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# The SunCoke Energy Perspective

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# Today we'll discuss…

## The SunCoke Perspective

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- **SunCoke Energy - who we are and what we do**
- A behind-the-scenes tour of SunCoke
- Jewell Mining's view of business environment
- USA Blast Furnace Overview
- Indian JV
- Q&A

# SunCoke produces high-quality metallurgical coke

## What is Coke?

- A hard, porous, carbon-rich material
- Created by destructive distillation of ash and coal
- Essential to the production of iron
- A critical input for steel production

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# Who We Are

5.9 million tons of coke-making capacity with six facilities (five in U.S. and one in Brazil), coal mining operations in Virginia and West Virginia – and a joint venture operation in India

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# Who We Are

- Largest independent producer of metallurgical coke in the Americas
- Leader in the steel industry supply chain and waste power areas
- Industry innovator with 50 years of experience
  - developed several industry-leading technology and environmental advancements in heat recovery coke-making
- Six coke production facilities
  - 5 in US
  - 1 in Brazil
  - Recent JV in India
- Two coal mining operations
  - 1.7 MM tons combined capacity
- Approximately 1,200 employees

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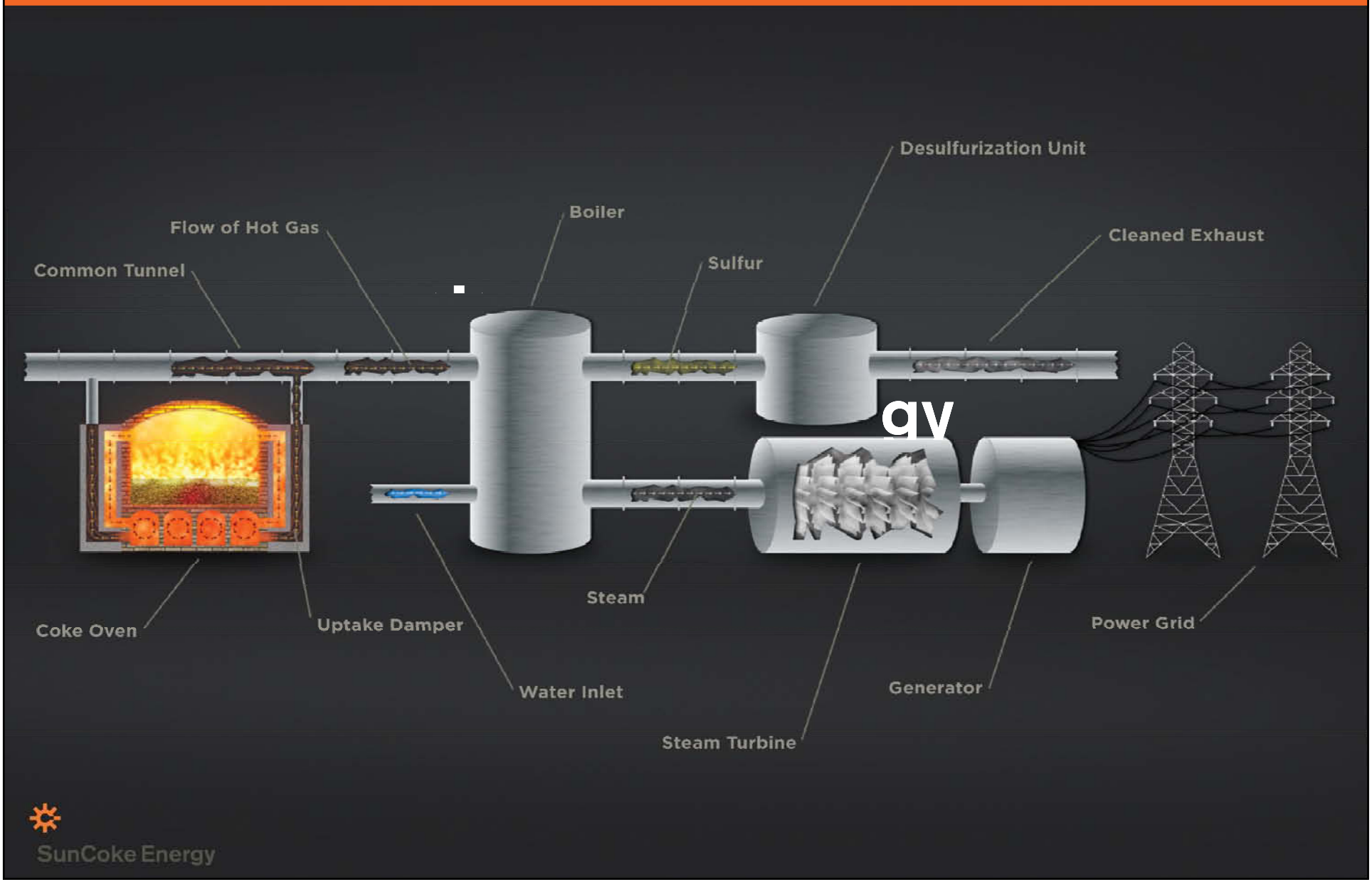
# About Cokemaking



