

Economic Commission for Europe

Committee on Sustainable Energy

Expert Group on Resource Management

Tenth session

Geneva, 29 April – 3 May 2019

Item 9 of the provisional agenda

Development, maintenance and application of UNFC and UNRMS

Technical Advisory Group Annual Report 2019

Prepared by Mr. Alistair Jones, Chair, Technical Advisory Group

1. As indicated in the Terms of Reference, an annual report will be issued by the Technical Advisory Group (TAG) and produced by the Secretariat in consultation with the Chair and members. This is the annual report for the period April 2018 to April 2019.
2. Since the ninth session of the Expert Group on Resource Classification, the TAG held 6 conference calls and will meet “face-to-face” in Geneva on 29 April 2019. Meetings were supplemented by email discussion and some individual meetings and calls.
3. TAG discussions covered
 - Working Group (WG) plans and progress updates
 - Progress of WG documents and the organization and status of document reviews
 - UNFC update
 - Development of UNRMS

Organisation, Membership and Terms of Reference

4. The TAG organisation and responsibilities are unchanged since those agreed with the Bureau in 2017.
5. The current members of the TAG are: Mr Alistair Jones (Chair of TAG), Mr Ulrich Kral (Anthropogenic WG Chair), Mr Sigurd Heiberg (Commercial WG Chair), Ms Karin Ask (Injection WG Chair), Mr Michael Neumann (Minerals WG Chair), Mr Julian Hilton (SDGs Delivery WG Chair and Nuclear Fuels WG Acting Chair), Mr Marco Petitta (Groundwater WG Chair), Mr Satinder Purewal (Petroleum WG Chair), Mr Frank Denelle (Renewables WG Chair), with the Chair and Secretary of the Expert Group as observers. Ms Adrienne Hanly was a member of TAG as Nuclear Fuels WG Chair until November 2018 when she finished her term with IAEA. She is thanked for her significant contribution to the work of EGRM.
6. Some TAG members have suggested that it would be helpful for other EGRM Working Groups and Task Forces to join the TAG.
7. The responsibilities of the TAG are:
 - Ensure appropriate and timely review of draft EGRM documents. All documents developed by the commodity Working Groups and proposed for public comment or for UNECE approval will be reviewed. Other commodity Working Group documents may be reviewed at the discretion of the TAG e.g. working papers to be shared with EGRM. The Bureau may also ask the TAG to review

other draft EGRM documents e.g. developed by the Task Forces. The review process is described below.

- Review Working Group goals, objectives and plans and recommend to the Bureau.
- Receive incoming requests for assistance or advice and agree which Working Group will handle these and appropriate timing and review of responses.
- Maintain awareness of progress on Working Group projects and of any emerging issues or opportunities, to assist in timely execution and to keep the Bureau informed. The TAG will provide a forum for discussion amongst Working Group Chairs to identify solutions, to flag issues and to make suggestions to the Bureau or to specific Task Forces.
- Facilitate appropriate support across Working Groups e.g. identifying where an expert in another group could provide helpful advice.

8. The scope of each sectoral Working Group encompasses the following, where appropriate. This list is generic. The work priorities may be different for different Working Groups and some items may not be applicable to every Working Group.

- Develop and maintain commodity specific specifications, guidelines and best practice documents
- Provide advice on interpreting, applying and/or mapping to UNFC
- Assist in stakeholder engagement for the application of UNFC
- Assist stakeholders to develop and maintain bridging documents
- Work with stakeholders to develop case studies to illustrate and test commodity specifications, bridging documents, guidelines and best practices.
- Assist with reviews of documents, as agreed with TAG, and provide expert advice to other EGRC Working Groups and Task Forces.
- Review and evaluate progress and delivery against workplan on an annual basis, identify issues and opportunities, define solutions and implement related actions.

Documents and reviews

9. The TAG Terms of reference defines the process for document reviews. The TAG will appoint a review team, and team lead, for each document to be reviewed. This team and team lead will be drawn from the Working Groups and TAG and, at the discretion of the TAG, may include other EGRC experts. The makeup of the team will depend on the document being reviewed. For documents which are proposing changes or extensions to the UNFC, such as new specifications, the review team will involve experts from different commodities to help ensure consistency. The TAG may decide that other documents, such as case studies, may only require review by the relevant commodity Working Group.

