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## **Economic Commission for Europe**

### **Committee on Sustainable Energy**

#### **Twenty-sixth session**

Geneva, 26-28 September 2017

Item 3(d) of the provisional agenda

**Accelerating the delivery of energy for sustainable development:**

**Framework guidelines for energy efficiency standards in buildings**

#### **Group of Experts on Energy Efficiency**

##### **Fourth session**

Geneva, 31 October-1 November 2017

Item 7 of the provisional agenda

**Work plan of the Group of Experts on Energy Efficiency for 2018-2019**

## **Work Plan of the Group of Experts on Energy Efficiency for 2018-2019**

### **I. Introduction**

1. Annex II of the Executive Committee decision on matters related to the Committee on Sustainable Energy (ECE/EX/2013/L.15) establishes a Group of Experts on Energy Efficiency (the Group of Experts). The mandate of the Group of Experts is to carry out concrete, results-oriented activities that, in line with the “Sustainable Energy for All” (SEforALL) initiative of the United Nations Secretary-General, help significantly improve energy efficiency in the region, thus contributing to climate change mitigation efforts; and strengthen regional cooperation in energy efficiency, with a view to reducing greenhouse gas emissions.

2. According to its Terms of Reference, the Group of Experts will concentrate on: (a) Regulatory and policy dialogue addressing financial, technical and policy barriers to improve energy efficiency; and (b) Sharing experience and best practices in the field of energy efficiency in the United Nations Economic Commission for Europe (ECE) region, including on strengthening institutional capacity in energy efficiency to reduce greenhouse gas emissions.

3. The mandate of the Group of Experts is requested to be renewed until December 2019, with the possibility of extension.

## II. Concrete Activities

4. On the basis of the outcomes of the implementation of the Work Plan for 2016-2017 and the recommendations from the Group of Experts and its Bureau, the Group of Experts will undertake the following activities. Deliverables that require additional resources for implementation are indicated as “dependent on extra-budgetary funding” and do not fall into the set of core activities to be delivered by the Group of Experts. In addition, following the recommendation of the Committee on Sustainable Energy to explore opportunities for closer cooperation among its subsidiary bodies, the Group of Experts will engage, within the scope of its expertise, in the joint work on transition of the energy sector.

### A. Exchange of experience to improve significantly energy efficiency in industry sector

5. **Description:** The Group of Experts will encourage the exchange of know-how and best practices between relevant experts of all member States and relevant international actors on how to improve energy efficiency in the region and to establish energy efficiency as a resource of its own right on equal footing with the supply side in energy policy. Energy efficiency in industry will be the focus of this activity. This work will be undertaken collaboratively with other organizations, such as: International Energy Agency (IEA), Copenhagen Centre on Energy Efficiency (C2E2), Energy Charter Secretariat, International Partnership for Energy Efficiency Cooperation (IPEEC), European Commission, United Nations Environment Programme (UNEP), United Nations Industrial Development Organization (UNIDO), European Bank for Reconstruction and Development (EBRD), World Bank, International Finance Corporation (IFC), United Nations Development Programme (UNDP), United Nations Framework Convention on Climate Change (UNFCCC), Investor Confidence Project (ICP) Europe, other United Nations Regional Commissions (UN RCs), and other relevant organizations.

6. The Group of Experts expects this activity to enhance further the involvement of the industry in achieving more sustainable and energy efficient production, logistics and consumption, however additional financing is required in order to scale up the activity in the entire region and have larger practical effect. This activity will support the Industry Accelerator of the Global Energy Efficiency Accelerator Platform.

7. The Group of Experts will explore the business environment in the ECE region for establishing energy service companies (ESCOs) and energy performance contracting. Developing such contracting and establishing energy as a service will open up great potential for improving energy efficiency in industry and in buildings. The countries in the region have very different energy policies and differently structured energy markets, so there is a need for an increased effort to consider energy market policies that mandate, enable and motivate utilities and ESCOs to profit from improved retail and distribution policies and practices. The analysis should provide guidance to the countries in the region through successful case studies and comparison of different roles for utilities and ESCOs in delivering energy efficiency improvements to their clients. This activity is dependent on extra-budgetary funding.

#### 8. **Work to be undertaken:**

(a) Identify the key operational policy priorities in industry for member States and provide platforms for collective action;

(b) Provide an effective platform for expanding already developed policies and measures in industry across countries in the region based on the “Best Policy Practices for Promoting Energy Efficiency. A Structured Framework of Best Practices in Policies to

Promote Energy Efficiency for Climate Change Mitigation and Sustainable Development” developed by the Group of Experts;

(c) Identify minimum industrial energy efficiency standards for important individual industry sectors to promote the best policy practices. The emphasis will be on industries with the highest energy consumption. This activity is dependent on availability of additional resources and/or extra-budgetary funding;

(d) Organize information sharing activities (workshops, seminars, roundtables, etc.) for exchange of experience on energy efficiency best practices, measures, and policies in industry;

(e) Identify possible options to safeguard that energy efficiency is treated as an energy resource of its own right and it is given primary consideration in national industrial policies;

(f) Identify barriers and options for developing delivery of energy efficiency by utilities (including energy performance contracting) and related approaches in the ECE region.

9. **Deliverables:**

(a) A report on improving energy efficiency in industry submitted for consideration by the Group of Experts.

(b) A report on barriers, options, and best practices for developing utility or ESCO delivery of energy efficiency improvements in the ECE region under existing regulatory approaches (dependent on extra-budgetary funding).

10. **Timeline:**

(a) First draft of the reports for discussion – September 2018;

(b) Final reports – September 2019.

**B. Exchange of experience on standards and guidelines to improve significantly energy efficiency in buildings**

11. **Description:** International standards in energy efficiency can play a valuable role in promoting good energy practices, harmonization of public policies, improving consumers’ and users’ understanding and confidence, avoiding technical barriers to trade related to energy policies, and enabling the creation of world markets for energy technologies. Work of the Joint Task Force on Energy Efficiency Standards in Buildings of the ECE Region established by the Committee on Sustainable Energy and the Committee on Housing and Land Management (CHLM) explored the potential for activities on energy efficiency standards in buildings. Terms of Reference of the Joint Task Force are provided in Annex and proposed to be extended for the period 2018-2019. It has begun implementation of the extra-budgetary project Energy Efficiency Standards in Buildings (July 2017 – December 2018) with the objective to improve knowledge of ECE member States of the energy efficiency standards in buildings in the ECE region. It has also developed draft Framework Principles for Building Standards.

12. A knowledge transfer based on a multilateral train-the-trainer approach can help to accelerate the dissemination of good practices throughout the ECE region and thereby to help improve the quality of new buildings and renovations. In seminars and accompanying materials offered and adopted to the needs of member States with assistance from international experts and integrating local partners, ECE could contribute to disseminate the needed skills (building design and physics, building envelope, heating/ventilation/air

conditioning, power generation, automation and controls, integrated planning and cost-effectiveness).

13. This work will be undertaken jointly with CHLM in collaboration with other organizations, such as the North American Passive House Network, the Passive House Institute (PHI), the Buildings Performance Institute Europe (BPIE), ICP Europe, the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC), International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), and other key stakeholders. ECE's role is particularly valuable in promoting the multiple benefits of building efficiency measures, matchmaking policy to sub-region/country situation, encouraging data collection and evaluation, promoting relevant tools, and highlighting best practices. This activity will support the Buildings Efficiency Accelerator of the Global Energy Efficiency Accelerator Platform.

14. **Work to be undertaken:**

(a) Explore the possibility of establishing ECE-wide Framework Principles for Building Standards that covers new and existing buildings, as well as best practices for neighbourhoods and cities;

(b) Explore the possibility to set up an ECE-wide offer of train-the-trainer seminars;

(c) Undertake mapping of energy efficiency standards and technologies in buildings in the ECE region;

(d) Develop best practices for existing standards and technologies.

15. **Deliverables:**

(a) Framework Principles for Building Standards;

(b) A set of train-the-trainer seminars on Framework Principles for Building Standards;

(c) Mapping of energy efficiency standards and technologies in buildings in the ECE region.

16. **Timeline:**

(a) Final draft of Framework Principles for Building Standards – June 2018;

(b) Seminars – ongoing in 2018-2019;

(c) Mapping of energy efficiency standards and technologies in buildings in the ECE region – February 2019.

## C. **Regulatory and policy dialogue addressing barriers to improve energy efficiency**

17. **Description:** A number of legislative, policy, economic, and financial barriers remain to improve significantly energy efficiency. Naming energy efficiency as “the first fuel” has not yet been converted into adequate investment that would make possible achieving one of the goals of the SEforALL initiative – doubling the global rate of improvement of energy efficiency by 2030. The results of the survey on overcoming barriers to investing in energy efficiency show that self-financing and direct financing from public budgets remain the main sources in most countries of the ECE region. However new opportunities for financing continue to be developed. Local commercial banks in many countries are providing financing

through credit lines offered by international financial institutions and/or national central bank funds targeted at sustainable energy. Bond financing of energy efficiency is an emerging opportunity for energy efficiency. National energy efficiency funds, particularly those set as a revolving fund, is another option. Energy service companies (ESCOs) are becoming an important, and in some countries leading, source of financing. The Group of Experts will continue to explore which financing strategies work best, how governments can improve their bankability and scope to expand private financing of energy efficiency, which policies and legislation have been proven to deliver results. This work will be conducted in cooperation with Governments of member States, financial institutions, international organizations (e.g. C2E2, World Bank etc.), and other stakeholders. This activity will support the Finance Accelerator of the Global Energy Efficiency Accelerator Platform.

18. **Work to be undertaken:**

- (a) Identify policies and legislation that increase the bankability of energy efficiency;
- (b) Identify best practices in finance strategies;
- (c) Analyze energy efficiency finance options in the region;
- (d) Improve the dialogue between the private financial sector, development banks and countries on the business case of energy efficiency financing.

19. **Deliverables:** A report submitted for consideration by the Group of Experts.

20. **Timeline:**

- (a) First draft of the report for discussion – October 2018;
- (b) Final report – October 2019.

## **Annex**

### **Terms of Reference for the Joint Task Force on Energy Efficiency Standards in Buildings of the ECE Region for 2018-2019**

#### **I. Background**

1. The Joint Task Force on Energy Efficiency Standards in Buildings was established by the Committee on Sustainable Energy and the Committee on Housing and Land Management (CHLM) with the participation of the Working Party 6 for 2016-2017 with a possibility of extension. The mandate of the Joint Task Force is proposed to be extended for the period of 2018-2019 with a possibility of extension.

