UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, DC 20549

FORM 8-K

CURRENT REPORT Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of report (Date of earliest event reported): February 22, 2010 (February 22, 2010)

Arch Coal, Inc.

(Exact name of registrant as specified in its charter)

1-13105 (Commission File Number) 43-0921172 (I.R.S. Employer Identification No.)

Delaware (State or other jurisdiction of incorporation)

> CityPlace One One CityPlace Drive, Suite 300 St. Louis, Missouri 63141 (Address, including zip code, of principal executive offices) Registrant's telephone number, including area code: (314) 994-2700

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

o Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

o Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

o Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

o Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 7.01 Regulation FD Disclosure.

Beginning on February 22, 2010, and at other times thereafter, the attached slides will be presented to various investors by the Senior Management team of Arch Coal, Inc. The slides from the presentation are attached hereto as Exhibit 99.1 and are hereby incorporated by reference.

A copy of the slides will be available at <u>http://investor.archcoal.com/events.cfm</u> for 30 days.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

The following exhibit is attached hereto and furnished herewith.

Exhibit No.	
No.	Description
99.1	Arch Coal, Inc. Investor Presentation Slides

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: February 22, 2010

Arch Coal, Inc.

By: /s/ Robert G. Jones Robert G. Jones Senior Vice President--Law, General Counsel and Secretary

Exhibit Index

Exhibit No.	Description
99.1	Arch Coal, Inc. Investor Presentation Slides





Arch Coal, Inc. Investor Presentation

February 2010

Forward-Looking Information

This presentation contains "forward-looking statements" – that is, statements related to future, not past, events. In this context, forward-looking statements often address our expected future business and financial performance, and often contain words such as "expects," "anticipates," "intends," "plans," "believes," "seeks," or "will." Forward-looking statements by their nature address matters that are, to different degrees, uncertain. For us, particular uncertainties arise from changes in the demand for our coal by the domestic electric generation industry; from legislation and regulations relating to the Clean Air Act and other environmental initiatives; from operational, geological, permit, labor and weather-related factors; from fluctuations in the amount of cash we generate from operations; from future integration of acquired businesses; and from numerous other matters of national, regional and global scale, including those of a political, economic, business, competitive or regulatory nature. These uncertainties may cause our actual future results to be materially different than those expressed in our forward-looking statements. We do not undertake to update our forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by law. For a description of some of the risks and uncertainties that may affect our future results, you should see the risk factors described from time to time in the reports we file with the Securities and Exchange Commission.

This presentation includes certain non-GAAP financial measures, including Adjusted EBITDA. These non-GAAP financial measures are not measures of financial performance in accordance with generally accepted accounting principles and may exclude items that are significant in understanding and assessing our financial results. Therefore, these measures should not be considered in isolation or as an alternative to net income from operations, cash flows from operations, earnings per fully-diluted share or other measures of profitability, liquidity or performance under generally accepted accounting principles. You should be aware that our presentation of these measures may not be comparable to similarly-titled measures used by other companies. A reconciliation of these financial measures to the most comparable measures presented in accordance with generally accepted accounting principles has been included at the end of this presentation.



GROWING

Arch Coal is a leader in the coal industry

- Second largest coal producer in the U.S.
 - Leading position in the Powder River Basin
 - Largest producer in Western Bituminous region
 - Low-cost producer in Central Appalachia
 - Significant exposure to metallurgical markets
- Represent 16 percent of the U.S. coal supply
 - Provide cleaner-burning, low-sulfur coal to domestic power producers to fuel 8 percent of the nation's electricity
 - Ship coal to domestic/international steel manufacturers and international power producers
- Lead coal industry in mine safety and environmental compliance
 - Talented workforce operates large, modern mines

