

# Harmonization of the Categories used to Classify Fossil Energy and Mineral Resources in the UNFC

Presented  
by  
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## Harmonization of the UNFC Categories and Sub-categories

- Task Force proposals for UNFC revisions
  - Remove category and sub-category labels
  - Agree high-level (umbrella) categories and sub-categories
  - Propose new generic principles-based definitions for “umbrella” categories and sub-categories, minimising changes from 2004, but simplifying wherever possible
  - Ensure that revised UNFC definitions facilitate mapping with other systems

## Harmonization of the UNFC Categories and Sub-categories

- Remove category and sub-category labels
  - Current (2004) UNFC has different labels for solid minerals and petroleum
  - Labels that are in English are contrary to the principle of a numerically-based system and are difficult to translate unambiguously
  - Labels cause confusion even in English (e.g. Intrinsically Economic)

## Harmonization of the UNFC Categories and Sub-categories

- Remove category (and sub-category) labels
  - Current (2004) UNFC category labels:

Category	2004 Coal, uranium and other solid minerals	2004 Petroleum
E1	Economic	Economic
E2	Potentially Economic	Potentially Economic
E3	Intrinsically Economic	Intrinsically Economic
F1	Mining Report and/or Feasibility Study	Justified Development and/or Production Project
F2	Pre-feasibility Study	Contingent Development Project
F3	Geological Study	Project Undefined
G1	Detailed Exploration	Reasonably Assured Geological Conditions
G2	General Exploration	Estimated Geological Conditions
G3	Prospecting	Inferred Geological Conditions
G4	Recon-naissance Study	Potential Geological Conditions

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## Harmonization of the UNFC Categories and Sub-categories

- Agree high-level (umbrella) categories and sub-categories
  - UNFC can be expanded to many levels of categories and sub-categories (e.g. PRMS use of F1.1.1.1)
  - Different commodities use different levels of sub-classification
  - Umbrella system should define those categories and sub-categories that are useful to all commodities but should accommodate further sub-division where necessary to handle individual system mapping
  - Consistent with umbrella system principles, the associated definitions should be completely harmonized between solid minerals and petroleum

## Harmonization of the UNFC Categories and Sub-categories

- Agree generic (umbrella) categories and sub-categories
  - Current (2004) UNFC:

Categories	Sub-categories
E1	E1.1, E1.2
E2	E2.1, E2.2
E3	E3.1, E3.2, E3.3
F1	F1.1, F1.2, F1.3
F2	F2.1, F2.2, F2.3
F3	
G1	
G2	
G3	
G4	

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## Harmonization of the UNFC Categories and Sub-categories

- Propose generic definitions for “umbrella” categories and sub-categories
  - Current (2004) UNFC has different definitions for solid minerals and petroleum
  - Even with solid minerals, definitions include commodity-specific guidelines (e.g. G4)
  - Umbrella system should have generic, principles-based, definitions in order to facilitate harmonization

## Harmonization of the UNFC Categories and Sub-categories

- Propose generic definitions for “umbrella” categories and sub-categories
  - Some examples of current (2004) UNFC definitions and proposed revisions:

## Harmonization of the UNFC Categories and Sub-categories

Cat.	2004 Coal, uranium and other solid minerals	2004 Petroleum	Proposal for revised UNFC definitions
G2	<p>General Exploration involves the initial delineation of an identified deposit. Methods used include surface mapping, widely spaced sampling, trenching and drilling for preliminary evaluation of mineral quantity and quality (including mineralogical tests on laboratory scale if required), and limited interpolation based on indirect methods of investigation. The objective is to establish the <del>main geological features</del> of a deposit, giving a reasonable indication of continuity and <del>providing an initial estimate</del> of size, shape, structure and grade. The degree of accuracy should be sufficient for deciding whether a Pre-feasibility Study and detailed exploration are warranted.</p>	<p>Quantities that are estimated to be recoverable from a known (drilled) accumulation, or part of a known accumulation, where sufficient technical data are available to establish the geological and reservoir production <del>performance characteristics</del> with a reasonable level of confidence.</p>	<p>Quantities associated with a <del>known deposit that can be</del> estimated with a reasonable level of confidence.</p>

## Harmonization of the UNFC Categories and Sub-categories

Cat.	2004 Coal, uranium and other solid minerals	2004 Petroleum	Proposal for revised UNFC definitions
G3	<p>Prospecting is the systematic process of searching for a mineral deposit by narrowing down areas of promising enhanced mineral potential. The methods utilized are outcrop identification, geological mapping, and indirect methods such as geophysical and geochemical studies. Limited trenching, drilling, and sampling may be carried out. The objective is to identify a deposit that will be the <del>target for further</del> exploration. Estimates of quantities are inferred, based on <del>interpretation of geological</del> geophysical and geochemical results.</p>	<p>Quantities that are estimated to be recoverable from a known (drilled) accumulation, or part of a known accumulation, where sufficient technical data are available to establish the geological and reservoir production <del>performance characteristics</del> with a low level of confidence.</p>	<p>Quantities associated with a <del>known deposit that can be</del> estimated with a low level of confidence.</p>

## Harmonization of the UNFC Categories and Sub-categories

Cat.	2004 Coal, uranium and other solid minerals	2004 Petroleum	Proposal for revised UNFC definitions
E1	Quantities, reported in tonnes/volume with grade/quality, demonstrated by means of a pre-feasibility study, feasibility study or mining report, in order of increasing accuracy, that justify extraction under the technological, economic, environmental and other relevant commercial conditions, realistically assumed at the time of the determination.	Production is justified under the technological, economic, environmental and other relevant commercial conditions, realistically assumed or specified at the time of the estimation	Extraction and sale is economically viable.  Refer to definitions of E1.1 and E1.2.

## Harmonization of the UNFC Categories and Sub-categories

Cat.	2004 Coal, uranium and other solid minerals	2004 Petroleum	Proposal for revised UNFC definitions
E1.1	Extraction is justified under competitive market conditions. Thus, the average value of the commodity mined per year must be such as to satisfy the required return on investment.	Production is justified under normal economic conditions. Assumptions regarding future economic conditions may be constrained by regulation.	Extraction and sale is economically viable on the basis of realistic assumptions of future market conditions.

## Harmonization of the UNFC Categories and Sub-categories

Cat.	2004 Coal, uranium and other solid minerals	2004 Petroleum	Proposal for revised UNFC definitions
F2	A Pre-feasibility Study provides a preliminary assessment of the economic viability of a deposit and forms the basis for justifying further investigations (detailed exploration and feasibility study). It usually follows a successful exploration campaign, and summarizes all geological, engineering, environmental, legal and economic information accumulated to date on the project. The pre-feasibility study addresses the items listed under the feasibility study, although not in as much detail.	<del>Development and production</del> of recoverable quantities has not been justified, due to <del>conditions that may or may not</del> be fulfilled.	A development project that has not yet been demonstrated to be technically and commercially feasible.

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## Harmonization of the UNFC Categories and Sub-categories

- Ensure that revised UNFC definitions facilitate mapping with other systems
  - To be covered in subsequent presentations and discussions

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