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## Economic Commission for Europe

### Committee on Sustainable Energy

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Item 7 of the provisional agenda

**Review of the work of the Committee and its subsidiary bodies in light of Appendix II of the Outcome of the Review of the 2005 ECE Reform**

## **Report on Implementing the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 in ECE member States**

Note by the secretariat

### **I. Introduction**

1. A report on Implementing the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 (UNFC-2009) has been requested for the current biennium (2012–2013) in relation to programme and performance monitoring.
2. This document has been prepared in response to that request.

### **II. Background**

3. UNFC-2009 provides a global communications tool applicable to all extractive activities, covering solid mineral and fossil energy resources, including oil, natural gas, coal and uranium. As the only global system that allows different classifications to be unified to a single representation of the entire mineral or hydrocarbon resource endowment, UNFC-2009 has a major impact on the ability to accurately understand the availability of all non-renewable resources and hence facilitate the development of appropriate long-term energy policies.
4. Designed to be internationally applicable and internationally acceptable, UNFC-2009 brings harmonization to terminology and definitions by using a powerful numerical codification system which applies to all fossil energy and mineral reserves and resources.
5. UNFC-2009 is a global system and hence offers value to and can be applied by both ECE and non-ECE member States.

6. UNFC-2009 currently applies to the extraction of fossil energy and mineral reserves and resources located on or below the Earth's surface. Work is underway to broaden the scope of application of UNFC-2009 to encompass renewable energy resources, which would for the first time provide a common classification system for both renewable and non-renewable energy projects so allowing for a better view of energy sustainability. UNFC-2009 is also being evaluated as a basis for classification of injection projects, e.g. for carbon dioxide sequestration.
7. A key benefit of UNFC-2009 is the fact that it provides a common basis for the solid minerals and petroleum sectors, whose classification systems have been developed largely independently of each other, primarily focussing on the mining of solids and the production of fluids respectively, but which now must address the increasing overlap between the two extractive industries.
8. UNFC-2009 has been developed to meet, to the extent possible, the needs of applications pertaining to (i) international energy and mineral studies; (ii) government resource management functions; (iii) corporate business processes; and (iv) financial reporting standards.
9. The importance of environmental and social issues in the context of resource extraction is appropriately recognized in UNFC-2009.

### **III. Historical Development**

10. The development of UNFC-2009 has been undertaken by the Expert Group on Resource Classification, which until the end of 2009 was known as the Ad Hoc Group of Experts on Harmonization of Fossil Energy and Mineral Resources Terminology.
11. At the request of the German Government and with the support of other ECE member States, work on development of the Framework Classification began in 1992 and the first version was published in 1997 and entitled "United Nations International Framework Classification for Reserves/Resources – Solid Fuels and Minerals Commodities" (UNFC-1997). This version applies only to coal and solid minerals. In 1997, the United Nations Economic and Social Council (ECOSOC) in its decision 1997/226 invited the Member States of the United Nations, international organizations and the regional commissions to consider taking appropriate measures for ensuring worldwide application of the Framework Classification.
12. On 9 November 1999, in Geneva, an agreement was made to incorporate the definitions of the Council of Mining and Metallurgical Institutions (CMMI) (CMMI is superseded by the Committee for Mineral Reserves International Reporting Standards (CRIRSCO)) into UNFC-1997 for all reserve/resource definitions which UNFC-1997 and CMMI shared in common.
13. In 2001, at the request of a number of ECE member States, the Ad Hoc Group of Experts was formed with the intention of extending the applicability of the system to oil, natural gas and uranium. This resulted in the finalization of a version of the Framework Classification in 2004 entitled "United Nations Framework for Fossil Energy and Mineral Resources" (UNFC-2004). In 2004, the United Nations Economic and Social Council (ECOSOC) in its decision 2004/233 invited the Member States of the United Nations, international organizations and the regional commissions to consider taking appropriate measures for ensuring worldwide application of the Framework Classification.
14. In 2004, CRIRSCO re-engaged with the ECE on development of UNFC-2004 and its alignment with the CRIRSCO Template.