Source: ACI



VITAL







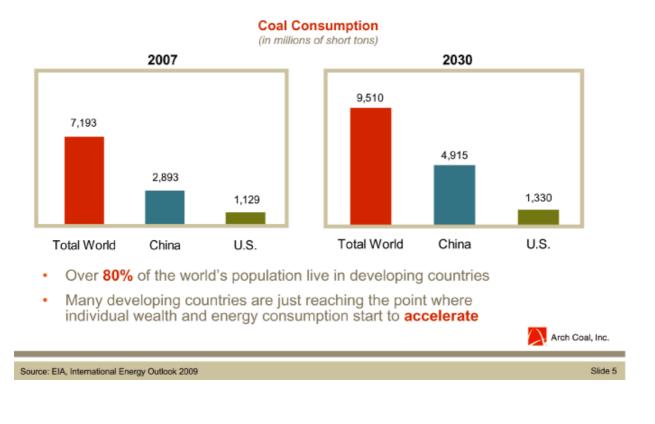


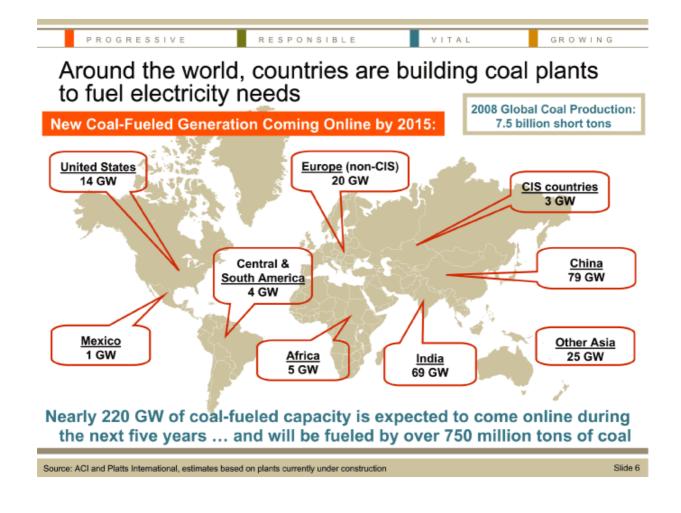
State of Coal Markets

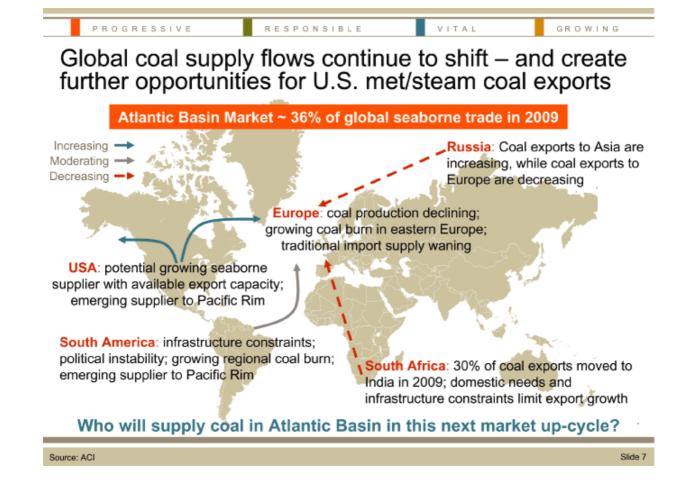
Arch Coal, Inc.

PROGRESSIVE	RESPONSIBLE	VITAL	GROWING
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World coal consumption is expanding rapidly







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RESPONSIBLE

GROWING

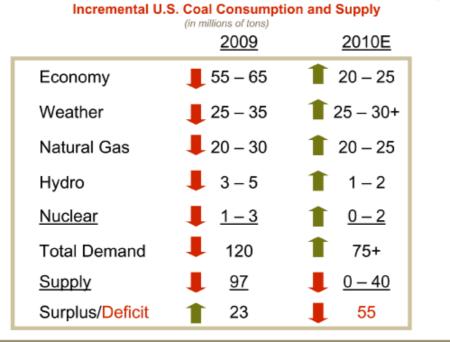
Global coal demand is recovering (albeit at different rates), while structural supply constraints remain

