

---

---

# **“The Challenges and Opportunities facing the South African Mining Industry”**

**Presentation to the Collieries Engineers Association  
Meeting**

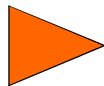
**By Roger Baxter, Chief Economist  
Chamber of Mines of South Africa,  
18 February 2010**



---

---

## **PRESENTATION OUTLINE**



**Snapshot of recent performance of  
RSA Mining Sector**

**RSA Mining – slow growth laggard,  
why?**

**Role of Mining still underestimated**

**Changing the mindset, going for  
sustained growth**

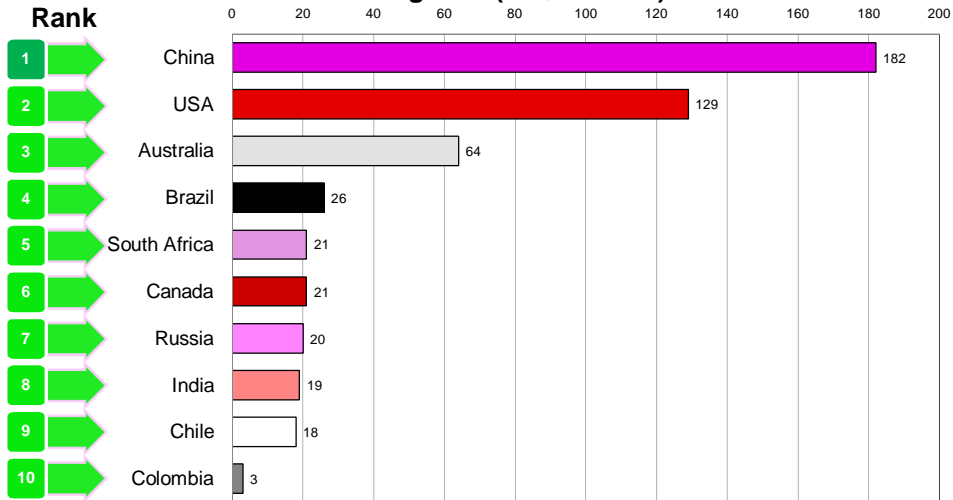
**The future**

---

---

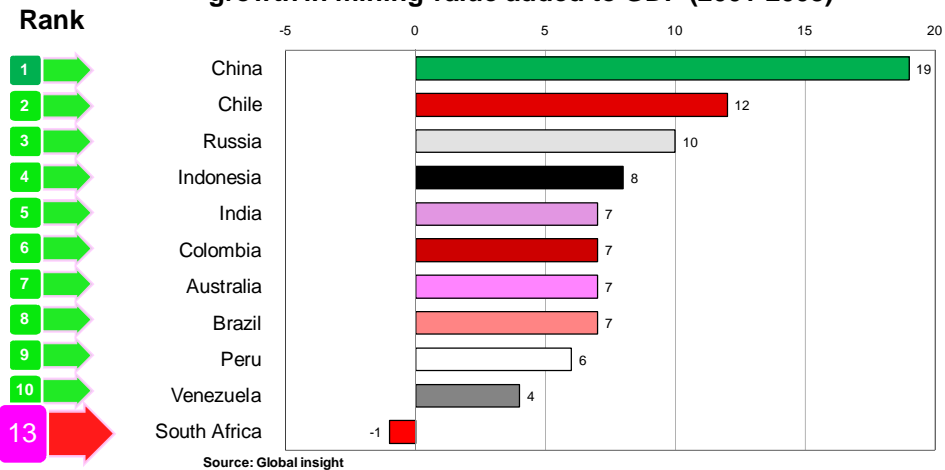
**SOUTH AFRICA HAS THE WORLD'S FIFTH LARGEST MINING SECTOR MEASURED BY REAL GDP**

