



# United Nations Framework Classification for Resources and alignment to the Sustainable Development Goals

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Chair

Expert Group on Resource  
Management



Tyumen Oil and Gas Forum, 17-19 September 2019  
Tyumen, Russian Federation

## Consistent classification and management of all resources



UNECE



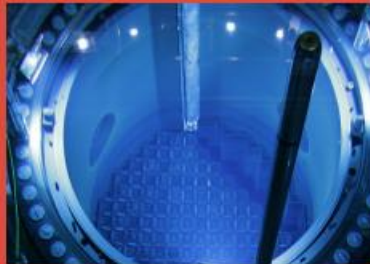
Minerals



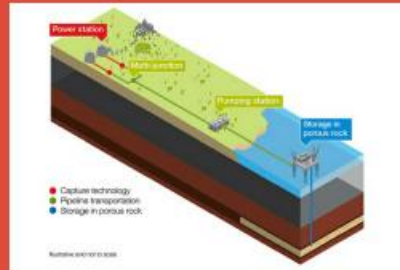
Petroleum



Renewables



Uranium



Injection

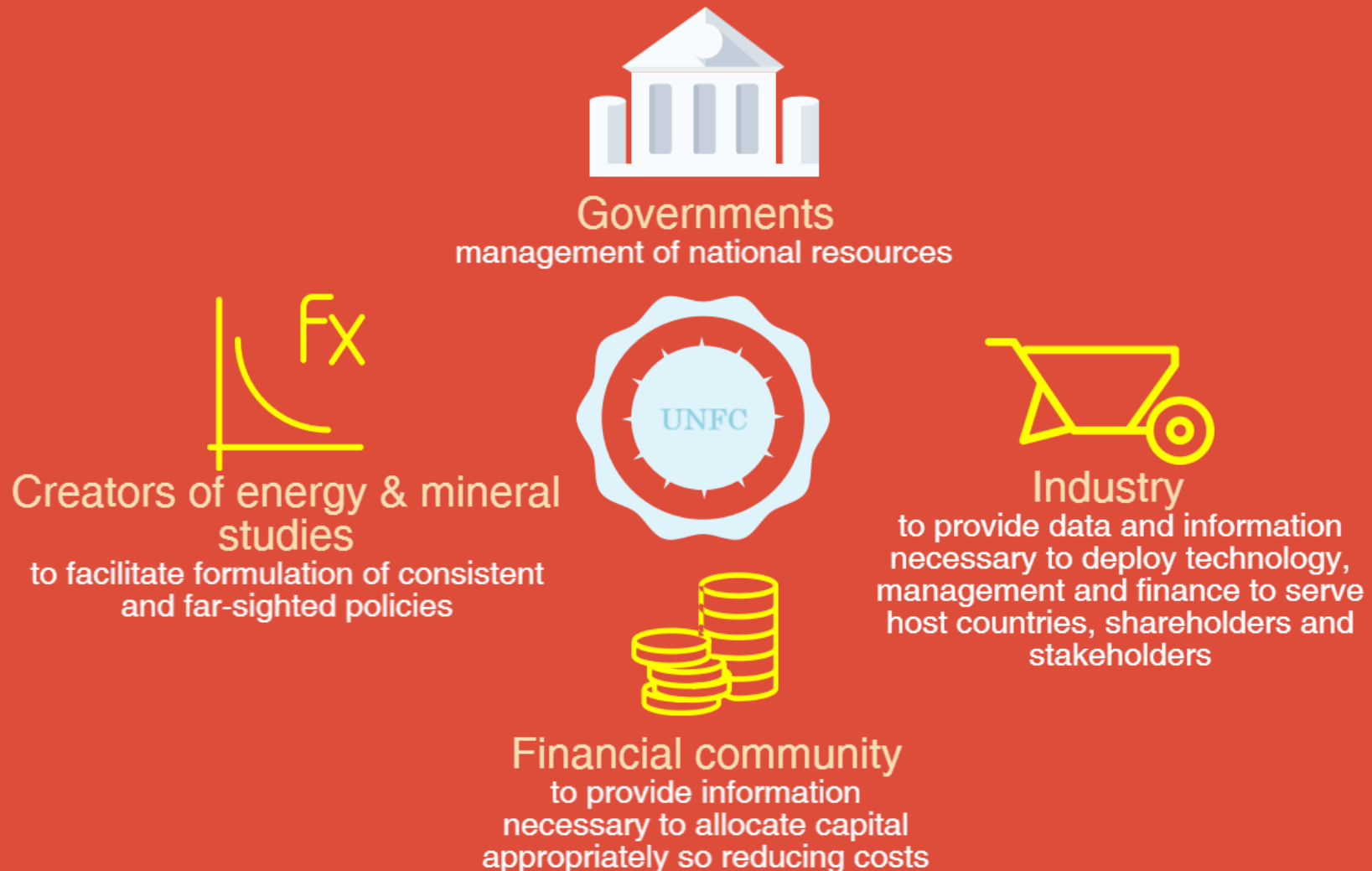


Anthropogenic

# UNFC Stakeholders



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# Expert Group on Resource Management

A global community representing all users



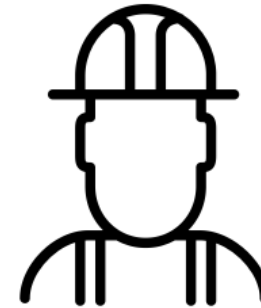
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Academia



Governments (UNECE  
and non-UNECE)



Industry



International  
organizations



Financial Sector Incl.  
standard setters



Professional Societies  
& Associations

# UNFC and ECOSOC

A call for global application



UNECE

The Economic and Social Council (ECOSOC) is at the heart of the United Nations system to advance the three dimensions of sustainable development – economic, social and environmental.