#### **II. Reporting**

2. The Joint Task Force will report to its parent bodies, the CHLM and the Committee on Sustainable Energy.

#### **III. Objective**

3. The objective of the Joint Task Force is to enhance the harmonization of the markets for products and technological appliances that increase energy efficiency in buildings of the ECE member States. It broadens the exchange of experiences and approaches to increased uptake of energy efficiency measures in buildings among the member States. The Joint Task Force is guided by recommendations and decisions of the Committee on Sustainable Energy and the CHLM.

4. The Joint Task Force will facilitate the ECE's support towards the achievement of the targets set by international initiatives such as the Global Goal 7, the Sustainable Energy for All Initiative, and the Geneva UN Charter on Sustainable Housing. All of these initiatives stress the importance of energy efficiency to ensure energy security, mitigate GHG emissions and ensure access to affordable, reliable, sustainable and modern energy for all.

#### **IV. Planned activities and outputs**

5. To achieve its objectives, the Joint Task Force will undertake the following activities:
- (a) Mapping energy efficiency standards in buildings and preparing gap analyses;
  - (b) Evaluating options for the development, adoption or promotion of energy efficiency standards in buildings;
  - (c) Preparing guidance materials;
  - (d) Promoting partnerships with other international organizations;
  - (e) Establishing a network of experts on energy efficiency in buildings;
  - (f) Developing and organizing training programmes.
6. The Joint Task Force will deliver, in particular, the following outputs:

- (a) Mapping of existing energy efficiency standards in buildings in the ECE region;
- (b) An online database of experts on energy efficiency in buildings tailored for the needs of the ECE region;
- (c) A roadmap for future ECE activities on standards.

7. All of the above mentioned activities and outputs are subject to regular consultations with and between the parent bodies, the CHLM and the Committee on Sustainable Energy, the Working Party 6, partner organizations, donors and members of the Joint Task Force and might be subject to adaptations.

## **V. Funding**

8. The activities of the Joint Task Force are supported by extra-budgetary funds and in-kind contributions. The listed activities will be implemented depending upon the availability of funds.

## **VI. Timetable**

9. The mandate of the Joint Task Force will cover the period of 2018-2019 with a possibility of extension.

## **VII. Methods of work**

10. The Joint Task Force is expected, subject to availability of funds, to have two to four face-to-face meetings during its mandate. The Joint Task Force will also work via various means of electronic communications. Donors are invited to provide voluntary contributions to support its work.

## **VIII. Membership**

11. The Joint Task Force will be open to all ECE member States. Other UN member States are also welcome to participate. The Joint Task Force comprises experts from the CHLM, the Committee on Sustainable Energy, and the Working Party 6, other ECE bodies, international organizations, such as the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), the International Partnership for Energy Efficiency Cooperation (IPEEC), the Copenhagen Centre on Energy Efficiency (C2E2), the Consortium for Energy Efficiency (CEE), the Pacific Northwest National Laboratory, the National Renewable Energy Laboratory (NREL), the Buildings Performance Institute Europe (BPIE), the Global Buildings Performance Network (GBPN), the North American Passive House Network, the Passive House Institute (PHI), and other relevant experts, to ensure a cross-sectoral approach to addressing energy efficiency standards and building codes. Independent technical experts on building standards and state of the art technologies will be invited to support the work of the task force by providing written contributions and participating in its meetings.

## **IX. Secretariat support**

12. The Joint Task Force will have two co-chairs representing the CHLM and the Committee on Sustainable Energy. The CHLM and the Committee on Sustainable Energy will jointly service the Joint Task Force. This will include:

(a) Servicing the Joint Task Force meetings (with interpretation and translation where possible), including the preparation of meeting agendas and reports;

(b) Preparing background documents and studies for the Joint Task Force at its request;

(c) Arranging for financial support for members of the Joint Task Force from ECE member States, so that they can participate in its meetings.

13. Provision of the secretariat support is dependent on the availability of additional resources as described in Section V.

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### Economic Commission for Europe

#### Committee on Sustainable Energy

#### Group of Experts on Cleaner Electricity Production from Fossil Fuels

##### Twenty-sixth session

Geneva, 26-28 September 2017

Item 4(d) of the provisional agenda

**Improving the environmental footprint of energy  
systems: Fossil fuels in the energy system**

##### Thirteen session

Geneva, 26-27 October 2017

Item 7 of the provisional agenda

**Work plan of the Group of Experts on Cleaner  
Electricity Production from Fossil Fuels for 2018-2019**

### Work plan of the Group of Experts on Cleaner Electricity Production from Fossil Fuels for 2018-2019

**Prepared by the Group of Experts on Cleaner Electricity Production  
from Fossil Fuels**

## I. Introduction

1. The Group of Experts on Cleaner Electricity Production from Fossil Fuels (Group of Experts) carries out concrete, result-oriented activities that significantly reduce greenhouse gas (GHG) emissions from fossil fuel-fired electricity generation. These activities are developed and implemented with the active participation of United Nations Economic Commission for Europe (ECE) member States, energy companies, financial sector, civil society, academia and independent experts.

2. The areas of work of the Group of Experts are regulatory and policy dialogue; sharing best practices in the field of cleaner electricity production from fossil fuels in the ECE region; Carbon Capture, Use and Storage (CCUS); enhanced oil recovery with CO<sub>2</sub>; advanced fossil fuels technologies for power generation; and evaluation of efficiency enhancing measures for coal-fired power plants including steam generators, air and flue gas systems, steam turbines, and generators.

3. On the basis of the outcomes of the implementation of the Work Plan for 2016-2017 and the recommendations from the Group of Experts and its Bureau, the Group of Experts will undertake a number of activities. Among these activities, four represent a continuation, adjusted as needed, of the 2016-2017 work plan. A number of new activities in line with the mandate of the Group of Experts are also indicated. Following the request of the Committee on Sustainable Energy to explore opportunities for closer cooperation among

its subsidiary bodies, three of the new activities are cross-cutting in nature. The Group of Experts will also engage, within the scope of its expertise, in joint work on the transition of the energy sector.

4. The Group of Experts notes that under the current resource constraints successful implementation of the work plan requires institution of dedicated task forces. When deciding on which activities to pursue, the Group therefore has considered the willingness of experts to take an active role in the task forces and other Group of Experts' work between sessions as one of the key selection criteria success.

## **II. 2018-2019 Activities**

### **A. Assess a future role for thermal power plants in sustainable electricity systems (continued activity from 2016-2017 work plan)**

#### **Description:**

If fossil fuel-fired generation is to remain a viable part of future sustainable electricity systems, there are two main aspects to consider: (a) decreasing the carbon intensity of electricity production and (b) increasing the flexibility of fossil generation to support deployment of variable renewable power generation. The Group of Experts would assess these aspects from a system-wide perspective.

#### **Work to be undertaken:**

(a) The Group of Experts, supported by the secretariat and through its Task Force focussed on assessing a future role for thermal power plants in sustainable electricity systems created in October 2016, will review a number of relevant existing electricity generation and transmission systems.

(b) The Group of Experts will analyze future development plans and/or scenarios (including relevant indicators) based on both renewable energy and fossil fuel outlooks to evaluate a range of current approaches to develop sustainable electricity systems and possibly in the context of the broader energy system.

(c) The Group of Experts will look at different possible options such as new builds/replacement invests vs retrofit of existing installations, in particular for countries with a very low or negative growth of electricity consumption. This scenario work could identify typical expected utilisation patterns of fossil power plants as a basis for the work performed under Activity B.

(d) Based on the above, the Group of Experts will organize round tables on the role of thermal power plants in a sustainable electricity system.

(e) The Group of Experts, taking into account the results of the discussions enriched by the work of the Task Force in-between annual sessions, will formulate policy recommendations or concise strategic messages to the energy and climate stakeholder community on the role of fossil fuels in sustainable energy systems.

#### **Deliverables:**

(a) Round table on the continued role of thermal power plants in a sustainable electricity system of the future.

(b) Recommendations/strategic message to the energy and climate stakeholder community on the role of and pathways for fossil fuels in sustainable energy systems.

#### **Timeline:**

- (a) Round table on the role of thermal power plants by December 2018.
- (b) First draft of recommendations/strategic message by December 2018.
- (c) Final draft of recommendations/strategic message by December 2019.

## **B. Increase flexibility in coal-fired electricity generation (continued activity from 2016-2017 work plan)**

### **Description:**

Increasing the flexibility of existing and new coal power plants could allow for deeper renewable energy penetration and thus reduce the carbon intensity of system wide electricity generation. Due to the design and operation procedures of historical electricity system development coal is used mostly as a baseload resource, however some new studies claim that existing thermal power plants can provide much more flexibility than often assumed. Operating this capacity under different operating regimes could reduce efficiencies of some power plant types and lead to non-compliance with other environmental limits (sulphur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), and particulate matter, for example), if appropriate measures are not taken. However, with proper design and operating procedures, it could be possible to support larger renewable energy integration using coal as a flexible balancing resource where coal-fired power plants and fuel resources are abundant (the role of natural gas power generation for such purposes is being considered by the ECE Group of Experts on Gas).

### **Work to be undertaken:**

(a) The secretariat, together with the Task Force created in October 2016 to focus on this topic, will work to identify gaps in information on interactions, complementarities and tensions at the nexus of coal power plants and renewable power generation. This work could include fact finding on the changing operational patterns of coal-fired power plants in Western Europe.

(b) The secretariat and the Task Force will prepare a background document on the nexus of coal power plants and renewable energy for consideration at the 2018 session of the Group of Experts.

(c) The secretariat and the Task Force will present its findings at the 2018 session of the Group of Experts.

(d) The Group of Experts will consider possible next steps, including collaboration with qualified partners (international organizations, private sector, and academia) in assessing the integration of coal power plants into future electricity systems with a larger proportion of variable renewable energy. Key aspects would be technology, policy and markets that can support flexible operation of plants.

### **Deliverables:**

(a) Round table/stakeholder dialogue on increasing flexibility of coal-fired electricity generation.

(b) Report on good practices and case studies in increasing flexibility of coal-fired electricity generation.

**Timeline:**

- (a) Round table on increasing flexibility of coal-fired electricity generation by December 2018.
- (b) First draft of good practices in increasing flexibility of coal-fired electricity generation by March 2019.
- (c) Final draft of good practices in increasing flexibility of coal-fired electricity generation by December 2019.