15. In 2006, a Memorandum of Understanding between the ECE Ad Hoc Group of Experts and the Society of Petroleum Engineers (SPE) had been executed wherein the SPE, through its Oil and Gas Reserves Committee, agreed to develop petroleum specifications for the application of the United Nations Framework Classification and to maintain evergreen the texts.<sup>1</sup> An informal collaborative agreement was in place with the Committee for Mineral Reserves International Reporting Standards (CRIRSCO). CRIRSCO and SPE provided commodity-specific specifications through the CRIRSCO Template of 2006 and the Petroleum Resources Management System (PRMS), respectively.

16. In 2007, at the encouragement of the International Accounting Standards Board (IASB), the Ad Hoc Group of Experts decided to map certain classification systems to UNFC-2004 and established a Task Force (UNFC Mapping Task Force) for this purpose. The report of the Mapping Task Force (ECE ENERGY SERIES No. 33 and ECE/ENERGY/71), recommended that certain changes be made to the category definitions of UNFC-2004 in order to achieve alignment and harmonization between UNFC-2004, the CRIRSCO Template of 2006 (which is widely used as the basis for solid minerals classification) and PRMS (which is widely used as the basis for petroleum classification). PRMS was approved by the Board of SPE in March 2007 and endorsed by the World Petroleum Council (WPC), the American Association of Petroleum Geologists (AAPG), the Society of Petroleum Evaluation Engineers (SPEE) and the Society of Exploration Geophysicists (SEG).

17. The Ad Hoc Group of Experts responded to the recommendation and nominated a small group of experts “the UNFC Revision Task Force”, which developed and proposed a revised text of UNFC-2004. This was presented at the seventh session of the Ad Hoc Group of Experts and the revised text, UNFC-2009, was subsequently approved by the Committee on Sustainable Energy at its eighteenth session in November 2009. UNFC-2009 was issued as a publication in all the languages of the United Nations in 2010 (ECE ENERGY SERIES No. 39 and ECE/ENERGY/85).

18. The Revision Task Force recommended that it would neither be constructive nor practical for the Expert Group to consider developing comprehensive new specifications and guidelines for UNFC-2009 where detailed commodity-specific specifications and guidelines already exist within the classification systems of the CRIRSCO Template and the PRMS. Development of high-level, generic specifications for UNFC-2009 was undertaken by the Expert Group to satisfy specification needs not addressed in the CRIRSCO Template and/or PRMS.

19. UNFC-2009 has now been aligned with the CRIRSCO Template of 2006 and the PRMS of 2007, which importantly facilitates the reporting of the same resource quantities under either UNFC-2009 or the aligned system.

20. In 2010, the Expert Group on Resource Classification started work on development of specifications for UNFC-2009 and tasked a Specifications Task Force to undertake the drafting. UNFC-2009 provides the high-level framework definitions to which specifications are needed as they set out the basic rules that are considered necessary to ensure an appropriate level of consistency and coherence in application. Specifications provide additional instructions on how the definitions of UNFC-2009 must be applied in specific circumstances, including commodity-specific rules.

21. Along with the generic specifications, the CRIRSCO Template and PRMS, together with a bridging document for each, provide the foundation and keystones for consistent

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<sup>1</sup> [http://www.unece.org/fileadmin/DAM/oes/MOU/2006\\_Oct\\_SPE\\_Signed.pdf](http://www.unece.org/fileadmin/DAM/oes/MOU/2006_Oct_SPE_Signed.pdf)

application of UNFC-2009. It is recognized that these systems will continue to be developed in response to stakeholder needs and changes in technology, and hence additional commodity-specific specifications may be incorporated in the future, subject to endorsement by the Expert Group on Resource Classification.

22. A public consultation on the draft Specifications for the Application of UNFC-2009 was undertaken from 22 October to 22 December 2012 in order to ensure a transparent and inclusive process in the development of this key document. The draft specifications were revised in the light of the comments received and the text was subsequently reviewed and endorsed by the Expert Group on Resource Classification at its fourth session in April 2013. The Specifications for the Application of UNFC-2009 contains the generic specifications for UNFC-2009, together with the solid minerals specifications from the CRIRSCO Template and petroleum-specific specifications from PRMS.

23. The Expert Group at its fourth session recommended that the Specifications for Application of UNFC-2009 be submitted to the Committee on Sustainable Energy at its twenty-second session in November 2013 for approval. The Expert Group also requested that the final text be issued as a publication in all languages of the United Nations as soon as practicable in order to facilitate further implementation of ECOSOC decision 2004/233.