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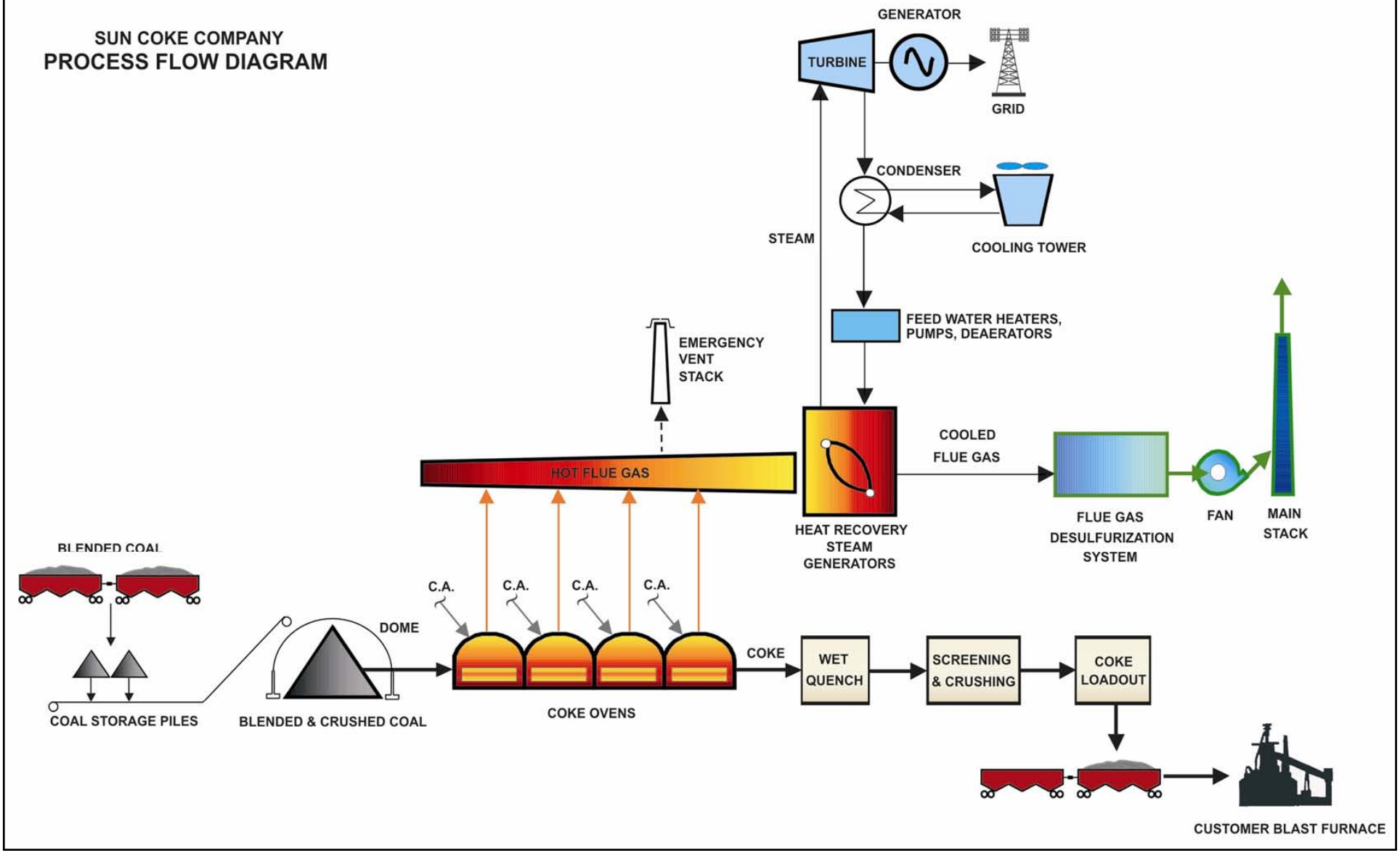
# How It Works



