Investor Presentation

November 2010

Cloud Peak Energy Inc. Financial Data

Cloud Peak Energy Inc. is the sole managing member and majority owner of Cloud Peak Energy Resources LLC. Unless expressly stated otherwise in this presentation, all financial data included herein is consolidated financial data of Cloud Peak Energy Inc.

Cautionary Note Regarding Forward-Looking Statements

This presentation contains “forward-looking statements” within the meaning of the safe harbor provisions of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements are not statements of historical facts, and often contain words such as “may,” “will,” “expect,” “believe,” “anticipate,” “plan,” “estimate,” “seek,” “could,” “should,” “intend,” “potential,” or words of similar meaning. Forward-looking statements are based on management’s current expectations or beliefs, as well as assumptions and estimates regarding our company, industry, economic conditions, government regulations and other factors. These statements are subject to significant risks, uncertainties and assumptions that are difficult to predict and could cause actual results to differ materially from those expressed or implied in the forward-looking statements. For a description of some of the risks and uncertainties that may adversely affect our future results, refer to the risk factors described from time to time in the reports and registration statements we file with the Securities and Exchange Commission, including those in Item 1A "Risk Factors" of our most recent Form 10-K and any updates thereto in our Forms 10-Q and current reports on Forms 8-K. There may be other risks and uncertainties that are not currently known to us or that we currently believe are not material. We make forward-looking statements based on currently available information, and we assume no obligation to, and expressly disclaim any obligation to, update or revise publicly any forward-looking statements made in our presentation, whether as a result of new information, future events or otherwise, except as required by law.

Non-GAAP Financial Measures

This presentation includes the non-GAAP financial measures of (1) Adjusted EBITDA and (2) Adjusted Earnings Per Share (“Adjusted EPS”). Adjusted EBITDA and Adjusted EPS are intended to provide additional information only and do not have any standard meaning prescribed by generally accepted accounting principles in the U.S., or GAAP. A quantitative reconciliation of Adjusted EBITDA to income from continuing operations and Adjusted EPS to EPS (as defined below) is found in the tables accompanying this presentation. EBITDA represents income from continuing operations before (1) interest income (expense) net, (2) income tax provision, (3) depreciation and depletion, (4) amortization, and (5) accretion. Adjusted EBITDA represents EBITDA as further adjusted to exclude specifically identified items that management believes do not directly reflect our core operations. For the periods presented in this presentation, the specifically identified items are the income statement impacts of: (1) the tax agreement and (2) our significant broker contract that expired in the first quarter of 2010. Adjusted EPS represents diluted earnings (loss) per share from continuing operations attributable to controlling interest (“EPS”), adjusted to exclude the estimated per share impact of the same specifically identified items used to calculate Adjusted EBITDA and described above.

Adjusted EBITDA is an additional tool intended to assist our management in comparing our performance on a consistent basis for purposes of business decision-making by removing the impact of certain items that management believes do not directly reflect our core operations. Adjusted EBITDA is a metric intended to assist management in evaluating operating performance, comparing performance across periods, planning and forecasting future business operations and helping determine levels of operating and capital investments. Period-to-period comparisons of Adjusted EBITDA are intended to help our management identify and assess additional trends potentially impacting our company that may not be shown solely by period-to-period comparisons of income from continuing operations. Adjusted EBITDA may also be used as part of our incentive compensation program for our executive officers and others.

We believe Adjusted EBITDA and Adjusted EPS are also useful to investors, analysts and other external users of our consolidated financial statements in evaluating our operating performance from period to period and comparing our performance to similar operating results of other relevant companies. Adjusted EBITDA allows investors to measure a company's operating performance without regard to items such as interest expense, taxes, depreciation and depletion, amortization and accretion and other specifically identified items that are not considered to directly reflect our core operations. Similarly, we believe Adjusted EPS provides an appropriate measure to use in assessing our performance across periods given that this measure provides an adjustment for certain specifically identified significant items that are not considered to directly reflect our core operations, the magnitude of which may vary drastically from period to period and, thereby, have a disproportionate effect on the earnings per share reported for a given period.

Our management recognizes that using Adjusted EBITDA and Adjusted EPS as performance measures has inherent limitations as compared to income from continuing operations, EPS or other GAAP financial measures, as these non-GAAP measures exclude certain items, including items that are recurring in nature, which may be meaningful to investors. Adjusted EBITDA and Adjusted EPS should not be considered in isolation and do not purport to be alternatives to income from continuing operations, EPS or other GAAP financial measures as a measure of our operating performance. Because not all companies use identical calculations, our presentations of Adjusted EBITDA and Adjusted EPS may not be comparable to other similarly titled measures of other companies. Moreover, our presentation of Adjusted EBITDA is different than EBITDA as defined in our debt financing agreements.

Overview

CLOUD PEAK ENERGY™

- Cloud Peak Energy Inc. – IPO November 2009
- Traded on NYSE – ticker symbol "CLD"
- Headquartered in Gillette, WY
- Third-largest U.S. coal producer
- Only pure-play, Powder River Basin (PRB) coal company
- Three surface mines producing low-sulfur, high-quality, subbituminous coal

Cloud Peak Energy Highlights

Pure-play Powder River Basin	**Third-largest U.S. coal producer, operating three large surface mines in the U.S. coal basin with the greatest growth potential**
Market outlook	**Improving external environment, positive PRB demand dynamics**
Growth opportunity	**Positive long-term PRB pricing opportunities, lease acquisition opportunities, developing export market**
Sound financial position	**Strong cash generation, stable balance sheet, liquidity for growth**

