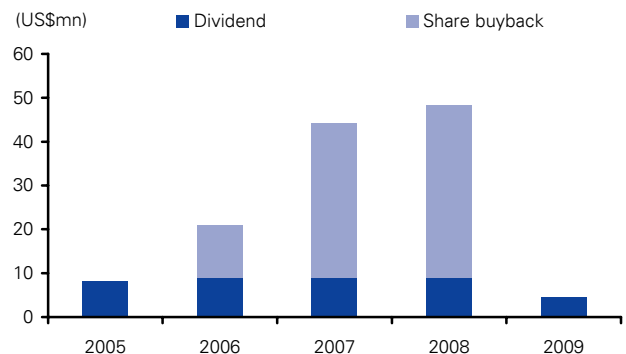
Net debt (cash). Alpha Natural ended 2009 with total debt of \$790 million, of which ~\$34 million is due in 2010 and ~\$250 million in 2011. On the flipside, the company had \$1.1 billion of committed total liquidity, comprised of \$466 million of cash & equivalents, \$119 million of marketable securities and \$536 million available under its short-term borrowing facilities. Should the company not implement a dividend policy, we estimate that its net debt position of \$324 million could turn into a net cash position of \$194 million by 2011, increasing substantially thereafter.

Figure 198: Alpha Natural debt maturities



Data is as of December 31, 2009
Source: Company data and Deutsche Bank estimates

Figure 199: Returning cash to shareholders (FCL)



Source: Company data and Deutsche Bank

Financial statements and operating assumptions

Figure 200: Alpha Natural summary income statement

(US\$m)	2008A	2009A	2010E	2011E	2012E
Sales	2,554	2,496	3,868	4,346	4,822
EBITDA	385	497	1,051	1,321	1,632
EBITDA margin	15.1%	19.9%	27.2%	30.4%	33.8%
Depreciation	172	380	380	370	360
EBIT	213	117	671	951	1,272
Interest income/(expense)	-12	-84	-74	-68	-60
Pre-tax income	205	25	597	883	1,212
Tax-rate	19.1%	-132.2%	25.0%	25.0%	25.0%
Net income	166	58	448	662	909
Net margin	6.5%	2.3%	11.6%	15.2%	18.8%
Shares	70	92	122	122	122
EPS (US\$)	2.61	1.88	3.68	5.45	7.48

The data till July, 2009 represents only old ANR and thereafter the combined entity (old ANR + FCL)
Source: Company data and Deutsche Bank estimates

Figure 201: Alpha Natural operating assumptions

	2008A	2009A	2010E	2011E	2012E
Shipments (000 tons)	28,313	47,200	86,000	91,000	95,500
Revenue per ton (US\$/ton)	90.21	52.88	44.98	47.75	50.49
Operating cash cost per ton (US\$/ton)	76.61	42.33	32.76	33.24	33.41
EBITDA per ton (US\$/ton)	13.60	10.54	12.22	14.51	17.09
Capital Expenditure (US\$m)	138	187	350	400	400

The data till July, 2009 represents only old ANR and thereafter the combined entity (old ANR + FCL)
Source: Company data and Deutsche Bank estimates

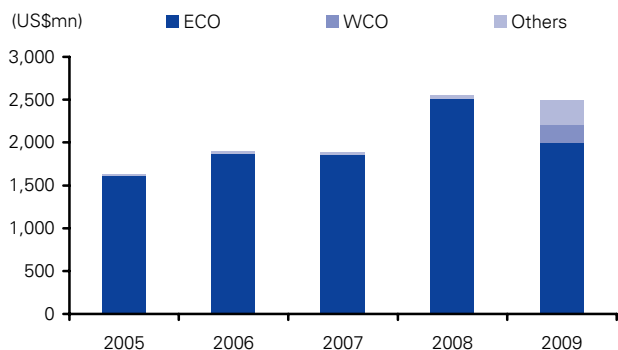
Figure 202: Alpha Natural summary balance sheet

(US\$m)	2008A	2009A	2010E	2011E	2012E
Assets					
Cash & equivalents	676	466	454	880	1,493
Other current assets	316	586	1,087	1,199	1,312
Long-term assets	737	4,071	4,041	4,071	4,111
Total assets	1,728	5,123	5,582	6,151	6,916
Liabilities					
Short-term debt	19	34	34	34	34
Other current liabilities	244	402	411	423	432
Long-term debt	521	757	760	653	500
Other long-term liabilities	219	1,340	1,340	1,340	1,340
Minority interest	0	0	0	0	0
Shareholders' equity	726	2,591	3,039	3,701	4,610
Total liabilities & equity	1,728	5,123	5,582	6,151	6,916
Net debt	-137	324	339	-194	-960

The data till July, 2009 represents only old ANR and thereafter the combined entity (old ANR + FCL)
Source: Company data and Deutsche Bank estimates

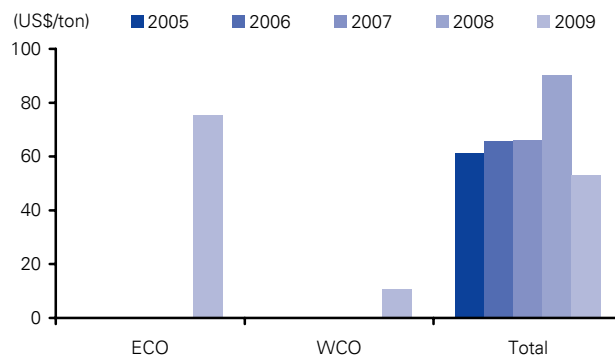
Alpha Natural financial snapshot

Figure 203: Evolution of revenue by segment



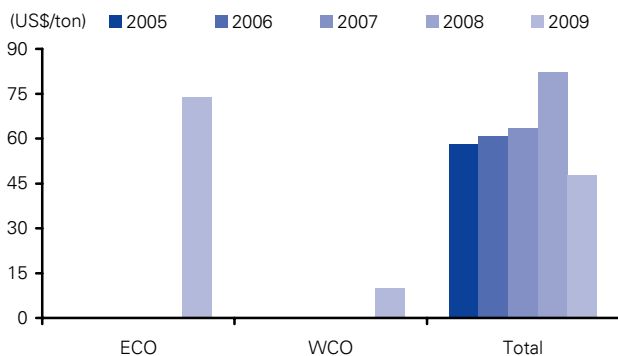
Source: Company data and Deutsche Bank

Figure 204: Evolution of avg. realized price by segment



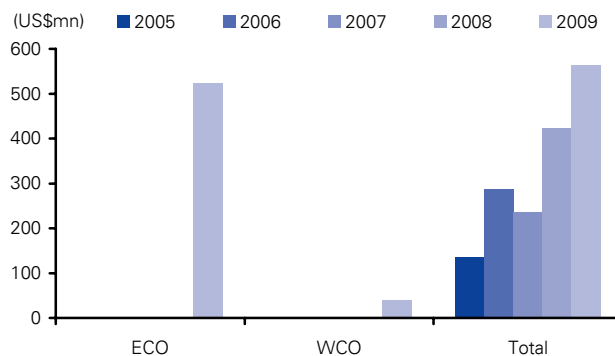
Source: Company data and Deutsche Bank

Figure 205: Evolution of average cost by segment



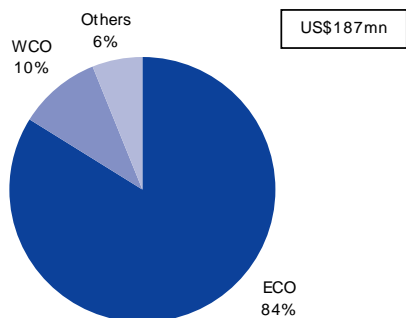
Source: Company data and Deutsche Bank

Figure 206: Evolution of operating profit by segment



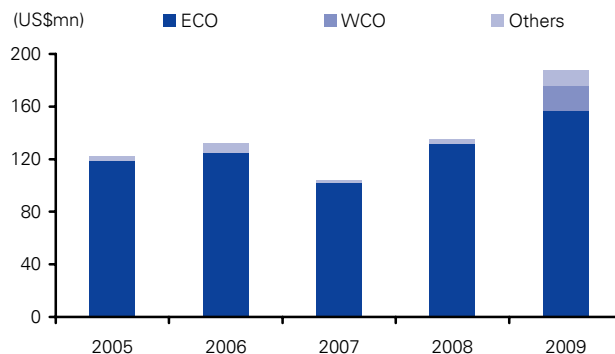
Source: Company data and Deutsche Bank

Figure 207: Capex breakdown by segment, 2009



Source: Company data and Deutsche Bank

Figure 208: Evolution of capex by segment



Source: Company data and Deutsche Bank

Company profile

Company description

Alpha is the third largest coal producer and largest metallurgical coal exporter in the US

Alpha Natural Resources (ANR or new ANR) is the third largest coal producer in the US, following the recent merger with the fourth largest coal producer in the US, Foundation Coal Holdings (FCL), and the number one exporter of met coal in the US and the number two domestic producer of met coal. The Foundation Coal transaction bolstered the company's presence in the Central Appalachia (CAPP) and Northern Appalachia (NAPP) Basins and gave the company exposure to the Powder River Basin (PRB). Alpha Natural now controls 2.32bn tons of recoverable reserves of coal, of which ~64% is low in sulfur and ~54% meets the most stringent requirements of the Clean Air Act.

Alpha Natural sold 47.2MM tons in 2009, with ~68% under long term agreements

The new Alpha Natural sold 47.2MM tons of coal and produced 45.9MM tons in 2009, deriving ~68% of its revenues from long-term supply contracts with terms of two years on average. The company produces steam and metallurgical coal from 61 active mines, 14 coal preparation plants, and 6 loading facilities. Alpha Natural operates in PRB (~45% of 2009 production), CAPP (~37%), and NAPP (~17%), which only incorporates five months of Foundation Coal. The Old Alpha Natural, a leading supplier of high-quality Appalachian coal to the electric utilities, steel and other industries; and also the nation's largest supplier and exporter of met, sold 28.3MM tons of coal in 2008 (of which 42% was met coal) out of CAPP and NAPP. Foundation Coal, a major US steam coal producer supplying US utilities and industrial plants, sold 70.9MM tons of coal in 2008 (of which 2% was met coal) out of CAPP, NAPP, and PRB. Alpha Natural is actively involved in the purchase and resale of coal mined by others, the majority of which is blended with its own coal production to create customized products.

Alpha Natural is headquartered in Abingdon, Virginia and had ~6,400 employees (of which 79% of the total employees were union-free), as on December 31, 2009.

Company history

Alpha was formed in 2002 and listed on the NYSE in 2005

Alpha Natural was formed in 2002 by members of management and by affiliates of First Reserve Corporation, a private equity firm. Since then, the company has been growing organically and by acquiring different coal assets (namely, Kentucky and Callaway) and transportation businesses (Portage railroad facility). Alpha Natural was listed on NYSE in February 2005 under ticker symbol "ANR".

Alpha Natural completed merger with Foundation Coal in 2009

In July 2009, Alpha Natural executed its largest business venture ever by completing a merger with Foundation Coal Holdings, resulting in the third largest coal company in the US.

Figure 209: Alpha Natural Resources corporate history

2002	Alpha Natural was formed and Acquired Virginia coal operations
2003	Acquired three coal companies i.e. Coastal Coal Company; American Metals and Coal International; and Mears Enterprises, Inc
2004	Acquired Moravian Run Reclamation Co (4 active and 2 under development mines), Cooney Bros. Coal Company (coal preparation plant and railroad facility in Portage)
2005	Acquired Nicewonder Coal Group for \$328 million
2006	Acquired three coal operations from Progress Fuels Corp for \$29 million, adding 73MM tons in reserves
2008	Acquired Mingo Logan-Ben Creek coal mining assets (Callaway) from Arch Coal for \$44 million, adding 9.2MM tons in reserves
2008	Entered merger agreement with Cliff Natural Resources. Agreement terminated in November 2008
2009	Merger with Foundation Coal Holdings, a transaction valued at ~\$2.2 billion

Source: Company information and Deutsche Bank

Operations overview

Alpha Natural now has operations in PRB, CAPP and NAPP and reserves exposure to these and IB

Following the merger with Foundation Coal in 2009, Alpha Natural has broadened and diversified its asset base throughout the US, with reserves now in the PRB, CAPP, NAPP and Illinois (IB) Basins and operation in the first three aforementioned basins. The Old Alpha Natural (i.e., pre-merger) had operations primarily in CAPP and only one mining complex in NAPP, AMFIRE. Foundation Coal had operations in the four basins, although the IB facility, Wabash, was idled in April 2007 due to a combination of factors, including aged underground infrastructure and uneconomical coal production.

The company has operations in the three coal basins, with two mining complexes in PRB (~45% of 2009 production), eleven in CAPP (~37%), and four in NAPP (~17%). In total, the company operates 61 active mines at 17 operating mining complexes (excluding the one idled mine in CAPP and another in IB). Out of these, 36 are underground mines and the rest are surface mines. The company owns 14 coal preparation plants and blending plants and is also involved in purchase and resale of coal from third parties.

We estimate a mine life of 27 years for Alpha Natural, based on the company's total coal reserves of 2.3bn tons and expected 86MM tons of production in 2010.

Post merger, Alpha Natural reclassified its segments into ECO (NAPP, CAPP) and WCO (PRB)

Post merger, the company has reclassified its operations and reports under two broad segments namely Eastern Coal Operations (ECO) and Western Coal Operations (WCO). All the assets in CAPP and NAPP are part of ECO, whereas only the PRB assets of Foundation Coal are part of WCO. ECO segment reports figures in two sub-segments: Eastern steam and Eastern met. WCO only sells steam coal.

Alpha Natural is the largest supplier and exporter of met coal in the US

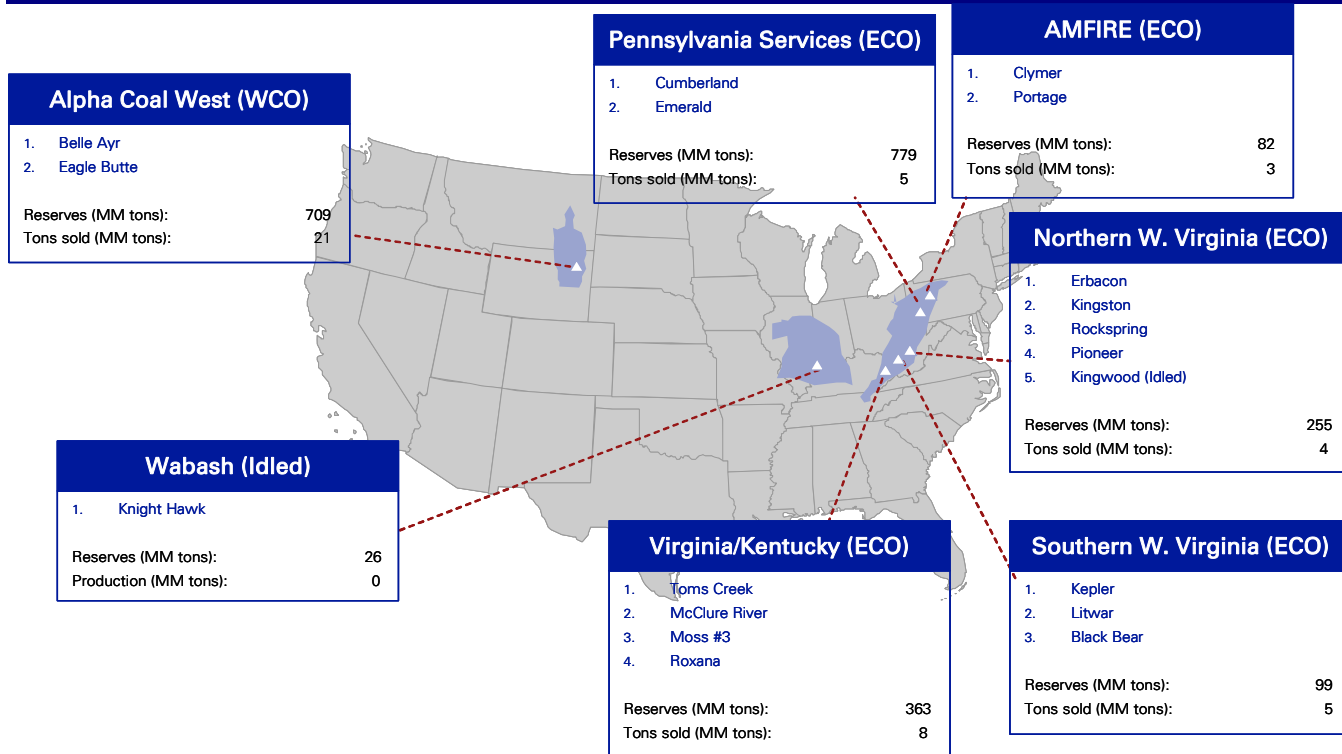
Alpha Natural is the largest supplier and exporter of met coal in the US. In 2009, Alpha Natural exported 14% of its total sales volume which contributed 31% in the revenues. In 2008, the Old Alpha Natural had exports contributing 31% to its total sales volume (2/3rd of which being met coal) and 52% in total sales value, whereas Foundation Coal primarily supplied coal to the US market.

Figure 210: Alpha Natural operations overview (by basin)

	PRB (WCO)	CAPP (ECO)	NAPP (ECO)	Illinois	Total
Total reserves	709MM tons	717MM tons	861MM tons	26MM tons	2,317MM tons
Production volumes					
2007 (pro-forma)	51.6MM tons	25.1MM tons	10.1MM tons	1.2MM tons	88.0MM tons
2008 (pro-forma)	49.2MM tons	24.7MM tons	10.6MM tons	0.4MM tons	84.9MM tons
2009 ¹	20.8MM tons	17.1MM tons	8.0MM tons	-	45.9MM tons
Life of mines ²	14 years	29 years	78 years		27 years
Region	Wyoming	West Virginia Kentucky	Pennsylvania	Southern Illinois	
Mining complexes	Alpha Coal West	Southern West Virginia Northern West Virginia Virginia/Kentucky	Pennsylvania Services AMFIRE	Wabash (Idled)	

¹2009 production volume figures incorporate only five months of FCL volumes (i.e. post-merger); ²Life of mine = Total reserves/2010E production
Data is as of December 31, 2009
Source: Company data and Deutsche Bank estimates

Figure 211: Alpha Natural operations by geography



Data is as of December 31, 2009
Source: Company data and Deutsche Bank

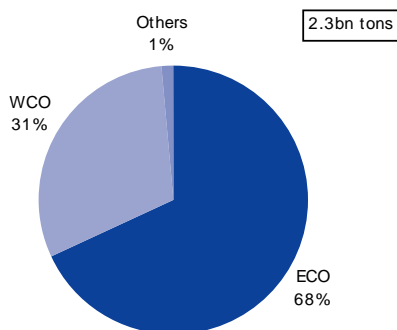
Alpha Natural uses railroads, trucks, barge lines, and ocean-going vessels to deliver coal to its customers. As prevalent in the coal industry, transportation cost in domestic sales is borne by the purchaser; however in the export sale, transportation cost from mine to loading port is paid by the producer, while the purchaser takes responsibility from loading port onwards.

Alpha Natural has total port capacity of ~12MM tons and owns 40% of Dominion Terminal among other operations

The company owns a 40.6% interest in Dominion Terminal Associates (DTA), which leases and operates a ground storage-to-vessel coal transloading facility in Newport News, Virginia. Arch Coal owns 22% in DTA and Peabody the remaining 38%. The facility has a coal throughput capacity of 20MM tons per year and ground storage capacity of ~1.7MM tons. The facility serves international customers, as well as domestic coal users located along the Atlantic coast of the US. Including interests in other operations, Alpha Natural has a total port capacity of ~12MM tons.

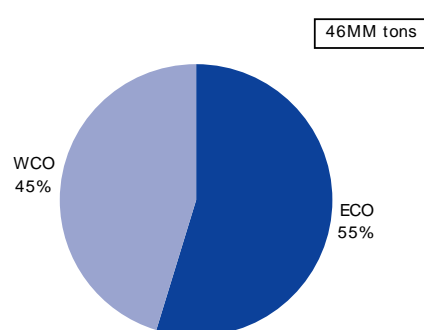
Alpha Natural snapshot of coal mining assets

Figure 212: Reserves by segment, 2009



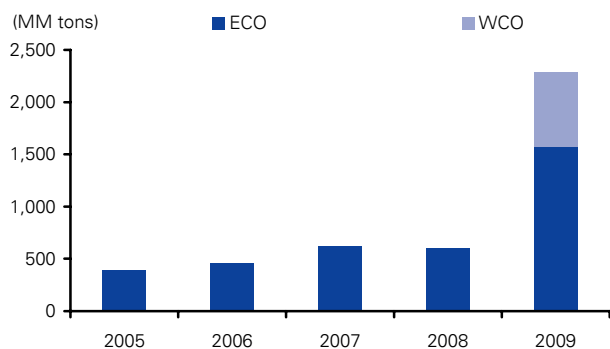
Source: Company data and Deutsche Bank

Figure 213: Production by segment, 2009



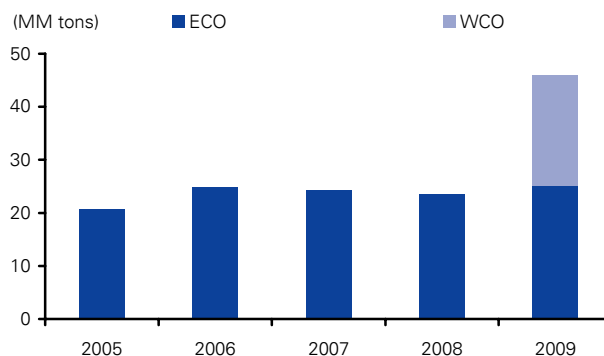
Source: Company data and Deutsche Bank

Figure 214: Evolution of reserves by segment



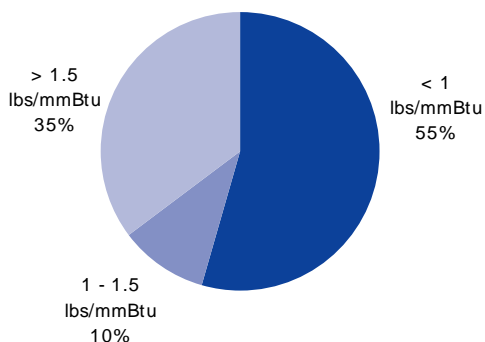
Source: Company data and Deutsche Bank

Figure 215: Evolution of production by segment



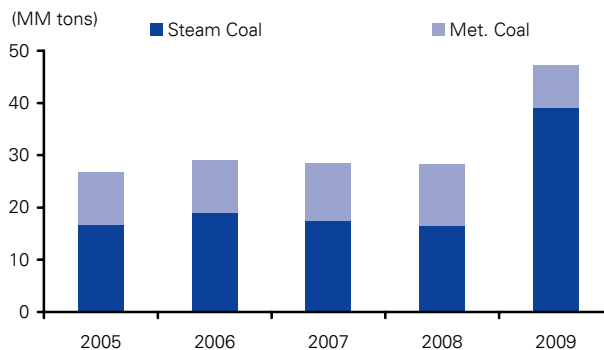
Source: Company data and Deutsche Bank

Figure 216: Sulfur content of reserves, 2009



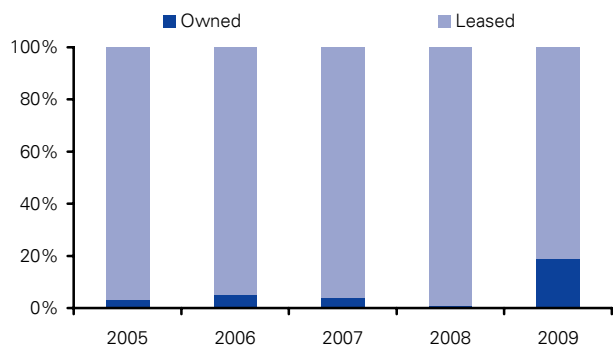
Source: Company data and Deutsche Bank

Figure 217: Evolution of shipments by product type



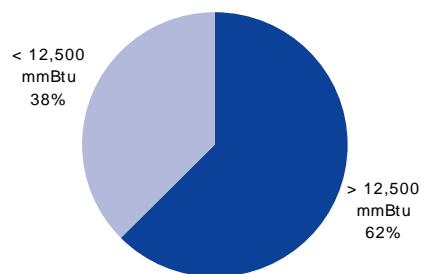
Source: Company data and Deutsche Bank

Figure 218: Reserve control (only Old Alpha Natural)



Source: Company data and Deutsche Bank

Figure 219: Heat content of reserves, 2009



Source: Company data and Deutsche Bank

Figure 220: Old Alpha Natural mining complex operations, as of December 2008

Basin	CAPP							NAPP
	Paramont	Dickenson-Russell	Kingwood	Brooks Run North	Brooks Run South	Enterprise	Callaway/Cobra	
Mining complex	Paramont	Dickenson-Russell	Kingwood	Brooks Run North	Brooks Run South	Enterprise	Callaway/Cobra	AMFIRE
Location	VA	VA	WV	WV	WV	KY	WV / VA	PA
Type of mining ¹	S / U	U	U	S / U	U	S / U	S / U	S / U
Mining methodology ²	RP	RP	RP	RP	RP	RP	RP	RP
Type of coal extracted	steam & met	steam & met	steam & met	steam & met	steam & met	steam	steam & met	steam & met
Transportation used ³	NS	CSX, NS	CSX	CSX	NS	CSX	NS	NS
Process coal at complex	yes	yes	yes	Yes	yes	yes	yes	yes

¹Type of mining: S = Surface, U = Underground

²Mining methodology: RP = Room and Pillar mining, S = Shovel/truck, F = Front loader/truck, LW = Longwall

³Railroad, CSX Railroad = CSX, Norfolk Southern Railroad = NS, RJCC = R.J. Corman Railroad Company, UP = Union Pacific Railroad Company

Source: Company data and Deutsche Bank estimates

Figure 221: Foundation Coal mining complex operations, as of December 2008

Basin	PRB		NAPP			CAPP		Illinois
	Belle Ayr	Eagle Butte	Cumberland	Emerald	Kingston	Rockspring	Pioneer	
Mining complex	Belle Ayr	Eagle Butte	Cumberland	Emerald	Kingston	Rockspring	Pioneer	Wabash mine
Location	Gillette, WY	Gillette, WY	Waynesburg, PA	Waynesburg, PA	WV	WV	WV	Wabash County, IL
Type of mining ¹	S	S	U	U	U	U	S	U
Mining methodology	S	S	LW	LW	RP	RP	F	RP
Type of coal extracted ²	steam	steam	steam	steam	steam & met	steam	steam & met	steam
Transportation used ³	BNSF, UP	BNSF, truck	barge, truck	CSX, NS, truck	barge, CSX, NS	NS, truck	barge, NS, CSX/RJCC	NA
Process coal at complex	no	no	yes	yes	yes	yes	no	NA

¹Type of mining: S = Surface, U = Underground

²Mining methodology: RP = Room and Pillar mining, S = Shovel/truck, F = Front loader/truck, LW = Longwall

³Railroad, CSX Railroad = CSX, Norfolk Southern Railroad = NS, RJCC = R.J. Corman Railroad Company, UP = Union Pacific Railroad Company

Source: Company data and Deutsche Bank

Priorities

Alpha Natural completed transformational transaction with Foundation Coal in 2009

Successful integration of Old Alpha Natural and Foundation Coal

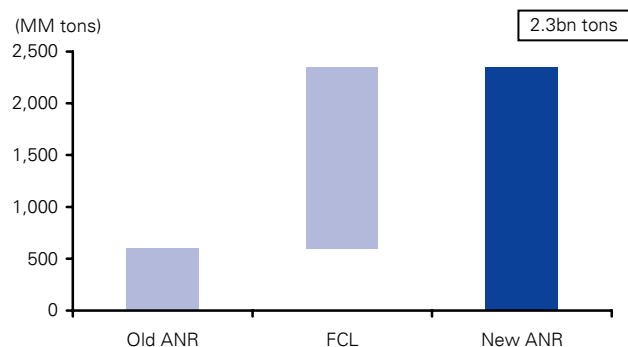
Alpha Natural completed the merger with Foundation Coal on July 31, 2009, creating the third largest coal company in the US. The all-stock transaction valued Foundation Coal at ~\$2.2 billion. Under the terms of the definitive merger agreement, each share of Old Alpha Natural automatically became one share of the combined company, while the Foundation Coal shareholders received 1.084 shares of the new company for each share of Foundation Coal owned. Following the completion of the transaction and the newly issued shares, the Old Alpha Natural shareholders owned ~59% of the new company on a fully diluted basis and the Foundation Coal shareholders owned the remaining ~41%.

