

U.S. Coal Supply

**CIBO Annual Meeting
October 2008 ~ Charleston, SC
Janet Gellici, CEO, ACC**



ACC
**American
Coal Council**

ACC Vision & Mission

Vision

To serve as the pre-eminent business voice of the American coal industry

Mission

Dedicated to advancing the development and utilization of American coal as an *economic, abundant/secure and environmentally sound fuel source*



ACC Objectives

Business-to-Business

Enhance the marketing & management capability of member companies

Advocacy

Support & defend the coal industry by serving as an educational & information resource on American coal for industry associates, public policy makers, educators & community leaders

Liaison

Support the activities & objectives of associations involved in advancing coal industry interests



ACC Membership

The ACC represents the collective interests of 165 companies spanning the entire coal chain.

From the hole in the ground to the plug in the wall.

- Coal Suppliers
- Coal Consumers (utility & industrial)
- Transportation (rail/barge/truck/ports)
- Energy Traders
- Coal Support Services
- Contributing Supporters



Top 10 Industry Issues

1. *Global Coal Market Dynamics*
2. *Meeting Electric Power Demand*
3. *New Coal Plant Siting & Permitting*
4. *Utility Fuel Flexibility/Switching Considerations*
5. *U.S. Coal Production Challenges*
6. *Coal Supply & Price Trends*
7. *Coal Transportation Capacity & Performance*
8. *Environmental Stewardship*
9. *Enhancing Public Perception of Coal*
10. *Business Opportunities in Emerging Markets:
Pre-Combustion, UCG, CTL*

Coal Market Strategies Conference – Oct. 6-8 – Williamsburg, VA

www.coalmarketstrategies.com

Global Marketplace Dynamics

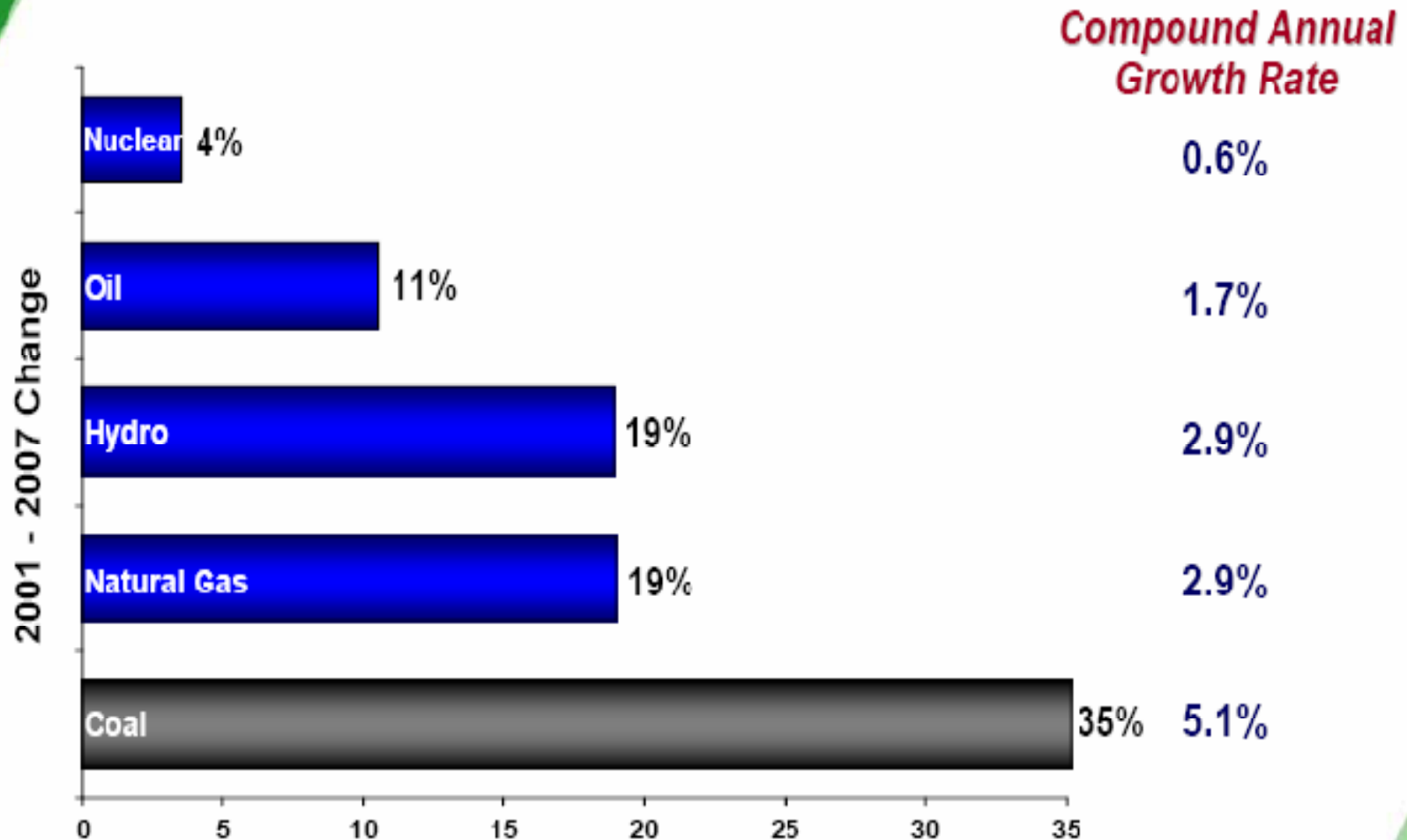
The Math

Growing Global Energy Demand
+ International Supply Disruptions
= Coal Demand Exceeding Supply