Key Investment Highlights

Pure-play Powder River Basin

Market outlook

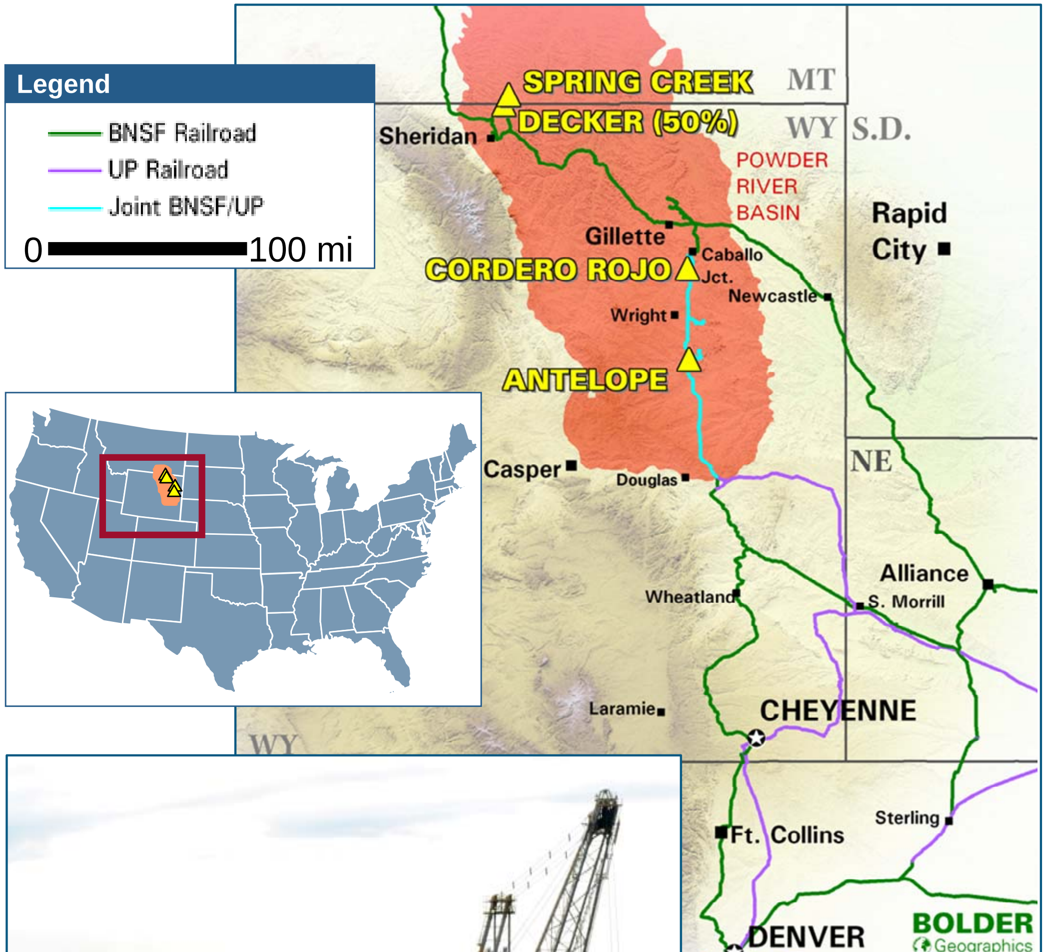
Growth opportunity

Sound financial position

- Third largest U.S. coal producer
- Three large surface mines
- Operating in the U.S. coal basin with the greatest growth potential

Diversified PRB Operations

CLOUD PEAK ENERGY™



Spring Creek Mine	
2009 Production	17.6M tons
2009 Proven & Probable Reserves	300M tons
Reserve Coal Quality	9,350 BTU/lb

Cordero Rojo Mine	
2009 Production	39.3M tons
2009 Proven & Probable Reserves	410M tons
Reserve Coal Quality	8,400 BTU/lb

Antelope Mine	
2009 Production	34.0M tons
2009 Proven & Probable Reserves	292M tons
Reserve Coal Quality	8,850 BTU/lb

Decker Mine (50% non-operating interest)	
2009 Production	2.3M tons
2009 Proven & Probable Reserves	1.0M tons
Reserve Coal Quality	9,400 BTU/lb

Low-Risk Surface Operations

- Highly productive, non-unionized workforce at all company-operated mines
- Proportionately low, long-term operational liabilities
- Surface mining reduces liabilities and allows for high-quality reclamation
- No Surface Mining Control & Reclamation Act environmental violations since October 2002

Reliable and Productive Operations

Predictive Analysis

- Procedures and incentives protect equipment
- Advanced testing supports comparison vs. baseline (vibration, fluid analysis, ultrasound, infrared, etc.)
- Track component life and degradation to avoid unplanned failures

Preventative Maintenance

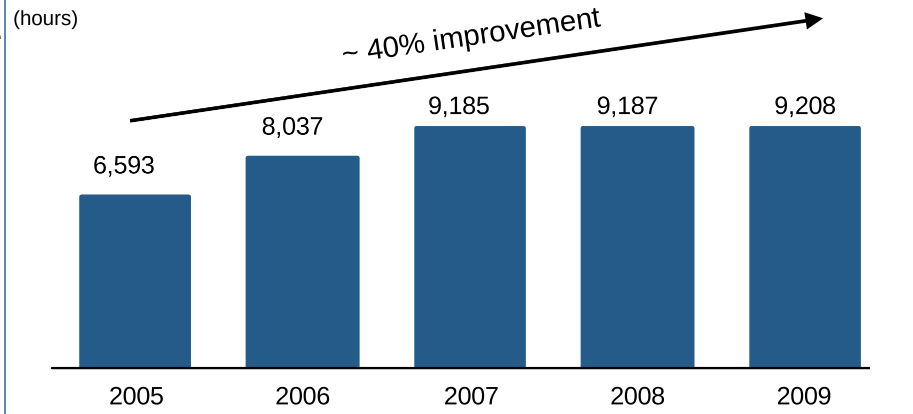
- Continuous improvement
- Strain gauge monitoring
- O4R scorecards (operator and mechanical feedback)
- Preventive Maintenance (change fluids, inspect thoroughly, etc.)

Improve utilization

- Understanding equipment allows for better utilization
- Example, payload measurement supports better loading procedures leading to tighter distribution and increased payloads on haul trucks
- Centralized GPS dispatch optimizes truck & shovel productivity

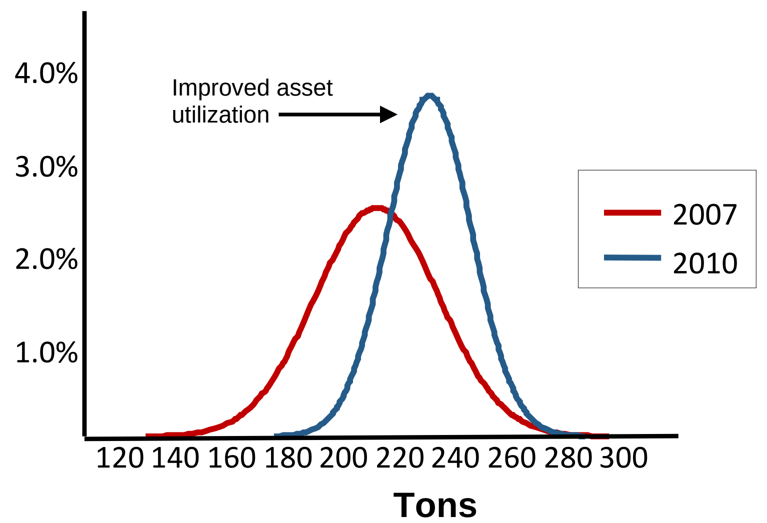
Result: Reliable and Highly Productive Operations