10. The following documents were developed by EGRM WGs or received from external groups, and reviewed by TAG or Working Groups where indicated:

- Anthropogenic Specifications
- Commercial: Commercial Considerations
- Minerals: CCMR-1999 Bridging Document
- Minerals: Draft specifications and guidelines (reviewed by Minerals WG)
- Nuclear Fuels: Entry Pathways to support Sus Dev
- Petroleum: CCPR-2004 Bridging Document
- Petroleum: Draft specifications and guidelines (reviewed by Petroleum WG)
- Petroleum: Mexico case study
- Petroleum: Review of global classification systems (reviewed by Petroleum WG)
- Renewables: Draft Solar Specifications
- Renewables: Draft Wind Specifications
- Guidance for application of UNFC (developed by the Nordic Project, advice from TAG)

- Concept & design of UNRMS (developed by SDG WG, comments from TAG)
- Anthropogenic and Minerals WG Terms of Reference

11. In addition to TAG members, the following are thanked for their significant input to TAG, cross-working group reviews: Hussein Allaboun, Jan Bygdevoll, Andrew Barrett, Roger Dixon, Brad van Gosen, Yang Hua, Luis Lopez, Barbara Pribyl, Dominique Salacz, Claudio Virues.

Development and Application of UNFC

12. Good progress in development and application of UNFC has been made since the ninth session of the Expert Group. There have been advances in Generic Specifications, Bridging Documents, Commodity Specifications and Guidance, Pilot Studies. There have also been useful reports on current practice and vision.

Update of Generic Specifications

13. A UNFC update is being developed by the Update Task Force (TF) for consideration by the Expert Group. Individual WGs provided comments to the TF on several draft versions. TAG discussed the update and developed recommendations for presentation at the tenth session. These are summarised here.

14. The TAG view is that the current draft addresses important updates: strengthening Social and Environmental aspects, making the terminology more applicable to the range of resources considered to date, making some changes to the E axis, consolidating and reorganising contents and guidance.

15. It is suggested that this should be finalised with the following steps:

- Review comments received (many already incorporated).
- Confirm changes work for all commodities – identify revisions of specifications and bridging documents required
- Review/refine: statement of role/benefit/stakeholders/use of UNFC, categorization of non-sales quantities, F axis text on commitment, undefined projects using existing technology
- Agree minimum changes required for each commodity, to facilitate finalization in 2019
- Issue for Public Comment for approval & publication in 2019
- Publish CRISCO and PRMS bridging documents

16. It is also suggested that a further update be considered incorporating more significant changes and learning from ongoing application and development.

17. More detailed comments from the TAG are provided in the Appendix.

Bridging Documents

18. Prior to the ninth session of the Expert Group, significant progress had been made on bridging documents for the Chinese Minerals and Petroleum classifications CCMR-1999 and CCPR-2004. Public comment for both documents had opened on 15th Feb 2018 and closed on 15th April 2018. Since the ninth session the Minerals and Petroleum teams from China and the TAG reviewers continued to work together. The bridging documents were finalised and approved by the MLR (Ministry of Land and Resources of the People's Republic of China), reviewed by the TAG and approved by the UNECE Committee on Sustainable Energy on 27th Sep 2018.

Commodity Specifications and Guidelines

19. Specifications for the application of UNFC to anthropogenic resources were issued for public comment in 2017 and presented at the ninth session in 2018. Following some additional comments, the specifications were revised and finalised, reviewed by the TAG and approved by the UNECE Committee on Sustainable Energy on 27th Sep 2018.

20. Draft Solar Specifications were presented at the ninth session the Expert Group. Since that session, the Solar Sub Group has developed a second draft of the Specifications and these were reviewed by TAG. The reviewers commended the significant progress and recommended presentation at the tenth session. They identified some issues to address and suggested steps to facilitate finalising and issuing for public comment.

