Report of the Expert Group on Resource Classification

I. Introduction

1. The third session of the Expert Group on Resource Classification was held on 2–4 May 2012.¹

2. This report summarizes the discussions on the work of the Expert Group at its third session. All the documents and presentations of the third session are available on the United Nations Economic Commission for Europe (UNECE) website.

II. Attendance

3. The meeting was attended by representatives of the following UNECE member countries: Bulgaria, Canada, Denmark, Hungary, Kazakhstan, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Turkey, Ukraine and United States of America.

4. Representatives of Angola, Australia, Brazil, China, India, Mexico, Mongolia, South Africa, Thailand, Uganda and Vietnam participated under Article 11 of the Commission’s Terms of Reference.

5. From the United Nations system and Specialized Agencies, a representative of the International Atomic Energy Agency (IAEA) attended.

6. The following international organizations were represented: Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP) and the International Energy Agency (IEA).

7. Representatives of the following non-governmental organizations participated: American Association of Petroleum Geologists (AAPG), Committee for Mineral Reserves International Reporting Standards (CRIRSCO), Confederation of United Kingdom Coal Producers, European Association of Geoscientists and Engineers (EAGE), European Federation of Geologists (EFG), Society of Petroleum Engineers (SPE), Society of Petroleum Evaluation Engineers (SPEE) and World Petroleum Council (WPC).

8. In addition, representatives from the private sector and academia attended.

III. Opening of the session

9. The session opened with a welcome address by the Director of the Sustainable Energy Division of UNECE, who advised that Mr. Sven Alkalaj, former Minister of Foreign Affairs of Bosnia and Herzegovina, had commenced as the new Executive Secretary of UNECE the previous month. The Director underlined the nature of the involvement of the United Nations in the development of the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 (UNFC-2009), notably as a facilitator and convener and not as a regulator or enforcer. He drew attention to the voluntary nature of the work on development of UNFC-2009, noting that the progress made to date was a result of significant in-kind contributions (time, travel, and sponsorship) provided by experts from around the world and that these contributions were greatly appreciated. He also noted that the Expert Group works via consensus, with consensus being general agreement characterized by the absence of formal objection to substantial issues. Deciding by consensus is a compromise process that involves seeking to take into account the views of all parties concerned; and to reconcile conflicting arguments. Consensus is not to be equated with unanimity. In closing, he drew attention to the key goal of the meeting to discuss and receive feedback on the draft generic specifications for application of UNFC-2009.

IV. Adoption of the agenda (agenda item 1)

10. The provisional agenda as contained in the document ECE/ENERGY/GE.3/2012/1 was adopted without amendment.

V. Officers (agenda item 2)

11. The existing Bureau served until the end of the third session and a new Bureau was elected to take over from the end of the session.

12. The current Bureau comprised: Mr. Michael Lynch-Bell (United Kingdom) as Chair, and Ms. Karin Ask (Norway); Mr. Fatih Birol (IEA), Mr. Ferdinando Camisani-Calzolari (CRIRSCO), Mr. David Elliott (Canada), Ms. Mücetta Ersoy (Turkey and Coordinator of the Minerals (including coal) Stakeholders), Mr. Kjell Reidar Knudsen (Norway), Mr. Ian Lambert (Australia), Mr. David MacDonald (United Kingdom), Mr. Yuri Podturkin (Russian Federation), Mr. James Ross (United Kingdom), Mr. Tim Smith (SPEE) and Mr. Rawdon Seager (SPE) as Vice-Chairs. It was further noted that the United States Geological Survey would shortly confirm the name of its representative.

13. The new Bureau was confirmed as: Mr. David MacDonald (United Kingdom) as Chair, Mr. Michael Lynch-Bell (United Kingdom) as Chairman Ex-officio, Mr. Yuri Podturkin (Russian Federation) as First Vice Chair, and Ms. Karin Ask (Norway), Mr. Fatih Birol (IEA), Mr. Ferdinando Camisani-Calzolari (CRIRSCO), Ms. Leesa Carson (Australia), Mr. David Elliott (Canada), Ms. Mücetta Ersoy (Turkey and Coordinator of the Minerals (including coal) Stakeholders), Mr. He Qingcheng (CCOP), Mr. Kjell Reidar
VI. Opening remarks from the chair (agenda item 3)

14. The Chair opened the meeting by welcoming participants and, in particular, the large number of attendees taking part for the first time. He observed that the level of interest in and support of UNFC-2009 and the Expert Group was continuing to grow worldwide.

15. The Chair noted that he and many of the Vice Chairs had delivered presentations at a number of minerals and petroleum-related conferences and workshops around the world and that these all served to promote greater understanding of the benefits of UNFC-2009.

16. The Chair advised participants that since the second session of the Expert Group, the work of the Bureau had been conducted through six conference calls and regular e-mail correspondence. Three meetings of the Bureau were also held in collaboration with the Specifications Task Force at the time of the second session of the Expert Group and similar meetings would be held at this session. He noted that the minutes of the Bureau conference calls were now available on the UNECE website.

17. The Chair thanked the Bureau members and their alternates for their efforts and commitment since the second session. He also thanked the Specifications Task Force, and in particular its Chair Mr. James Ross, the Communications Sub-Committee and the Task Force on the UNFC and Recipient Reservoirs for the work undertaken since April 2010.