Significant synergies expected to flow through SG&A in 2010

Following the successful integration of both companies, Alpha Natural expects to generate substantial synergies to the tune of \$43 to \$50 million annually, beginning in 2010. The bulk of these synergies should flow through the SG&A line.

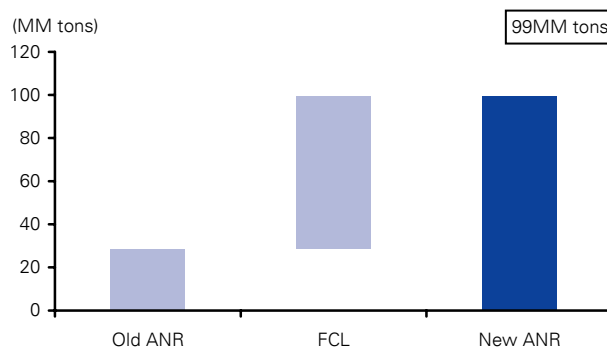
Excluding the potential synergy benefits, the transaction value translates to 1.3x revenue and 7.8x EBITDA, and in terms of reserves and production, the transaction translated to multiples of \$1.3/ton and \$31.8/ton, respectively.

Figure 222: Pro-forma reserves, 2008



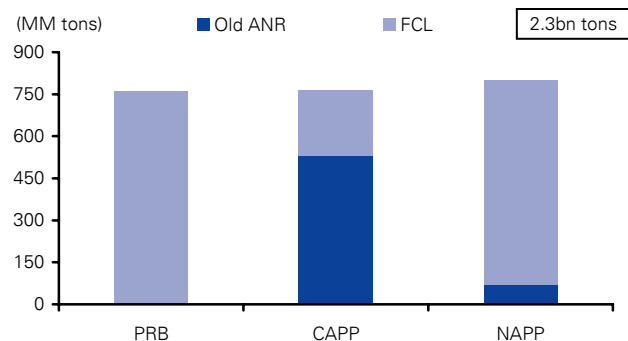
Source: Company data and Deutsche Bank

Figure 223: Pro-forma shipments, 2008



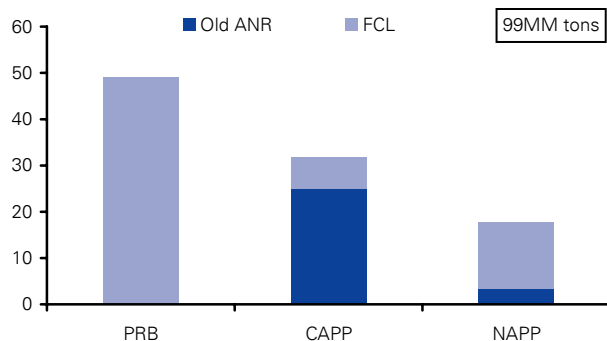
Source: Company data and Deutsche Bank

Figure 224: Pro-forma reserves by basin, 2008



Source: Company data and Deutsche Bank

Figure 225: Pro-forma shipments by basin, 2008



Source: Company data and Deutsche Bank

Customers

Post Foundation Coal transaction, steam coal accounted for 83% of total sales volumes (from 58%)

Alpha Natural produces and sells steam and met coal to its array of customers. Prior to the Foundation Coal, steam coal volumes represented 58% of the total sales for the Old Alpha Natural and met coal 42% in 2008. Foundation Coal was mainly a steam coal player with met coal contributing only 2% of the total sales volume in 2008. Steam coal accounted for 83% of the sales volumes in 2009, taking into consideration only five months contribution from Foundation Coal.

Old Alpha Natural was a big exporter, while Foundation Coal was more of a domestic player

Steam coal is primarily sold to large utilities and industrial customers which use it as fuel for electricity generation. Met coal is sold to steel producers where it is used to make coke for steel production. The Old Alpha Natural had customers in 20 countries with Brazil being the biggest export market in 2008. On the other hand, Foundation Coal sold primarily steam coal in the domestic market.

Ownership and management

Alpha Natural is listed on the NYSE under the ticker symbol ANR.N

Fidelity Investments is the largest single shareholder in Alpha Natural

Shareholder structure

Alpha Natural's shares are listed on the NYSE under the ticker symbol "ANR.N". Following the completion of the Foundation Coal transaction, the old Alpha Natural shareholders owned ~59% of the new company on a fully diluted basis, and the Foundation Coal shareholders the remaining ~41%. The company has 120 million common shares outstanding and a free float of ~98.7%. Insider ownership totals ~1.3% of the total shares outstanding. Daily traded volume averaged ~\$139 million over the past six months.

Fidelity Investments (8.3%), Columbia Management Advisors (8.2%), and BlackRock (7.7%) are the top shareholders in Alpha Natural.

Figure 226: Alpha Natural shareholder structure, February 2010

Shareholder name	Shares held (in mn)	% outstanding
Fidelity Investments	10.0	8.3%
Columbia Management Advisors, Inc.	9.9	8.2%
BlackRock, Inc.	9.3	7.7%
Mackenzie Financial Corporation	6.2	5.2%
Barclays Global Investors UK Holdings Limited	6.2	5.2%
Neuberger Berman, LLC	4.4	3.6%
The Vanguard Group, Inc.	4.2	3.5%
Van Eck Associates Corporation	3.6	3.0%
State Street Global Advisors, Inc.	2.6	2.2%
BNY Mellon Asset Management	2.2	1.9%
Others	61.7	51.3%
Total	120.3	100.0%

Source: Company Data, Capital IQ and Deutsche Bank

Management

Kevin S Crutchfield is the CEO of Alpha Natural since 2007 and Kurt D. Kost the President since 2009

Figure 227: Alpha Natural senior management

Name	Position	Since
Kevin S. Crutchfield	CEO	2007
Kurt D. Kost	President	2009
Philip J. Cavatoni	Executive VP and Chief Strategy Officer	2009
Frank J. Wood	Executive VP and CFO	2004
Alexander C. Schoch	EVP Law, Chief Legal Officer and Secretary	2006
Michael C. Crews	EVP and Chief Financial Officer	2008
Fredrick D. Palmer	Senior Vice President of Government Relations	2001

Source: Company data and Deutsche Bank

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North America United States
Industrials Metals & Mining

24 March 2010

Arch Coal

Reuters: **ACI.N** Bloomberg: **ACI UN**

Steam leverage with flexibility

Initiating Arch Coal with a Buy and \$32 PT

We are initiating coverage on Arch Coal (ACI) with a Buy rating and a price target of \$32/share. Arch Coal is the second largest publicly traded coal producer in the US and a leading producer in PRB and WBIT region. It is also a met coal producers in US. Recent acquisitions bolster reserves and enhance production potential in the PRB. We estimate that coal sales volumes could reach 161MM tons by 2012 from 125MM tons in 2009, following the successful integration of Jacobs Ranch and normalized production at most operations. Although nearly priced for expected sales volumes in 2010, Arch Coal remains fairly exposed in 2011 (63% of volumes yet to be priced). Financial flexibility should improve over the next few years on fairly low levels of capex.

DB bullish on bulk commodities as market conditions tighten

DB is bullish on bulk commodities, and in particular coal; backed by increasing net imports by China and India, an improvement in power consumption in the US and global steel consumption, and less pressure from coal to natural gas switching at utility plants. Our commodities team calls for Japanese steam coal to average \$85/tonne in 2010 and \$100/tonne by 2011 and for premium hard coking coal to average \$175/tonne in 2010 and \$190/tonne by 2011, which bode well for the US coal market.

Earnings upswing on higher coal prices and benefits post transaction

EPS of \$0.92 in 2010 and \$2.20 in 2011 denote a significant improvement from \$0.37 posted in 2009. Our 2010 and 2011 EPS estimates are 12% and 18% higher than consensus, respectively. We anticipate that a combination of higher average realized coal prices, increasing coal sales volumes – post Jacobs Ranch acquisition, and subdued operating cash costs increases to be the main drivers for our earnings outlook.

Valuation and risks

Our 12-month price target of \$32/share for Arch Coal is based on a 7x 2011E EBITDA of \$957 million. We believe that Arch Coal should trade at the high end of the range of the peer group given the size and location of its asset base, operations and mining projects, growth prospects and value extraction potential post recent acquisitions. Further, position in the met coal market enhances its earnings potential in the foreseeable future. Our PT equates with ~1.3x our NAV of \$25/share calculated under a DCF methodology. Main downside risks include direction of spot prices vis-à-vis contract pricing in place, inability to implement its growth plans in met coal, inability to realize synergies and fully integrate Jacobs Ranch, and limited financial flexibility. Please see next page for details on Arch Coal's valuation and risks.

Forecasts and ratios

Year End Dec 31	2009A	2010E	2011E
FY EPS (USD)	0.37	0.92	2.20
P/E (x)	48.7	26.2	11.0
DPS (USD)	0.36	0.36	0.36
Dividend yield (%)	2.0	1.5	1.5
EV/EBITDA	10.1	8.1	5.6

Source: Deutsche Bank estimates, company data

¹ Includes the impact of FAS123R requiring the expensing of stock options.

Buy

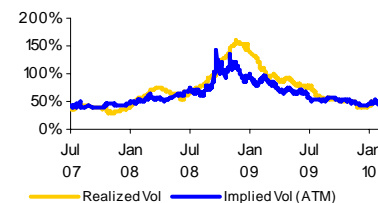
Price at 23 Mar 2010 (USD)	24.22
Price target	32.00
52-week range	27.38 - 12.63

Price/price relative



Performance (%)	1m	3m	12m
Absolute	7.9	8.4	73.2
S&P 500 INDEX	6.0	5.0	47.8

Implied & Realized Volatility (3M)



Investment thesis

Outlook

Arch is the second largest publicly traded coal producer in US

Arch Coal (ACI), based in St. Louis, Missouri, is the second largest publicly traded coal producer in the US. It is a leading producer in PRB and WBIT region, holding ~20% and ~21% market share, respectively. It is also a met coal producers in US, with production bound to increase further in the coming years. Performance has been driven by the recently bolstered reserves and production in the PRB following acquisition of Jacobs Ranch. We estimate that coal sales volumes could reach 161MM tons by 2012 from 125MM tons in 2009, following the successful integration of Jacobs Ranch and normalized production at most operations. Arch Coal has priced commitments for 87% of expected sales volumes in 2010 and remains fairly exposed in 2011, with 63% of its volumes yet to be priced. Financial flexibility, while constrained in the near-term, should improve over the next few years on meaningful cash generation aided by fairly low levels of capex. We are initiating coverage on Arch with a Buy rating and a price target of \$32/share.

Valuation

We believe that Arch should trade at the high end of the range of its peer group

Our 12-month price target of \$32/share for Arch Coal is based on a 7x 2011E EBITDA of \$957 million. Our selected sample of NA coal companies should trade between 5x and 7x forward EBITDA, based on historical averages. We believe that Arch should trade at the higher end of the range of its peer group given the size and location of its asset base, operations and mining projects, growth prospects and value extraction potential post the Jacobs Ranch acquisition. Further, we believe that its position in the met coal market bodes well for the company's earnings potential in the foreseeable future. As a valuation cross-check, we note that our PT equates with ~1.3x our NAV of \$25/share calculated under a DCF methodology (9.0% WACC with 10.5% Ke and 5.6% post-tax Kd, and a 1.0% terminal growth rate [based on our knowledge of the asset base and expectations of long-term growth]).

Risks

Main downside risk include direction of spot prices vis-à-vis contract pricing in place

Key downside risks to our outlook include pullback in global economic growth, slowdown in energy consumption/or slowdown in steel consumption, further coal inventory increases at utility companies, direction of energy prices, changes in energy and/or carbon policy changes and consequent ramifications in switching fuels. These dynamics tend to set the stage for global coal supply and demand fundamentals, and ultimately on the dynamics unfolding in the US. Mining companies can face geologic and operational obstacles. Arch Coal is exposed to its ability to implement its growth plans in met coal, its more limited financial flexibility (based on cash on hand and debt levels), its probable EPA prohibitions related to water discharges from the Spruce property which would hinder its development, and to successfully realizing synergies and integrating Jacobs Ranch. Other risks are associated with the direction of input costs, fiscal regime and mining legislation, and the successful execution of mining operations. Further risks for coal companies stem from contract pricing in place vis-à-vis the direction of spot prices.

Model updated: 18 March 2010

Running the numbers

North America

United States

Metals & Mining

Arch Coal

Reuters: ACI.N

Bloomberg: ACI UN

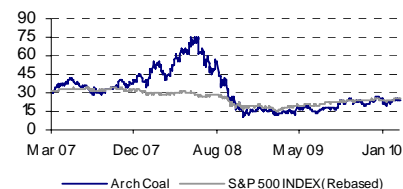
Buy

Price (23 Mar 10)	USD 24.22
Target price	USD 32.00
52-week Range	USD 12.63 - 27.38
Market Cap (m)	USDm 3,932 EURm 2,946

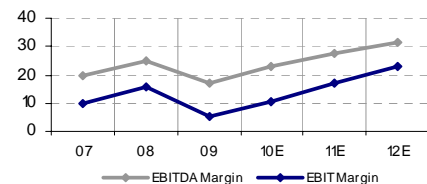
Company Profile

Arch Coal (ACI) is the second largest coal producer in the US. Additionally, ACI is one of the largest metallurgical coal producers in the US. ACI sold 125MM tons of coal in 2009 and controlled 3.9bn tons of proven and probable reserves at the end of 2009. It has operations in Powder River Basin (77% of 2009 sales volume), Western Bituminous (13%) and Central Appalachia (13%) basins. The company produces steam (97%) and metallurgical coal (3%), concentrating primarily on low-sulfur content coal and providing fuel for ~8% of the electricity generated in the US.

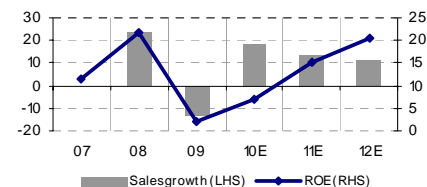
Price Performance



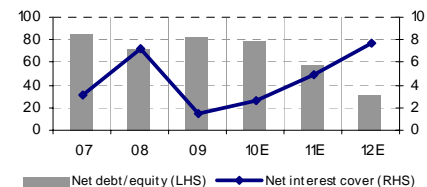
Margin Trends



Growth & Profitability



Solvency



David Martin

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Fiscal year end 31-Dec

	2007	2008	2009	2010E	2011E	2012E
Financial Summary						
DB EPS (USD)	1.21	2.45	0.37	0.92	2.20	3.51
Reported EPS (USD)	1.21	2.45	0.28	0.92	2.20	3.51
DPS (USD)	0.27	0.34	0.36	0.36	0.36	0.36
BVPS (USD)	10.75	12.04	14.01	13.59	15.44	18.60

Valuation Metrics

Price/Sales (x)	2.0	2.1	1.1	1.3	1.1	1.0
P/E (DB) (x)	28.4	18.0	48.7	26.2	11.0	6.9
P/E (Reported) (x)	28.4	18.0	64.7	26.2	11.0	6.9
P/BV (x)	4.2	1.4	1.6	1.8	1.6	1.3
FCF yield (%)	nm	2.9	2.2	1.8	9.0	14.0
Dividend yield (%)	0.8	0.8	2.0	1.5	1.5	1.5
EV/Sales	2.6	2.5	1.7	1.9	1.5	1.3
EV/EBITDA	13.1	10.1	10.1	8.1	5.6	4.0
EV/EBIT	27.0	16.5	31.2	17.3	9.0	5.6

Income Statement (USDm)

Sales	2,414	2,984	2,576	3,063	3,487	3,877
EBITDA	472	753	445	703	957	1,217
EBIT	230	460	143	328	597	877
Pre-tax profit	155	396	25	201	477	762
Net income	175	354	42	151	358	572

Cash Flow (USDm)

Cash flow from operations	331	679	383	289	628	827
Net Capex	-418	-496	-322	-220	-275	-275
Free cash flow	-87	183	61	69	353	552
Equity raised/(bought back)	5	-48	327	0	0	0
Dividends paid	-39	-49	-55	-59	-59	-59
Net inc/(dec) in borrowings	131	11	496	-14	-71	-110
Other investing/financing cash flows	-7	-32	-838	0	0	0
Net cash flow	3	66	-10	-3	224	383
Change in working capital	-105	-2	-25	-237	-90	-85

Balance Sheet (USDm)

Cash and cash equivalents	5	71	61	58	281	664
Property, plant & equipment	2,464	2,703	3,366	3,211	3,126	3,061
Goodwill	40	47	114	114	114	114
Other assets	1,086	1,158	1,300	1,548	1,648	1,740
Total assets	3,595	3,979	4,841	4,931	5,169	5,579
Debt	1,303	1,312	1,808	1,794	1,723	1,613
Other liabilities	760	938	909	921	930	938
Total liabilities	2,063	2,250	2,717	2,715	2,654	2,550
Total shareholders' equity	1,532	1,729	2,124	2,216	2,515	3,028
Net debt	1,298	1,242	1,747	1,736	1,442	949

Key Company Metrics

Sales growth (%)	nm	23.6	-13.7	18.9	13.8	11.2
DB EPS growth (%)	na	102.5	-84.9	150.0	137.4	59.8
Payout ratio (%)	22.0	13.8	128.9	38.8	16.3	10.2
EBITDA Margin (%)	19.5	25.2	17.3	23.0	27.4	31.4
EBIT Margin (%)	9.5	15.4	5.6	10.7	17.1	22.6
ROE (%)	11.4	21.7	2.2	7.0	15.2	20.7
Net debt/equity (%)	84.8	71.8	82.2	78.3	57.3	31.3
Net interest cover (x)	3.2	7.2	1.5	2.6	5.0	7.6

DuPont Analysis

EBIT margin (%)	9.5	15.4	5.6	10.7	17.1	22.6
x Asset turnover (x)	0.7	0.8	0.6	0.6	0.7	0.7
x Financial cost ratio (x)	0.7	0.9	0.3	0.6	0.8	0.9
x Tax and other effects (x)	1.1	0.9	0.9	0.7	0.7	0.7
= ROA (post tax) (%)	4.9	9.4	1.0	3.1	7.1	10.6
x Financial leverage (x)	2.3	2.3	2.3	2.3	2.1	1.9
= ROE (%)	11.4	21.7	2.2	7.0	15.2	20.7
annual growth (%)	na	90.5	-89.9	217.9	117.7	36.3
x NTA/share (avg) (x)	10.6	11.3	12.7	13.3	14.5	17.0
= Reported EPS	1.21	2.45	0.28	0.92	2.20	3.51
annual growth (%)	na	102.2	-88.6	231.8	137.4	59.8

Source: Company data, Deutsche Bank estimates

Arch Coal valuation charts

Figure 228: Arch Coal forward P/E



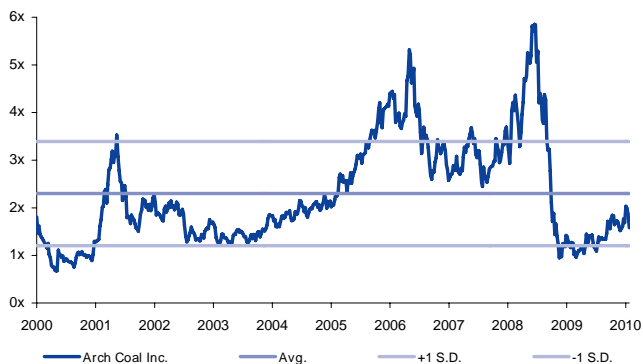
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 229: Arch Coal forward EV/EBITDA



Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 230: Arch Coal forward P/BV



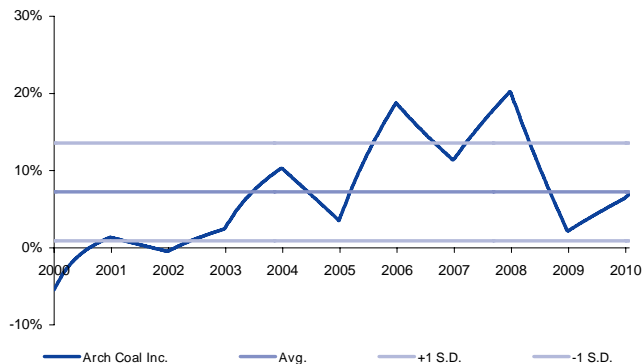
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 231: Arch Coal forward dividend yield



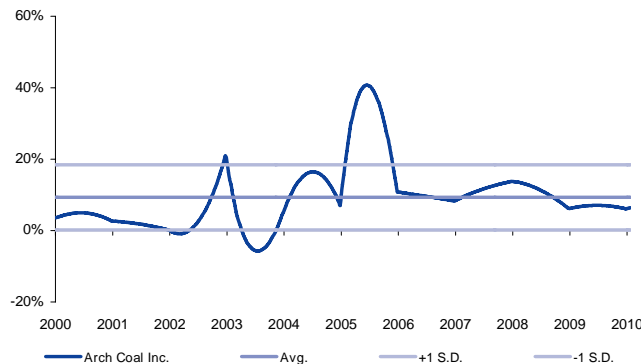
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 232: Arch Coal forward ROE



Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 233: Arch Coal forward ROIC



Source: Company data, Capital IQ and Deutsche Bank estimates

Earnings outlook

Arch Coal EPS to reach \$0.92 in 2010, \$2.20 in 2011, peaking in 2012 at \$3.51

We estimate that a combination of higher average realized coal prices, increasing coal sales volumes – resulting from additional capacity post acquisition of Jacobs Ranch and additional capacity coming on stream as market conditions improve, as well as fairly subdued cash costs increases to be the main drivers for Arch Coal earnings results in 2010 through 2012.

- Revenues.** Revenue should reach \$3.1 billion in 2010 (+19% y/y), \$3.5 billion in 2011 (+14% y/y) and peak at \$3.9 billion by 2012 (+11% y/y). These results reflect the full incorporation of the Jacobs Ranch acquisition, as well as increasing volumes and average realized prices resulting from improving market conditions.
- EBITDA.** EBITDA should follow a similar growth path to revenue coming in at \$703 million in 2010 (+58% y/y) (slightly higher than the company guidance of \$590 - \$710 million), \$957 million in 2011 (+36% y/y) and \$1.2 billion in 2012 (+27% y/y). Our 2010 and 2011 EBITDA estimates are slightly higher than consensus (being 8% and 7%, respectively). Our 2012 EBITDA estimate is fairly in line with consensus (+4%).
- EPS.** EPS of \$0.92 in 2010 and \$2.20 in 2011 denote a significant improvement from the \$0.37 posted in 2009. Our 2010 and 2011 EPS estimates are 12% and 18% higher than consensus, respectively. Our 2012 \$3.51 EPS estimate is 18% ahead of consensus.
- Sensitivity.** We estimate that a \$1/ton change to our average coal realized price in 2010 should result in a \$150 million change in EBITDA (+/- 21%) and \$0.69 change in EPS (+/- 74%), denoting the operating and financial leverage of the company.