**C. Decrease emissions and increase efficiency from new and existing coal-fired power generation using best practices across the ECE region (continued activity from 2016-2017 work plan)**

**Description:**

Both existing and new coal power generation will play an important role in global electricity systems in the short and medium term. In a typical pulverized coal fired plant, for each

1 per cent increase in efficiency of a coal-fired power plant there is a 2–3 per cent reduction of CO<sub>2</sub> emissions and other air pollutants. Improving energy efficiency has been a focus of intensive energy research over the past two decades. As a result, there has been steady technological innovation towards increasing efficiency and reducing emissions from the power generation of fossil fuels, most notably from coal (where most of the research has been focused).

For existing plants, increasing the energy efficiency can offer both economic benefits while reducing GHG emissions. Over the past few years, some countries have recognized concerns with their increasing energy demand and ageing power plants. For example, Mongolia, Kazakhstan and Uzbekistan have recently begun programmes of modernization or of constructing new power plants. However, the average energy intensities in countries with economies in transition are generally still significantly higher than most other countries. Building on the efforts to implement the work plans for 2014-2015 and 2016-2017, a number of best practice guidance documents for improving plant efficiencies were identified as well as an opportunity to disseminate best practice guidance. Collaborative opportunities have been identified with a number of partners, including the World Coal Association and the International Energy Agency (IEA) Clean Coal Centre, to support this effort in the ECE region.

For construction of new coal-fired power plants, there are a number of high efficiency, low emissions (HELE) coal power generation technologies that could increase efficiencies significantly and decrease power generation emissions in the region. Coal gasification, for example, is a promising technology that offers a versatile and clean way to convert coal into electricity, hydrogen, and other valuable energy products. Introduction of HELE technologies that enhance efficiency, environmental performance and reliability is critical for countries in which electricity generation is based on coal. Activities under this topic will be developed with a view to developing best practice guidance in the deployment of HELE technologies across the ECE region. It will provide member States with the opportunity to adjust policy and regulation in a way that could identify solutions to ongoing coal utilization and a pathway towards carbon capture and storage (CCS) retrofits.

**Work to be undertaken:**

(a) The Group of Experts through its Task Force created in October 2016 will revise the results of activities carried out in 2016-2017 and any lessons learned.

(b) Based on the findings, and in collaboration with partners such as the World Coal Association and the IEA Clean Coal Centre, the Group of Experts will organize a round table discussion in the ECE region.

(c) The Group of Experts will review all the case studies presented at the workshops in 2015, 2016 and 2017 with a view to developing best practices on drivers and barriers to uptake of HELE technologies.

(d) Drawing on the case studies, the Group of Experts will study the drivers and barriers to the deployment of HELE technologies, and other factors affecting decisions to invest in HELE technologies or in conventional thermal power plants.

(e) The Group of Experts will draft a report on best practices in HELE technologies in the ECE region.

**Deliverables:**

(a) Workshop/round table on HELE technologies.

(b) Report on best practices in HELE technologies in the ECE region.

**Timeline:**

(a) Round table on HELE technologies by December 2018.

(b) First draft of the report on best practices in HELE technologies in the ECE region by November 2018.

(c) Report on best practices in HELE technologies and on drivers and barriers to their deployment in the ECE region presented at the session of the Group of Experts by November 2019.

(d) Final report on best practices in HELE technologies in the ECE region by November 2019.

**D. Assess means for development and deployment of carbon capture, use and storage (CCUS) technology and know-how (continued activity from 2016-2017 work plan)**

**Description:**

Know-how for Carbon Capture, Use and Storage (CCUS) development and deployment is an important way to support progress in ECE member States. This activity would allow them to consider break-through technology options in the development of sustainable electricity and energy systems, especially in countries still relying on fossil fuels for electricity generation. This activity will look at the contribution of CCUS to climate change mitigation potential, as well as at the obstacles to its deployment, in particular related to the public perception of such projects. Given that large scale demonstration projects have faced the most challenges in the development of CCUS, the Group of Experts may initially focus on small scale and/or modular CCUS and aspects related to infrastructure and storage.

**Work to be undertaken:**

(a) The Group of Experts through its Task Force on CCUS created in October 2016 will review the impact of activities carried out in the previous work plan, progress achieved, and remaining gaps in this field.

(b) The Group of Experts will organize a round table on means needed to develop and deploy CCUS technology.

(c) Provided needed extrabudgetary funds or in-kind contributions are identified, the Group of Experts may draft recommendations on removing obstacles to implementing small scale CCS.

**Deliverables:**

(a) Round table on ways to develop and deploy CCUS technology.

(b) Recommendations on removing obstacles to large and small scale CCS.

(c) Provide general and country-specific recommendations on CCUS to the United Nations Framework Convention on Climate Change (UNFCCC) as a means to accelerate implementation of the Paris Accord.

**Timeline:**

(a) Round table on means to develop and deploy CCUS technology by October 2019.

(b) Recommendations on removing obstacles to small scale CCS by October 2019.

(c) Recommendations on CCUS to UNFCCC on the Paris Accord (December 2019).

**E. Opportunities in combined heat and power (CHP), gasification and coal to develop other technologies or products (such as liquids or chemicals)**

**Description:**

This activity will look at opportunities for sustainable use of fossil fuels – primarily coal – beyond electricity generation, e.g., for combined heat and power (CHP), coal gasification, or the use of coal and carbon dioxide as a feedstock to develop other technologies or products (such as liquids or chemicals).

**Work to be undertaken:**

(a) The Group of Experts will conduct a scoping exercise on the state of development of opportunities in CHP and non-energy use of coal (excluding metallurgical use of coal).

(b) The Group of Experts will present its findings at the annual session in 2018 during a round table dedicated to this topic.

(c) The Group of Experts will draft a report on the opportunities in CHP, gasification and chemical use of coal.

**Deliverables:**

(a) Round table on CHP, gasification and chemical use of coal.

(b) Report on the opportunities in CHP, gasification and chemical use of coal.

**Timeline:**

- (a) Round table on CHP and chemical use of coal by October 2018.
- (b) First draft of the report on the opportunities in CHP, gasification and chemical use of coal by April 2019.
- (c) Final draft of the report on the opportunities in CHP, gasification and chemical use of coal by November 2019.

***Cross-cutting activities***

**F. Role of fossil fuels in supporting renewable energy deployment**

**Description:**

In collaboration with the Group of Experts on Renewable Energy and the Group of Experts on Gas, the Group of Experts on Cleaner Electricity Production from Fossil Fuels will review the role of fossil fuels in supporting the deployment of renewable energy. In order to increase the uptake of renewable energy sources, a reliable source of energy and capacity is needed for when renewable energy sources are not available. Both coal- and gas-fired electricity generation can provide the needed capacity.

There is also a need for rapid-response capacity to maintain balance in power networks to accommodate oscillations in the output of intermittent energy sources.

**Work to be undertaken:**

- (a) The Group of Experts will cooperate with and establish a joint Task Force with the Group of Experts on Gas and the Group of Experts on Renewable Energy to explore policy, regulation, and power market design (balancing markets, energy markets, and capacity markets) to consider which approaches are most effective.
- (b) The Group of Experts will organize a dialogue on the role of fossil fuels in increasing the uptake of renewable energy in the ECE region.
- (c) The Group of Experts will collect case studies and relevant lessons learned from the development policies carried out by ECE member States over the past several years.

**Deliverables:**

- (a) Report from joint Task Force on its findings and any recommendations.
- (b) Dialogue on the role of fossil fuels in increasing the uptake of renewable energy in the ECE region.
- (c) Case studies on the enabling role of fossil fuels in increasing the uptake of renewable energy in the ECE region.

**Timeline:**

- (a) Report from joint Task Force on its findings and any recommendations presented to the annual meetings of the Group of Experts and the Group of Experts on Gas and the Group of Experts on Renewable Energy in 2018 and 2019.
- (b) Dialogue on the role of fossil fuels in increasing the uptake of renewable energy by October 2019.

(c) Case studies on the enabling role of fossil fuels in increasing the uptake of renewable energy in the ECE region, ongoing, to be carried out throughout the two-year cycle by November 2019.

## **G. Role of gas and liquefied natural gas (LNG) in electricity generation (with the Group of Experts on Gas)**

### **Description:**

In collaboration with the Group of Experts on Gas, the Group of Experts on Cleaner Electricity Production from Fossil Fuels will review the role of coal and natural gas in electricity generation in the ECE region and the competing options for future electricity generation, including an increased use of LNG in electricity generation.

### **Work to be undertaken:**

The Group of Experts will organize a round table on the role of LNG in electricity generation.

### **Deliverables:**

Round table on the role of LNG in electricity generation.

### **Timeline:**

Round table on the role of LNG in electricity generation by October 2019.

## **H. Innovation in the extraction and use of coal mine methane for electricity production and other uses (with the Group of Experts on Coal Mine Methane)**

### **Description:**

In collaboration with the Group of Experts on Coal Mine Methane (CMM), the Group of Experts will explore methane use in the context of cleaner electricity and heat production.

### **Work to be undertaken:**

The Group of Experts will organize a round table on the role of the extraction and use of CMM for electricity production.

### **Deliverables:**

Round table on the use of CMM for energy production.

### **Timeline:**

Round table on the use of CMM for energy production by December 2019.

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## Economic and Social Council

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### Economic Commission for Europe

#### Committee on Sustainable Energy

##### Twenty-sixth session

Geneva, 26-28 September 2017

Item 3(c) of the provisional agenda

**Accelerating the delivery of energy for sustainable development:**

**Tracking progress on sustainable energy**

##### Group of Experts on Renewable Energy

##### Fourth session

Geneva, 2-3 November 2017

Item 7 of the provisional agenda

**Work plan of the Group of Experts on Renewable Energy for 2018-2019**

### Work Plan of the Group of Experts on Renewable Energy for 2018-2019

Prepared by the Group of Experts on Renewable Energy

#### I. Introduction

1. Annex II of the Executive Committee decision on matters relating to the Committee on Sustainable Energy (ECE/EX/7) established the Group of Experts on Renewable Energy (the Group of Experts) which is mandated to carry out concrete result-oriented activities that, in line with the Sustainable Energy for All initiative of the Secretary-General, help significantly increase the uptake of renewable energy in the region and that help achieve the objective of access to energy for all in the United Nations Economic Commission for Europe (ECE) region.
2. According to its Terms of Reference, the Group of Experts will focus on a) regulatory and policy dialogue and b) sharing of best practices on various renewable energy sources, including biomass, with a view to increasing the share of renewables in the global energy mix.
3. The mandate and the Work Plan 2018-2019 of the Group of Experts is requested to be renewed until December 2019, with the possibility of extension.