## ECOSOC Decision 2004/233

Member States of the United Nations,  
international organizations and regional  
commissions to consider taking appropriate  
measures for ensuring worldwide application  
of the Framework Classification.

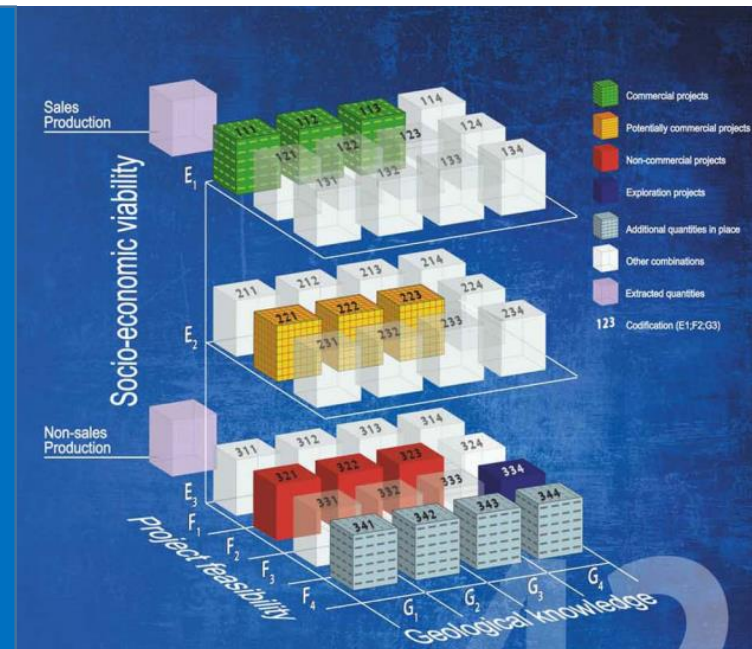
# Why UNFC?



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- The structure to understand and manage all resources in alignment with the SDGs.
- Applicable horizontally and vertically to all sectors
- Embeds all project risks and opportunities

UNFC promotes clear thinking and a shared vision





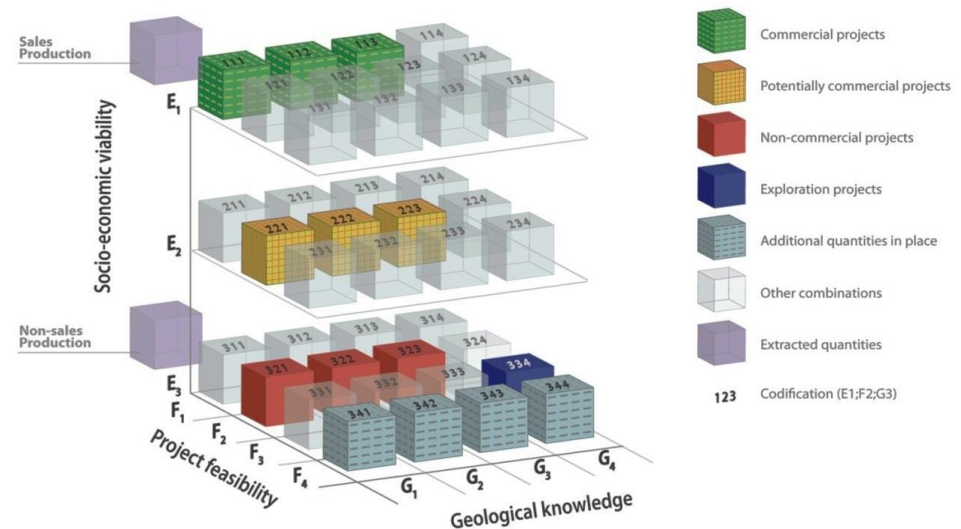
# Resources Redefined

Resource progression is critical



UNECE

- UNFC is a project maturity-based, resource-progression oriented tool for the management resources.
- UNFC provides a balanced view of socio-economic factors, technology and uncertainties involved in the classification of resources and provides a progression pathway for projects.
- UNFC puts emphasis on figuring in social and environmental considerations at the centre of resource management.



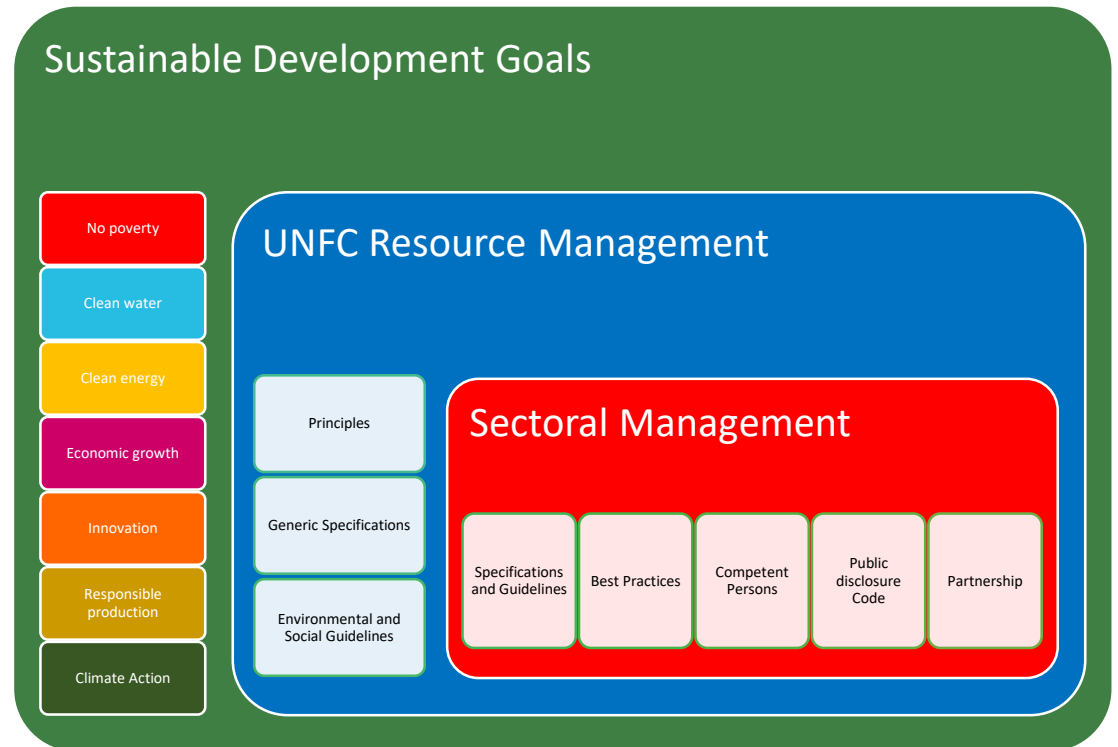
UNFC is different from other resource classification and management tools in being responsive to requirements of the 2030 Agenda for Sustainable Development, aspirations of society and the modern outlook of the industry.