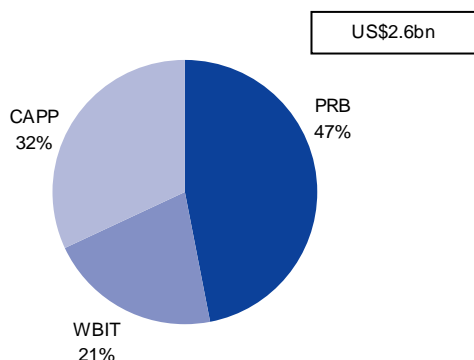
Arch Coal's earnings are very sensitive to a \$1/ton change in avg realized prices

Figure 234: Arch Coal key earnings summary

(US\$m)	2008A	2009A	2010E	2011E	2012E
Sales	2,984	2,576	3,063	3,487	3,877
EBITDA	753	445	703	957	1,217
EBITDA margin	25.2%	17.3%	23.0%	27.5%	31.4%
EPS (US\$)	2.45	0.37	0.92	2.20	3.51
Operating summary					
Shipments (000 tons)	139,594	125,008	149,500	155,500	161,000
Revenue per ton (US\$/ton)	21.37	20.61	20.49	22.42	24.08
Operating cash cost per ton (US\$/ton)	15.98	17.05	15.79	16.27	16.52
EBITDA per ton (US\$/ton)	5.40	3.56	4.70	6.16	7.56

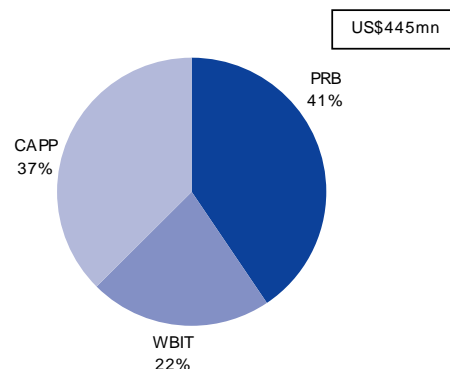
Source: Company data and Deutsche Bank estimates

Figure 235: Revenue breakdown by region, 2009



Source: Company data and Deutsche Bank

Figure 236: EBITDA breakdown by region, 2009



Source: Company data and Deutsche Bank

Operational outlook

Coal sales expected to increase 20% in 2010 then have moderate growth.

Average realized price is expected to be flat in 2010

Arch Coal has priced nearly 90% of its coal sales in 2010, but remains fairly exposed in 2011

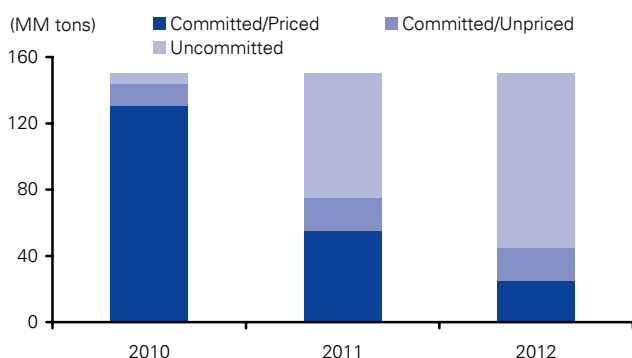
Volumes. We estimate coal sales volumes to reach ~150MM tons in 2010 (+20% y/y following a 10% y/y decline in 2009) – in line with company guidance range of 145 and 155MM tons. We anticipate coal sales volumes to reach 161MM tons by 2012, taking into consideration the incorporation of Jacobs Ranch and improving market conditions.

Prices. Despite our expectation of power consumption increases and less pressure from coal to natural gas switching at utility plants in the US, which should result in improving steam coal prices in the foreseeable future as the US recovers, we do acknowledge that coal inventory levels at utility companies while decreasing still remain fairly high and low natural gas prices continue to pose a risk. On a more constructive note, recent quarterly met coal price settlements point to tight market conditions. Thus, we anticipate that average realized prices will be flat in 2010 at \$20.49/ton and increase 9% y/y and reach \$22.42/ton in 2011. These figures also take into consideration the additional lower-priced PRB production into the mix, post Jacobs Ranch.

Contracts. Arch Coal typically engages in fixed price and fixed volume long-term agreements with many of its customers, with terms greater than one year. Most contracts last between one and five years (3.1 years on average), with some being as short as 11 months, while others lasting more than 10 years. Multi-year contracts usually have specific and possibly different volume and pricing arrangements for each year of contract, with some having variable pricing.

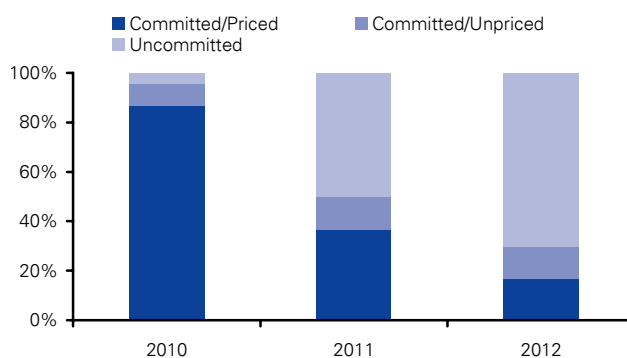
Following the release of its 4Q09 results in 2010, Arch Coal stated that it has priced 87% of its 2010 sales volume. For 2011, Arch Coal remains fairly exposed with 63% of its expected sales volume yet to be priced.

Figure 237: Committed tonnage



Data is as of December 31, 2009
Source: Company data and Deutsche Bank estimates

Figure 238: Commitments profile



Data is as of December 31, 2009
Source: Company data and Deutsche Bank estimates

Operating cash costs. We estimate Arch Coal’s operating cash cost to average \$15.79/ton in 2010 (-7% y/y), due to the increased exposure to the PRB region, following the Jacobs Ranch acquisition, as well as to the synergies expected from the transaction and some benefits unattractive diesel hedges implemented expire. Thereafter, we expect operating cash costs to continue to increase at a moderate rate of about 3% and 2% in 2011 and 2012, respectively.

Liquidity and free cash flow estimates

Arch Coal is able to maximize use of lower EBITDA/ton generation vs peers with lower capex spend

Based on our estimates, Arch Coal could generate free cash flow of \$306 million in 2010 and could almost double the amount to \$637 million by 2012 (implying a FCF yield of ~12% over the 3-year time period), primarily on increasing and improving results, as capex expectations hover between \$220 and \$275 million during the same time period (lower figures than those invested over the past five years). We believe that cash flow generation expected over the next few years, should be sufficient to fund investments, \$148 million due in debt maturities this year, dividend payments, while gradually improving the company's balance sheet.

Capex over next three years could be between \$220 and \$275 million, lower than historical average figures

Capex. We estimate Arch Coal will spend \$220 million in 2010 (was \$323 million in 2009), which is on the higher end of the company guidance provided between \$200 and 220 million. The reduction comes as the final \$120 million LBA payment on Little Thunder was completed in 2009. Despite the addition of incremental volume from the former Jacobs Ranch mine, as virtually no new capex is required for it. Thereafter, we anticipate capex to increase to \$275 million for both 2011 and 2012. Over the course of 2009, Arch Coal opted to reduce its discretionary capital spending in light of the weak economic and deteriorating coal market trends evidenced. These figures compare to an average of \$540 million spent between 2006 and 2008.

Share buybacks/dividends. We anticipate that Arch Coal's dividend per share to come in at \$0.36 in the foreseeable future, in line with the 2009 amount declared and paid – which translates to ~\$60 million per year and imply a dividend yield of ~1%. In addition to dividends, Arch Coal has implemented share buy-backs in the past, with the most recent buy-back of \$50 million taking place in 2008.

Financial flexibility currently limited due to debt levels and fairly low cash on hand

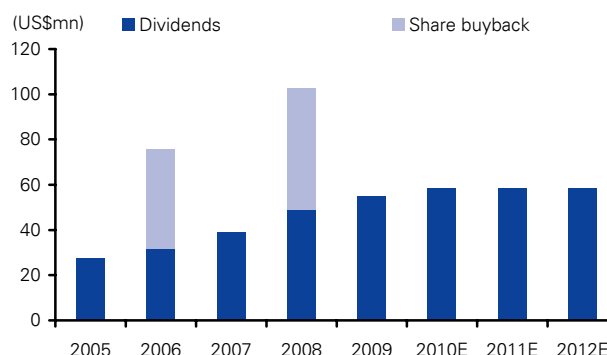
Liquidity. Arch Coal ended the year with total debt of \$1.8 billion and net debt of \$1.7 billion as of 4Q09. The company has \$691 million of committed total liquidity, comprised of \$61 million of cash on hand and \$630 million available under its short-term borrowing facilities. Although the state of the company's balance currently limits its financial flexibility, we anticipate an improvement over the course of the next few years with net debt dropping to \$0.9 billion by 2012.

Figure 239: Arch Coal debt maturities



Data is as of December 31, 2009
Source: Company data and Deutsche Bank estimates

Figure 240: Returning cash to shareholders



Source: Company data and Deutsche Bank

Financial statements and operating assumptions

Figure 241: Arch Coal summary income statement

(US\$m)	2008A	2009A	2010E	2011E	2012E
Sales	2,984	2,576	3,063	3,487	3,877
EBITDA	753	445	703	957	1,217
EBITDA margin	25.2%	17.3%	23.0%	27.5%	31.4%
Depreciation	293	302	375	360	340
EBIT	460	143	328	597	877
Interest income/(expense)	-64	-118	-127	-120	-115
Pre-tax income	396	25	201	477	762
Tax-rate	10.5%	-66.0%	25.0%	25.0%	25.0%
Net income	354	42	151	358	572
Net margin	11.9%	1.6%	4.9%	10.3%	14.7%
Shares	144	151	163	163	163
EPS (US\$)	2.45	0.37	0.92	2.20	3.51

Source: Company data and Deutsche Bank estimates

Figure 242: Arch Coal operating assumptions

	2008A	2009A	2010E	2011E	2012E
Shipments (000 tons)	139,594	125,008	149,500	155,500	161,000
Revenue per ton (US\$/ton)	21.37	20.61	20.49	22.42	24.08
Operating cash cost per ton (US\$/ton)	15.98	17.05	15.79	16.27	16.52
EBITDA per ton (US\$/ton)	5.40	3.56	4.70	6.16	7.56
Capital Expenditure (US\$m)	497	323	220	275	275

Source: Company data and Deutsche Bank estimates

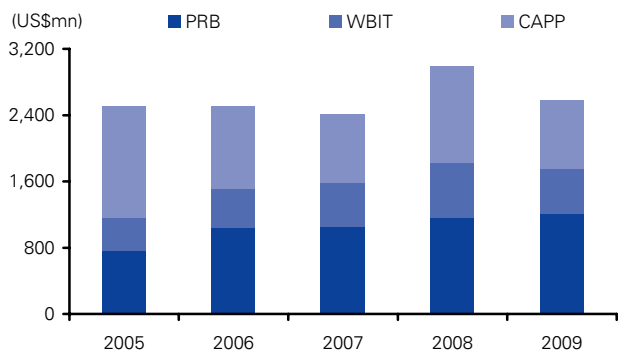
Figure 243: Arch Coal summary balance sheet

(US\$m)	2008A	2009A	2010E	2011E	2012E
Assets					
Cash & equivalents	71	61	58	281	664
Other current assets	636	626	874	974	1,066
Long-term assets	3,273	4,154	3,999	3,914	3,849
Total assets	3,979	4,841	4,931	5,169	5,579
Liabilities					
Short-term debt	213	267	267	267	267
Other current liabilities	446	364	376	386	393
Long-term debt	1,099	1,540	1,526	1,456	1,345
Other long-term liabilities	492	545	545	545	545
Minority interest	0	9	9	9	9
Shareholders' equity	1,729	2,124	2,216	2,515	3,028
Total liabilities & equity	3,979	4,841	4,931	5,169	5,579
Net debt	1,242	1,747	1,736	1,442	949

Source: Company data and Deutsche Bank estimates

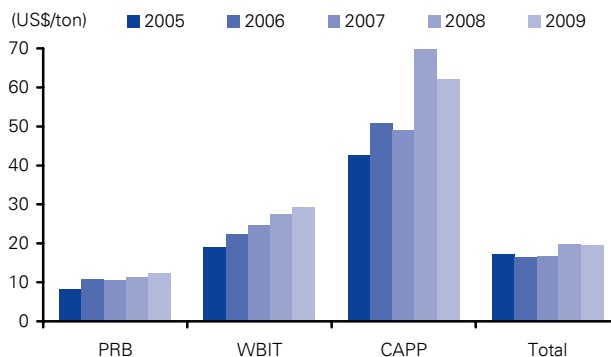
Arch Coal financial snapshot

Figure 244: Evolution of revenue by region



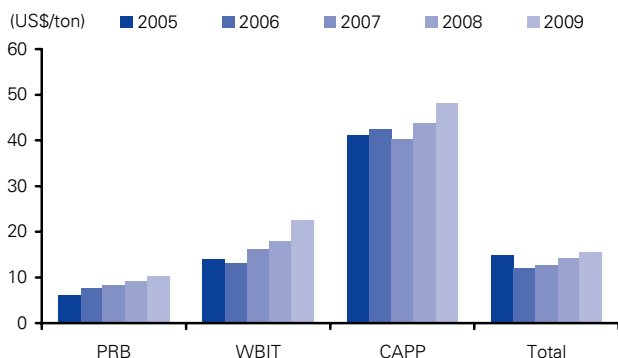
Source: Company data and Deutsche Bank

Figure 245: Evolution of average realized price by region



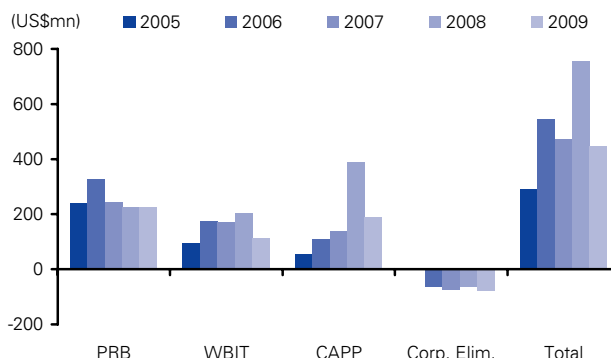
Source: Company data and Deutsche Bank

Figure 246: Evolution of average cost by region



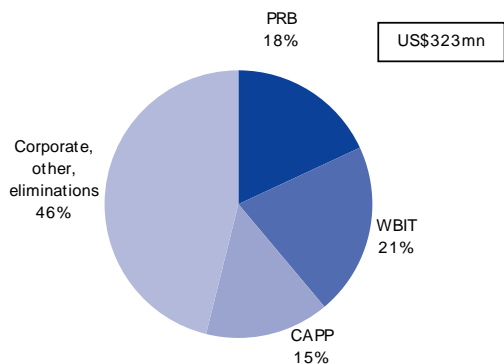
Source: Company data and Deutsche Bank

Figure 247: Evolution of EBITDA by region



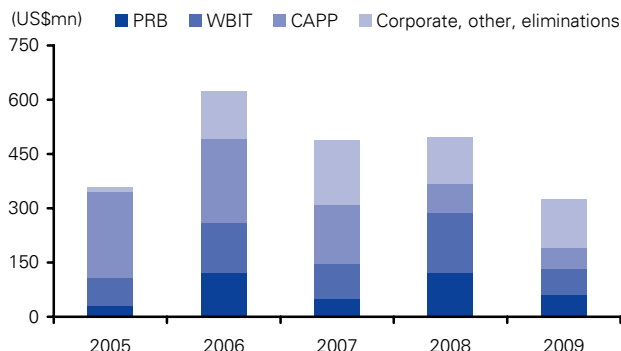
Source: Company data and Deutsche Bank

Figure 248: Capex breakdown by region, 2009



Source: Company data and Deutsche Bank

Figure 249: Evolution of capex by region



Source: Company data and Deutsche Bank

Company profile

Company description

Arch Coal is the second largest publicly traded coal producer in the US

Arch Coal (ACI), headquarter in St. Louis, Missouri, is the second largest publicly traded coal producer in the US, with a ~11% share of 2009 US production, concentrating primarily on low-sulfur content coal. Additionally, Arch Coal was the fifth largest met coal producer in the US in 2008, although its rank fell in 2009.

Controls a reserve base of 3.9bn tons of low sulfur coal

The company also controls a vast domestic reserve base totaling ~3.9bn tons following recent acquisitions (Jacobs Ranch and Otter Creek reserves of 381MM tons and 731MM tons, respectively), of which ~85% is low in sulfur and ~79% meets the most stringent requirements of the Clean Air Act without the application of expensive scrubbing technology.

Arch Coal sold 125MM tons in 2009 from PRB, WBIT and CAPP operations

Arch Coal sold 125MM tons of coal in 2009 (including purchases from third parties), deriving ~72% of its revenues from long-term supply contracts with terms of 3.1 years on average. The company operates 19 active mines from 11 mining complexes located in the Powder River Basin (PRB) (~77% of 2009 sales volume), the Western Bituminous region (WBIT) (~13%), and the Central Appalachian region (CAPP) (~10%).

Steam and met coal is produced primarily from surface mines

Steam and met coal is produced from surface (~80% of production) and underground (~20%) mines which is sold to ~175 power plants in 39 states, steel mills, and industrial facilities in the US. Arch Coal provides the fuel for ~8% of the electricity generated in the US.

As of Feb 11, 2010, Arch Coal had ~4,601 workers, ~152 of whom were represented by the Scotia Employees Association.

Company history

In 1997, Arch Mineral Corporation and Ashland Coal merged to form Arch Coal

Arch Coal was formed in July 1997 through the merger of privately held Arch Mineral Corporation and publicly traded Ashland Coal, Inc. Arch Mineral was formed as a partnership between Ashland Oil and the Hunt family of Texas in 1969, whereas Ashland Coal was formed as wholly owned subsidiary of Ashland Oil in 1975. With the completion of the merger, Arch became the leading producer of low-sulfur coal in the eastern US. Arch Coal started trading on the NYSE under the ticker symbol "ACI" in 1988.

Recent acquisitions include Jacobs Ranch mining complex and Otter Creek

Following a series of acquisitions (namely, Atlantic Richfield, North Rochelle, Jacobs Ranch mine) and winning bids of the federal reserve tracts (Thundercloud, Little Thunder, Otter Creek), Arch Coal has expanded into the west and solidified its position as a leading producer of high-Btu, low sulfur coal and created the world's largest single coal mining complex, Black Thunder.

Through the acquisition of a one-third interest in Knight Hawk Coal, Arch Coal expanded production into the Illinois Basin (IB). Arch Coal has sold select eastern assets to sharpen its focus in the CAPP region opting to keep its larger and more scalable properties.

Figure 250: Arch Coal corporate history

1969	Arch Mineral Corporation founded
1975	Ashland Coal formed
1997	Merged with Ashland Coal, Inc.
1998	Acquired Atlantic Richfield Company (Black Thunder and Coal Creek mines in PRB, West Elk mine in Colorado, and a 65% interest in Canyon Fuel Co.) for \$1.1 billion Won bid on Thundercloud, a 412MM tons federal reserve tract adjacent to the Black Thunder mine, for \$158 million
2001	Issued 8.7 million shares @\$19.0, totaling net proceeds of \$156.86 million, to repay debt Issued 8.5 million shares @\$33.0, totaling net proceeds of \$266.3 million
2004	Acquired remaining 35% of Canyon Fuel Co for \$112 million Acquired Triton Coal's North Rochelle mine near Black Thunder operations for \$291 million Won bid on Little Thunder, a 719MM tons federal reserve tract adjacent to the Black Thunder mine, for \$611 million
2005	Sold stock of Hobet Mining, Apogee Coal & Catenary Coal Co (4 mining complexes and 455MM tons of reserves in CAPP) to Magnum for \$15 million, net of assumption of certain liabilities
2006	Acquired 1/3 rd interest in Knight Hawk Coal for \$15 million
2007	Sold Mingo Logan-Ben Creek to ANR (1.2MM tons in 2007 and 4.0MM tons in 2006) for \$40 million Bought Ark Land Co. in Southern Illinois for \$39 million
2009	Acquired Rio Tinto's Jacobs Ranch mine complex for \$764 million Issued 19.55 million common shares for net proceeds of \$326 million and 8.75% senior unsecured notes for net proceeds of \$570 million to fund part of Jacobs Ranch acquisition Won bid on Otter Creek, a 731MM tons reserve tract with Great Northern Properties for \$73 million

Source: Company data and Deutsche Bank

Operations overview

ACI manages a broad asset base in the US

Arch Coal has a broad and diverse asset base throughout the US. It owns or controls, primarily through long-term leases, acres of coal land in West Virginia, Wyoming, Illinois, Utah, Kentucky, New Mexico, and Colorado. Arch Coal operates 19 active mines at 11 mining complexes – two mining complexes in PRB (~77% of 2009 sales volume), five in WBIT (~13%), and four in CAPP (~10%), it also has 374MM tons reserves (excluding Knight Hawk) in IB that are currently not in operation. Since Arch Coal has a ~33% equity interest in Knight Hawk Holdings, LLC (Knight Hawk), a coal producer in IB, reserves and volumes pertaining to Knight Hawk are not reflected in the figures shown for the company.

Coal sales are managed by basin – namely, PRB, WBIT, and CAPP

Coal sales are managed by basin – namely, PRB, WBIT, and CAPP – as geology, coal transportation routes to customers, regulatory environments and coal quality are generally consistent within each. The company sells substantially all of its coal to power plants, steel mills and industrial facilities in US.

Black Thunder is the most significant mining complex in PRB (~65% of 2009 shipments)

Arch Coal ranks second in terms of market share in PRB region (~20% market share) with two surface mining complexes. Black Thunder is the most significant mining complex in PRB (~65% of total shipments in 2009). Post Jacobs Ranch's acquisition, the enhanced Black Thunder mining complex is the largest single coal-mining complex in the world with an expected production capacity of 140MM tons per year.

Met and steam coal is produced in CAPP

Arch Coal's WBIT operations include four underground and one surface mining complex located in Colorado, Utah, and southern Wyoming. The company's operations in CAPP are located in southern West Virginia, eastern Kentucky and Virginia and include four mining complexes comprised of nine underground mines, and four surface mines. Met and PCI coal is produced in CAPP.

We estimate a mine life of 26 years for Arch Coal, based on the company's total coal reserves of 3.9bn tons and expected 150MM tons of production in 2010.

Figure 251: Arch Coal operations overview

	PRB	WBIT	CAPP	IB ¹	Total ¹
Total reserves	2,758MM tons	467MM tons	336MM tons	374MM tons	3,935MM tons
Sales volumes ²	96.1MM tons	16.7MM tons	12.2MM tons	-	125.0MM tons
Region	Wyoming	Colorado Utah Southern Wyoming	West Virginia Eastern Kentucky Virginia	Illinois	.
Mining complexes	Black Thunder Coal Creek	Arch of Wyoming Skyline Dugout Sufco West Elk	Mountain Laurel Coal-Mac Cumberland River Lone Mountain	Knight Hawk	.
Sulfur content range	0.2% - 0.9%	0.4% - 0.8%	0.2% - 2.0%	1.0% - 4.3%	0.2% - 4.3%
Heat value range (Btu/lb)	8,000 – 9,500	10,000 – 12,000	11,400 – 13,200	10,100 – 12,600	10,032

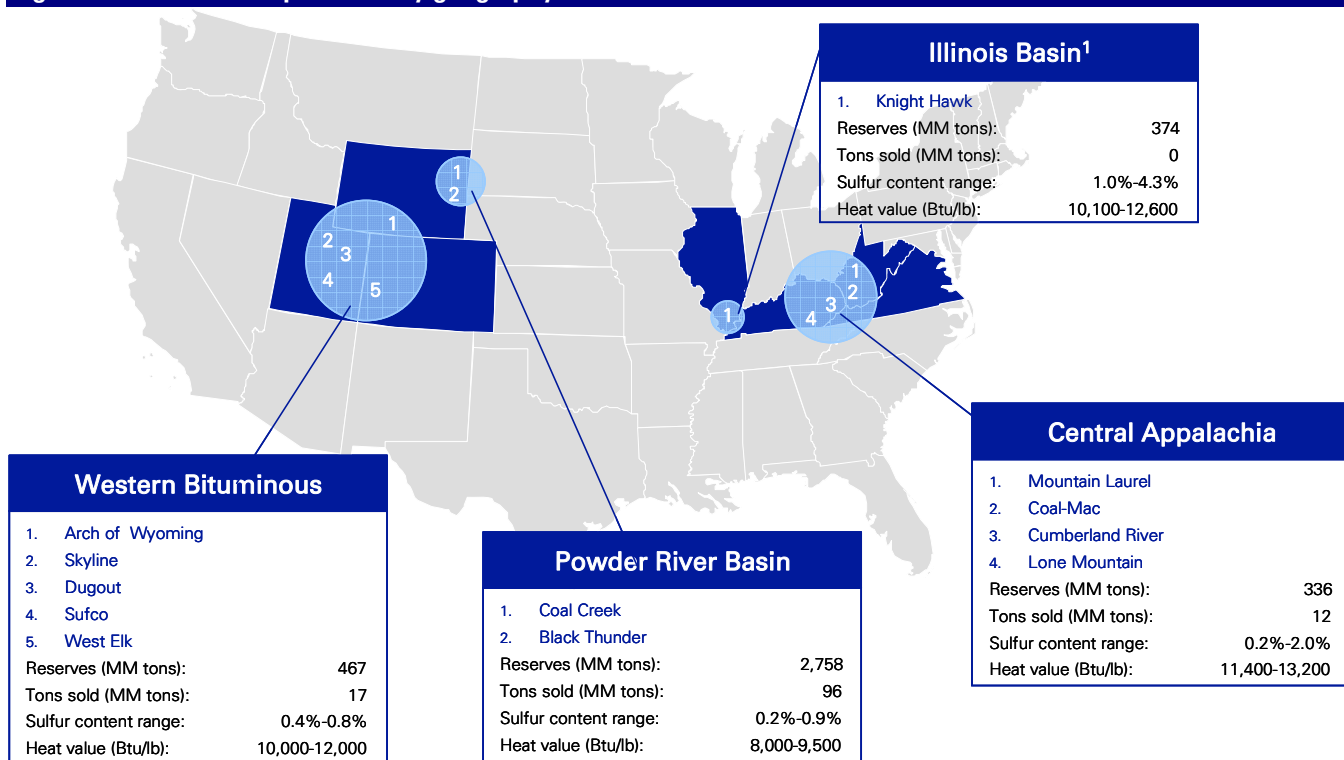
Data is as of December 31, 2009

¹Excludes reserves and sales volumes figures for Knight Hawk Holdings LLC, as ACI owns only 1/3rd equity interest in it; ACI also controls a significant undeveloped reserve base in that region

²Excludes sales of third party purchased coal of 7.5MM tons

Source: Company data and Deutsche Bank estimates

Figure 252: Arch Coal operations by geography



Data is as of December 31, 2009

¹Excludes reserves and tons sold figures for Knight Hawk Holdings LLC, as ACI owns only 1/3rd equity interest in it; ACI also controls a significant undeveloped reserve base in that region

Source: Company data and Deutsche Bank

Arch Coal purchases and sells coal from others, some of which it blends with own

In addition to selling coal produced in its mining complexes, Arch Coal purchases and sells coal mined by others as well, some of which it blends with coal produced from its mines. Arch sells a vast majority of coal domestically to producers of electric power in US (~94% of 2009 volumes).