#### II. Concrete activities

4. Building on the activities of the Work Plan 2016-2017 and the recommendations from the Group of Experts and its Bureau, the Group of Experts will undertake the following

activities in the ECE region. Deliverables which require extra-budgetary funding for implementation are highlighted as “dependent on extra-budgetary funding”, and do not fall into the set of core activities to be delivered by the Group of Experts. In addition, following the recommendation of the Committee on Sustainable Energy to explore opportunities for closer cooperation among its subsidiary bodies, the Group of Experts will engage, within the scope of its expertise, in the joint work on transition of the energy sector.

## **A. Tracking progress in the uptake of renewable energy sources**

**Description:** The Group of Experts will continue to monitor the progress on the uptake of renewable energy in the region, following the baseline established in 2015 and updated report in 2017. This work will continue in collaboration with key partners, including the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA), the Renewable Energy Policy Network for the 21<sup>st</sup> Century (REN21), and the World Bank Group. The expected results will help to improve the understanding of renewable energy globally and contribute to existing global monitoring systems already in place by partners including the Sustainable Energy for All Global Tracking Framework (GTF). The Group of Experts will further contribute to future ECE initiatives in assessing progress and prospects of sustainable energy within the region, such as for the 2017 GTF UNECE Regional report.

### **Work to be undertaken:**

(a) Review the state of development and monitor the progress of renewable energy update in the region. This will include building on key findings from the Renewable Energy Status Report 2017 for selected countries and further investigating a selected number of key issues as well as contributing to existing global monitoring frameworks, in particular the GTF;

(b) Identify ways to strengthen national action plans regarding renewable energy, drawing on experience of best practices on framework conditions and instruments that help significantly increase the uptake of renewable energy in the region;

(c) Promote the application of a unified system of renewable energy indicators for a more comprehensive assessment - at regional, national and international level - of the status of renewable energy, including obstacles and opportunities. Such a system should allow the development of strategic actions to achieve specific goals and may contribute to or benefit from the in-depth review of the Sustainable Development Goal 7 and its indicators in 2018. As part of this, review of methodology to determine renewable energy shares in gross final energy consumption (GFEC) should be undertaken and, in case of inconsistencies, further work explored and, eventually, initiated on harmonisation and developing common approach in definition of key indicators of renewable energy development (dependent on extra-budgetary funding).

### **Deliverables:**

(a) A report submitted for consideration by the Group of Experts at the annual meeting;

(b) A report on the status of the implementation of renewable energy national action plans;

(c) A set of recommendations on renewable energy indicators as instrument to assess the renewable energy status and progress (dependent on extra-budgetary funding).

**Timeline:** 2018-2019.

## **B. Exchange of experiences and good practices on how to increase the uptake of renewable energy**

**Description:** The Group of Experts will continue to serve as platform for exchanging experiences and good practices on renewable energy development among member States, relevant international organizations and other stakeholders on how to increase energy production from renewable sources as a means of sustainable development and climate change mitigation, in an integrated approach that considers cross-cutting and nexus issues. This work will be undertaken collaboratively with other organisations, such as IRENA, IEA, REN21 and the World Bank Group, the other United Nations Regional Commissions and other relevant organizations. A set of capacity development activities will be implemented to increase know-how on renewable energy among stakeholders from public and private sector in the region.

### **Work to be undertaken:**

(a) Organize a discussion within the Group of Experts for exchanging information on already developed renewable energy policies and measures across countries in the region, aiming to meet renewable energy targets and to develop/ implement their renewable energy national action plans. This includes inputs to discussions around policy options to achieve sustainable energy in the future as facilitated by the Committee overseen flagship project “Pathways to Sustainable Energy”;

(b) Promote information sharing activities within workshops, seminars, roundtables, develop documentation/briefs etc. for exchange of experience on best practices and policies, such as in the context of the International Forum on Energy for Sustainable Development and the Committee on Sustainable Energy;

(c) Organize specific Hard Talks, upon country request and fund availability, to use the results of the Renewable Energy Status Report for an open dialogue among stakeholders, including through inter-sectoral coordination and cooperation with relevant organizations (dependent on extra-budgetary funding).

### **Deliverables:**

(a) Ad hoc workshop or discussion within the annual session of the Group of Experts; written contributions on adaptive and cross-cutting policy options;

(b) Present information on policies, experiences and good practices in countries of the region during four workshops and seminars organized by relevant organizations (dependent on both regular and extra-budgetary funding for travel costs);

(c) Organize Hard Talks in ECE countries on a demand-driven basis with the participation of key stakeholders (dependent on extra-budgetary funding).

**Timeline:** 2018-2019.

## **C. Matchmaking activities to support renewable energy investments**

**Description:** The Group of Experts will work to support countries in the creation of market conditions and build capacities for the identification, development and promotion of renewable energy investment projects in selected countries. This work is based on the findings of the status report 2017 which demonstrates how several countries in the ECE region lag in global developments both technically and financially despite significant untapped renewable energy resources.

**Work to be undertaken:**

(a) Organize the activities to strengthen the capacity of the countries to specific needs on renewable energy - investment promotion, policy and financial framework development, technological adaptation, and project proposal writing and financial evaluation of renewable energy projects, through different opportunities including the development of information materials on relevant examples (online and print), organisations of workshops, and other relevant measures (dependent on extra-budgetary funding);

(b) Support in the further development of a renewable energy project pipeline in selected countries of the Eastern part of the ECE region, and realisation of matchmaking events to bring together project developers, investors and technology providers (dependent on extra-budgetary funding).

**Deliverables:**

(a) Capacity building workshop(s), information materials;

(b) Project pipeline; matchmaking event(s).

**Timeline:** 2018-2019.

**D. Cross-cutting cooperation to strengthen integration of renewable energy in future sustainable energy systems**

**Description:** The Group of Experts will work to improve the integration of the various renewable energy technologies into present and future energy supply systems and different sectors, including electricity generation, heating and cooling, gas and liquid fuel distribution as well as autonomous energy supply systems.

5. This activity is implemented in cooperation with other ECE bodies, with the Group of Experts leading or contributing to the work:

- The Group of Experts will cooperate with the Expert Group on Resource Classification to enhance the application of the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources (UNFC) to renewable energy resources (Lead: Expert Group on Resource Classification);
- The Group of Experts will cooperate with the Group of Experts on Gas and the Group of Experts on Cleaner Electricity Production from Fossil Fuels, in the implementation of activities related to renewable energy within the respective work plans, supporting possible synergies between renewable energy and fossil fuels, especially gas in energy production, and in the grid integration of renewable energy (Lead: Group of Experts on Gas; Group of Experts on Cleaner Electricity Production from Fossil Fuels);
- The Group of Experts will assess opportunities for more sustainable and environmentally friendly renewable energy through inter-sectoral synergies (nexus), in cooperation with relevant activities of other sub-programmes of the ECE, notably with the Task Force on Water-Food-Energy-Ecosystem Nexus and the Team of Specialists on Wood Energy (Lead: Task Force on Water-Food-Energy-Ecosystem Nexus and the Team of Specialists on Wood Energy).

**Work to be undertaken:**

(a) Develop or update of specifications for the application of UNFC to the various renewable energy technologies (bioenergy, solar, hydro, wind) (under the lead of Expert Group on Resource Classification);

(b) Develop recommendations produced in close collaboration with the Group of Experts on Gas and the Group of Experts on Cleaner Electricity Production from Fossil Fuels on how to overcome key obstacles and identify opportunities for synergies on renewable energy (under the lead of the Group of Experts on Gas and the Group of Experts on Cleaner Electricity Production from Fossil Fuels);

(c) Develop recommendations on inter-sectoral synergies to deploy renewable energy and support the relevant Sustainable Development Goals within an integrated nexus approach and future energy system (under the lead of the Task Force on Water-Food-Energy-Ecosystem Nexus and the Team of Specialists on Wood Energy).

**Deliverables:**

(a) Documentation that supports UNFC to be applied to renewable energy sources;

(b) Documentation on good practices and policies of renewable energy within future energy systems;

(c) Documentation on water-energy nexus challenges that include renewable energy development.

**Timeline:** 2018-2019.

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## **Economic Commission for Europe**

### **Committee on Sustainable Energy**

#### **Twenty-sixth session**

Geneva, 26-28 September 2017

Item 4(b) of the provisional agenda

**Improving the environmental footprint  
of energy systems:**

**Methane management in extractive activities**

#### **Group of Experts on Coal Mine Methane**

#### **Twelfth session**

Geneva, 24 October 2017

Item 8 of the provisional agenda

**Work plan for 2018–2019**

## **Work plan of the Group of Experts on Coal Mine Methane for 2018-2019**

### **Prepared by the Group of Experts on Coal Mine Methane**

#### **I. Introduction**

1. The mandate of the Group of Experts on Coal Mine Methane (the Group of Experts) is to promote the reduction of greenhouse gas emissions from coal mines by means of concrete, results-oriented activities that may help the recovery and use of methane in order to reduce the risks of explosions in coal mines, mitigate climate change, and support sustainable development.
2. The Group of Experts focuses on best practices for effective drainage, recovery and usage of coal mine methane.

#### **II. Concrete activities in 2018-2019**

3. Taking account of the outcomes and lessons learned from implementation of its 2014-2015 and 2016-2017 work plans, extensive consultations with a wide range of stakeholders, and the outcomes of the eleventh session of the Group of Experts on Coal Mine Methane, the Group of Experts proposes to undertake the following activities in 2018 and 2019:

## A. Disseminate and Expand the Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines

**Description:** Since 2005, the Group of Experts has collaborated with the Global Methane Initiative (GMI), a voluntary, multilateral partnership that aims to reduce global methane emissions and to advance the abatement, recovery and use of methane. In partnership with GMI, in 2010 the Group of Experts published and has since disseminated the "Best Practice Guidance for Effective Methane Drainage and Use in Coal Mines". In 2016, the Best Practice Guidance was revised, updated and supplemented by a number of new case studies. On 30 June 2015, the Executive Committee of the United Nations Economic Commission for Europe (ECE) approved an extrabudgetary project "Dissemination of best practices in the abatement, recovery, and use of methane", that was implemented in 2016 and 2017. Within the framework of this project, the Best Practice Guidance was effectively disseminated to a target audience of potential beneficiaries in the coal mining industry. Dissemination of the Best Practice Guidance is needed, as is development of a standard training module to augment education and outreach. The work of the Group of Experts to deliver these activities is supported by a grant that ECE received from the United States Environmental Protection Agency (U.S. EPA) to continue the extrabudgetary project "Dissemination of best practices in the abatement, recovery, and use of methane".