VITAL

Last Market Run-Up	Present
 "The lack of investment spent by Australian infrastructure providers over the past decade has resulted in severe rail and port bottlenecks." Macquarie (6/07) 	 "Fundamentally, the metallurgical coal market looks extremely tight, as recent Australian infrastructure problems have removed any remaining slack." Macquarie (2/10)
 "China which became a net importer of coal this year, increased purchases of the fuel 27% in April to meet higher energy demand." Bloomberg (5/07) 	 "China finished the year as a net importer to the tune of 103.43mt – a massive swing from its position of net exporter of 17.43mt in 2008." McCloskey (1/10)
 "India is expecting to double its South African coal imports during 2007. High demand and a halt in Chinese exports of coal are thought to be the cause of this increase." <i>Reuters</i> (5/07) 	 "India was the biggest single buyer of South African coal in 2009and is hungry for more to feed its burgeoning power needs." Reuters (1/10)
• "Production is shifting away from West Virginia because the state has presented coal producers with difficult regulations, torrents of litigation and orchestrated hostility that discouraged growth and investment." The State Journal (5/07)	 "The outlook for CAPP surface mining, in our view, remains in question following the EPA's decision to undergo a thorough reevaluation of the standards mandated by the CWA. CAPP surface mines have begun to idle as existing permits are exhausted and cannot be extended." Morgan Stanley (1/10)

Source: ACI and news/industry reports

Coal was disproportionately impacted by downturn in 2009; should outperform other fuels in recovery



Source: EIA and ACI

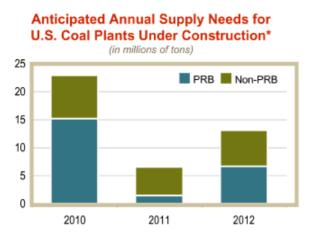
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Slide 9

GROWING

PROGRESSIVE	RESPONSIBLE	VITAL	GROWING
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U.S. coal consumption also will benefit from new coal plant start-ups



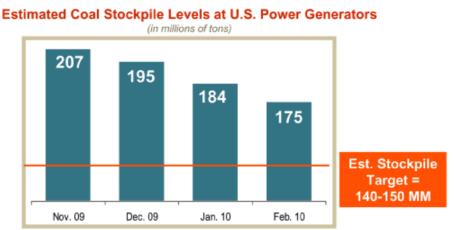
- Approximately 5 GW 16 plants have come online in 2008 and 2009
- Build-out of an additional 13 GW through 2012 equates to 43 million tons of new annual coal demand
- Arch estimates that the Powder River Basin will service one half of this demand
- Currently, we estimate that 6 GW roughly 13 plants – are scheduled to be in operation by the end of 2010

Source: Platts, EIA and ACI

* Gross of plant retirements

PROGRESSIVE	RESPONSIBLE	VITAL	GROWING

U.S. coal stockpiles are being liquidated much faster than anticipated

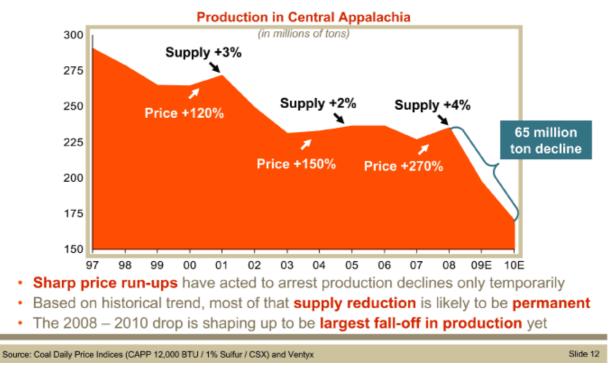


- During the shoulder season, Arch anticipates a much smaller build in stockpiles versus previous years
- PRB stockpiles are the lowest in the country translating into improvement in the forward curve index pricing (up 35% since Oct.'09) ... and pressure building for additional price movement much earlier in this market up-cycle

