



[www.mma1.com](http://www.mma1.com)

*Energy/Environmental/Engineering*



## The Rapidly Changing Economics of the Coal Mining Industry

Presented at the CAS/SME 2007 Annual Spring Meeting

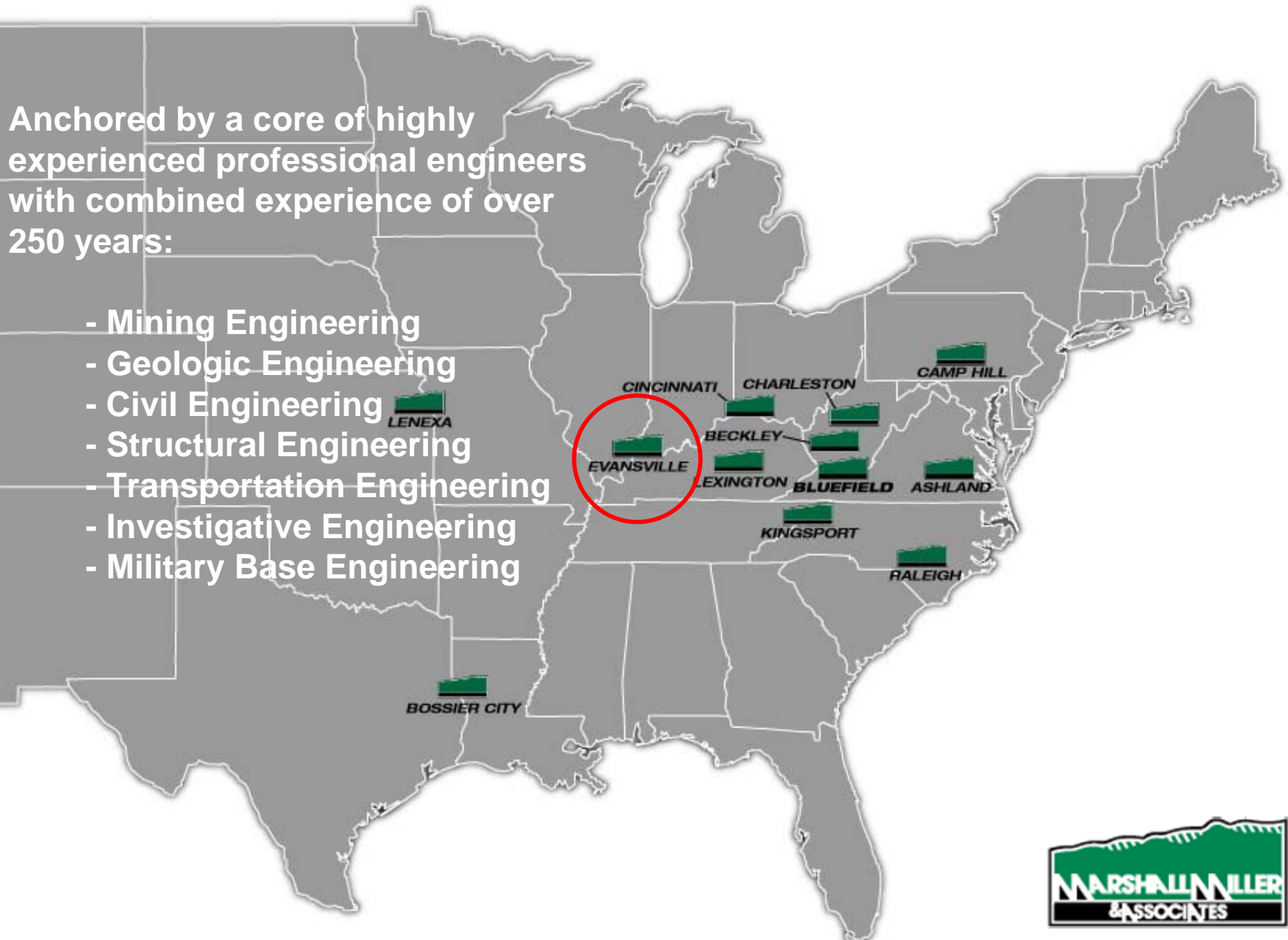
April 14, 2007

Lexington, Kentucky

# EXPERIENCE MATTERS...Growing To Meet Your Needs

Anchored by a core of highly experienced professional engineers with combined experience of over 250 years:

- Mining Engineering
- Geologic Engineering
- Civil Engineering
- Structural Engineering
- Transportation Engineering
- Investigative Engineering
- Military Base Engineering



“What Goes Up Has To Come  
Down...Unless We’re Talking Cost  
of Production”

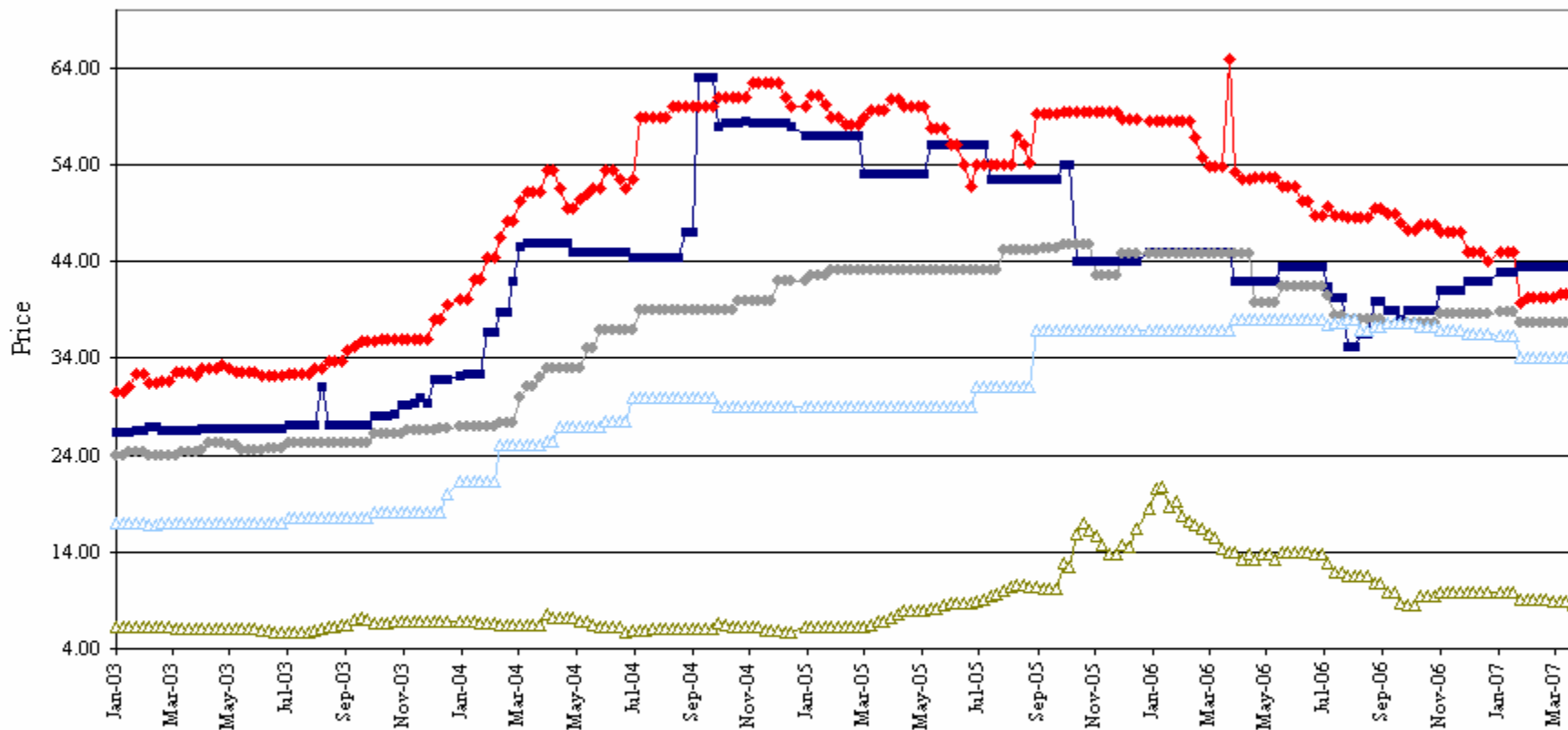


# Dollars and Sense

- It was too good to last....the price of coal, that is
- The fundamentals...long on demand...short on supply
- An economist's dream
- Became Wall Street's dream
- New capital flooded the industry
- Attention turned to *Class 2* and *Class 3* Reserves/Resources

## Overall Pricing: 2003 to Current

Source: Platts Coal Outlook and SNL Energy Coal Report



■ Northern Appalachia-Pittsburgh Seam

◆ Central Appalachia-NYMEX Look-Alike

◆ Illinois Basin 11,500 BTU/lb.

◆ Powder River Basin 8,800 BTU/lb.

◆ Rocky Mountain-Colorado



# Cost Index - Explosives

Item : Explosives

Base Date : 8200

Data:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
1997	148.8	148.3	149	149	149	148.9	149.9	149.8	149.7	149.8	148	149	149.1
1998	149.2	149.5	148.6	148.3	146.4	146.5	146.5	146.6	146.6	146.9	146.8	146.8	147.4
1999	146.7	145	144.7	144.3	144.2	144.1	145.4	145.3	145.3	144.6	144.3	142.8	144.7
2000	144.1	143.6	140.1	133.8	134.2	134.6	134.7	135.1	135.5	135.4	135.6	136.2	136.9
2001	140.9	141.6	142.8	142.9	143.3	143.5	143.5	142.6	142.6	143.7	143.4	143.1	142.8
2002	145.2	146	147.9	146.1	145.9	146.7	147	148.8	148.8	149.5	150.1	151.6	147.8