**The global top ten mining countries as measured by Mining GDP (US\$ billions)**

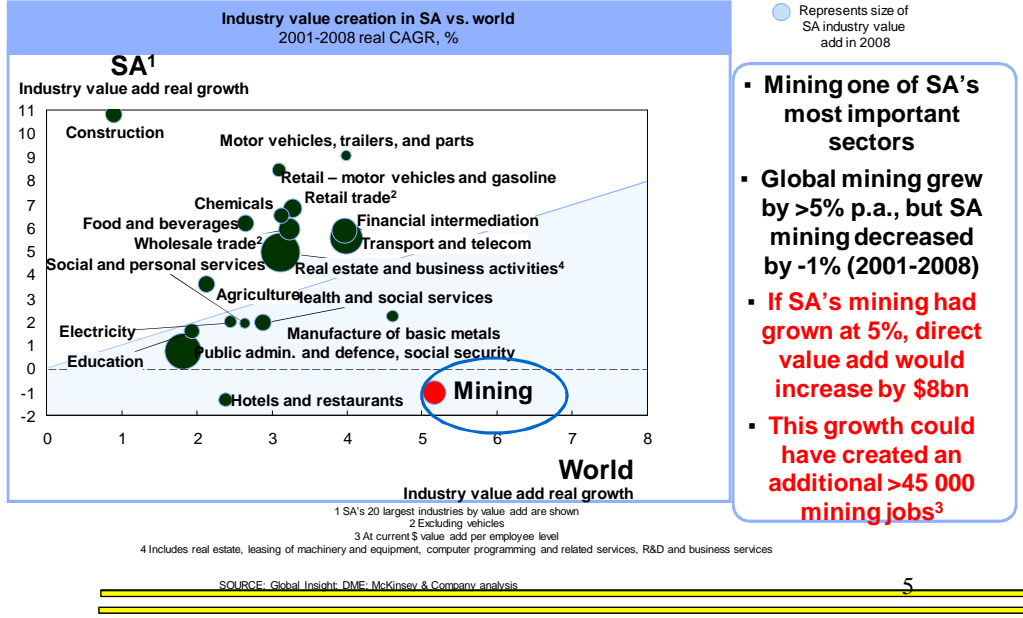


**BUT SOUTH AFRICA'S MINING SECTOR IS UNDERPERFORMING IN TERMS OF ECONOMIC GROWTH RELATIVE TO PEERS**

**The global top ten mining countries as measured by growth in mining value added to GDP (2001-2008)**

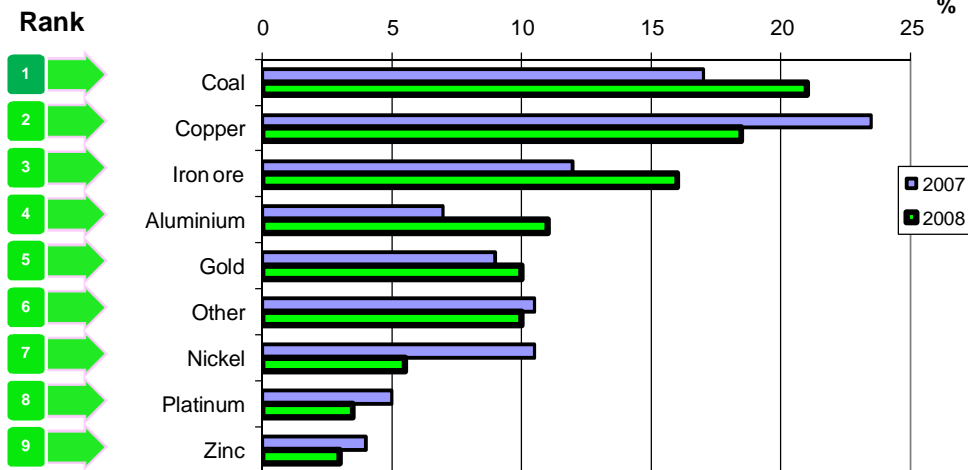


## RELATIVE TO OTHER SA INDUSTRIES AND GLOBAL TRENDS, SA MINING IS LAGGING IN REAL GROWTH



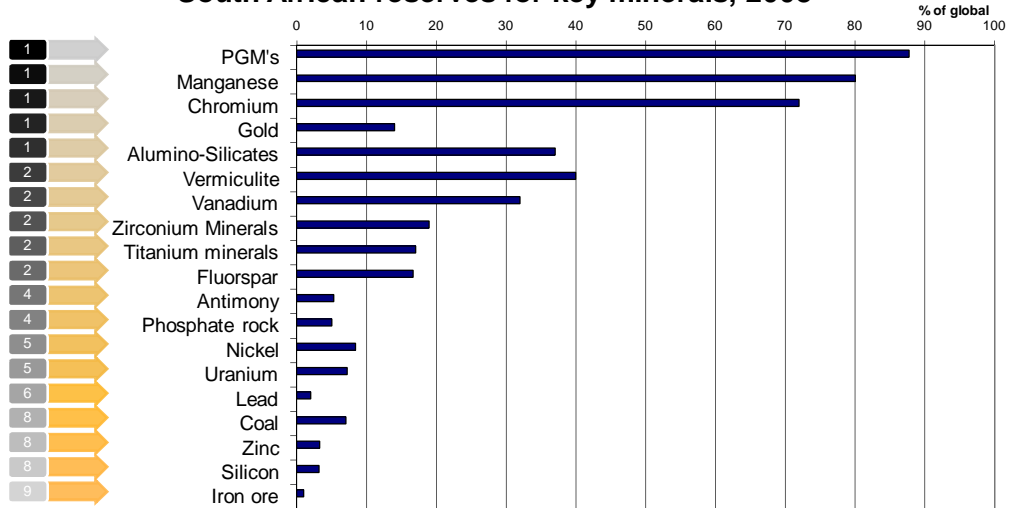
## THIS IS DESPITE SOUTH AFRICA BEING EXPOSED TO ALL THE KEY MINERAL COMMODITIES BY VALUE

### Comparison of Revenue by commodity (composition of revenues of top 40 mining companies - PWC)



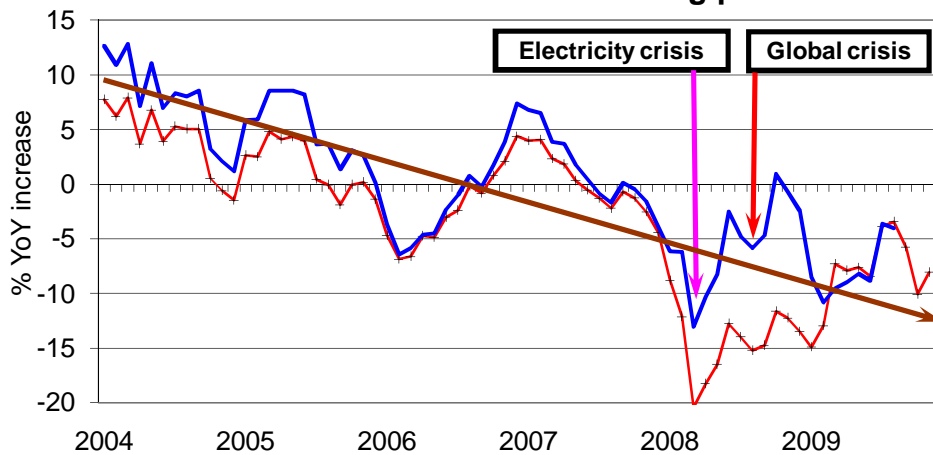
**SOUTH AFRICA, IS NOT MATURE MINING REAL ESTATE! THE COUNTRY STILL HAS SIGNIFICANT GEOLOGICAL POTENTIAL**

**South African reserves for key minerals, 2008**



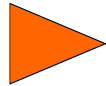
**RSA NOT ABLE TO CAPITALISE ON THE COMMODITY BOOM, EVEN BEFORE THE GLOBAL CRISIS HIT**

**Growth rates in South African mining production**



## PRESENTATION OUTLINE

Snapshot of recent performance of SA Mining Sector



SA Mining – slow growth laggard, why?

Role of Mining still underestimated

Changing the mindset, going for sustained growth

The future

## SOUTH AFRICA WAS UNABLE TO TAKE ADVANTAGE DURING THE COMMODITY BOOM MOSTLY DUE TO DOMESTIC ISSUES

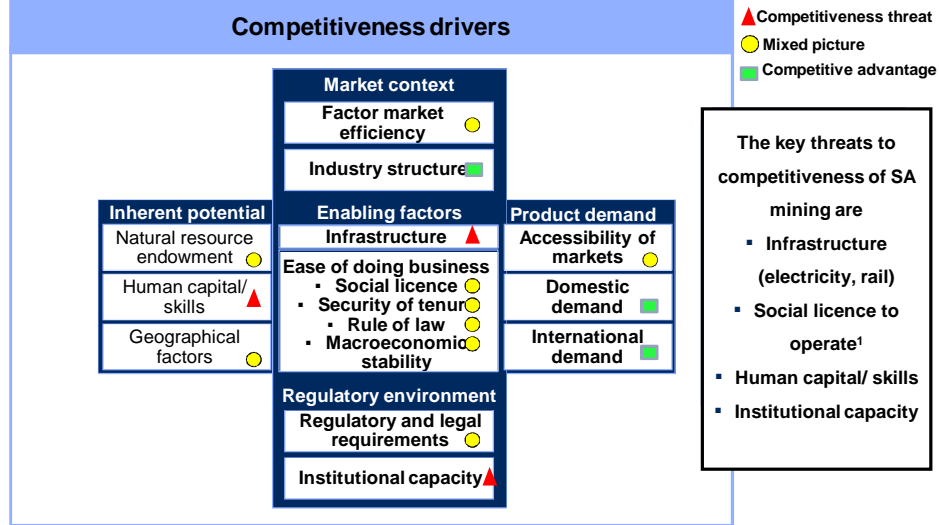
- Mining production declined in period 2006 to 2008, despite significant increase in investment in that period.