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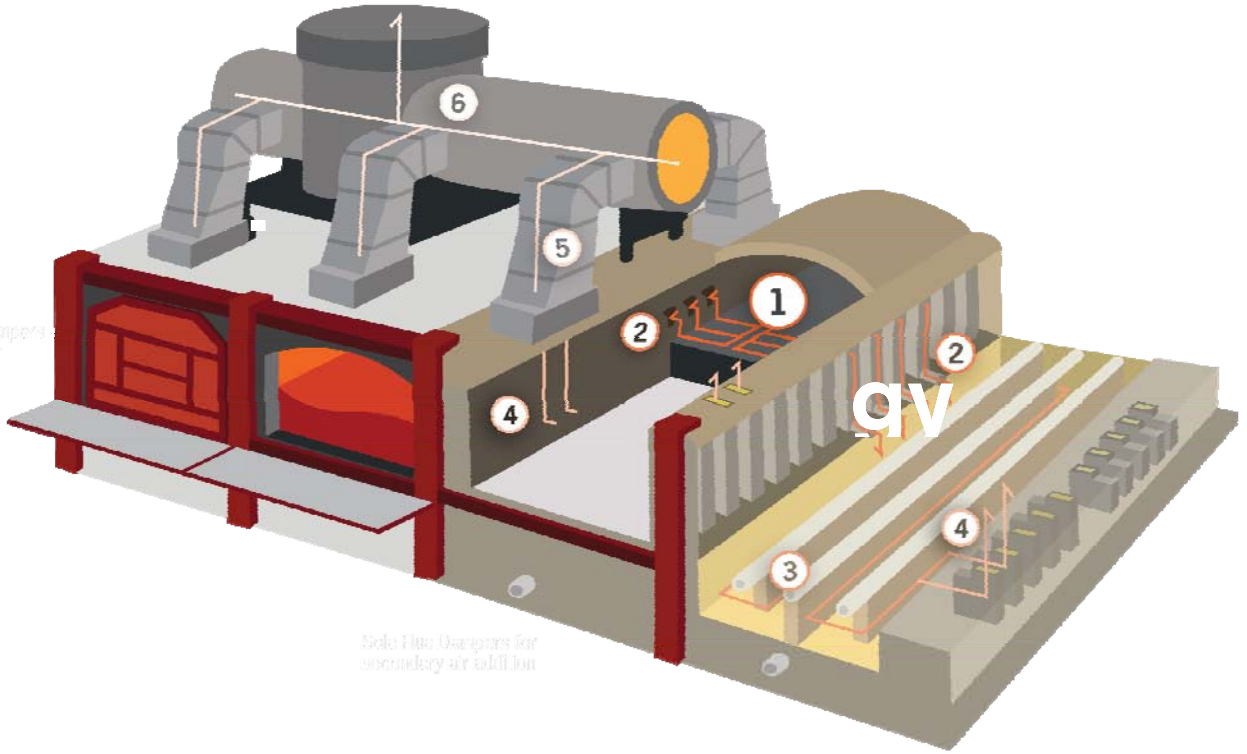
# Superior Design




**1**
Coal bed absorbs heat from refractory and liberates combustible volatile matter.

**2**
Partially combusted gas is drawn through downcomers within the oven walls.

**3**
Gas traverses through sole flues beneath the oven floor where secondary air is added through sole flue dampers.

**4**
Oxidized flue gas is drawn into uptakes within oven walls.

**5**
Flue gas exits at the top of each wall and travels across an uptake damper before entering the common tunnel.

**6**
Common tunnel delivers hot flue gas from multiple ovens to a boiler or vent stack.

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# Oven During Construction

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# Oven During Construction

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# Pusher Charging Machine

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# Flat Push Hot Car & Stationary Ram

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# Heat Recovery Steam Generators

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# Coal Market Commentary

- **World commodity prices have been extremely weak**
  - Slower growth in Asia
  - Europe remains in deep recession, Brazil also sluggish
  - Slow growth continues in North America
  - Coal and ore recently oversupplied but producer reaction beginning to stabilize pricing
- **Expect 2013 to be a challenging year for coal**
  - Thermal outlook, somewhat improved but natural gas still capping price moves
  - Met pricing will remain weak until economic growth accelerates in North America, Europe and China
  - Met supply response is in second phase
- **2013 will be a survival year for Coal with potential for solid rebound in 2014**
  - China and India the most important swing players for demand

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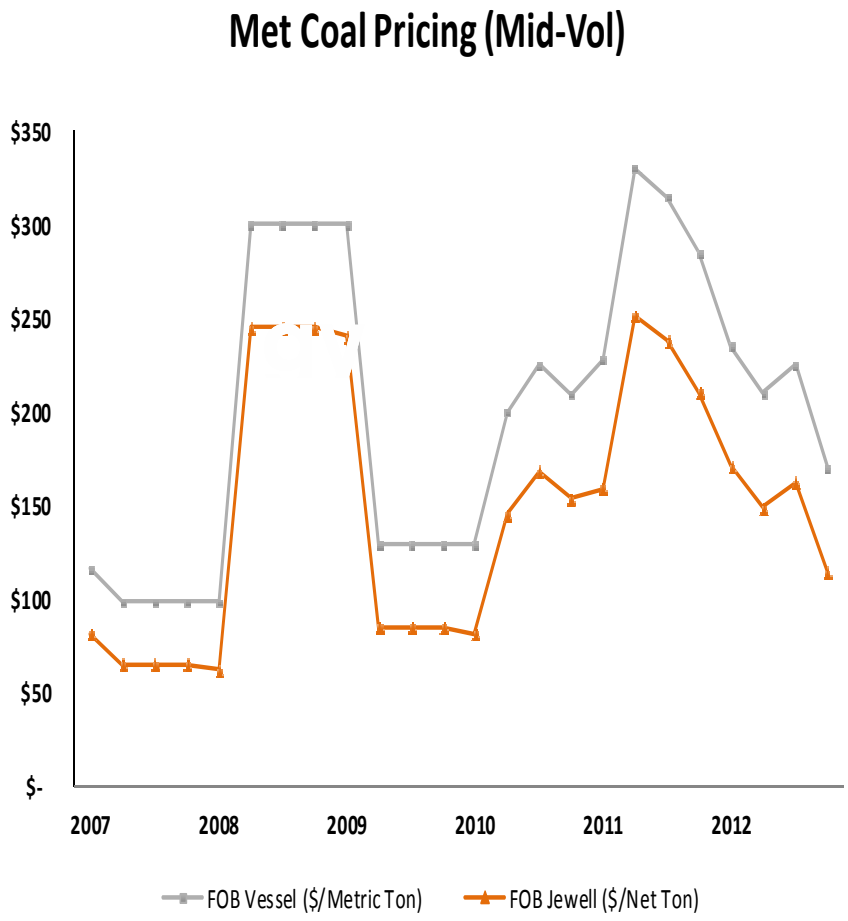
# Jewell Coal Mining

