



COMMITTEE FOR MINERAL RESERVES  
INTERNATIONAL REPORTING STANDARDS

## CRIRSCO Initiative in India: it's benefits and future outlook

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**ICMM**  
International Council  
on Mining & Metals

# Presentation Outline

- ✓ CRIRSCO Template
- ✓ CRIRSCO Members & Stock Exchanges Recognition
- ✓ Why MEAI steering this initiative ?
- ✓ What is MEAI-NACRI Initiative?
- ✓ CRIRSCO Initiative in India: Update
- ✓ Benefits of joining CRIRSCO
- ✓ Future Outlook

# About CRIRSCO

- ❖ CRIRSCO stands for **'Committee for Mineral Reserves International Reporting Standards'**
- ❖ It **promotes best practice** in the **international public reporting** of mineral exploration results, resources and reserves
  - **Transparency** - Disclosures of data, processes and procedures
  - **Materiality** - Facts and evidences
  - **Accountability** - Knowledge and judgement of QP/ CP
- ❖ It is **recognized by global organizations** such as:
  - ✓ the International Accounting Standards Board (**IASB**),
  - ✓ the UN Economic Commission for Europe (**UNECE**), and
  - ✓ the International Council on Mining and Metals (**ICMM**)as the **key international organization representing the mining industry** on issues relating to the classification and reporting of mineral assets

# Public Reporting for the markets

- ❖ CRIRSCO standards are intended for **Public Reporting** by Mining Companies
- ❖ Public reports must be prepared by **Competent Person (CP)** and they shall be **issued with the written consent of the CP(s)**
- ❖ A Mineral Resource must have “.... **Reasonable** prospects for **eventual economic extraction**”. ‘Discovered uneconomic’ or ‘unrecoverable’ or “*undiscovered*” categories *not included*.
- ❖ Public Report is the **responsibility of the Company** acting through its Board of Directors. Such Report must be **based on the supporting documentation prepared by CP(s)**