PRB production is shipped directly to customers, CAPP goes through preparation plants

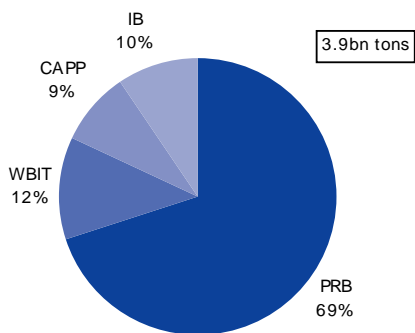
Arch Coal uses large earth-moving equipment, such as draglines, shovels and loaders to mine coal from surface mines and uses longwall systems or continuous miners in case of underground mines. In PRB, Arch Coal crushes coal and then ships it directly to customers with no need for additional preparation, whereas, CAPP production goes through preparation plants.

Arch Coal owns a 22% interest in DTA

Coal is transported from mining complexes/preparation plants to customers by means of railroads, trucks, barge lines, and ocean-going vessels from terminal facilities. Arch Coal Terminal is a company-owned dock on the Big Sandy River that enhances the company's portfolio of transportation options with an annual throughput capacity of 6MM tons and storage capacity of ~500,000 tons. The company also owns a 22% interest in Dominion Terminal Associates (DTA), which leases and operates a ground storage-to-vessel coal transloading facility in Newport News, Virginia. The facility has a coal throughput capacity of 20MM tons per year and ground storage capacity of ~1.7MM tons. The facility serves international customers, as well as domestic coal users located along the Atlantic coast of the US.

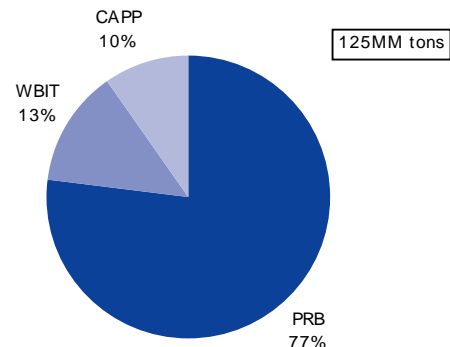
Arch Coal snapshot of coal mining assets

Figure 253: Reserves by basin, 2009



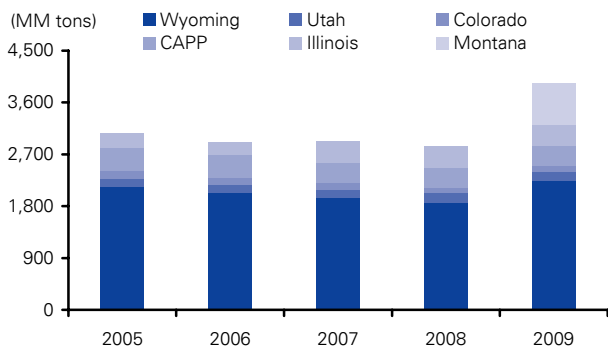
Source: Company data and Deutsche Bank

Figure 254: Shipments by basin, 2009



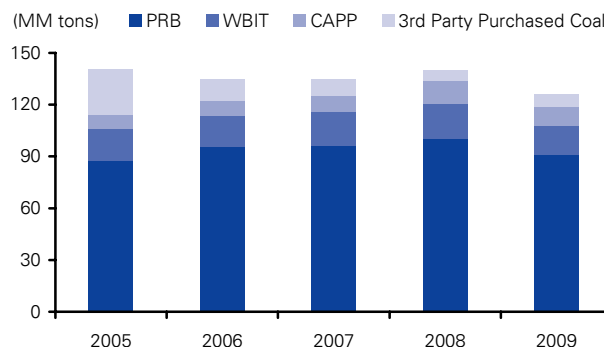
Data excludes figures for third party purchased coal
Source: Company data and Deutsche Bank

Figure 255: Evolution of reserves by region



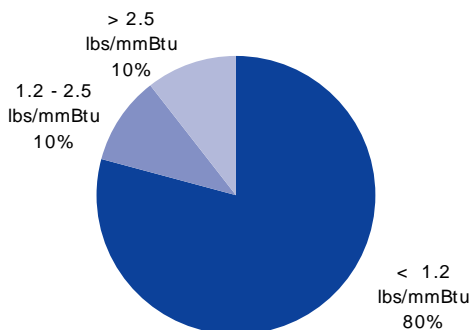
Source: Company data and Deutsche Bank

Figure 256: Evolution of shipments by basin



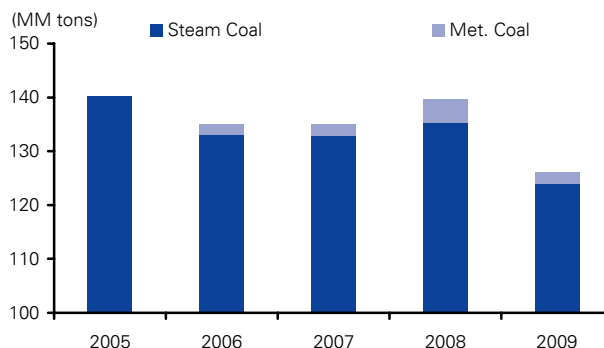
Source: Company data and Deutsche Bank

Figure 257: Sulfur content of reserves, 2009



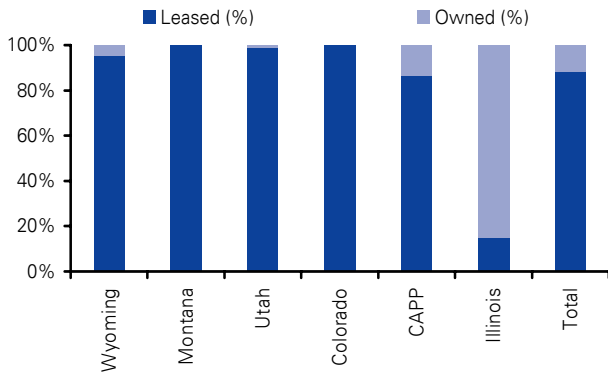
Source: Company data and Deutsche Bank

Figure 258: Evolution of shipments by product type



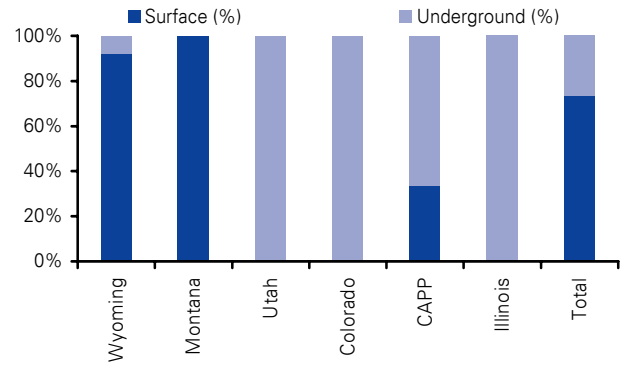
Source: Company data and Deutsche Bank

Figure 259: Reserve control, 2009



Source: Company data and Deutsche Bank

Figure 260: Mining method (% of total reserves), 2009



Source: Company data and Deutsche Bank

Figure 261: Arch Coal mining complex operations, as of December 2009

Basin	PRB		WBIT					CAPP			
Mining complex	Black Thunder	Coal Creek	Arch Wyoming	Dugout Canyon	Skyline	Sufco	West Elk	Coal-Mac	Cumberland River	Lone Mountain	Mountain Laurel
Location	Campbell County, WY	Campbell County, WY	Carbon County, WY	Carbon County, UT	Carbon and Emery Counties, UT	Sevier County, UT	Gunnison County, CO	Logan and Mingo Counties, WV	Wise County, VA and Letcher County, KY	Harlan County, KY and Lee County, VA	Logan County, WV
Acreage	33,800	7,400	58,000	18,200	12,400	27,550	17,900	46,800	17,000	22,000	38,280
Type of mining ¹	S	S	S	U	U	U	U	S / U	S / U	U	S / U
Mining equipment ²	D, S	D,S	L	LW, CM	LW, CM	LW, CM	LW, CM	L, E	L, CM, HW	CM	L, LW, CM
Type of coal extracted	steam	steam	steam	steam	steam	steam	steam	steam	steam & met.	steam & met.	steam & met.
Seams coal extracted	Upper Wyodak	Wyodak-R1, Wyodak-R3	Johnson	Rock Canyon, Gilson	Lower O'Conner A	Upper Hiawatha, Lower Hiawatha	E	Coalburg, Stockton	Imboden to High Splint No. 14	Kellioka, Darby, Owl	Cedar Grove, Alma
Total assigned reserves	1,522MM tons	197MM tons	15MM tons	20MM tons	19MM tons	66MM tons	75MM tons	27MM tons	23MM tons	31MM tons	86MM tons
Life of mine ³	12 years	16 years	9 years	3 years	2 years	11 years	10 years	9 years	8 years	11 years	8 years
Tons shipped											
2007	86.8MM tons	10.2MM tons	-	4.0MM tons	2.4MM tons	6.7MM tons	6.2MM tons	3.9MM tons	2.4MM tons	2.4MM tons	1.0MM tons
2008	88.5MM tons	11.5MM tons	0.2MM tons	4.3MM tons	3.3MM tons	7.4MM tons	5.3MM tons	3.7MM tons	2.4MM tons	2.7MM tons	4.3MM tons
2009	81.2MM tons	9.8MM tons	0.1MM tons	3.2MM tons	2.8MM tons	6.6MM tons	4.0MM tons	2.9MM tons	1.6MM tons	2.2MM tons	4.4MM tons
Air quality permit tonnage	190.0MM tons	50.0MM tons	2.5MM tons	NA	NA	NA	NA	NA	NA	NA	NA
Heat value (Btu/lb)	8,800	8,400	10,930	12,100	11,600	11,000	11,700	12,200	12,700	13,000	12,500
SO2 (lbs/mm Btu)	0.50 - 0.75	0.85	0.70	0.90	0.80	0.70	0.90	1.20 - 1.40	1.20 - 1.60	1.20	1.20
Lease control	federal/state	federal/state	federal/state/private	federal/state	federal/state/private	federal/state	federal/state	private	private	private	private
Complex composition	7 active pit areas, 3 owned loadout facilities	2 active pit areas, 1 loadout facility	1 active pit area	1 longwall, 3 cont. miners, 2 loadout facilities (1 owned and 1 contracted)	1 longwall, 1 cont. miner section, 1 loadout facility	1 longwall, 3 cont. miner sections, 1 loadout facility	1 longwall, 2 cont. miner sections, 1 loadout facility, 1 prep. plant under construction	1 captive surface mine, 1 contract u/g mine, 1 prep. plant, 2 loadout facilities	4 u/g mines, 4 cont. miner sections, 2 surface mines, 1 highwall miners, 1 prep. plant, 1 loadout facility	3 u/g mines, 7 cont. miner sections, 1 prep. plant, 1 loadout facility	1 u/g mine, 1 longwall, 4 cont. miner sections, 2 contract surface mine, 1 prep. plant, 1 loadout facility
Transportation used ⁴	UP, BN	UP, BN	UP	UP	UP	UP	UP	NS/CSX	NS	NS/CSX	CSX
Process coal at complex	no	no	no	yes	yes	no	yes	yes	yes	yes	yes
Loadout facility specifications	load 15k tons train in <2 hrs	load 15k tons train in <3 hrs	NA	1 st :load 20k tons per day into highway trucks, 2 nd :11k tons train in <3 hrs	load 12k tons train in <4 hrs	load 11k tons train in <3 hrs	load 11k tons train in <3 hrs	1 st : load 12k tons train in <4 hrs, 2 nd : load 10k tons train in <4 hrs	load 12.5k tons train in <4 hrs	load 12.5k tons train in <4 hrs	load 15k tons train in <4 hrs

¹Type of mining: S = Surface, U = Underground²Mining Equipment: D = Dragline, L = Loader/truck, S = Shovel/truck, E = Excavator/truck, LW = Longwall, CM = Continuous miner, HW = Highwall miner³Life of mine is provided by the company.⁴Railroad: UP = Union Pacific Railroad, CSX = CSX Transportation, BN = Burlington Northern Santa Fe Railway, NS = Norfolk Southern Railroad

Source: Company data and Deutsche Bank

Priorities

Arch Coal completed JR acquisition for \$769 million, creating the largest mining complex in the world

Funded by equity and debt offering of \$326 million and \$600 million respectively

Synergies between \$45 and \$55mn per year to flow from 2010 onwards

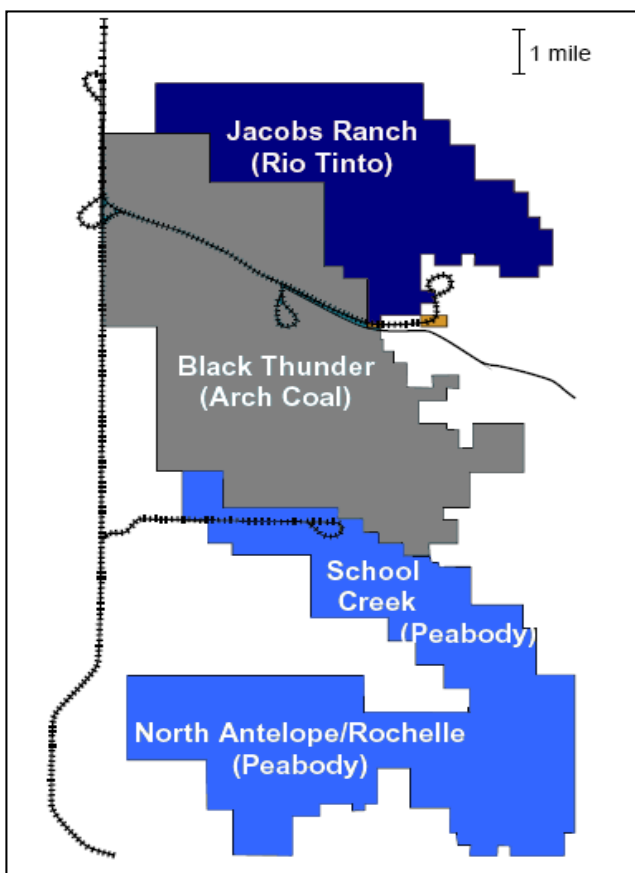
Successful integration of Jacobs Ranch into Black Thunder

Following the \$769 million acquisition of the Jacobs Ranch (JR) mining complex in the PRB from Rio Tinto in October 2009, Arch Coal has worked towards a swift integration with its Black Thunder mine. Jacobs Ranch augments Black Thunder's reserve base by ~381MM tons with low cost coal and adds ~42MM tons of production, with an average quality of 8,800 Btu per lb and SO₂ content of less than 1lb/MMBtu. The resulting mining complex is the largest and most efficient in the world.

In order to finance this acquisition, Arch Coal completed a public offering of 19.6 million shares of its common stock with net proceeds of \$326 million and a \$600 million debt offering (8.75% senior unsecured notes) due 2016 with net proceeds of \$570 million.

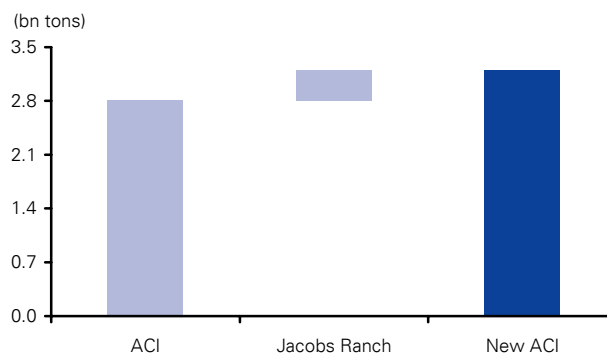
Arch Coal estimates synergies between \$45 and \$55 million per year (~\$0.40/ton on 2009 volumes), to start flowing in 2010. Roughly half of the synergies represent operational cost savings with the remaining related to administrative cost reductions and enhanced coal-blending optimization opportunities.

Figure 262: Jacobs Ranch operations



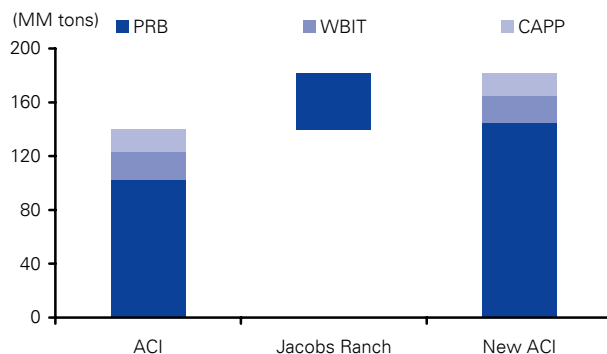
Source: Company data and Deutsche Bank

Figure 263: Arch Coal pro-forma reserves, 2008



Source: Company data and Deutsche Bank

Figure 264: Arch Coal pro-forma shipments, 2008



Source: Company data and Deutsche Bank

Arch Coal plans to more than double met and PCI coal sales in 2010 from 2.1MM tons in 2009

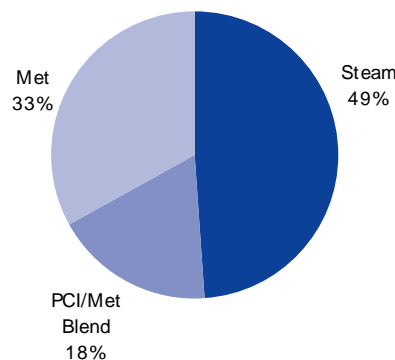
Arch Coal is able to switch its high-vol coal between steam and met

Arch Coal has the flexibility to sell additional met coal

Following the development of Mountain Laurel in 4Q07, Arch Coal solidified its met coal capabilities (including PCI). Based on 4.4MM tons sold in 2008, Arch was the fifth largest US met coal producer; however, met coal production more than halved to 2.1MM tons in 2009 due to unfavorable market conditions. In 2010, Arch Coal anticipates to more than double its met and PCI coal sales to ~4MM tons to take advantage of improving market conditions.

All of Arch Coal's met coal reserves are based in CAPP. As a high-volatile met coal player, Arch Coal is able to sell some of its product as either steam or met coal depending on market conditions for each. In order to switch from steam to met coal, the company takes into account the opportunity cost of the resulting loss on yield due to additional washing (~20-30%). Based on the characteristics of Mountain Laurel, Lone Mountain, and Cumberland River, Arch Coal could potentially sell between 7 and 8MM tpy of met coal (including PCI).

Figure 265: Arch Coal Central Appalachian product profile, 2009



Data is based on 15MM tons of production capacity
Source: Company data and Deutsche Bank

Arch Coal to supply fuel needs of Trailblazer following a 35% stake purchase in plant

Lost Prairie in Illinois could be developed in horizon

Arch Coal acquires 35% stake in Trailblazer Energy Center

In March 2010, Arch Coal acquired a 35% stake in the Trailblazer Energy Center from Tenaska, Inc. The Trailblazer Energy Center, located in Texas, is a fossil-fuel-based power plant. As part of the agreement, Arch Coal will supply the fuel needs of the plant from its PRB mining complexes for the first 20 years of operation.

Untapping Lost Prairie reserves, a long-term growth opportunity

Lost Prairie, encompassing much Arch Coal's ~300MM tons of reserves in Illinois, is amongst Arch Coal's long-term growth opportunities. Lost Prairie is in the permitting process stage, within a long series of steps. The mine is at least five years away from production. Thus, not much capital has been committed to its development as of yet.

Recent Events

Arch Coal leases Otter Creek reserves in Montana from GNP, paying \$73mn over five years

Arch Coal enters agreement to lease Otter Creek reserves in Montana coal

Arch Coal entered into a coal lease agreement with Great Northern Properties (GNP) in November 2009, comprising the Otter Creek reserves located on ~9,600 acres in southeastern Montana. Arch Coal will pay a front-end bonus of \$0.10 per ton, or \$73.1 million payable in five equal annual installments to GNP (with the first installment due in 4Q09). The mining complex comprises ~731MM tons of high-quality, low-cost sub-bituminous coal reserves located in the Ashland coalfield southeast of Billings, providing the company with a viable option to build a significant position in the Northern PRB region. Post the Otter Creek lease, Arch Coal reserves in the PRB region jump to 3.9bn tons from ~3.2bn tons previously.

On a separate note, Arch Coal agreed to pay nearly \$86 million for the right to lease and develop 572MM tons of state-owned coal in Otter Creek Valley (not reflected in the company's reserves as of December 31, 2009). The bid values the reserves at \$0.15 per ton, which is lower than the \$0.25 per ton minimum originally set by the Land Board. Arch Coal will make a one-time payment in April 2010 for a 10-year window to start mining the field. The coal lease gives Arch Coal the right to mine ~8,300 acres, allowing the company to control more than 1.3bn tons of coal in Montana's Otter Creek area.

Development of Spruce Reserves could be halted if EPA vetoes 404 permit previously issued

EPA could hinder the development of Spruce reserves

Although Arch Coal received permission in 2007 to develop Spruce (~30MM tons of coal reserves) in CAAP, after nearly a 10-year permitting process which included the preparation of a full environmental impact statement, where apparently the Environmental Protection Agency (EPA) was intimately involved, The company has received notification that the EPA plans to initiate a process to veto the issuance of the 404 permit issued by the U.S. Army Corps of Engineers.

Top 10 customers represent almost half of the company's sales

Customers

Arch Coal ships ~85% of its coal to ~175 power plants in 39 states in the US, with 52% of its customer sales split between 52% east of the Mississippi and 48% west. Tennessee Valley Authority, Ameren Corporation and PacifiCorp are amongst the company's largest customers, representing ~23% of total coal revenues for 2009. The ten largest customers represent ~48% of total coal revenues.

Arch Coal exports coal to countries in major consuming continents

Apart from the US, Arch Coal also exports coal to customers in North America, Europe, South America, and Asia.

Ownership and management

Shareholder structure

Arch Coal shares are listed on the NYSE under the ticker symbol ACI.N

Arch Coal's shares are listed on the NYSE under the ticker "ACI.N". Following the issuance of 19.6 million shares in July 2009 to partially fund the Jacobs Ranch acquisition, Arch Coal has 162 million common shares outstanding and a free float of ~99.3%. Directors and executive officers as a group hold ~0.7% of the shares outstanding. Daily traded volume averaged ~\$118 million over the past six months.

Fidelity Investments is the largest single shareholder in Arch Coal

Fidelity Investments (13.9%), BlackRock, Inc. (9.0%) and Capital Research and Management (5.2%) are the top shareholders in Arch Coal.

