Presentation on

Working Group for Twelfth Plan

on

Mineral Exploration and Development

AUGUST 2011
Working Group & Subgroups

- Four Subgroups of the Working Group were constituted on 30.03.2011, namely

  - Survey and General exploration (Subgroup I)
  - Metals and Minerals (Subgroup II)
  - Finance and Infrastructure (Subgroup III)
  - S & T (Subgroup IV)
Subgroup meetings

- Subgroup meetings held on as follows:

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<th>Subgroup I</th>
<th>Subgroup II</th>
<th>Subgroup III</th>
<th>Subgroup IV</th>
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Subgroup meetings

(continued)

Working Group meetings held on
» 30.06.2011 and
» 01.07.2011

• Working Group considered the work-in-progress of the subgroups and made suggestions for incorporation
• Subgroup Reports under preparation
• Draft Reports will be circulated in August
• Meeting of Working Group in early September to finalise
Framework for subgroup recommendations

- Eleventh FYP recommendations and mid-term Review
- Hoda Committee Recommendations 2007
- National Mineral Policy 2008
- Report of HPC on GSI 2009
- CII Report on skill development of Mining Sector 2010
- Draft MMDR Act 2011
- Draft Report of HPC on IBM 2011
General tenor of Subgroup recommendations

Subgroup I (Survey & General Exploration)

• Create conducive climate for private sector investment in exploration by
  – Investor friendly concession grant and management procedures
  – Acquisition of high quality baseline data on
    • Geology
    • Geomorphology
    • Geophysics (gravity, magnetic, spectral, EM, radiometric)
    • Geochemistry
General tenor of Subgroup recommendations
(Subgroup I)

(contd....)

• Harnessing IT related services for
  - GIS applications
  - Publication of survey and exploration Reports
  - Integration of 3rd party data
  - Comprehensive and interactive National Mineral Inventory

• Proper regulation of exploration and mining

• Strengthening of GSI, IBM and State Directorates for concession administration, data management, detailed exploration, mine planning and closure
General tenor of Subgroup recommendations (Subgroup I)

(continued)

- Stepping up of Baseline surveys on land and offshore areas
- Focus on concept oriented exploration including for
  - Technology metals/minerals (Ni, Co, Mo, Ga, Ge, In, Os)
  - Energy critical elements (ECE) and Rare Earths Elements (REE)
  - Special attention to OGP area of 5,70,000 Sq.Km with emphasis on search for deeper level and concealed mineral deposits
- Creation of National Geoscience Advisory Council for science policy direction
- Creation of Geosciences Congress for professional development of Sector
General tenor of Subgroup recommendations (Subgroup I)

(Contd....)

• Specific projects in Twelfth Plan for
  - National Aeromagnetic survey by GSI
  - Completion of Geochemical survey of GSI on fast track by outsourcing analysis
  - Phase III Portal Project of GSI for 1:50,000 scale map service
  - Strengthening of Regulators, IBM and State DGMs through National Mineral Fund and State Mineral Fund (under new MMDR Act)
  - Creation of National Geophysical Data Repository and National Drill Core Repository

• Cross cutting Issues to be addressed
  – Forest and environmental clearance
  – Land acquisition, R & R
  – National Geoscientific data bases with GIS
General tenor of Subgroup recommendations
Subgroup II (Minerals and Metals)

(contd....)

• Subgroup went into minerals specific strategies for major minerals, including exploration, extraction, processing, import (acquisition) and recycling strategies

• Metals/Minerals considered include
  – Aluminium
  – Base metals (Cu, Pb, Zn)
  – Noble metals (Au, Ag, PGE)
  – Precious stones (Diamonds)
  – Beach Sand Minerals (BSM) and Rare Earth Elements (REE)
  – Strategic Metals (Technology, Energy Critical eg., Sn, Co, hi, Ge, Ga, In, Ni, Be, Ta, W, Bi, Se, etc.)
  – Industrial and Fertilizer Minerals (Limestone, phosphates and potash etc.)
  – Ferrous minerals (Fe, Cr, Mn etc.)
  – Dimension stones
General Tenor of Subgroup recommendations (Subgroup II)

(contd….)