24. As the generic specifications are needed to operationalize UNFC-2009 and they are awaiting the approval of the Committee on Sustainable Energy, implementation of UNFC-2009 has not and cannot yet have started. A significant education and outreach programme on UNFC-2009 has been implemented by the Expert Group on Resource Classification since 2010 and this is described in Section V below.

#### **IV. Funding**

25. The development of UNFC-2009 would not have been possible without the very significant and long-term in-kind contributions of the members of the Expert Group on Resource Classification, including Governments, the private sector, professional societies and associations, international organizations, academia and individual experts. These in-kind contributions have been provided in the form of time (man hours for direct work and travel time to and during events), direct sponsorship of events (including meetings, workshops, conferences, social events) and travel (travel encompasses flights, hotel and other associated costs of participating at events). It has been estimated that current in-kind contributions to the work of the Expert Group are in the order of one million US dollars per annum. This level of in-kind contributions will need to be maintained for the work of the Expert Group to continue and implementation of UNFC-2009 to commence or alternatively be replaced by an equivalent level of extrabudgetary funding.

#### **V. UNFC-2009 Education and Outreach Programme**

26. At its first session in April 2010, the Expert Group on Resource Classification recommended the establishment of a Communications Sub-Committee. The Sub-Committee was established with a mandate to develop and implement a communications and education strategy. The strategy encompasses opportunities to promote UNFC-2009 globally and to deliver a consistent message, including through conferences, workshops, articles and technical papers. The Sub-Committee was also tasked to assist to identify experts in countries and organizations not already represented in the Expert Group, as well as to work with all UNFC-2009 stakeholders or end-users including academic institutions.

27. UNFC-2009 is presented and/or promoted at workshops, conferences, and meetings globally:

- (a) In 2010, UNFC-2009 was promoted and/or presented at 18 events;
- (b) In 2011, UNFC-2009 was promoted and/or presented at 17 events;
- (c) In 2012, UNFC-2009 was promoted and/or presented at 35 events.

In the first eight months of 2013, UNFC-2009 was promoted and/or presented at 16 events.

28. Since 2010, nine training workshops have been held to build capacity and generate awareness on the benefits of UNFC-2009:

(a) International Workshop “UNFC-2009 – Theory and Practice”, Warsaw, Poland, 21–22 June 2010. The event was organized by the Polish Geological Institute-National Research Institute and ECE, in cooperation with the Polish Ministry of the Environment (Department of Geology and Geological Concessions);

(b) UNFC and Resource Classifications Workshop, organized by the European Office of the American Association of Petroleum Geologists in cooperation with ECE, London, United Kingdom, 7–8 February 2011;

(c) International Workshop on UNFC-2009, Ankara, Turkey, 29–30 September 2011. The event was jointly organized by ECE, Ministry of Energy and Natural Resources of Turkey – General Directorate of Mining Affairs (MIGEM), General Directorate of Turkish Coal Enterprises (TKI) and the General Directorate of Mineral Research and Exploration (MTA);

(d) Workshop on UNFC Resource Classification (for oil, gas and minerals) in Bangkok, Thailand, 9–10 February 2012. The event was organized by the Coordinating Committee for Geoscience Programmes in East and South-east Asia (CCOP) in cooperation with ECE and the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP);

(e) UNFC-2009 Workshop in Mexico City, Mexico, 28–29 September 2012. The event was organized by the Ministry of Energy of Mexico (SENER), the National Hydrocarbons Commission (CNH), and the Mexican Geological Survey (SGM), in cooperation with ECE and the United Nations Economic Commission for Latin America and the Caribbean (ECLAC);

(f) Interregional Workshop on Recent Developments in Evaluation of Uranium and Thorium Resources in Lisbon, Portugal, 15–18 October 2012. The event was jointly organized by ECE, the International Atomic Energy Agency (IAEA), and the Ibero-American Programme for Science, Technology and Development (CYTED);

(g) Renewable Reserves Workshop, London, United Kingdom, 31 October–1 November 2012. This event was organized by the Renewables Reserves Working Group in cooperation with ECE to assess the viability of applying UNFC-2009 to renewable resources;

(h) UNFC-2009 Workshop, Palais des Nations, Geneva, Switzerland, 23 April 2013. This Workshop was organized by ECE;

(i) Interregional Workshop on UNFC-2009 Applications in Uranium and Thorium Resources: Focus on Comprehensive Extraction”, Santiago, Chile, 9–12 July 2013. This event was jointly organized by IAEA, CYTED, ECE, and ECLAC in cooperation with the Association of Chilean Engineers, Ministry of Mines of Chile and the Chilean Nuclear Energy Commission.