18. The Chair observed that there are a number of on-going activities within the European Union (EU) to standardize resource reporting across the minerals and petroleum sectors. These projects have found that such standardization is difficult, if not impossible, without a system such as UNFC-2009, the only classification system in the world to cover all extractive activities. The three activities of note are the EuroGeoSource project (see paragraph 60(c)), the INSPIRE Directive and the European Coal Resources (EUCORES) project.

19. With regard to the INSPIRE Directive, the INSPIRE Thematic Working Group on Energy Resources has proposed wording in the upcoming version of the INSPIRE Data Specification on Energy Resources recommending the use of UNFC-2009 where this is possible and feasible.

20. EUCORES is developing a database and map of coal resources in Europe. The focus of the project is a thorough classification and mapping of coal and coal bed methane in the EU. The project is considering use of UNFC-2009 as a reference system for the database to allow comparability of the reserves and resources.

21. The Chair then provided a brief update on the status of the development of UNFC-2009, as well as key activities currently underway that might lead to its scope being broadened. A brief update was provided on the five key activities (i) the development of specifications for UNFC-2009; (ii) the pilot study undertaken by the Norwegian Petroleum Directorate (NPD) and Statoil to map the Norwegian Classification System to UNFC; (iii) the work of the Task Force on UNFC and Recipient Reservoirs to explore if UNFC-2009 can be used to classify injection projects; (iv) the work of the IAEA regarding the possible adoption of UNFC-2009 for uranium and thorium; and, (v) the potential application of UNFC-2009 to renewable energy resources.

22. In closing, the Chair advised that he was retiring from Ernst & Young at the end of June 2012. In view of this he confirmed that he would need to step down as Chair of the Expert Group at the end of this session since he would no longer have an organization to
sponsor his travel. The Chair’s role involves a number of travel commitments annually related to promoting UNFC-2009 at conferences and supporting workshops.

23. The Expert Group thanked the Chair for his efforts, commitment and leadership during his three years in this role.

VII. Introduction of participants (agenda item 4)

24. A tour de table was conducted during which all participants introduced themselves.

VIII. Activities and priorities of the Committee on Sustainable Energy and matters for consideration by the Expert Group (agenda item 5)

25. The Director advised that UNECE, at its 2011 session, initiated a review of the work of the Commission and the implementation of the 2005 reform. The review is carried out by the UNECE Executive Committee (EXCOM), a body that was established following the 2005 UNECE reform to implement the overall recommendations set by the Commission and to act on its behalf in between the biennial sessions of the Commission. The review aims to provide concrete recommendations and make proposals for future work priorities for all subprogrammes in UNECE. It is anticipated that the review process will be completed in the third quarter of 2012.

26. Experts were encouraged to engage with the Ministry of Foreign Affairs in their respective countries to express their views on the work of the Expert Group, including the promotion and further development of UNFC-2009.

IX. Review of the programme of work for 2011–2012 (agenda item 6)

27. The Chair provided a brief overview of the programme of work for 2011–2012 as agreed at the second session and contained in the meeting report (ECE/ENERGY/GE.3/2011/2). He highlighted the key issues: the priority work of the Specifications Task Force Phase Two; mapping of UNFC-2009 to other classification systems; testing of UNFC-2009 by members of the Expert Group; establishment of the Communications Sub-Committee and promotion of UNFC-2009 through conferences, workshops, articles and technical papers; the work of the Task Force on UNFC and Recipient Reservoirs; and, on-going monitoring of financial reporting issues of relevance to the Expert Group.

X. Specifications for the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 (agenda item 7)

28. The Chair of the Specifications Task Force Phase Two provided an update on the work carried out by the Task Force since the second session of the Expert Group. The members of the Task Force are Mr. Ferdinando Camisani-Calzolari, Mr. Daniel Diluzio, Mr. Roger Dixon, Mr. David Elliott, Mr. Timothy Klett (who withdrew in early 2012), Mr. Kjell Reidar Knudsen, Mr. Ian Lambert (supported by Mr. Yanis Miezitis), Mr. David
29. The UNFC-2009 specifications development process to date was summarized. The revision of the UNFC of 2004 had resulted in the simplified UNFC-2009 with generic definitions only. As a first step in developing specifications for UNFC-2009, a survey of stakeholders representing each of the four key areas of application of UNFC-2009 was undertaken. The stakeholders were requested to provide their views on what specifications, if any, they considered to be necessary in order that UNFC-2009 could adequately serve their needs. The focus was on users of reserve/resource data. The four areas of application are: international energy and minerals studies; government resources management; industry business processes; and, financial reporting. The results of this survey are contained in document ECE/ENERGY/2010/8 prepared by the Task Force for the UNECE Committee on Sustainable Energy.

30. Attention was drawn to the two draft documents circulated to the Expert Group prior to the third session: unofficial working document EGRC.3/2012/INF.1 is the draft UNFC-2009 generic specifications document and unofficial working document EGRC.3/2012/INF.2 is the draft report documenting the Task Force process. It was emphasized that all text contained in the two documents is draft. It was also highlighted that a number of issues are still being discussed in the Task Force, a number of issues are pending further input from CRIRSCO and SPE, and all issues are subject to feedback from the Expert Group. Following this there will be a public comment period that is likely to take place in August and September 2012.