- Binding infrastructure constraints (electricity, rail,)
- Red tape constraints (e.g. water licenses)
- Mine closures for safety related issues (some valid, some not) –s54's
- Policy uncertainty (changing the rules of the game)
- Human capital constraints
- Stagnant productivity and rapidly escalating costs
- Volatility in rand-dollar exchange rate
- Then the global crisis hit

local

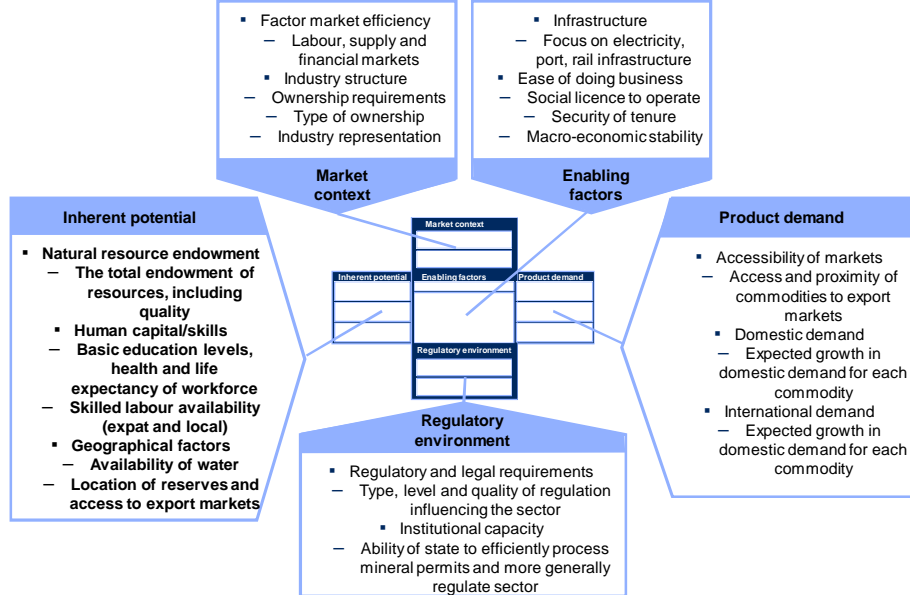
International

## THE LACK OF GROWTH IS DUE TO A COMBINATION OF DRIVERS ERODING THE SECTOR'S COMPETITIVENESS

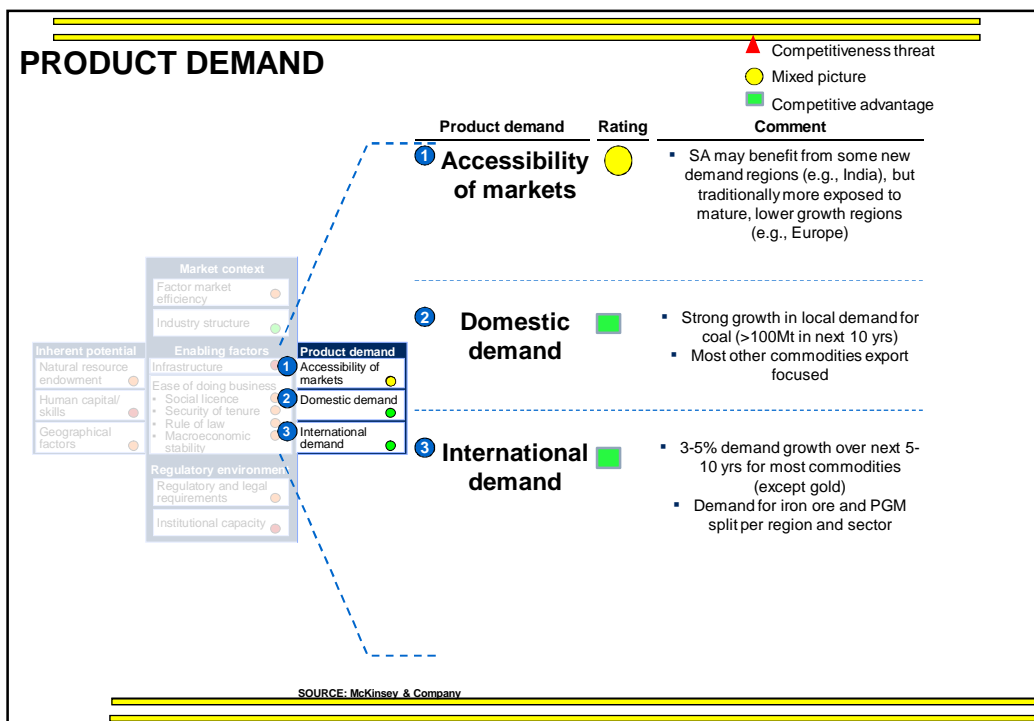
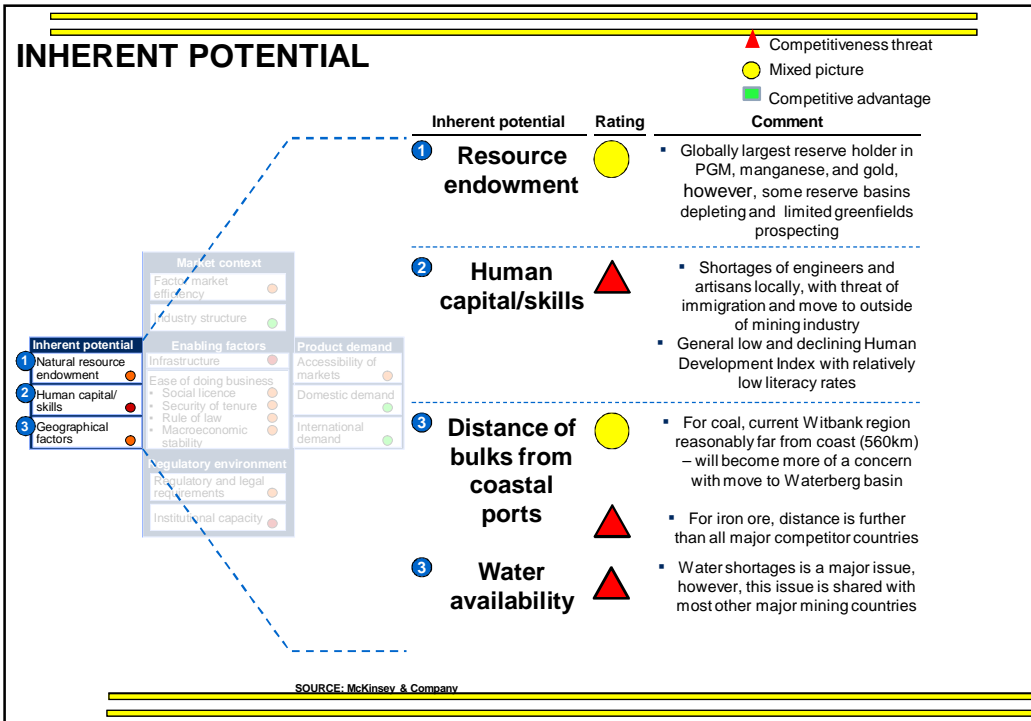