Source: EIA and ACI

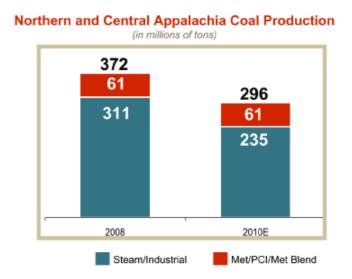
PROGRESSIVE	RESPONSIBLE	VITAL	GROWING
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U.S. coal production continues to shift westward as Central Appalachia is in long-term secular decline



PROGRESSIVE RESPONSIBLE VITAL GROWING			PROGRESSIVE	RESPONSIBLE	VITAL	GROWING
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Competition is set to increase for constrained coal supply in Northern and Central Appalachia



More than **75 million tons of high-Btu Appalachian production** could disappear from steam coal markets or migrate to higher margin met coal markets

Source: EIA and ACI

P	R	0	G	R	E	s	S	1	v	F	

Powder River Basin should fill most of the supply gap from the Appalachian Basins over the next five years

Powder River Basin

- Lowest cost and largest coal supply region in the U.S.
- Consistent with history, PRB will be called upon to fill supply gap created by Appalachia
- Replacing 75 million tons of Appalachian coal would require over 110 million tons of PRB coal on a Btuequivalent basis
- Would represent the most profound call on PRB yet

Illinois Basin

VITAL

Can and will grow ... but not without limitations:

- Lower cost than Appalachia but much higher cost than PRB
- Capital investment required will be significant
- Long lead time for permitting and project development
- Some areas contain difficult geology
 - Quality disadvantage (sulfur, chlorine)

 High-sulfur content
 Export pull for steam and crossover met products will further reduce supply available to domestic power generators

Northern App

Limited growth

potential

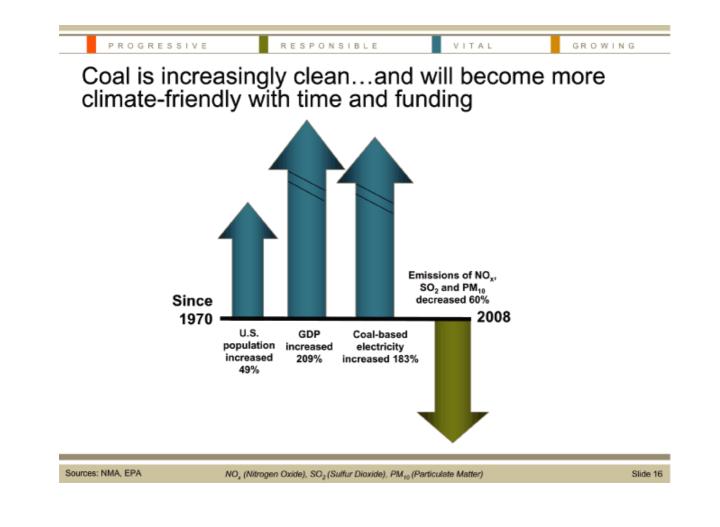
Source: ACI





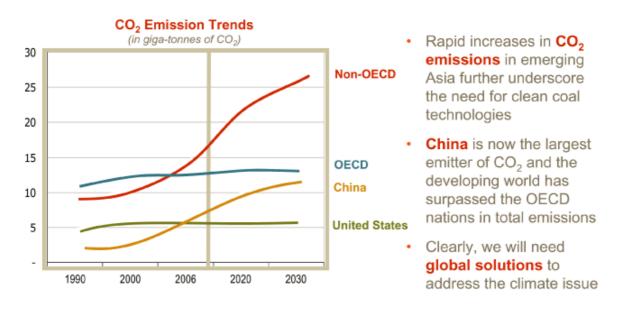
Energy, the environment and clean coal technologies