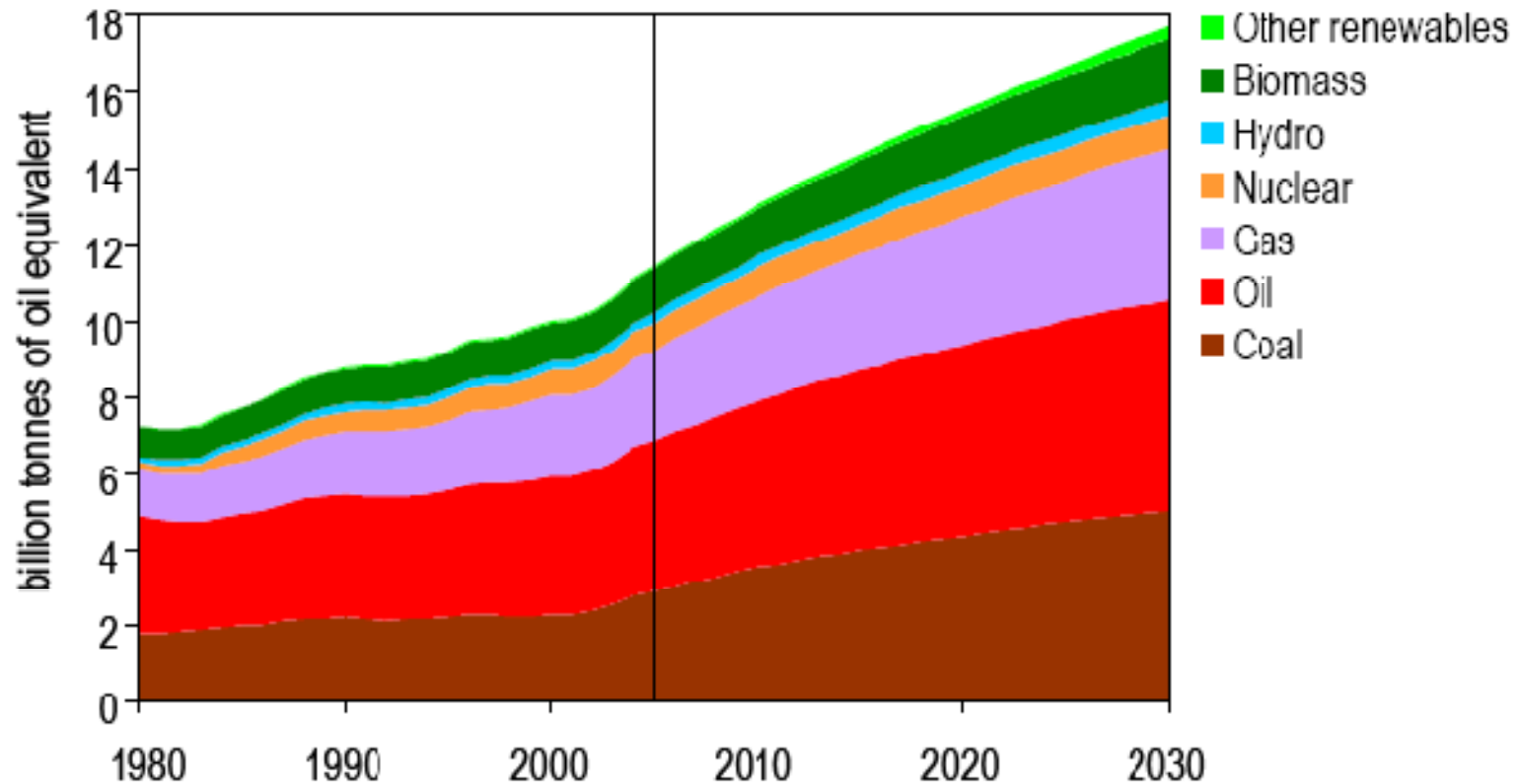
Coal Fastest Growing Global Fuel Source

Global Coal Demand Grows 1.5+ Billion Tons in 6 Years





Reference Scenario: World Primary Energy Demand



Global demand grows by more than half over the next quarter of a century, with coal use rising most in absolute terms.