31. The structure of the linkage between UNFC-2009 and other systems was explained, notably the linkage to the CRIRSCO Template and the SPE/WPC/AAPG/SPEE Petroleum Resources Management System (SPE-PRMS), which will provide minerals and petroleum commodity-specific specifications for UNFC-2009 respectively; the linkage with other systems that are aligned to UNFC-2009 (for example the system for uranium); and the requirement for bridging documents. The key bridging documents are those with the CRIRSCO Template and SPE-PRMS and these will be included in the final version of document EGRC.3/2012/INF.1. The bridging documents are intended to provide guidance on how to move from the system to which the bridging document refers to the UNFC-2009, which is of particular importance in the areas where UNFC-2009 has greater granularity.

32. It was noted that generic specifications are required to (i) ensure an appropriate level of comparability of reported UNFC-2009 quantities across commodities and countries, irrespective of the system used as the basis for evaluation; and (ii) ensure reported UNFC-2009 quantities include sufficient information for users of such data to understand what is being reported, for example if the estimate is gross or net. An overview of the current proposed 20 generic specifications was presented.

33. The Expert Group was requested to provide feedback on the structure of the linkage between UNFC-2009 and other systems, the broad content of the proposed generic specifications and the possible need for additional generic specifications.

34. Discussion focussed on the fundamental reporting issues of Effective Date and Reference Point and whether they should be included as generic specifications or not. A number of experts expressed the view that these issues are already included in the commodity-specific specifications and therefore should not be duplicated in the generic specifications. However, wide support was expressed for providing such generic specifications since they relate directly to the reporting of estimates using UNFC-2009, regardless of the underlying system. During the discussion it also emerged that Effective Date and Reference Point are not explicitly dealt with under the CRIRSCO Template. A representative of CRIRSCO advised that consideration would be given to possibly...
incorporating them in the next update of the Template. There was consensus that where generic definitions are needed, they must be consistent with the commodity-specific specifications (where they exist).

35. A number of experts requested an increased emphasis on social and environmental issues, arguing that the only reference to these increasingly important topics is a footnote in Annex I of UNFC-2009.

36. The IAEA representative requested the need for UNFC-2009 to report thorium where it has been extracted (together with commercial products) and then “stored”, while waiting for a commercial market to develop. A new generic specification may be required to address this issue.

37. A number of counties expressed interest in applying and reporting under UNFC-2009, including Bulgaria, Portugal, Slovakia and Thailand. However it was noted that until the CRIRSCO Template and SPE-PRMS bridging documents are finalized, any application can only be in the form of a pilot.

38. Following discussion, the Expert Group extended the deadline for feedback from the Group on the informal specifications documents to 1 June 2012. Support was expressed for the documents being issued for public comment as soon as possible, notwithstanding that there may be outstanding areas of non-agreement within the Task Force. All Expert Group members would be able to provide feedback during the public comment period.

39. The future work of the Task Force will focus on the following key tasks: finalizing the documents on the generic specifications for the application of UNFC-2009 and the accompanying explanatory report; preparation of bridging documents between the CRIRSCO Template and UNFC-2009 and between SPE-PRMS and UNFC-2009; preparation of a glossary of terms for inclusion as an annex to the generic specifications document; and issuing the specifications documents developed by the Specifications Task Force for a public consultation. The specifications document, together with all supporting documentation, should be finalized where possible for the next session of the Expert Group.

40. The Task Force and, in particular, its Chair, were thanked for their efforts and commitment in progressing this work.

41. The Chair then outlined the key governance issues that would need to be addressed during the establishment of a Technical Advisory Group: membership, including the number of members, the need for representation from both the minerals and oil and gas sectors, the selection process for new members, and the period of membership; the selection process for the Chair and period as Chair; the mandate, the terms of reference; the frequency of meetings; the openness of meetings; the publication of meeting minutes; and the need for extrabudgetary funding.

42. In order to progress this issue, a Task Force would be established to determine the parameters for the Technical Advisory Group, including preparation of relevant documentation for the Expert Group’s next meeting. The Task Force will report to the Bureau, which will review and approve any recommendations it makes. It was also noted that membership of the Task Force was not linked to membership of the Technical Advisory Group once set up.

XI. Case studies (agenda item 8)

43. The Chair introduced this item, noting that testing of UNFC-2009 is a key component of the programme of the work of the Expert Group. Only through testing and use would areas of improvement in UNFC-2009 be identified.
44. The representative of the Norwegian Petroleum Directorate (NPD) provided the results of a pilot study undertaken by NPD and Statoil to classify the complete Norwegian petroleum project portfolio according to UNFC-2009, by mapping the classes of the Norwegian Classification System to UNFC-2009 and by classifying the 800 projects in the portfolio individually. The goal of the study was to see if UNFC-2009 works on a full portfolio of projects, including the “difficult” projects, and to see if UNFC-2009 could serve NPD’s needs, and/or if improvements could or should be suggested. Undertaking the pilot study resulted in a number of lessons being learnt, including: the granularity of UNFC-2009 may be more effective for resource management than the current NPD system; and the usability of UNFC-2009 is considerably reduced if application is restricted to mapping of the example classes provided in Figure 1 of UNFC-2009. In summary, UNFC-2009 was successfully used to classify the 800 projects which constitute the total Norwegian Resource Account; UNFC-2009 can be used as a stand-alone system; the mapping of primary classes undertaken in 2011 was incorrect because important granularity was lost; the differences in the results between direct project classification and class mapping such as undertaken in this pilot study are very minor; the results of the pilot demonstrate that the mapping between the NPD system and UNFC-2009 is acceptable.