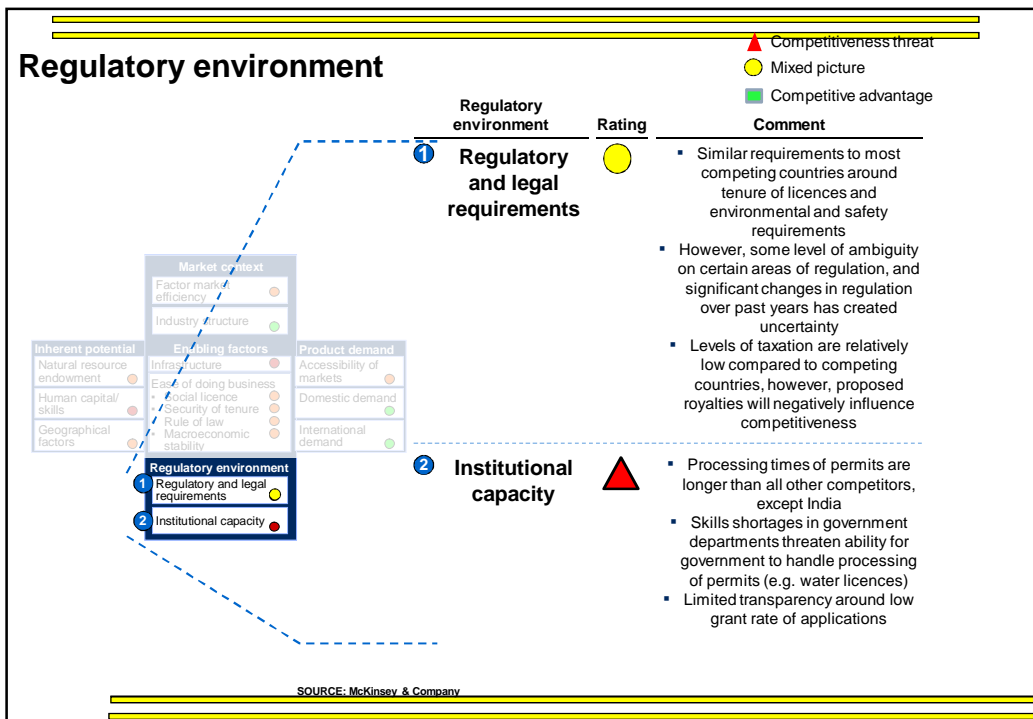
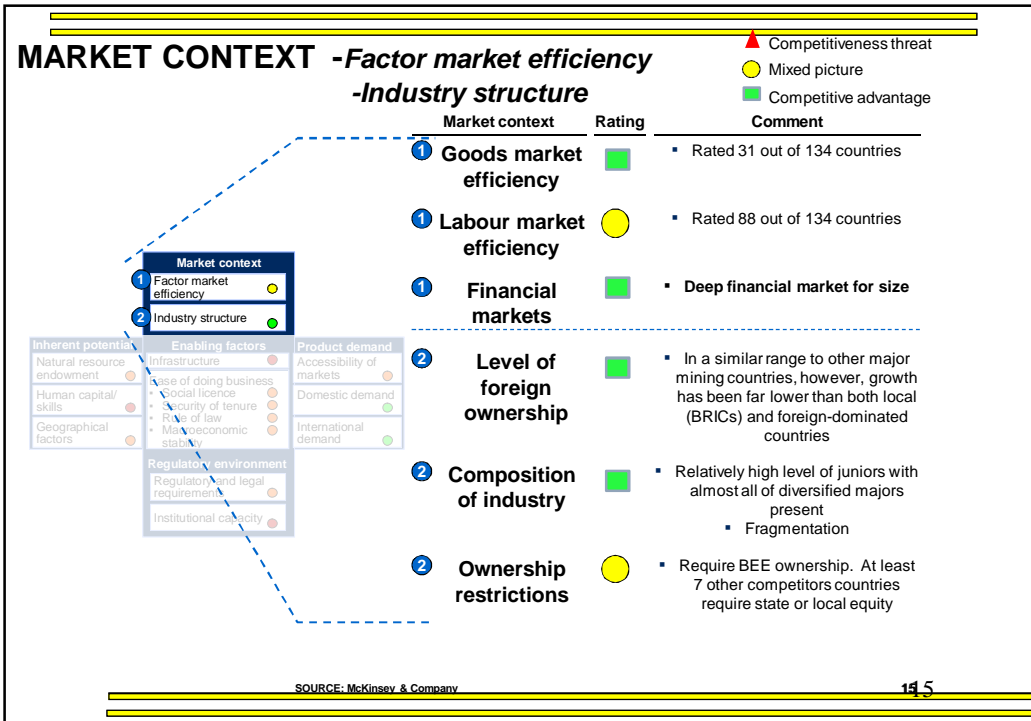
<sup>1</sup> Dealt primarily in sustainability and transformation workstreams  
SOURCE: McKinsey & Company

## DETAILED OVERVIEW OF COMPETITIVENESS DRIVERS



SOURCE: McKinsey & Company

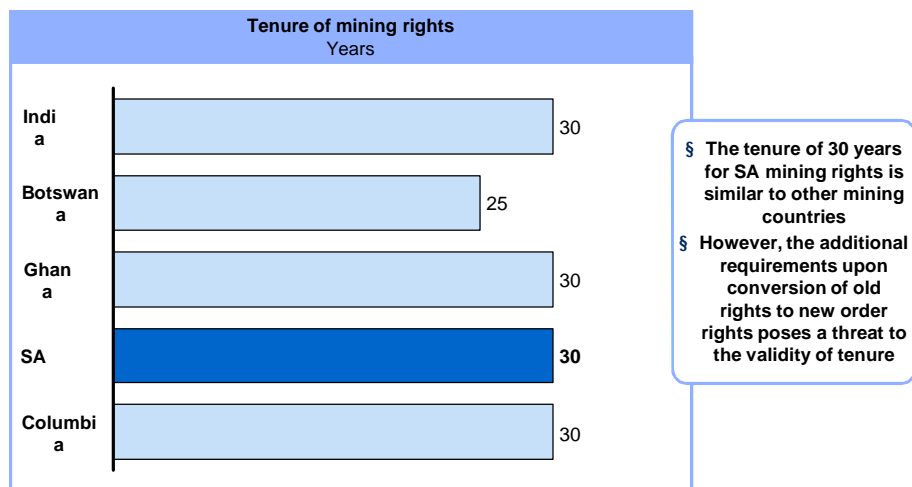




## RED TAPE

- **New Minerals Act enacted on 1 May 2004 following 11 years of discussions**
- **Mining Charter negotiated in 2002 and commences with Act**
- Act in sync with global trends towards state custodianship, Charter focused on dealing with historical legacies
- Problem is in interpretation of Act and Charter and initially large bottlenecks occur in processing applications
- Investment in RSA mining falls in 2004/05 as companies battle with new laws and other factors (rail, rand)
- Environmental and water licensing become key challenges