29. It has come to the attention of the Expert Group that UNFC-2009 is currently being taught in universities around the world, including in Argentina, Spain, Thailand, Turkey,

and the United Kingdom. Current teaching is not being undertaken with Expert Group approved material. The Communications Sub-Committee has recently started work on preparing standard teaching material on UNFC-2009 appropriate for inclusion on the basic curriculum at universities.

30. A number of national publications refer to UNFC-2009, including:

(a) Poland: In 2010, the Polish Geological Institute-National Research Institute (PGI-NRI) and the Ministry of Environment confirmed that the data in its publication “Mineral Resources of Poland”, which is updated annually, is prepared according to UNFC-2009;

(b) Ukraine: In 2013, the State Commission of Ukraine for Mineral Reserves published “Monograph on National and International Classification Systems for Mineral Reserves and Resources: State and Harmonization Prospects”;

(c) Australia: Geoscience Australia publishes “Australia's Identified Mineral Resources” annually. This is an annual national assessment that takes a long-term view of mineral resources likely to be available for mining. The 2012 version describes the correlation of Australia’s national mineral resource system with that of UNFC-2009.

## **VI. IAEA Technical Cooperation Fund**

31. A significant number of training events and capacity-building missions have been organized with funding from the International Atomic Energy Agency (IAEA). IAEA Project INT/2/015 funded from the IAEA Technical Cooperation Fund was initiated in 2012 for a period of two years to assist Member States in strengthening their capabilities in uranium exploration, resource augmentation and production. This includes different phases of exploration, resources evaluation, uranium mining and processing, and applying good practices to ensure sustainability of all activities. As many IAEA Member States are either newly starting these activities or re-starting them after a hiatus of two or more decades, considerable challenges in technology deployment and human resources management have to be addressed. Capacity-building on the use of UNFC-2009 for the reporting and management of uranium and thorium resources is a key component of this project.

32. To date the INT/2/015 project has funded the following events, all of which included training and education on UNFC-2009:

(a) Interregional Planning and Coordination Meeting with focus on “Uranium exploration and production priorities outlook”, Finland, 26–29 June 2012;

(b) Interregional IAEA, CYTED and ECE Workshop on Recent Developments in Evaluation of Uranium and Thorium Resources, Portugal, 15–18 October 2012;

(c) Interregional Training Course on Uranium Deposit Models and Exploration, China, 12–16 November 2012;

(d) Interregional Training Course on Uranium Production from Phosphate Rocks, Jordan, 10–14 December 2012;

(e) Interregional Training Course on Performance Optimization in Uranium and Rare Earth Elements (REE) Production from Phosphate Rocks, Tunisia, 11–15 February 2013;

(f) Interregional Training Course on Uranium Exploration Strategy, Mining and Processing Techniques, India, 8–12 April 2013;

(g) Interregional IAEA, CYTED, ECE and ECLAC Workshop on UNFC-2009 Applications in Uranium and Thorium Resources, Chile, 9–12 July 2013.

33. As a result of this Project, case studies on UNFC-2009 have been undertaken by Argentina, Brazil, Cameroon, Indonesia, Malawi, Peru, Philippines, Tanzania, and Thailand.

34. The Project has served to broaden understanding and knowledge of UNFC-2009 and, in particular, its value as a national reporting tool. As a result, a number of countries have expressed interest in applying UNFC-2009 at the national level once the specifications are approved. However, the project has also received numerous requests for technical assistance from these and other countries.

## VII. Pilot Projects and Case Studies

35. Testing of UNFC-2009 going forwards will be a critical issue. Pilot projects and case studies allow potential users of UNFC-2009 to understand how the system works and to confirm that it meets their needs. It also allows any shortcomings and challenges in the application of UNFC-2009 to be highlighted. Feedback from such testing is being compiled by the Expert Group and will be taken into account in any periodic revisions of the system. The Committee on Sustainable Energy has directed the Expert Group to reinforce its efforts to encourage testing and application of UNFC-2009 as widely as possible and that feedback on this continue to be monitored and reviewed at least every two years (ECE/ENERGY/84, paragraph 25(b)).