### Work to be undertaken:

(a) Plan, organize, and execute two pre-workshop fact-finding missions focused on identifying challenges locally faced in the abatement, recovery, and use of coal mine methane, subject to availability of extrabudgetary resources.

(b) Plan, organize, and execute two demand-driven capacity-building workshops on best practices for effective methane drainage and use in coal mines, subject to availability of extrabudgetary resources.

(c) Plan, organize, and execute a demand-driven capacity-building workshop on methane from abandoned mines, subject to extrabudgetary resources.

(d) Develop best practices (or recommendations) on sustainable management of abandoned coal mines, subject to availability of extrabudgetary resources.

(e) Develop a standard training module on best practices in the abatement, recovery, and use of methane from coal mines.

(f) Develop a risk management tool, in the form of a document and associated templates, on gas control and explosion prevention for the purpose of raising awareness of and providing training on methods and practices for identifying and mitigating risk.

(g) Continue the collaboration with GMI, including through the phase II of the extrabudgetary project on "Dissemination of best practices in the abatement, recovery, and use of methane".

(h) Explore how to further expand and deepen the collaboration with GMI in the context of the Committee of Sustainable Energy and in collaboration with other ECE Groups of Experts.

### Deliverables:

(a) Report/case study resulting from fact-finding missions providing a description of the situation and recommendations, subject to availability of extrabudgetary resources.

(b) Two demand-driven capacity-building workshops on best practices for effective methane drainage and use in coal mines, subject to availability of extrabudgetary resources.

(c) A demand-driven capacity-building workshop on methane from abandoned mines, subject to availability of extrabudgetary resources.

(d) Best practices (or recommendations) on sustainable management of abandoned coal mines, subject to availability of extrabudgetary resources.

(e) A standard training module on best practices in the recovery, use, and abatement of methane emissions from coal mines.

(f) A risk management tool on gas control and explosion prevention.

(g) A new expanded framework for collaboration between relevant ECE Groups of Experts and GMI.

**Timeline:**

(a) Report/case study resulting from fact-finding missions, by December 2019, subject to availability of extrabudgetary resources.

(b) Two workshops on best practices for effective methane drainage and use in coal mines by December 2019, subject to availability of extrabudgetary resources.

(c) A demand-driven capacity-building workshop on methane from abandoned mines, by December 2019, subject to extrabudgetary resources.

(d) Best practices (or recommendations) on sustainable management of abandoned coal mines, by December 2019, subject to extrabudgetary resources.

(e) A standard training module on best practices in the recovery, use, and abatement of methane emissions from coal mines, by December 2019.

(f) A risk management tool on gas control and explosion prevention, by December 2019.

(g) A new framework for collaboration between relevant ECE Groups of Experts and GMI by December 2019, subject to the continuous interest of both Parties to strengthen their relationship.

**B. Launch and support the work of the International Centres of Excellence on Coal Mine Methane**

**Description:** An International Centre of Excellence on Coal Mine Methane (ICE-CMM) is a non-profit entity established in a United Nations Member State under the national laws of that Member State that, under the auspices of and in close collaboration with the Group of Experts, supports capacity-building activities through dissemination of best practices in economically viable methane abatement and utilisation, socially acceptable underground coal mine practices, and environmentally-responsible methane management. The Group of Experts seeks to establish a network of independent ICE-CMMs operating in different locations and collaborating with one another under the guidance and supervision of the Group. In June 2017, the first ICE-CMM, located in Katowice, Poland, formally became operational and commenced its activities. In May 2017, a Memorandum of Understanding was signed between ECE and Shanxi Coking Coal Group Co Ltd of Taiyuan, China, to provide a framework for instituting an ICE-CMM in China. The Bureau of the Group of Experts will provide support for establishing the ICE-CMM in China, and will engage in planning, delivering and overseeing the activities of the ICE-CMMs in both Poland and in China, as requested or needed in accordance with the ICE-CMMs' Terms of Reference. The Group of Experts stands ready to assist ICE-CMMs with organizing and delivery of activities specified in their respective Work Plans.



**Work to be undertaken:**

- (a) Assist ICE-CMM in Poland in carrying out its work, as requested or needed in accordance with the ICE-CMM's Terms of Reference.
- (b) Develop the work plan of ICE-CMM in China, with a list of deliverables.
- (c) Inaugurate ICE-CMM in China.
- (d) Once ICE-CMM in China is formally set up and operational, assist the host institution in carrying out work of ICE-CMM in China, as requested or needed in accordance with the ICE-CMM's Terms of Reference.

**Deliverables:**

- (a) Three capacity-building seminars in the abatement, recovery, and use of methane from coal mines organized in cooperation with ICE-CMMs, in Geneva, or at other centrally-located location in the ECE region and beyond. Delivery of seminars is subject to availability of extrabudgetary resources.
- (b) Yearly status reports on the activities of ICE-CMM in Poland, to be delivered by ICE-CMM Poland for the review and approval of the Group of Experts.
- (c) Initial work plan with a list of deliverables of ICE-CMM in China, to be delivered by ICE-CMM China in coordination with the Group of Experts.
- (d) Yearly status reports on the activities of ICE-CMM in China, to be delivered by ICE-CMM China for the review and approval of the Group of Experts.

**Timeline:**

- (a) Three capacity-building seminars organized in cooperation with ICE-CMMs, in Geneva, or at other centrally-located location in the ECE region and beyond, to be delivered by December 2019, subject to availability of the extrabudgetary resources.
- (b) Yearly status reports on the activities of ICE-CMM in Poland to be delivered by ICE-CMM Poland for the Group of Experts' review and approval, at the annual sessions of the Group in 2018 and 2019.
- (c) Initial work plan with a list of deliverables of ICE-CMM in China by May 2018.
- (d) Yearly status reports on the activities of ICE-CMM in China to be delivered by ICE-CMM China for the Group of Experts' review and approval, at the annual sessions of the Group in 2018 and 2019.

**C. Collect and disseminate case studies on the application of best practice guidance in specific coal mines in different regions of the world**

**Description:** Case studies are needed to demonstrate how the principles outlined in the Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines can be implemented at operating coal mines around the world. The second edition of the Best Practice Guidance contains ten case studies organized in a common framework (Initial Conditions—Gas Control Problems—Solutions) for comparison purposes. The framework was reviewed by the Bureau of the Group of Experts and was found to be a useful tool to describe various coal mine problems and to offer solutions. A number of case studies following a similar structure were developed to support demand-driven capacity-building workshops organized within the framework of the extrabudgetary project “Dissemination of best practices in the abatement, recovery, and use of methane” implemented during the 2016–2017 biennium. At its tenth session held on 28 October 2015, the Group of Experts recommended that a case study library be developed to complement the Best Practice

Guidance. A library has been assembled in electronic form on the ECE coal mine methane website. Subject to extrabudgetary resources the case study database could be extended by elaborating concrete, in-depth case studies and analyses that demonstrate the benefits of applying the best practices.

**Work to be undertaken:**

(a) Reach out to coal mining institutions and coal mine operators to encourage them to share relevant case studies on the application of best practices.

(b) Review case studies through electronic exchanges and discuss them, as applicable, at the annual sessions of the Group in 2018 and 2019.

(c) Develop, compile and publish case studies on the ECE coal mine methane website, subject to availability of extrabudgetary resources.

**Deliverables:**

Case studies on implementation of best practices in methane management, subject to availability of extrabudgetary resources.

**Timeline:**

Case studies are reviewed and approved as they arrive. This process is an ongoing activity of the Group of Experts.

**D. Contribute, in cooperation with other Groups of Experts and under the leadership of the Committee on Sustainable Energy, to the work on integrated methane management in the context of sustainable development.**

**Description:** In January 2015, the Group of Experts offered to participate in the Task Force on methane management in extractive industries that reports to the Bureau of the Committee on Sustainable Energy. The Group of Experts will contribute, within the scope of its expertise, to the work on methane management in key energy-related extractive industries undertaken jointly by various Groups of Experts operating under the umbrella and leadership of the Committee.

**Work to be undertaken:**

Contribute, within the scope of the Group's expertise, to the work on the cross-cutting issue of methane management along the value chain in key energy-related extractive industries, for the purpose of determining and promoting the most efficient methods of measuring, monitoring, reporting and verifying methane emissions in these industries, and developing best practices for preventing such emissions.

**Deliverables:**

(a) Coal mining sector-related part of the summary report on the estimated volumes of methane emissions in extractive industries in the ECE region, subject to work on the report being continued and availability of extrabudgetary resources.

(b) Coal mining sector-related part of the summary report on techniques and methods used for measuring, monitoring, reporting and verifying methane emissions in extractive industries in the UNECE region, subject to work on the report being continued and availability of extrabudgetary resources.

**Timeline:**

(a) Contribution to the summary report on the actual volumes of methane emissions from extractive activities (to be determined by the progress of work on that matter and subject to availability of extrabudgetary resources).

(b) Contribution to the summary report on techniques and methods used for measuring, monitoring, reporting and verifying methane emissions, by (to be determined by the progress of work on that matter and the request by the Committee and subject to availability of extrabudgetary resources).

**E. Further engage, in cooperation with other Groups of Experts and under the leadership of the Committee on Sustainable Energy, in the work on transition the coal industry in the ECE region**

**Description:** In November 2015, the Committee on Sustainable Energy at its twenty-fourth session mandated the Group of Experts on Coal Mine Methane, to make a proposal on how to expand the current mandate of the Group of Experts to encompass work on the transition of traditional mining companies to become integrated energy providers and service companies and to explore the impact this transition might have on energy for sustainable development. In September 2017, at the twenty-sixth session of the Committee, the Group presented its proposal and recommendations. In accordance with the recommendations made to the Committee, the Group of Experts stands ready to further engage in the work on transition of the coal sector.

**Work to be undertaken:**

Explore, in cooperation with other Groups of Experts and under the leadership of the Committee on Sustainable Energy, development of a case-specific model for transition of a particular old industrial site.

**Deliverables:**

(a) Selection, in cooperation with other Groups of Experts and under the leadership of the Committee on Sustainable Energy, as well as in cooperation with interested member State and/or site operator located in the ECE region, upon its prior request and subject to its financial involvement, a specific old industrial site for development of a case-specific model for transition.

(b) A preliminary assessment, performed in cooperation with other Groups of Experts and under the leadership of the Committee on Sustainable Energy, of the industrial site selected for the project, including examination and evaluation of the profitability and sustainability of the current profile of the site's production, as well as a review of the relevant domestic regulations.

(c) Summary report and presentation, developed in cooperation with other Groups of Experts and under the leadership of the Committee on Sustainable Energy, on technical, legal and financial measures available for improvement of the selected site.