21. Draft Wind Specifications have been developed and reviewed by the TAG. The reviewers suggested a few revisions and recommended presentation to the tenth session of the Expert Group on Resource Management, with a proposal to issue them for public comment.

22. Draft Minerals Specifications and Guidelines have been developed and will be presented to the tenth session of the Expert Group.

23. Draft Petroleum Specifications and Guidelines have been developed and will be presented to the tenth session of the Expert Group.

24. A Groundwater Working Group has been initiated with a view to developing Groundwater Specifications.

Pilot Project and Reports

25. The Petroleum WG instigated and led a Mexico Pilot Project on the application of UNFC. The report was reviewed by TAG and will be presented at the tenth session. The reviewers commented that this is a very interesting study in a) showing how UNFC can be applied at a country level, b) giving an example of social and environmental considerations and c) showing how check lists and flow charts can facilitate categorization.

26. The Petroleum WG also undertook a review of global classification systems and will report on this at the tenth session.

27. Nuclear Fuels and SDG WGs wrote a report “Concept Note- Entry Pathways for Nuclear Energy to Support Sustainable Development.” This was reviewed by TAG who commended the groups for their commitment to addressing the goals of UNECE and UNRMS. This report will be presented at the tenth session.

28. The Commercial WG wrote a first draft report for presentation at the tenth session on the application of UNFC to Commercial Assessments. TAG reviewers commented that the report provides a very useful discussion of commercial aspects including: the importance of UNFC commercial assessments, broader commercial analysis for the purposes of project and/or asset valuation, tying UNFC to Sustainable Development Goals, the complexity of projects addressing multiple commodities, distinguishing assets and projects.

Advice on the application of UNFC

29. In response to a request from the Nordic Project (external group), TAG commented on an update of “Guidance on the Application of UNFC for Mineral Resources in Finland, Norway and Sweden”. TAG commented that the document is well written and is expected to be a good guidance for applying UNFC to mineral resources in Finland, Norway and Sweden. Certain discussions go beyond the guidance provided in the UNFC, which is acceptable provided that such guidance is not misaligned with the higher definitions and generic specifications of the UNFC. The reviewed guidance document is for the Nordic region only as applied to solid minerals reporting, and do not form part of, or be construed to officially modify the current UNFC documentation.

Development of UNRMS

30. The SDG WG has written a report on concept and design of the United Nations Resource Management System. The TAG discussed this report and provided comments to the SDG WG. This was not a formal TAG review but an opportunity for TAG consideration of UNRMS and to provide feedback.

31. There was broad support for the document and the vision it describes. The scope of comments and discussion included:

- Whether circular economy applies to energy
- Bringing out, more strongly, Capital Markets as users
- Whether UNRMS will absorb and replace UNFC, or whether these will be separate tools
- The importance of establishing confidence in UNRMS as a process and in those applying it, including consideration of Competent Persons and Governance
- Whether zero waste is an appropriate vision or a vision of an optimal recycling rate
- Request to replace the term “Geological Knowledge” with a more widely-applicable term
- Suggestions about the way forward in defining scope and developing the design and superstructure of UNRMS (section 8 of the report)

Conclusions: status and challenges

32. Good progress has been made in developing and applying UNFC with advances made in

- Bridging to existing classifications
- Updating generic specifications
- Developing new commodity specifications and guidelines
- Pilot projects, reports and advice

33. Work has begun on UNRMS with development of the vision and outline design.

34. Challenges in moving forward include:

- Finalise UNFC update of Generic Specifications which meet the needs all commodities and can be published in a timely manner
- Test and maintaining consistency in UNFC bridging and commodity specifications
- Apply UNFC – move from case studies to adoption
- Develop a contents list, plan and milestones for UNRMS

Appendix: TAG Comments on UNFC Update

35. A UNFC update is being developed by the UNFC Revision Task Force (TF) for consideration by the Expert Group. Individual WGs provided comments to the TF on several draft versions. TAG discussed the update and developed recommendations for presentation at the tenth session.

