

CRIRSCO Initiative in India: An Update

Promoted by

Mining Engineers' Association of India

About CRIRSCO

The mineral rich economies in the world formed an international consortium known as CRIRSCO (Committee for Mineral Reserves International Reporting Standards) to promote high standards of reporting of mineral deposit estimates (Mineral Resources and Mineral Reserves) and of exploration progress (Exploration Results). The stock exchanges in the world recognize only the CRIRSCO compliant reporting standards such as JORC (Australia), SME guidelines (USA), NI-43 - 101 (Canada), SAMREC (South Africa), PERC (Europe) etc. Currently national reporting organizations (NROs) from 13 countries are members of the CRIRSCO: Australasia, Brazil, Canada, Chile, Colombia, Europe, Indonesia, Kazakhstan, Mongolia, Russia, South Africa, Turkey and USA.



Over 80% of the mining companies listed in the world adopt CRIRSCO standards for reporting Mineral Reserves. The mining companies operating in the CRIRSCO member countries benefit from easy access to foreign investments and raising funds by listing in stock exchanges located in other regions of the world. CRIRSCO has a strategic alliance with and is in part funded by the International Council for Mining and Metals; other support comes from mining companies and professional societies. Please find more details about CRIRSCO in their website www.crirSCO.com.

India, boastful of vast mineral potential, deserves to be a member of CRIRSCO, when other Asian countries like Mongolia, Indonesia, Turkey and Kazakhstan already became its members. Being a member of CRIRSCO will allow Indian mining industry to attract investments into the country for development of the rich mineral resources. In the following paragraphs, we are updating the readers on the initiatives taken by CRIRSCO in India in association with professional bodies and industry representatives.

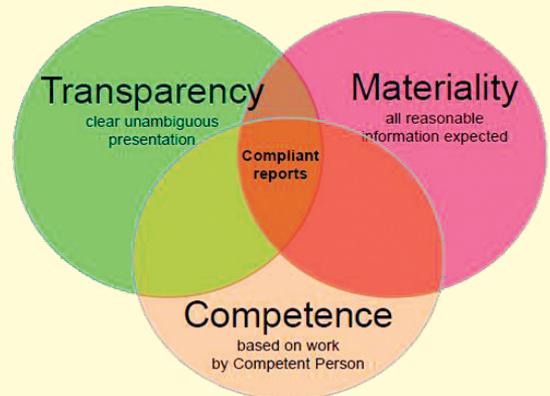
CRIRSCO Template

Principle based, not prescriptive

Transparency requires that the reader of a Public Report is provided with sufficient information, the presentation of which is clear and unambiguous, so as to understand the report and not to be misled.

Materiality requires that a Public Report contain all the relevant information, which investors and their professional advisers would reasonably require, and reasonably expect to find in a Public Report, for making a reasoned and balanced judgement regarding the Exploration Results, Mineral Resources or Mineral Reserves being reported.

Competence requires that the Public Report be based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable professional code of ethics (Competent Person)

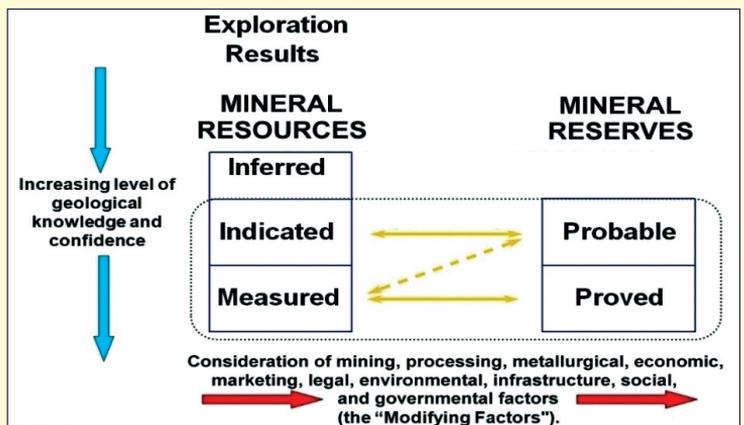


General relationship between Exploration Results, Mineral Resources and Mineral Reserves

The figure below provides the general relationship between Exploration Results, Mineral Resources and Mineral Reserves as presented in CRIRSCO template and adopted by all member countries. This is a simple, smart and internationally accepted diagram.