Tire life



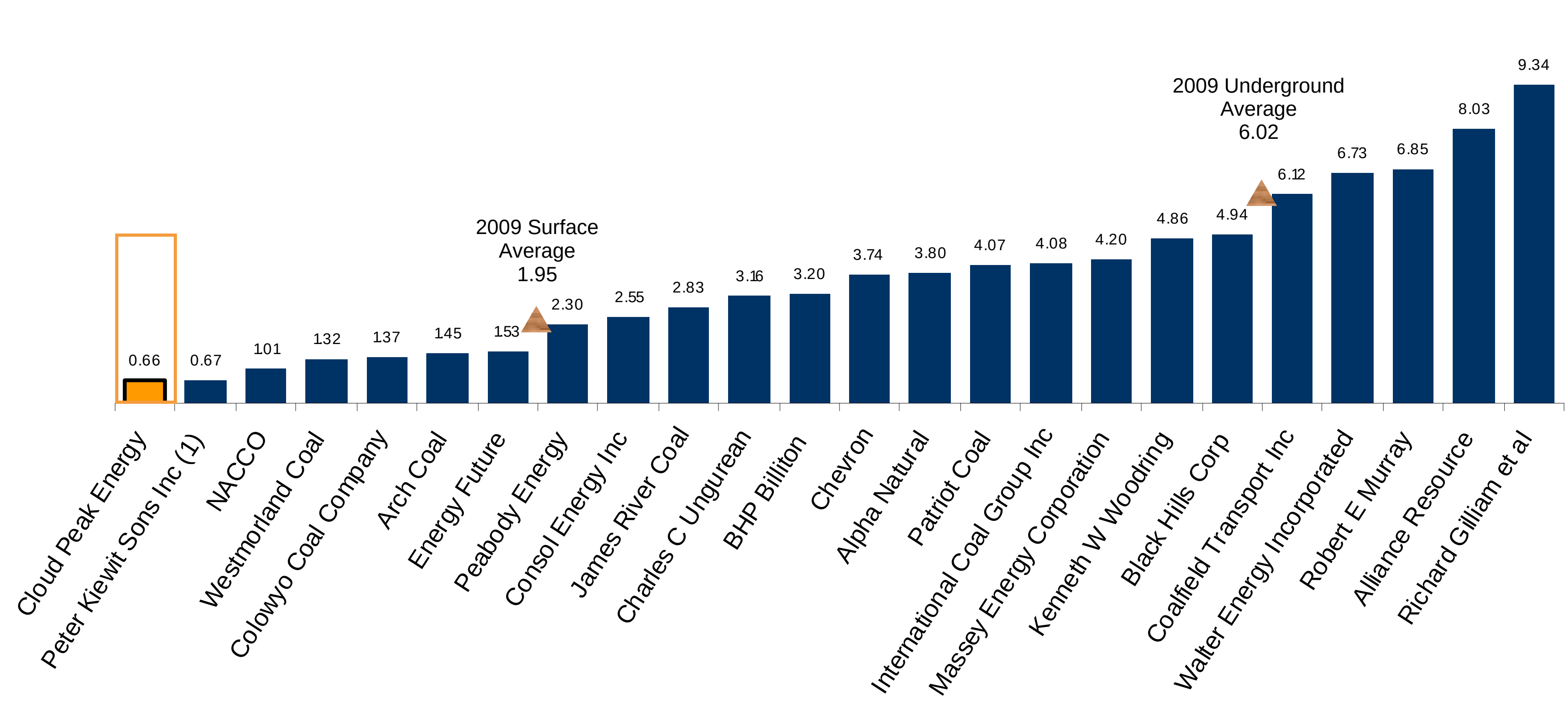
Note: Average tire cost = $29,000.

Coal load per haul truck



Good Safety Record Indicates Well Run Operations

Top 25 Coal Producing Companies - 2009 Preliminary Incident Rates (MSHA)



Source: MSHA.
Note: Total Incident Rate = (total number of employee incidents x 200,000) / total man-hours.
(1) Cloud Peak Energy has combined Kiewit and Level III Communications data as reported by MSHA.

A portion of employees' bonuses are tied to safety

Key Investment Highlights

Pure-play Powder River Basin

Market outlook

- Improving external environment
- Positive PRB demand dynamics

Growth opportunity

Sound financial position

External Environment Improving

Stockpiles Back in Balance – Year Over Year September 2010 (EVA estimates)

- U.S. stockpiles down 43 million tons to 143 million tons
- PRB stockpiles down 20 million tons to 71 million tons

Electricity Demand Recovering

- EEI estimated U.S. electric generation increased by 4.1% through mid-October 2010 compared to the same period in 2009
- EIA is forecasting total 2010 generation will increase by 4.4% compared to 2009

Coal Production

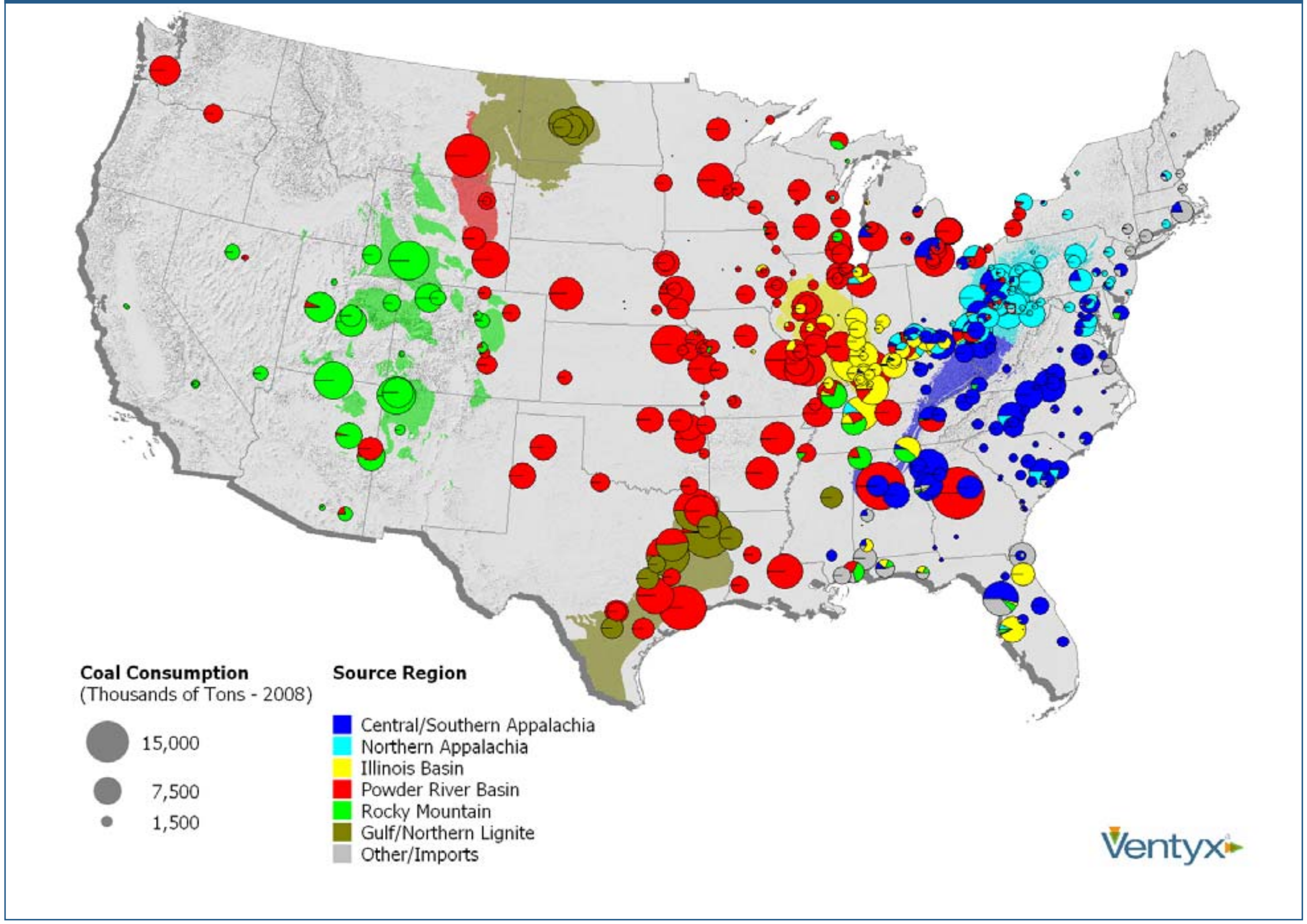
- EIA estimates total U.S. coal production down approximately 0.8% year-to-date through August compared to same period in 2009
  - Appalachian coal production down 2.4%
  - PRB rail shipments up 3.0% through September 2010

Sources:
EVA – Energy Venture Analysis, Inc.
EEI – Edison Electric Institute
EIA – Energy Information Administration

Reach of PRB Coal is Growing

- Low-cost coal supply
- Surface mining
- More supportive local environment for coal mining
- Low sulfur content
- Ample rail capacity