2003	149.6	149.7	150.5	152.3	155.2	154.9	154.9	161.3	158.8	159.9	161.9	162.7	156
2004	162.2	168.2	168.2	168.2	170.1	173.4	171.7	168.2	168.2	168.2	170.3	170.3	168.9
2005	170.3	172.9	172.9	172.8	170.5	170.6	171.6	171.7	172.8	173.2	174.5	175.7	172.5
2006	176	179.2	180.7	180.2	180.8	180.2	180.6	180	179.9	180.2	180.3	180.5	179.8
2007	181.2	185.1									(P)	(P)	(P)
	(P)	(P)											

P : Preliminary. All indexes are subject to revision four months after original publication.

2002 – 2007: 27% Increase



# Cost Index - #2 Diesel Fuel

Group : Fuels and related products and power  
 Item : #2 diesel fuel

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
1997	73.2	73.1	66.5	66.1	63.6	61	57.7	62.1	61.3	64.7	65.8	58.9	64.5
1998	53.9	51.3	47.6	50	50	45.8	44.7	44.4	48.1	47.3	46.1	39	47.4
1999	40.2	38.1	43.2	53.1	53	53.5	59.8	65.6	68.8	67.5	71.9	72.7	57.3
2000	76.1	86.1	90	84.1	82.8	85.7	89.5	92.1	110.8	110	110.4	101.6	93.3
2001	96.7	92.4	83.5	86.4	93.1	90.2	81.6	82	91.6	75.9	71.3	56.2	83.4
2002	58.9	60.0	69.7	76.9	74.7	73.3	77.6	80.4	92.3	98.7	85.5	86.8	77.9
2003	97.6	123.8	129.4	102.3	87.9	89.8	92.7	96.6	91.1	101.1	95.9	98.1	100.5
2004	109.3	103.7	109.7	119.9	121	114.2	123	135.1	140.9	166.6	159.7	135.3	128.2
2005	141.1	149.5	173.3	175.4	170.8	187.2	189.8	200.6	212.6	264.1	206.2	198.5	189.1
2006	197.1	196.2	206.5	230.4	239.6	246.9	237.5	250.2	201.3	197.5	197.2	203	216.9
2007	180.9	193.5											
	P	P									P	P	P

P : Preliminary. All indexes are subject to revision four months after original publication.

