

*Interregional workshop on uranium, coal and oil & gas  
classification: Towards a better understanding of  
energetic basins and application of UNFC-2009  
16-19 August, 2016*

**The MRC Code**

**Mongolian Resource Classification for public reporting  
and its interrelationship with UNFC-2009**

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**17 August, 2016**

# PRESENTATION AGENDA

1. Brief introduction for the MPIGM and MRC Code
2. About CRIRSCO
3. CRIRSCO Template
4. Competent Person issues
5. Relationship between the MRC Code or CRIRSCO Template and UNFC-2009

# THE MPIGM - INTRODUCTION

- The MPIGM - The Mongolian Professional Institute of Geosciences and Mining was founded on January 2014 as a National Reporting Organization. This is a non-government, self regulated, professional organization.
- The MPIGM became 8<sup>th</sup> Member of CRIRSCO on October 2014 during CRIRSCO Annual Meeting in UB.

# MRC CODE - INTRODUCTION

## **THE MONGOLIAN CODE FOR THE PUBLIC REPORTING OF EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES (MRC Code)**

- Internationally accepted CRIRSCO Template based code
- Mongolian Government accepted in 2014 by the order of the Ministry of Mining according to the Mineral Law of Mongolia for public reporting of Mineral Resources and Reserves.

## COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

*To promote best practice in the international public reporting of Mineral Exploration Results, Mineral Resources and Mineral Reserves.*

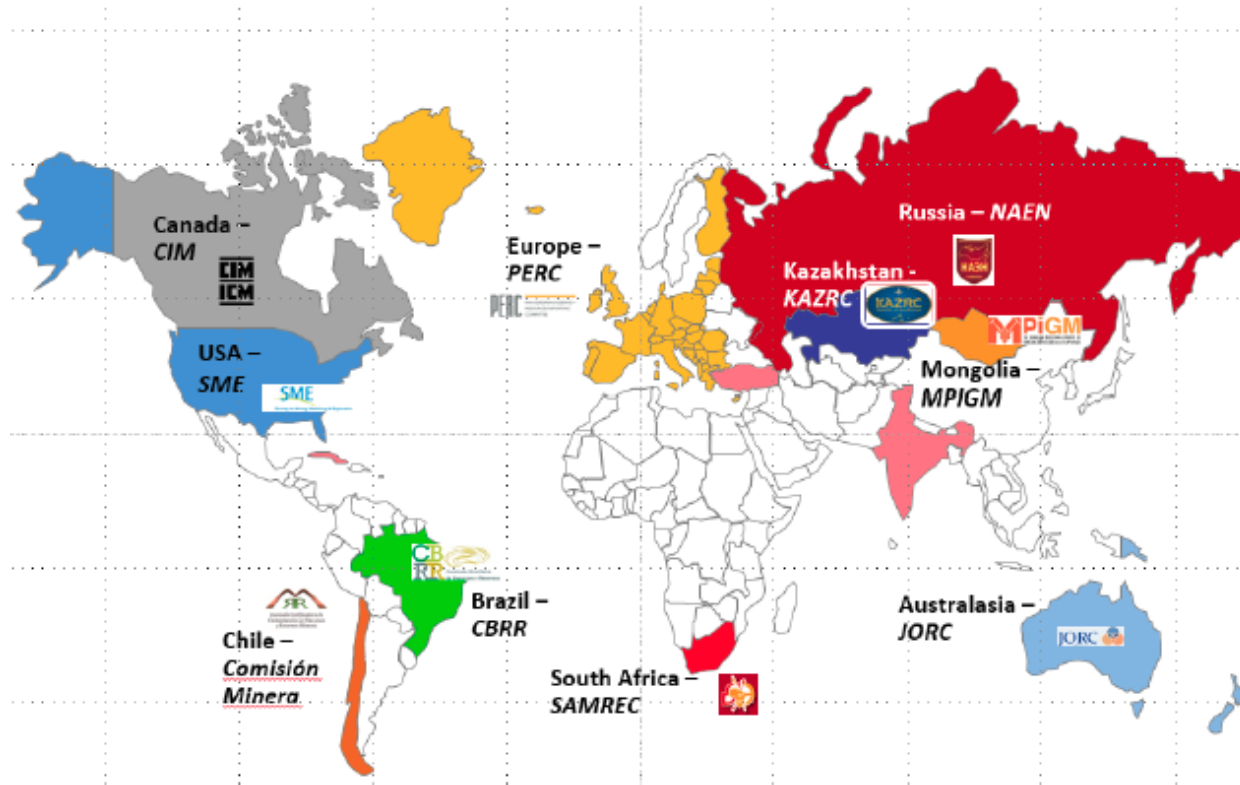
*CRIRSCO is an international advisory body without legal authority, relying on its constituent members to ensure regulatory and disciplinary oversight at a national level.*

