

## **Guidance Note on Competency Requirements for the Estimation, Classification and Management of Resources**

**Prepared by the Competency Working Group of the Expert Group on Resource Management**

### *Summary*

At its twelfth session in Geneva, 26-30 April 2021, the Expert Group on Resource Management of the United Nations Economic Commission for Europe (ECE) requested the Competency Working Group to merge ECE's two separate guidance documents on (i) Evaluator Qualifications and (ii) Competent Person Requirements, and to submit a revised version to the Expert Group at its thirteenth session.

This document presents a new non-mandatory Guidance Note on Competency Requirements for the Estimation, Classification and Management of Resources. The Guidance Note is resource neutral and may be applied regardless of the resource or combination of resources being assessed. It is noted that additional guidance may be needed to accommodate resource sector specific requirements, as well as regional and/or national requirements. Resource sector specific requirements could be addressed through development of separate guidance notes or as annexes to this note. The International Centres of Excellence on Sustainable Resource Management (ICE-SRMs) would be well placed to develop additional guidance that meets regional and/or national requirements and promote harmonization between professional organizations to facilitate greater international recognition of resources.

The Expert Group reviewed this Guidance Note at its thirteenth session on 25 October 2022 and recommended it for publication.

## I. Purpose

1. This Guidance Note sets out the competency requirements of individuals who are responsible for the estimation and/or classification of resources according to the principles of the United Nations Framework Classification for Resources (UNFC) and/or managed within the United Nations Resource Management System (UNRMS). The Guidance Note is resource neutral and may be applied regardless of the resource or combination of resources being assessed. It is noted that additional guidance may be needed to accommodate resource sector specific requirements, as well as regional and/or national requirements. Resource sector specific requirements could be addressed through development of separate guidance notes or as annexes to this note. The International Centres of Excellence on Sustainable Resource Management (ICE-SRMs) would be well placed to develop additional guidance that meets regional and/or national requirements and promote harmonization between professional organizations to facilitate greater international recognition of resources experts.

## II. Definitions

2. In the context of this document, the following definitions apply:

(a) **Professional Organization:** a self-regulatory professional association or statutory body (e.g. government authority) that admits individuals on the basis of their academic qualifications, experience, and ethical fitness; requires compliance with the professional standards of competence and ethics established by the organisation; requires or encourages continuing professional development; and has and applies disciplinary powers, including the power to suspend or expel individuals;

(b) **Resource:** A resource is a source from which an environmental-social-economic benefit is produced. Resources can be renewable (e.g. solar, wind, groundwater) or non-renewable. Resources can be for primary use (e.g. minerals, hydrocarbons, renewable energy, groundwater, pore space for CO<sub>2</sub> storage) and can be derived from or after primary use as secondary resources (e.g. anthropogenic resources, mining residues and tailings, processing or refining residues, construction wastes);

(c) **Resource classification:** the categorisation of resources based on the social, environmental and economic viability of their extraction/use, the corresponding technical feasibility and the degree of confidence in the estimates of volumes and forecasts;

(d) **Qualified Assessment:** a formal report pertaining to the estimated quantities and/or value of resources made by a Qualified Expert, that should include, but not be limited to, sources and adequacy and reliability of the underlying data, assumptions made and limitations, the qualifications and experience of the author(s) or those responsible for sign-off;

(e) **Qualified Expert:** an independent person with education, training and relevant professional experience in a discipline pertinent to a resource, acting in compliance with the professional standards of competence and ethics established by his/her Professional Organization. This person is responsible for the standards and methodologies used for collecting, analysing and verifying information used in a Qualified Assessment.

## III. Context

3. Scientifically and technically effective, independent and credible resource estimation, classification and management practice, depends critically on an often complex set of judgements made by those with the appropriate expertise and experience and in doing so who are free from potential conflict of interest. Making such judgments is necessarily evidence-based and is reliant on robust, verifiable data compiled, quality assured and analysed by qualified and experienced personnel working with or with access to accredited facilities and laboratories, taking into account both qualitative and quantitative factors.

4. The United Nations Economic Commission for Europe (UNECE) has developed a “Commitment Trifecta” document (ECE/ENERGY/2021/17)<sup>1</sup> on bold actions required for delivering concrete, near-term outcomes and, longer-term, achieving the 2030 Agenda for Sustainable Development and the Paris Agreement. This document proposes that a comprehensive framework for responsible resource management would benefit communities worldwide and provide assurances to an investment community calling for tightened environmental, social, and corporate governance. Securing sustainable resources will require the institution of: (a) a Socio-Environmental-Economic Contract; (b) common sustainable finance principles; (c) a comprehensive resource management framework; (d) mechanisms to ensure transparency, traceability and sustainability; and (e) strategic environmental assessments. These apply to all resources including minerals, hydrocarbons, renewable energy, nuclear fuels, anthropogenic resources, injection projects and groundwater. This framework, which includes the global adoption of UNFC and UNRMS, has been integrated into the United Nations policy statement *Transforming Extractive Industries for Sustainable Development*.<sup>2</sup>

5. Strict adherence to internationally accepted standards for acquiring and analysing data, accompanied by rigorous quality assurance, quality control and peer-review procedures, are crucial for ensuring public credibility of the resources sector. Both these factors are also essential parts of any future investment policy and resource progression decision-making processes, especially those associated with delivering the UN Sustainable Development Goals (SDGs), which are now to be closely coupled with environmental, social and governance (ESG) assessment and performance criteria.