© OECD/IEA 2008

Source: World Energy Outlook 2007



INTERNATIONAL
ENERGY AGENCY

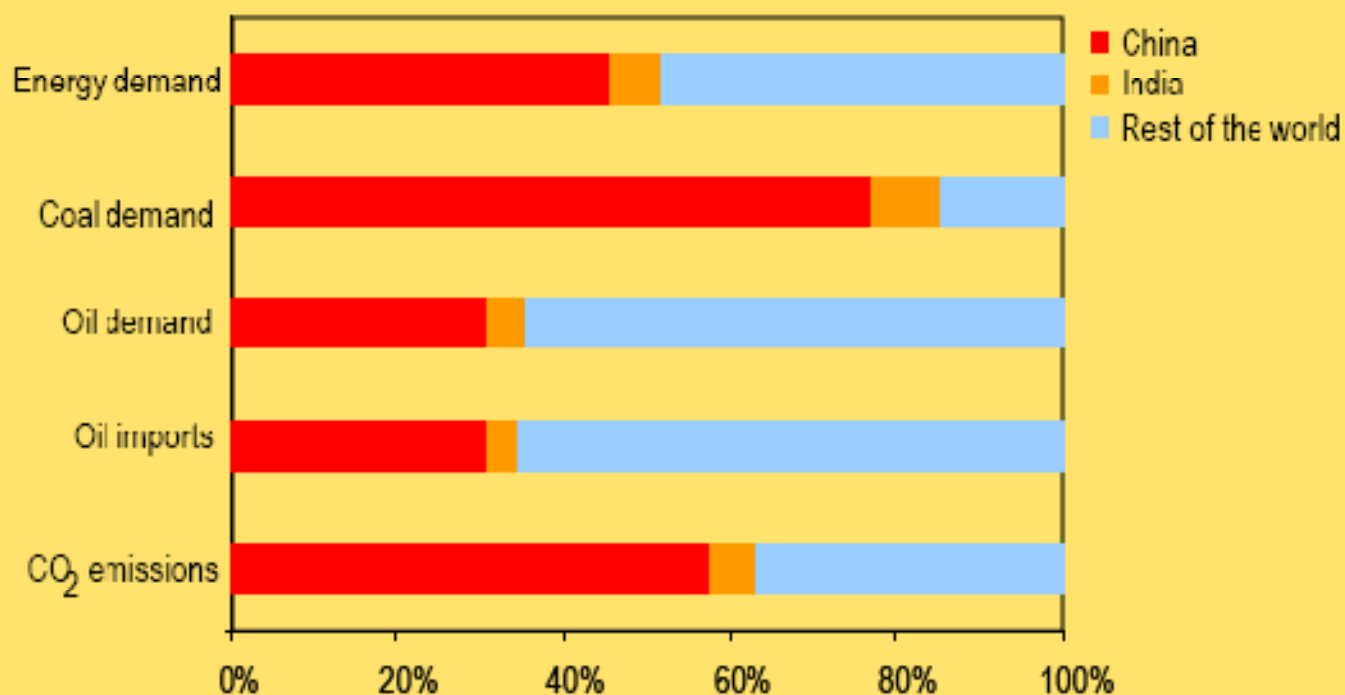
WORLD
ENERGY
OUTLOOK
2007

China
and India
Insights

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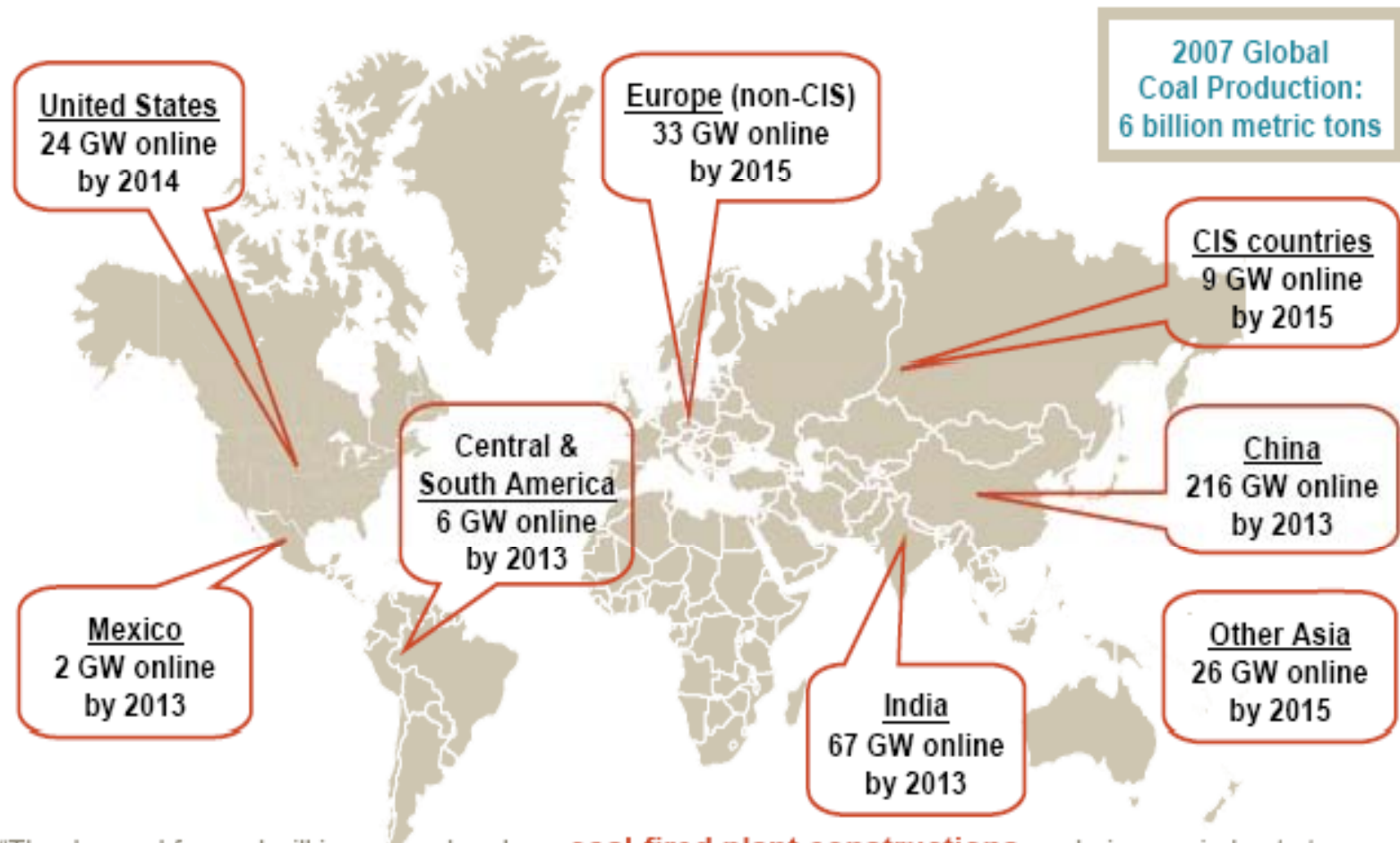
Why Focus on China & India?

Increase in World Primary Energy Demand, Imports & Energy-Related
CO₂ Emissions in the Reference Scenario, 2000-2006



China & India have contributed more than half of the increase in global demand for energy and over 80% for coal since 2000