**Timeline:**

(a) Selection of the site and conclusion of the agreement with interested State and/or site operator by December 2018.

(b) Assessment of the industrial site by June 2019.

(c) Report summarizing project by December 2019.

**F. Continue to provide advice on coal mine methane related standards to the United Nations Framework Convention on Climate Change (UNFCCC), the International Organization for Standardization (ISO), and other international, national and regional market-based coal mine methane emission reduction mechanisms. Engage and develop robust professional ties with the recognized expert entities operating in the field of fossil-based energy.**

**Description:** In the past the Group of Experts advised UNFCCC on matters related to methane standards and methodologies, namely ACM0008 (Consolidated methodology for coal bed methane, coal mine methane and ventilation air methane capture and use for power (electrical or motive) and heat and/or destruction through flaring or flameless oxidation). The Group of Experts also provides comments on other international, national and regional market-based coal mine methane emission reduction mechanisms, such as the California Air Resources Board Mine Methane Capture Protocol or the ISO Technical Committee 263 Coalbed methane (CBM). To increase the efficiency and visibility of its work, the Group of Experts seeks to establish professional ties with recognized expert entities operating in the field of fossil-based energy. In order to change the negative and generalized image of the coal industry predominant among multilateral and bilateral financial institutions, which has become a barrier to financing and implementing coal mine methane capture and use projects, the Group of Experts seeks to engage with such institutions in order to educate them on the benefits deriving from efficient coal mine methane management.

**Work to be undertaken:** Continue to liaise with the above-mentioned and similar organizations and actively solicit the Group of Experts' advice and services. To establish professional ties with the recognized expert entities operating in the field of fossil-based energy. To change the negative and generalized image of the coal industry predominant among multilateral and bilateral financial institutions, and educate such institutions on the benefits deriving from efficient coal mine methane management.

**Deliverables:**

- (a) Advice and comments on coal mine methane related standards.
- (b) Undertake steps to re-establish professional ties with the World Coal Association and the International Energy Agency (IEA) Coal Industry Advisory Board.
- (c) Explore opportunities for engagement with multilateral and bilateral financial institutions, with the goal to change the negative and generalized image of the coal industry, and raise extrabudgetary funds to support the current and future activities of the Group.

**Timeline:**

- (a) To provide advice as requested.
  - (b) Re-engagement with the World Coal Association and the IEA Coal Industry Advisory Board, by December 2019, subject to the interest of the targeted partners.
  - (c) Engagement with multilateral and bilateral financial institutions, by December 2019, subject to the interest of the targeted partners.
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## Economic Commission for Europe

### Committee on Sustainable Energy

#### Group of Experts on Gas

##### Twenty-sixth session

Geneva, 26-28 September 2017

Item 4(b) of the provisional agenda

**Improving the environmental footprint of energy systems: Methane management in extractive activities**

##### Fifth session

Geneva, 22-23 March 2018

Item 5 of the provisional agenda

**Work plan of the Group of Experts on Gas for 2018-2019**

## Work plan of the Group of Experts on Gas for 2018-2019

### Prepared by the Group of Experts on Gas

#### I. Introduction

1. The mandate of the Group of Experts on Gas (the Group of Experts) is to provide a forum for multi-stakeholder dialogue on promoting the sustainable and clean production, distribution, and consumption of gas in the United Nations Economic Commission for Europe (ECE) region.

2. The areas of work of the Group of Experts are policy dialogue and exchange of information and experiences among ECE member States on gas-related issues of regional relevance, including the ever-increasing share of gas in the total primary energy supply and its social and environmental impacts. Concrete activities of the Group of Experts on Gas are intended to help member States deliver on key political commitments, such as the Paris Agreement on climate change and the Sustainable Development Goals.

#### II. Concrete activities

3. On the basis of the outcomes of the implementation of the Work Plan for 2014-2017 and the recommendations from the Group of Experts and its Bureau, the Group of Experts will undertake a number of activities. Among these activities, two represent a continuation, adjusted as needed, of the 2014–2017 work plan. Several new activities in line with the mandate of the Group of Experts are also indicated. In addition, following the request of the Committee on Sustainable Energy to explore opportunities for closer cooperation among its subsidiary bodies, the Group of Experts will engage, within the scope of its expertise, in joint work on the transition of the energy sector.

4. The Group of Experts notes that under the current resource constraints successful implementation of the work plan requires institution of dedicated task forces. When deciding on which activities to pursue, the Group therefore has considered the willingness of experts to take an active role in the task forces and other Group of Experts' work between sessions as one of the key selection criteria success.

## **A. Role of gas in attaining Sustainable Development Goals**

### **Description:**

This activity will explore how gas and liquefied natural gas (LNG) can help attain the Sustainable Development Goals, and in particular Goal 7 – to ensure access to affordable, reliable, sustainable and modern energy for all. Gas may play a crucial role in access to energy. Some 2.7 billion people, or 40 per cent of the world's population, still do not have access to clean fuels and technologies for cooking. Increasing the share of gas in the total primary energy supply, by for example replacing coal with gas, could help increase the rate of improvement in energy efficiency. Goal 7 also calls on United Nations Member States to increase the uptake of renewable energy, which gas is well-placed to support. Natural gas is relevant to attaining a number of other Sustainable Development Goals. Among them are: Goal 1 (no poverty), Goal 2 (zero hunger), Goal 5 (gender), Goal 6 (clean water and sanitation), Goal 7 (affordable, reliable, sustainable and modern energy), Goal 8 (decent work and economic growth), Goal 9 (industry, innovation and infrastructure), Goal 11 (inclusive, safe, resilient and sustainable cities), Goal 12 (sustainable consumption and production patterns), and Goal 13 (climate action).

### **Work to be undertaken:**

(a) The International Gas Union (IGU) will lead this work and prepare evidence, position papers and materials that highlight the role that gas and LNG could play in achieving the Sustainable Development Goals and elaborate barriers that prevent them from playing that role.

(b) The Group of Experts will review this material and organize policy dialogues on the role that gas could play in attaining the Sustainable Development Goals.

(c) The Bureau and the secretariat will, in collaboration with IGU, disseminate position papers and proceedings from the policy dialogues electronically and at the Group of Experts annual sessions and other relevant events and workshops.

### **Deliverables:**

(a) Policy dialogues on the enabling role of gas in attaining the Sustainable Development Goals.

(b) Dissemination of selected materials, position papers, and proceedings from the policy dialogues on the role of gas in attaining the Sustainable Development Goals and the obstacles to that role.

### **Timeline:**

(a) Policy dialogues on the enabling role of gas in attaining the Sustainable Development Goals: April 2019.

(b) Dissemination of various materials, position papers, and proceedings: December 2019.

## **B. Best practices in managing methane emissions along the gas value chain**

### **Description:**

In many ECE member States, there is an opportunity to improve efficiency and reduce methane emissions along the entire gas value chain. Methane emissions from the gas value chain reduce the climate benefits of natural gas and could, if emissions are significant, undermine the role of gas in the energy system of the future.

### **Work to be undertaken:**

(a) The proposed activity reflects a special contribution from the United States Environmental Protection Agency (U.S. EPA) on behalf of the Global Methane Initiative (GMI), as part of the extrabudgetary project on reducing methane emissions from the extractive industries. Further contributions to this project and work are being solicited.

(b) The Group of Experts will review any ongoing activities of other organizations on this topic to ensure their results are reflected, to ensure that there is no duplication of work and to identify key partners with whom to cooperate,

(c) The Group of Experts will invite other international companies, organizations and associations to contribute.

### **Deliverables:**

(a) Case studies on reducing methane emissions from the gas sector in the ECE region.

(b) Best practices in managing methane emissions along the gas value chain (including monitoring, reporting and verification (MRV) and remediation).

### **Timeline:**

(a) Case studies on reducing methane emissions: December 2018.

(b) Best practices in managing methane emissions: December 2019.

## **C. Role of gas in improving urban air quality**

### **Description:**

Urban air quality is degraded by accumulation of nitrogen oxides, carbon monoxide, methane, volatile organic compounds, sulphur dioxide, and particulate matter. Use of natural gas as opposed to other fuels such as coal, biomass, diesel or petrol, would produce significantly lower concentrations of these pollutants and hence improve urban air quality. Replacing some of these fuels in electricity generation and transportation with natural gas may help improve air quality, in particular in the urban areas of the economies in transition of the ECE region and in developing countries beyond the ECE region.

### **Work to be undertaken:**

(a) IGU will lead this work in collaboration with the World Health Organization (WHO).

(b) Building upon case studies on urban air quality recently published by IGU, the Group of Experts will develop policy recommendations for ECE member States and other United Nations Member States on the role of gas in improving urban air quality.

**Deliverables:**

- (a) Policy dialogue on the role of gas in improving urban air quality.
- (b) Policy recommendations on the role of gas in improving urban air quality.

**Timeline:**

- (a) Policy dialogue on the role of gas in improving urban air quality: April 2019.
- (b) Policy recommendations on the role of gas in improving urban air quality: December 2019.

**D. Renewable energy and natural gas as the best combination to enhance the energy efficiency in the whole energy system**

**Description:**

There are significant opportunities to increase energy efficiency throughout the entire energy system by considering natural gas with renewable energy sources. The goal of this activity is to take a wider perspective and consider the role of gas in improving the energy efficiency of the energy system, highlighting the comparative advantages of gas in terms of flexibility and efficiency and identifying its optimal combination with renewable energy (from the perspective of enhancing energy efficiency and decreasing emissions and energy's carbon footprint). The Group of Experts will cooperate with the Group of Experts on Cleaner Electricity Production from Fossil Fuels and the Group of Experts on Renewable Energy on this activity.

**Work to be undertaken:**

(a) The Group of Experts will examine the role of gas, including LNG, as an enabler for penetration of intermittent renewable energy sources. The Group of Experts will seek input from and cooperate with the Group of Experts on Cleaner Electricity Production from Fossil Fuels and the Group of Experts on Renewable Energy.

(b) Enagas will lead this activity drawing on its ongoing collaboration with the Sustainable Gas Institute and other stakeholders.

**Deliverables:**

- (a) Policy dialogue on synergies between renewable energy and natural gas.
- (b) Recommendations on improving interactions between natural gas and renewable energy sources.

**Timeline:**

- (a) Policy dialogue on synergies between renewable energy and natural gas: April 2019.
- (b) Recommendations on improving interactions between gas and renewable energy: December 2019.