45. A representative from Geoscience Australia delivered a case study from the Australian Government perspective entitled “National reporting of identified mineral resources in Australia: How it draws on, but differs from, company reporting”. The Australian national minerals resources reporting system was described and it was noted that whilst the national resources are derived from company reports, they are presented differently. A mapping of the national reporting system in Australia to the CRIRSCO Template and UNFC-2009 was shown. The presenter observed that countries with significant mining sectors should regularly evaluate their national mineral stocks and that it is most informative to report categories which provide views on resources likely to be available for mining in short, medium and long time scales. Whilst it is up to each country to decide which categories are reported, mapping of reporting categories to the UNFC-2009 would facilitate meaningful comparisons and estimation of global inventories.

46. The Chairman of the State Commission of Ukraine on Mineral Resources delivered a detailed presentation on mapping of the Ukrainian mineral resources classification for hydrocarbons (oil and gas fields) to UNFC-2009 at the category level. Whilst the majority of the sub-categories of UNFC-2009 can be mapped to the Ukrainian system, some differences were found with E3.1, E3.3, F1.1, F1.2 and F2.3. However, it was anticipated that sub-categories could be established within the Ukrainian system to allow full mapping.

47. A representative from the Ministry of Natural Resources and Environment of Thailand delivered a presentation on Potential Application of UNFC-2009 to Mineral Resources in Thailand. It was noted that there are plans in the country to map the current system for minerals, which is based on the UNFC of 1997, to UNFC-2009. A case study on classification of rare earth minerals was also provided.

48. The representative of PetroChina delivered a presentation on the Chinese Petroleum Resource Classification System and Mapping to UNFC-2009. It was noted that the most recent update of the Chinese system came into effect in 2005. With regard to mapping, the areas of non-alignment between the two systems occur in the categories 111; 112; and 113.

49. The representative of PetroVietnam outlined the Classification of Hydrocarbon Reserves and Resources in Vietnam. Vietnam is interested in applying an international classification system such as UNFC-2009 for which it would need guidelines and support from the Expert Group.

50. The representative of Mongolia provided an update on the status of the minerals sector in the country.
51. The representative of GF Consultoria E Representação Ltd of Brazil provided an overview of the classification system for mineral reserves and resources in the country.

52. The Expert Group noted with the appreciation the extensive information provided. The importance of testing the UNFC through case studies was underlined. It was emphasized that efforts should be undertaken to prepare a series of case studies applying UNFC-2009 to both solid mineral deposits, and oil and gas fields, which should be issued as a UNECE publication, preferably in all United Nations languages.


53. The Chairman introduced this item, noting that a document had been prepared providing a high-level mapping from the UNFC of 1997 to UNFC-2009 (ECE/ENERGY/GE.3/2012/3).

XIII. Education and Outreach and Activities of the Communications Sub-Committee (agenda item 10)

54. The Chair of the Communications Sub-Committee provided an update of the work and activities of the Sub-Committee since the last Expert Group meeting (ECE/ENERGY/GE.3/2011/4), covering the membership, communications and education strategy, current activities, events attended in 2011 and 2012, and future events and work plans.

55. The membership of the Communications Sub-Committee was noted to be: Mr. John Brooks (Chair), Mr. Stephen Henley (CRIRSCO), Mr. Michael Lynch-Bell (Chair, Expert Group), Mr. Jan Roelofsen (IHS Global), Mr. Tim Smith (SPEE) and the secretariat.

56. The Communications and Educations Strategy for the Expert Group encompasses: conferences and workshops; the relationship with other industry bodies and associations; publications, technical journals and articles; media; website; and membership of the Expert Group.

57. Promotional videos explaining UNFC-2009 and the Expert Group are now posted to the UNECE website. The draft version of an animated presentation explaining UNFC-2009 was presented. Work has started to develop a frequently asked questions area on the website, finalization of which is dependent on the work on specifications.

58. Members of the Expert Group were encouraged to identify events at which a presentation on UNFC-2009 could usefully be delivered and also to volunteer to deliver such presentations.

59. The Chair, on behalf of the Expert Group, expressed appreciation to the Communications Sub-Committee for its efforts to date.
Projects and planned events in 2011 and 2012 to promote and/or test the UNFC were then discussed, including:

(a) **International Workshop on UNFC-2009, Ankara, Turkey, 29–30 September 2011**

The representative of Turkish Coal Enterprises (TKI) delivered an overview of the “International Workshop on the UNFC for Minerals” held in Ankara, Turkey, 29–30 September 2011. The event was jointly organized by UNECE, General Directorate of Mining Affairs of the Ministry of Energy and Natural Resources (MIGEM), TKI and Turkish General Directorate of Mineral Research and Exploration (MTA). Amongst the workshop goals were to extend knowledge on UNFC-2009 in Turkey and assess the possibility of applying UNFC-2009 to mineral resources in the country. The current classification system allows reporting only on the basis of geological knowledge. Turkey wishes to implement a resource classification system that will meet its needs both internally for public reporting and communications across all national extractive industries, and externally for dialogue with international partners and to allow comparison of its national resource inventory with those of other countries. Participants concluded that UNFC-2009 can meet all those needs. The Workshop closed with an agreement for a National Committee to be established in Turkey to assess future short- and long-term activities on this issue. MIGEM is currently preparing the legal infrastructure for the National Committee. Turkey was also invited to engage more actively in the work on specifications.