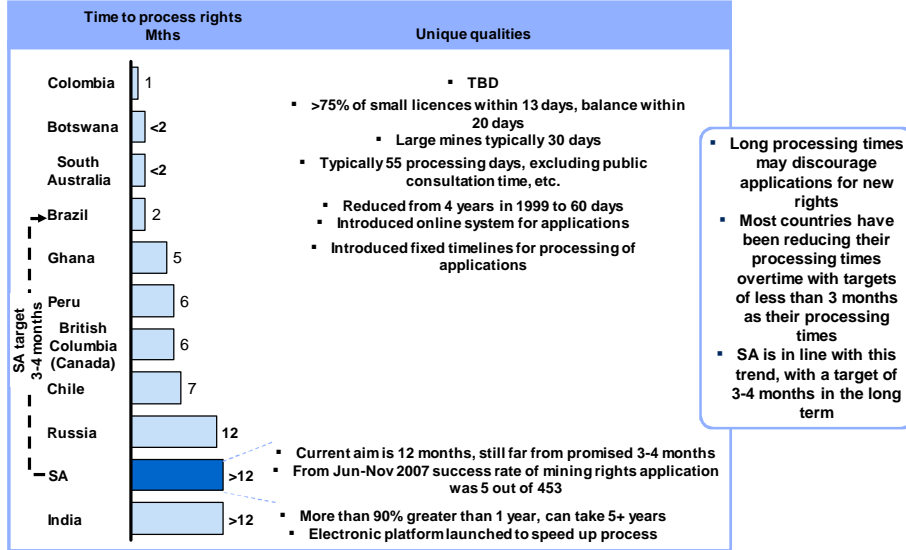
## TENURE OF MINING RIGHTS IS SIMILAR TO PEERS BUT THE REQUIREMENT TO CONVERT IS A THREAT TO TENURE



SOURCE: D.M.E., Government Gazette; SIMCO/UMMS; Mining legislation in various countries; McKinsey & Company

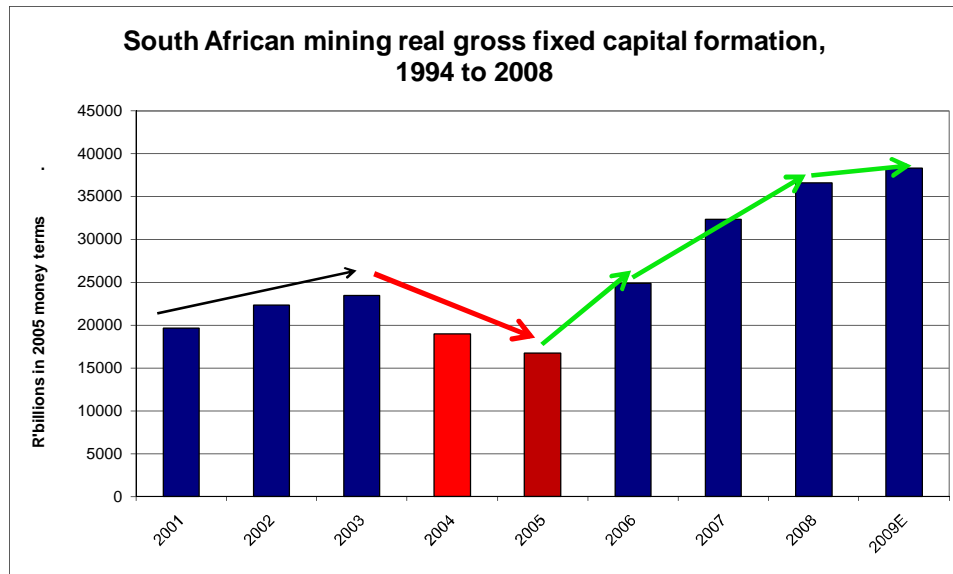
18

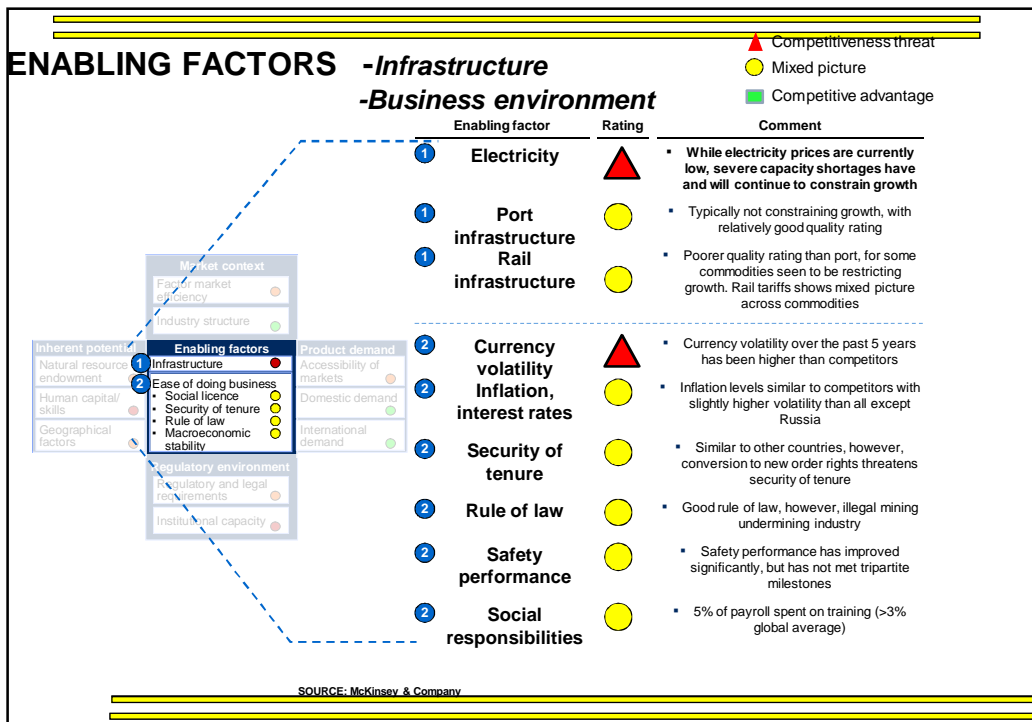
## SA'S MINING RIGHTS PROCESSING TIME APPEARS TO BE LONGER THAN ALMOST ALL OTHER COMPETITORS



SOURCE: INGEMMET; Sernageomin; KomarSA; RenCap; Cadalso; press; Peru Energy Ministry.com; SIMCO UPME; Mining Weekly; Botswana Department of Mines; Government of India Ministry of Mines; Australian Government; BC Ministry of Energy; BC MPR; Journal of Energy and Natural Resources Law

## RSA MINING GFCF FALLS 2004/05 BEFORE RECOVERING





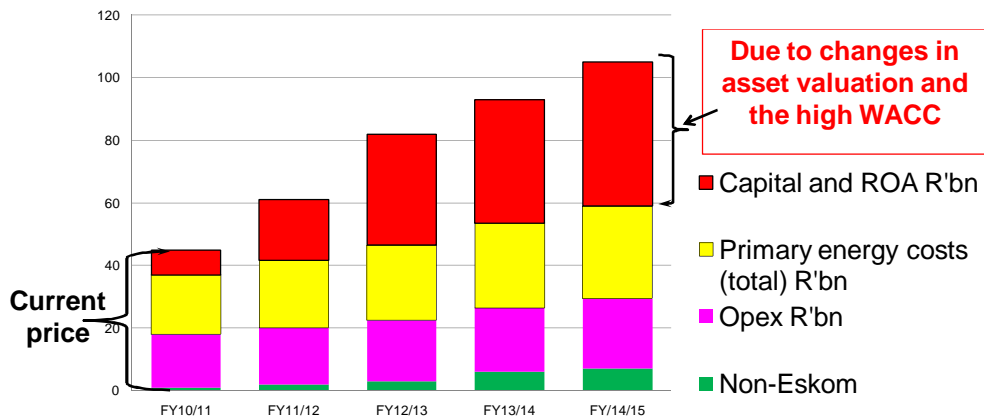
- INFRASTRUCTURE CHALLENGES**
- **Government owns 43% of fixed capital stock of the economy but only accounts for 25% of gross investment.**
  - **Areas that government controls (electricity, rail, most ports, water, etc.) become binding constraints.**
  - **Lack of competition in key areas and lack of capacity of the state result in key bottlenecks.**
  - **Have to look at innovative solutions to tackle the constraints.**
  - **Binding constraints in:**
    - Electricity
    - Rail
  - **Big risks:**
    - Water
    - Liquid fuels