*It recognises the truly global nature of the minerals industry and the agreed need for international consensus on reporting standards.*

# CRIRSCO - MEMBERS



CRIRSCO Is Formed by Representatives of National Reporting Organizations (NROs)



CRIRSCO is sponsored by the International Council for Mining and Metals; other support comes from mining companies and professional societies

# CRIRSCO - MEMBERS



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

**CRIRSCO Template**



**JORC Code**



**SAMCodes**



**NI 43-101**



**SME Guide**



**PERC Code**



**CH 20 235 Code**



**NAEN Code**



**MRC Code**

**CBRR**

**CBRR Guide**

**KAZRC**

**KAZRC**



THE MONGOLIAN PROFESSIONAL INSTITUTE OF GEOSCIENCES AND MINING

# CRIRSCO - HISTORY



At the 15th Council of Mining and Metallurgical Institutions (CMMI) Congress at Sun City, South Africa in 1994, the CMMI Mineral Definitions Working Group was formed, made up of representatives from:

Australia [Australasian Institute of Mining and Metallurgy (AusIMM)];  
Canada [Canadian Institute of Mining, Metallurgy and Petroleum (CIM)];  
South Africa [South African Institute of Mining and Metallurgy (SAIMM)];  
UK [Institution of Mining and Metallurgy (IMM)]; and  
United States [Society for Mining, Metallurgy and Exploration (SME)].

The primary objective of the group was to develop a set of international standard definitions for the reporting of mineral resources and mineral reserves.

The initiative assumed greater urgency in March 1997 with the well publicised Bre-X scandal, and in October 1997 there was a major breakthrough when the five participants met in Denver, Colorado and reached provisional agreement (the Denver Accord) for the definitions of the two major categories, Mineral Resources and Mineral Reserves, and their respective sub-categories Measured, Indicated and Inferred Mineral Resources, and Proved and Probable Mineral Reserves.



# CRIRSCO – HISTORY WITH UNESE



At Geneva in October 1999, agreement was reached between CMMI representatives and the UNECE Task Force for the adoption of the CMMI standard reporting definitions for mineral resources and reserves, with minor modifications, into the UNFC for those categories that were common to both systems.

On the final CMMI Congress in Cairns, Australia in May 2002, the group was reformed as the Combined Reserves International Reporting Standards Committee, or CRIRSCO. This was later changed to the Committee for Mineral Reserves International Reporting Standards.

CRIRSCO re-engaged with the UNECE during the period 2006-2009, worked with the Society of Petroleum Engineers (SPE) as petroleum industry representatives to map the CRIRSCO Template (first published in 2006) to the Petroleum Resource Management System, participated in a UNECE Task Force set up to map the Template and PRMS to the UNFC and a further Task Force to recommend revisions to the UNFC. This work culminated in the release of a new, and much simplified, version of the UNFC in December 2009.