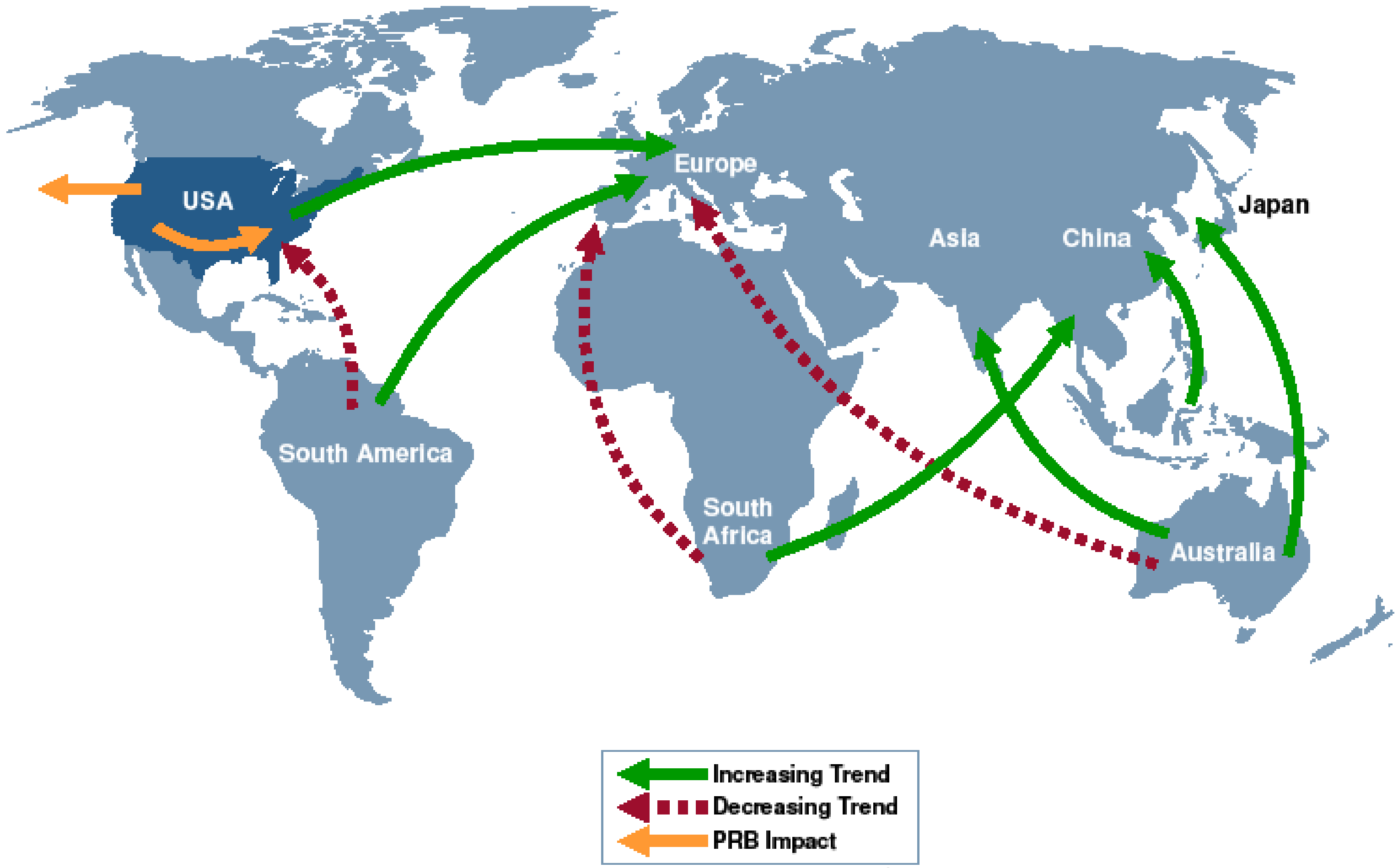
Consumption of PRB Coal



Source: Ventyx, Velocity Suite

Increasing Long-Term International Demand Supports Powder River Basin Pricing

- **U.S. exports through August 2010 up nearly 50% (36M tons 2009 to 53M tons 2010)**
- **PIRA & DTC estimates total 2010 exports between 75 and 80M tons – a 30% increase over 2009**



Source: Cloud Peak Energy Management.

Sources:
PIRA – PIRA Energy Group
DTC – Doyle Trading Consultants

Key Investment Highlights

Cloud Peak Energy™

Pure-play Powder River Basin

Market outlook

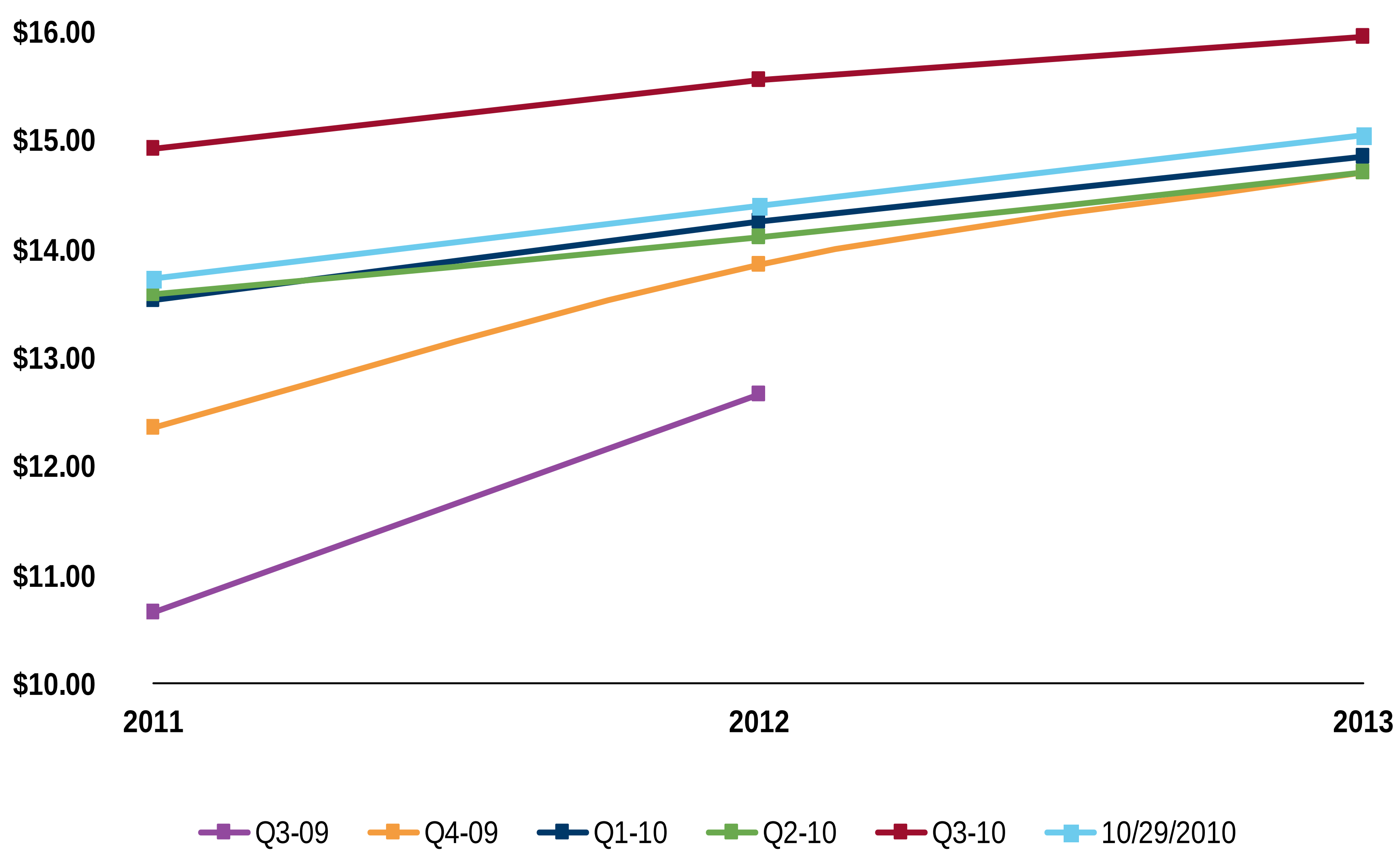
Growth opportunities

- Positive long-term PRB pricing opportunities
- Lease acquisition opportunities
- Developing export market