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	PROGRESSIVE	RESPONSIBLE	VITAL	GROWING

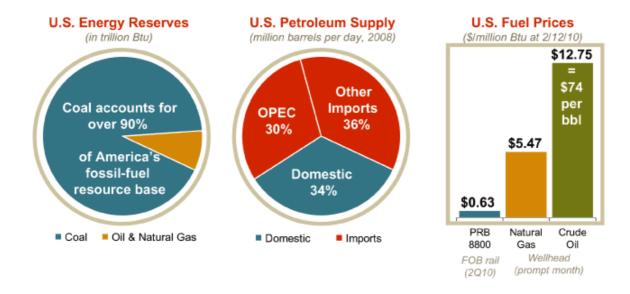
The developed and developing world must work together to address the climate challenge



Source: International Energy Outlook 2008 *OECD = Organization for Economic Cooperation and Development



Coal will remain a vital part of America's energy future



Source: EIA, BP Statistical Review of World Energy 2008, Argus Coal Daily





Arch Coal Overview



PROGRESSIVE	RESPONSIBLE	VITAL	GROWING
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Arch's safety and environmental performance is the best among the largest public coal companies

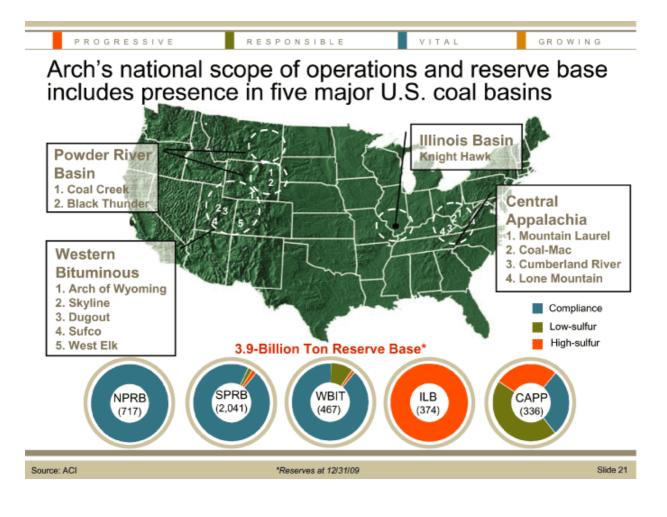


- Arch's safety record is the best in the U.S. coal industry
 - Set new company record in 2009
 - Arch's rate was one-fourth the national coal industry average
- Arch's environmental performance ranks first among major coal industry peer group
 - Set new company record in 2009

Slide 20

 Ten of Arch's individual mines and facilities achieved either zero reportable injuries or zero environmental violations in 2009

Sources: ACI, MSHA



and integrated	d it into Black Thunde	
The enhanced Bla coal-mining com	ck Thunder is the largest single plex in the world	Formerly Jacobs Ranch
- Permitted coal	reserves* of 1.5 billion tons	
	acity of more than 140 million tons market conditions warrant	E B E
 Synergies from the million and \$55 m 	e transaction of between \$45 hillion annually	Black Thunder (Arch Coal)
the remaining re	present operational cost savings with elated to administrative cost savings nced coal-blending opportunities	
	sition in the PRB is focused on mestic steam coal market	(Decked)
 Growing interest the West Coast 	t in expanding exports off	North Antelope/Rochelle (Peabody)

