Proposal from the State Commission of Ukraine on Mineral Resources – Draft Simplified Classification, 27 January 2009

United Nations Framework Classifications for Fossil Energy and Mineral Resources 2008 (UNFC - 2008)

1. The United Nations Framework Classification (UNFC-2008) applies to fossil energy and mineral resources located in the subsoil. It serves the needs for classification at a global level (for energy and mineral supply studies), for governments (resources management and policy formulation), for industry (business process management) and financial reporting.

2. The UNFC is a generic system in which quantities are classified on the basis of the three fundamental criteria of economic and social viability (E), field project status and feasibility (F), and geological knowledge (G), using a numerical coding system. Combinations of these criteria create a three-dimensional system. Categories (e.g.E1, E2, E3) and, in some cases, sub-categories are defined for each of the three criteria as set out and defined in Annex.

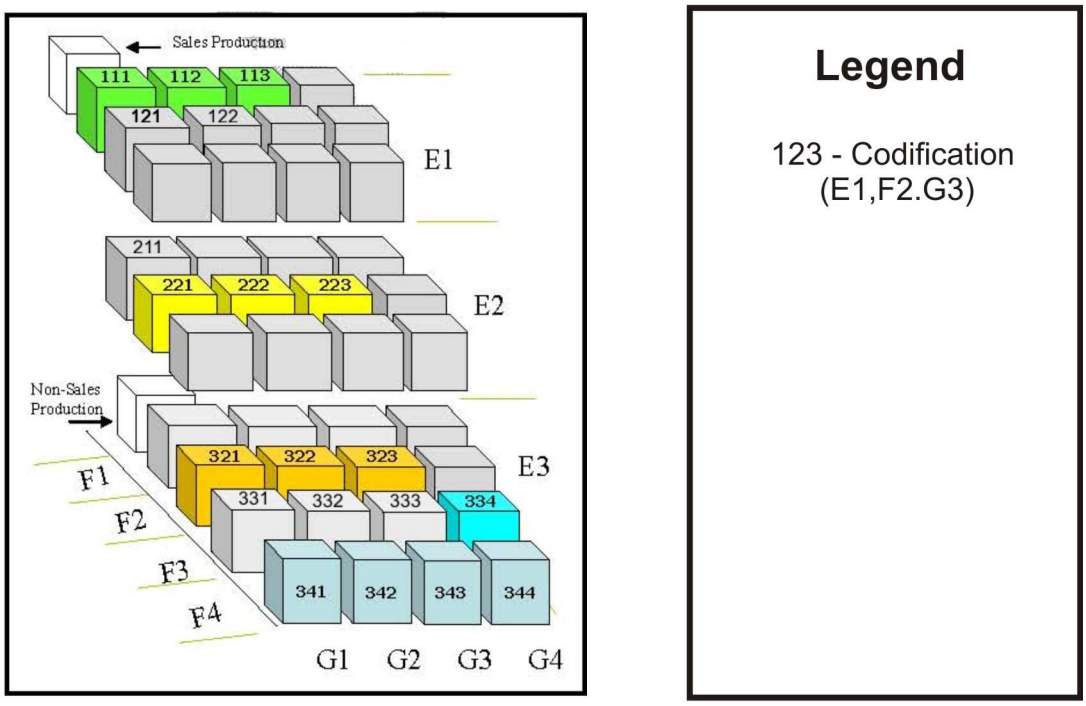
3. The first set of categories (the E axis) designates the degree of favourability of social and economic conditions in establishing the commercial viability of the project, including consideration of market prices and relevant legal, regulatory, environmental and contract conditions. The second set (the F axis) designates the maturity of studies and commitments necessary to implement mining plans or development projects. These extent from early exploration efforts before a deposit or accumulation has been confirmed to exist through to a project that is extracting and selling a commodity, and reflect standard value chain of management principles. The third set of categories (the G axis) designates the level of certainty in the geological knowledge and potential recoverability of the quantities.

4. The categories and sub-categories are the building blocks of the system, and are combined in the form of "classes".

5. A class is uniquely defined by selecting from each of the three criteria a particular combination of a category or sub-category (or groups of categories/sub-categories). Since the codes are always quoted in the same sequence (i.e. E; F;G), the letters may be dropped and just the numbers retained. The numerical code defining a class is then identical in all languages using Arabic numerals.

6. While there are no explicit restrictions on the possible combinations of E, F and G categories or sub-categories, only a limited number will generally be applicable.

Figure 1. UNFC categories and examples of classes



7. Material balance of total quantities can be maintained by full application of the classification. For this purpose a reference point shall be established where the quantity, quality and sales price of recovered quantities are determined.

8. With the exception of past production that may be measured, quantities are always estimated. There will be a degree of uncertainty associated with the estimates. The uncertainty is communicated either by quoting discrete quantities of decreasing levels of confidence (high, moderate, low) or by generating three specific scenarios or outcomes (low, best and high estimates). The former approach is typically applied for solid minerals, while the latter method is commonly used in petroleum. A low estimate scenario is directly equivalent to a high confidence estimate (i.e. G1), whereas a best estimate scenario is equivalent to the combination of the high confidence and moderate confidence estimates (G1+G2). A high estimate scenario is equivalent to the combination of high, moderate and low confidence estimates (G1+G2+G3). Quantities may be estimated using deterministic or probabilistic methods.

9. Where relevant, discovered quantities that may be recovered in the future are subdivided into quantities that are forecast to be sold and quantities that are forecast to be extracted but not sold.

10. Potentially recoverable quantities may be recovered in the future through projects that are contingent on one or more conditions yet to be fulfilled. Contingent projects are classified into projects for which the social and economic conditions are expected to be acceptable for implementation and those where they are not. In the former case, contingency is caused by the recovery project and being sufficiently matured to confirm technical and/ or commercial feasibility, which can then provide the basis for a commitment to extract and sell the commodity at a commercial scale. In the latter case, neither the project nor the economic and social conditions are sufficiently matured or indicate a potential for commercial recovery and sale. A deposit or an accumulation may give rise to several projects with different status.

11. Classifications other than the one shown can be generated by choosing appropriate combinations or categories, or by grouping or further subdividing the categories. This permits the harmonization of resources inventories that are developed on the basis of different classification systems.

12. Conversely, when the unabbreviated UNFC is used to build a resources inventory, this can be converted to inventories developed on other harmonized classifications without going back to the basic resources information.

13. Classifications often need to be adapted to national and local needs. Modifications of this nature should be checked for consistency with the unabbreviated UNFC and other applications in use.

Annex. Definition of Categories

Category	**Definition**
E1	Extraction and sale are economically viable.
E2	Extraction and sale is not 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.
F1	Feasibility of extraction by a defined development project has been confirmed.
F2	Feasibility of extraction by a defined development project is subject to further evaluation.
F3	Feasibility of extraction by a defined development project cannot be evaluated due to limited technical data.
F4	No development project or mining operation has been identified.
G1	Quantities associated with a known deposit that can be estimated with a high level of confidence.
G2	Quantities associated with a known deposit that can be estimated with a moderate level of confidence.
G3	Quantities associated with a known deposit that can be estimated with a low level of confidence.
G4	Estimated quantities associated with a potential deposit, based primarily on indirect evidence.

Notes:

(a) The tem "extraction" is equivalent to "production" when applied to petroleum.

(b) The term "deposit" is equivalent to "accumulation" or "pool" when applied to petroleum.

(c) 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 other non-technical factors that could directly impact the viability of a development project.