# UNFC approach



UNECE

- Structured within overarching SDG framework
- Long-term policy making and planning
- Shorter-term actions - Make resource projects competitive through innovative approaches
- Efficient financial capital allocation
- Reduce environmental burden, carbon foot-print and negative public perception
- Increase collaboration globally

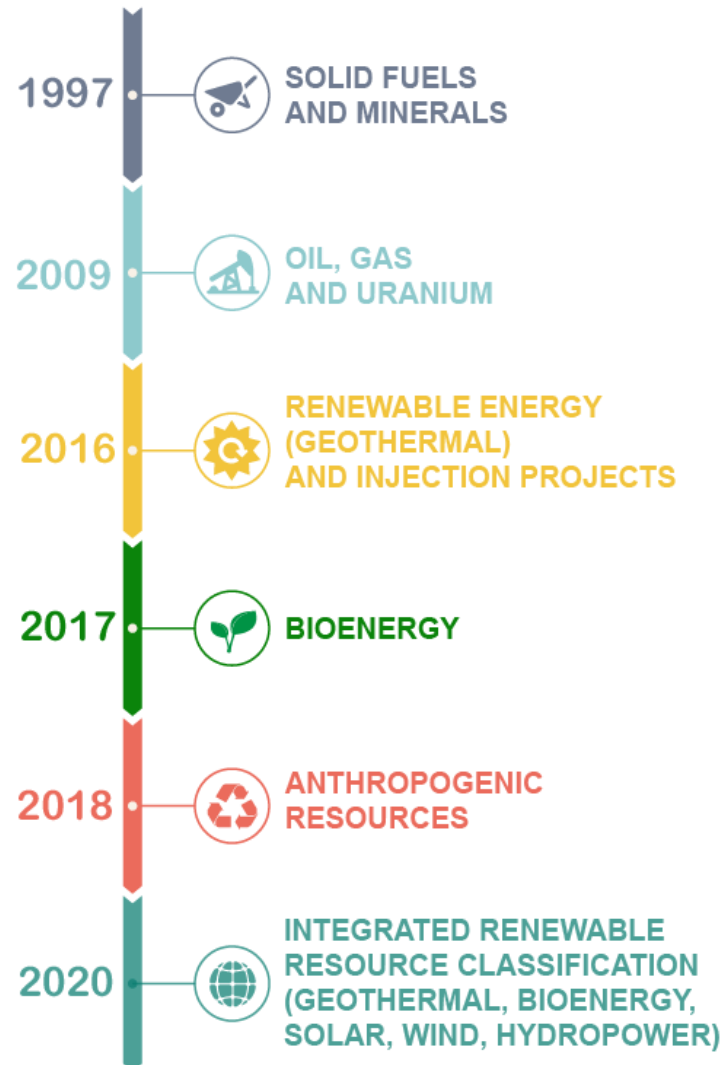


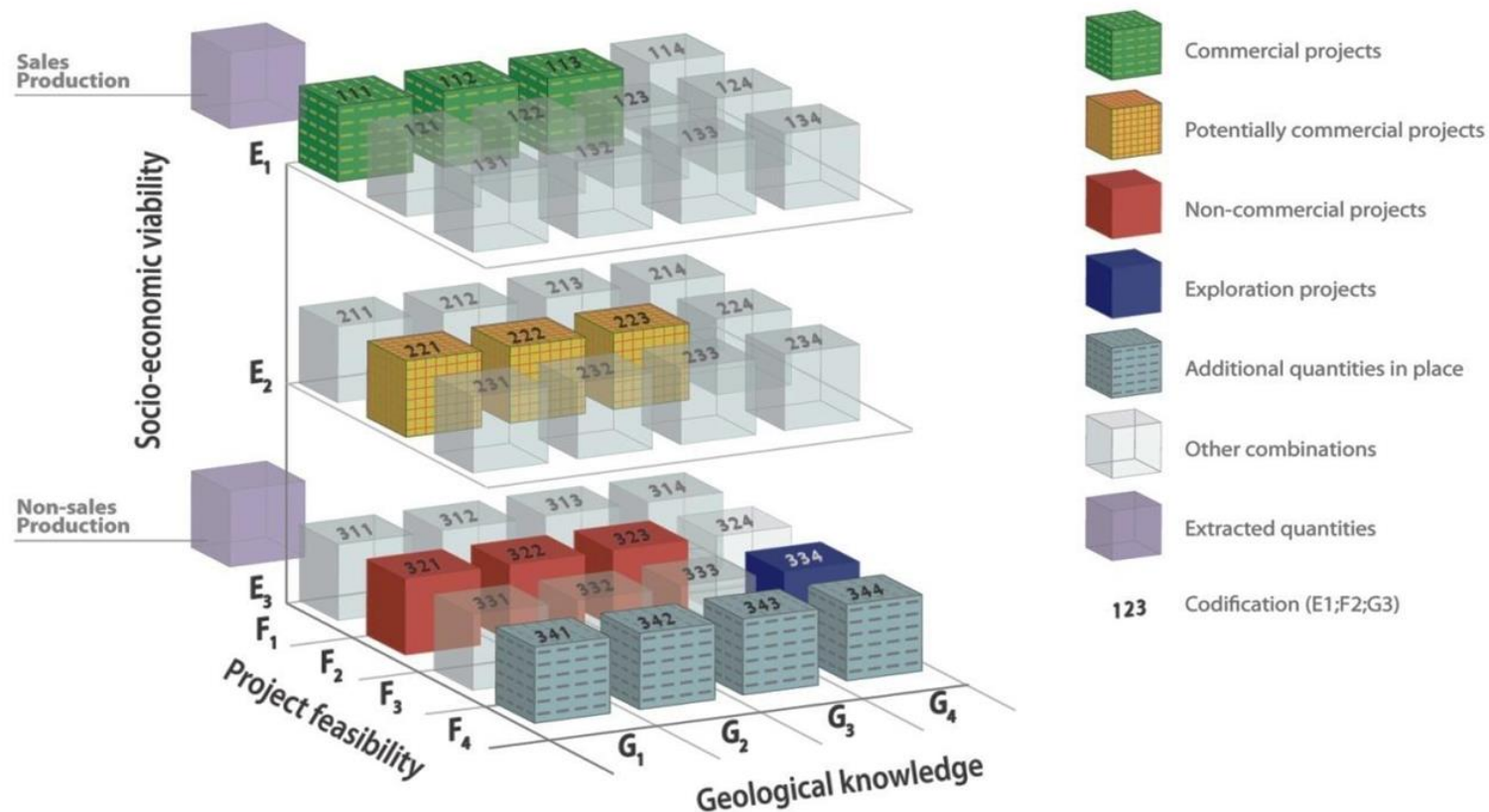


# Growing applications of UNFC



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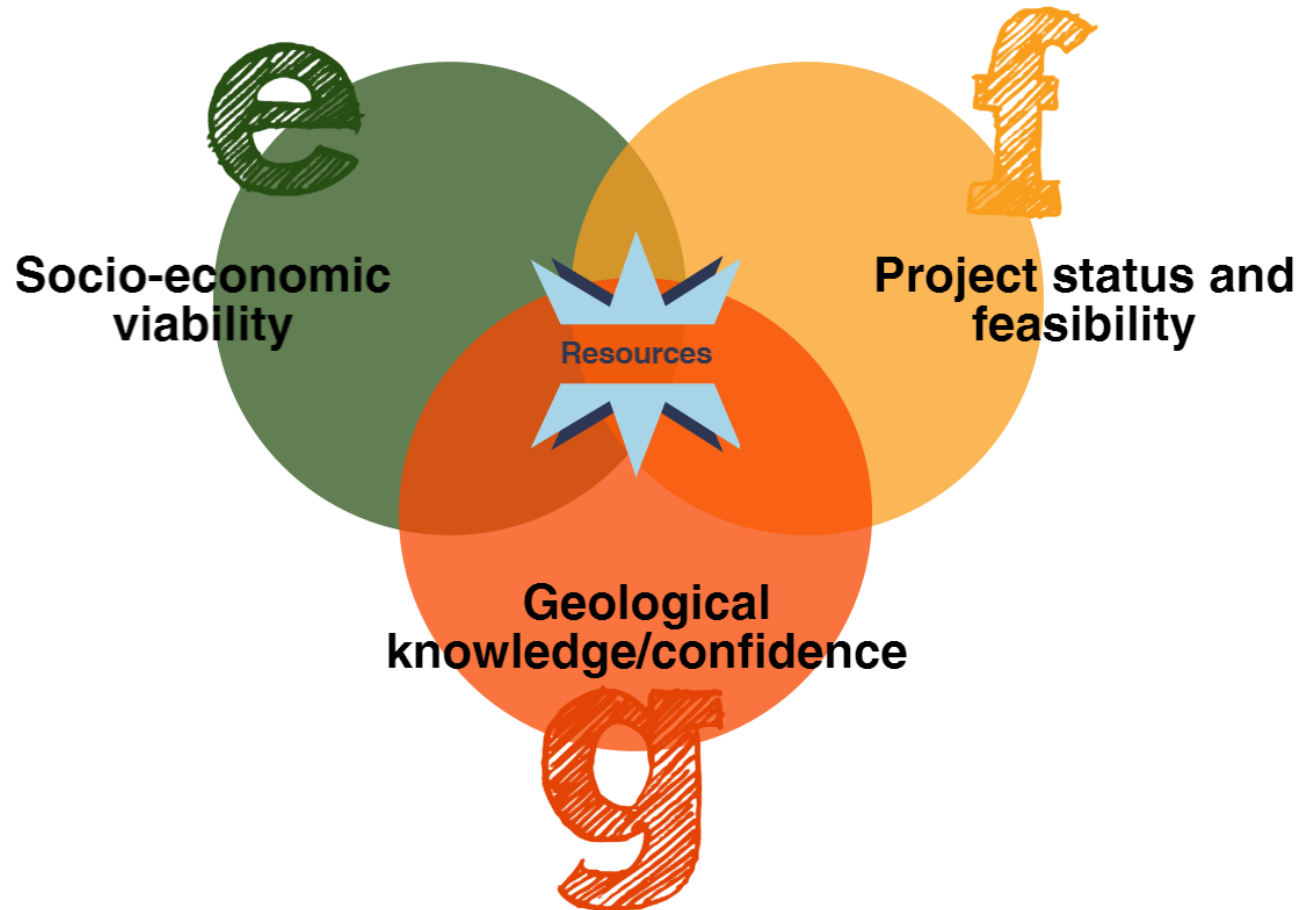