2002 – 2007: 223% Increase

# Cost Index – Iron & Steel

Item : Iron and steel

Base Date : 8200

Data:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
1997	125.5	126.6	126.2	125.8	126	126.1	126.7	126.8	126.8	126.8	127.2	127	126.5
1998	127	126.6	125.7	125.5	125.3	125	124.2	122.6	120.5	117.6	115.6	114.5	122.5
1999	113.9	113.8	112.9	112.8	113.1	113.8	113.4	114	113.9	114.3	115.5	117.1	114
2000	118.3	118.2	118.4	119	118.4	117.6	117.1	116.2	116.1	114.7	112.8	112.4	116.6
2001	112.1	118.6	110.6	110.2	109.9	109.7	110	109.9	109.6	108.6	107.6	107.3	109.7
2002	107.1	107.7	109	110.8	112.9	114.7	115.9	117	118.6	118.9	118.2	117.9	114.1
2003	118.6	120.1	120.7	120.7	119.8	119.2	119.4	120.8	122	123.2	125	128.4	121.5
2004	134	143.6	150.3	154.4	155.3	155.2	166	174.2	174	178.9	182.4	180.6	162.4
2005	181.2	179.8	176.4	176.9	170.7	162	160	161.8	169.2	168	173.9	173.8	171.1
2006	174.7	177.2	178.1	180.7	183.7	189	193.9	192.2	195.3	194.9	189.1(P)	189.3(P)	186.6
2007	191.5(P)	197.1											P

P : Preliminary. All indexes are subject to revision four months after original publication.

2002 – 2007: 83% Increase

# Costs of Production

<u>Index</u>	<b>Av. Annual Historic Percentage Increase</b>			
	<u>One Year</u>	<u>Three Year</u>	<u>Five Year</u>	<u>Ten Year</u>
<b>Employment Cost Index</b>	<b>6.96%</b>	<b>5.20%</b>	<b>4.23%</b>	<b>3.44%</b>
<b>Fixed Capital (Construction)</b>	<b>2.47%</b>	<b>4.97%</b>	<b>3.95%</b>	<b>2.58%</b>
<b>PPI - 0575-03 #2 Diesel Fuel</b>	<b>-1.38%</b>	<b>28.87%</b>	<b>44.50%</b>	<b>16.47%</b>
<b>PPI - 0712-0105 Tires</b>	<b>5.38%</b>	<b>3.24%</b>	<b>4.36%</b>	<b>2.29%</b>
<b>PPI - 101 Iron &amp; Steel</b>	<b>11.23%</b>	<b>12.42%</b>	<b>16.60%</b>	<b>5.57%</b>
<b>CPI - All Urban Consumers</b>	<b>2.42%</b>	<b>3.10%</b>	<b>2.89%</b>	<b>2.75%</b>
<b>PPI - Explosives</b>	<b>3.29%</b>	<b>3.35%</b>	<b>5.36%</b>	<b>2.48%</b>

# Public Companies

Alpha Natural Resources, LLC (ANR)

Alliance Resource Partners, LP (ARLP)

Arch Coal (ACI)

CONSOL Energy Inc. (CNX)

Foundation Coal Holdings, Inc. (FCL)

James River Coal Company (JRCC)

International Coal Group (ICO)

Massey Energy Company (MEE)