**E. Emerging issues**

**Description:**

This activity is a scoping exercise on the role of biogas and biomethane, synthetic gas, power to gas, hydrogen, and other emerging concepts of the use of gas as part of the future energy system. This forward-looking activity may involve many contributors (IGU, European Biogas Association, hydrogen community, companies such as Audi, etc.), and may



involve collaboration with other groups of experts and other ECE subprogrammes and Divisions on topics such as comparative assessment of transportation options for mobility efficiency and climate mitigation

**Work to be undertaken:**

(a) The focus of the Group of Experts will be on the economic and environmental interplay between conventional gas and other emerging concepts (biogas, hydrogen, hythane) and long-term synergies.

(b) The secretariat will take the lead on this activity, until the Group of Experts identifies other champions.

**Deliverables:**

(a) Policy dialogue on the role of gas in the future energy system.

(b) Recommendations on the role of biomethane and synthetic gas in the future energy system.

**Timeline:**

(a) Policy dialogue on the role of gas: April 2019.

(b) Recommendations on the role of biomethane and synthetic gas: December 2019.

**F. Promoting sustainable and clean production, distribution, and consumption of gas and LNG in the ECE region**

**Description:**

An annual policy dialogue on the ways to promote the sustainable, secure and clean production, distribution, and consumption of gas and LNG in the ECE region. This activity stems from the core mandate given to the Group of Experts.

**Work to be undertaken:**

The Group of Experts, at its annual session and other occasional meetings and workshops held in the ECE region, will organize events to present and disseminate relevant policy papers on various gas topics on an ad hoc basis.

**Deliverables:**

(a) Annual policy dialogues on gas supply, transit and demand.

(b) Presentations at annual sessions of policy papers on topical issues, for in-depth consideration.

**Timeline:**

(a) Annual policy dialogues on gas supply, transit and demand: December 2019.

(b) Presentations at annual sessions of policy papers: December 2019.

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## Economic Commission for Europe Committee on Sustainable Energy Expert Group on Resource Classification

**Eighth session**  
Geneva, 25-28 April 2017

### Report of the Expert Group on Resource Classification

#### Addendum

#### Work Plan for the Expert Group on Resource Classification for 2018-2019

#### Prepared by the Expert Group on Resource Classification

1. Annex II of the United Nations Economic Commission for Europe (ECE) Executive Committee decision on matters related to the Committee on Sustainable Energy (ECE/EX/2013/L.15) mandates the Expert Group on Resource Classification to carry out concrete results-oriented activities related to the classification of energy and mineral reserves and resources.
2. According to its Terms of Reference, the Expert Group concentrates on the promotion, application, maintenance and further development of the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 (UNFC-2009), now renamed as the United Nations Framework Classification for Resources (UNFC).
3. The mandate for the Expert Group is approved until December 2019.

#### I. Concrete activities

4. The Expert Group proposes to undertake the following activities:

##### A. UNFC Principles, Specifications and Guidelines for its Application

**Description:** The Expert Group will ensure testing, review, ongoing maintenance and periodic updating based on the requirements of the UNFC principles, specifications and

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guidelines for its application to resources. UNFC can serve as a universal management system fully responsive and transformative to the needs of the 2030 Agenda for Sustainable Development and the greenhouse gas (GHG) reduction commitments of the Paris Agreement that entered into force in November 2016. In view of the current comprehensive application of UNFC for the classification and management of diverse energy and raw materials and anticipating new challenges in sustainable energy and raw material management, UNFC will be updated and revised in a new version. The Expert Group will explore and develop additional applications for UNFC to other natural resources as required, in particular, to address the challenges of the food-energy-water-land nexus.

**Work to be undertaken:** The Expert Group through its UNFC Revision Task Force will review the UNFC principles, specifications and guidelines for its application and address additions, modifications and updates required for a new version of UNFC. The revised version should take into account the needs of all resources and how it can aid the achievement of the Sustainable Development Goals. Comprehensive guidelines on social and environmental considerations should be incorporated into the revised version of UNFC. The Expert Group will encourage stakeholders to carry out bridging with other systems, in particular to national systems. As a number of international and national systems are now aligned with UNFC through bridging documents, support will be provided for consistent and coherent updates of UNFC, as well as the aligned systems, in a holistic and organic manner. The Expert Group will provide detailed guidelines on Competent Person(s) which are needed for financial reporting and disclosure functions.

**Deliverables:**

- (i) Revised version of UNFC incorporating Specifications for its Application.
- (ii) Continued development, update and governance of UNFC, including specifications, bridging documents and guidelines.

**Timeline:**

- (i) Plan and timeline for revised version of UNFC: September 2017.
- (ii) First draft of the revised version of UNFC: April 2018.
- (iii) Final draft of the revised version of UNFC: April 2019.

## **B. Technical Support**

**Description:** The Expert Group will maintain a Technical Advisory Group to provide assistance and advice on how to apply UNFC to various sectors and environments and to assist in mapping or/and bridging to other systems as and when requested, as well as to compile and analyze the results of such initiatives.

**Work to be undertaken:**

- (i) The Technical Advisory Group will perform in accordance with its terms of reference outlined in document ECE/ENERGY/GE.3/2013/5. The Bureau will review the terms of reference on an ongoing basis and should any modifications be proposed they should be submitted to the Expert Group for consideration.

**Deliverables:**

- (i) Report of the work of the Technical Advisory Group submitted annually to the Expert Group. The Technical Advisory Group will report to and keep the Bureau informed on its activities between annual meetings of the Expert Group.

(ii) Documents and/or white paper on the opportunities for and challenges of using UNFC in various sectors submitted to the Bureau for review and publication on the United Nations Economic Commission for Europe (ECE) website.

**Timeline:**

- (i) Annual report of the Technical Advisory Group to the ninth session of the Expert Group, 2018.
- (ii) Annual report of the Technical Advisory Group to the tenth session of the Expert Group, 2019.
- (iii) Documents and/or white paper on the opportunities for and challenges of using UNFC in various sectors: December 2019.

**C. Strengthening of Guidelines to Accommodate Environmental and Social Considerations in UNFC**

**Description:** The Expert Group through its Environmental and Social Considerations Task Force will propose guidance on accommodating environmental and social considerations in UNFC and the Generic Specifications for its Application.

**Work to be undertaken:** The Environmental and Social Considerations Task Force will work according to the Terms of Reference recommended by the Expert Group at its sixth session (EGRC-6/2015/INF.7). The work will be conducted in cooperation with as wide a range of UNFC stakeholders as possible. The Task Force will report to the Bureau of the Expert Group between annual sessions of the Expert Group.

**Deliverables:**

- (i) Document with detailed guidance on assessing the environmental and social considerations for the classification of resources according to UNFC and the successor version thereof, in particular, to ensure alignment with the Sustainable Development Goals and the commitments of the Paris Agreement on climate action. The guidance will be considered for inclusion in the revised version of UNFC.

**Timeline:**

- (i) Document with detailed environmental and social guidance to support the revision of UNFC: April 2018.
- (ii) Documents on technical, policy and legal aspects related to accommodating environmental and social considerations for the classification of resources in various sectors: April 2019.

**D. Application of UNFC to meet relevant Sustainable Development Goals and the commitments of the Paris Agreement**

**Description:** The Expert Group, through its Sustainable Development Goals Working Group, will develop documents that will support the effective use of UNFC to help attain the relevant Sustainable Development Goals and the commitments of the Paris Agreement. The work will be conducted in cooperation with other relevant stakeholders and international organizations.

**Work to be undertaken:** The Expert Group, will work to produce documents and other supporting materials such as case studies and white papers that will assist in the use of UNFC as an effective tool to aid the attainment of the relevant Sustainable Development Goals, as well as the reduction of GHGs arising from the development and production of energy and raw materials. The work will be conducted in cooperation with as wide a range of UNFC stakeholders as possible.

**Deliverables:**

- (i) Documents, including detailed guidance and case studies, on the effective use of UNFC to implement sustainable energy, raw material and related services that can support the attainment of relevant Sustainable Development Goals and reduce GHGs.
- (ii) Documents, including case studies to demonstrate the effectiveness of UNFC for the attainment of specific goals in energy and material flows.

**Timeline:**

- (i) Presentation of guidance to support revision of UNFC: April 2018 to ongoing.
- (ii) Presentation of one or more case studies: April 2018 to ongoing.
- (iii) Development of promotional material: April 2018 to ongoing.

## E. Application of UNFC to Petroleum Projects

**Description:** The Expert Group, through its Petroleum Working Group, will develop and update documentation that allows application of UNFC to petroleum projects.

**Work to be undertaken:** Aid in the preparation of mapping and bridging documents and detailed guidelines for application. The Working Group will report to the Bureau of the Expert Group between annual sessions of the Expert Group.

**Deliverables:**

- (i) Mapping and bridging documents to international and national systems.
- (ii) Guidelines for application to petroleum projects as appropriate.

**Timeline:**

- (i) Final bridging document between the Chinese Classification for Petroleum Resources/Reserves 2004 (CCPR-2004) and UNFC: April 2018.
- (ii) Draft mapping and bridging document between the Canadian Oil and Gas Evaluation Handbook (COGEH) and UNFC: following publication of the final draft of COGEH.

## F. Application of UNFC to Minerals Projects

**Description:** The Expert Group, through its Minerals Working Group, will develop additional documentation that supports the use of UNFC to classify various solid mineral projects.

**Work to be undertaken:** Aid in the preparation of mapping and bridging documents and detailed guidelines for application of UNFC to minerals. The Working Group will report to the Bureau of the Expert Group between annual sessions of the Expert Group.

**Deliverables:**

- (i) Guidelines for application on solid mineral projects as appropriate.
- (ii) Bridging documents as may be requested.

**Timeline:**

- (i) Final bridging document between the China Mineral Reserves and Resources Classification System (CMRRCS) and UNFC: April 2018.

- (ii) Draft mapping and bridging of the revised solid minerals classification system of the Russian Federation and UNFC: April 2019.

## G. Application of UNFC to Renewable Energy Projects

**Description:** The Group of Experts, through its Renewable Energy Classification Working Group, will continue to develop documentation that will allow UNFC to be applied to renewable energy resources. The work will be conducted in cooperation with other relevant stakeholders and international organizations.

**Work to be undertaken:**

- (i) Update generic specifications for renewable energy as may be required.
- (ii) Finalize and publish specifications for the application of UNFC to bioenergy.
- (iii) Develop specifications for the application of UNFC to solar energy.
- (iv) Develop specifications for the application of UNFC to hydropower.
- (v) Develop specifications for the application of UNFC to wind energy.
- (vi) Develop guidelines and case studies for the application of UNFC to renewable energy.