Around the globe, countries are embracing coal as a primary source for electricity

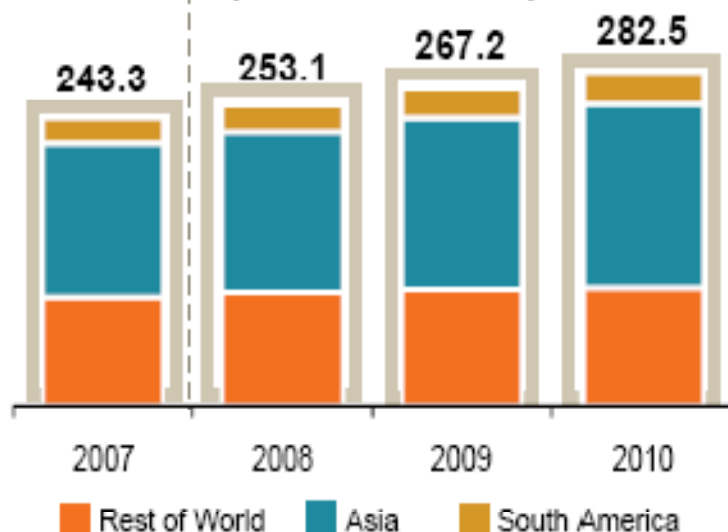


"The demand for coal will increase sharply as **coal-fired plant constructions** are being carried out at a break neck pace. By 2012, the world would need an estimated additional 1.1 billion short tons of new coal supply."

Growing worldwide steel production and blast furnace capacity additions are stoking met coal demand

Projected Import Metallurgical Coal Demand

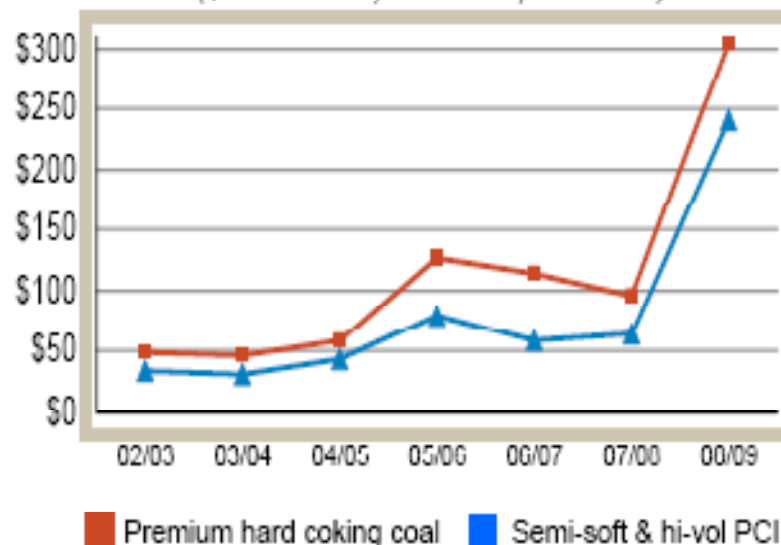
(in million metric tons)