# Defining resources with UNFC

## The 3 Criteria



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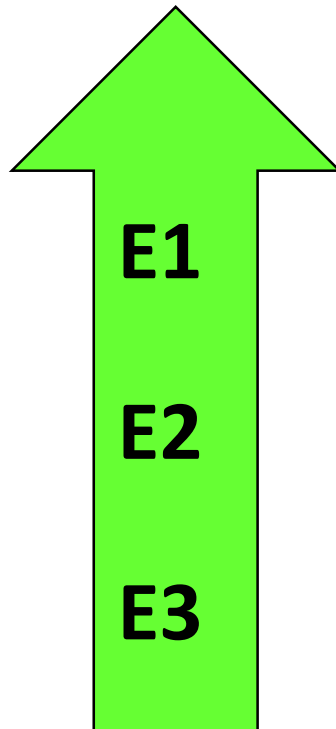
# Criteria and Categories



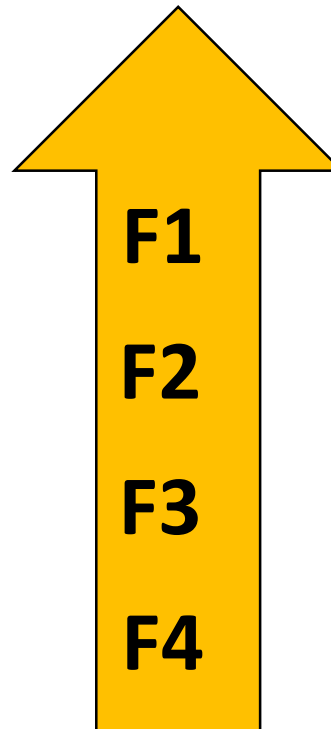
UNEP

Numerical coding system based on the three criteria, sub-divided by categories:

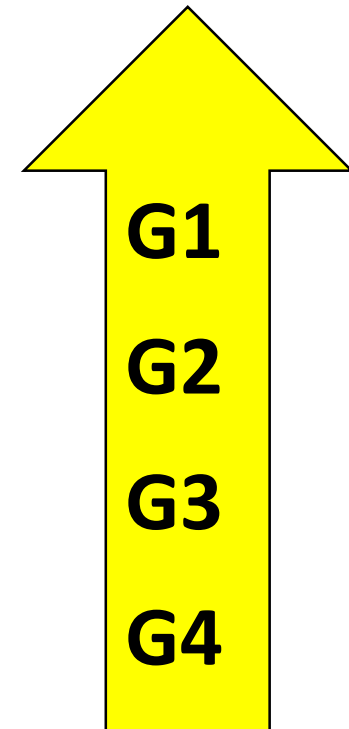
**Economic and  
social viability**



**Field project status  
and feasibility**



**Geological  
knowledge**



# UNFC – E Axis



UNECE

- Degree of favourability of social and economic conditions in establishing the commercial viability of the project
- Includes consideration of market prices and relevant legal, regulatory, environmental and contractual conditions
- E1, E2 and E3 categories
- E1 is “best”
- Definitions should always be read in conjunction with supporting explanation

# E axis category definitions



UNECE

Category	Definition
E1	Extraction and sale has been confirmed to be economically viable.
E2	Extraction and sale is expected to become economically viable in the foreseeable future.
E3	Extraction and sale is not expected to become economically viable in the foreseeable future or evaluation is at too early a stage to determine economic viability.

The phrase “economically viable” encompasses economic (in the narrow sense) plus other relevant “market conditions”, and includes consideration of prices, costs, legal/fiscal framework, environmental, social and all other non-technical factors that could directly impact the viability of a development project.

# UNFC – How it works



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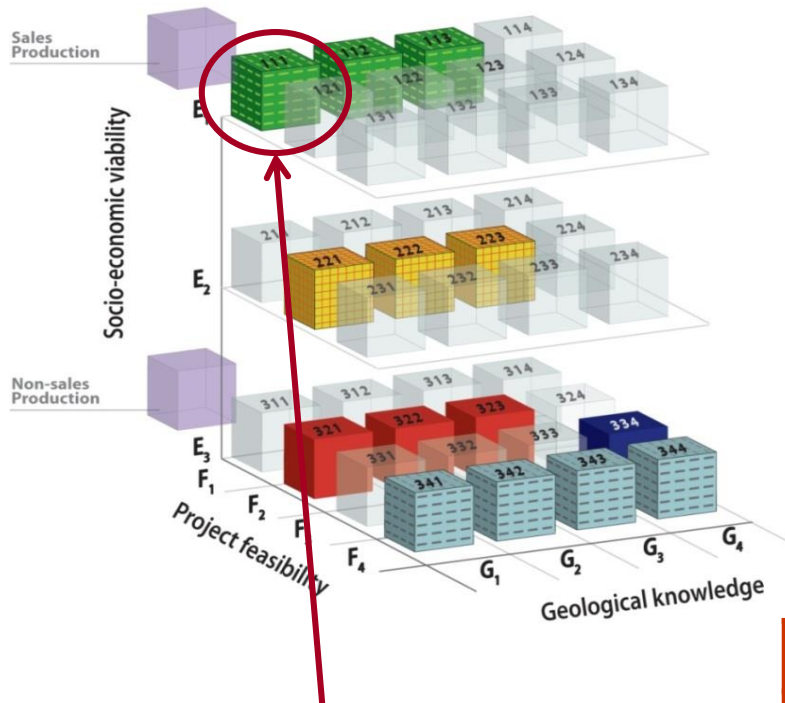
- The category definitions are the building blocks of the system:
  - Select the correct category for each of the three criteria
- These are combined (E, F, G) in the form of classes
- Class **111** means that the reported quantities have satisfied the definitions for:
  - **E1, F1 and G1**
- There are no constraints on combinations, but not all will be meaningful