The Working Group will report to the Bureau of the Expert Group between annual sessions of the Expert Group.

**Deliverables:**

- (i) Documentation that allows UNFC to be applied to renewable energy resources, including updated generic specifications, specifications for bioenergy, solar, hydropower and wind energy and guidelines required for applications. All documentation to be subject to review by the Expert Group and public consultation.
- (ii) A series of case studies on the application of UNFC to geothermal energy, bioenergy, solar energy, hydropower and wind energy.

**Timeline:**

- (i) Final bioenergy specifications – April 2018.
- (ii) Updated generic specifications for renewable energy: April 2018 to ongoing.
- (iii) Draft specifications for the application of UNFC to solar energy: April 2018.
- (iv) Draft specifications for the application of UNFC to wind energy: April 2019.
- (v) Draft specifications for the application of UNFC to hydropower: April 2019.
- (vi) Guidelines and case studies for the application of UNFC to renewable energy: April 2018 to ongoing.

## H. Application of UNFC to Injection Projects

**Description:** The Expert Group, through its Injection Projects Working Group, will develop additional documentation to support the use of the Specifications for the Application of UNFC to Injection Projects for the Purpose of Geological Storage (for example, storage of carbon dioxide, natural gas storage or other fluid waste disposal projects).

**Work to be undertaken:** Provide detailed guidelines and case studies for application. The Working Group will report to the Bureau of the Expert Group between annual sessions of the Expert Group.

**Deliverables:**

- (i) Guidelines for the application of UNFC to injection projects as appropriate.
- (ii) Considerations for application of UNFC to carbon capture and storage projects.

**Timeline:**

- (i) Guidelines and case studies on injection projects: April 2018 to ongoing.
- (ii) Document or white paper on the application of UNFC to carbon capture and storage projects: April 2019.

## I. Application of UNFC to Nuclear Fuel Resources Projects

**Description:** Classification of nuclear fuel resources is currently undertaken according to the Organisation for Economic Co-operation and Development (OECD) Nuclear Energy Agency (NEA)/International Atomic Energy Agency (IAEA) 'Red Book' classification system. The 'Red Book' is now aligned with UNFC through a Bridging Document (ECE/ENERGY/2014/6). Guidelines and case studies to apply UNFC to the classification of identified and predicted resources of uranium and thorium have been developed.

**Work to be undertaken:** The Nuclear Fuel Resources Working Group will produce a document on the application of UNFC for commissioning and implementing uranium projects. The Working Group will report to the Bureau of the Expert Group between annual sessions of the Expert Group.

**Deliverables:**

- (i) Draft document on the application of UNFC for commissioning and implementing uranium projects.
- (ii) Review submitted case studies on the application of UNFC to uranium and thorium projects.
- (iii) Guidelines for application on nuclear fuel projects as appropriate.
- (iv) Bridging documents as may be requested.

**Timeline:**

- (i) Case studies reviewed: January 2018 to ongoing.
- (ii) Draft document on the application of UNFC for commissioning and implementing uranium projects: April 2018.

## J. Application of UNFC to Anthropogenic Resources Projects

**Description:** The Expert Group, through its Anthropogenic Resources Working Group, will develop documentation that will allow UNFC to classify the recovery of secondary resources and the management of anthropogenic resources. Anthropogenic resources, which are primarily mining residues, commodity processing residues and other wastes, have assumed importance in the current scenarios related to the Sustainable Development Goals in which the strategy to reduce, reuse and recycle residues is being emphasized. Many valuable and critical elements, such as rare and rare earth elements and base metals, could be recovered profitably from such anthropogenic resources. However, there is currently no



international standard on how these ‘secondary resources’ could be classified, managed and reported.

**Work to be undertaken:** Provide specifications, detailed guidelines and case studies for application of UNFC to anthropogenic resources. The Working Group will report to the Bureau of the Expert Group between annual sessions of the Expert Group.

**Deliverables:**

- (i) Specifications and guidelines for application of UNFC to anthropogenic resources projects.
- (ii) Case studies for application to anthropogenic resources projects.

**Timeline:**

- (i) Draft specifications for application of UNFC to anthropogenic resources: April 2018.
- (ii) Final specifications for application of UNFC to anthropogenic resources: April 2019.
- (iii) Guidelines and case studies: April 2018 to ongoing.

## **K. Application of UNFC to management of other resources and cross-cutting activities**

**Description:** Upon request, the Expert Group will explore and develop other applications of UNFC, provided such work does not compromise the Expert Group’s ability to fulfil its other obligations. The Expert Group will develop documentation that will allow UNFC to classify and manage other resources (for example, groundwater, coal mine methane, energy from wastes). A number of these activities will be undertaken as cross-cutting activities and will require extrabudgetary funding and/or in-kind contributions.

**Work to be undertaken:** Provide background notes, draft specifications and preliminary case studies for application of UNFC to other resources.

**Deliverables:**

- (i) Concept notes and preliminary specifications for application of UNFC to other resources.
- (ii) Case studies for application of UNFC to resources.

**Timeline:**

- (i) Concept notes on suggested applications and preliminary specifications for application of UNFC to other resources: April 2018 (subject to identification of extrabudgetary resources and/or in-kind contributions).
- (ii) Case studies for application of UNFC to resources: April 2019 (subject to identification of extrabudgetary resources and/or in-kind contributions).

## **L. Support to Financial Reporting**

**Description:** UNFC has been designed to meet, to the extent possible, the needs of all applications pertaining to financial reporting standards, particularly those promulgated by the International Accounting Standards Board (IASB).

**Work to be undertaken:** The Bureau of the Expert Group will monitor relevant developments in financial reporting globally that might have an impact on reserves and resources.

**Deliverables:** Annual status report submitted to the Expert Group on any changes or developments in the financial reporting sector globally with implications or potential implications for UNFC and the work of the Expert Group.

**Timeline:** Status report on financial reporting issues of relevance to reserves and resources and the work of the Expert Group submitted to the Expert Group annually: April 2018 and April 2019.

## M. Capacity-building

**Description:** UNFC applications include diverse energy, raw material and services sectors with projects that could operate in different geographical locations. UNFC Evaluators and other users need to be trained on an ongoing basis and made aware of any changes to the framework and its applications. Subject to the availability of extrabudgetary resources, the Expert Group will develop capacity-building programmes on UNFC using, in particular, the capabilities of industry professional societies and associations.

Subject to the availability of extrabudgetary resources, the Expert Group and the Bureau will provide technical support for regional and national advisory services and international peer review missions to ECE and other United Nations Member States. Any work requested in a non-ECE member State would need to be undertaken in cooperation with the relevant regional commission. In cooperation with the Economic Commission for Africa (ECA), the Expert Group will further support the adoption of UNFC as the common management system for all resources in Africa. Capacity-building activities will be subject to the availability of extrabudgetary funding and in-kind contributions.

**Work to be undertaken:**

- (i) Subject to the availability of extrabudgetary resources, organize national and regional workshops on UNFC.
- (ii) Subject to the availability of extrabudgetary resources provide support to projects and organizations working on the application of UNFC, for example, the African Minerals Development Centre (AMDC)

**Deliverables:**

- (i) Subject to the availability of extrabudgetary resources, national and regional workshops on UNFC: 2018 and 2019.
- (ii) Report on any capacity-building activities to be delivered annually to the Expert Group.
- (iii) Report on any capacity-building support in Africa undertaken in collaboration with AMDC and ECA to be delivered annually to the Expert Group.

**Timeline:**

- (i) National and regional workshops on UNFC: 2018 and 2019.
- (ii) Annual reports on capacity-building activities presented to the Expert Group: April 2018 and April 2019.

## **N. Promotion and Outreach**

**Description:** The Expert Group through its Communications Working Group, formerly the Communications Sub-Committee (Terms of Reference are contained in Annex I to ECE/ENERGY/GE.3/2014/6), will implement the agreed promotion and outreach strategy. It is noted that the work of the Communications Working Group would be more effective if extrabudgetary resources were available.

**Work to be undertaken:**

- (i) Develop, maintain and update standard presentations on UNFC.
- (ii) Conduct web-based promotional and educational programmes, including webinars.
- (iii) Develop an online application tool for UNFC.
- (iv) Implement the stakeholder engagement and outreach strategy.
- (v) Develop social media engagement strategy.
- (vi) Develop standard curriculum for national and regional workshops.
- (vii) Develop web-based educational programmes.
- (viii) Support curriculum development for educational institutions.

The Working Group will report to the Bureau of the Expert Group between annual sessions of the Expert Group.

**Deliverables:**

- (i) Annual report on the education and outreach activities.
- (ii) Updated standard presentations on UNFC.
- (iii) Webinars on UNFC.
- (iv) Online application tool for UNFC.
- (v) Standard curriculum for national and regional workshops.
- (vi) Web-based educational programmes on UNFC.

**Timeline:**

- (i) Annual reports of the Communications Working Group presented to the Expert Group: April 2018 and April 2019.
- (ii) Updated standard presentations on UNFC posted to the ECE website: April 2018 and ongoing.
- (iii) Webinars on UNFC: 2018 and 2019.
- (iv) Online application tool for UNFC: December 2018.
- (v) Standard curriculum for national and regional workshops: April 2018 and ongoing.
- (vi) Web-based educational programmes on UNFC: April 2019.

**O. Extrabudgetary Resource Mobilization**

**Description:** Development, promotion of and capacity building on UNFC is dependent upon significant voluntary contributions (man-hours, travel, expertise, sponsorship) and it cannot be expected to be sustainable in the longer term. Extrabudgetary resources are required to support the Expert Group's work, including capacity-building, advisory services and consultations.

**Work to be undertaken:** The Resourcing Working Group will update the UNFC resourcing plan and the estimated funding requirement to maintain the support needed for the development and maintenance of UNFC. The Working Group will identify potential donors and develop and implement a coordinated plan to approach them for support. As the application of UNFC becomes widely accepted in different energy and raw material sectors,

the need for advisory services, international peer review, expert services and capacity-building for national institutions will also increase. Support to non-ECE member States can only be provided with extrabudgetary funds. The Working Group will report to the Bureau of the Expert Group between annual sessions of the Expert Group.

**Deliverables:**

- (i) Extrabudgetary resourcing action plan aligned with the resourcing strategy of ECE.
- (ii) Report and update to the Expert Group annually on the status of implementation of the extrabudgetary action plan.

**Timeline:**

- (i) Extrabudgetary action plan for 2018–2019: April 2018.
  - (ii) Update on resource mobilization efforts: April 2018 and April 2019.
-