(b) **International Workshop on UNFC Resource Classification (for Oil, Gas and Minerals), Bangkok, Thailand, 9–10 February 2012**

This two-day event was organized by the Coordinating Committee for Geoscience Programmes in East and South-east Asia (CCOP) – under its Enhancing Public Petroleum Management Programme – in cooperation with UNECE and the United Nations Economic and Social Commission for Asia and the Pacific. Government representatives from the minerals and/or petroleum sectors from Cambodia, China, Indonesia, Korea, Lao People's Democratic Republic, Malaysia, the Philippines, Thailand and Vietnam participated. The event concluded that UNFC-2009 can help countries in developing policies for sustainable resource management, deployment of technologies and cost effective financial management to support resource development. The CCOP representative advised that Cambodia, Timor-Leste and Lao People's Democratic Republic currently do not have a classification system and intend to use UNFC-2009. CCOP countries will monitor the development of UNFC 2009, particularly the generic specifications. Participants recommended that future workshops should focus on case studies and allow more time for discussion.

(c) **EuroGeoSource Project**

The representative of the EuroGeoSource Advisory Board provided a status report following two years of implementation of the project. This three-year European Commission funded project aims to provide data on energetic and non-energetic mineral resources through an internet portal to support energy and minerals planning in Europe. A key motivation for the project is to make data accessible and comparable across Europe. The project is structured in eleven work packages, of which work package four addresses interoperability and data exchange formats to facilitate creation of the format for delivery of the key economic attributes for oil and gas and mineral resource deposits. Under this work package, the different classifications and categorizations used by the partners will be compared and

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2 [http://www.eurogeosource.eu/](http://www.eurogeosource.eu/)
mapping between the key parameters of the classifications will be undertaken. UNFC-2009 is being used as the mapping tool.

(d) 34th International Geological Congress, Brisbane, Australia, 5–10 August 2012

The Secretary General of the Congress provided an update on the event. One of the 34 Congress themes focuses on mining and mineral resources. As part of this theme, a symposium has been organized on “Resource and reserve reporting, international codes and the valuation of mineral assets”, which will include a presentation on UNFC-2009. More details are available on the Congress website.3

(e) Other workshops, projects or events incorporating a session or presentation on the UNFC

(i) The representative of the National Hydrocarbons Commission of Mexico provided an update on the workshop on UNFC-2009 that will be held in Mexico City, 27–28 September 2012. The event will focus on both petroleum and minerals and will follow a similar format to previous workshops.

(ii) The Secretary to the Government of India of the Ministry of Mines outlined India’s intent to organize a national workshop on UNFC-2009 end-2012 or early-2013. Organization of the event will be coordinated with the secretariat.

61. The representative of the World Petroleum Council provided details on the 21st World Petroleum Congress to be held in Moscow, Russian Federation, 16–19 June 2014.

62. The Communications Sub-Committee will continue to implement the Communications and Educations Strategy.

XIV. Use of the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 for Classifying Injection Projects (agenda item 11)

63. The Chair of the Task Force on UNFC and Recipient Reservoirs introduced this item, noting it had been agreed at the first session of the Expert Group that the Task Force should be established to explore if and how UNFC-2009 could be used in classifying recipient reservoirs or injection projects, such as hydrocarbon gas injection, carbon dioxide (CO2) injection and disposal/storage of other waste products/gases.

64. The membership of the Task Force is: Ms. Karin Ask (Statoil and Chair), Mr. Dragutin Domitrovic (INA – Oil Industry plc), Ms. Eva Halland (Norwegian Petroleum Directorate) and Mr. Martin Hubbig (RWE Dea AG). Mr. Domitrovic joined the Task Force during the first quarter of 2012.

65. The first draft proposals of how UNFC-2009 could be adapted for use on injection projects were presented. The proposals related to revised wording for the definitions and supporting explanations of the F and G categories. With regard to the E categories, it was noted that whilst enhanced oil recovery (EOR) projects would generate a cash flow the economics of some injection projects, such as CO2 storage, might be a challenge. The issue of sealing capacity and risk of leakage of injection projects was also raised and whether the risk of leakage should be handled in the Classification and, if so, how. Volume risk could be addressed on the G axis, technical issues on the F axis and cost issues on the E axis.

3 http://www.34igc.org/
With regard to economics, it was noted that the injection rate is equivalent to the production rate of a reservoir. The Task Force was encouraged to look at the Organisation for Economic Co-operation and Development (OECD) Nuclear Energy Agency (NEA) and IAEA joint publication on world uranium resources, production and demand (also commonly known as the “Red Book”), since there could be some synergies with the approach used in the uranium industry based on ranges of the costs of recovery.

66. The IEA representative provided an overview of IEA’s work on storage capacity of CO₂. There is currently no uniform methodology for estimating geological storage capacity of CO₂, with each country or organization using its own evaluation and estimation method. IEA is preparing guidelines for storage capacity estimation that should be ready for publication in November 2012. Workshops on the topic were organized by IEA in April and November 2011 – a member of the Task Force participated in both events. Clarification was provided on the difference between capacity estimation and classification. Whilst UNFC-2009 could offer assistance in terms of classification, this would, however not automatically help in estimating capacity.

67. A representative of NPD provided an overview of NPD’s CO₂ Storage Atlas of the Norwegian North Sea and the challenges of classification systems. It was noted that the CO₂ storage capacity of the Norwegian Continental Shelf portion of the North Sea is approximately 72 Gigatonnes. The Atlas was prepared following the Norwegian Ministry of Petroleum and Energy’s request to NPD to prepare an overview of possible storage reservoirs and their capacity. This was in relation to the political decision taken in Norway to store the CO₂ that will be captured from the Mongstad Refinery and Power Plant. The Atlas will serve as input for future work on carbon capture and storage on the Norwegian Continental Shelf.