**2013 focus is on optimizing our coal business to enhance long-term strategic flexibility and value**

- Expect difficult environment to continue through most of 2013
  - Potential for price turnaround in late 2013 into 2014
- Experienced coal team has navigated through previous volatile markets successfully
- Allocate minimum sustaining capital to drive down cost, ensure safety and provide strategic flexibility



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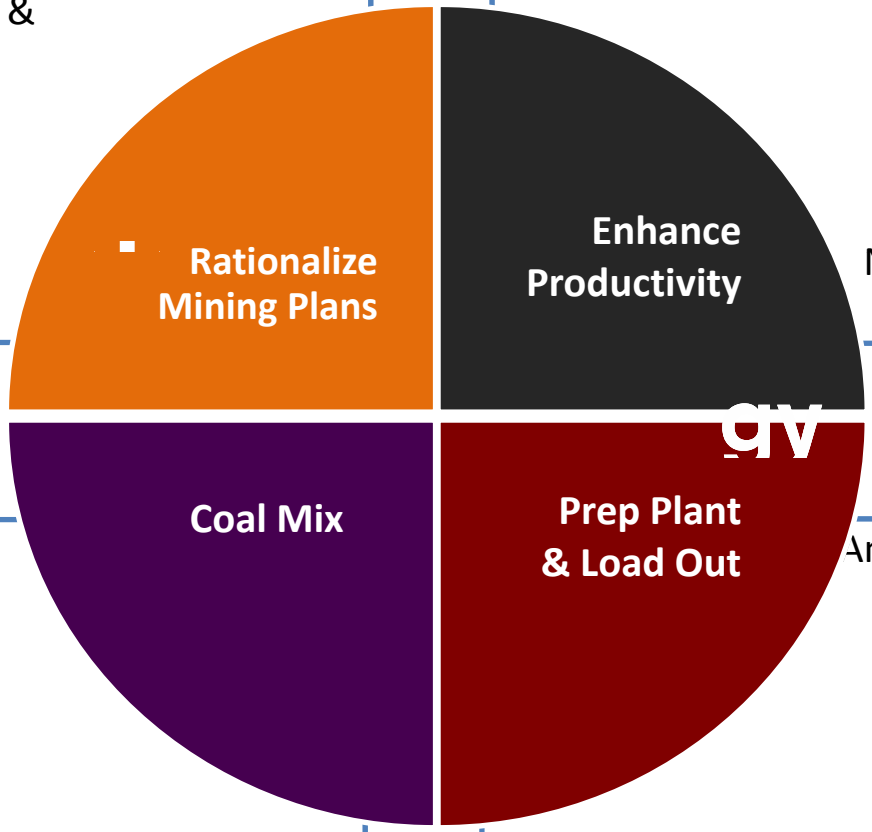
# Coal Mining Action Plan

- Idle high cost operations
- Consolidate best people & equipment
- Optimize mine layouts
- Implement deep cut plans as approved




- Face equipment upgrade program complete Q1 13
- Implemented new asset management software

New maintenance program being deployed

- Opportunistically buy lower-cost coal to supplement production
- Increase percentage of lower-cost surface production
- Minimize thermal production to extent possible

Anticipate at least a 2% yield improvement from new cyclone & ultra fine circuit upgrade

- Additional spending to maintain plant structure
- Minor amount of capital for permitting and planning for long-term strategic options

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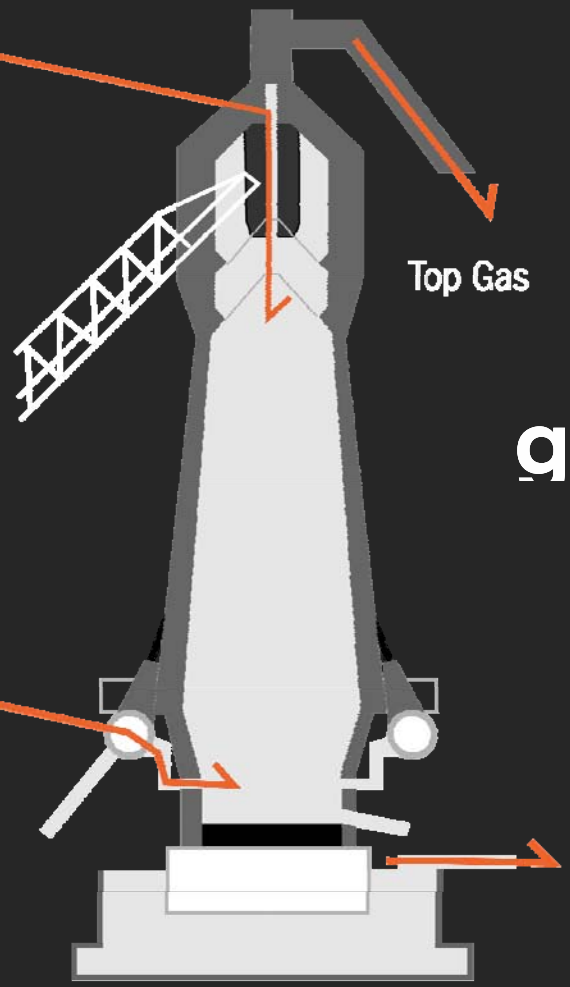
# Blast Furnaces and Coke

| BEST IN CLASS in lbs/ST | | |
|---|---|---|
| Iron Burden | Iron Ore/ Pellets Scrap | 3100 198 |
| Flux | Limestone | 30 |
| Fuel | Coke | 600 |