36. An important pilot project was undertaken by the Norwegian Petroleum Directorate, in cooperation with Statoil, in 2011–2012 and represents the most significant testing of the system to date. The pilot involved applying UNFC-2009 to the total Norwegian national petroleum resource base, representing a portfolio of more than 800 projects. The goal of the testing was to highlight if any functionalities of the existing Norwegian petroleum classification system could be improved by the use of UNFC-2009, as well as identify challenges related to the use of UNFC-2009 and any shortcomings with respect to national resource management needs and applications. The pilot involved examining the UNFC-2009 categories for individual projects and compared these results with a category to category mapping. The pilot served to successfully demonstrate that UNFC-2009 is a strong instrument for analyzing a nation's petroleum resource base, providing for international communication and comparison to other nation's resources.

37. A number of ECE countries, including the Russian Federation and Ukraine, have also undertaken detailed case studies. Case studies have additionally been carried out by non-ECE countries, including: Argentina, Cameroon, Indonesia, Malawi, Peru, Philippines, Tanzania, and Thailand.

38. Case studies have also been undertaken by industry, including:

(a) DONG Energy: the case study compared the DONG Energy internal classification system with UNFC-2009 and found that it can be mapped to UNFC-2009 with no major modifications;

(b) RWE Dea AG: the case study applied UNFC-2009 to the producing German Mittelplate oil field and found that the greater granularity of UNFC-2009 enabled classification to be done more accurately.

## VIII. Moving from UNFC-1997 to UNFC-2009

39. A large number of countries implemented UNFC-1997 or updated their national systems on the basis of it. At the meeting of the Task Force on the Implementation of UNFC-1997 held in Geneva, 19–20 November 2001, the latest results of the practical application of UNFC-1997 worldwide, as recommended by ECOSOC decision 1997/226, were considered (ENERGY/AC.1/2001/2). It was noted that a growing number of countries were implementing UNFC-1997 as a national system, whilst others were continuing to update their national systems on the basis of UNFC-1997. Ukraine was the first ECE country to legislate UNFC-1997. Bulgaria, Portugal and Romania are also using UNFC-1997.

40. Particular progress outside the ECE region was reported in the Asian region where a number of countries endowed with mineral and solid fuels resources (China, India, Indonesia, Iran (Islamic Republic of), Malaysia, the Philippines) were noted to have adopted the Classification by a Law. In India, for example, the National Mineral Inventory for more than 70 minerals is maintained according to UNFC-1997. Annex I to ENERGY/AC.1/2001/2 provides the status of the implementation of UNFC-1997 worldwide as at November 2001.

41. UNFC-1997 and UNFC-2009 are not fully aligned, since a number of changes were made in order to align UNFC-2009 with the CRIRSCO Template and PRMS. Hence this has posed a number of countries challenges in updating to UNFC-2009 and resulted in a number of requests for technical assistance and provision of a detailed mapping document. A mapping document has been developed by the Expert Group on Resource Classification, but further training is needed to explain the relationship between UNFC-1997 and UNFC-2009 and, in particular, the correct application of the UNFC-2009 specifications, including the CRIRSCO Template.

42. Annex I provides a list of countries that have either: participated directly in meetings, seminars or workshops related to UNFC-1997 and/or UNFC-2009; applied UNFC-1997 directly; mapped their national classification systems for minerals, petroleum and/or uranium to UNFC-1997 or UNFC-2009; applied UNFC-1997 or UNFC-2009 to selected deposits and/or expressed an interest in doing so.

## IX. UNFC-2009 and the European Union

43. Data harmonization and standardization in the area of the reporting of reserves and resources at the European Union (EU) level is desired and various initiatives and projects are being supported by the European Commission (EC) to that end. UNFC-2009 is increasingly being viewed as a tool that can facilitate standardization and harmonization of data within Europe. The European Commission noted in its Communication of 2 February 2011 (COM(2011) 25 final) to the European Parliament, the European Council, the European Economic and Social Committee and the Committee of the Regions Commission its intent to “promote the work of UNECE in the area of standardisation concerning reporting of reserves and resources at EU-level”.