68. The Expert Group noted with appreciation the information provided. The Task Force was thanked for its efforts since the last session and requested to continue to work on the wording of the definitions and supporting explanations for the F and G categories of UNFC-2009 and align them to the extent possible with extraction projects. The Expert Group further requested the Task Force to provide an update on its activities to the fourth session and to prepare any relevant documentation.

69. The Task Force was also requested to continue to seek areas of collaboration and cooperation with the UNECE Working Party on Gas, particularly on the study on Underground Gas Storage in Europe and Central Asia.

XV. Application of the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 to nuclear fuel resources (agenda item 12)

70. The IAEA representative provided an overview of the two-day consultation meeting held 30 April–1 May 2012 to test and map UNFC-2009 for nuclear fuel resources. Both uranium and thorium resources were addressed. The recommendations from that consultation meeting include to:

(a) Continue the process of mapping and alignment between the OECD-NEA/IAEA “Red Book” classification and UNFC-2009, and in particular the factors influencing the $/kg cost bands, in the context of wider efforts to enhance coherence and consistency of reporting resources and reserves;

(b) Communicate on a regular basis to exchange information and feedback between the Expert Group, IAEA and OECD NEA on the development and use of UNFC-2009, and in particular to provide input to and feedback on the generic specifications;
(c) Develop a bridging document for mapping, correlation and conversion of values to UNFC-2009 from the OECD NEA/IAEA scheme, and report findings and recommendations at the latest by the Expert Group meeting to be held in 2013;

(d) Propose to the Joint OECD NEA/IAEA Uranium Group an optional/alternative reporting based on UNFC 2009. The Australian resources as expressed in UNFC-2009 will be provided as a test case;

(e) In collaboration with the responsible IAEA Expert Working Group, develop Guidelines for the accommodation of Comprehensive Extraction projects within the Classification Framework and develop Guidelines for the classification of uranium and thorium for both operational use and stakeholder communications; and

(f) Develop documentation and associated training materials to build capacity in IAEA Member States to adopt UNFC-2009 within their national mineral exploration, mining and mineral extraction plans, including the role of UNFC-2009 in support of stakeholder engagement and social licensing.

71. The workshops and technical meetings at which the application of UNFC-2009 to uranium resources was presented since the second session were outlined, including in Argentina, Austria, India, Jordan, Madagascar and Morocco.

72. The Expert Group noted the information provided and thanked IAEA for its efforts to test and map UNFC-2009 for nuclear fuel resources. The Expert Group requested to be updated at its next meeting and for any relevant documentation to be prepared, including a bridging document.

XVI. Application of the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 to renewable energy resources (agenda item 13)

73. The BP representative noted that his company has a business need to communicate both internally and externally the value of renewable energy projects compared to projects based on conventional energy forms. A consistent framework is needed to make such comparisons; currently, no methodology exists to assess the resources of a renewable asset (whether in barrels of oil equivalent or other metric measurement) which would allow renewable investment to be contrasted against hydrocarbon (economics per barrel, reserves, etc). The presenter advised that UNFC-2009 could meet these needs with minimal modification, so providing a tool for communication on issues relating to sustainable energy.

74. BP has identified a number of challenges to the development of a methodology for renewable energy resources that would be comparable to the methodology used for fossil fuels. These challenges relate to time horizon, production uncertainty, energy system equivalence and energy price. Applying UNFC-2009 to renewable energy resources would involve classifying projects and not non-renewable energy itself – renewable projects have a life span based on facilities, contracts or licenses. Taking wind and solar power as examples, whilst the resources are clearly non-depletable there is a life-span based on land lease and technology, and equipment life. While there are an infinite number of projects that could be proposed, evaluating the potential future energy sales associated with any given renewable energy project was deemed to be within the bounds of UNFC-2009.

75. BP plans to develop a draft general specifications document for renewable energies, as well as a bridging document for one renewable energy form (notably, biofuel) and is willing to discuss the findings with the Expert Group at its next session.
76. The representative of the Institute of Petroleum Engineering of the Technical University of Clausthal provided an overview of worldwide classification and reporting requirements for geothermal resources. The differences between the geothermal sector and the oil and gas sector were highlighted, including that for geothermal resources the commodity to be extracted is heat, the commodity (heat) is stored in both rock and fluid, and natural geothermal fluids contain dissolved solids and gas which can be regarded as by-products. Geothermal reporting standards are needed to reduce the risk to investors and to increase confidence in geothermal development. Whilst lessons could be learnt from the oil and gas sector, the two sectors are not identical and therefore applying the oil and gas classification system to geothermal resources would not be suitable in all cases.

77. A presentation on the Potential Application of UNFC-2009 to Geothermal Resources prepared by the United States Geological Survey (USGS) was delivered. It was concluded that geothermal resource classification could be accommodated within UNFC-2009 and that there would be benefits to the sector in working in three dimensions. There are many geothermal prospects which are characterized by technological challenges and/or other factors (e.g., land status) affecting feasibility that are unrelated to simple economics; the E and F categories of UNFC-2009 will allow these issues to be distinguished. The four proposed stages of geological knowledge (G1 to G4) could be aligned with the four proposed categories of the USGS geothermal classification system (Prospective, Potential, Confirmed, and Producing), although there will be a requirement to clearly delineate the geological knowledge supplied by active production of a geothermal field and the associated high level of feasibility i.e. high geological confidence with corresponding low feasibility or economic viability.