Sound financial position

Powder River Basin Forward Coal Prices

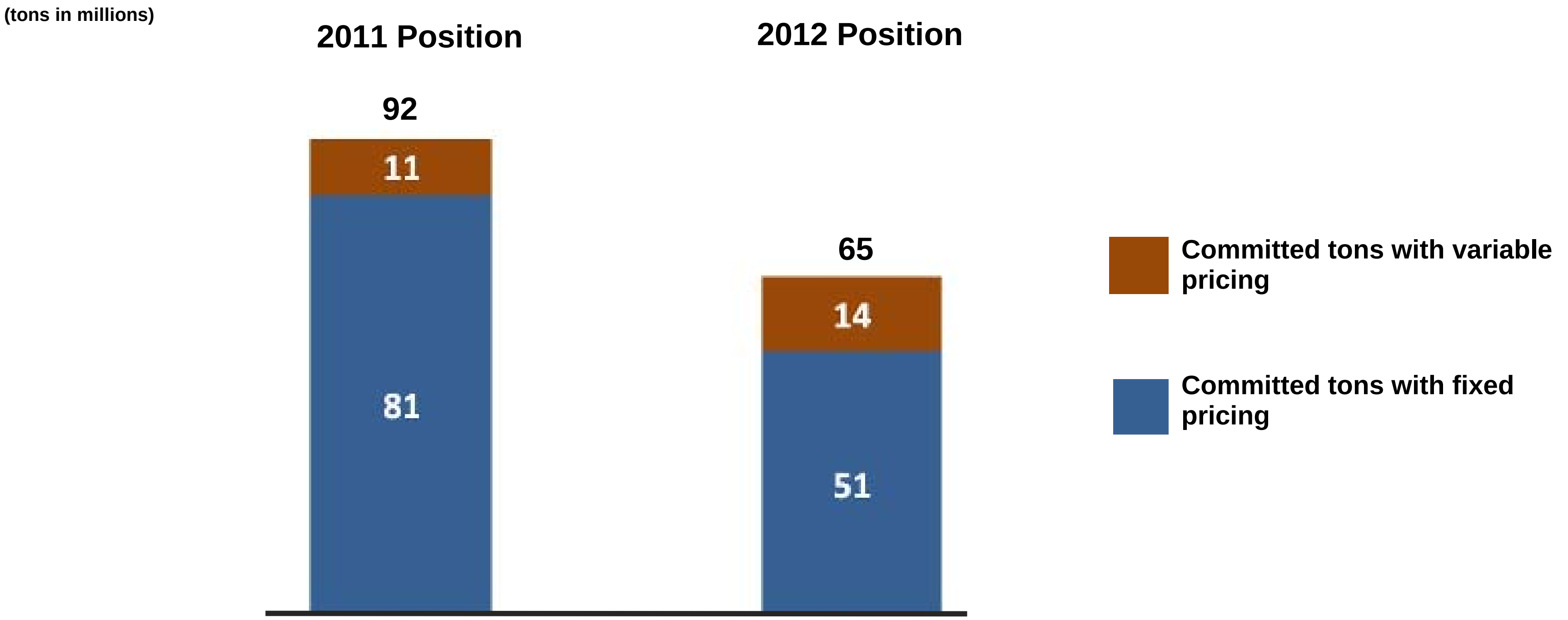
U.S. PRB 8800 Coal Price



Source: ICAP plc

Strong Contracted Position with Upside Potential

Contracted Coal - Total Committed Tons (as of 10/22/10)[1]



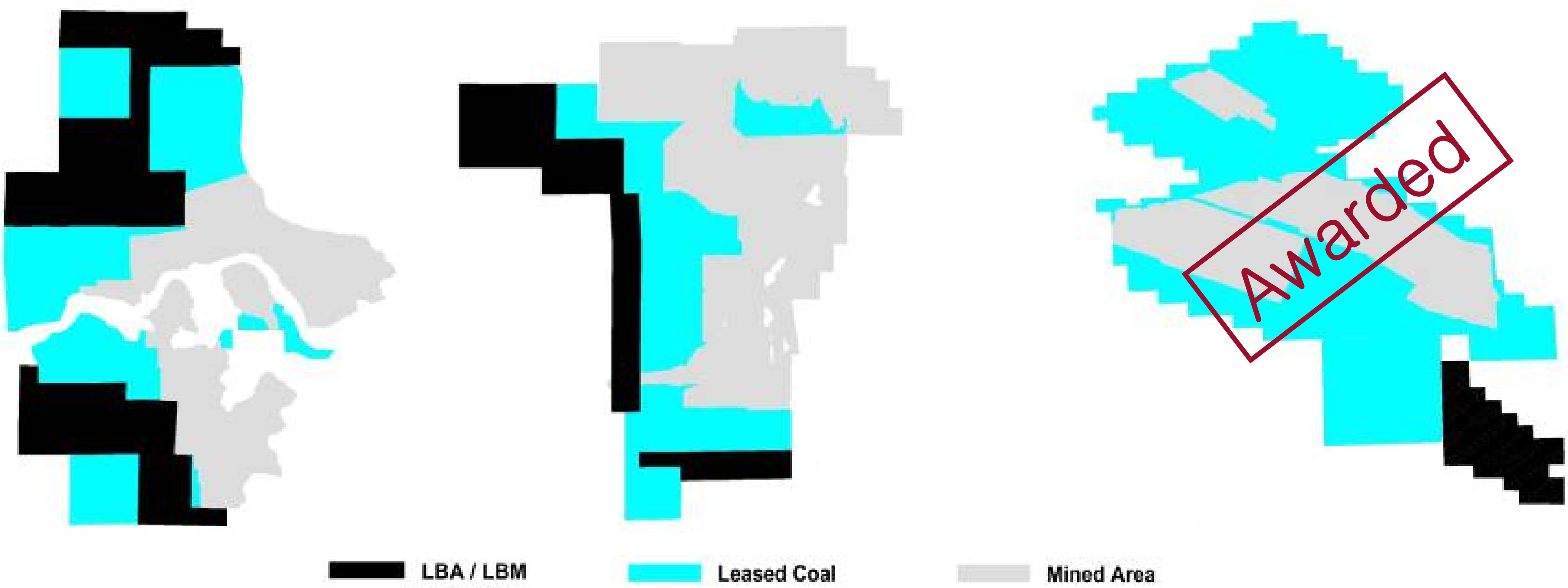
2011 average realized price per ton is forecast to be approximately $13.04

(assuming $14.20/ton 8800 Btu and $11.60/ton 8400 Btu for un-priced sales)

[1] Excludes contracted coal sales from Decker.