# UNFC – How it works



UNECE



**UNFC Class: 111**

Category	Definition
E1	Extraction and sale has been confirmed to be economically viable.
Category	Definition
F1	Feasibility of extraction by a defined development project or mining operation has been confirmed.
Category	Definition
G1	Quantities associated with a known deposit that can be estimated with a high level of confidence.

# UNFC – 2D representation



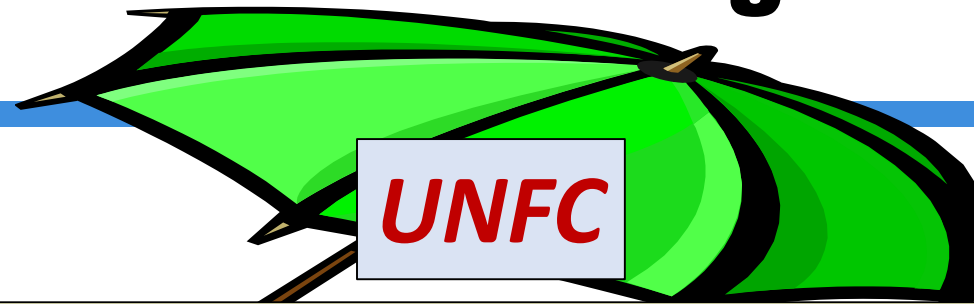
UNECE

	Extracted	Sales Production			
		Non-sales Production			
		<u>Class</u>	<u>Categories</u>		
			E	F	G
	Future recovery by commercial development projects or mining operations	Commercial Projects	1	1	1, 2, 3
	Potential future recovery by contingent development projects or mining operations	Potentially Commercial Projects	2	2	1, 2, 3
		Non-Commercial Projects	3	2	1, 2, 3
	Additional quantities in place associated with known deposits		3	4	1, 2, 3
	Potential future recovery by successful exploration activities	Exploration Projects	3	3	4
	Additional quantities in place associated with potential deposits		3	4	4

# Specifications and Aligned Systems



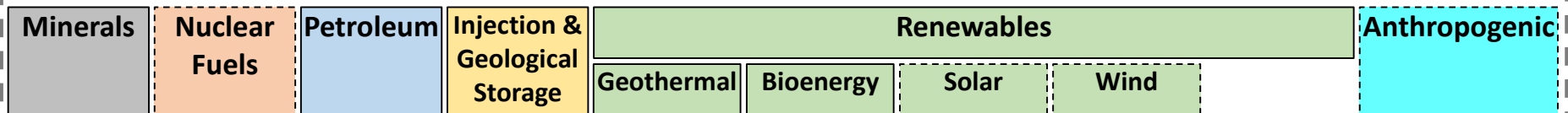
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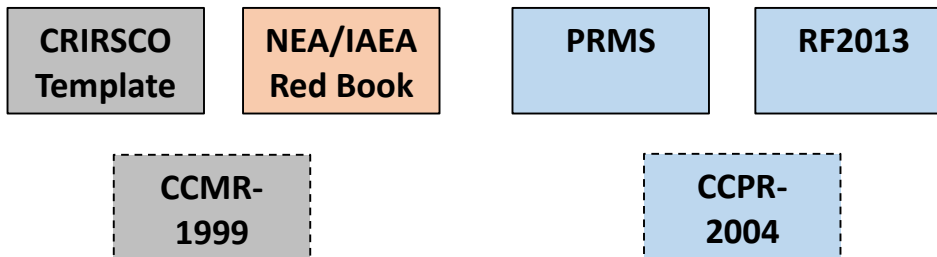
## Classification Framework and Category Definitions

Generic Specifications (UNFC 2009)

Commodity-Specific Specifications



## Aligned Systems



# Generic specifications



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- Minimum standards for using UNFC
- **Mandatory requirements**
  - Use of numerical codes
  - Effective date
  - Clarity in aggregated estimates (provide disaggregated data as possible)
  - Aggregation should include proper justification
  - Basis of classification to be clear
  - Reference point to be mentioned.
  - Reclassification in case of suspension of a project
  - Include only potentially recoverable quantities.
  - Clarity in economic assumptions.
  - Use of SI units (or conversion factors to be given)
  - Provide documentation with sufficient details

## Minerals - Bridging to CRIRSCO Template



UNEP

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

## Minerals - Mapping E-F axes to CRIRSCO Template



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	F1.1	F1.2	F1.3	F2.1	F2.2	F2.3	F3	F4
E1.1	1	2	3	4				
E1.2	1	2	3					
E2			4	4	5			
E3.1	12	12	12	12	12	12		
E3.2			6	6	6		8	
E3.3			7	7	7	7		11