78. The Australian Code for Reporting of Exploration Results, Geothermal Resources and Geothermal Reserves, Edition 2 (2010) was presented by a representative of Geoscience Australia. This Code is based on the format and terminology of the Australasian Joint Ore Reserves Committee (JORC) Code (a CRIRSCO Template code), used for the reporting of mineral sector results. The Canadian Geothermal Energy Association has adopted a similar code to the Australian one and there are currently discussions for the two codes to be merged.

79. Geothermal resources were noted to be the renewable energy resources most closely linked to oil and gas resources.

80. The Expert Group noted with interest the presentations delivered and the potential for and interest in the application of UNFC-2009 to renewable energy resources. The Expert Group stressed that completion of the work on applying UNFC-2009 to oil, gas, minerals and uranium remained the priority, notwithstanding that it looked forward to receiving the outcomes of BP’s work and findings at its next session.

XVII. Update on financial reporting (agenda item 14)

81. The representative of the law firm Sullivan and Cromwell provided an overview of new disclosure requirements for natural resource companies, noting that the US Securities and Exchange Commission (SEC) and other regulators are placing greater emphasis on disclosures relating to environmental and social responsibility, as well as ethical issues which will provide investors with more information to make investment choices. Attention was drawn to the new disclosure requirements relevant to the natural resources industry contained within the recently enacted Dodd-Frank Act, a statute whose main purpose was to address problems in the financial services industry. Dodd-Frank requires that the SEC adopt rules requiring any reporting issuer that engages in the commercial development of oil, natural gas or minerals to disclose any payments made to the United States or non-United States Governments for the purpose of commercial development of oil, natural gas or minerals. The EU has proposed similar disclosure requirements.
82. A representative of Ernst & Young provided an overview of the financial reporting update document prepared for the meeting (ECE/ENERGY/GE.3/2012/5). In particular he emphasized the status of the Extractive Industries Project of the International Accounting Standards Board (IASB), which involved extensive research to assess the potential for developing an International Financial Reporting Standard (IFRS) for all extractive activities. The project is now on hold and IASB is due to consider adding such an IFRS to its active agenda in May 2012. It was estimated that should an IFRS for extractive activities be added to the Board’s agenda it would take at least three years before a standard was issued, following which there would be 18 months lead time between issuing and mandatory application.

83. An update was provided on the European Securities and Market Authority (ESMA) which replaced the Committee of European Securities Regulators (CESR) effective 1 January 2011. In March 2011, ESMA published an update of the CESR recommendations which provide guidance to companies issuing a prospectus in relation to a material interest in minerals projects (including hydrocarbons, metallic ore and industrial minerals). Acceptable reporting frameworks for minerals and for oil and gas were outlined.

84. The representative of the Alberta Securities Commission provided an update on financial reporting in Canada. In December 2011, the Canadian Securities Administrators (CSA) published an update to CSA Staff Notice 51-327 Guidance on Oil and Gas Disclosure to provide additional guidance to reporting issuers directly or indirectly engaged in oil and gas activities when preparing their disclosure. The Notice provides additional guidance related to compliance with disclosure requirement on a range of issues, including evaluation, classification and disclosure of unconventional hydrocarbons, as well as revised guidance on disclosure of contingent resources. An update of the existing guidance in the Canadian Oil and Gas Evaluation Handbook (COGEH) is needed, as well as expansion to deal with unconventional resources and resources other than reserves.

85. The meeting noted with appreciation the information provided. The issue of a potential future IFRS for extractive activities and financial reporting generally would continue to be monitored and any necessary documentation prepared for the fourth session.

XVIII. Programme of work for 2012–2013 (agenda item 15)

86. After discussion and review of the programme of work for 2011–12 as agreed at the second session and included in the report of that meeting (ECE/ENERGY/GE.3/2011/2), the Expert Group recommended the following programme of work for 2012–2013:

(a) Specifications for UNFC-2009

Description: Specifications (or “secondary rules”) are needed for UNFC-2009 in order to ensure an appropriate level of consistency and coherence when it is applied. They provide additional instructions on how the definitions contained in UNFC-2009 must be applied in specific circumstances including, where appropriate, commodity-specific rules. At the first session of the Expert Group, the Specifications Task Force Phase Two (established by and reporting to the Bureau) was tasked to consider all issues raised by stakeholders that are not currently addressed fully in the CRIRSCO Template and/or the SPE-PRMS and as contained in the final version of the Report of the original Specifications Task Force (ECE/ENERGY/2010/8). Specifically, the Task Force was requested to consider carefully each issue in turn and either: (i) develop a generic UNFC specification to address the issue, for the eventual approval of the Expert Group, but subject to a public comment period; (ii) provide an explanation to the Expert Group to demonstrate that the issue is, or will be, adequately addressed in both the Template and SPE-PRMS based on discussions with CRIRSCO and the SPE Oil and Gas Reserves Committee (SPE OGRC); or, (iii) provide an
explanation to the Expert Group to justify why a specification is not considered necessary and/or appropriate for that issue.