6. In this context, disclosure and verifiability of the knowledge, skills and autonomy of individuals who are involved in estimations, classification and management of resources are both essential for the accuracy of UNFC and UNRMS but also the acceptance of those estimates by their many and varied stakeholders.

#### IV. Qualified Assessments by Qualified Experts

7. At its simplest, application of the UN resource toolkits UNFC and UNRMS for compiling Qualified Assessments of resources must be conducted, reviewed or led by Qualified Experts. Estimates of the quantities and value of resources (known as a “Qualified Assessment”) are predicated upon evidence-based evaluation methodologies derived from the principles and good practices of biological, chemical and physical science, mathematics, and economics. Because these various disciplines constantly evolve and develop, and with them the regulatory, financial and social context within which they operate, the compilation and sign-off of these Qualified Assessments must be conducted by suitably competent, informed and experienced personnel (“Qualified Experts”). Qualified Experts must be able to track and understand any relevant changes in key assessment parameters. These parameters may include scientific and technical knowledge; social, environmental and economic viability; applicable contractual, statutory, and regulatory provisions; but also the social, environmental and governance factors to be taken into account for which the information relevant to the resource assessment is to be used.

8. Applying these methodologies in an objective, credible and skilled manner is critical to the resultant understanding and acceptance by all stakeholders of the findings and judgements that result from their application and must be conducted by a Qualified Expert.

9. Qualified Experts making estimates of the quantities and value of resources must: (i) examine and interpret the available data necessary to estimate or audit resources

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<sup>1</sup> United Nations Economic Commission for Europe Member States delivering the 2030 Agenda for Sustainable Development and the Paris Agreement - A Commitment Trifecta; <https://unece.org/sites/default/files/2021-07/ECE-ENERGY-2021-17%20Commitment%20Trifecta.pdf>

<sup>2</sup> Transforming Extractive Industries for Sustainable Development, United Nations, New York, 25 May 2021; [https://www.un.org/sites/un2.un.org/files/sg\\_policy\\_brief\\_extractives.pdf](https://www.un.org/sites/un2.un.org/files/sg_policy_brief_extractives.pdf)

information; (ii) state the key assumptions on which they are able to perform quality assessments, verifications, tests and consider all matters required to evaluate the sufficiency, precision, reliability and accuracy of the information and data used; and (iii) make calculations and estimates and apply any tests and standards necessary to make Qualified Assessments. This should be done in accordance with any relevant national or international reporting standard, where such standard exists for the resources sector in question.

10. Given the potential complexity of making a Qualified Assessment, a Qualified Expert may be required to work in teams rather than alone.

## **V. Accuracy and Reliability of Qualified Assessments**

11. The accuracy and reliability of a Qualified Assessment are necessarily subject to a range of factors beyond the direct control of the Qualified Expert, including but not limited to the following:

(a) Resources estimation is inherently imprecise as a result of the inherent uncertainties in, and the limited nature of, the accumulation and interpretation of data upon which the estimations are predicated, hence typically conducted within value range estimates;

(b) The methods, information and source data used in estimating resources, including range estimates, should be based on direct measurements, however, situations may require the reliance on indirect or analogous approaches;

(c) Qualified Experts estimating resources and making judgements as to their nature, extent, and value may necessarily rely on generally accepted engineering and evaluation principles and standards together with their educational background, professional training, integrity and professional experience.

### **A. Records and documents concerning a Qualified Assessment**

12. The Qualified Expert shall document and maintain records with respect to the Qualified Assessment they were involved in, unless otherwise prohibited from doing so by law or assessment contract. Such documentation and records should include, among other things, raw data used to estimate or audit resources information, resource models, compliance testing, and simulations, estimates and assumptions.

## **VI. Competency Requirements of a Qualified Expert**

13. A person acting as a Qualified Expert shall be considered professionally qualified in such capacity if they meet the criteria listed below. The determination of whether a Qualified Expert is professionally qualified should also be made on an individual-by-individual basis by the requestor of the Qualified Assessment. The Qualified Expert should:

(a) Be independent;

(b) Be objective;

(c) Have sufficient educational background i.e., have obtained, from a college or university of recognised stature, a bachelor's or advanced degree, in an appropriate discipline, where relevant;

(d) Have professional training and professional experience to enable them to exercise prudent professional judgment and to be in responsible charge of the estimation, classification or management of resources information. The level of experience required depends on the complexity of the project/resource to be estimated and hence needs to be considered on a case-by-case basis. For some resource sectors a Qualified Expert would normally be considered to be qualified if they have a minimum of five years (or as appropriate) practical experience in a discipline pertinent to the resource being estimated; with at least three full years (or as appropriate) of such experience being in the estimation and evaluation of the class of resources information in question;

(e) Have received, and maintain in good standing, a membership, professional licence, or the equivalent thereof, obtained from a Professional Organization [in circumstances where this criterion is not met, the Qualified Expert must clearly state the reasons as part of their Statement of Qualified Expert].