		UNFC-2009 Sub-Classes	
Mineral Reserve	1	On Production	
	2	Approved for Development	
	3	Justified for Development	
Mineral Resource	4	Development Pending	
	5	Development On Hold	
Inventory (not defined in Template)	6	Development Unclassified	
	7	Development Not Viable	
	11	Additional Quantities in Place	
Exploration Results		8	
Special Cases	Classification not in Template	12	
	Less Common Mappings		

# UNFC advantages

A view in 3 dimensions



UNECE

- Provides definitions, rules and guidelines
- No two resource projects are the same

Each resource project needs  
a defined progression pathway

Principles

Rules

Guidelines



# Social & environmental considerations

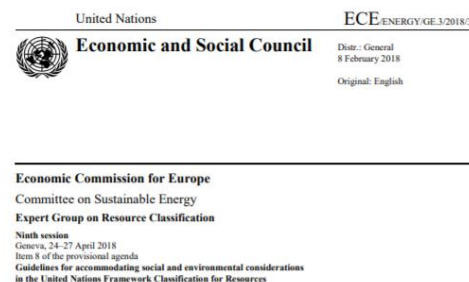
## Understanding the system boundaries



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- EGRM has a Working Group to examine the social and environmental aspects of the classification. Two guidance notes are available:

1. Accommodating environmental and social considerations in UNFC
2. Clarification of terminology and concepts related to UNFC



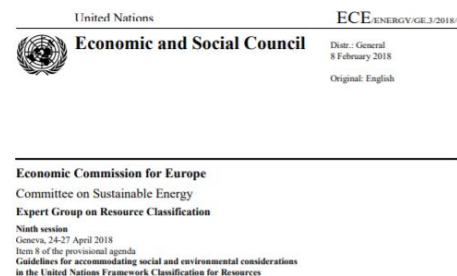
### Draft guidance for accommodating environmental and social considerations in the United Nations Framework Classification for Resources

Prepared by the Social and Environmental Considerations Task Force of the Expert Group on Resource Classification

#### Summary

The Social and Environmental Considerations Task Force on Resource Classification is the successor to the E-axis Sub-Group on Social and Environmental Aspects of the E-axis Sub-Group on Resource Classification in the United Nations Framework Classification for Resources (UNFC). Progress of the seventh and eighth sessions of the Expert Group (ECE/ENERGY/GE.3/2017/6 respectively). The main result of the division of the E2 Category into E2.1 and E2.2 to social and environmental issues will be resolved, and recommendations of this report only address the social and environmental issues. Further thought will be needed with respect to economic and social and environmental issues of specific resource types. Accommodating Social and Environmental Considerations Terminology (ECE/ENERGY/GE.3/2018/4) recommends that the Group consider the clarification of some terms in UNFC necessary to the work of the Task Force. It also contains topics that arose during the course of work, for consideration of UNFC.

GE.18-01856(E)



### Accommodating Social and Environmental Considerations in the United Nations Framework Classification for Resources: Concepts and Terminology

Prepared by the Social and Environmental Considerations Task Force of the Expert Group on Resource Classification

#### Summary

This report of the Social and Environmental Considerations Task Force is a supplement to the document "Draft Guidance on accommodating environmental and social considerations in the United Nations Framework Classification for Resources (UNFC)" (ECE/ENERGY/GE.3/2018/3) that will be presented at the ninth session of the Expert Group on Resource Classification. It covers two main topics:

- Clarification of some terms relevant to social and environmental considerations.
- Discussion of topics that arose during, but outside, the immediate scope of the work of the Social and Environmental Considerations Task Force.

It is presented for consideration by the Expert Group at its ninth session, and the review and update of UNFC that is planned to start in 2018. It is not intended to be comprehensive, and many of the issues it contains would benefit from further thought and discussion.

GE.18-01854(E)



Please recycle

# UNFC Evaluator / Competent Person



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- “Evaluators must possess an appropriate level of expertise and relevant experience in the estimation of quantities associated with the type of deposit under evaluation.”
- Two guidance notes developed:
- 1. UNFC Specification for Evaluator Qualifications – **Top-level guidance**
- 2. Competent Person Requirements and Options for Resources Reporting – **Detailed guidance on generic requirements for public reporting and disclosures for all commodities**



## LISTING ON AIX – KEY PARAMETERS (INDICATIVE)\* FOR MINING COMPANIES

Requirement	Tier 1	Tier 2
Financial statements	3 years' audited accounts	2 years' audited accounts (if applicable)
Financial capability	Adequate to execute stated work programme for 18 months following listing Working capital for 12 months following listing	Adequate to execute stated work programme for 12 months following listing Working capital for 12 months following listing
Market capitalisation	Expected aggregate market value of shares of at least \$1,000,000	-
Mineral report	JORC/NI 43-101-compliant report prepared by a Competent person** Proved reserves or measured resources	JORC/NI 43-101/KAZRC-compliant report prepared by a Competent person
Management	Adequate experience and technical expertise relevant to the company's business and industry as well as adequate public company experience	
Personnel and infrastructure	Suitably qualified technical personnel and experts, and the infrastructure required for the proposed exploration and development programmes	
Compliance	Compliance with the terms of mining licences, material contracts, and applicable Laws	
Conflicts of interest	Ability to operate business independently of controlling shareholder (if any) Adequate systems and controls to eliminate or manage conflicts of interest	
Continuing obligations (general)	Annual report (including Corporate governance compliance report) Annual financial report (audited), semi-annual financial report	
Continuing obligations (mining)	Semi-annual mining/exploration reports Annual competent person's report	Semi-annual mining/exploration reports Annual competent person's report

### Exemptions

Parameters may be waived or modified at AIX's discretion

\*Full general parameters are available from <https://www.aix.kz/wp-content/uploads/2019/04/AIX-Rulebook.pdf>

Draft mining companies parameters are available upon request from [a.ashimov@aix.kz](mailto:a.ashimov@aix.kz)

\*\*A Competent Person should act in the spirit of "Guidance Note on Competent Person Requirements and Options for Resources Reporting" prepared by the Bureau of the Expert Group on Resource Management of the United Nations Economic Commission for Europe.