- Global import **met coal** demand expected to grow by ~40 million tons over next 3 years

Benchmark Pricing for Met Coal

(\$/metric ton, FOB the port basis)



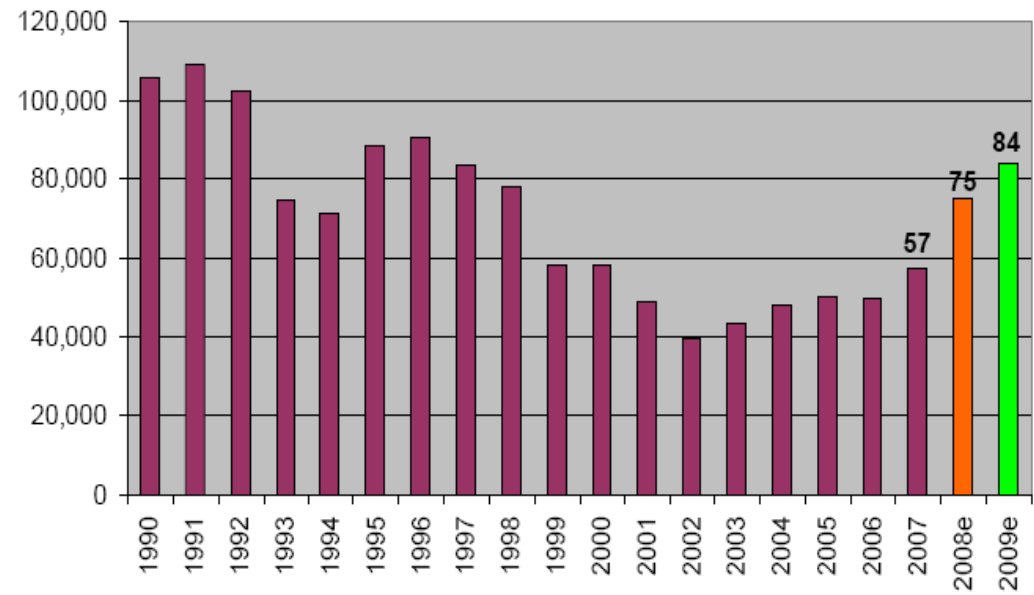
- Met coal pricing** has risen sharply since 2003; expect continued market tightness

Major Coal Supply Nations

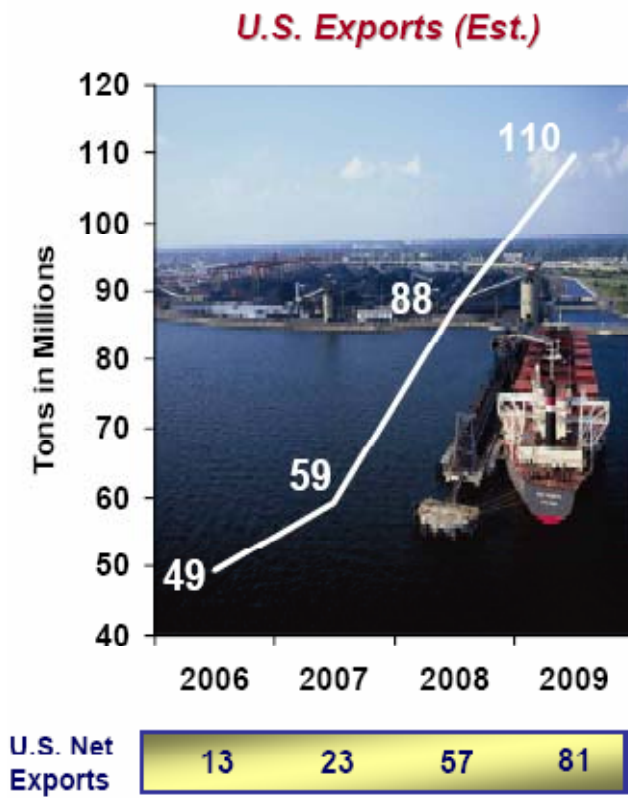
- Australia
- Indonesia
- Russia
- South Africa
- China
- Colombia
- US