Most efficient blast furnaces require 800-900 lbs/THM of fuel to produce a ton of hot metal

| BEST IN CLASS in lbs/ST | | |
|---|---|---|
| Fuel | Nat Gas | Up to 80-120 |
| Fuel | Coal | Up to 120-180 |




Blast furnaces are the most efficient and proven method of reducing iron oxides into liquid iron

Coke is a vital material to blast furnace steel making

We believe that stronger, larger coke is becoming more important as blast furnaces seek to optimize fuel needs

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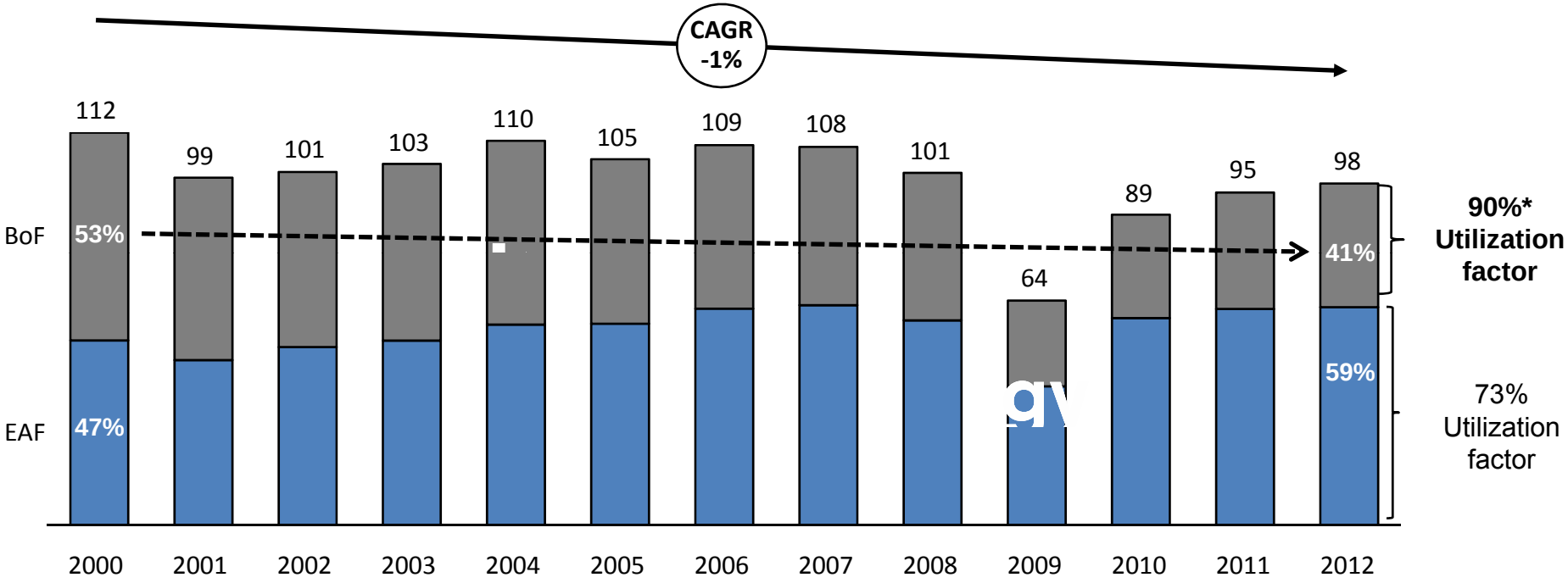
# U.S. Crude Steel Production Historical Trends: 100 MM ton/yr. market; BF/BOFs rationalized

Crude steel production
in MM tons




Source: WSD, AISI, WSA, CRU

Note: * BF utilization denominator excludes RG fleet & AM IH 5,6

"9/11"
- 8 months recession
- 0.3% GDP contraction
  - Peak to trough

Subprime crisis
- 18 months recession
- 5.1% GDP contraction
  - Peak to trough

Amid a challenging economic environment, domestic steel has proven to remain a ~100 MM ton crude steel market and BOF market share to remain ~40%