# CRIRSCO Members



## COUNTRY

## CRIRSCO Aligned Codes

Australasia  
Brazil  
Canada  
Chile  
Europe

JORC  
CBRR  
CIM , NI 43-101  
Comision Minera  
PERC

## COUNTRY

## CRIRSCO Aligned Codes

Kazakhstan  
Mongolia  
Russia  
South Africa  
United States

KAZRC  
MPIGM  
NAEN  
SAMREC  
SME

# Global Securities Exchanges Recognition

## Security Exchanges

ASIC: **Australia**

CSA: Toronto **Canada**

Santiago SX: **Chile**

ESMA: **Europe and UK**

AIM: **London**

HKE: **Hong Kong**

NYSE & NASDAQ: **USA**

JSE: **South Africa**

Moscow Exchange: **Russia**

## Recognised CRIRSCO Aligned Codes

JORC

NI 43-101, CIM Standards

Comision Minera

All CRIRSCO aligned Codes

CIM, JORC, NAEN, SAMREC, SME

JORC, SAMREC, CIM

SEC Industry Guide 7

SAMREC

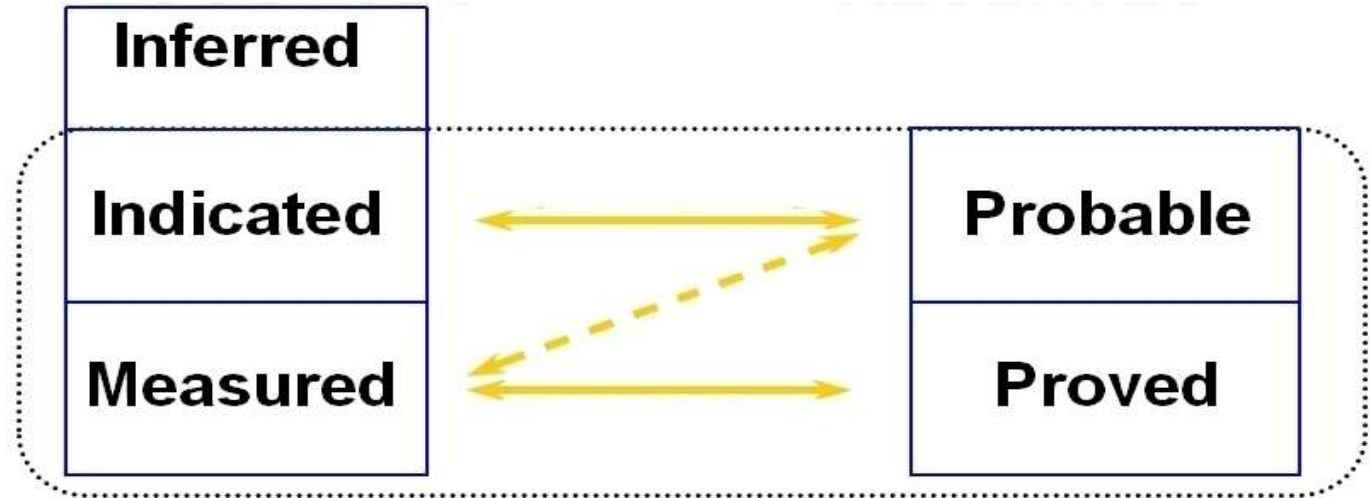
NAEN

# Fundamental Framework

**Exploration  
Results**

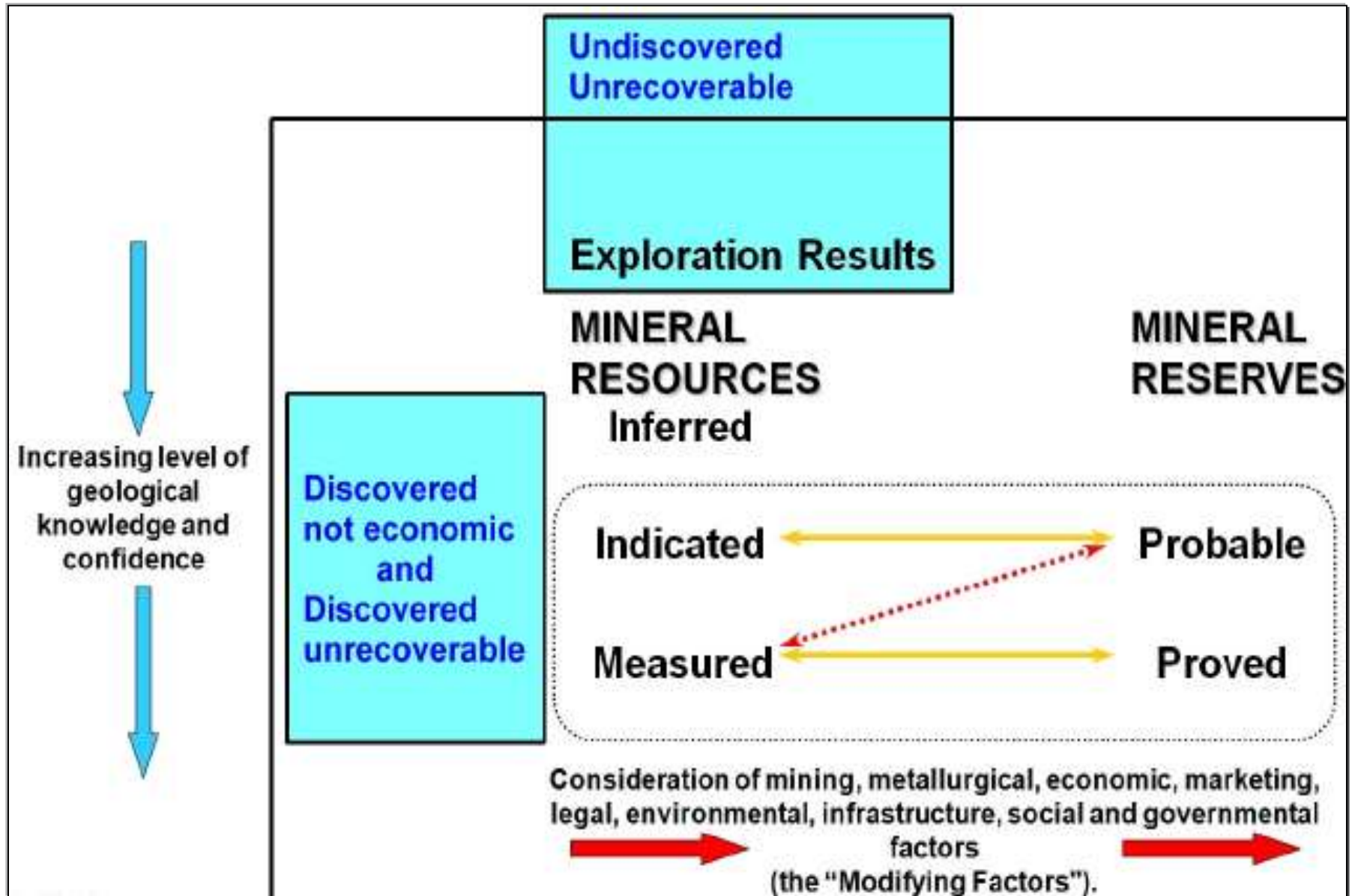
**MINERAL  
RESOURCES**

**MINERAL  
RESERVES**



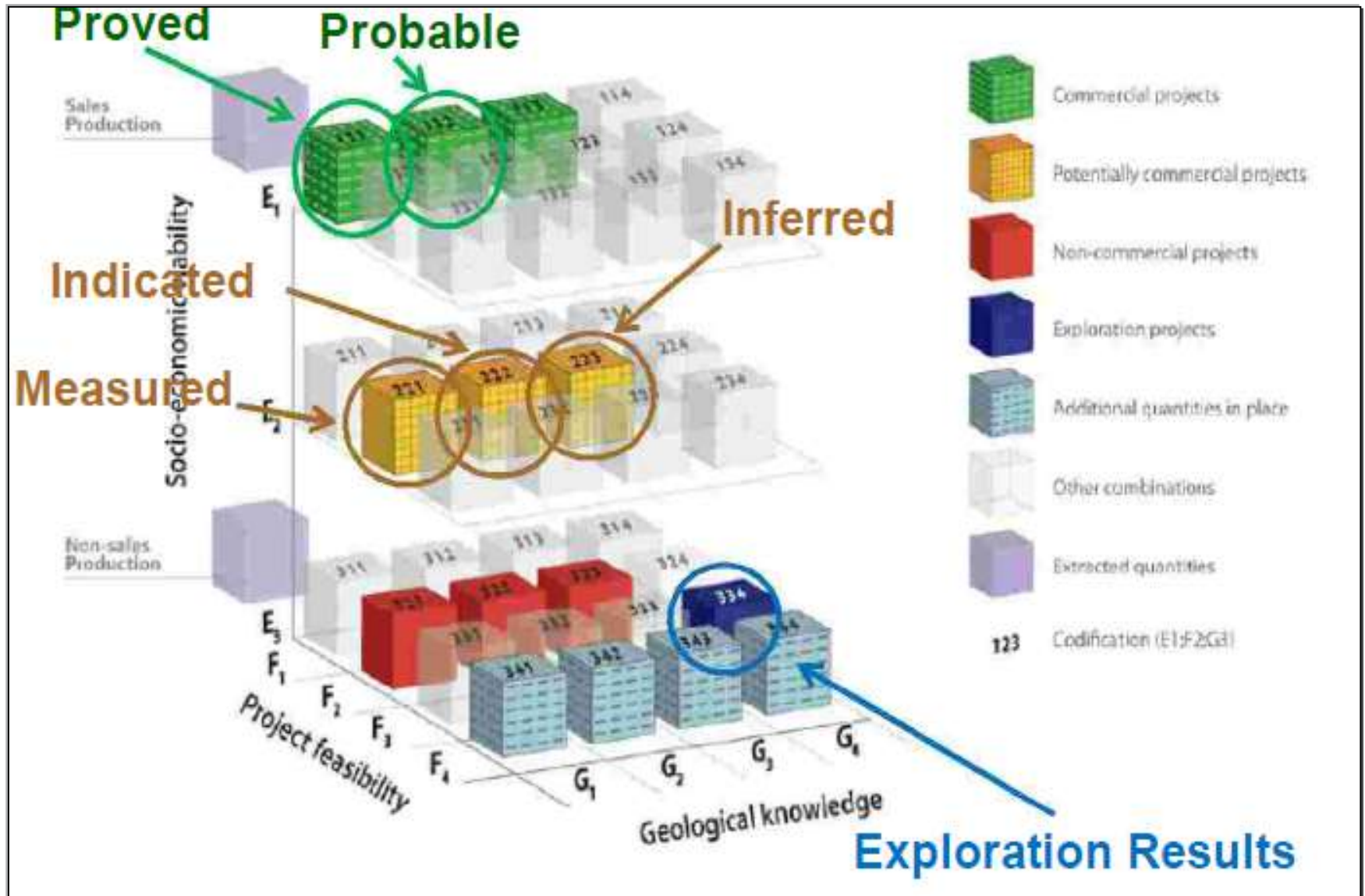
Consideration of mining, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social, and governmental factors (the "Modifying Factors").