U.S. Coal Exports



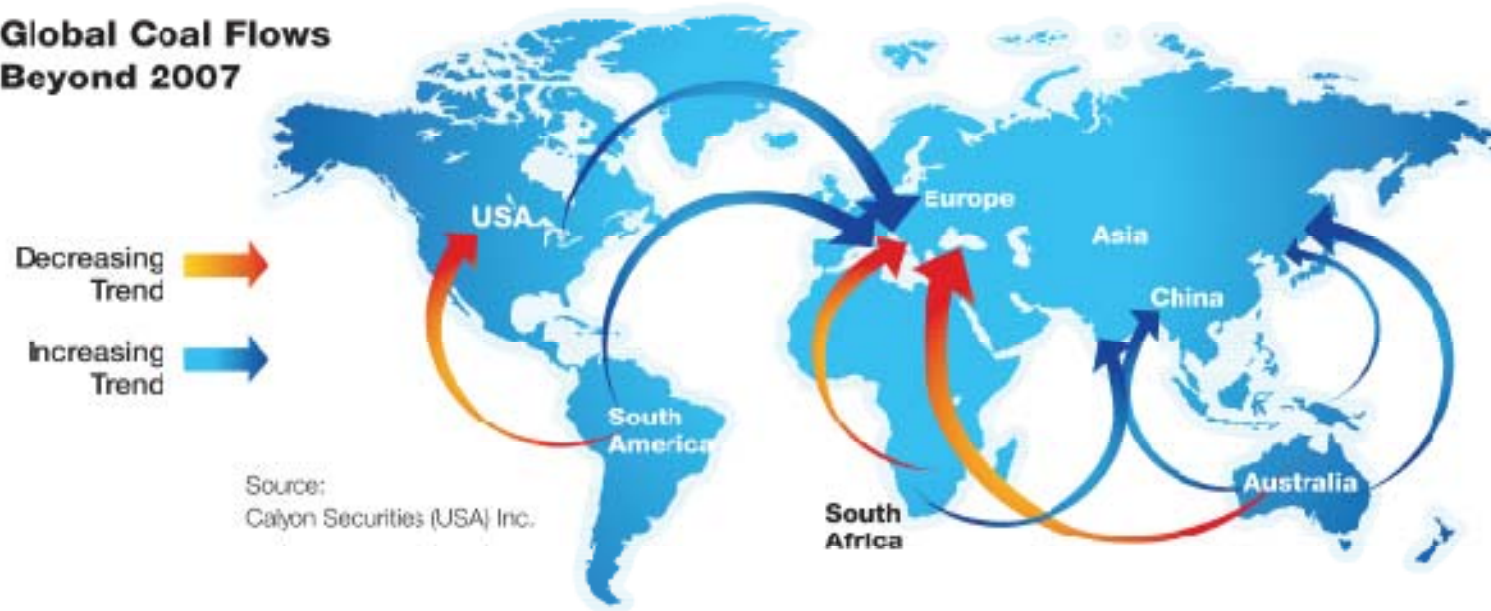
Source: Consol Energy



Source: Peabody Energy

Global Coal Flows

Global Coal Flows Beyond 2007



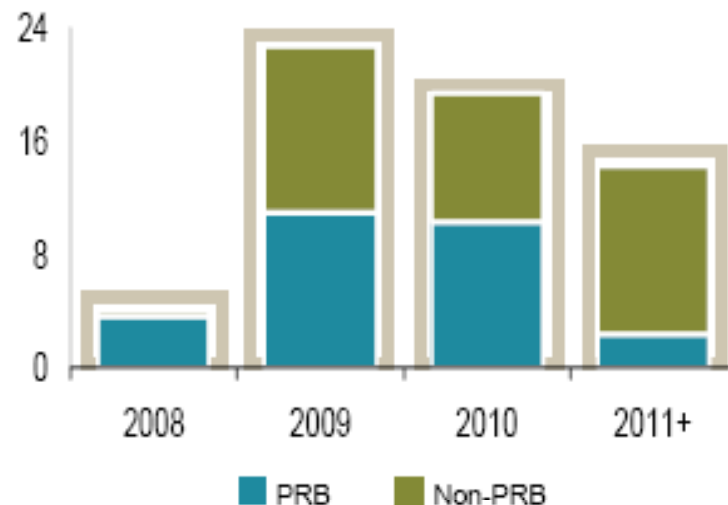
Source: Simmons & Company International Research and Various News Reports

**Global Coal Flows Shifting in Response
to Growing Demand & Severe Supply Constraints**

Largest coal plant build-out since 1980 will meaningfully expand coal demand

Anticipated Supply Region for Coal Plants Under Construction

(in millions of tons)