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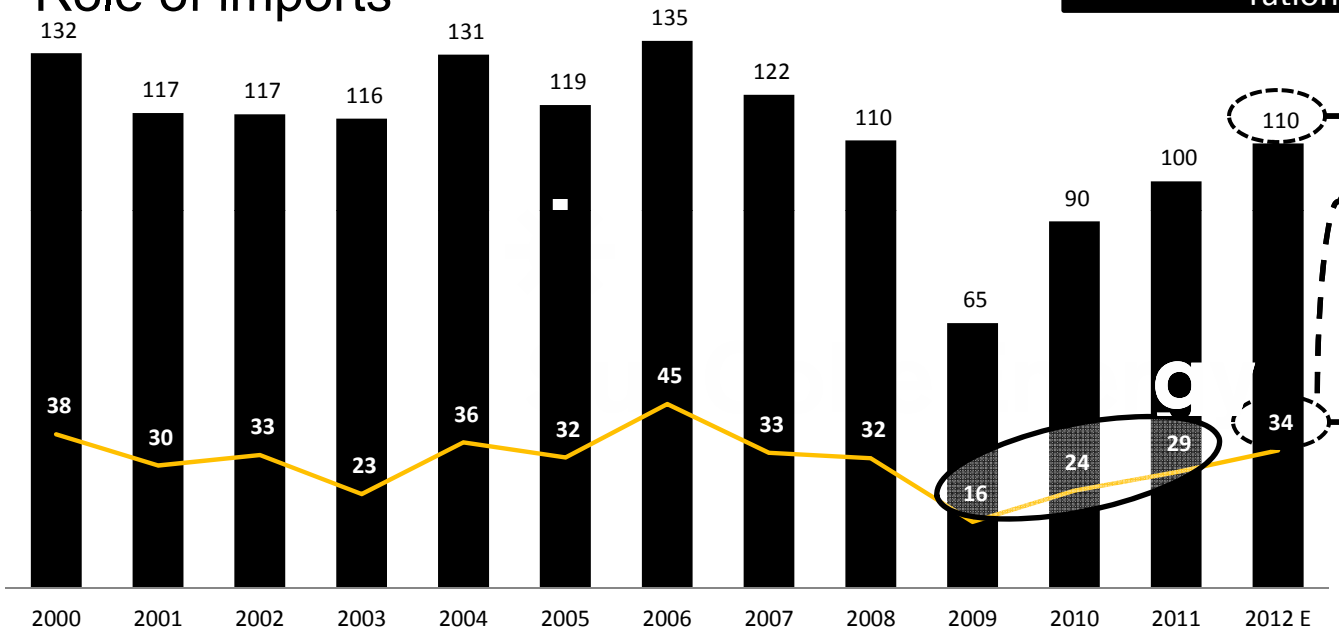
# Apparent steel supply vs. imports

in MM tons

## U.S. market: finished steel supply

### Role of imports




Source: WSD, AISI, WSA, CRU

Growing market participation due to competitiveness and BOF rationalization

Rapid recovery to > 100 MM tons/yr.

| Steel product | Tons MM |
|---|---|
| Semis | 8 |
| Sheets | 7 |
| OCG | 4 |
| Line pipes | 3 |
| Plates | 3 |
| Bars | 3 |
| Other | 6 |
| Total | 34 |

26

Finished imports represent ~ 30% of apparent supply

- 24% if semis are excluded
- Brazil, Canada, EU, Japan and Korea largest suppliers

Market share of imports has been growing since '09

Apparent supply = Shipments + Finished imports - Exports

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# Injectants and Their Impact on Blast Furnaces in NA

## US & Canada

| | Units | 2011 | 2012 |
|---|---|---|---|
| Hot Metal Production | MM nt | 42.9 | 43.4 |
| Coke Consumption | MM nt | 17.0 | 17.1 |
| PCI Consumption | MM nt | 2.7 | 2.1 |
| NG Consumption | MM nt | 2.2 | 2.9 |
| Coke Rate (Kg/nthm) | Kg/nthm | 360 | 358 |
| PCI Rate (Kg/nthm) | Kg/nthm | **56** | **44** |
| NG Rate (Kg/nthm) | Kg/nthm | **47** | **61** |

## US

| | Units | 2011 | 2012 |
|---|---|---|---|
| Hot Metal Production | MM nt | 35.8 | 35.9 |
| Coke Consumption | MM nt | 14.1 | 14.1 |
| PCI Consumption | MM nt | 2.4 | 1.7 |
| NG Consumption | MM nt | 1.8 | 2.4 |
| Coke Rate (Kg/nthm) | Kg/nthm | 358* | 357 |
| PCI Rate (Kg/nthm) | Kg/nthm | **60** | **44** |
| NG Rate (Kg/nthm) | Kg/nthm | **45** | **60** |

Source: AIST, SXC Internal Analysis

From the tables above it is clear that Coke rate has remained constant however injectants have substituted each other and the numbers have almost flipped for the two from ‘11 to ’12 . Threat from cheap natural gas as an injectant is limited due to BF constraints and their need for high quality coke for burden support