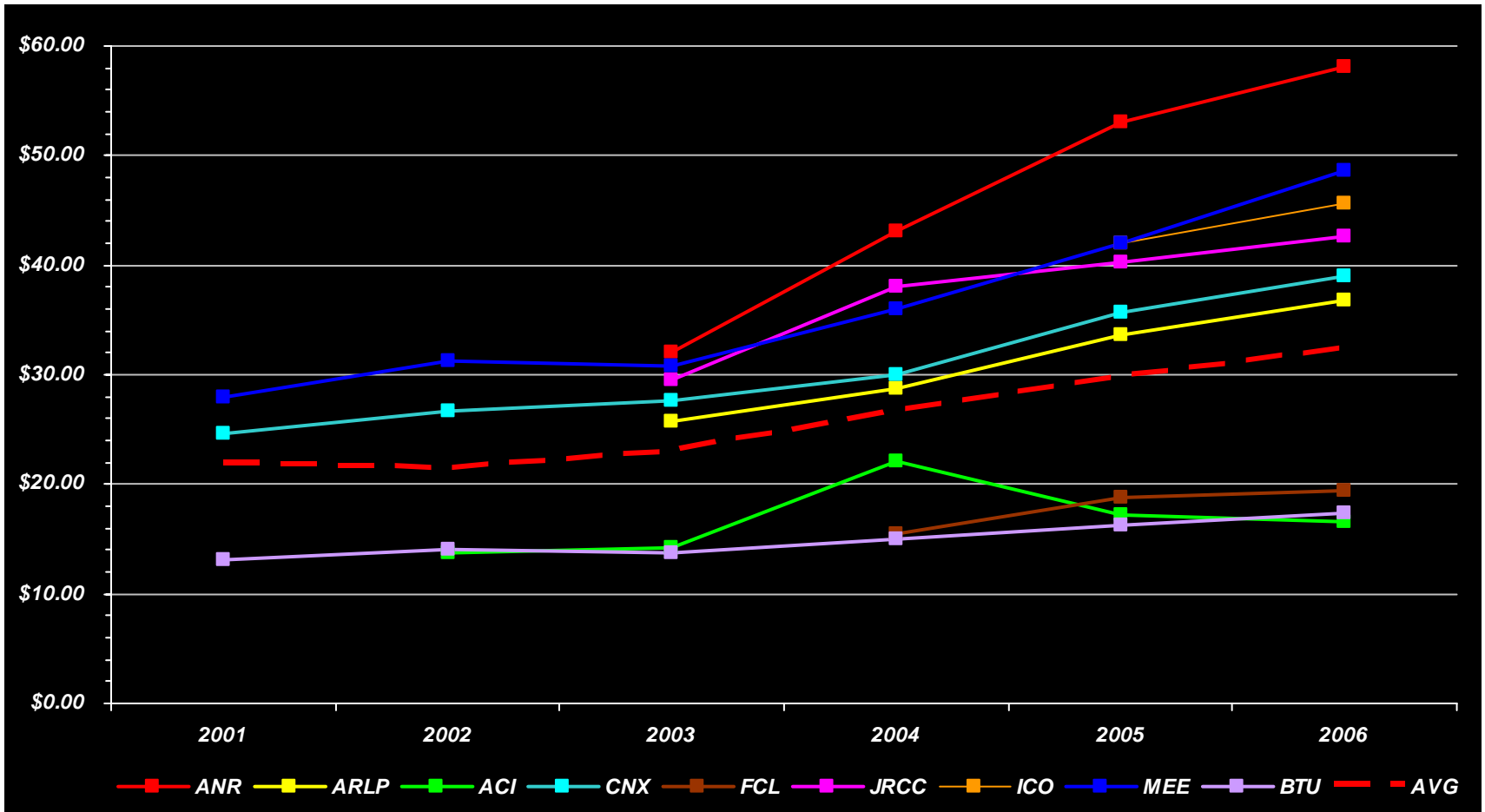
Peabody Energy Corporation (BTU)

Westmoreland Coal Company (WLB)