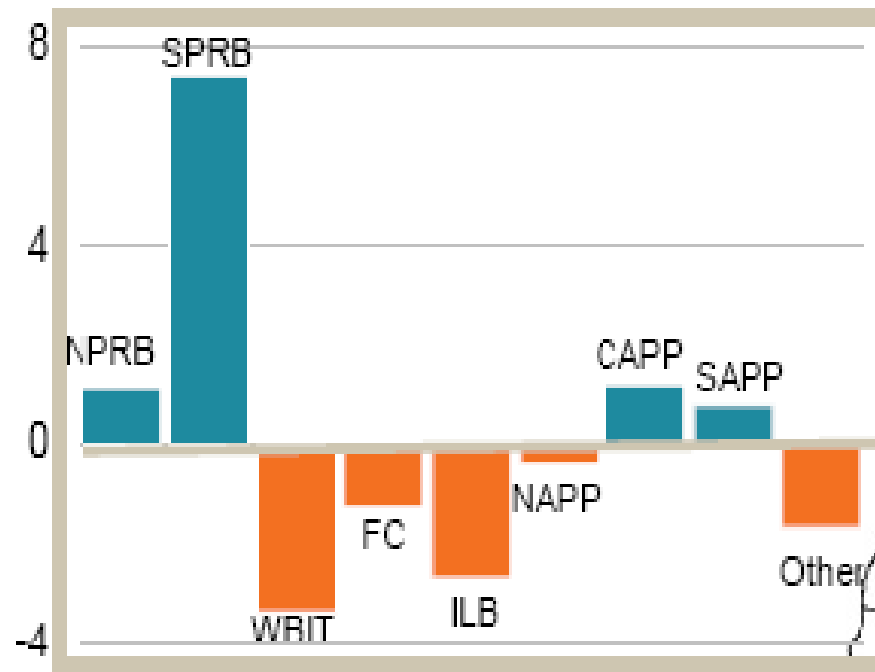
- Build-out of 17.5 GW equates to **62 million tons** of new annual coal demand over next four years
- **Powder River Basin** likely will service at least half of these plants
- More than 7 GW – another **20 million tons** – in advanced permitting stages

U.S. Coal Demand > Supply

U.S. Coal Supply Growth Not Keeping Pace with Projected U.S. Demand in 2008

Increase in 1H08 U.S. Coal Production

(versus 1H07, in million tons, per MSHA)



Source: Arch Coal

Supply Challenges

- More challenging geology
- Workforce shortages
- Safety regulation compliance
- Permitting challenges/delays
- Financial crisis
- Higher operating costs



Factors Affecting Coal Supply

Geology

- Reserve Depletion
- Increased Overburden Ratios
- Adverse Geologic Conditions
 - Seam variations & faults



Factors Affecting Coal Supply

Workforce

- Aging Workforce
- Labor Shortages
 - Especially skilled labor

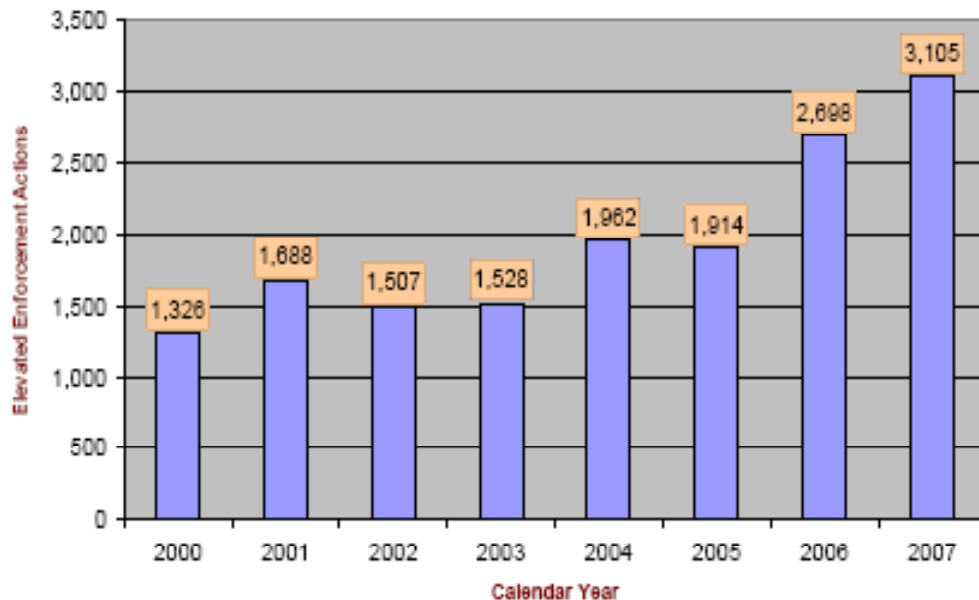
*55% of the workforce
is 50 years or older.
A high percentage will
be eligible to retire in 5-7 years.
CONSOL Energy*