- 2007 London
- 2008 Santiago
- 2009 Beijing
- 2010 Moscow
- 2011 London
- 2012 London
- 2013 Bogota
- 2014 Ulaanbaatar
- 2015 Brasilia

# INTERNATIONAL REPORTING TEMPLATE

for the public reporting of

EXPLORATION RESULTS, MINERAL RESOURCES  
AND MINERAL RESERVES

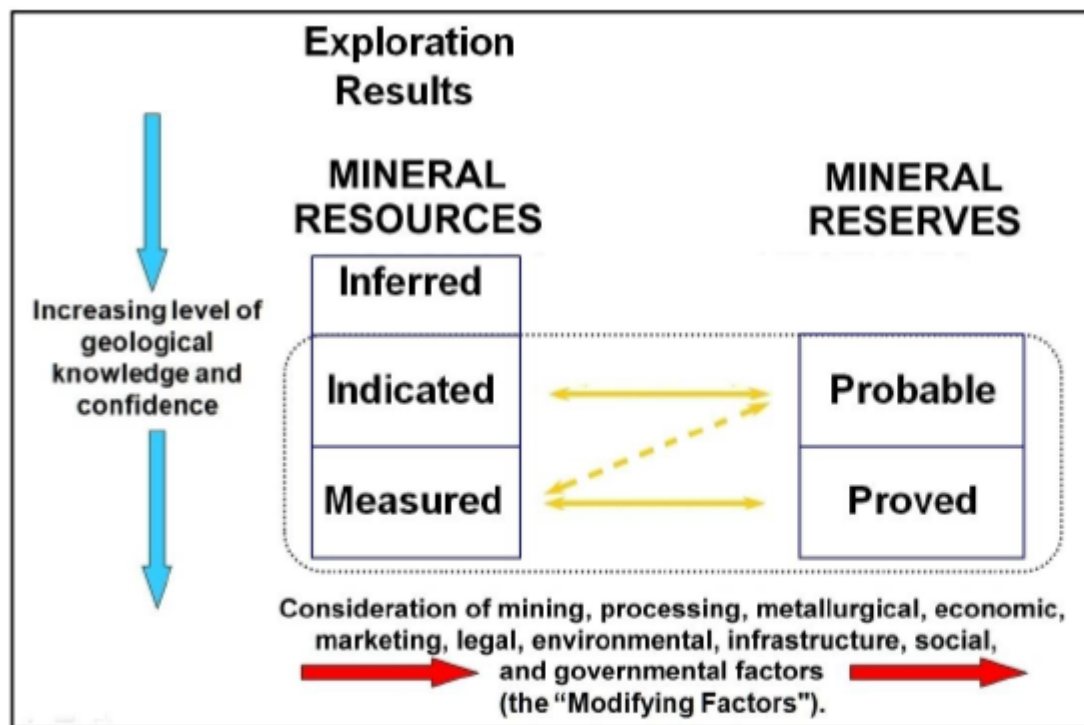
NOVEMBER 2013

# CRIRSCO – THE TEMPLATE PURPOSE



- Advisory only
- National Standards/Codes take precedence
- Model for development of new codes
- First edition 2006
- Updated 2013
- Revision commenced Nov 2015

# THE TEMPLATE - COMMON DEFINITIONS



Agreed by all NROs

Also Included:

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

## Updates and new Codes

- JORC 2012
- PERC 2013
- MRC 2014
- SME Guide 2014
- CBRR Guide 2015
- SAMREC 2016
- KAZRC 2016

# CRIRSCO MEMBER COMPARISON



	AUSTRALIA	BRAZIL	CANADA	CHILE	EUROPE	MONGOLIA	RUSSIA	SOUTH AFRICA	USA SME	USA SEC
CODE	JORC	CBRR	NI 3-101	CM	PERC	MRC	NAEN	SAMREC	SME Guide	IG7
LISTING RULES	X				X			X		
GOVERNMENT SECURITIES LAW			X	X		X	X			X
NATIONAL	X	X		X		X	X	X	X	X
PROVINCE/ STATE			X							

# ACCEPTANCE OF NATIONAL REPORTING CODES AND STANDARDS BY CAPITAL MARKETS



- **Australia:** JORC, NI43-101/CIM, PERC, SAMREC
- **Canada:** NI43-101/CIM, Chilean Code, IG7, JORC, PERC, SAMREC, NAEN
- **Chile:** Chilean Code
- **European Stock Exchanges:** All CRIRSCO codes
- **Hong Kong:** JORC, NI43-101/CIM, PERC
- **Johannesburg:** SAMREC
- **New York:** IG7
- **Singapore:** NI43-101, JORC, PERC