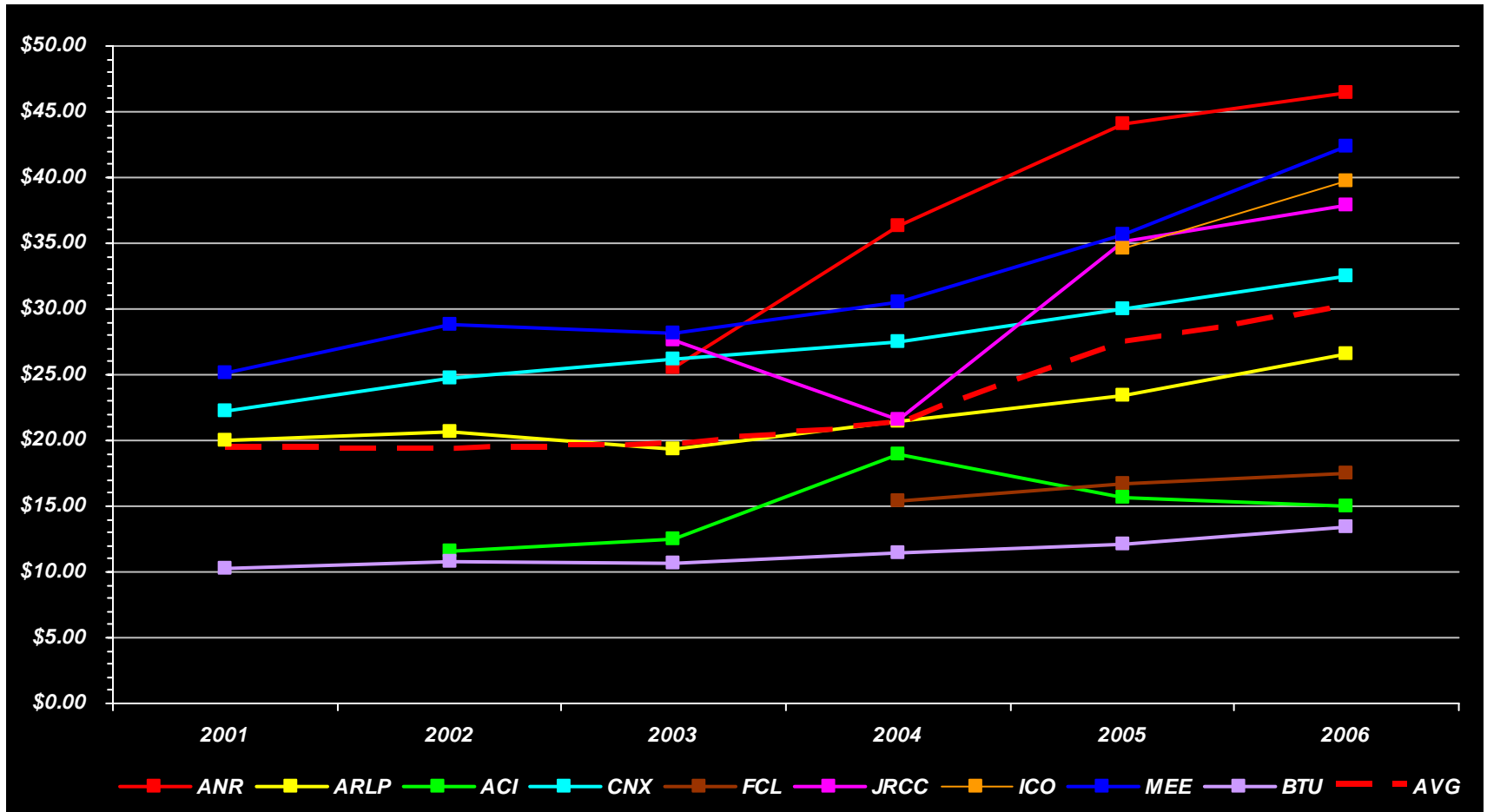
# Reported Average Sale Prices

## Publicly-Traded Coal Companies



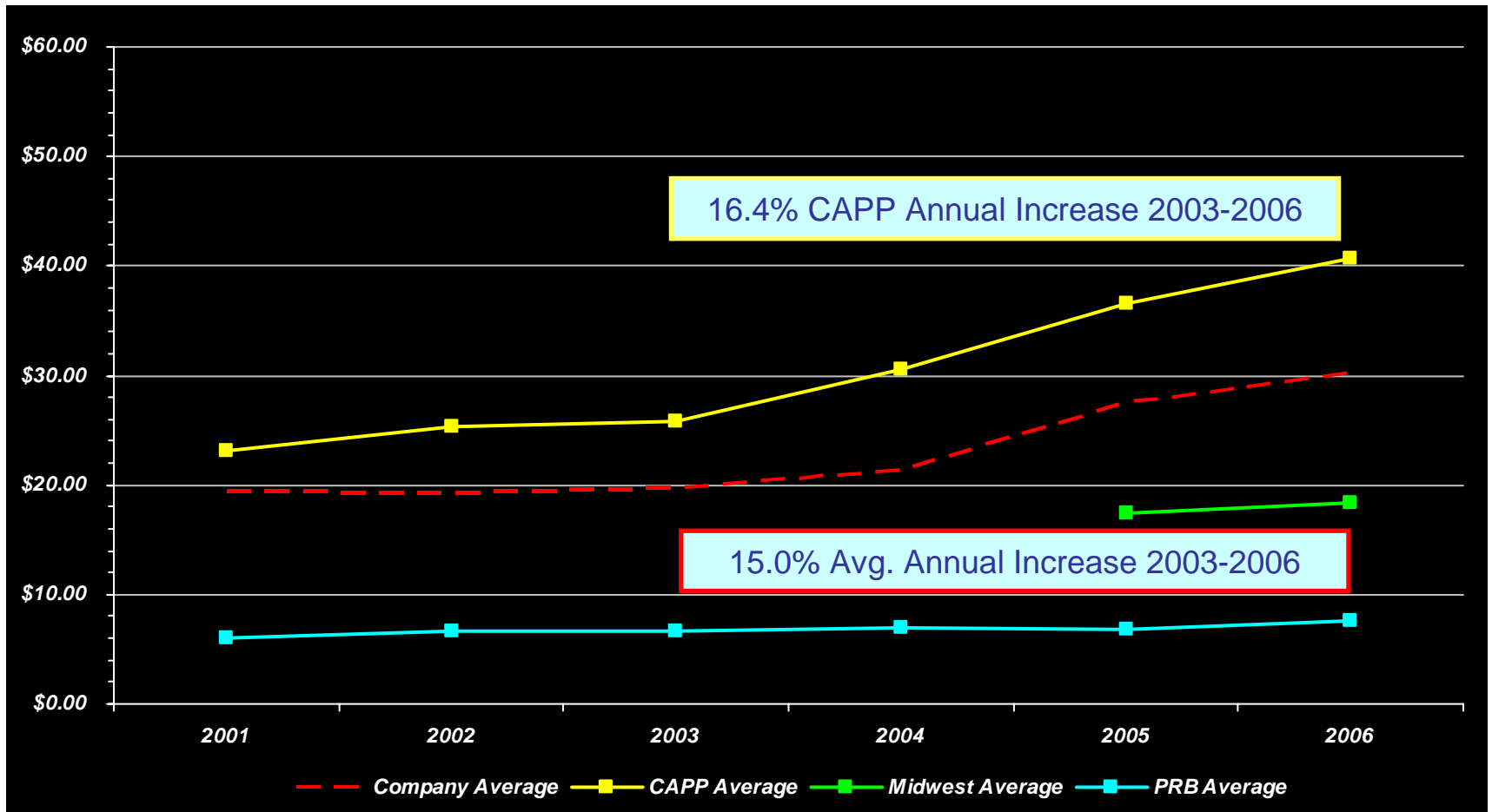
# Reported Average Cash Cost

## Publicly-Traded Coal Companies



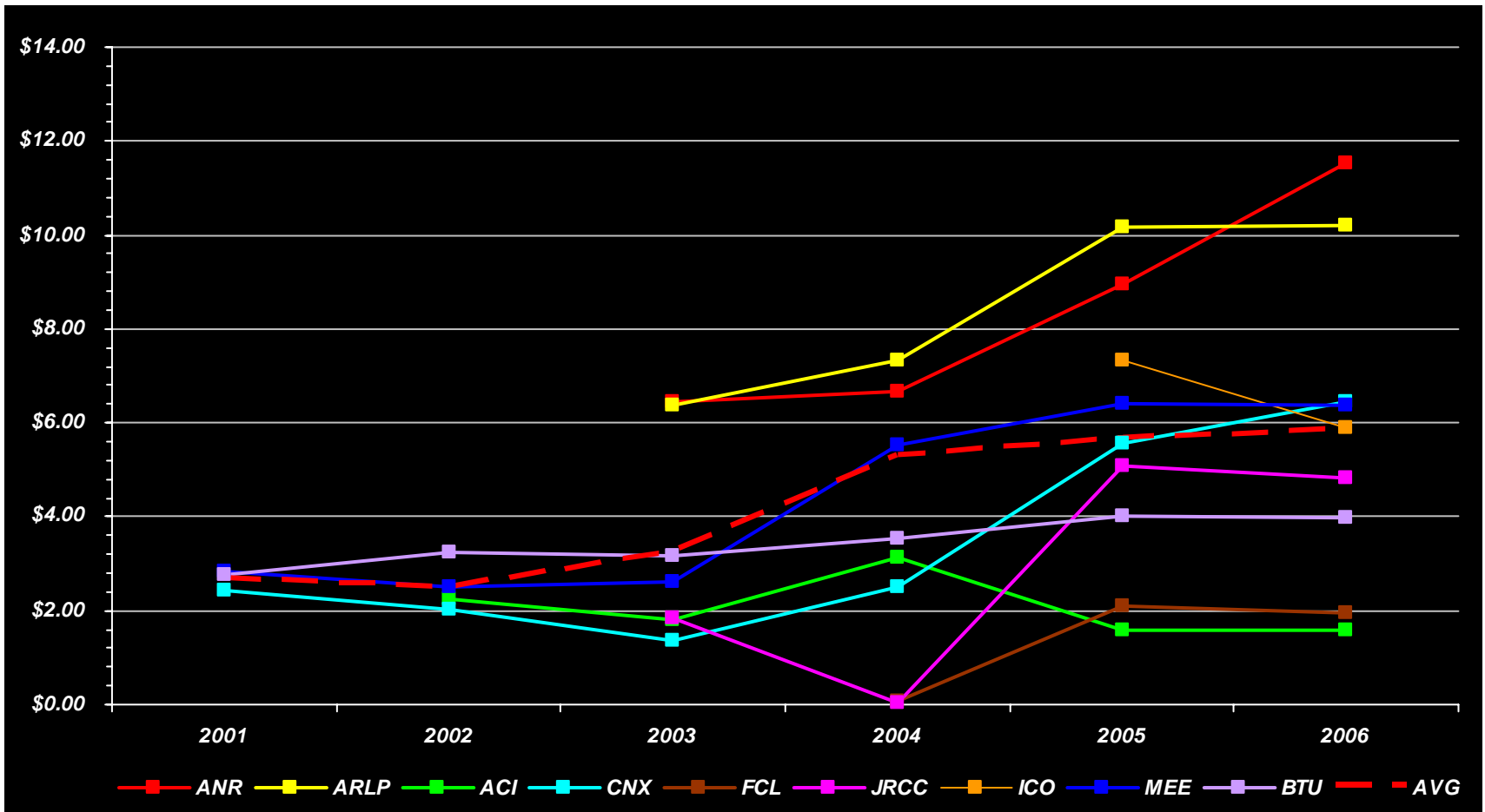
# Reported Average Cash Costs

## Publicly-Traded Coal Companies



# Reported Average Cash Margin

## Publicly-Traded Coal Companies



# Current Challenges in CAPP

- Cost increases in CAPP have kept pace with Price increases.
- Cost increases in PRB and Midwest markets have exceeded Price increases.
- Cost of raw materials increasing.
- Cost, availability and productivity of labor.
- Increased cost of regulations; still undefined.
- Exacerbated by complex geology.
  - Thinner coal; higher reject; increasing ratios; further distance from plants; etc.
- Some CAPP operations “under water” in 2007
- 2007 – begins the next wave of rationalization