### A. INSPIRE Directive

44. The INSPIRE Directive (Directive 2007/2/EC), which entered into force on 15 May 2007, establishes an infrastructure for spatial information in Europe to support Community environmental policies, and policies or activities which may have an environmental impact. The following recommendation is included in the final version of the INSPIRE Data

Specifications on Energy Resources: “Recommendation 7: The standardisation and harmonisation of classification of resources has been considered in great detail. In order to achieve a greater degree of interoperability, the use of the UNFC 2009 classification is recommended where its use is possible and feasible.”

## **B. EuroGeoSource**

45. EuroGeoSource, a three-year EU co-funded project that started in April 2010, used UNFC-2009 as the tool to harmonize the energy and mineral resource data. The project resulted in the development of the EuroGeoSource web GIS system – a multilingual application that allows users to identify access, use and re-use aggregated geographical information on geo-energy and mineral resources from the ten EU project partners. Of the ten participating project countries, three are using UNFC-1997 (Bulgaria, Portugal and Romania), four are using a version based on the Russian classification system (Estonia, Hungary, Poland and Slovenia); and three are using the PRMS for petroleum and national systems for minerals (Belgium, Denmark and the Netherlands). Bulgaria, Portugal and Romania are undertaking work to update to UNFC-2009. As a result of this project, all ten countries are now either mapped to UNFC-2009 or have plans to implement the system directly.

## **C. European Innovation Partnership on Raw Materials**

46. The EU Raw Materials Supply Group assessed the value of using UNFC-2009 in the context of the European Innovation Partnership on Raw Materials at its plenary meeting in Brussels, November 2012. The Group comprises the European Commission, EU and European Economic Area (EEA) Member States, candidate countries, industry, environmental NGOs, and trade unions. It falls under the remit of the EC Directorate-General for Enterprise and Industry. To achieve standardization and harmonization across the EU countries, a proposal was for UNFC-2009 to be the over-arching system operated at member state and EU-level.

## **D. Statistical Information on Raw Materials Deposits (Minventory)**

47. This EC Directorate-General for Enterprise and Industry commissioned project, “Statistical Information on Raw Materials Deposits” (Minventory), is a collaboration between ten European geological bodies which seeks to create a directory of mineral reserves and resources across Europe and a roadmap to a harmonized data repository. UNFC-2009 is being considered as the project mapping tool.

## **E. EuCoRes (European Coal Resources)**

48. This project aims to create a geographical database and map of EU coal basins, including potential sources of coal bed methane (CBM) based on a harmonized typology. The focus is a thorough classification and mapping of coal and CBM in the EU. Next to the formulation of a unified classification and terminology, an extensive geographical database is to be constructed where detailed and georeferenced information of all existing coal deposits in the EU is included. The output of this project will be fully compatible with UNFC-2009.

## **X. Financial Reporting Standards**

49. UNFC-2009 has been designed to meet, to the extent possible, the needs of all applications pertaining to financial reporting standards, particularly those promulgated by the US Securities and Exchange Commission (SEC) and the International Accounting Standards Board (IASB). The Expert Group cooperates closely with the IASB, which undertook an international extractive activities research project to analyse the unique financial reporting issues applicable to extractive activities and to identify a basis on which a financial reporting model might be developed to address these issues. If the IASB decides in the future to add an International Financial Reporting Standard (IFRS) for extractive activities to its active agenda, the objective would be to develop an IFRS on accounting for extractive activities that would supersede IFRS 6: Exploration for and Evaluation of Mineral Resources. The IASB discussion paper “Extractive Activities”, which incorporates the results of the research project, recommended that the UNFC-2009’s progress in use by capital markets and industry be reviewed if and when an extractive activities project is added to the IASB’s active agenda. The recent endorsement by the Expert Group of the bridging documents with the CRIRSCO Template and the PRMS is the first step in achieving renewed consideration by the IASB.

## **XI. Observations and Conclusions**

50. Specifications are needed to operationalize UNFC-2009. Since the specifications for UNFC-2009 are only recently completed, the tangible impact of the system can neither be judged nor measured yet. The specifications and the bridging documents for UNFC-2009 were endorsed by the Expert Group on Resource Classification at its fourth session (23–26 April 2013) and are awaiting approval by the Committee on Sustainable Energy.

51. Three challenges are envisaged in relation to implementation of UNFC-2009 by ECE and non-ECE member States: administrative, technical and financial.