# Mineralisation beyond 'Inferred'





# CRIRSCO high-level mapping to UNFC-2009



# CRIRSCO high-level mapping to UNFC-2009

CRIRSCO Template		UNFC-2009 "minimum" Categories			UNFC-2009 Class
Mineral Reserve	Proved	E1	F1	G1	Commercial Projects
	Probable			G2	
Mineral Resource	Measured	E2	F2	G1	Potentially Commercial Projects
	Indicated			G2	
	Inferred			G3	
Exploration Results		E3	F3	G4	Exploration Projects

# MEAI Initiative

- ❖ **MEAI** '*Mining Engineers' Association of India*' took the initiative to bring India under CRIRSCO membership.
  - ✓ **Largest Professional body** representing all the disciplines in the Indian Mineral industry, with **over 5500 membership**
  - ✓ **Serving** the Mineral industry since 1957 (**6 decades**)
  - ✓ **Geographically spread** across India with **25 Chapters** and its membership represent all **solid minerals and coal**
  - ✓ **Represents Pool** of mineral industry professionals with **proven professional competency & expertise**
- ❖ One of the **Objects of MEAI**: '*To **keep following** on the progress of all legislations affecting economic and industrial development of the country in general and mining industry in particular and **voice collective views** of its members thereon to authorities when necessary*'

# MEAI-NACRI Initiative

- ❖ **NACRI** stands for '*National Core Committee for reporting Mineral Resources and Reserves in India*' formed on 19<sup>th</sup> November 2015

NACRI is comprised of experts from mining, mineral processing and geosciences with specialization in exploration, mining, processing, estimation, classification and reporting of mineral resources and reserves, covering all solid minerals including atomic minerals, gemstones and coal.

- ❖ NACRI formed under the leadership of MEAI and supported by
  - ✓ Professional bodies like MGMI and Geological Society of India; FIMI, Mineral Industry Leaders, Mining Consultancy Companies and Premier Academic Institutions.
- ❖ **MEAI-NACRI's Role :**
  - ✓ Develop an Indian Code for reporting Mineral Resources and Reserves, compliant to CRIRSCO Template and
  - ✓ Ensure admission of India as a Member of CRIRSCO.