Figure 266: Arch Coal shareholder structure, February 2010

Shareholder name	Shares held (in mn)	% outstanding
Fidelity Investments	22.5	13.9%
BlackRock, Inc.	14.7	9.0%
Capital Research and Management Company	8.4	5.2%
Barclays Global Investors UK Holdings Limited	7.5	4.6%
Goodman & Company, Investment Counsel Ltd.	7.5	4.6%
T. Rowe Price Group, Inc.	7.0	4.3%
Nuveen Investments Inc.	5.9	3.7%
The Vanguard Group, Inc.	5.5	3.4%
State Street Global Advisors, Inc.	5.4	3.3%
Schneider Capital Management Corporation	4.9	3.0%
Others	73.1	45.0%
Total	162.4	100.0%

Source: Company Data, Capital IQ and Deutsche Bank

Management

Steven F. Leer is the Chairman and CEO of Arch Coal since 2006

Figure 267: Arch Coal senior management

Name	Position	Since
Steven F. Leer	Chairman and Chief Executive Officer	2006
John W. Eaves	President and Chief Operating Officer	2006
Paul A. Lang	Senior Vice President, Operations	2006
John T. Drexler	Senior Vice President and Chief Financial Officer	2008
C. Henry Besten	Senior Vice President, Strategic Development	2002
Robert G. Jones	Senior Vice President - Law, General Counsel and Secretary	2008

Source: Company data and Deutsche Bank

North America United States
Industrials Metals & Mining

24 March 2010

Peabody Energy

Reuters: **BTU.N** Bloomberg: **BTU UN**

Thinking big globally

Initiating Peabody Energy with a Hold and \$57.50 PT

We are initiating coverage of Peabody Energy (BTU) with a Hold rating and a price target of \$57.50. Peabody is the world's largest private-sector coal company with operations in US and Australia. It is the leading producer in the PRB with a 29% market share. It is also one of the largest met coal producers contributing to the seaborne market. Growth depends on the successful execution of its roster of projects in the US and Australia – which we believe could bolster coal sales volumes from 244MM tons in 2009 to 280MM tons by 2012, increasing further thereafter. Despite expectations of lofty capex levels, cash generation should increase commensurately with production, funding debt maturities, growth projects, dividend payments, and eventually improve capital structure.

DB bullish on bulk commodities as market conditions tighten

DB is bullish on bulk commodities, and in particular coal; backed by increasing net imports by China and India, an improvement in power consumption in the US and global steel consumption, and less pressure from coal to natural gas switching at utility plants. Our commodities team calls for Japanese steam coal to average \$85/tonne in 2010 and \$100/tonne by 2011 and for premium hard coking coal to average \$175/tonne in 2010 and \$190/tonne by 2011, which bode well for the US coal market.

Earnings upswing on higher coal prices and subdued operating cash costs

EPS of \$3.30 in 2010 and \$4.75 in 2011 denote a significant improvement from \$1.91 posted in 2009. Our 2010 and 2011 EPS estimates are 16% and 17% higher than consensus, respectively. We anticipate that a combination of higher average realized coal prices (particularly in met coal), increasing coal sales volumes, and subdued operating cash costs increases to be the main drivers for our earnings outlook.

Valuation and risks

Our 12-month price target of \$57.50/share for Peabody is based on a 7x 2011E EBITDA of \$2.4 billion. Our selected sample of NA coal companies should trade between 5x and 7x forward EBITDA, based on historical averages. We believe that Peabody should trade at the higher end of the range of its peer group given its size and growth prospects. Further, we believe that its position in the met coal market bodes well for the company's earnings potential in the foreseeable future. Our PT equates with ~1.3x our NAV of \$46/share calculated under a DCF methodology. Main up/downside risks include direction of spot prices vis-à-vis contract pricing in place, better/worse ramp up of new projects in place – including higher/lower investment requirements and/or operating costs. Please see next page for details on Peabody's valuation and risks.

Forecasts and ratios

Year End Dec 31	2009A	2010E	2011E
FY EPS (USD)	1.91	3.30	4.75
P/E (x)	17.5	14.5	10.0
DPS (USD)	0.25	0.24	0.24
Dividend yield (%)	0.7	0.5	0.5
EV/EBITDA	8.2	7.8	6.0

Source: Deutsche Bank estimates, company data

¹ Includes the impact of FAS123R requiring the expensing of stock options.

Hold

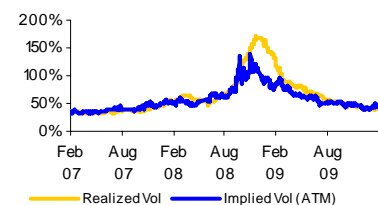
Price at 23 Mar 2010 (USD)	47.76
Price target	57.50
52-week range	50.86 - 24.43

Price/price relative



Performance (%)	1m	3m	12m
Absolute	2.2	2.7	76.7
S&P 500 INDEX	6.0	5.0	47.8

Implied & Realized Volatility (3M)



Investment thesis

Outlook

Peabody is the largest private-sector coal company globally

Peabody Energy, based in St. Louis, Missouri, is world's largest private-sector coal company with operations in US and Australia. It is the leading producer in the Powder River Basin (PRB), holding a 29% market share with 66% of its coal sales volumes coming from this region. Peabody is also one of the largest met coal producers contributing to the seaborne market. The company has yet to price 63% of its met coal in 2010 and 100% in 2011, which given where 2010 quarterly prices have settled bode well for earnings upside. Growth depends on the successful execution of its roster of projects in the US and Australia – which we believe could bolster coal sales volumes from 244MM tons in 2009 to 280MM tons by 2012, increasing further thereafter. Despite expectations of lofty capex levels over the next three, cash generation should increase commensurately with production, funding debt maturities, growth projects, dividend payments, and eventually improve capital structure. We are initiating coverage on Peabody Energy with a Hold rating and a price target of \$57.50/share.

Valuation

We believe that Peabody should trade at the high end of the range of its peer group

Our 12-month price target of \$57.50/share for Peabody is based on a 7x 2011E EBITDA of \$2.4 billion. Our selected sample of NA coal companies should trade between 5x and 7x forward EBITDA, based on historical averages. We believe that Peabody should trade at the higher end of the range of its peer group given the size and location of its asset base, operations and mining projects, growth prospects. Further, we believe that its position in the met coal market bodes well for the company's earnings potential in the foreseeable future. As a valuation cross-check, we note that our PT equates with ~1.3x our NAV of \$46/share calculated under a DCF methodology (9.0% WACC with 10.5% Ke and 5.6% post-tax Kd, and a 1.5% terminal growth rate [based on our knowledge of the asset base and expectations of long-term growth]).

Risks

Main up/downside risk include direction of spot prices vis-à-vis contract pricing in place

Key up/downside risks to our outlook include acceleration/pullback in global economic growth, acceleration/slowdown in energy consumption and/or in steel consumption, further coal inventory increases/decreases at utility companies, direction of energy prices, changes in energy and/or carbon policy changes and consequent ramifications in switching fuels. These dynamics tend to set the stage for global coal supply and demand fundamentals, and ultimately on the dynamics unfolding in the US. Mining companies can face geologic and operational obstacles. Project execution risk at Bear Run Mine in US and several other projects in Australia in the form of delays could result in a lower growth profile than currently envisioned for Peabody, and could possibly lead to higher investments and/or higher operating expenses. Further, we expect Peabody to pursue additional international growth programs (including acquisitions) and its performance will depend on these being well received by the market and executed. Other risks are associated with the direction of input costs, fiscal regime and mining legislation, and the successful execution of mining operations. Further risks for coal companies stem from contract pricing in place vis-à-vis the direction of spot prices.

Model updated: 18 March 2010

Running the numbers

North America

United States

Metals & Mining

Peabody Energy

Reuters: BTU.N

Bloomberg: BTU UN

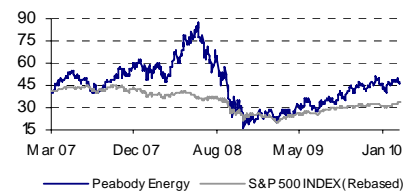
Hold

Price (23 Mar 10)	USD 47.76
Target price	USD 57.50
52-week Range	USD 24.43 - 50.86
Market Cap (m)	USDm 12,695 EURm 9,511

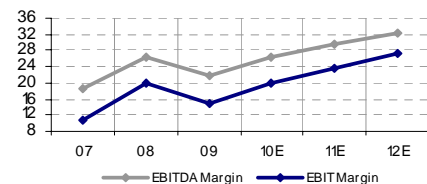
Company Profile

Peabody Energy Corporation (BTU) is the world's largest private-sector coal producer with operations in the US and Australia, and minority stake in Venezuela through a joint venture agreement. The company sold 244MM tons of coal in 2009 and controlled ~9.0bn tons of proven and probable coal reserves at the end of 2009. Peabody has three regional business segments: Western US (66% of 2009 sales volume), Mid-western US (13%) and Australia (9%). In addition to its mining operations, the company markets, brokers and trades coal through its Trading and Brokerage Operations segment (12% of sales volume).

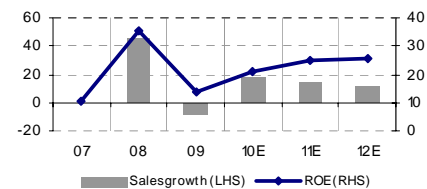
Price Performance



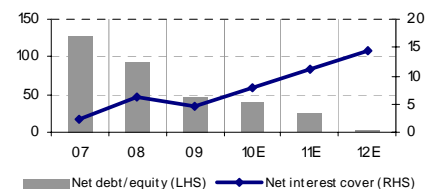
Margin Trends



Growth & Profitability



Solvency



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Fiscal year end 31-Dec

	2007	2008	2009	2010E	2011E	2012E
Financial Summary						
DB EPS (USD)	1.56	3.64	1.91	3.30	4.75	6.21
Reported EPS (USD)	0.98	3.51	1.68	3.30	4.75	6.21
DPS (USD)	0.24	0.24	0.25	0.24	0.24	0.24
BVPS (USD)	9.54	10.80	14.12	17.19	21.73	27.75
Valuation Metrics						
Price/Sales (x)	2.7	2.2	1.5	1.8	1.6	1.4
P/E (DB) (x)	30.3	14.7	17.5	14.5	10.0	7.7
P/E (Reported) (x)	48.2	15.2	19.9	14.5	10.0	7.7
P/BV (x)	6.5	2.1	3.2	2.8	2.2	1.7
FCF yield (%)	nm	7.0	8.1	0.2	3.1	10.2
Dividend yield (%)	0.5	0.4	0.7	0.5	0.5	0.5
EV/Sales	3.5	2.6	1.8	2.1	1.8	1.4
EV/EBITDA	18.7	9.9	8.2	7.8	6.0	4.5
EV/EBIT	32.1	12.9	11.9	10.4	7.4	5.3

Income Statement (USDm)

Sales	4,545	6,593	6,012	7,058	8,088	9,022
EBITDA	842	1,726	1,296	1,858	2,374	2,896
EBIT	490	1,320	891	1,394	1,924	2,456
Pre-tax profit	365	1,177	652	1,214	1,749	2,286
Net income	264	954	448	883	1,272	1,663

Cash Flow (USDm)

Cash flow from operations	282	1,383	1,048	647	1,191	1,995
Net Capex	-497	-372	-330	-625	-800	-700
Free cash flow	-215	1,011	718	22	391	1,295
Equity raised/(bought back)	33	-181	4	0	0	0
Dividends paid	-64	-65	-67	-64	-64	-64
Net inc/(dec) in borrowings	-20	-130	-36	-4	-78	-259
Other investing/financing cash flows	-15	-231	-79	0	0	0
Net cash flow	-281	404	539	-47	249	971
Change in working capital	57	99	-91	-700	-531	-109

Balance Sheet (USDm)

Cash and cash equivalents	45	450	989	942	1,191	2,162
Property, plant & equipment	7,298	7,315	7,262	7,423	7,773	8,033
Goodwill	0	0	0	0	0	0
Other assets	1,748	2,057	1,705	1,920	2,425	2,581
Total assets	9,091	9,822	9,955	10,285	11,388	12,776
Debt	3,273	3,156	2,752	2,748	2,670	2,411
Other liabilities	3,298	3,761	3,447	2,962	2,936	2,983
Total liabilities	6,571	6,917	6,199	5,710	5,606	5,394
Total shareholders' equity	2,520	2,905	3,756	4,575	5,782	7,381
Net debt	3,228	2,707	1,763	1,806	1,479	248

Key Company Metrics

Sales growth (%)	nm	45.1	-8.8	17.4	14.6	11.6
DB EPS growth (%)	na	133.3	-47.5	72.7	44.1	30.7
Payout ratio (%)	24.0	6.8	14.8	7.2	5.0	3.8
EBITDA Margin (%)	18.5	26.2	21.6	26.3	29.4	32.1
EBIT Margin (%)	10.8	20.0	14.8	19.7	23.8	27.2
ROE (%)	10.5	35.2	13.5	21.2	24.6	25.3
Net debt/equity (%)	128.1	93.2	47.0	39.5	25.6	3.4
Net interest cover (x)	2.1	6.1	4.6	7.7	11.0	14.4

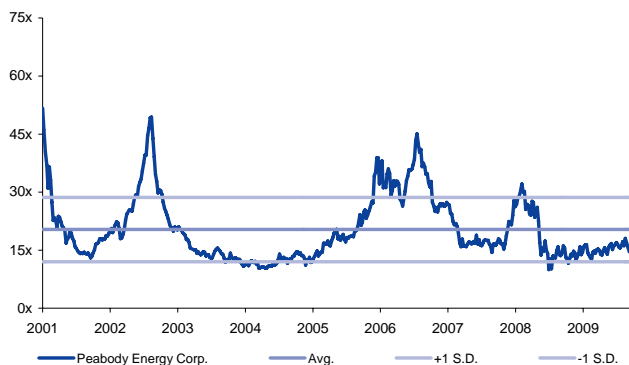
DuPont Analysis

EBIT margin (%)	10.8	20.0	14.8	19.7	23.8	27.2
x Asset turnover (x)	0.5	0.7	0.6	0.7	0.7	0.7
x Financial cost ratio (x)	0.5	0.8	0.8	0.9	0.9	0.9
x Tax and other effects (x)	1.0	0.9	0.6	0.7	0.7	0.7
= ROA (post tax) (%)	2.9	10.1	4.5	8.7	11.7	13.8
x Financial leverage (x)	3.6	3.5	3.0	2.4	2.1	1.8
= ROE (%)	10.5	35.2	13.5	21.2	24.6	25.3
annual growth (%)	na	235.2	-61.7	57.6	15.9	2.8
x NT\$/share (avg) (x)	9.4	10.0	12.4	15.5	19.3	24.6
= Reported EPS	0.98	3.51	1.68	3.30	4.75	6.21
annual growth (%)	na	258.0	-52.3	96.8	44.1	30.7

Source: Company data, Deutsche Bank estimates

Peabody valuation charts

Figure 268: Peabody forward P/E



Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 269: Peabody forward EV/EBITDA



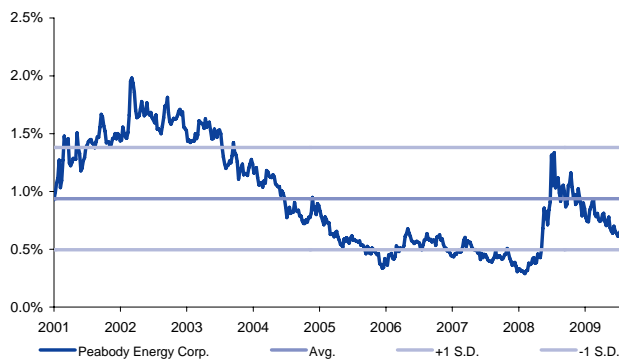
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 270: Peabody forward P/BV



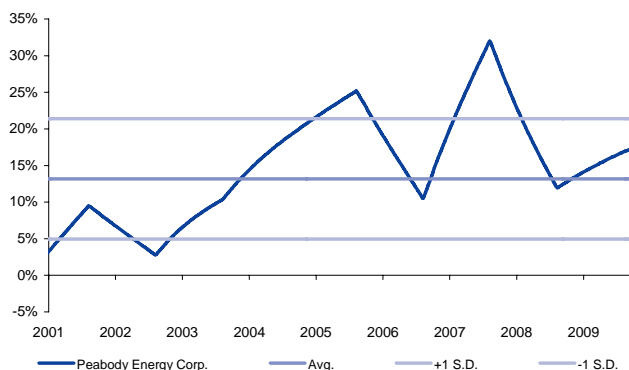
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 271: Peabody forward dividend yield



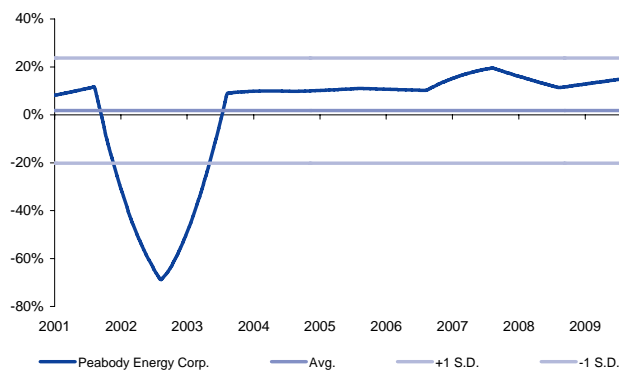
Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 272: Peabody forward ROE



Source: Company data, Capital IQ and Deutsche Bank estimates

Figure 273: Peabody forward ROIC



Source: Company data, Capital IQ and Deutsche Bank estimates

Earnings outlook

Peabody EPS to reach \$3.30 in 2010 and \$4.75 in 2011, peaking in 2012 at \$6.21

We estimate that a combination of higher average realized coal prices, increasing coal sales volumes – resulting from an improving economic environment and additional capacity coming on stream, as well as fairly subdued cash costs increases to be the main drivers for Peabody earnings results in 2010 through 2012.

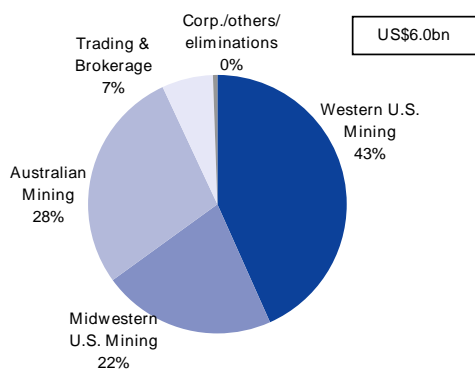
- Revenues.** Revenue should reach \$7.1 billion in 2010 (+17% y/y), \$8.1 billion in 2011 (+15% y/y) and peak at \$9.0 billion by 2012 (+12% y/y). The increases reflect our expectation of an improving market (incorporated into our average price expectations) and increasing volume coming on stream in the US and Australia.
- EBITDA.** EBITDA should follow a similar growth path to revenue coming in at \$1.9 billion in 2010 (+43% y/y), \$2.4 billion in 2011 (+28% y/y) and \$2.9 billion in 2012 (+22% y/y). Our 2010 and 2011 EBITDA estimates are 10% and 9% higher than consensus, respectively. Our 2012 EBITDA estimate is ~20% higher than consensus.
- EPS.** EPS of \$3.30 in 2010 and \$4.75 in 2011 denote a significant improvement from the \$1.91 posted in 2009. Our 2010 and 2011 EPS estimates are 16% and 17% higher than consensus, respectively. Our 2012 \$6.21 EPS estimate is 37% ahead of consensus.
- Sensitivity.** We estimate that a \$1/ton change to our average coal realized price in 2010 should result in a \$219 million change in EBITDA (+/- 12%) and \$0.61 change in EPS (+/- 19%).

Figure 274: Peabody key earnings summary

(US\$m)	2008A	2009A	2010E	2011E	2012E
Sales	6,593	6,012	7,058	8,088	9,022
EBITDA	1,726	1,296	1,858	2,374	2,896
EBITDA margin	26.2%	21.6%	26.3%	29.4%	32.1%
EPS (US\$)	3.64	1.91	3.30	4.75	6.21
Operating summary					
Shipments (000 tons)	255,500	243,600	251,650	265,000	280,250
Revenue per ton (US\$/ton)	25.81	24.68	28.05	30.52	32.19
Operating cash cost per ton (US\$/ton)	19.05	19.36	20.67	21.56	21.86
EBITDA per ton (US\$/ton)	6.76	5.32	7.38	8.96	10.33

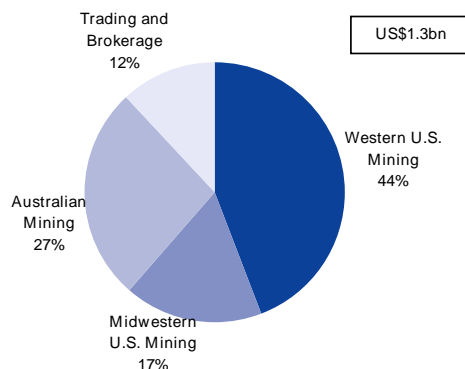
Source: Company data and Deutsche Bank estimates

Figure 275: Revenue breakdown by segment, 2009



Source: Company data and Deutsche Bank estimates

Figure 276: EBITDA breakdown by segment, 2009



Source: Company data and Deutsche Bank

Operational outlook

Coal sales volumes of 252MM tons in 2010 and reach 280MM tons by 2012

Volumes. We estimate coal sales volumes of 252MM tons in 2010 (+3% y/y, following a 5% y/y decline in 2009) – in line with company guidance range of 240 to 260MM tons. Given the number of expansion projects Peabody is currently working on, including Bear Run Mine in the Midwestern US adding +8MM tpy and several projects in Australia increasing net capacity by 13 to 20MM tpy over next 5 years, we anticipate coal sales volumes to reach 280MM tons by 2012, and continue to increase in the foreseeable future.

We expect average realized prices to increase 14% y/y in 2010 and 9% in 2011

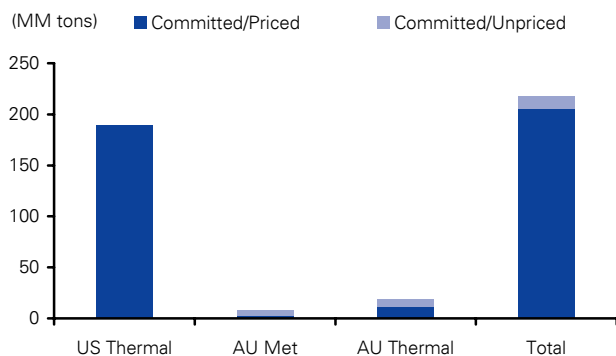
Prices. Despite our expectation of power consumption increases and less pressure from coal to natural gas switching at utility plants in the US, which should result in improving steam coal prices in the foreseeable future as the US recovers, we do acknowledge that coal inventory levels at utility companies while decreasing still remain fairly high and low natural gas prices continue to pose a risk. On a more constructive note, recent quarterly met coal price settlements point to tight market conditions. We anticipate that average realized prices should increase 14% y/y in 2010 reaching \$28.05/ton (following a 4% y/y decline). Thereafter, we expect a 9% y/y increase in 2011, followed by an additional 5% y/y increase in 2012.

Peabody has committed and priced practically all of its 2010 volumes and 66% of 2011 volumes

Contracts. Peabody typically engages in fixed price and fixed volume long-term agreements with many of its customers, with terms greater than one year. Multi-year contracts usually have specific and possibly different volume and pricing arrangements for each year of contract, with some even having variable pricing. The sales backlog as of January (with terms ranging from one to 17 years) stood at over 1bn tons of coal (five years of current production), include volume subject to price reopener and/or extension provisions.

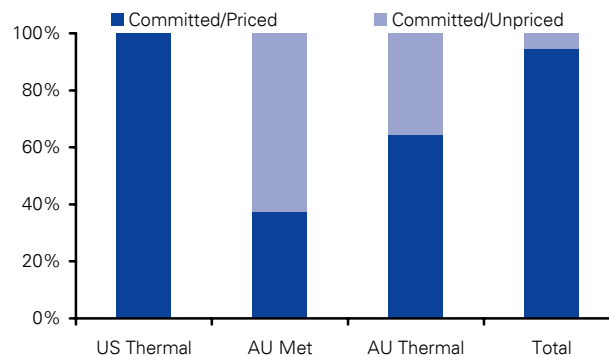
Following the release of its 4Q09 results in January 2010, the company stated that it has priced substantially all of its 2010 sales volume (~5% has yet to be priced). For 2011, Peabody has committed and priced 66% of its expected sales volume – leaving 34% exposed to potentially higher prices should market conditions continue to tighten further. In US, Peabody is fully committed and priced for 2010, ~70% in 2011 and 35% in 2012. In Australia, the company has yet to price ~5MM tons of met coal and ~6.8MM tons of steam coal in 2010 and ~9.5MM tons of met coal and 9.5MM tons of steam coal in 2011.

Figure 277: Committed tonnage - 2010



Data is as of December 31, 2009
Source: Company data and Deutsche Bank estimates

Figure 278: Commitments profile – 2010



Data is as of December 31, 2009
Source: Company data and Deutsche Bank estimates

Operating cash costs. We estimate Peabody’s operating cash cost to average \$20.67/ton in 2010 (+7% y/y). Thereafter, we expect operating cash costs to increase at a rate of about 4% in 2011. The y/y increases are a reflection of the higher-cost Australian operations (vis-à-vis US operations) increasingly becoming a larger piece of the mix due to the ongoing expansion projects, as well as to the inflationary pressures affecting the industry at large.

Liquidity and free cash flow estimates

Strong cash flow generation to fund capex and debt maturities due

Based on our estimates, Peabody could generate free cash flow of \$722 million in 2010 and could almost double the amount to \$1.4 billion by 2012 (implying an average FCF yield of ~8% over the 3-year period), primarily on increasing and improving operating results as capex should remain at fairly lofty levels ranging between \$625 and \$800 million during such time period. Although the company has almost \$520 million due in debt maturities over the next two years, cash flow generation should be sufficient to pay this and comfortably fund the next wave of growth projects.