* Due to unavailability of data IH3 coke rate is assumed to be same as IH4

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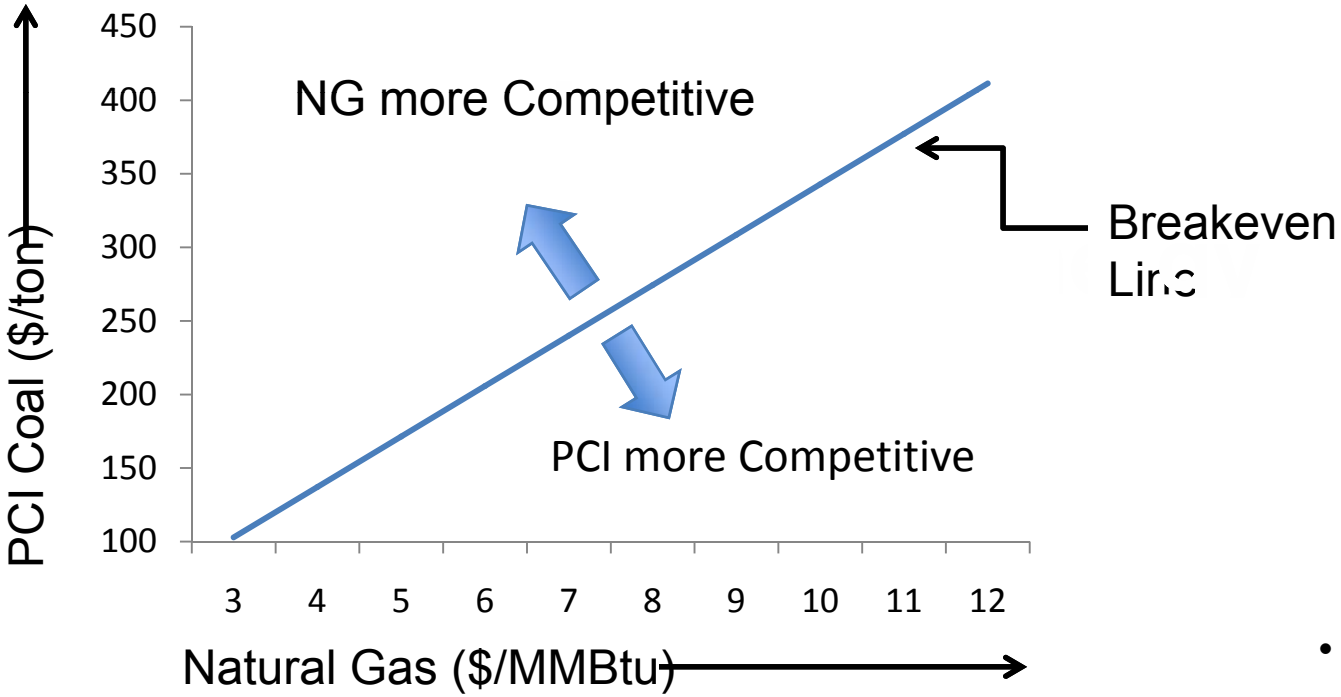
1 unit of Natural gas can replace about 1.2 units of Coke and 1 unit of PCI can replace about 0.9 units of Coke. Heat content in 1 MT of Natural gas is about 50.4 MMBTU

## PCI vs. Natural Gas Break Even Prices

Breakeven prices for the two injectants:




Source: Hatch, Woodmackenzie, MIT, SXC

- However, the choice may not be as straight forward as shown in the chart as the Capex investment for Natural gas is about 1.5 MM (exclusive of Oxygen enrichment plant) and PCI is about 60 MM USD assuming a BF capacity of 2.5 MT/year
- If infrastructure for both the injectants is already in place then chart could be used as is

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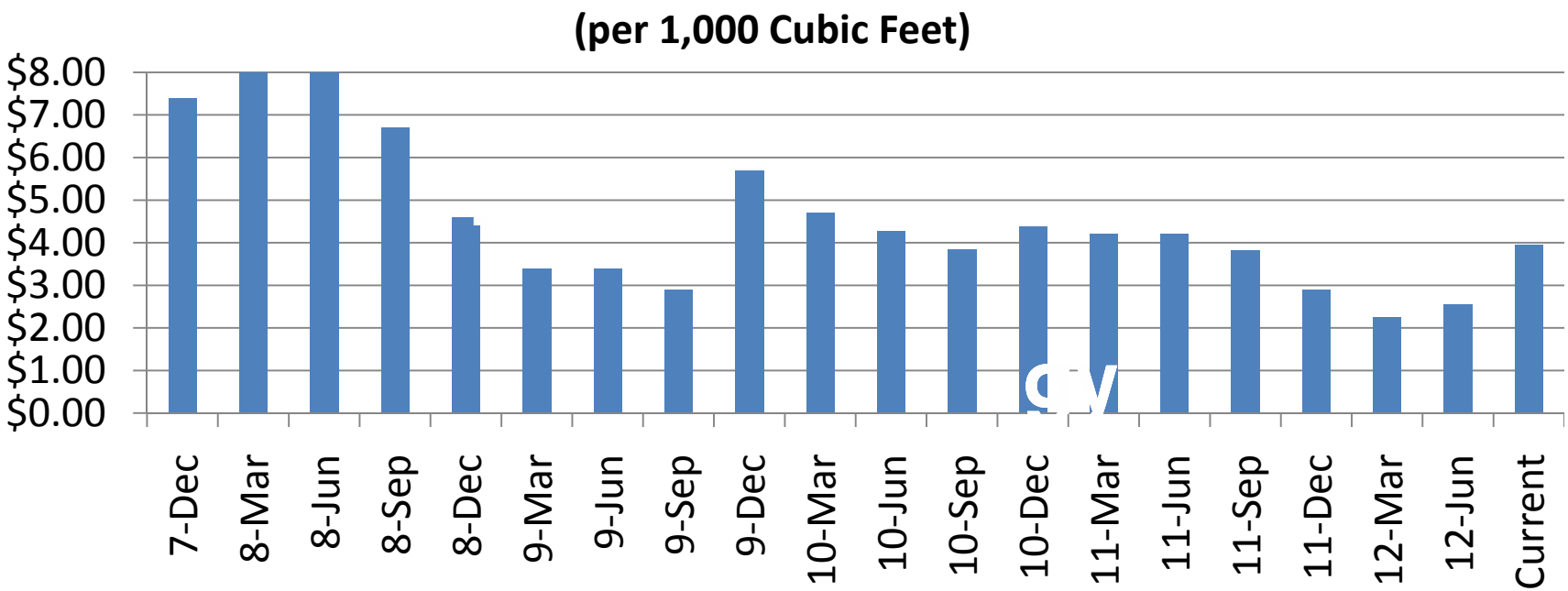
# Natural Gas Pricing