MSHA Enforcement Actions

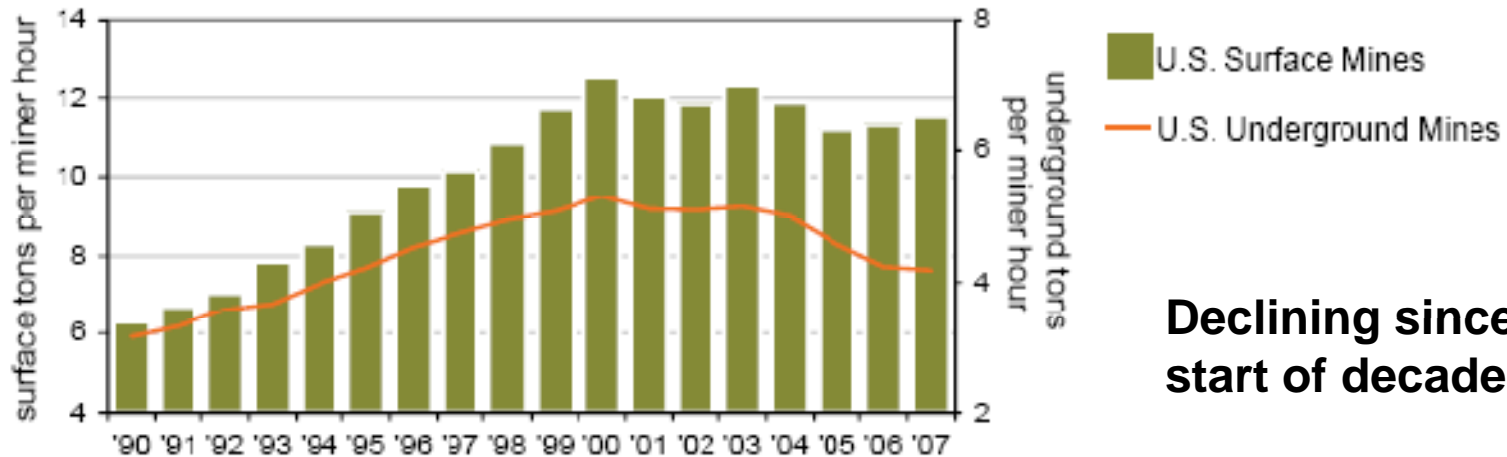
Coal Mines

Coal - Elevated Enforcement Actions
CY 2000 - 2007



- Enforcement Actions taken by MSHA for Coal mines increased 134% between CY 2000 & CY 2007.
- Enforcement Actions taken by MSHA for Coal mines increased 62% between CY 2005 & CY 2007.

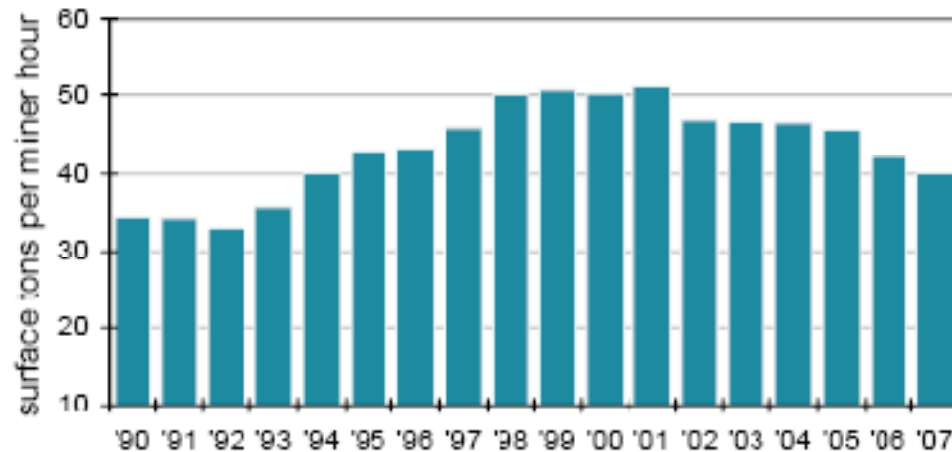
Coal Mining Productivity



Declining since start of decade.

■ Powder River Basin

Productivity down 10-20% at underground mines due to increased mine inspections.






Graphics Source: Arch Coal, MSHA

Factors Affecting Coal Supply

- Permitting
 - More time consuming
 - More costly
 - More difficult to secure
- Section 404 Valley Fill Issue
 - CAPP
 - ILB

Regulatory

Mining permits are ever-expanding 

MINING PERMIT CIRCA 1983	MINING PERMIT CIRCA 2005
	
Prep time: ~ 6 Months Cost: ~\$10,000	Prep time: 3 + Years Cost: ~\$750,000

Running Right

Factors Affecting Coal Supply

- Force Majeure Notices Recently Issued
- Reasons Cited
 - Geologic Conditions
 - Refusal Disposal Issues – Section 404
 - Labor Shortages
 - Productivity Loss – MINER Act

The Fallout



Factors Affecting Coal Supply

- Credit Squeeze
 - Could lead to fewer new mine projects; renewed focus on expanding current sites alternatively
- Supporting Commodity Costs & Availability
 - Steel
 - Explosives
 - Diesel
 - Copper
 - Rubber (tires)
 - Mining Equipment Backlogs

Other Factors



Domestic Consumption Implications

More Math

Competition w/ Global Markets
+ U.S. Supply Challenges
= Tight Market Capacity
= More Expensive Fuel

Coping Strategies

Fuel Flexibility

Transportation Flexibility

Long Term Contracts

Integrate Fuel, Environment & Capital Planning



American Coal Council

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