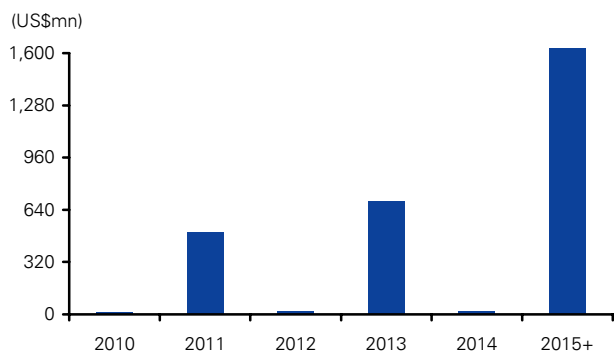
Capex could hover between \$625 and \$800 million over next three years

Capex. Peabody has a number of projects that could add new production and expand existing capacity at existing mines – including the investment in the large Bear Run Mine in the Midwestern US (+8MM tpy of capacity) and several projects in Australia that could increase net capacity over the next 5 years (+13 to 20MM tpy). Taking into consideration these projects, we estimate 2010 capex to be \$625 million (was \$384 million in 2009 - including Federal lease coal expenditures), with the overall figure increasing to \$800 million in 2011 and marginally decreasing from this new level to \$700 million in 2012. Peabody is guiding for 2010 capex to be between \$600 and \$650 million.

Share buybacks/dividends. We have built into our model dividend payments to the tune of \$0.24 per year in the foreseeable future – which translates to \$64 million per year and imply a dividend yield of less than 1%. These estimates are in line with what Peabody has been paying during the past four years. In addition to dividends, Peabody has bought back shares in the past, with the most recent buyback of \$200 million taking place in 2008.

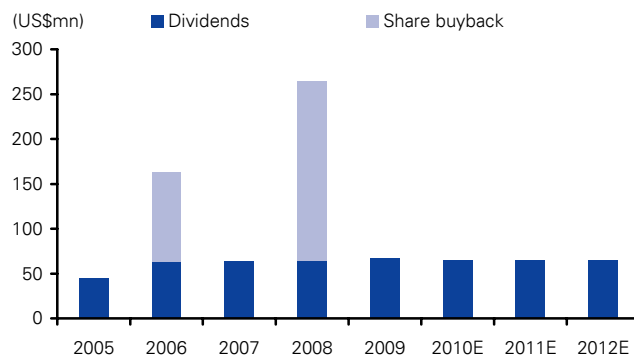
Net debt (cash). Peabody ended 2009 with total debt of \$2.8 billion, of which \$14 million is due in 2010 and \$505 million in 2011. On the other side of the equation, the company had had \$2.5 billion of total liquidity, comprised of \$989 million of cash on hand and \$1.5 billion available borrowing capacity under senior unsecured credit facility, net of outstanding letters of credit (the credit facility matures in September 2011). Barring any major acquisitions or a material change in dividend payments, we estimate that net debt of \$1.8 billion will be unchanged in 2010, but could drop to ~\$250 million by 2012.

Figure 279: Debt maturities



Data is as of December 31, 2009
Source: Company data and Deutsche Bank estimates

Figure 280: Returning cash to shareholders



Source: Company data and Deutsche Bank

Financial statements and operating assumptions

Figure 281: Peabody summary income statement

(US\$m)	2008A	2009A	2010E	2011E	2012E
Sales	6,593	6,012	7,058	8,088	9,022
EBITDA	1,726	1,296	1,858	2,374	2,896
EBITDA margin	26.2%	21.6%	26.3%	29.4%	32.1%
Depreciation	406	405	464	450	440
EBIT	1,320	891	1,394	1,924	2,456
Interest income/(expense)	-143	-170	-180	-175	-170
Pre-tax income	1,177	652	1,214	1,749	2,286
Tax-rate	15.8%	29.7%	25.0%	25.0%	25.0%
Net income	954	448	883	1,272	1,663
Net margin	14.5%	7.5%	12.5%	15.7%	18.4%
Shares	271	268	268	268	268
EPS (US\$)	3.64	1.91	3.30	4.75	6.21

Source: Company data and Deutsche Bank estimates

Figure 282: Peabody operating assumptions

	2008A	2009A	2010E	2011E	2012E
Shipments (000 tons)	255,500	243,600	251,650	265,000	280,250
Revenue per ton (US\$/ton)	25.81	24.68	28.05	30.52	32.19
Operating cash cost per ton (US\$/ton)	19.05	19.36	20.67	21.56	21.86
EBITDA per ton (US\$/ton)	6.76	5.32	7.38	8.96	10.33
Capital Expenditure (US\$m)	445	384	625	800	700

Source: Company data and Deutsche Bank estimates

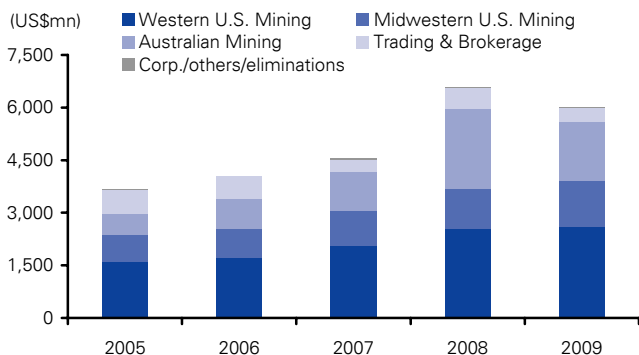
Figure 283: Peabody summary balance sheet

(US\$m)	2008A	2009A	2010E	2011E	2012E
Assets					
Cash & equivalents	450	989	942	1,191	2,162
Other current assets	1,522	1,200	1,415	1,920	2,076
Long-term assets	7,851	7,766	7,927	8,277	8,537
Total assets	9,822	9,955	10,285	11,388	12,776
Liabilities					
Short-term debt	17	14	14	14	14
Other current liabilities	1,839	1,298	813	787	835
Long-term debt	3,139	2,738	2,734	2,656	2,397
Other long-term liabilities	1,922	2,149	2,149	2,149	2,149
Minority interest	1	6	6	6	6
Shareholders' equity	2,905	3,756	4,575	5,782	7,381
Total liabilities & equity	9,822	9,955	10,285	11,388	12,776
Net debt	2,707	1,764	1,806	1,479	248

Source: Company data and Deutsche Bank estimates

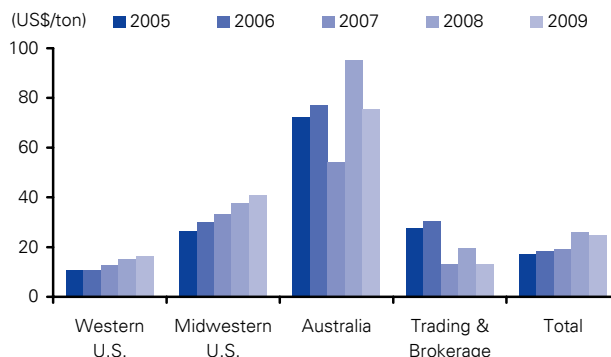
Peabody financial snapshot

Figure 284: Evolution of revenue by segment



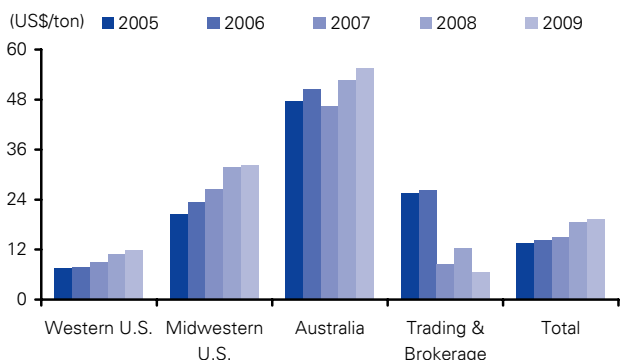
Source: Company data and Deutsche Bank estimates

Figure 285: Evolution of avg. realized price by segment



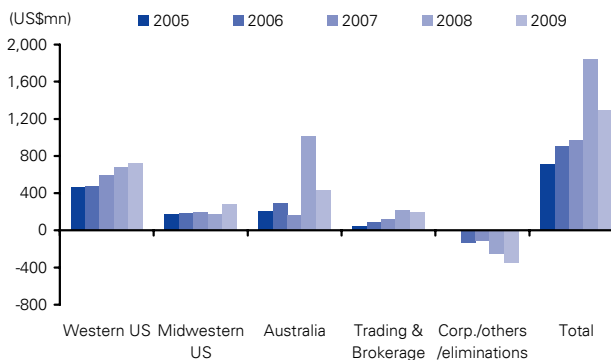
Source: Company data and Deutsche Bank estimates

Figure 286: Evolution of average cost by segment



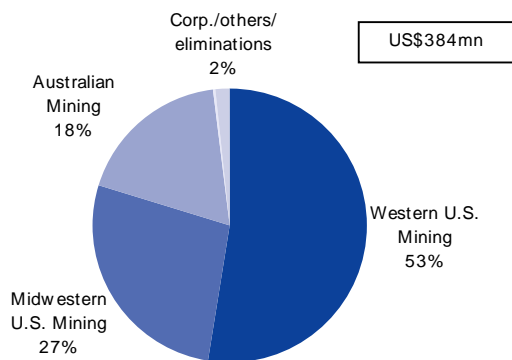
Source: Company data and Deutsche Bank estimates

Figure 287: Evolution of EBITDA by segment



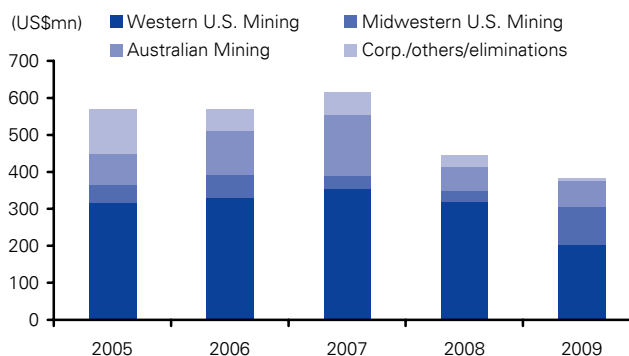
Source: Company data and Deutsche Bank estimates

Figure 288: Capex breakdown by segment, 2009



Source: Company data and Deutsche Bank estimates

Figure 289: Evolution of capex by segment



Source: Company data and Deutsche Bank

Company profile

Company description

Peabody is the leading coal producer in the US with an ~18% market share

Controls 9.0bn tons of coal reserves in the US and Australia

Peabody produces steam and met coal from surface and underground mines

Founded in 1883, Peabody has grown organically and via acquisitions over the years

Listed on NYSE in 2001

Spun-off Eastern US Mining segment in 2007, leading to the creation of Patriot Coal

Peabody Energy (BTU), headquarters in St. Louis, Missouri, is world's largest private-sector coal company with operations primarily in the US and Australia. It is the largest coal producer in the US, with a 2009 market share of ~18%. Peabody controls a vast reserve base in the US and Australia, totaling ~9.0bn tons. In 2009, Peabody sold ~244MM tons of coal in 2009, deriving ~93% of its revenues from long-term supply contracts. The company conducts its mining business through 28 coal operations that consist of three principal operating segments: Western US Mining (66% of 2009 sales volume), Midwestern US Mining (13%) and Australian Mining (9%). In addition to its mining operations, the company markets, brokers and trades coal through its Trading and Brokerage Operations segment (12%).

The company produces steam and met coal from surface and underground mines and sells to electricity generating and industrial plants in more than 23 countries. Peabody provides fuel for ~10% of the electricity generated in the US and ~2% in the world. As of December 31, 2009, BTU had ~7,300 workers, where ~29% of the ~5,400 hourly employees belong to organized labor unions.

Company history

Peabody Energy was founded in 1883 as a retail coal supplier, and entered the mining business in 1888 with its first coal mine in Illinois as Peabody & Co. During the 1980s and 1990s, Peabody grew its mining business in the Powder River Basin (PRB) and other regions in US via expansions and acquisitions. Peabody began trading on the NYSE under the ticker symbol "BTU", in 2001. Thereafter, the company expanded into Australia and Colorado following the acquisitions of RAG Coal International in 2004 and Excel Coal Limited in 2006. In 2007, Peabody spun off portions of its formerly Eastern US Mining segment leading to the creation of Patriot Coal Corporation (Patriot), which is now an independent public company traded on the NYSE under the symbol "PCX". The spin-off included eight company-operated mines, two joint venture mines, and other contractor operated mines serviced by eight coal preparation facilities and reserves totaling 1.2bn tons.

Figure 290: Peabody corporate history

1883	Peabody, Daniels and Co. founded as a retail coal supplier
1888	Entered mining business as Peabody & Co. with its first coal mine in Illinois
1955	Merged with Sinclair Coal Company, a major surface mining company
1968	Acquired by Kennecott Copper Company
1977	Sold to Peabody Holding Company
1990	Acquired by Hanson PLC
1997	Hanson spun off its energy-related businesses into The Energy Group PLC, including Eastern Group and Peabody Holding Company
1998	Lehman Brothers Merchant Banking Partners II L.P. purchased Peabody Holding Company
2001	Name changed to Peabody Energy Corporation, completed IPO, shares began trading on NYSE
2004	Acquired coal operations from RAG Coal International AG for \$250 million, expanding into Australia and Colorado
2006	Acquired Excel Coal Limited, an independent coal company in Australia for \$1.5 billion
2007	Spun off portions of formerly Eastern U.S. mining operations to form Patriot Coal Corp.
2008	Began shipping coal from its new El Segundo Mine in New Mexico (~6MM tpy) Purchased remaining 15.4% stake of the Millennium Mine in Queensland for \$110 million
2009	Obtained an option to purchase up to 50% interest in Polo Resources Limited's coal and mineral interests in Mongolia (warrants enable it to acquire 15% equity interest)

Source: Company data and Deutsche Bank estimates

Operations overview

Peabody has the largest asset base – with operations in the US (19 mining complexes) and Australia (9)

Peabody has the largest asset base throughout the US and Australia, with operations in the PRB (Wyoming), Midwestern US (Illinois, Indiana), Southwestern US (Arizona, New Mexico), Colorado; and Queensland and New South Wales, in Australia. The company owns majority interests in 28 coal mining operations –19 in the US and 9 in Australia. All met sales take place out of Australia. The company also owns a 25.5% interest in a Venezuelan operating mine through a joint venture arrangement.

Peabody has leading positions in the regions it operates in the US

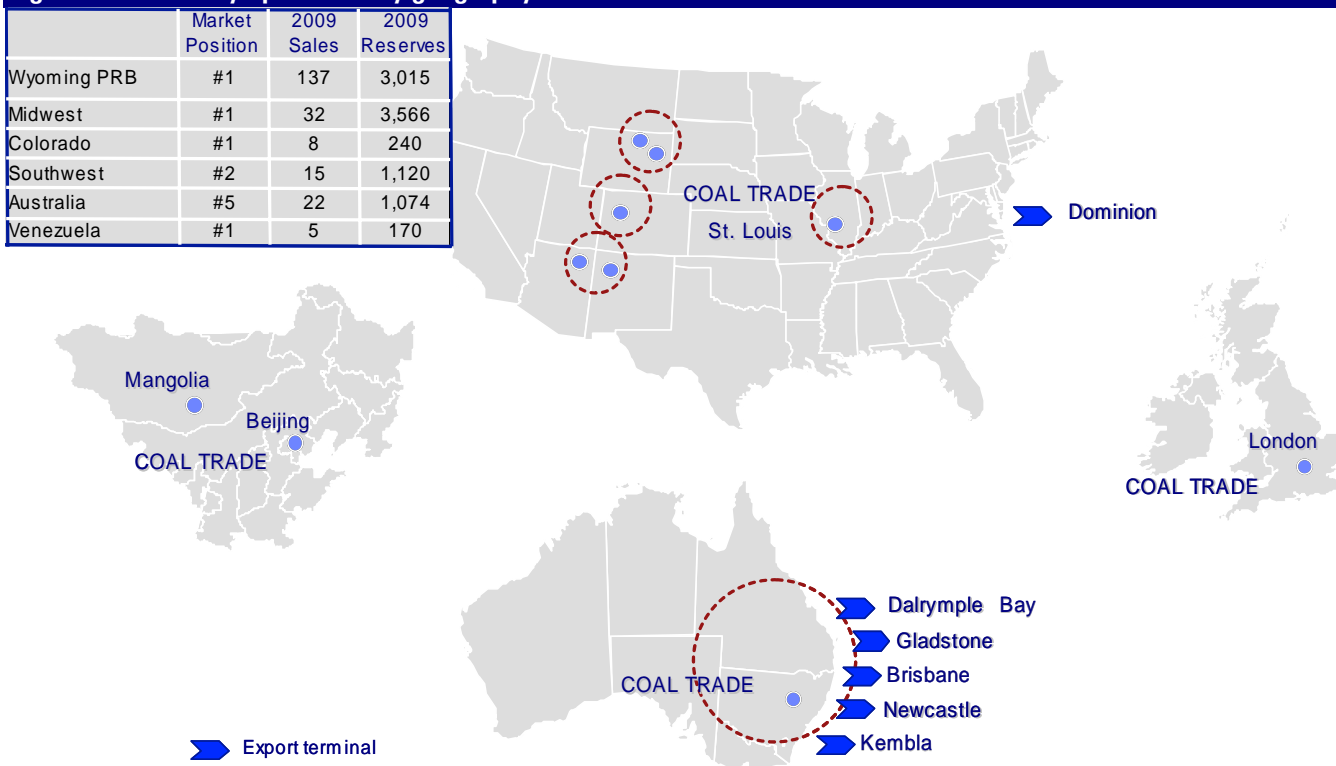
The company has a leading position in almost all the regions in US. Most of the sales for Peabody come from the PRB (~65% of total shipments in 2009). North Antelope/Rochelle is the most significant mining complex in the PRB, accounting for more than 47% of Peabody’s 2009 shipments, is the second largest coal mine in the world. In Australia, Peabody operates 9 surface and underground mines producing steam and met coal.

We estimate a mine life of 36 years for Peabody, based on the company’s total coal reserves of 9.0bn tons and expected 252MM tons of shipments in 2010 (would be 41 years based on expected 219MM tons of production in 2010).

Peabody brokers coal from other coal producers

Apart from coal mining activities, Peabody brokers coal from other coal producers. In the past years, Peabody has expanded its coal trading activities in the US, Europe, Australia, China, Indonesia, South Africa and South America, and opened trading offices in London and Beijing.

Figure 291: Peabody operations by geography



Data is as of December 31, 2009. Sales and Reserves are in MM tons. 2009 Sales exclude tonnage of BTU's Trading and Brokerage Operation segment (~29MM tons). The 2009 Sales figure for Venezuela is reported based on equity income accounting. Source: Company data and Deutsche Bank

Peabody owns a 37.5% interest in DTA; Arch Coal owns 22%, and Alpha Natural 40%

Peabody owns a 37.5% interest in Dominion Terminal Associates (DTA), which leases and operates a ground storage-to-vessel coal transloading facility in Newport News, Virginia. The facility has a coal throughput capacity of 20MM tons per year and ground storage capacity of ~1.7MM tons. The facility exports both met and steam coal primarily to European and Brazilian markets. Overall, Peabody controls ~6MM tpy of port capacity in Australia and ~8MM tpy in the US.

Peabody uses large earth-moving equipment, such as draglines, trucks-and-shovels and loaders to mine coal from surface mines and uses longwall systems or continuous miners in case of underground mines. It then ships most of the coal directly to customers without additional preparation; only a small portion of its production goes through preparation plants. In the US, the bulk of its sales volume is shipped via rail, with some shipped by barge, truck and ocean-going vessels. In Australia, domestic sales volume is typically shipped via rail and export volume is shipped via ocean-going vessels to customers.

Areas of interest include expansions of Australian export capabilities; Btu conversion technologies; and carbon capture

Peabody's other commercial activities include: (1) expansions of its Australian export capability with a 17.7% sponsorship of the Newcastle Infrastructure Group terminal under construction, as well as the management of its coal reserve and real estate holdings through initiatives, such as participation in developing mine-mouth coal-fueled generating plants; (2) developing Btu conversion technologies, designed to convert coal to natural gas and transportation fuels; and (3) advancing carbon capture sequestration initiatives in the US, China, and Australia.

Figure 292: Peabody operations overview

	Midwest	PRB	Southwest/Colorado	Australia	Total
Total reserves	3,566MM tons	3,015MM tons	1,360MM tons	1,074MM tons	9,015MM tons
Sales volumes ¹	31.8MM tons	137.8MM tons	22.3MM tons	22.3MM tons	214.2MM tons
Region	Indiana Illinois Kentucky	Montana Wyoming	Arizona Colorado New Mexico	New South Wales Queensland	
Mining complexes	Air Quality Miller Creek Francisco Farmersburg Somerville Viking Wildcat Hills Willow Lake Gateway	North Antelope/Rochelle Caballo Rawhide	Kayenta Lee Ranch Twentymile El Segundo	North Goonyella / Eaglefield Metropolitan Wilkie Creek Chain Valley Wambo Burton Wilpinjong Millennium	
Sulfur content range	NA	0.2%-0.4%	NA	NA	
Heat value range (Btu/lb)	10,900 – 12,400	8,200 – 8,700	9,300 – 11,200	10,800 – 12,900	

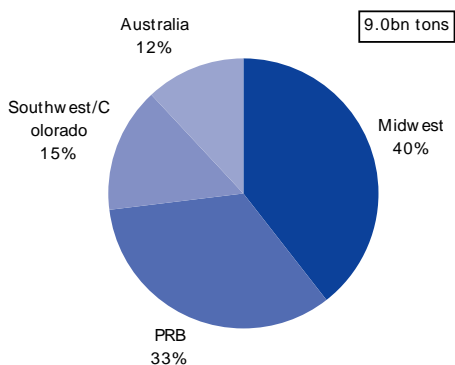
Data is as of December 31, 2009

¹Excludes sales of third party purchased coal of 29.4MM tons. Corresponding production volumes for Midwest, PRB, Southwest/Colorado and Australia are 28.7MM tons, 137.4MM tons, 22.2MM tons and 21.7MM tons respectively

Source: Company data and Deutsche Bank estimates

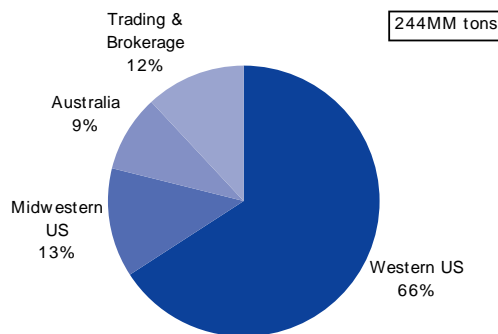
Peabody snapshot of coal mining assets

Figure 293: Reserves by region, 2009



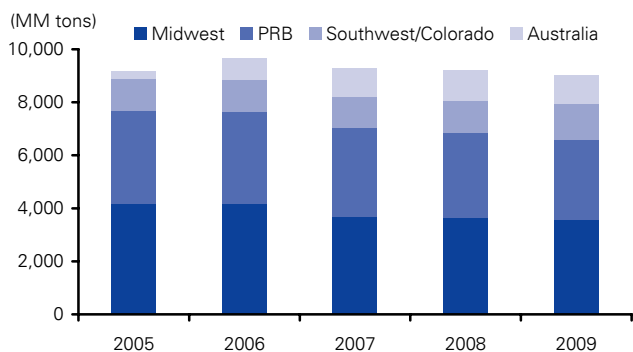
Source: Company data and Deutsche Bank estimates

Figure 294: Shipments by segment, 2009



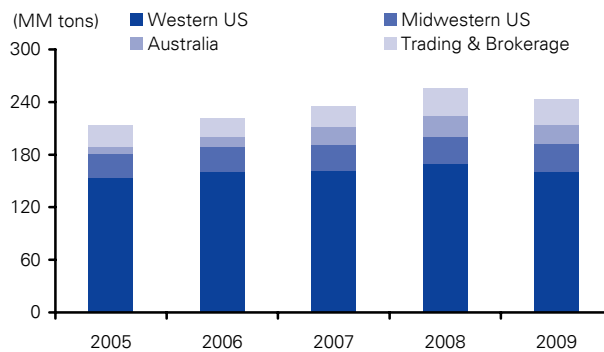
Source: Company data and Deutsche Bank estimates

Figure 295: Evolution of reserves by region



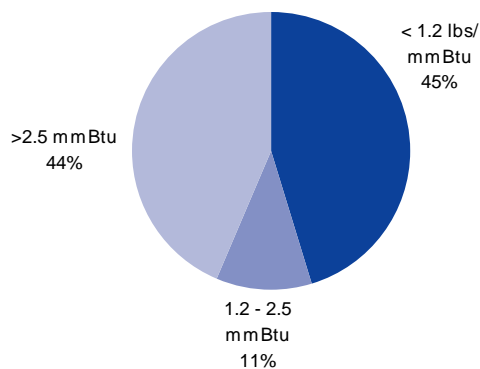
Source: Company data and Deutsche Bank estimates

Figure 296: Evolution of shipments by segment



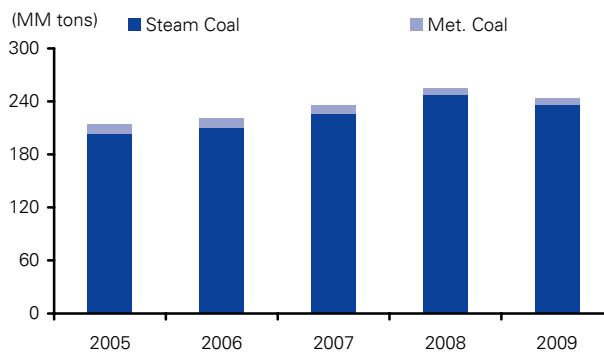
Source: Company data and Deutsche Bank estimates