36. The most recent version of UNFC was published in 2009. It focused on Minerals and Petroleum, bridged to CRIRSCO and PRMS, with these as the commodity specifications. There has been significant evolution since then:

- Bridging to other specifications: Nuclear Red Book, Russian Petroleum, Chinese Minerals and Petroleum
- Specifications developed for other commodities: Injection, Geothermal, Bioenergy, Anthropogenic (Solar, Wind in progress)
- Guidance notes and papers on Social & Environmental, G-axis, Project Definition, Evaluator Qualifications, Competent Persons

37. As a result, changes are required to consolidate current developments:

- Make suitable for all resources to which UNFC applies: Terminology; Categories and classes suitable for all relevant projects and commodities
- Make easy and practical to use: Consolidate guidance into one document; Clarify some complex/confusing aspects; Clearer statement of role and benefits on UNFC, identification of key stakeholders and how they can use UNFC

38. A second reason for change is to facilitate and promote achieving the UN Sustainable Development Goals (SDGs).

- UNFC should support relevant resource and project types. This is consistent with the development of UNFC since 2009.
- Further development of Social & Environmental aspects, where needed. This also is consistent with the development of UNFC since 2009. In the 2009 version there is only limited discussion of Social & Environmental aspects in the text and footnotes.
- Support transparency e.g. facilitate reporting of emissions, land use etc. from a project

39. The TAG view is that the current draft is a significant step forward in addressing the requirements identified above:

- Social & Environmental aspects strengthened: Includes recommendations from E-axis TF on E2 sub categories and guidance
- Terminology more applicable to range of resources: Minerals, Petroleum, Nuclear Fuels, Injection Renewables, Anthropogenic; Includes recommendations from G-axis TF
- E axis modified: Categorization for projects with non-sales production; E1.2 removed as use is unclear; E2 sub categories added (see above)
- Contents and associated guidance consolidated and re-organised: Includes associated guidance on Definition of a Project, Evaluator Qualifications, Competent Persons: Includes 2D EF table of sub-classes
- Bridging documents between PRMS, CRIRSCO and UNFC will be separate (as other bridging documents)

40. TAG suggests that this draft is a suitable 'incremental' update and should be finalised with the following steps:

- Review comments received (many already incorporated).

- Confirm changes work for all commodities, and identify revisions of specifications and bridging documents required
- Review/refine: statement of role/benefit/stakeholders/use of UNFC, categorization of non-sales quantities, F axis text on commitment, undefined projects using existing technology
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41. There are some areas which deserve further consideration in this ‘incremental’ update:

Categorization of non-sales quantities

- Some projects produce only or mainly non-sales quantities e.g. solar for home use; energy to run a business
- Allow non-sales as a reported quantity for every project class (it is a project output not a separate class)
- Modify the E axis definition and supporting explanation so that the maturity of a project which produces only or mainly non-sales quantities can be recognized. Requires explanation of what ‘economically viable’ means in this case

F axis text on commitment

- F axis includes the status of commitment F1.2 “Capital funds have been committed and implementation of the development project or mining operation is underway”.
- However, F1.2 is the only F axis text where Commitment is mentioned. So, there is confusion amongst users. F axis is sometimes viewed as only concerning technical feasibility
- Modify F axis text to make clear that it concerns Technical Feasibility and Commitment of Capital. (Alternative is to move Commitment to E axis.)

Undefined projects using existing technology

- Addition of F4.4 to enable categorization of notional/undefined projects using existing technologies e.g. for wind or solar resources

42. TAG also suggested that a subsequent, more substantial, update be considered after 2019:

- Make UNFC easier to understand and apply
- Broaden applicability to all relevant resource and project types: More fully meet needs of renewable energy users; Multiple resource & circular projects; Applicability for Groundwater, other resources?
- Continue focus on Social & Environmental aspects: Testing and application will guide revisions
- Additional guidance where needed: Commercial aspects in development; Aggregation
- Support transparency e.g. facilitate emissions, land use... from a project: “Open up” UNFC to enable reporting of range of measures for a project, or is should this be in UNRMS?
- Address any proposed changes not included in incremental update
- Include further lessons from ongoing applications and from development of UNRMS