## INFRASTRUCTURE CHALLENGES - ELECTRICITY

- **Current reserve margin at 5-8%**
- New base load power only expected at earliest 2012 (April)
- Based on current demand trends the reserve margin will continue to deteriorate
- Opportunity cost of government not properly implementing the Energy Policy White Paper of 1998 now apparent – immediate cost of build program >R500 billion
- Only way of preventing a full blown crisis in short term is by achieving major gains on energy efficiency or by forced savings (targeted at industry)
- In medium term PPPs and Cogen a critically important solution
- Problem of Eskom application is large re-valuation windfall, with return to capital (valuation and depreciation) and return on capital (WACC) accounting for 40% of the increase applied for
- Economy cannot absorb 147% increase in price by 2012 (35% x 3)

## BY FY 2014/15 RETURN ON CAPITAL AND RETURN TO CAPITAL IS LARGER THAN THE CURRENT ELECTRICITY PRICE

**Composition of proposed electricity price, Eskom 2nd application, MYPD2**



---

---

## **INFRASTRUCTURE CHALLENGES - RAIL**

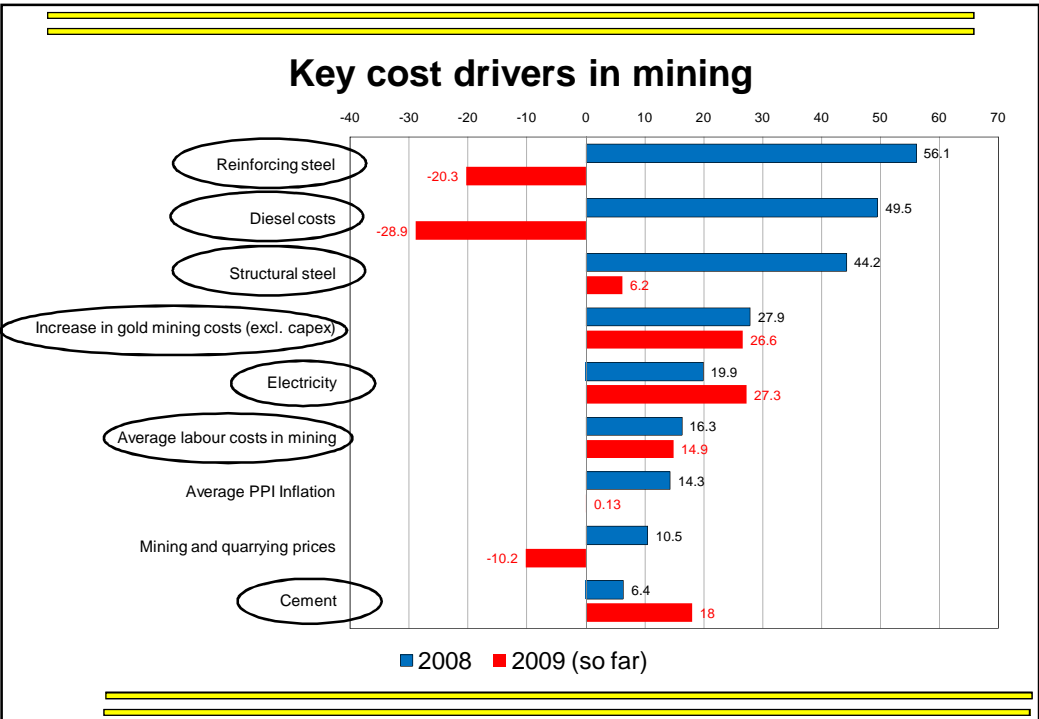
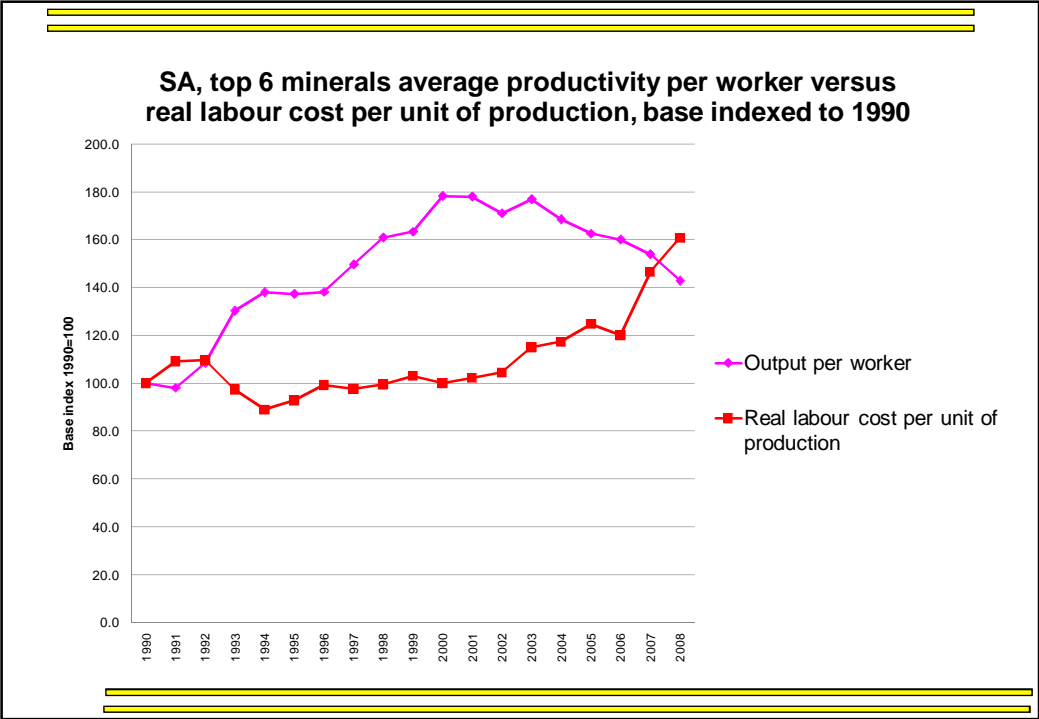
- **Binding constraint on growth of coal, iron ore, manganese and chrome**
  - **For example RSA has >80% of world's manganese resources, but high rail costs and limited service results in RSA accounting for only 15% of global supply**
  - All major inland railways controlled and operated by one utility
  - Poor service and poor capacity means that 81% of RSA's freight by volume goes on roads (should be other way around!)
  - Poor leadership, management and technical capacity combined with poor investment record result in significant constraints
  - Average age of rolling stock and locomotive fleet >28 years
  - Negotiations for upgrades to Orex and Coalink lines >6 years – RSA misses bulks boom
  - Critical need to introduce competition on rail
- 
- 