14. In the context used herein, it is recommended that experience and competency levels should generally include a clear understanding of several areas of knowledge pertinent to the circumstances and conditions to which they are being applied. These may include (but not necessarily be restricted to): industry accepted practices related to the creation and understanding of resource models; the judicious selection of and reliance upon appropriate analogues; suitable application of and reliance upon information in resources evaluation; fundamentals and limitations of simulations; adequate knowledge and applicability of probabilistic and deterministic assessment methodologies; the use of appropriate performance-evaluation techniques to confirm and/or refine interpretations; the consequences of reliance on computer software without a full understanding of the internal calculation processes; various forms of production licensing and fiscal systems; and ongoing education, training and professional development in ethics and the relevant or pertinent resources definitions.

15. The Qualified Expert should secure continuing professional development in the disciplines pertinent to a resource. The Qualified Expert should decline an assignment for which they are not qualified.

#### **A. Independence and objectivity requirements of a Qualified Expert**

16. In order that users of UNFC and UNRMS may be assured that a Qualified Assessment is transparent, impartial and objective, it is important that a Qualified Expert maintains high standards of independence and objectivity. A statement of such independence shall be included in every report containing resources information (see Annex). To the extent that the applicable standards of independence and objectivity set forth in this Guidance Note are not met by a Qualified Expert in estimating, classifying and managing or auditing resources information, such lack of conformity shall be disclosed in any report or opinion relating to resources information.

17. A Consulting Qualified Expert, or any firm of consultants of which such individuals are stockholders, proprietors, partners, or employees, must be independent from any entity with respect to which such Qualified Expert or consulting firm estimate, classify, manage, or audit resources information.

18. A Qualified Expert employed internally by an entity should be empowered by that entity to be objective with respect to estimating, classifying, managing or auditing resources information relating to such entity if the information purports to have been treated in accordance with this guidance note. A Qualified Expert employed internally by an entity would normally be considered to be in a position of objectivity with respect to that entity if, during the time period in which resources information was estimated or audited, the Qualified Expert was (i) assigned to an internal-estimate/audit group that is accountable to senior-level management or the board of directors of the entity and kept separate and independent from the operating and investment decision-making process of such entity, and (ii) granted complete and unrestricted freedom to report, to one or more of the principal executives or the board of directors of the entity, any substantive or procedural irregularities of which the Qualified Expert became aware during estimating and auditing of resources information pertaining to that entity.

## Annex

### Template for a Statement of a Qualified Expert

[Date]

[Entity]

[Address]

I, [name] do hereby certify that:

1. I am [consultant/employee] of:

[Entity]

[Address]

2. I have made the estimates of resources as of [dates] set forth in the accompanying [table/report/public disclosure] with respect to the [project] of [Entity]. My examination included such tests and procedures as were considered necessary under the circumstances to render the opinion set forth herein. As of the date of this statement, to the best of my knowledge, information and belief, this Qualified Assessment contains all the scientific and technical information that is required to ensure that it is not misleading.

3. I graduated with a [degree] from the [university] in [year]. In addition, I have obtained a [degree] from the [university] in [year].

4. I am a [professional title] with the [Professional Association or Statutory Body/Government Authority].

[alternatively] 4. I do not have a professional title and I am not registered with a Professional Association/Statutory Body/Government Authority for the following reasons: [stated reasons].

5. I have worked as a [professional qualification] for a total of [years], during which time I have conducted reviews and audits on numerous projects covering [resources/commodities and deposit/reservoir types].

6. I have read the definition of a “Qualified Expert” set out in the United Nations Framework Classification for Resources and certify that by reason of my education, affiliation with a Professional Organisation and past relevant work experience, I fulfil the requirements to be a “Qualified Expert” for the purposes of the United Nations Framework Classification for Resources.

7. I visited the [project] on [dates] (or, alternatively, [I have not visited the project because (explain reason)]).

8. I am independent from the [organisation] that is the subject of the Qualified Assessment.

[alternatively] 8. I meet the requirements of independence and objectivity of a Qualified Expert employed internally by [Entity] as set forth in the UNFC Guidance Note on Competency Requirements for the Estimation, Classification and Management of Resources (ECE/ENERGY/GE.3/2022/4).

9. I am not aware of any material fact or material change with respect to the subject matter of the resources estimates that is not reflected in the Qualified Assessment, the omission to disclose which makes the Qualified Assessment misleading.

10. I consent to the filing of the Qualified Assessment with any authority and any publication, including electronic publication accessible by the public, of the Qualified Assessment.

[Date]

“Signed” \_\_\_\_\_

NOTE: Information on qualifications detailed in items 4 and 5 above should be provided on an “if not, why not” basis.