India – the next landmark
For Mining & Metals

PDAC 2013, Toronto, 5 March 2013
Huge potential, growth can accelerate

- Metal & Mining contribute 2% to India’s GDP
- India has quality mining resources in concentrated clusters
- Exploration budget remains negligible - impact on resource base expansion
- Current R/P & R/R ratios for various minerals indicate significant opportunities for mining industry players
- 100% FDI allowed in the mining sector under the Automatic Route
### Trajectory of Indian Reforms – under way

| **Mining Law reforms** | • Recommendations made by a special committee largely adopted  
• Commercial orientation, competitive bidding, streamlining of Licensing, transparency, transferability, CSR, R&R  
• National Mineral Policy, National Royalty Commission |
|------------------------|-------------------------------------------------------------------------------------------------|
| **Land reforms** | • Public acquisition provisions liberalized to allow acquisition for private industries in select sectors.  
• FSI norms, Building and Tenancy laws liberalized to some extent. |
| **Labor reforms** | • Unification and harmonization of labor laws and change in Apprentices Act to relax the mandatory absorption percentage of industrial trainees.  
• Private management of Industrial Training Institutes and employment exchanges. |
| **Tax and fiscal reforms** | • Fiscal Responsibility and Budget Management Act reinstated to control fiscal deficit.  
• Targeted subsidies through Unique Identification Number implemented for Central schemes  
• Goods and Services Tax (GST) with partial abolition of other taxes. |
| **Financial sector** | • Calibrated opening up of banking sector.  
• Pension and insurance sectors also see some liberalization. |
| **Administrative reforms** | • Partial implementation of administrative reforms at Center.  
• Includes rationalisation of functions and size of government, simplification of processes and creation of coordination mechanisms |
| **Judicial reforms** | • Attempt towards reduction in backlog of cases.  
• Judicial Standards and accountability Bill implemented for the Supreme Court and High Courts. |
COMMODITY DEMAND DRIVERS
Five macro developments will have major impact on the Indian Economy

<table>
<thead>
<tr>
<th></th>
<th>Development</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Increased Urbanisation</td>
<td>Structural shift</td>
</tr>
<tr>
<td>2</td>
<td>Demographic dividend</td>
<td>Young nation</td>
</tr>
<tr>
<td>3</td>
<td>Better connectivity</td>
<td>Connected villages and towns</td>
</tr>
<tr>
<td>4</td>
<td>Regional Integration</td>
<td>Asian behemoth</td>
</tr>
<tr>
<td>5</td>
<td>Better governance</td>
<td>Federal success</td>
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GDP growth + increased share of infrastructure investment will double investments in infra...

- Increased emphasis on private investments/PPP - impetus to growth in physical achievements.
- Investment planned to be doubled in 12th Plan period (2012-17) to USD 1 trillion
- 90% increase in FDI in infrastructure sector in 2012
Rising urban population, more cities, taller buildings and income growth will boost Real Estate sector

Key levers and trends

| Urban population | Urban population is expected to increase from 382 million in 2011 to 500 million by 2020 |
| Per capita floor space | Boosted by increase in per capita income and decrease in household size, per capita floor space will increase to ~18m² by 2020 from the current ~13m² |
| Reconstruction | Increase in FSI norms coupled with aging buildings would cause more reconstruction |
| Industrial/commercial space growth | Increase in consumerism and growth of service sector will drive demand for commercial space |
Automotive growth to accelerate

Key levers and trends

<table>
<thead>
<tr>
<th>Vehicle volumes</th>
<th>Increase in GDP/capita, urbanisation and growth of industrial and agricultural sectors will increase volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle weight</td>
<td>Emission norms and fuel efficiency will drive light-weighting of vehicles</td>
</tr>
<tr>
<td>Auto parts after-market</td>
<td>Change in vehicle mix and increased localisation of supply of parts will lead to an increase in the after-market numbers.</td>
</tr>
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Vehicle demand (Vehicles/1000 people)

<table>
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<tr>
<th>Year</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>14</td>
<td>20</td>
<td>26</td>
</tr>
</tbody>
</table>

*Pl note that Motor vehicles include Passenger vehicles and Commercial vehicles
Significant investments in key infrastructure sectors i.e. rail, road, ports and airports will boost metal demand

Key levers and trends

<table>
<thead>
<tr>
<th>Investments in the economy</th>
<th>With increased GDP levels, the absolute amount of investments shall also increase and will be majorly used for infrastructure and public services.</th>
</tr>
</thead>
</table>
| Upgradation of existing infra | Rail and road networks will be modernised in the future with greater focus on safety and accessibility |}

| Government policies and impetus | Recognition of infrastructure’s contribution to economic growth, formulation of favourable policies |
### Railways Vision 2020 investment allocation and plans have high metals intensity