---

---

## **STAGNANT PRODUCTIVITY AND RAPIDLY RISING COSTS**

- In most of the major mineral grouping relative output per worker has declined over the past five years:
    - (impacts of managerial challenges, skills, safety stoppages, electricity supply constraints, capacity, etc.)
  - The industry faces a set of cost pressures that are all rising faster than general PPI inflation
- 
-



---

---

## **RSA MINING ALSO FACES KEY SOCIO POLITICAL CHALLENGES THAT IMPACT ON THE SOCIAL LICENCE TO OPERATE**

- General feeling in communities and within political circles that benefits of mining are not captured locally and communities around mines remain the most poverty stricken
  - RSA mining perceived to be primary ore exporter, with little domestic value addition
  - Past five years characterised by implementation challenges
  - Other key departments question why mining has performed so badly in midst of unprecedented commodities boom
  - Is RSA mining contributing to socio-economic development?
- 
- 

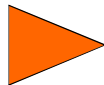
---

---

## **PRESENTATION OUTLINE**

**Snapshot of recent performance of SA Mining Sector**

**SA Mining – slow growth laggard, why?**



**Role of Mining still underestimated**

**Changing the mindset, going for sustained growth**

**The future**

---

---

---

---

## ROLE OF MINING OFTEN UNDERESTIMATED

- Key foundation industry (enabled SA to become the most industrialised country in Africa)
  - Large employer of semi-skilled and skilled workers
  - Critically important NET generator of FOREX
  - Significant multipliers into the rest of the economy (large procurement, investment and wage spender)
  - Equally important, very large magnet for foreign investment inflows (which help fund current account)
  - Significant contributor to transformation in the economy
- 
- 

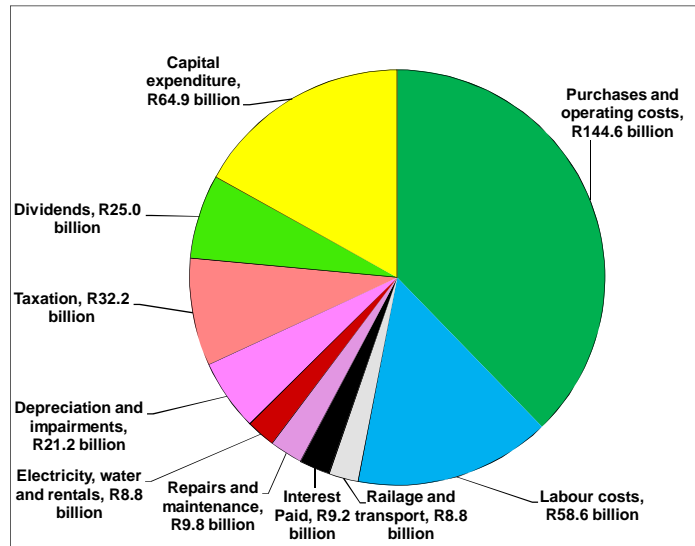
---

---

## MINING - THE ESSENTIAL CORE OF SA ECONOMY

- Creates 1 million jobs (500 000 direct & 500 000 indirect).
  - Accounts for about 18% of GDP (including multipliers).
  - Critical earner of foreign exchange >50%.
  - Accounts for 18% of investment (including multipliers).
  - Attracts significant **foreign savings** (35% of value of JSE).
  - 33% of all BEE deals done in SA over past 11 years (R200 billion)
  - 18.5% of corporate tax receipts (2007 R22 billion, 2008 R33 billion)
  - 50% of volume of Transnet's rail and ports
  - 93% of electricity generation via coal power plants
  - 15% of electricity demand
  - About 37% of country's of liquid fuels via coal (R30 billion worth)
- 
-

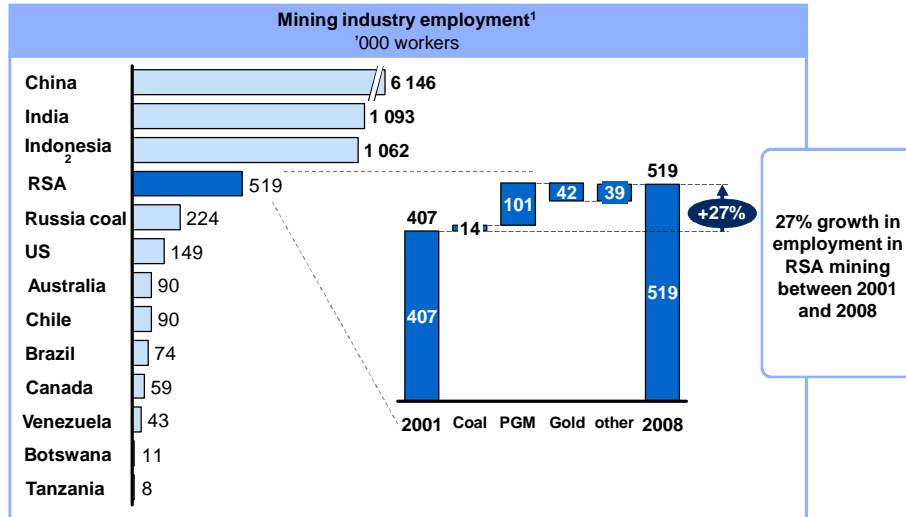
**SA Mining industry, income and expenditure 2008**  
**Total income R364 billion, total expenditure R383 billion**