Common definitions contained in CRIRSCO Template also Included:

- Public Report • Competent Person
- Exploration Target • Scoping Study
- Pre-feasibility Study • Feasibility Study



CRIRSCO initiative in India

India is gifted with abundant mineral resources and solid fuels that are essential for the industrial & technological advancements and sustainable economic growth of the country. The National Mineral Policy (NMP) encourages the Indian mineral industry attract significant domestic and foreign private investments to explore, develop and extract its mineral resources. Public reporting of mineral resources based on international best practices instills confidence in the prospective investors to take knowledge based investment decisions. Internationally recognized codes and associated guidelines for public reporting of mineral resources set path for clear communication among the mining companies, regulators, investors and other key stakeholders.

The Indian government adopted United Nations Framework Classification (UNFC-1997) in the year 2003 through legislation, mainly for the purpose of approval of Mining Plans and accounting for National Mineral Inventory by Indian Bureau of Mines. At that time, Federation of Indian Mineral Industries (FIMI) was in the forefront in promoting adoption of UNFC by Indian mineral industry. However, after almost 15 years of efforts in its implementation, dejectedly, the key stakeholders often voiced difficulty in its implementation and realized that its utility had been limited to regulatory purposes only, contrary to NMP aspirations. It may be worth noting that all the leading stock exchanges in the world, where the junior as well as major mining companies are listed to raise risky funds, refuse to consider UNFC based Exploration Results, Mineral Resources and Reserves reports. Principal reasons for rejection of UNFC based reports by the international stock exchanges include a) UNFC reports are not prepared by Competent Persons, b) the professionals that prepare these reports are not controlled by ethical code of conduct, c) the UNFC based reports include all categories of mineral inventory irrespective of its ability to stand to the basic test of 'reasonable prospects for eventual economic extraction' and d) UNFC is prescriptive. Furthermore, the investment bankers and underwriters of public issues too refuse to accept UNFC reports and insists on CRIRSCO compliant Resource/ Reserve reports for listing (IPO/ FPO) of mineral-based companies even in Indian stock exchanges. As a result, the Indian mining companies (government/ private) interested in raising funds even in India are compelled to prepare CRIRSCO compliant reserve reports (or Independent Technical Reports), in addition to UNFC reports that are required by the Indian regulators. This is certainly not a healthy situation.

The NMP 2008 envisages adoption of the latest version of UNFC. Though the United Nations Economic Commission for Europe (UNECE) released, for adoption by the UNFC users, its latest edition of UNFC in the year 2009, which is radically different from its previous version of UNFC-1997, the Indian regulators are yet to gear up to switchover to the latest Classification System. India's reluctance to avail an internationally recognized reserve reporting system is alleged to be the key reason for attracting poor FDI and private investments by the Indian mineral industry. Recent invitation seeking bids from the consultants to prepare and submit JORC compliant mineral reserve reports of blocks identified for auction by the Indian government is the testimony of the ground truth and strongly advocates for immediate implementation of an internationally recognized reserve-reporting standard.

To address the then prevailing distressing situation in Indian mineral industry, **Mining Engineers' Association of India (MEAI)** spearheaded a unique initiative in organizing a round table conference on "Adopting International Standards for Mineral Reserves Reporting by India" on December 18, 2014 at Hyderabad. Representatives of IBM, GSI, SEBI, Geological Society of India, SGAT, Tata Steel, NMDC, Vedanta, Gujarat Ambuja Cement, Ramco Cements, ACC Ltd, UCIL, NLC Ltd, Mining consulting companies DMT and SRG, and independent consultants participated in daylong deliberations. Later in November 2015, professional societies representing the mineral industry and major mining companies in India, under the leadership of MEAI, formed a National Core Committee for reporting Resources and Reserves of India (NACRI) to explore the initiative. NACRI, comprising of subject experts from geosciences, mining and mineral processing covering all solid minerals including atomic minerals and gemstones and solid fossil fuels, was formally established on December 19, 2015 with 34 members. Subsequently, MEAI on behalf of NACRI signed an MoU with CRIRSCO on February 24, 2016 in Phoenix, USA on the sidelines of the SME Annual conference to help India join CRIRSCO in near future. NACRI got the mandate from CRIRSCO to develop an internationally acceptable Indian code that was later named as 'The Indian Mineral Industry Code (IMIC)' for public reporting of Exploration Results, Mineral Resources and Mineral Reserves compliant with CRIRSCO Template.