Figure 297: Sulfur content of reserves, 2009



Source: Company data and Deutsche Bank estimates

Figure 298: Evolution of shipments by product type



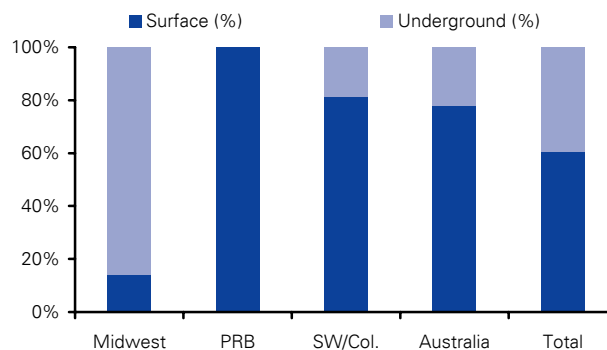
Source: Company data and Deutsche Bank estimates

Figure 299: Reserve control, 2009



Source: Company data and Deutsche Bank estimates

Figure 300: Mining method (% of total reserves), 2009



Source: Company data and Deutsche Bank estimates

Figure 301: Peabody mining complex operations, as of December 2009

Region	Midwest										PRB	
Mining complex	Air Quality	Miller Creek	Francisco	Farmersburg	Somerville ⁵	Viking	Cottage Grove	Wildcat Hills	Willow Lake	Gateway	N. Antelope	Caballo
Location	Vincennes, IN	Bicknell, IN	Francisco, IN	Pimento, IN	Oakland, IN	Cannelburg, IN	Equality, IL	Eldorado, IL	Equality, IL	Coulterville, IL	Gillette, WY	Gillette, WY
Type of mining ¹	U	S	U	S	S	S	S	U	U	U	S	S
Mining equipment ²	CM	D, S	CM	DL, D, S	DL, D, S	D, S	D, S	CM	CM	CM	DL, S	D, S
Type of coal extracted	steam	steam	steam	steam	steam	steam	steam	steam	steam	steam	steam	steam
Assigned reserves	50MM tons	22MM tons	46MM tons	21MM tons	18MM tons	7MM tons	15MM tons	23MM tons	25MM tons	18MM tons	859MM tons	845MM tons
Life of mine ³	31 years	11 years	14 years	6 years	3 years	4 years	21 years	11 years	7 years	5 years	9 years	36 years
Tons shipped												
2007	2.1MM tons	1.6MM tons	3.1MM tons	3.5MM tons	8.4MM tons	1.7MM tons	0.9MM tons	2.0MM tons	3.6MM tons	2.7MM tons	91.5MM tons	31.2MM tons
2008	1.9MM tons	1.9MM tons	3.4MM tons	3.4MM tons	7.9MM tons	1.6MM tons	0.7MM tons	2.2MM tons	3.6MM tons	3.2MM tons	97.6MM tons	31.2MM tons
2009	1.6MM tons	2.0MM tons	3.4MM tons	3.5MM tons	7.1MM tons	1.6MM tons	0.7MM tons	2.1MM tons	3.4MM tons	3.3MM tons	98.3MM tons	23.3MM tons
Btu/lb	11,300	11,100	11,30	10,900	11,100	11,500	12,400	12,200	12,100	11,000	8,700	8,200
SO2/mm Btu	NA	>2.5	>2.5	>2.5	>2.5	>2.5	>2.5	>2.5	>2.5	>2.5	<1.2	NA
Transportation used ⁴	Truck, Rail, Barge	Truck, Rail	Rail	Truck, Rail	Truck, Rail, Barge	Truck, Rail	Truck, Barge	Barge	Barge	Truck, Rail, Barge	UP/BN	UP/BN
Region	PRB (Contd.)	Southwest/Colorado				Australia						
Mining complex	Rawhide	Kayenta	Lee Ranch	Twentymile	El Segundo	N. Goonyella/Eaglefield ⁵	Metropolitan	Wilkie Creek	Wambo ⁵	Burton	Wilpinjong	Millennium
Location	Gillette, WY	Kayenta, AZ	Grants, NM	Oak Creek, CO	Grants, NM	Queensland	New S. Wales	Queensland	New S. Wales	Queensland	New S. Wales	Queensland
Type of mining ¹	S	S	S	U	S	S / U	U	S	S / U	S	S	S
Mining equipment ²	D, S	DL, S	DL, S	LW	S	LW, S	LW	S	LW, S	S	S	S
Type of coal extracted	steam	steam	steam	steam	steam	met	met	steam	steam, met.	steam, met.	steam	met
Assigned reserves	380MM tons	256MM tons	184MM tons	49MM tons	182MM tons	38MM tons	44MM tons	370MM tons	201MM tons	33MM tons	206MM tons	41MM tons
Life of mine ³	24 years	34 years	53 years	6 years	36 years	15 years	29 years	161 years	49 years	17 years	25 years	46 years
Tons shipped												
2007	17.2MM tons	8.0MM tons	5.3MM tons	8.3MM tons	-	2.8MM tons	1.5MM tons	2.4MM tons	4.4MM tons	3.1MM tons	5.1MM tons	1.3MM tons
2008	18.4MM tons	8.0MM tons	3.3MM tons	8.0MM tons	3.3MM tons	2.8MM tons	1.5MM tons	2.6MM tons	5.4MM tons	2.6MM tons	7.5MM tons	1.2MM tons
2009	15.8MM tons	7.5MM tons	1.8MM tons	7.8MM tons	5.1MM tons	2.5MM tons	1.5MM tons	2.3MM tons	4.1MM tons	2.0MM tons	8.4MM tons	0.9MM tons
Btu/lb	8,300	11,100	9,400	11,200	9,300	12,900	12,600	10,800	12,200	12,700	11,200	12,600
SO2/mm Btu	NA	NA	NA	<1.2	NA	<1.2	<1.2	<1.2	<1.2	<1.2	1.2-2.5	<1.2
Transportation used ⁴	BN	Private	BN	UP	BN	Dalrymple Bay Coal Terminal	Port Kembla	Port of Brisbane	Port of Newcastle	Dalrymple Bay Coal Terminal	Port of Newcastle	Dalrymple Bay Terminal

Above table exclude Bear Run Mine with a total reserves of 226MM tons, expected to begin operation in mid-2010

¹Type of mining: S = Surface, U = Underground; ²Mining Equipment, DL = Dragline, D = Dozer/Casting, L = Loader/truck, S = Shovel/truck, LW = Longwall, CM = Continuous miner;

³Life of Mine = Assigned reserves/2009 production; ⁴Railroad: UP = Union Pacific Railroad, BN = Burlington Northern Santa Fe Railway

⁵Somerville represents - 3 mines, N. Goonyella/Eaglefield - 2 and Wambo - 2 mines;

Source: Company data and Deutsche Bank

Priorities

Bear Run Mine in Indiana could add 8MM tpy following a \$350 to \$400mn investment

Commitment to develop Bear Run Mine in Indiana – could add 8MM tpy of coal

Peabody's capital commitments include the Bear Run Mine, which is currently under development, in Sullivan County, Indiana with coal capacity to produce 8MM tpy. Bear Run has the possibility to be the largest surface coal mine in Eastern US. It is slated to begin operations in mid-2010 and to produce 2 to 3MM tons in 2010. Total capex for the project estimated between \$350 to \$400 million has been spread over several years. Peabody has already signed long-term agreements of up to 17 years, to supply more than 90MM tons of coal, worth \$6 billion, to two major Midwestern electricity generators from this mine.

Expansions in Australia could add 13 to 20MM tpy destined to seaborne market over the next 5 years

Australian coal capacity destined to seaborne could grow 13 to 20MM tpy in 5 years

Peabody is advancing several projects in Australia that could double coal volumes destined to the seaborne market in the next five years – adding a total of 13 to 20MM tpy. The company could increase its coal capacity destined to the seaborne met market by 8 to 13MM tpy and by 5 to 7MM tpy its coal capacity destined to the seaborne steam market.

Figure 302: Peabody 5-year projects pipeline in Australia

	Mine type ¹	Capacity (MM tons per year)	Quality ²
Total Export Met		8 – 13	
Denham Development	S	3 – 6	Premium HQHCC
Burton Extension	S	2 – 3	HQHCC / HCC
Metropolitan Expansion	U	1	HCC
Millennium Expansion	S	2 – 3	Semi-Hard / PCI
Total Export Steam		5 – 7	
Wambo Expansion	S/U	3 – 4	High quality, low ash
Wilpinjong Expansion	S	2 – 3	Low cost complex

¹Mine Type: S = Surface mine, U = Underground mine; ²Quality: HQHCC = High quality hard coking coal, HCC = Hard coking coal
Source: Company data and Deutsche Bank

Denham could add 3 to 6MM tpy of HCC by 2014

- **Denham.** A new open-cut mine near Peabody's existing Eaglefield mine in Queensland, which could provide 3 to 6MM tpy of high-quality hard coking coal. Currently in the permitting stage, Denham could come on line by 2014.

Burton to increase HQCC production capacity to ~4.7MM tpy from 2.2MM tpy currently

- **Burton.** An existing open-cut mine in the Bowen Basin (95% owned by Peabody and 5% by Thiess Pty Ltd), which has recoverable open-cut reserves of 40MM tons and production capacity of ~2.2MM tpy of high-quality hard coking coal. Peabody plans to increase the production capacity to ~4.7MM tpy. Coal from Burton is exported to major steel mills in Asia, Europe and South America, through Dalrymple Bay Coal Terminal.

Metropolitan got green light to expand HCC capacity by 1MM tpy from ~1.7MM tpy currently

- **Metropolitan.** Australia's oldest continually operating coal mine located in the Southern coalfields of NSW. The mine currently produces ~1.7MM tpy of saleable hard and semi-hard coking coal, which is exported, through Port Kembla Coal Terminal, to customers in Japan, India, South America, China, and Europe. In June 2009, Peabody received final permits for the 1MM tpy expansion of hard coking coal capacity, having the rights to produce up to ~3MM tons per annum for the next 23 years at this mine.

Following expansion at Wilpinjong, total capacity will reach ~9MM tpy of low-cost steam coal

- **Wilpinjong.** A low cost steam coal open-cut mine located in Wilpinjong (near Mudgee), NSW, with the lowest strip ratio (1.3:1) in the area. The mining lease contains recoverable reserves of 221MM tons of steam coal out of which ~132MM tons of the marketable reserve of domestic coal has been committed to Macquarie Generation under a long-term supply contract. The contract with Macquarie Generation is to supply up to 7.7MM tpy of coal for its Bayswater and Liddell power stations for a period of 19 years (from 2007). Around 2.2 to 2.8MM tpy of coal is exported from Wilpinjong to Asia via the Port of Newcastle. In 2009, Peabody is expanding steam coal exports by 2 to 3MM tpy. The mine will have total capacity of ~9MM tons of low-cost steam coal.

Wilpinjong supplies up to 7.7MM tpy of coal to Macquarie Generation under long-term supply contract

Recent events

Peabody approves 1MM tpy hard coking coal expansion at the Metropolitan Mine in Australia

Peabody approves 1MM tpy hard coking coal expansion at Metropolitan Mine

In January 2010, Peabody approved the 1MM tpy hard coking coal expansion at the Metropolitan Mine in New South Wales, Australia. The Metropolitan Mine is an underground mine that uses the longwall method and ships its coal through the Port Kembla south of Sydney. Peabody received the final permits for the expansion at this mine in June 2009. Capital investments for the expansion are expected to total \$70 million, of which ~\$15 million is targeted to be deployed in 2010.

Peabody entered a \$1bn carbon-capture plant JV in China with 7 other companies

Peabody is 6% minority partner in a \$1 billion carbon capture project in China

In November 2009, Peabody executed a joint-venture agreement with China Huaneng Group and seven other companies to build a \$1 billion carbon-capture plant, a project first announced two years ago. The project will capture and store carbon dioxide and at full capacity will generate 650 megawatts of electricity near Tianjin, China. The first phase of production, which will produce 250 megawatts of electricity, is planned for 2011. Peabody has a 6% stake in the venture.

Representative offices in Indonesia and Singapore bolster Peabody's presence in Asia

Opening representative offices in Indonesia and Singapore

In September 2009, Peabody opened an office in Jakarta, Indonesia, to expand business development and coal sourcing opportunities to serve the fast-growing Pacific markets, particularly China and India. In October 2009, the company opened an office in Singapore that should serve as the new hub for Peabody COALTRADE International activities in Southeast Asia, further expanding the company's access to the seaborne coal markets.

Joint development of Shaxi mine in China could produce 15MM tons of coal per year

Joint development of Shaxi mine in Xinjiang, China

Peabody and Shanxi Lu'an Mining Group Company Ltd. (Lu'an)'s subsidiaries have entered into an agreement to explore joint development and operation of Lu'an's Shaxi mine in the Xinjiang Uygur autonomous region in northwestern China. The mine has the potential to reach coal production of 15MM tpy, in line with the development of a new rail project that would serve electricity customers and other industrial users in Central and Eastern China.

Customers

Top five customers represented ~28% of 2009 total coal sales

Electric utility plants are main customers; top five customers represent 28% of sales

In 2009, Peabody sold ~81% of its coal to US electricity generators, ~17% to customers outside the US and ~2% to the US industrial sector. In total, it sold coal to ~345 electricity generating and industrial plants in 23 countries. Peabody derived ~28% of its total coal revenues from sales to its five largest customers, during the aforementioned time period.

Local offices in Asia Pacific solidifying relationships w/ energy and steel companies in region

Australian coal sales destined mainly to Asia Pacific; expanding reach with offices

Australian export steam and met coal is predominantly shipped to customers in the Asia-Pacific region. Most of the sales from Australian mines are denominated in US dollars. Peabody has positioned itself to participate in Pacific Rim growth by expanding its Australian operations and through its business office in Beijing, which is developing partnerships with China's largest coal, energy and steel companies. The company also opened a representative office in coal-rich Mongolia, where it is also participating in a joint venture that holds 50% in Polo Resources's Mongolian coal interests.

Ownership and management

Shareholder structure

Peabody shares are listed on the NYSE under the ticker BTU.N

Peabody's shares are listed on the NYSE under the ticker "BTU.N". The company has 268 million common shares outstanding and a free float of ~99.7%. Directors and executive officers as a group own ~0.3% of the outstanding shares. Daily traded volume averaged ~\$243 million over the past six months.

BlackRock is the largest single shareholder in Peabody

BlackRock, Inc. (10.9%), Fidelity Investments (4.6%), and Wellington Management (4.6%) are the top shareholders of Peabody.

Figure 303: Peabody shareholder structure, February 2010

Shareholder name	Shares held (in mn)	% outstanding
BlackRock, Inc.	29.2	10.9%
Fidelity Investments	12.4	4.6%
Wellington Management Company L.L.P.	12.3	4.6%
State Street Global Advisors, Inc.	11.2	4.2%
Barclays Global Investors UK Holdings Limited	10.8	4.0%
The Vanguard Group, Inc.	9.7	3.6%
UBS Global Asset Management	8.6	3.2%
T. Rowe Price Group, Inc.	8.3	3.1%
PRIMECAP Management Company	7.2	2.7%
Capital Research and Management Company	4.6	1.7%
Others	153.6	57.4%
Total	267.8	100.0%

Source: Company Data and Deutsche Bank

Management

Gregory H. Boyce is the Chairman and CEO of Peabody since 2006

Figure 304: Peabody senior management

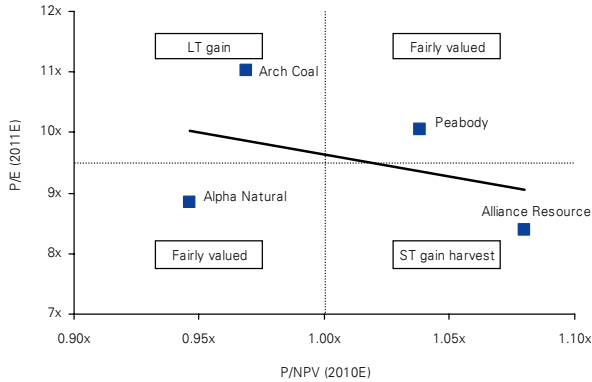
Name	Position	Since
Gregory H. Boyce	Chairman and Chief Executive Officer	2006
Richard A. Navarre	President and Chief Commercial Officer	2008
Eric Ford	EVP and Chief Operating Officer	2007
Sharon D. Fiehler	EVP and Chief Administrative Officer	2008
Alexander C. Schoch	EVP Law, Chief Legal Officer and Secretary	2006
Michael C. Crews	EVP and Chief Financial Officer	2008
Fredrick D. Palmer	Senior Vice President of Government Relations	2001

Source: Company data and Deutsche Bank

Appendices

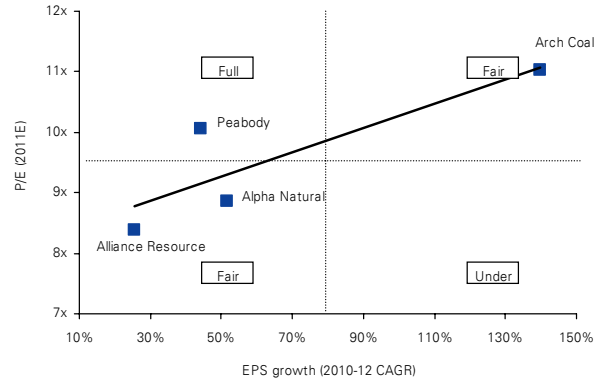
NA Coal sector comparative valuation charts

Figure 305: NA Coal P/E vs P/NPV valuation plot



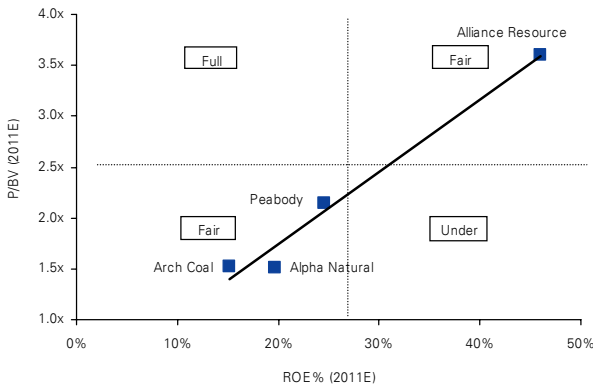
Source: Company data and Deutsche Bank estimates

Figure 306: NA Coal P/E vs EPS growth valuation plot



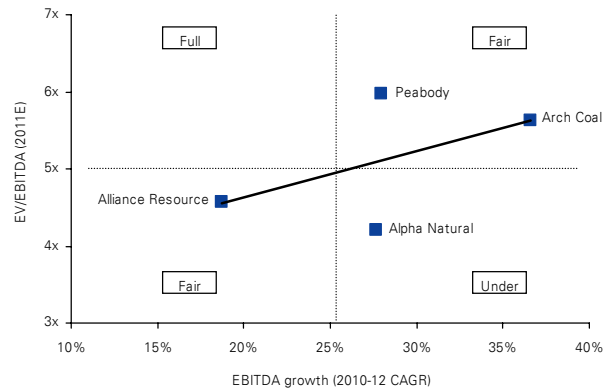
Source: Company data and Deutsche Bank estimates

Figure 307: NA Coal P/BV vs ROE valuation plot



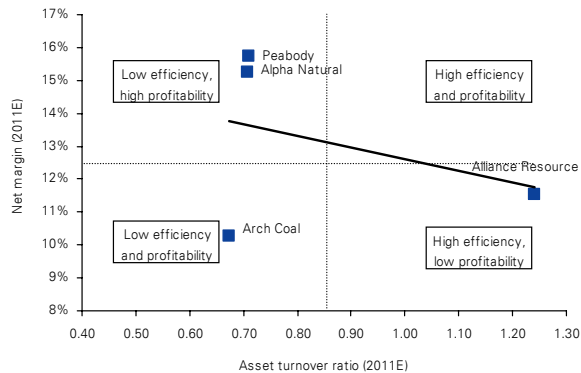
Source: Company data and Deutsche Bank estimates

Figure 308: NA Coal EV/EBITDA vs EBITDA growth plot



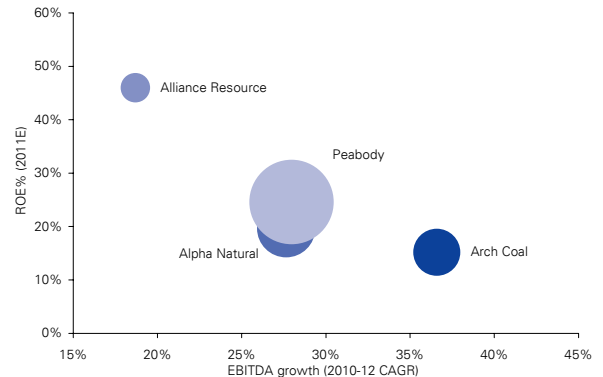
Source: Company data and Deutsche Bank estimates

Figure 309: NA Coal net margin vs asset turnover ratio



Source: Company data and Deutsche Bank estimates

Figure 310: NA Coal ROE vs EBITDA growth*



* Size of the bubbles indicates the market cap. Source: Company data and Deutsche Bank estimates

DB commodity price forecasts

Figure 311: DB commodity forecasts

March 23, 2010	Spot price	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010E	2011E	2012E	2013E	2014E	LT	
International coal prices																	
Steam coal																	
Calendar year	(\$/tonne)	94	33	33	28	40	51	52	55	108	85	82	96	96	91	90	86
Japanese fiscal year	(\$/tonne)	94	35	32	27	45	53	52	56	125	71	85	100	95	90	90	84
Met coal																	
Calendar year	(\$/tonne)	220	42	47	47	55	110	119	101	249	172	164	186	190	160	150	128
Japanese fiscal year	(\$/tonne)	220	43	48	46	58	127	116	96	300	129	175	190	190	150	150	120
US coal prices:																	
Central Appalachia 12,500 Btu, 1.2 SO2	(\$/ton)	58	40	28	32	54	60	52	45	92	53	66	73	81	69	69	69
Northern Appalachia 13,000 Btu, <3.0 SO2	(\$/ton)	64	31	30	31	46	52	42	46	100	55	59	63	68	61	61	61
Illinois Basin 11,800 Btu, 5.0 SO2 Powder	(\$/ton)	42	29	27	25	30	36	36	32	60	47	40	43	45	44	44	44
Powder River Basin 8,800 Btu, 0.8 SO2	(\$/ton)	12	9	6	6	7	10	13	10	14	9	12	13	14	12	12	12
Uinta Basin (WBIT) 11,700 Btu, 0.8 SO2	(\$/ton)	40	20	18	15	22	31	37	29	48	52	43	46	46	44	44	44
Oil & Gas																	
WTI Cushing	(\$/bbl)	82	26	26	31	41	57	66	72	100	62	65	80	85	90	90	90
US Natural Gas	(\$/MMBtu)	4.1	4.3	3.1	5.5	6.0	9.1	6.9	7.2	9.1	4.1	6.0	6.0	6.3	6.5	6.5	6.5
Steel Prices																	
Hot rolled coil - US	(\$/tonne)	615	247	356	320	671	600	641	585	946	531	625	660	615	570	525	525
Hot rolled coil - EU	(\$/tonne)	630	231	260	349	552	562	585	666	926	569	634	662	634	590	547	547
Exchange Rates																	
USD/AUD	(x)	0.92	0.51	0.56	0.75	0.78	0.73	0.79	0.88	0.71	0.90	0.89	0.84	0.78	0.78	0.75	0.73
ZAR/USD	(x)	7.33	11.90	8.57	6.62	5.65	6.34	7.01	6.82	9.38	7.41	8.50	9.00	9.50	9.79	10.08	10.38
USD/EUR	(x)	1.35	0.89	1.05	1.26	1.36	1.18	1.32	1.46	1.40	1.43	1.50	1.45	1.40	1.40	1.33	1.25