Cloud Peak Energy
Lease Acquisition Strategy

Antelope Mine | **Cordero Rojo Mine** | **Spring Creek Mine**



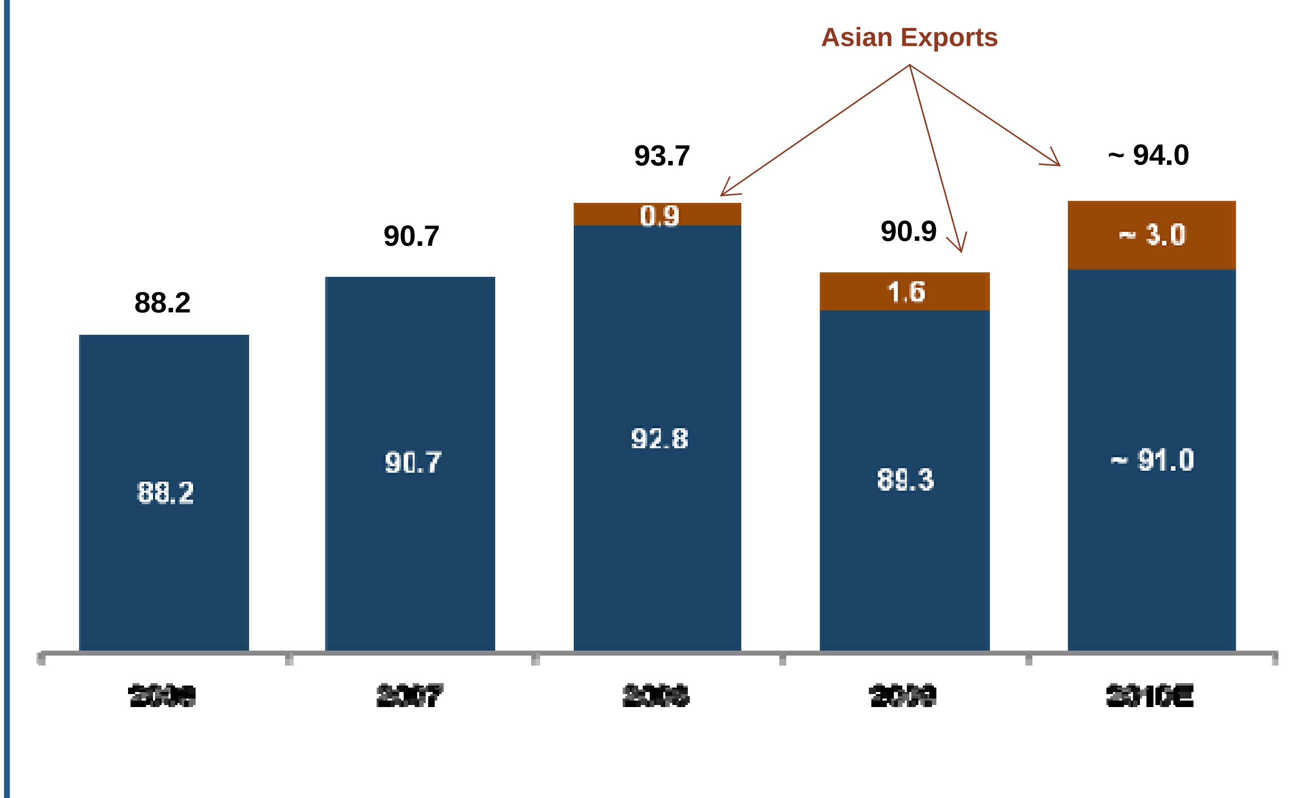
Mine	LBA/BLM	Expected Bid Date	Tonnage Estimates
Antelope	West Antelope II[1] (BLM Alternative 2)	2011	377M[2] Recoverable tons
Cordero Rojo	Maysdorf II (Tract as applied for)	2011 – 2013	434M[3] Recoverable tons
Spring Creek	Modification Approved	2010	51M[4] In place tons

Source: Cloud Peak Energy management.
Note: Acquired tonnage is not classified as reserve until verified with sufficient technical and economic analysis. Maps not to scale.

1 Subject to pending legal challenges filed in 2010 against the BLM and the Secretary of the Interior by certain environmental groups.
2 Based on BLM Record of Decision. BLM estimate adjusted for mining recovery. Allows access to additional 80 million tons of non-reserve coal deposits controlled by Antelope.
3 Estimated tonnage for Maysdorf II as applied for. Final tract delineation and tonnage subject to possible significant reduction pending BLM review and determination of surface owner status.
4 Based on BLM Decision Record. CPE is currently evaluating tonnage that it believes can be economically mined from this tract.

Disciplined Production Growth

Production at Company Operated Mines (in million tons)



- Manage production to meet demand
- Exports to Asia growing as a percent of total production

Key Investment Highlights

Pure-play Powder River Basin

Market Outlook

Growth opportunity

Sound financial position

- Strong cash generation
- Stable balance sheet
- Liquidity for growth

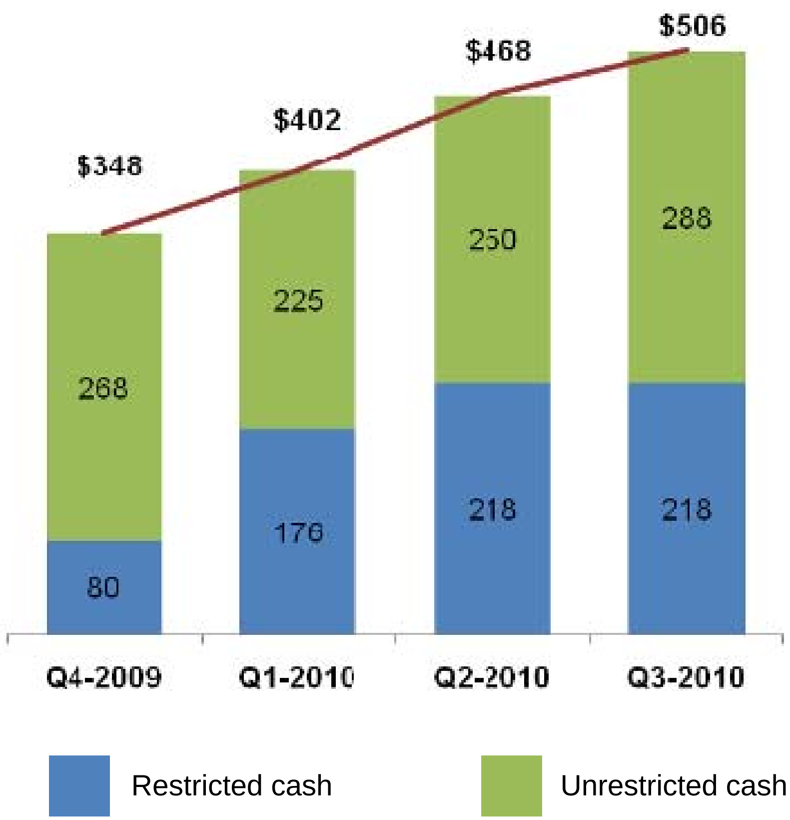
First Nine Months 2010 Highlights

- Increased domestic and export demand
- Operations able to respond at low incremental cost
- Appropriate investment in business improvements
- Investing in coal additions
- Reliable cash generation
- Favorable margins

Liquidity for Growth

Positive Cash Generation
Cash, Cash Equivalents and Restricted Cash

($ in millions)



Liquidity and Obligations
(as of September 30, 2010)

($ in millions)

Unrestricted Cash	$ 288
Revolver, net of Letters of Credit	$ 390
Total Available Liquidity	**$ 678**
Restricted Cash	$ 218
$400M Revolver (Baa3- Rating)	$ 0
8¼% Senior Notes due 2017 (B1 / BB- rating)	$ 300
8½% Senior Notes due 2019 (B1 / BB- rating)	$ 300
Total Senior Debt	**$ 600**

Looking forward to 2011 and beyond

- Largely sold for 2011 production at favorable prices
- Indexed/unpriced sales provide opportunity for future pricing upside
- Continued strong contribution from export sales
- Strong balance sheet provides financial flexibility
- Significant cash generation
- Disciplined capital deployment
- Proportionally low, long-term operational liabilities

Cloud Peak Energy Highlights

Pure-play Powder River Basin	**Third-largest U.S. coal producer, operating three large surface mines in the U.S. coal basin with the greatest growth potential**
Market outlook	**Improving external environment, positive PRB demand dynamics**
Growth opportunity	**Positive long-term PRB pricing opportunities, lease acquisition opportunities, developing export market**
Sound financial position	**Strong cash generation, stable balance sheet, liquidity for growth**

Appendices
(Cloud Peak Energy Inc.)