Exceptions are granted on special application to listing authorities, particularly for secondary listings



# MRC CODE - CONTEXT



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## Competence and Responsibility

- 
- 11. A Competent Person is a minerals industry professional who is a Member or Fellow with the Registered Professional certification of the Mongolian Professional Institute of Geosciences and Mining or a Recognised Professional Organisation. These organisations have enforceable disciplinary processes including the powers to suspend or expel a member.**

**A Competent Person must have a minimum of five years' relevant experience in the style of mineralisation or type of deposit under consideration and in the activity which that person is undertaking.**

## Competence and Responsibility (cont.)

- 
- (11)** If the Competent Person is preparing a report on Exploration Results, the relevant experience must be in exploration. If the Competent Person is estimating, or supervising the estimation of Mineral Resources, the relevant experience must be in the estimation, assessment and evaluation of Mineral Resources. If the Competent Person is estimating, or supervising the estimation of Mineral Reserves, the relevant experience must be in the estimation, assessment, evaluation and economic extraction of Mineral Reserves.

...

# WHAT IS A COMPETENT PERSONS REPORT?



- The CRIRSCO family of “codes” define public reports to include all disclosures from press releases and website postings, to technical reports, which may be of various sizes.
- The reports should name a Competent Person who takes responsibility for the disclosure.
- Securities regulators can have specific requirements for disclosure in a “Technical Report” which is prepared by Qualified Persons (e.g. Canada) or Competent Persons elsewhere.
- Most large mining companies have Competent Persons Reports to support their annual declarations of Mineral Resources and Mineral Reserves. These reports sometimes take the format of strategic business plans.

# GENERAL PRINCIPLES (DRAWN FROM THE CRIRSCO TEMPLATE)



- **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 contains all the relevant information which investors and their professional advisers would reasonably require, and reasonably expect to find in a public report, for the purpose of making a **reasoned and balanced judgment 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 Competent Persons** who are subject to an enforceable professional code of ethics and rules of conduct.

# RELATIONSHIP BETWEEN CRIRSCO AND UNFC



United Nations

ECE/ENERGY/2014/6



**Economic and Social Council**

Distr.: General  
10 September 2014

Original: English

**Economic Commission for Europe**

**Committee on Sustainable Energy**

Twenty-third session

Geneva, 19–21 November 2014

Item 6 of the provisional agenda

From source to use: the role of fossil fuels in delivering a sustainable energy future

**Application of the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 to nuclear fuel resources**

**Bridging Document between the Organisation of Economic Co-operation and Development Nuclear Energy Agency/International Atomic Energy Agency Uranium Classification and UNFC-2009**

**Prepared by the Expert Group on Resource Classification**

## **I. Introduction**

1. This Bridging Document was approved by the Expert Group on Resource Classification at its fifth session, 29 April–2 May 2014, subject to minor modifications and review by the Technical Advisory Group of the Expert Group. No significant changes were made to the document as a result of the review by the Technical Advisory Group and all

United Nations

ECE/ENERGY/2015/7



**Economic and Social Council**

Distr.: General  
6 November 2015

Original: English only

**Economic Commission for Europe**

**Committee on Sustainable Energy**

Twenty-fourth session

Geneva, 18–20 November 2015

Item 5 of the Provisional Agenda

**Expert Group on Resource Classification**

**Guidelines for Application of the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 for Uranium and Thorium Resources\***

**Prepared by the Expert Group on Resource Classification\*\***

### *Summary*

The purpose of the document is to provide non-mandatory guidance for the application of the United Nations Framework Classification for Mineral Reserves and Resources 2009 (UNFC-2009) to uranium and thorium resources. These Guidelines are intended to assist all those responsible for finding, classifying, quantifying, financing, permitting, mining, and processing these minerals such that they are fit to enter the nuclear fuel cycle. The Guidelines must be used in conjunction with the most recent release of UNFC-2009 (ECE Energy Series No. 42 and ECE/ENERGY/94), which incorporates the specifications or mandatory rules for its use and application. As a living document, the Guidelines will be subject to ongoing review and update. Users of these Guidelines are invited to share their experience in using them with the ECE Expert Group on Resource Classification.