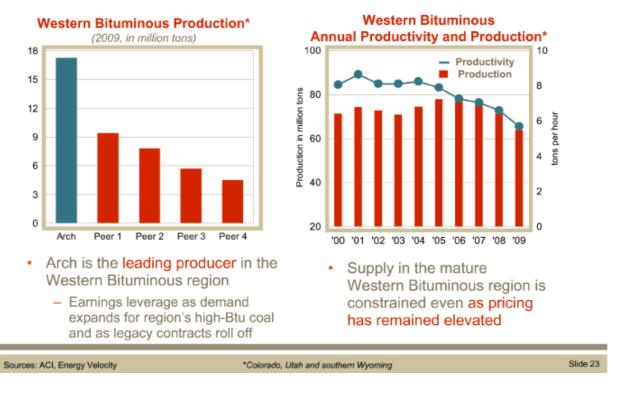
Source: ACI

*Reserves at 12/31/09

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PROGRESSIVE	RESPONSIBLE	VITAL	GROWING
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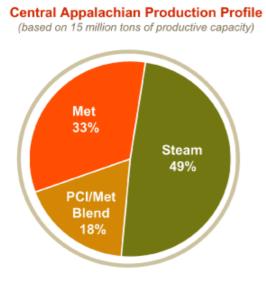
Arch's Western Bituminous assets continue to contribute meaningfully to the company's earnings profile



P	R	0	G	R	F	S	5	т	V.	F	
	15	~	9	1.1		0	~		~	-	

GROWING

Arch is also a leading producer of met and PCI coal – with the potential to boost sales in a robust market



 Arch's low-cost production profile is geared towards serving high margin met market as well as high quality Eastern power and growing seaborne steam market

VITAL

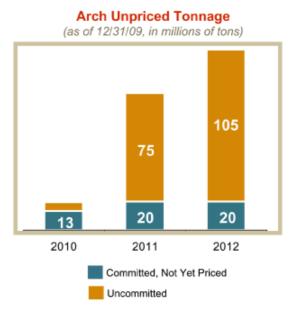
- Arch's capabilities equate to roughly 10 percent of U.S. met coal supply
- In the current met market, Arch's met shipments should increase meaningfully

Source: ACI, EIA and company SEC filings

	PROGRESSIVE	RESPONSIBLE	VITAL	GROWING
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Arch is strongly positioned for the recovering domestic coal market

- Arch employs a pragmatic, market-driven pricing strategy
- We remain committed to maintaining near-term stability in earnings
 - A majority of our remaining volumes for 2010 are committed
- We also strive to preserve our long-term earnings leverage by retaining the flexibility to layer in future volumes at attractive levels



Slide 25

Source: ACI

VITAL

Arch has the capacity to capitalize on strengthening coal market

Arch Potential Upside to Increase in Coal Prices – 2011

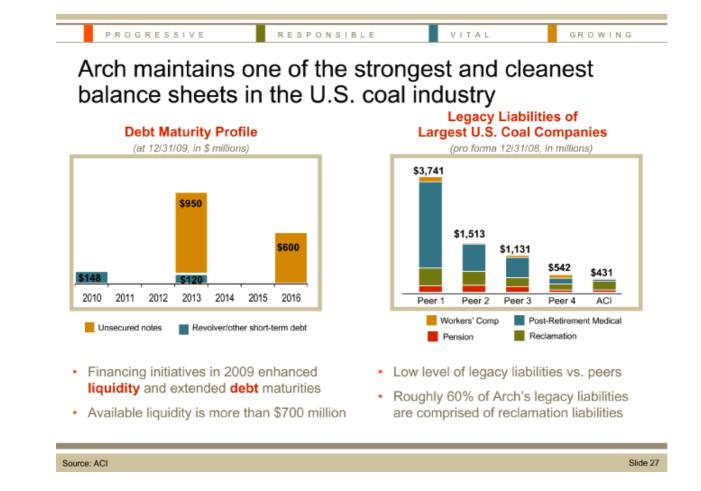
(\$ in millions, except per ton and per share amounts)