52. In view of the increasing number of requests for technical assistance and national workshops, particularly from developing countries, lack of funding is a growing impediment to implementation of UNFC-2009. Extrabudgetary funding is needed as the implementation of UNFC-2009 requires a capacity that is beyond what can be reasonably be expected through the goodwill and voluntary contributions of the members of the Expert Group on Resource Classification. The United Nations is encouraged to reassess its regular budget commitment in support of implementation, further development and maintenance of UNFC-2009.

53. The work of the Expert Group on Resource Classification and the development of UNFC-2009 is a priority within the work programme of ECE. A global classification system for reserve and resource estimates, one that incorporates across fuel and non-fuel resources, is a vital tool in encouraging sustainable resource development and use.

54. Engagement with the other regional commissions is sought where possible and, in particular, when events are held in countries outside the ECE region. Closer cooperation and collaboration with the other regional commissions will be needed once implementation of UNFC-2009 starts.

55. The level of support by the key stakeholders involved in developing UNFC-2009, which in many cases is over a period of more than five years and in some cases up to 20 years, clearly demonstrates a firm belief in the enormous value of such a system. A standardized system of classifying and hence comparing non-renewable and renewable reserves of energy will greatly enhance the capability of governments to plan for sustainable energy use in the future, as well as enabling investors to easily compare diverse

portfolios of both alternative and conventional forms of energy with a high degree of confidence in the underlying methodology and resulting metrics. By providing a common basis for comparing different energy resources, this will facilitate the most efficient allocation of investment capital to competing energy projects, aiding the development of the rapidly changing global energy complex.

56. Classification activities are currently carried out worldwide by a number of entities including ECE, CRIRSCO, SPE, and a range of individual countries and regulatory bodies. For example, within the ECE region a range of EU countries, as well as Norway and the Russian Federation have their own national classification systems and Securities regulators in the United States and Canada each have their own systems for corporate reporting. Other than UNFC-2009, all these systems are specifically designed either for petroleum or for solid minerals and do not cover both. In addition, these systems often use the same terminology, but defined differently. There are so many classification systems worldwide that a standardized system, covering both petroleum and solid minerals, and using harmonized terminology is urgently needed to facilitate the reporting of reserves and resources nationally, at EU-level, ECE-level and globally. No other body/organization is working on a global classification system such as UNFC-2009. The benefits of such a global system are starting to be understood by governments worldwide.

57. Should an IFRS for extractive activities be developed, the potential for even broader application of UNFC-2009 could be further enhanced (see paragraph 49).

## Annex I

### UNFC-1997, UNFC-2009 and Country Engagement

The following is a list of countries that have either: participated directly in meetings, seminars or workshops related to UNFC-1997 and/or UNFC-2009; applied UNFC-1997 directly; mapped their national classification systems for minerals, petroleum and/or uranium to UNFC-1997 or UNFC-2009; applied UNFC-1997 or UNFC-2009 to selected deposits and/or expressed an interest in doing so:

1. Albania
2. Angola
3. Argentina
4. Australia
5. Austria
6. Azerbaijan
7. Brazil
8. Bulgaria
9. Cambodia
10. Canada
11. Chad
12. Chile
13. China
14. Colombia
15. Czech Republic
16. Cuba
17. The Democratic Republic of the Congo
18. Egypt
19. Estonia
20. Finland
21. Germany
22. Greece
23. Hungary
24. India
25. Indonesia
26. Iraq
27. Japan
28. Kazakhstan
29. Kyrgyzstan
30. Laos PDR
31. Malaysia
32. Mauritania
33. Mongolia
34. Mozambique
35. Nepal
36. Norway
37. New Zealand
38. Nigeria
39. Paraguay
40. Philippines
41. Poland
42. Portugal
43. Romania

44. Russian Federation
  45. Senegal
  46. Slovenia
  47. Slovakia
  48. South Africa
  49. Spain
  50. Sri Lanka
  51. Sudan
  52. Tajikistan
  53. Thailand
  54. Tunisia
  55. Turkey
  56. Turkmenistan
  57. Uganda
  58. Ukraine
  59. United Kingdom
  60. United States of America
  61. Uzbekistan
  62. Venezuela
  63. Vietnam
  64. Zambia
  65. Zimbabwe
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