# RELATIONSHIP BETWEEN CRIRSCO AND UNFC



**1. The UNFC 2009 references the CRIRSCO Template for all solid mineral "Commodity Specific Specifications" including Uranium and Thorium. It is not possible to apply the UNFC to solid minerals without using the CRIRSCO Template.**

Backup:

UNFC 2009 page 17 paragraph 2 - *"UNFC 2009 "Long-standing agreements are in place for CRIRSCO and SPE to provide the commodity-specific specifications for solid minerals and petroleum. In accordance with those agreements, they have provided commodity - specific specifications via the CRIRSCO Template and PRMS respectively."*



## 2. R & R Information compiled in the NEA/IAEA system cannot be transferred into the UNFC without using the CRIRSCO Template.

Here is the backup:

**Bridging Document (document 1)**, Paragraph 5 in the introduction of the document states:

- *"The mapping of NEA/IAEA results for individual deposits into UNFC-2009 requires the application of "Production Terminology" as defined in Section II.B of this Bridging Document, the instructions set out in Section III of this Bridging Document, the commodity-specific specifications compiled in the CRIRSCO Template<sup>2</sup>, and the Generic Specifications for the application of UNFC-2009 (ECE Energy Series No. 42 (ECE/ENERGY/94) "UNFC-2009 incorporating Specifications for its Application", Part II, Section VI)".*



**2. R & R Information compiled in the NEA/IAEA system cannot be transferred into the UNFC without using the CRIRSCO Template.**

**(Cont.)**

**Guidelines (document 2) Section C. "Commodity-specific specifications" clause 62 :**

**"Commodity-specific specifications for solid minerals are provided through the CRIRSCO Template<sup>6</sup> [4]. The relationship between UNFC-2009 and the CRIRSCO Template is explained in the "Bridging Document between the CRIRSCO Template and UNFC-2009" (refer to Annex III (p. 31) of UNFC-2009). Along with the Generic Specifications, these provide the foundation and keystones for consistent application of UNFC-2009 for solid minerals including uranium and thorium.**