Central Appalachian coal begins to lose market share below $5.00 gas pricing. 2012 pricing is projected based upon forward curve of traded wellhead contracts.

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1

US BF's currently running are expected to operate balance of 2013. Dollars being spent for various gun job repairs planned through the year. One major rebuild planned for 2013.

2

Integrated steelmakers report strong order book all be it at weak pricing.

3

Blast furnaces have seen the worst

- No further shutdowns expected
- Crude steel from BF expected to grow by about 1 MM tpy through '17

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# USA Coke Balance

| MM tons | 2011 | 2012 |
|---|---|---|
| Coke Production | 15.4 | 15.2 |
| Coke Consumption | 15.8 | 15.5 |
| Imports | 1.4 | 1.1 |
| Exports | 1.0 | 1.0 |

1.4 MM tons of coke consumption is from Foundry and Sinter

Source: EIA

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# USA Coke Balance

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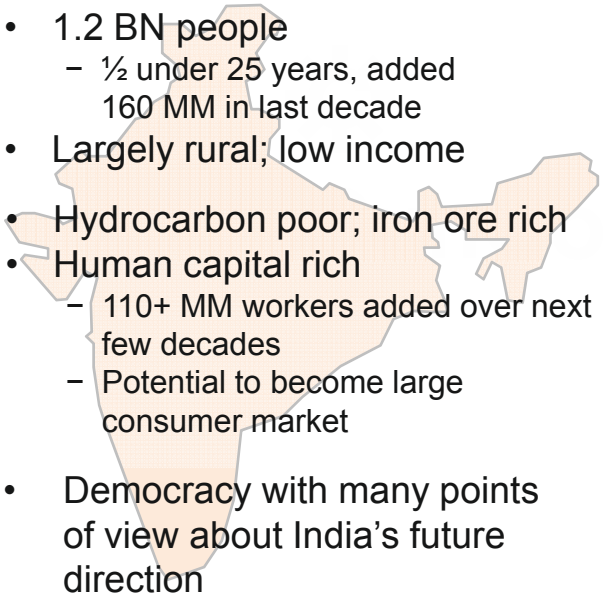
# BRIC Countries

## Every country is different

### India



**1**

- 1.2 BN people
  - ½ under 25 years, added 160 MM in last decade
- Largely rural; low income

**2**

- Hydrocarbon poor; iron ore rich
- Human capital rich
  - 110+ MM workers added over next few decades
  - Potential to become large consumer market

**3**

- Democracy with many points of view about India's future direction
- Reforms take time

**1**

- Smaller population: 200 MM
- Largely urban; strong middle class

**2**

- Natural resource rich
- Attractive consumer market
- Strong agricultural & industrial bases
- Dependent on foreign capital for growth

**3**

- Young democracy
- History of politics getting in way of economic development
  - Hyperinflation

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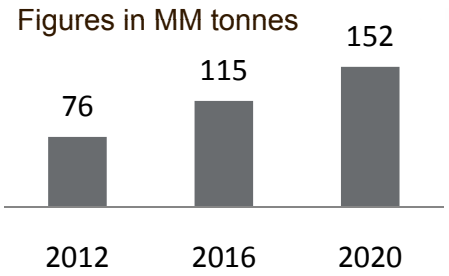
# Get the Big Calls Right

## India – metallurgical coke demand

### Growing steel industry

- 120 MM tonne market by 2020




- Rapid expansion only achievable with blast furnace technology
  - Blast furnace capacity should increase ~ 70 MM tonnes by 2020

### Expensive power price

- India's average cost of power ~ U.S.$ 80[1]/MWh
  - ~2x that of U.S...
  - ...but per capita GDP is 4% of U.S. GDP
- ~ 300 million citizens have no access to electricity
- EIA estimates that India will add 600-1,200 GW by 2050 to meet growing demand
  - Today ~ 200 GW

[1] 2011 all India trading price

### Attractive for SunCoke

- SunCoke produces high quality coke which improves the efficiency of blast furnaces
- By-product of SunCoke's heat recovery process is power
- Coke demand is expected to grow 30 MM tonnes by 2020

**30 MM tonne met coke growth market**

- Modest 15% penetration rate
- Result: SunCoke India could be larger than SunCoke U.S.

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# Thank you!

# Any questions?