<table>
<thead>
<tr>
<th>Type of work</th>
<th>Allocation (USD million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High speed corridors</td>
<td>47,400</td>
</tr>
<tr>
<td>New line</td>
<td>42,600</td>
</tr>
<tr>
<td>Track doubling</td>
<td>31,000</td>
</tr>
<tr>
<td>DFC</td>
<td>19,000</td>
</tr>
<tr>
<td>Gauge conversion</td>
<td>8,000</td>
</tr>
<tr>
<td>Electrification</td>
<td>11,500</td>
</tr>
<tr>
<td>Metropolitan transport project</td>
<td>14,300</td>
</tr>
<tr>
<td>Procurement of wagons</td>
<td>20,500</td>
</tr>
<tr>
<td>Other rolling stock</td>
<td>48,200</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>328,800</strong></td>
</tr>
</tbody>
</table>

- Railway has an ambitious investment plan to invest USD 328 billion during the 2010-2020 under its “Vision 2020”.
- Vision 2020 envisages massive capacity augmentation.
- Wagon procurement is envisaged to increase to 75,000 per annum from present level of 15,000.
- Policy for private participation.
Rebound in manufacturing, mechanization and growth of industries will drive growth of capital goods industry

<table>
<thead>
<tr>
<th>Drivers for Growth in consumption of steel in manufacturing sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in Power demand</td>
</tr>
<tr>
<td>Increase in automobiles</td>
</tr>
<tr>
<td>Increased mining activity</td>
</tr>
</tbody>
</table>

➢ As per new manufacturing policy of GOI contribution to GDP to be increased to 25% from the current 16% in the next 15 years

➢ Steel consumption in capital goods:
  China -18% (2010 estimate)
  India - Negligible
COMMODITY DEMAND
Growing power generation, largely coal based, will escalate thermal coal needs - CY imports > 100 MT

With rising population, increasing urbanization and need for infrastructure, the power requirement is expected to reach 215,000 MW by 2020 and hence growing thermal coal requirement. 88,000 MW planned to be added in 12th Plan alone.
Steel demand is expected to rise to 110 mn MT by 2020, with corresponding Met Coal demand at 65 mn MT.

- Per capita consumption of steel even at these projected levels would be far lower than the global average today.

### Steel demand forecasts (Mn MT)

- India is likely to consume 65 Mn MT of met coal in 2020 and 130 Mn MT in 2030.
- Given that only 2 Mn MT of 2010 was of high grade (ST1, ST2 and W1) and there is limited production, provides great opportunity in this space.

### Metallurgical coal demand forecasts (Mn MT)
Benchmarking per capita consumption of base metals reflect significant headroom

- India's per capita use of various base metals remains significantly low compared to other developing and developed economies.
- India has significant resources of copper ore, but currently imports majority of its copper concentrate requirement.
- India remains self sufficient in other base metals like aluminium and zinc but lower per capita consumption indicates a huge untapped opportunity in base metal or its consuming industries.
The demand for copper & aluminum likely to grow by 4-5 times over the next 15 years

► Demand for aluminum is derived mostly from the power and construction sectors that together contribute to around 55% of domestic aluminum consumption

► Demand for copper is largely based on power industry, consumer durables & housing, all of which likely to witness robust growth

Source: Annual Report, Ministry of Mines
Gold imports – huge imports despite R/P ratio of 37

Though primary Gold metal production in India remained constant between 2–3 tonnes during the last 5 years, the imports have incher higher to 969 tonnes in FY11 against 715 tonnes in FY07.

The current production of gold ore in country is around 0.5 million tonne which is merely 0.5% of its annual gold consumption.

The total resources of gold ore in the country were estimated at 390.29 million tonnes (As per UNFC system, as on 1.4.2005) - 19.25 MT reserves, remaining 371.04 MTs resources category.

The gold import bill has tripled from INR 654 billion to INR 1,847 billion in between FY07–FY11
Rio Tinto – a long term relationship with India

Rio Tinto Bunder Project

- Grass root discovery by Rio Tinto & 100% owned
- 27.4 million carats of diamond
- Mining lease LOI recently issued by GoI and GoMP
- Estimated total investment till production of US$ 500 million
In summary ...

► Indian Demand for Metals and Minerals would continue to grow for few decades

► India has a large, quality resource base - but not fully explored / leveraged

► Active capital market & investor base, functioning legal & judicial system

► Various reforms initiatives are under way

► Sharp jump in FDI in 2012 – 3rd highest investee country, further liberalisation

► Growth can significantly accelerate

► Opportunities for all:
  ► Exploration
  ► Technology transfer / Joint Ventures
  ► MDO and other services
  ► Strategic investments in mining & metals
  ► Trade - Equipments, Minerals, Consultancy
Thank You

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