Source: Bloomberg and Deutsche Bank estimates

Historical commodity price reference

Figure 312: Historical commodity prices and y/y changes: 1986-2009

	Steam Coal												Met Coal						US		WTI		US	
	CAPP		NAPP		PRB		WBIT		IB		Intl. benchmark		Export Docks, US		Coke Plants, US		Intl. benchmark		Natural Gas		Oil		HRC	
	\$/ton	Y/y	\$/ton	Y/y	\$/ton	Y/y	\$/ton	Y/y	\$/ton	Y/y	\$/tonne	Y/y	\$/ton	Y/y	\$/tonne	Y/y	\$/MMBtu	Y/y	\$/bbl	Y/y	\$/ton	Y/y		
1986	35	3%	36	3%	12	-2%															15		312	6%
1987	37	4%	38	5%	13	14%															19	31%	381	22%
1988	36	-2%	36	-5%	13	0%															16	-17%	400	5%
1989	25	-30%	27	-24%	8	-40%															19	19%	343	-14%
1990	25	-2%	27	-2%	7	-8%											1.8		24	28%			334	-2%
1991	30	21%	30	13%	8	11%										1.5	-13%	21	-12%			301	-10%	
1992	28	-5%	29	-5%	8	-2%										1.7	13%	21	-4%			292	-3%	
1993	25	-10%	26	-10%	7	-12%										2.1	22%	18	-10%			337	15%	
1994	24	-5%	25	-4%	7	-9%					34					1.9	-8%	17	-7%			363	8%	
1995	24	-1%	25	0%	6	-6%					40	17%				1.7	-13%	18	7%			346	-5%	
1996	23	-5%	24	-5%	6	-5%					40	0%				2.5	48%	22	19%			329	-5%	
1997	26	14%	27	13%	4	-29%					38	-7%				2.5	-1%	21	-6%			335	2%	
1998	28	6%	26	-3%	5	11%	12		22		35	-8%				2.2	-13%	14	-30%			301	-10%	
1999	25	-9%	20	-24%	5	-1%	13	4%	20	-8%	30	-13%				42	-18%	2.3	8%	19	34%	285	-5%	
2000	24	-4%	20	-1%	4	-3%	12	-3%	19	-7%	29	-4%				40	-5%	4.3	86%	30	58%	295	4%	
2001	40	65%	31	59%	9	102%	20	61%	29	54%	35	20%	42		47	43	8%	4.3	0%	26	-15%	222	-25%	
2002	28	-28%	30	-5%	6	-34%	18	-10%	27	-4%	32	-8%	45	9%	51	9%	48	13%	3.1	-28%	26	1%	313	41%
2003	32	14%	31	5%	6	4%	15	-15%	25	-10%	27	-16%	44	-2%	51	0%	46	-4%	5.5	78%	31	19%	294	-6%
2004	54	69%	46	48%	7	6%	22	47%	30	21%	45	68%	63	43%	62	22%	58	25%	6.0	9%	41	33%	608	107%
2005	60	10%	52	13%	10	50%	31	40%	36	21%	53	18%	82	29%	84	36%	127	119%	9.1	51%	57	37%	545	-10%
2006	52	-14%	42	-19%	13	34%	37	19%	36	-1%	52	-1%	91	11%	93	11%	116	-9%	6.9	-24%	66	17%	584	7%
2007	45	-13%	46	11%	10	-22%	29	-21%	32	-12%	56	6%	89	-2%	95	2%	96	-17%	7.2	5%	72	9%	528	-10%
2008	92	105%	100	117%	14	33%	48	66%	60	89%	125	125%	134	50%	118	23%	300	213%	9.1	26%	100	38%	860	63%
2009	53	-43%	55	-45%	9	-31%	52	7%	47	-22%	71	-43%	119	-11%	146	24%	129	-57%	4.1	-55%	62	-38%	482	-44%
Average																								
1991-1995	26		27		7						37					48		1.8		19		328		
1995-2000	25		23		5		12		20		34					48		2.8		21		309		
2001-2005	43		38		7		21		29		38		55		59	64		5.6		36		397		
2006-2009	60		61		12		42		44		76		108		113	160		6.8		75		614		
Average of period (years)																								
Last 20Y	37		35		8						46					81		4.0		35		398		
Last 15Y	40		38		8		26		32		47					84		4.7		40		422		
Last 10Y	48		45		9		28		34		52		79		83	100		6.0		51		473		
Last 5Y	60		59		11		39		42		71		103		107	154		7.2		71		600		

Benchmark used: CAPP = Central Appalachia 12,500 Btu 1.2 SO2; NAPP = Northern Appalachia 13,000 Btu <3.0 SO2; PRB = Powder River Basin 8,800 Btu 0.8 SO2; WBIT = Uinta Basin 11,700 Btu 0.8 SO2; IB = Illinois Basin 11,800 Btu 5.0 SO2; Intl. Steam coal = Japanese Benchmark Thermal Coal; Intl. Met coal = Premium Hard Coking Coal; Intl. Steam and Met coal prices are calculated for Japanese fiscal year; Source: Bloomberg and Deutsche Bank estimates

Global economic indicators

Figure 313: Economic indicators

	Growth of real GDP (% y/y)				Inflation, CPI (% y/y)				Current Account (% of GDP)			
	2008	2009F	2010F	2011F	2008	2009F	2010F	2011F	2008	2009F	2010F	2011F
US	0.4	-2.4	3.8	3.5	3.8	-0.3	2.0	1.7	-4.9	-3.0	-2.8	-3.0
Japan	-0.7	-5.1	2.2	0.8	1.4	-1.4	-1.2	-0.6	3.2	2.8	3.7	4.7
Euroland	0.7	-4.0	1.1	1.2	3.3	0.3	1.2	1.3	-1.5	-1.2	-0.8	-0.6
Germany	1.4	-4.9	2.0	1.5	2.8	0.3	0.8	1.0	6.6	3.4	5.3	4.0
France	0.3	-2.2	1.2	1.3	3.2	0.1	1.3	1.1	-2.3	-2.0	-1.9	-2.1
Italy	-1.0	-4.9	0.9	1.0	3.5	0.8	1.4	1.6	-3.4	-3.1	-2.8	-3.2
Spain	0.9	-3.6	-0.4	0.7	4.2	-0.3	1.1	1.4	-9.6	-5.3	-3.9	-4.0
Netherlands	2.0	-4.0	1.3	1.4	2.2	1.0	0.9	1.1	4.2	3.0	3.5	4.0
Belgium	0.8	-3.1	1.6	1.2	4.5	0.0	1.3	1.5	0.2	0.0	1.0	1.5
Austria	2.0	-3.5	1.8	1.3	3.2	0.4	1.2	1.4	3.6	1.5	2.0	2.5
Finland	0.8	-6.7	1.7	1.6	3.9	1.6	1.2	1.3	2.6	1.0	1.5	2.0
Greece	2.9	-0.7	-0.7	0.4	4.2	1.3	1.9	1.9	-13.8	-9.0	-7.0	-6.0
Portugal	0.0	-2.6	1.6	1.2	2.7	-1.0	0.5	0.8	-12.1	-9.0	-7.0	-6.0
Ireland	-3.0	-6.6	-0.6	1.5	3.1	-1.6	-0.3	0.5	-5.1	-3.0	-1.5	-1.5
Other Industrial Countries												
United Kingdom	0.6	-4.8	1.5	2.5	3.6	2.2	3.1	0.9	-1.6	-2.5	-2.3	-1.5
Denmark	-1.2	-5.1	1.0	2.0	3.4	1.4	1.7	1.6	2.2	2.0	2.0	1.8
Norway	1.7	-1.1	1.8	2.5	3.8	2.2	1.7	1.7	19.5	14.9	15.0	16.0
Sweden	-0.4	-4.7	1.5	2.1	3.5	-0.4	0.9	1.5	6.2	7.0	7.2	7.5
Switzerland	1.8	-1.8	0.4	1.3	2.4	-0.5	0.6	0.7	2.4	7.5	6.5	6.0
Czech Republic	2.8	-4.0	2.0	3.6	3.6	1.0	2.8	1.3	-3.5	-1.1	-2.1	-2.9
Hungary	0.6	-6.3	1.5	3.4	3.5	7.4	3.9	4.9	-7.4	0.2	-1.2	-2.5
Poland	5.0	1.7	3.2	3.1	3.3	3.0	2.5	2.5	-5.1	-0.7	-3.3	-4.1
Canada	0.4	-2.5	3.0	3.5	2.4	0.3	1.7	2.5	0.5	-2.9	-2.9	-2.6
Australia	2.4	0.9	2.6	3.7	4.4	1.8	2.6	3.1	-4.6	-4.2	-5.7	-4.9
New Zealand	0.2	-1.4	2.9	2.7	4.0	2.2	1.5	1.9	-8.8	-2.9	-3.6	-5.2
Emerging Europe/Africa	4.2	-4.7	3.6	4.1	7.7	5.2	4.9	5.3	-0.2	1.0	-1.3	-1.5
Egypt	7.2	4.7	5.4	5.9	20.2	10.0	8.8	5.6	0.5	-2.4	-1.8	-1.7
Israel	4.0	0.5	3.2	3.7	3.8	4.0	2.0	2.0	1.1	3.0	2.7	2.7
Kazakhstan	3.3	1.2	5.1	4.0	9.7	6.1	5.6	4.3	5.1	-2.8	1.2	5.0
Romania	7.1	-6.1	3.3	4.8	6.3	4.8	4.0	3.4	-12.1	-4.8	-5.9	-6.4
Russia	5.6	-7.9	3.8	4.5	13.3	8.8	8.5	9.5	6.0	4.8	0.2	0.7
Turkey	0.6	-5.8	3.9	3.5	10.1	5.7	6.4	6.4	-5.7	-2.0	-3.2	-4.5
Ukraine	2.1	-13.4	2.2	4.2	22.3	12.3	13.3	11.0	-4.7	-0.2	-1.7	-2.8
South Africa	3.1	-1.6	3.1	3.3	9.1	6.3	4.2	5.9	-7.3	-4.1	-5.2	-6.0
Asia (ex-Japan)	6.9	5.5	8.1	7.6	6.6	0.6	4.5	3.8	4.2	4.8	3.7	2.6
China	9.6	8.7	9.8	9.3	5.9	-0.7	3.4	2.5	7.2	5.8	4.5	3.0
Hong Kong	2.1	-2.7	6.5	5.5	4.3	0.5	1.3	2.5	14.3	10.5	5.2	4.5
India	6.3	5.7	7.6	7.6	9.1	2.1	8.6	6.7	-3.0	-1.5	-1.0	-1.2
Indonesia	6.0	4.5	5.5	6.5	9.8	4.9	5.1	6.5	0.0	1.4	1.5	1.7
Korea	2.2	0.2	5.5	3.9	4.7	2.8	3.1	3.9	-0.7	5.1	1.6	0.6
Malaysia	4.6	-1.7	6.5	4.6	5.4	0.6	1.7	2.0	17.6	17.5	15.6	12.6
Philippines	3.7	0.9	3.5	5.0	9.3	3.4	6.0	5.6	2.3	4.1	4.8	4.7
Singapore	1.4	-2.0	7.0	6.0	6.5	0.2	2.2	2.3	14.4	14.7	18.0	20.4
Taiwan	0.7	-1.9	6.1	4.2	3.5	-0.9	2.1	3.0	6.5	11.2	8.7	6.7
Thailand	2.6	-2.3	5.5	4.1	5.5	-0.8	4.3	4.3	0.6	7.7	4.8	3.5
Latin America	4.0	-2.7	4.1	3.7	10.0	6.3	7.9	7.4	-0.4	-0.6	-1.2	-2.1
Argentina	6.8	-3.1	4.1	2.6	23.0	14.8	28.4	28.7	2.2	2.2	1.5	0.1
Brazil	5.1	-0.2	5.8	4.5	5.9	4.3	4.9	4.7	-1.8	-1.5	-2.9	-4.4
Chile	3.2	-1.5	4.6	6.1	7.1	-1.5	3.6	3.4	-2.0	3.2	1.3	0.9
Colombia	2.5	0.2	2.3	2.8	7.7	2.0	3.5	3.5	-3.4	-2.1	-2.2	-2.5
Mexico	1.8	-6.5	4.0	3.5	6.5	3.6	5.0	4.0	-1.8	-0.8	-1.0	-1.3
Venezuela	4.5	-2.9	-0.5	1.8	31.9	26.9	33.0	29.0	13.8	0.0	2.4	2.5
EM countries	5.8	1.6	6.3	4.2	7.5	2.7	5.2	4.8	2.3	2.9	1.6	0.8
World	2.8	-1.2	4.2	4.0	5.1	1.2	3.1	2.8	-0.1	0.6	0.2	-0.1

Source: Deutsche Bank estimates

Glossary of mining terms

Anthracite: Type of coal that has the highest carbon content and the lowest moisture and ash content. Anthracite burns slowly and makes a good heating fuel for homes.

ARA: Amsterdam-Rotterdam-Antwerp, a major delivery hub for cargo entering Northwest Europe.

Ash: Impurities consisting of iron, alumina and other incombustible matter that are contained in coal. Adding weight, it increases the cost of handling and can affect the burning characteristics of coal.

Assigned reserves: Recoverable reserves designated for mining by a specific operation.

Bituminous: Type of coal that contains very little moisture and has high heat value. It is used to generate electricity and to produce coke, a coal residue used in the steel industry.

British thermal units (Btu): A measure of energy required to raise the temperature of one pound of water by one degree Fahrenheit.

Clean Air Act: Strict air pollution control law that was passed in 1970.

Clean Coal Technology (CCT) program: The CCT program refers to a number of technological advances that make the burning process of coal cleaner by removing pollutants such as sulfur, nitrogen, and fly ash that can contaminate the air and water.

Coal: Coal is a burnable carbonaceous rock considered to be a mineral of organic origin that contains large amounts of carbon. Coal is also a fossil fuel made up primarily of the remains of plants. It can be burned to release energy. Coal contains other elements such as hydrogen, oxygen and nitrogen.

Coal seam: Each layer of a coal deposit is called a seam.

Coal gasification: Process that changes coal into a gas that has the same heating value as natural gas and that is cleaner than burning coal itself.

Coke: Substance made by heating coal to very high temperatures without the presence of air that is used in the iron and steel industry.

Combined-cycle system: In combined-cycle system, gas from heating coal operates a combustion turbine connected to a generator, and the exhaust gases from this turbine heat water that, in turn, operates a steam-powered generator.

Compliance coal: Coal, which, when burned, emits 1.2 lbs or less of sulfur dioxide per million Btus, requiring no blending or other sulfur dioxide reduction technologies in order to comply with the requirements of the Clean Air Act.

Continuous miner: A machine with large, rotating cutters that break into the coal with arms that scoop the coal from the seam onto a built-in conveyor or into shuttle cars in a continuous operation used in underground mining.

Conventional mining: Method that includes the use of explosives in a coal seam, fracturing the seam and removing the coal onto a conveyor or truck.

Cooling degree days (CDD): Excess of daily average temperature over 65°F; usually cumulated over time.

Clean spread: The spark spread minus the cost of emissions.

Dragline: A large machine used in surface mining to remove the overburden or layers of earth and rock, covering a coal seam. The dragline has a large bucket, suspended by cables from the end of a long boom, which is able to scoop up large amounts of overburden as it is dragged across the excavation area and redeposit the overburden in another area.

Electrostatic precipitator: Device that helps prevent air pollution by giving coal dust particles an electric charge so they can be accelerated to a collector plate.

Face: Commonly used to describe the exposed area of a coal seam from which coal is extracted.

Flue: A flue is a pipe through which gases and smoke escape from burning coal.

Flue gas desulfurization system: Scrubber or device that removes more than 90% of the sulfur dioxide emissions from the burning coal process.

Fluidized-Bed Combustion (FBC): Process of burning coal in which coal is inserted in a bed of particles that are suspended in the air and that react with the coal to heat the furnace more cleanly. In order to prevent some nitrogen oxide gases from forming, coal is burned at a slightly lower temperature in FBC.

Fly ash: The fine particles contained in the gases that are released when coal is burned.

Fossil fuel: Fuel formed from the remains of organic materials. Fossil fuels include coal, oil, and natural gas.

Gasification: Process by which coal is converted into low, medium or high-Btu gas.

Generator: Machine that turns mechanical energy into electric energy.

High Btu coal: Coal which has an average heat content of 12,500 Btus per pound or greater.

Highwall: The unexcavated face of exposed overburden and coal at a surface mine.

Lignite: Type of coal that contains a lot of moisture and ash and breaks easily. It has the lowest carbon content and heating value out of the four types of coal. It is also called brown coal and it is used primarily at electricity-generating plants.

Longwall mining: One of two major underground coal mining methods, generally employing two rotating drums pulled mechanically back and forth across a long face coal.

Low Btu coal: Coal which has an average heat content of 9,500 Btus per pound or less.

Low sulfur coal: Coal which, when burned, emits 1.6 lbs or less of sulfur dioxide per million Btu.

Medium sulfur coal: Coal which, when burned, emits between 1.6 and 4.5 lbs of sulfur dioxide per million Btu.

Metallurgical coal (met): The various grades of coal that is suitable for carbonization to make coke to use in steel manufacturing. The quality of met coal depends on the following criteria: volatility (which affects the coke yield), level of impurities – including sulfur and ash (which affect coke quality), composition (which affects strength), and basic characteristics (which affect coke oven safety). Typically, met coal has particularly high Btu and low ash and sulfur content.

Mid Btu coal: Coal which has an average heat content of between 9,500 and 12,500 Btus per pound.

Nitrogen oxide (NOx): A gas formed in high temperature environments such as coal combustion. A harmful pollutant that contributes to smog.

Nonrenewable energy: Energy supplied by fossil fuels. These fuels are limited in supply.

Overburden: Material that is removed from the earth's surface to uncover the coal. Overburden includes layers of earth and rock.

Peat: Soggy, sponge-like material that forms from plants and trees after they die. Peat from plants and trees that died about 300 million years ago became buried and compressed under the earth's surface over long period of time. Through the passage of time and the forces of heat and pressure, peat became coal.

Pillar: Area of coal left to support the overlying strata in a mine. It is sometimes left permanently to support surface structures.

Portal: Entrance to a mine.

Preparation plant: A facility used for crushing, sizing and washing coal to remove impurities and to prepare it for use by a particular customer.

Probable reserves: Reserves for which quantity and grade and/or quality are computed from information similar to that used for proven reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced.

Proven reserves: Reserves for which quantity is computed from dimensions revealed in outcrops, trenches, working or drill holes; grade and/or quality are computed from the results of detailed sampling and the sites for inspection, sampling and measurement are spaced closely and the geologic character is so well defined that size, shape, depth and mineral content of reserves are well established.

Reclamation: The restoration of land and environmental values to a mining site after the coal is extracted. The process commonly includes shaping the land to its approximate original appearance, restoring topsoil and planting native grass and ground covers.

Recoverable reserves: The amount of proven and probable reserves that can actually be recovered from the reserve base taking into account all mining and preparation losses involved in producing a saleable product using existing methods under current law.

Reserves: That part of a mineral deposit which could be economically and legally extracted or produced at the time of the reserve determination.

Roof bolting: Method of supporting the ceiling of underground mines by inserting long steel bolts into holes bored into strata forming the roof.

Room-and-pillar mining: One of two major underground coal mining methods utilizing continuous miners creating a network of rooms within the coal seam, leaving behind pillars of coal used to support the roof of a mine.

Scrubber: Device that removes sulfur components formed during coal combustion.

Sludge: Muddy waste that is produced during processes to remove sulfur from coal.

Slurry: Coal that is ground to powder and mixed with water. In this form, coal can be pumped through a pipeline.

Spark spread: Price spread between electricity and the fuel.

Steam coal: Coal used by power plants and industrial steam boilers to produce electricity, steam or both. Typically, steam coal is lower in Btu content and higher in volatile matter than met coal.

Sub-bituminous: Type of coal that is dull black and has less moisture than lignite. Sub-bituminous is generally used to produce steam for electricity generation.

Sulfur: One of the elements present in varying quantities in coal that contributes to environmental degradation when coal is burned. Sulfur dioxide is produced as gaseous by-product of coal combustion.

Surface mining: Mining method used when the coal is found close to the surface or on hillsides. It involves removing the topsoil and subsoil, and setting them aside while the coal is removed.

Turbine: An engine that spins around, causing heat energy of burning coal to become mechanical energy.

Underground mining: Mining method used to extract coal that is deep beneath the surface or in seams exposed on hillsides. It involves drilling two openings called shafts into the coal bed, one to transport miners and equipment and the other to bring coal to the surface.

Unassigned reserves: Recoverable reserves that have not yet been designated for mining by a specific operation.

Source: Industry associations and reports, company reports, and Deutsche Bank

Measurement conversion table

Figure 314: Conversion table			
1 pound	=	10,377 Btu	1 barrel oil equivalent = 0.20 metric tons of hard coal
1 pound of coal	=	10.948 megajoules	1 barrel oil equivalent = 0.41 metric tons of lignite coal
1 short ton (2,000 lbs.) of coal	=	20,754,000 Btu	1 metric ton oil equivalent = 1.5 metric tons of hard coal
1 short ton	=	21,897 megajoules	1 metric ton oil equivalent = 3.0 metric tons of lignite coal
1 short ton	=	0.907 metric tons	1 metric ton hard coal = 5 barrels oil equivalent
1 metric ton	=	22,877,388 Btu	1 metric ton hard coal = 0.67 metric tons of oil equivalent
1 metric ton	=	24,137 megajoules	1 metric ton lignite coal = 2.5 barrels oil equivalent
1 metric ton	=	1.102 short tons	1 metric ton lignite coal = 0.33 metric tons of oil equivalent

Source: Industry associations and reports, company reports and Deutsche Bank

Research Contribution

The author of this report wishes to acknowledge the contribution made by Ashish Bansal and Anshul Agrawal, the employees of Irevna, a division of CRISIL Ltd, a third-party provider to Deutsche Bank of offshore research support services.

Appendix 1

Important Disclosures

Additional information available upon request

Disclosure checklist			
Company	Ticker	Recent price*	Disclosure
Arch Coal	ACI.N	24.22 (USD) 23 Mar 10	NA
Alpha Natural Resources	ANR.N	48.26 (USD) 23 Mar 10	6
Alliance Resource L.P.	ARLP.OQ	42.12 (USD) 23 Mar 10	2
Peabody Energy	BTU.N	47.76 (USD) 23 Mar 10	8,17

*Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank and subject companies.

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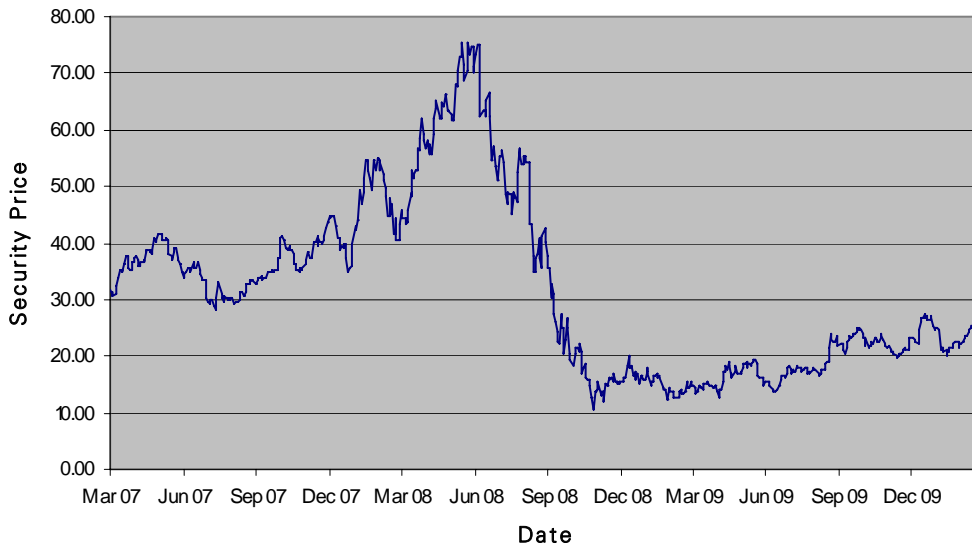
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Historical recommendations and target price: Arch Coal (ACI.N)

(as of 3/23/2010)



Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

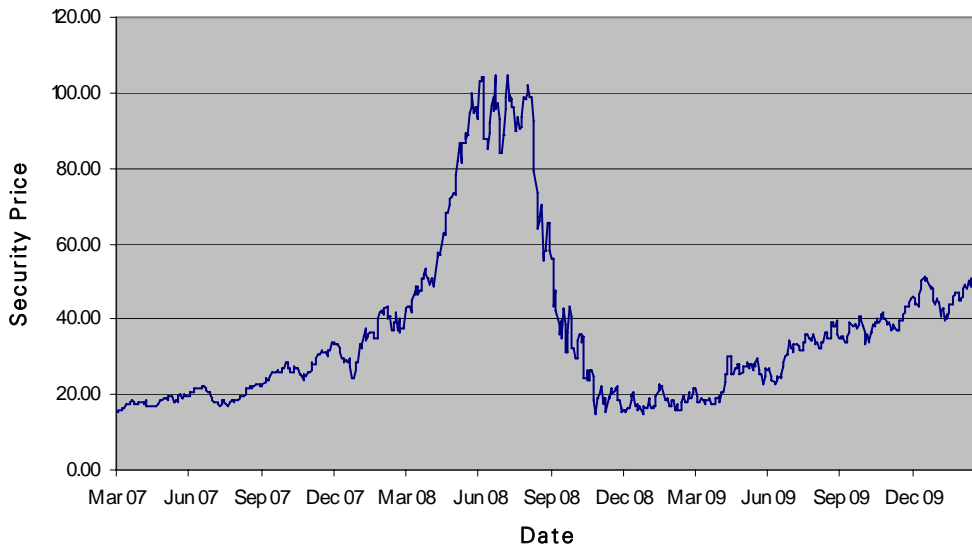
Current Recommendations

- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

*New Recommendation Structure as of September 9, 2002

Historical recommendations and target price: Alpha Natural Resources (ANR.N)

(as of 3/23/2010)



Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

Current Recommendations

- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

*New Recommendation Structure as of September 9, 2002

Historical recommendations and target price: Alliance Resource L.P. (ARLP.OQ)

(as of 3/23/2010)



Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

Current Recommendations

- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

*New Recommendation Structure as of September 9, 2002

Historical recommendations and target price: Peabody Energy (BTU.N)

(as of 3/23/2010)



Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

Current Recommendations

- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

*New Recommendation Structure as of September 9, 2002

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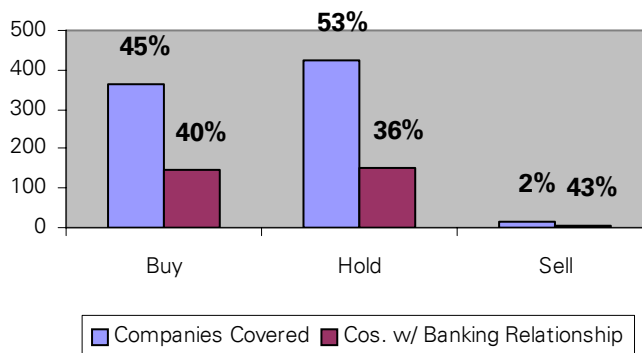
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North American Universe

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