NACRI formed six technical committees, led by domain experts, to develop several specialized sections of IMIC and the committees accomplished task by April 21, 2017. The CRIRSCO Executive body formed an evaluation

committee consisting of five-member countries viz. Australia, Brazil, Canada, South Africa and USA to review and approve the draft IMIC, NACRI Charter and Code of ethics submitted by NACRI. Once CRIRSCO general body confers its approval to admit India as its member, the NACRI and its sponsors propose to celebrate this unique achievement at Delhi, sometime in September 2018. This is a 'Made in India' Code and confident that it would prove to be influential in attracting private investment in the Indian mineral industry. Everyone would greet this occasion as an historic event achieved by Indian mineral industry.

Professional bodies such as MEAI, MGMI and Geological Society of India, FIMI representing the Indian mineral industry, and ASSOCHAM supported the NACRI and the initiative. NACRI will continue to retain its identity as an autonomous body with a transparent communication strategy, as detailed in NACRI Charter. NACRI will act free from any pressures from the stakeholders, but work in sync with its sponsors.

NACRI was being intensely engaged in promoting the best practices in estimation and reporting of Mineral Exploration Results, Mineral Resources and Mineral Reserves through publications in journals, conducting workshops, specialized training programs, and strategic meetings. NACRI organized, jointly with CRIRSCO, a specialized training program at Hyderabad on June 10-11, 2016, for the NACRI members and industry professionals. Dr Harry Parker, the then Chairperson of CRIRSCO was one of the Course Directors for this two-day training program. MEAI hosted a two-day CRIRSCO Annual Meet in 2016 and one-day open session at Jaipur, where over two dozen CRIRSCO leaders from 14 countries participated. NACRI conducted professional training program to GSI and IBM senior executives on 6th October 2017 at GSITTI, Hyderabad. NACRI, in association with CRIRSCO experts, conducted a two-day training program to MGMI members on reporting of coal reserves in June 2018 at Kolkata.

NACRI representatives met senior officials of MoM, IBM and GSI on a few occasions at Delhi, Hyderabad, Jaipur and Udaipur; and were successful in receiving assurance of their support for developing the IMIC. In fact, the then Secretary of Mines, Mr. Balvinder Kumar announced in MEAI International Conference and CRIRSCO Annual Meet held at Jaipur in October 2016, his wholehearted support from Indian government to adopt IMIC. CRIRSCO and NACRI contributed their specific suggestions on public reporting of reserves based on international best practices to the committee constituted by Gol to formulate the new NMP 2018.

Implementation of the Indian Mining Industry Code

Successful acceptance and implementation of IMIC in India will enable the Indian mineral industry prepare resource/ reserve reports using its own 'Made In India' but an internationally recognized National Code. The Indian mineral industry professionals that are members of Recognized Professional Organisations (RPO) of NACRI would be able to register as Competent Persons and prepare public reports on Reserves and Resources.

FIMI, the nodal agency of Indian mineral industry, firmly stood with the NACRI and assured all the support that is required to implement the IMIC in India. In near future, NACRI is likely to be conferred as the National Reporting Organisation (NRO) by CRIRSCO and MEAI as the first RPO in India. The MEAI has already amended its bylaws, to incorporate Competent Persons qualifications and experience, and code of ethics in the EGM held on 24-1-2018, and fulfilled the mandatory requirement of CRIRSCO for being recognized as RPO. At the time of drafting this document, the MGMI was also preparing to become another RPO in India. The NACRI will be responsible for developing and maintaining the IMIC that is compliant to CRIRSCO Template. The RPOs will be responsible for registering the Competent Persons and monitoring their ethical conduct while preparing the reports. The IMIC and establishment of NRO and RPOs in the country will act as catalysts in attracting much needed foreign investment to India.

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