# CRIRSCO Journey in India

- ❖ **Aug 21, 2014:** All India Exploration geologists meet held at Hyderabad
- ❖ **Dec 18, 2014:** at Round table conference held at *Hyderabad* called by MEAI, with participation from the mineral industry and government agencies.
- ❖ **Mar 10, 2015:** CRIRSCO appointed Dr Abani Samal and Dr PV Rao as its Indian *Representatives*:
  - ✓ To act on behalf of the CRIRSCO
  - ✓ To identify Indian NRO that would meet CRIRSCO admission criteria
  - ✓ To identify an Indian Professional Organization for inclusion as a Recognized Professional Organization (RPO) under the CRIRSCO family Codes. This organization must be able to meet the requirements of an RPO.

# CRIRSCO Journey in India

- ❖ **Apr 10, 2015:** MEAI Council confirmed the appointment of Dr Abani Samal and Dr PV Rao to form National Core Committee (NCC) and lead CRIRSCO initiative in *India*
- ❖ **Nov 19, 2015:** NACRI was formed under the leadership of MEAI with the support of Geol Soc of India, MGMI and membership from professional bodies, mining industry leaders, consultancy companies, academic institutions
- ❖ **Nov 30, 2015:** Dr Abani Samal and Dr PV Rao represented India as its observers in the 4-days CRIRSCO Annual Meeting held in *Brasilia, Brazil*.
- ❖ **Feb 24, 2016:** MEAI President and NACRI Co-Chairs signed MoU with CRIRSCO in *Phoenix, USA* to facilitate India's admission in CRIRSCO by Nov 2017.

# CRIRSCO Journey in India

- ❖ **June 10-11, 2016:** NACRI hosted a Professional development program at *Hyderabad* in association with CRIRSCO and SME, USA
- ❖ **Nov 7-10, 2016:** MEAI hosted CRIRSCO Annual Meet at *Jaipur*
- ❖ **Apr 22, 2017:** NACRI developed & approved draft Indian reporting Code, IMIG
- ❖ **Ongoing programs:** Regular publications in Mining Engineers Journal and presentations in conferences held by Institute of Engineers, Indian Institute of technology-KGP, CII, MEAI etc. on technical aspects of CRIRSCO Template

# Benefits of joining CRIRSCO

- ❖ Potential for **developing a unified CRIRSCO compliant** Mineral Resource / Reserve reporting code for India
- ❖ The Indian Code shall follow CRIRSCO Template but **can be modified to meet the specific needs** of Indian mineral industry with the approval of all CRIRSCO members
- ❖ Develop a **Simple** and **Easy** to adopt Code, yet recognized by global stock exchanges and potential investors
- ❖ The **qualifications** & **experience** required to register as CP could be proposed that are internationally acceptable
- ❖ The Indian mining industry **will not have to look for another CRIRSCO compliant code** (such as JORC, CIM) for public reporting of Resource / Reserve to raise funds
- ❖ Establish **credibility** to the NMI and protect the interest of investors and government



# National Mineral Policy 2008

## ❖ NMP envisages

“maintaining the National Mineral Inventory in accordance with the **latest version of the UNFC** system showing reserves and remaining resources, ensure sustainable mining and sustainable development around mining areas.”

# Future Outlook

- ❖ UNFC 2009 - to maintain NMI by IBM
  - to report exploration results by GSI
- ❖ CRIRSCO compliant reports by Lessees on Resources and Reserves (Mining Plans and Returns)
- ❖ Produce NMI from:
  - CRIRSCO compliant reports from Lessees
  - UNFC 2009 based exploration results from GSI
  - Adopt CRIRSCO-UNFC mapping to prepare NMI
- ❖ The above system serves two major purposes:
  - Maintaining NMI of high standard using industry Best practices
  - Raising funds by listing in domestic and Global stock Exchanges and from prospective investors

Thank You



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