**The significant mining industry value chain**

Exploration & Mine Development	Project Implementation & Construction	Opencast/Surface Mining	Underground Mining	Mineral Processing	Smelting & Refining	Bulk Materials Handling	Consulting & Engineering Services
<ul style="list-style-type: none"> <li>•Mining surveying &amp; deposit &amp; mine modeling equipment &amp; services</li> </ul>	<ul style="list-style-type: none"> <li>•Project engineering &amp; design services</li> <li>•Bulk earthworks &amp; surface infrastructure construction services</li> <li>•Shaft sinking &amp; underground mine development</li> </ul>	<ul style="list-style-type: none"> <li>•Opencast/surface contract mining services</li> <li>•Drilling &amp; blasting equipment &amp; consumables</li> <li>•Haulage &amp; excavating equipment</li> <li>•Crushing &amp; screening equipment</li> </ul>	<ul style="list-style-type: none"> <li>•Underground contract mining services</li> <li>•Handheld drilling equipment</li> <li>•Blasting equipment &amp; consumables</li> <li>•Mobile haulage &amp; drilling equipment</li> <li>•Ground support equipment</li> <li>•Ventilation &amp; refrigeration equipment</li> <li>•Winding &amp; hoisting equipment</li> <li>•Other support processes &amp; equipment</li> </ul>	<ul style="list-style-type: none"> <li>•Engineering design &amp; project management services</li> <li>•Contract mineral processing services</li> <li>•Comminution equipment &amp; services</li> <li>•Concentration equipment &amp; services</li> <li>•Tailings equipment services</li> <li>•Process control, assaying &amp; testing equipment</li> <li>•Reagents &amp; chemicals</li> </ul>	<ul style="list-style-type: none"> <li>•Drying equipment &amp; services</li> <li>•Smelting &amp; tapping equipment &amp; services</li> <li>•Converting equipment</li> <li>•Environmental/gas treatment equipment &amp; services</li> <li>•Refractory equipment &amp; consumables</li> <li>•Process control, assaying &amp; sampling equipment &amp; services</li> <li>•Reagents &amp; chemicals</li> </ul>	<ul style="list-style-type: none"> <li>•Conveyor equipment &amp; consumables</li> <li>•Cranes</li> <li>•Valves</li> <li>•Pumps</li> <li>•Materials &amp; storage equipment</li> <li>•Transportation vehicles</li> <li>•Other</li> </ul>	<ul style="list-style-type: none"> <li>•Exploration</li> <li>•Mine planning &amp; design</li> <li>•Geotechnical &amp; surveying</li> <li>•Hydrology</li> <li>•Environmental &amp; social impact assessments</li> <li>•Feasibility studies</li> <li>•Civil construction &amp; bulk earthworks</li> <li>•Procurement &amp; management</li> <li>•Shaft sinking</li> <li>•EHS &amp; Q</li> <li>•Ventilation</li> <li>•Assaying &amp; sampling</li> <li>•Instrumentation &amp; control</li> <li>•Electrical</li> <li>•Maintenance &amp; stores</li> <li>•Contract Mining/Mineral processing</li> </ul>

## RSA'S MINING WORKFORCE IS THE FOURTH LARGEST IN THE WORLD



1 Most recent available data, 2007/2008 data for all countries except Tanzania (2004), India (2005), and Botswana (2006)  
2 Includes quarrying as well as oil and gas mining (no more granular data available)

SOURCE: DMR, Minerals Council of Australia, Australian Bureau of Statistics, Bank of Botswana, Brazilian Labour Ministry, Natural Resources Canada, Statistics Institute of Chile, US MSHA, Indian Economic Survey 2007/08, Indonesian Ministry of Labour, Venezuelan Labour Ministry

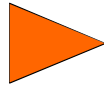
**I.E. THE BENEFITS OF SOUTH AFRICAN MINING ARE MOSTLY CAPTURED LOCALLY!!**

## PRESENTATION OUTLINE

Snapshot of recent performance of  
RSA Mining Sector

RSA Mining – slow growth laggard,  
why?

Role of Mining still underestimated

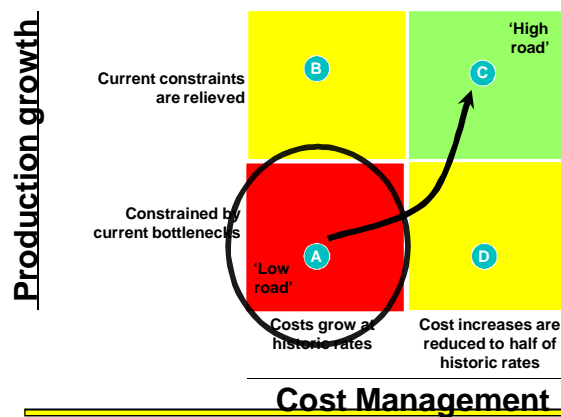


Changing the mindset, going for  
sustained growth

The future

## IF CURRENT TRENDS CONTINUE THE RSA MINING INDUSTRY WILL STRUGGLE TO COMPETE AND GROW

Four scenarios were developed for the forward looking  
scenarios



---

---

## SOMETHING DIFFERENT HAD TO BE DONE TO DRIVE POSITIVE OUTCOME

- Industry has history of constructive engagement (minerals policy discussion, significant work on investment task team in 2006/07, Charter, etc.)
  - Confrontational outcome on implementation issues tests commitment of stakeholders to growth and transformation objectives
  - Outcomes over past 5-years, negative mining growth, which in turn holds back RSA's growth prospects
- 
- 

---

---

## MINING INDUSTRY GROWTH, DEVELOPMENT AND EMPLOYMENT TASK-TEAM (MIGDETT)

- Tripartite, leadership driven. Setup in December 2008.
  - Deal with Short term issues (business survival and trying to limit retrenchments):
    - Try and avoid retrenchments where possible (short-timing, extended leave, etc.)
    - Good protection already afforded to workers through LRA/BCEA/MPRDA
    - Reduce cost pressures where possible
    - Maintain predictability and stability of policy
    - **SUCCEEDED 50 000 jobs lost versus 100 000 jobs losses expected**
  - Long term issues (repositioning the industry for growth):
    - Must get infrastructure right for the next boom
    - Address longer term regulatory constraints
    - Develop sufficient human capital to enable the sector to grow in future
    - Move to “**SA Inc**” approach
    - **WORK IN PROGRESS**
- 
-

---

---

## **PROCESS FOR THE DEVELOPMENT OF STRATEGY FOR GROWTH AND TRANSFORMATION**

- DMR believes that industry leadership (bus, gov, lab) needs to take back the moral high ground and leadership of the industry
  - Possibly too much focus on implementation
  - DMR drives the critical need to get mining growth onto higher growth plane and to build on transformation
  - DMR DG insists stakeholders must work together to more effectively grow and transform the industry
- 
- 

---

---

## **AGREEMENT BY TRIPARTITE LEADERSHIP TO DEVELOP “STRATEGY FOR SUSTAINABLE GROWTH AND TRANSFORMATION OF SOUTH AFRICAN MINING SECTOR”**

- To be developed by tripartite under auspices of MIGDETT
    - SAMDA to lead transformation study
    - Competitiveness task team with McKinsey study as institutional framework
  - Detailed rules of engagement spelt out (constructive, problem solving, no holy cows, confidential, etc.)
  - Mining Charter review part of the process
  - Target, strategy document by end March 2010
  - Strategy document to be debated in MIGDETT Plenary (Mining Summit) in late March
  - Final strategy document to be submitted to Cabinet in April
- 
-

## PRESENTATION OUTLINE

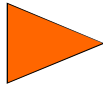
Snapshot of recent performance of  
RSA Mining Sector

RSA Mining – slow growth laggard,  
why?

Role of Mining still underestimated

Changing the mindset, going for  
sustained growth

The future



## STRATEGIC CONTEXT GOING FORWARD

- Tripartite stakeholders have to work more closely together to progress the growth and transformation agenda of the RSA mining industry
- The challenges related to capacity and skills in the industry, in government and in service providers is probably the single biggest risk to the mining industry's future – and this can only be overcome through effective partnerships
- MIGDETT process key opportunity to get strategic direction right and to make progress
- Implementation of strategy outcomes set to be key challenge that must be met (get rubber to hit the tarmac)



**MINING AND MINERALS MATTER  
FOR SOUTH AFRICA**