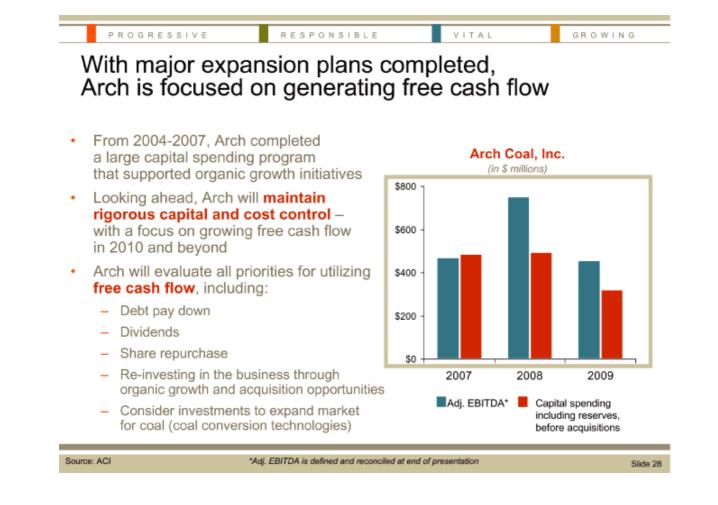
	Illustrative Price Increase			
Steam Coal	\$2	\$5		
Met Coal	\$20	\$40		
2011 Unpriced Tons (in millions)				
Steam Coal (1)	88.0	88.0		
Met Coal (1)	7.0	7.0		
Potential Incremental Revenue	\$316	\$720		
Less: Sales-Sensitive Payments @ 18.5% (2)	(58)	(133)		
Potential Incremental EBITDA	\$258	\$587		
Less: Taxes @ 25% Potential Incremental Net Income	(65) \$193	(147) \$440		
Potential Incremental EPS ⁽³⁾	\$1.18	\$2.70		

Steam coal based on midpoint of open tonnage guidance of 95 million tons less met coal capabilities of roughly 7 million tons Sales-sensitive costs consist of royalties, black lung tax and severance tax Based on diluted weighted average shares outstanding of 163 million in 2009 (1)

(2) (3)

Source: ACI





EBITDA Reconciliation Chart

Included in the accompanying presentation, we have presented certain non-GAAP measures as defined by Regulation G. The following reconciles these items to net income as reported under GAAP.

Adjusted EBITDA

Adjusted EBITDA is defined as net income attributable to the Company before the effect of net interest expense, income taxes, depreciation, depletion and amortization and the amortization of acquired sales contracts, net, and other non-operating expense. Adjusted EBITDA may also be adjusted for items that may not reflect the trend of future results.

Adjusted EBITDA is not a measure of financial performance in accordance with generally accepted accounting principles, and items excluded to calculate Adjusted EBITDA are significant in understanding and assessing our financial condition. Therefore, Adjusted EBITDA should not be considered in isolation nor as an alternative to net income, income from operations, cash flows from operations or as a measure of our profitability, liquidity or performance under generally accepted accounting principles. We believe that Adjusted EBITDA presents a useful measure of our ability to service and incur debt based on ongoing operations. Furthermore, analogous measures are used by industry analysts to evaluate operating performance. In addition, acquisition-related expenses are excluded to make results more comparable between periods. Investors should be aware that our presentation of Adjusted EBITDA may not be comparable to similarly titled measures used by other companies. The table below shows how we calculate Adjusted EBITDA.

	Year Ended December 31,					
	2009		2008			2007
			(U	Inaudited)		
Net income	s	42,179	s	355,211	\$	175,943
Income tax expense (benefit)		(16,775)		41,774		(19,850)
Interest expense, net		98,310		64,285		72,265
Depreciation, depletion and amortization		301,608		293,553		243,695
Amortization of acquired sales contracts, net		19,623		(705)		(1,633)
Costs related to acquisition of Jacobs Ranch		13,726		-		-
Other non-operating expense						2,273
Net income attributable to noncontrolling interest		(10)		(881)		(1,014)
Adjusted EBITDA	S	458,661	S	753,237	\$	471,679

Source: ACI