# Africa: implementing UNFC



UNEP



**Africa leads the world in implementing a new system continent-wide (UNFC-AMREC). Based on UNFC, it will launch the continent on a path of social, environmental and economic progress.**

# Mexico - Development of Petroleum Pilot Project



UNECE

Project Initiation

Review 1

Review 2

Review 3

Planning

Phase 1

Phase 2

Phase 3

March – May

Justification  
Approvals

June

Forum  
Workshop

July - October

Blocks selection  
Tools generation  
Projects classification

November – December

Final Report  
UN Paper  
ECE/ENERGY/GE.3/2019/5  
(English, Russian, French, Spanish)



Comisión Nacional  
de Hidrocarburos

National Hydrocarbons Commission

**SENER**

SECRETARÍA DE ENERGÍA

Energy Ministry



**ASEA**

AGENCIA DE SEGURIDAD,  
ENERGÍA Y AMBIENTE

Safety, Energy and Environment Agency



United Nations Development Programme - Mexico.

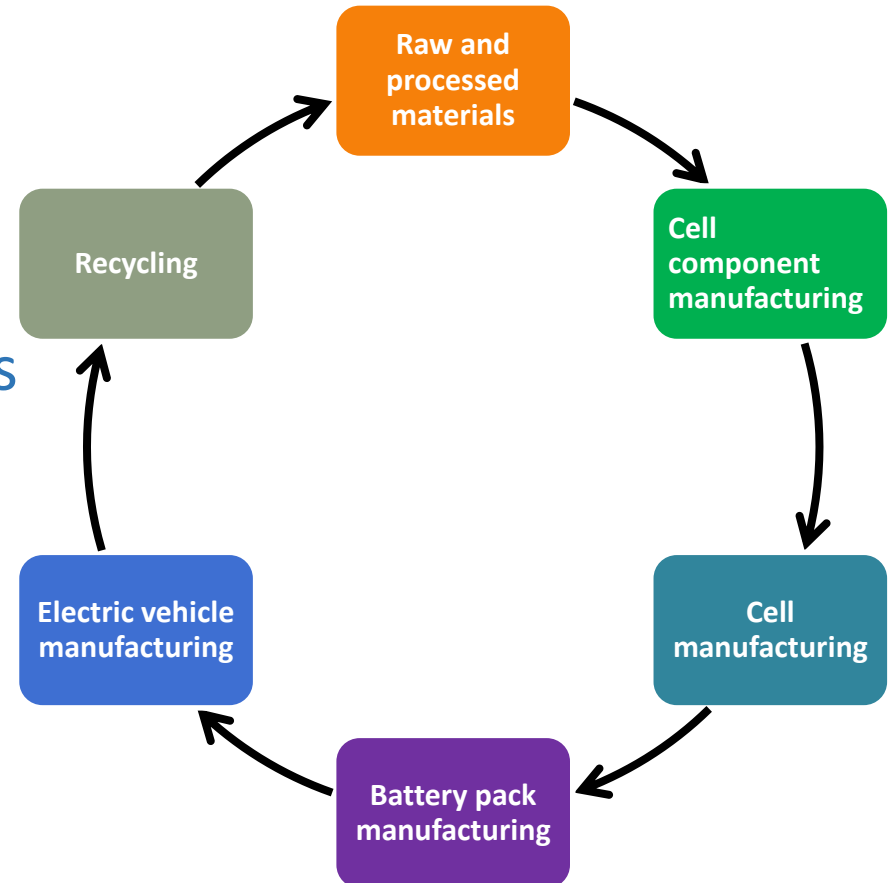
Petroleum Working  
Group of the EGRM

# UNFC for Europe

Battery Alliance



- Different reporting codes for primary resources and reserves across EU
- Lack of harmonised reporting system for secondary raw materials
  - **UNFC**
- Mining legal framework in EU Member States is heterogeneous (and in 24 languages)



# In summary ...



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- **UNFC is a generic, principles-based system**
  - Applicable to both solid minerals and fluids
  - Uses a numerical coding system
- **Based on three fundamental criteria**
  - Economic and social viability
  - Field project status and feasibility
  - Geological knowledge
- **Meets multiple needs**
  - Stakeholder community
  - Multiple commodities
  - Natural and anthropogenic deposits
- **Aligned to the needs of Agenda 2030 and aiding the achievement of the SDGs**



# More information



UNECE

<http://unece.org/energy/se/reserves.html>

Sustainable Energy

UNFC and Sustainable Resource Management

About UNFC and Sustainable Resource Management

Areas of Work

Applications

UNFC Documents

Case Studies and Application Examples

Governance

Public consultations

MOUs

FAQs

Meetings and Events

Publications

Media

Contact us

## UNFC and Sustainable Resource Management

**United Nations Framework Classification for Resources (UNFC)** - a universally acceptable and internationally applicable scheme for the sustainable management of all energy and mineral resources.



23-27 April 2018

**Resource Management Week 2018**  
**UNFC FOR SUSTAINABLE DEVELOPMENT**  
9<sup>th</sup> Session of the Expert Group on Resource Classification



Applications



UNFC Documents



Case studies



Governance



Public consultations



MOUs



Learning



FAQs



# Thank you

**David MacDonald**

Chair

Expert Group on Resource  
Management

[www.unece.org/energy/se/reserves.html](http://www.unece.org/energy/se/reserves.html)



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Tyumen, Russian Federation