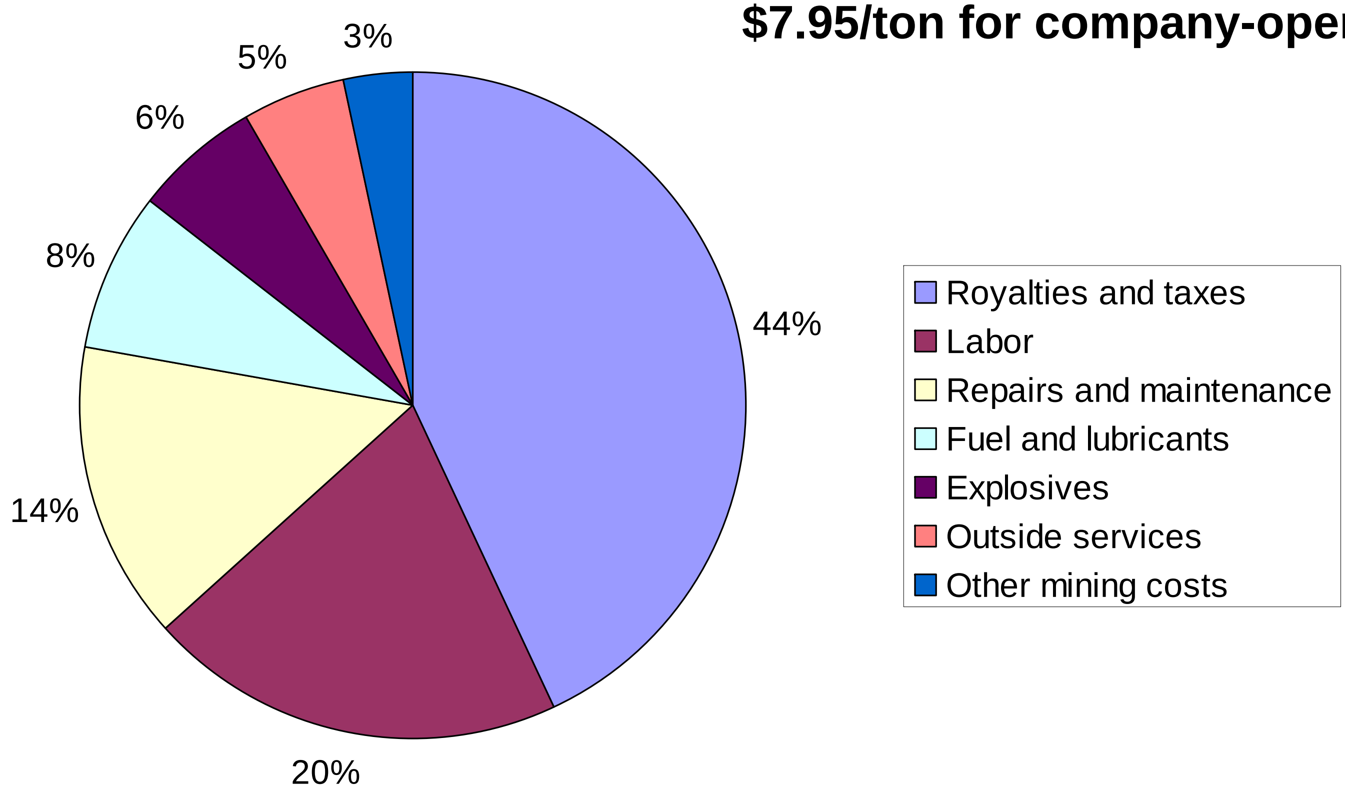
Updated Guidance –
2010 Estimates and 2009 Actuals

	2010 (estimated)	2009 (actual)
Coal production from Cloud Peak Energy's three operated mines (million tons)	Approx. 94	91
Committed sales of estimated 2010 production with fixed prices	100%	
Anticipated realized price of produced coal (per ton)	Approx. $12.33	$11.85
Average cost of produced coal (per ton)[1]	$8.40 - $8.45	$7.95
Additional operating income ($ million)[2]	$25 – $35	
Selling, general & administrative expenses ($ million)	Approx. $65	$70
Interest expense ($ million)	Approx. $50	n/m
Depreciation, depletion, amortization and accretion ($ million)	$115 – $120	$139
Effective income tax rate[3]	22% - 26%	n/m
Capital expenditures – excludes federal coal leases ($ million)[4]	$60 - $90	$95
Committed federal coal lease cash payments ($ million)	$64	$93

1 Represents average Cost of Product Sold for produced coal for our three operated mines.
2 Does not include $8.3 million contribution for first quarter 2010 from one significant broker sales contract which is now completed.
3 The company's effective income tax rate is expected to be lower than the federal statutory rate of 35 percent primarily because Cloud Peak Energy Inc., the publicly traded parent company, provides for tax only on its controlling 51.7 percent share of income from Cloud Peak Energy Resources LLC.
4 Before capitalized interest.

2009 Average Cost of Produced Coal[1]

$7.95/ton for company-operated mines



1 Represents average Cost of Product Sold for produced coal for our three company-operated mines.

Statement of Operations Data

(in thousands, except per share amounts)

	Nine Months Ended September 30, 2010	Nine Months Ended September 30, 2009
Revenues	$ 1,024,960	$ 1,061,286
Operating income	170,482	260,931
Income from continuing operations	87,448	147,268
Income from discontinued operations	—	42,790
Income attributable to controlling interest	20,856	190,058
Earnings per share – basic and diluted		
Income from continuing operations	$ 0.68	$ 2.45
Income from discontinued operations	—	0.72
Net income	$ 0.68	$ 3.17

Reconciliation of Non-GAAP Measures – Adjusted EBITDA

(in thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2010	2009	2010	2009
Net income from continuing operations	$ 19,516	$ 52,490	$ 87,448	$ 147,268
Interest income	(184)	(86)	(411)	(228)
Interest expense	11,404	61	36,186	1,007
Income tax provision	14,712	21,256	30,212	59,888
Depreciation and depletion	25,997	24,047	75,212	68,383
Amortization[1]	—	8,519	3,197	24,770
Accretion	3,337	2,945	9,903	8,402
EBITDA	$ 74,782	$ 109,232	$ 241,747	$ 309,490
Tax agreement expense	19,669	—	19,669	—
Expired significant broker contract[1]	—	(18,931)	(8,324)	(55,285)
Adjusted EBITDA	$ 94,451	$ 90,301	$ 253,092	$ 254,205

[1] The impact of the expired significant broker contract on the Statement of Operations is a combination of net income and the amortization expense related to the contract. All amortization expense for the periods presented was attributable to the significant broker contract.