# RELATIONSHIP BETWEEN CRIRSCO AND UNFC



## 3. Mapping Between CRIRSCO/ UNFC /IAEA

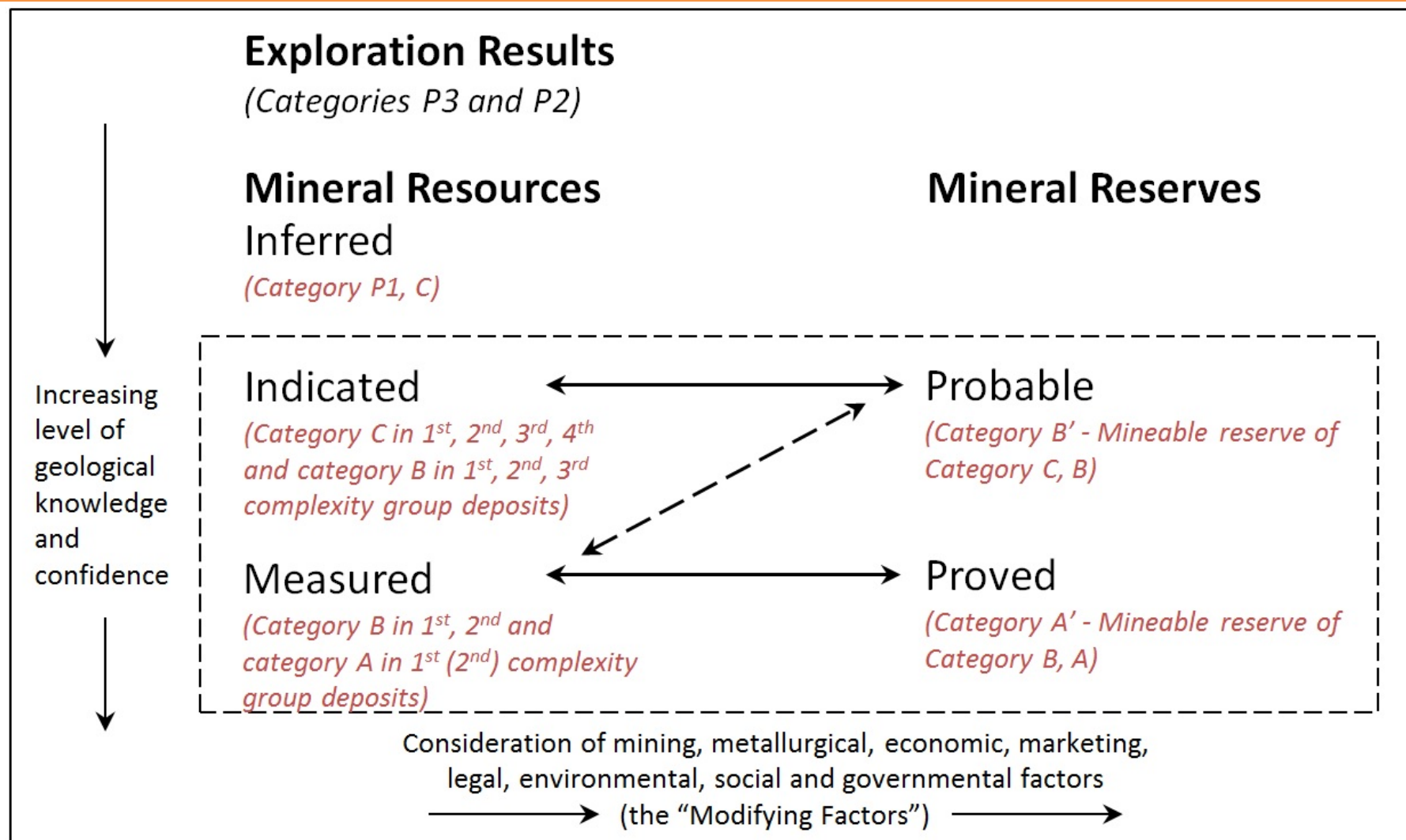
A generalized description of the mapping is outlined on pages 38 to 43 of Guidelines

UNFC-2009 Classification					CRIRSCO Template		NEA/IAEA Classification	
UNFC Classes and Sub-classes		UNFC Categories			CRIRSCO Classes and Sub-classes			
Class	Sub-Class	E	F	G	Class	Sub-Class	IAEA-NEA Categories	Status
Commercial Projects	On Production	1	1.1	1	Mineral Reserves	Proved	Reasonably Assured Resources (RAR)	Existing
				2		Probable		
	Approved for Development	1	1.2	1		Proved		Committed
				2		Probable		
	Justified for Development	1	1.3	1		Proved		Planned
				2		Probable		
Potentially Commercial Projects	Development Pending	2	2.1	1	Mineral Resources	Measured	Identified Resources	Prospective
				2		Indicated		
				3		Inferred		
	Development On Hold	2	2.2	1		Measured		
				2		Indicated		
				3		Inferred		
Non-commercial Projects	Development Unclassified	3.2	2.2	1,2,3	Inventory (not defined in Template)	Development Unclassified (not defined in Template)	Identified Resources	Unclassified
	Development Not Viable	3.3	2.3	1,2,3		Not Viable (not defined in Template)	RAR IR*	Not Viable
Exploration Projects		3.2	3.1	4	Exploration Target		Undiscovered Resources	Prognosticated Resources
		3.2	3.2, 3.3	4				Speculative Resources

## 4. What are the CRIRSCO Commodity Specific Specifications?

This was a debate that raged for months. It was finally resolved when section C, "Commodity-Specific Specifications" on pages 22 to 31 of Guidelines was approved. In short, the "Commodity-Specific Specifications" is almost the entire CRIRSCO Template.

# BRIDGING BETWEEN MRC CODE AND NATIONAL CODE



**THANK YOU.**

**SOURCE: [WWW. CRIRSCO.COM](http://WWW.CRIRSCO.COM)**