**Work to be undertaken:** The Specifications Task Force Phase Two is to continue its work to develop generic specifications for UNFC-2009, in close collaboration with CRIRSCO and SPE. The draft text of the generic specifications (unofficial room document EGRC-3/2012/INF.1 “Specifications for the application of UNFC-2009 – draft document prepared by the Specifications Task Force) is to be updated to both reflect comments provided at the third session of the Expert Group and also the feedback requested to be submitted in writing by 1 June 2012. The specifications document and other supporting documents (including glossary of terms and bridging documents for the CRIRSCO Template and SPE-PRMS) developed by the Specifications Task Force are to be issued for a public consultation. Where possible, the documentation prepared by the Task Force should be finalized prior to the fourth session of the Expert Group and published in all official languages of the United Nations to facilitate further implementation of United Nations Economic and Social Council (ECOSOC) Decision 2004/233.

(b) Technical Advisory Group

**Description:** A Technical Advisory Group is needed to provide assistance and advice on how to interpret, apply and/or map to UNFC-2009 as and when requested, as well as to compile and analyze the results of such initiatives. At the first session of the Expert Group it was agreed that the Bureau should progress establishment of a Technical Advisory Group, including development of a mandate, methodology of operation and rules of procedure, list of deliverables, membership list and potential sources of extrabudgetary funding, for consideration at the second session of the Expert Group.

**Work to be undertaken:** Progress establishment of a Technical Advisory Group in parallel with the development of the specifications for UNFC-2009. Establish a Task Force to determine the parameters for the Technical Advisory Group. Prepare relevant documentation for review by the Expert Group.

(c) Testing of UNFC-2009

**Description:** Widespread testing of UNFC-2009 is essential to ensure the classification meets the needs of its stakeholders and also to ensure it remains current. The Committee on Sustainable Energy has also 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.

**Work to be undertaken:** Encourage members of the Expert Group to test UNFC-2009 in their own work environments. Encourage stakeholders to carry out cross-mapping with other systems (e.g. as CRIRSCO and SPE are undertaking with the Russian Federation); ideally this would include government to government mapping, as well as commercial systems and to test the draft bridging documents to the CRIRSCO Template and SPE-PRMS when available. Results should be compiled and analysed by the Bureau of the Expert Group (until the Technical Advisory Group is established). Results of testing and case studies on the UNFC should be prepared for review by the Expert Group and then compiled in a publication and posted to the UNECE website.

(d) Communications Sub-Committee

**Description:** The Expert Group established a Communications Sub-Committee at its first session, with a mandate to develop and implement a communications and education strategy to ensure that opportunities to promote UNFC-2009 globally and to deliver a consistent message are maximized, including through conferences, workshops, articles and technical papers. The Sub-Committee was also tasked to assist with identification of experts in countries and organizations not already represented in the Expert Group.
Work to be undertaken: The Communications Sub-Committee is to continue its work to promote the Expert Group and UNFC-2009 as per its mandate, with a review of activities to be prepared for the fourth session of the Expert Group. Subject to resources (human and financial), attention is to be given to organizing national and regional workshops e.g., in India, Mexico, sub-Saharan Africa.

(e) Use of UNFC in classifying injection projects

Description: The Expert Group commenced research on the potential use of UNFC-2009 in classifying injection projects (e.g., CO₂ storage, natural gas storage or other waste disposal projects). It was recommended at the first session of the Expert Group that a Task Force on UNFC and Recipient Reservoirs would be established by and report to the Bureau to continue to research and develop views on this potential use of UNFC-2009 and identify additional key stakeholders who could provide critical analysis and feedback on the practicality of applying UNFC-2009 for these types of projects.

Work to be undertaken: Continue work to investigate how, for example, oil and gas companies classify and evaluate the maturity of their gas injection projects today, and propose a draft bridging document. An update on any findings is to be provided to the fourth session of the Expert Group and relevant documentation prepared for this session.

(f) Financial reporting

Description: UNFC-2009 has been designed to meet, to the extent possible, the needs of applications pertaining to financial reporting standards, particularly promulgated by the SEC and the IASB. The Expert Group is working closely with the IASB which has undertaken an 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. In 2011, the IASB carried out a public consultation on its future IFRS future work programme and the IASB has yet to take a decision on whether an IFRS for extractive activities should be added to its active agenda. If the IASB decides to add such an IFRS to its 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.

Work to be undertaken: Continue to support the IASB in the area of a potential IFRS on Extractive Activities as appropriate. Monitor relevant developments in financial reporting generally that might have an impact on reserves and resources and prepare any necessary documentation for the fourth session.

(g) Collaboration and cooperation with other bodies

Description: UNFC-2009 has been designed to meet essential needs in international energy and minerals policy formulation, Government resources management, industry business processes management and capital allocation. This has required close collaboration and cooperation with stakeholders from these four areas of application.

Work to be undertaken: Continue to collaborate and cooperate with as wide a range of stakeholders as possible and identify new partners, particularly within non-UNECE member countries.

XIX. Other business (agenda item 16)

87. A brief update on the SPEE initiative to investigate the possible merger of SPE-PRMS and COGEH was provided. This project is being undertaken and researched by the SPEE Reserves Definition Committee. Following completion of the research, SPEE will decide whether a merger is both desirable and feasible. It was stressed that this project
would need to be discussed fully with the PRMS partners and that no changes would be made to SPE-PRMS before the next scheduled SPE-PRMS update.

88. The fourth session of the Expert Group on Resource Classification is scheduled to be held in Geneva, 24–26 April 2013.

XX. Adoption of the report of the meeting (agenda item 17)

89. As per standard practice, the report of the meeting would be drafted in consultation with members of the Bureau, approved by the Bureau and then circulated to the Expert Group and posted to the UNECE website.