Reconciliation of Non-GAAP Measures – Adjusted EPS

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2010	2009	2010	2009
Diluted earnings (loss) per common share attributable to controlling interest from continuing operations	$ (0.22)	$ 0.87	$ 0.68	$ 2.45
Expired significant broker contract	—	(0.17)	(0.17)	(0.51)
Tax agreement expense	0.64	—	0.64	—
Change in net value of deferred tax assets[1]	0.18	—	0.18	—
Adjusted EPS	$ 0.60	$ 0.70	$ 1.33	$ 1.94
Weighted-average shares outstanding	30,600,000	60,000,000	30,600,000	60,000,000

1 Related adjustments to our deferred tax assets, net of valuation allowance, as a result of the increase in tax agreement liability are recorded through income tax expense.

Other Data

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2010	2009	2010	2009
Tons Produced[1] (in millions)	**25.1**	**24.1**	**70.4**	**68.0**
Total tons Sold (in millions)	**26.1**	**27.4**	**72.8**	**77.7**
Average revenue per ton[1]	**$12.36**	**$11.92**	**$12.31**	**$11.96**
Average cost of product sold per ton[1]	**$8.36**	**$7.69**	**$8.41**	**$7.94**

[1] Represents only the three company-operated mines

Balance Sheet Data

(in millions)

	September 30,	December 31,				
	2010	2009	2008	2007	2006	2005
Cash and cash equivalents	$ 287.7	$ 268.3	$ 15.9	$ 23.6	$ 19.6	$ 11.4
Restricted cash	218.4	80.2	—	—	—	—
Property, plant and equipment, net	965.1	987.1	927.9	719.7	703.7	616.4
Total assets	1,793.1	1,677.6	1,785.2	1,781.2	1,723.3	1,694.2
Senior notes, net of unamortized discount	595.6	595.3	—	—	—	—
Federal coal lease obligations	121.8	169.1	206.3	67.7	79.0	102.7
Asset retirement obligations, net of current portion	181.4	175.9	164.2	159.1	161.0	141.6
Total liabilities	1,252.8	1,232.1	800.0	1,446.2	1,433.5	1,411.9
Controlling interest equity	282.0	252.3	985.2	335.0	289.9	282.3
Noncontrolling interest equity	258.3	192.6	—	—	—	—

Statement of Operations Data

(in thousands, except per share amounts)

	Year Ended December 31,				
	2009	2008	2007	2006	2005
Revenues	$1,398,200	$1,239,711	$1,053,168	$ 942,841	$ 783,929
Operating income	255,003	124,936	102,731	88,868	77,294
Income from continuing operations	182,472	88,340	53,789	40,537	39,995
Income (loss) from discontinued operations	211,078	(25,215)	(21,482)	(2,599)	336
Net income	393,550	63,125	32,307	37,938	40,331
Amounts attributable to controlling interest:					
Income from continuing operations	170,623	88,340	53,789	40,537	39,995
Income (loss) from discontinued operations	211,078	(25,215)	(21,482)	(2,599)	336
Net income	381,701	63,125	32,307	37,938	40,331
Earnings per share – basic					
Income from continuing operations	$ 3.01	$ 1.47	$ 0.90	$ 0.68	$ 0.67
Income (loss) from discontinued operations	$ 3.73	$ (0.42)	$ (0.36)	$ (0.05)	$ —
Net income	$ 6.74	$ 1.05	$ 0.54	$ 0.63	$ 0.67
Earnings per share attributed to controlling interest – diluted					
Income from continuing operations	$ 2.97	$ 1.47	$ 0.90	$ 0.68	$ 0.67
Income (loss) from discontinued operations	$ 3.52	$ (0.42)	$ (0.36)	$ (0.05)	$ —
Net income	$ 6.49	$ 1.05	$ 0.54	$ 0.63	$ 0.67

Other Data

(in millions)

	Year Ended December 31,				
	2009	2008	2007	2006	2005
Tons sold – company owned and operated mines	90.9	93.7	90.7	88.2	80.8
Total tons sold – Decker mine (50% share)	2.3	3.3	3.5	3.6	3.5
Tons sold from production	93.2	97.0	94.2	91.8	84.3
Tons purchased and resold	10.1	8.1	8.1	8.1	6.7
Total tons sold	103.3	105.1	102.3	99.9	91.0

Tax Receivable Agreement ("TRA")

The TRA was created at the time of the IPO to share tax benefit of step up in asset basis as a result of the IPO

Cloud Peak Energy

Life of Mine Model	2011	2012	2013	2014……	2037	2038	2039
Revenue	$ xxx.x						
Costs	(xxx.x)						
Capex	(xxx.x)						
Cash Flow	(xxx.x)						

Tax Calculations	with step-up	without step-up
Income	$ xxx.x	$ xxx.x
Tax Depreciation	(yyy.y)	(zzz.z)
Taxable Income	aaa.a	bbb.b
Tax Rate	x.x%	x.x%
Cash Tax Payable	$ yyy.y	$ zzz.z

Difference:
85% to Rio Tinto
15% to Cloud Peak Energy Inc.

Cloud Peak Energy Inc.
Balance Sheet *($s in millions)*

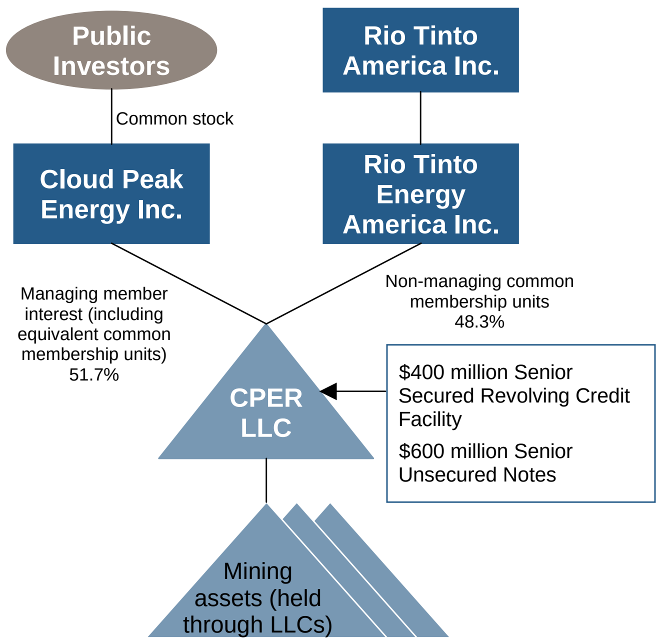
	30-Sep-10
TRA Liability	$ 68.2

*Difference between "**with**" and "**without**" tax benefit estimate accrues to the parties with 85% going to Rio Tinto. This estimate is booked on the Cloud Peak Energy balance sheet as a liability.*

Successful Transition From Rio Tinto

IPO Structure [1]

- Corporate structure after the IPO resulted in common ownership of assets held by Cloud Peak Energy Resources LLC:



- Rio Tinto provided transition services including IT systems and continued use of its balance sheet to support Cloud Peak Energy's surety bonds
- IT transition is complete
- All surety bonds were successfully transferred and Cloud Peak Energy established collateral accounts
- Cloud Peak Energy established its own insurance coverage for common lines including D&O, property, workers' comp, liability, etc.
- No material impact seen in vendor re-negotiations or other key outside services

[1] Simplified diagram for illustrative purposes. Includes 50% interest in Decker mine.