• Recommendations relate to
  – Critical bottlenecks in production arising out of environmental and forest related clearances
  – Need to develop recycling strategies particularly for Al, ECE, REE, Zn, Pb
  – Process R&D for recovery of Au, Ag, Te, Se from Cu
  – Process R&D for recovery of Ni from COB
  – Process R&D for recovery of Va from Bauxite etc.
General tenor of Subgroup recommendations (Subgroup II)

- Change in inverted duty structure to enable recovery of Au from Cu anode slime
- Focus on deep exploration using high technology advanced softwares and sophisticated geophysical sensors for concealed primary sources of Technology, Energy Critical, Rare, Noble and Base metals and diamonds
- Coordinated strategy with AMD, IREL and IBM for BSM and REE
- Creation of national stockpile of important ECE and REE with designated agencies
- Acquisition of raw material assets abroad as part of national strategy
General tenor of Subgroup recommendations (Subgroup II)

- Promotion of beneficiation (and agglomeration) and incentivization for utilization of low grades and recycling
- Skill development and upgradation for mining and extraction related activities

• Creation of institutional mechanisms enabling expert study of techno-economic policy issues relating to national raw materials security
• Cross cutting issues to be addressed
  - Incentive structure to promote business models for process R&D
  - Creation of enabling environment for operationalisation of waste management and recycling strategies (for ECE, REE etc.)
  - National strategies for raw materials acquisition abroad
  - Skill development mechanisms
General tenor of Subgroup recommendations
Subgroup III (Finance and infrastructure)

(contd….)

• Align structure of financial incentives with nature of risk and provide for
  – Amortisation of pre-production mine development expenditure over longer period at option of lessee
  – Tax benefit for advance earmarking of profits for expenditure on mine closure
  – Benefits of high risk venture capital based exploration to flow back to investors (flow through shares)
  – Creation of Exploration Bonds like Equity Infrastructure Bonds (which provide tax-free interest payment during initial period and can convert into equity shares at the end of the period – useful for HNW)
  – Promotion of Infrastructure Development in mining areas (including PPP)
General tenor of Subgroup recommendations)  
(Subgroup III)  
(contd....)

• State level Mineral Development Funds funded out of royalty, leveraged for infrastructure creation and management (including PPP projects)
• Railway infrastructure planning to be better aligned with ore transportation requirements including
  – PPP schemes for last mile/rolling stock (high load wagons)/Sidings
  – Track and signalling improvements
  – Rail movement capacity creation to ports or large mineral based industry clusters
• Rail freight tariffs to be rationalised to retain competitive edge of mineral based industry
General tenor of Subgroup recommendations  
(Subgroup III)  
(contd….)

• Capacity for ore handling in specific ports needs to be improved through planned investments to reduce turn around time and reduce port transactions costs

• Industry-Port-Customs interface needs to be improved through seamless data bases for reducing transaction costs and improving revenue collection

• Cross cutting issues requiring to be addressed
  – Railway infrastructure planning and freight rate related issue
  – Port infrastructure planning and investment
  – Incentives for exploration and mine closure
General tenor of Subgroup recommendations
Sub Group IV (S&T)

(contd....)

- Mechanisms for articulation of industry requirements of technologies and processes for improving competitive edge in exploration, extraction, beneficiation, value addition and recycling in minerals and metals

- Policy and incentives for private sector to develop business models for process R&D for co-production/by production of Technology and Energy Critical Materials

- Policy and incentives and joint plan (of all stake holders) to promote R&D for specific metals and alloys for use in energy, electronic, defence and other sectors particularly as import substitution
General tenor of Subgroup recommendations
(Subgroup IV)

(contd....)

- Policy and incentives for recycling of metals (including scrap)
- Policy and incentives for manufacture and indigenization of mining equipment and machinery and research on mining methodologies
- Policy and incentives for acquisition and development of exploration related technologies, sensors, softwares, etc.
- Policy and incentives for institutional growth in areas of sustainable development (and clean energy), societal geoscience including global change issues; and geo-technical applications.
General tenor of Subgroup recommendations (Subgroup IV)

(contd....)

- Cross cutting issues requiring to be addressed:
  - Networking of R&D institution
  - Creation of Centres of Excellence
  - Promotion of multi-disciplinary studies
  - Mechanisms for creation of State-of-the art networked laboratory infrastructure
  - Sustained development of S&T pool for Geology, Geophysics, mining engineers, etc. at Universities and Institutes of advanced learning