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**Meeting with the Chair
of the Committee on Sustainable Energy
Report by the Chair**

Report by the Chair of the Committee on Sustainable Energy

The Chair of the Committee on Sustainable Energy (the Committee), Mr. Jürgen Keinhorst, is pleased to submit his report to the 125th meeting of the Executive Committee (EXCOM) on 30 November 2022. At its 120th meeting (Geneva, 26 January 2022), EXCOM approved the programme of work of the sustainable energy subprogramme for 2022.

I. Introduction

1. This report outlines the main achievements of the Committee on Sustainable Energy (the Committee) and its subsidiary bodies in the period from December 2021 to October 2022, as well as major activities planned for the remainder of 2022 and 2023. More information is contained in the report of the thirty-first session of the Committee, held on 21-23 September 2022 in Geneva in hybrid mode (ECE/ENERGY/143). Activities that took place in October after document ECE/ENERGY/143 was issued are described below.

2. As indicated in the Report by the Chair at the 119th meeting of the Executive Committee (EXCOM) (Informal document 2021/30), the activities of the sustainable energy subprogramme, which support the Committee, fall into four broad categories: (i) sustainable resource management; (ii) deep transformation of the energy system; (iii) reducing the environmental footprint of the energy sector; and (iv) support to member States in attaining energy for sustainable development (including regional cooperation, projects, the pathways programme, and engagement with UN Energy processes). The Committee oversees implementation of the following flagship activities: Pathways to Sustainable Energy; Methane Management in Extractive Industries; High-Performance Buildings Initiative; and the International Forums on Energy for Sustainable Development.

3. The Committee activities in the reporting period are based on its Programme of work for 2022, as approved by the Committee at its thirtieth session on 22-24 September 2021 (ECE/ENERGY/2021/1).

4. The current Committee organizational structure with its subsidiary bodies is presented in Annex I.

II. Achievements since the last report to EXCOM

5. Since December 2021 when the Chair gave his last report at the 119th meeting of EXCOM, the Committee has worked to accelerate and deepen the transition to sustainable energy in the United Nations Economic Commission for Europe (UNECE) region in support of the 2030 Agenda on Sustainable Development (2030 Agenda) and the Paris Agreement commitments.

6. The Committee has implemented many of the activities identified and endorsed in the *Revised strategic review of the United Nations Economic Commission for Europe sustainable energy subprogramme* (ECE/ENERGY/2021/4) and described in the Programme of Work for 2022 of the sustainable energy subprogramme (ECE/ENERGY/2021/1), particularly those related to: energy efficiency; sustainable resource management; hydrogen; just transition; methane management; carbon neutrality; renewable energy; digitalization; and energy security.

7. The Committee has produced many tangible products and accomplishments, delivering on its commitments, despite a range of challenges that were beyond the control of the Committee or the subprogramme:

(a) In Q2 of 2022, the Director of the Sustainable Energy Division (a D-1 position) retired and the Chief of the Sustainable Energy Section (a P-5 position) vacated her position. The Division filled the P-5 position temporarily while the remaining Chief of the Energy Industry Section (a P-5) assumed the role of Acting Director while also retaining her Chief of Section duties for four months. A new Director started in October 2022;

(b) The outbreak of war in the region, continued COVID-19 restrictions, supply chain challenges and climate change impacts have exacerbated the challenges of meeting the sustainability and climate change mitigation goals for member States. The gaps between commitments that countries have made and what is needed to achieve the 2030 Agenda and Paris Agreement commitments remain substantial.

8. In light of the urgent and growing demand from member States for the sustainable energy subprogramme to support their efforts to build more resilient and sustainable energy systems and modernize resource management systems in the region, and recalling that the Regular Budget support for this activity, including staffing, has remained minimal and unchanged for the past many years, the Committee “decided to recommend to the Commission that it consider requesting the Economic and Social Council (ECOSOC) consider asking the Secretary-General to strengthen the secretariat’s role in supporting member States in building resilient energy systems and modernizing resource management systems, as well as outreach efforts” (ECE/ENERGY/143, paragraph 40).

9. The theme of the thirty-first session of the Committee was *Energy Security, Resilience and Net Zero: Tangible Actions to Deliver a Sustainable Energy Future*. The session took place during the same week as the UN General Assembly and Clean Energy Ministerial and just over one month before the 27th Conference of the Parties under the UN Framework Convention on Climate Change (UNFCCC). The session featured a high-level panel where member States shared their current needs and priorities related to building energy system resiliency given the challenges they are facing. The session also included discussions, recommendations and presentations of country actions that build resiliency, ensuring energy security and affordability in the UNECE region while meeting the objectives of the 2030 Agenda and the Paris Agreement, including net zero.

10. During the high-level segment, member States noted the vulnerability of their energy systems and significant challenges related to access to affordable, reliable, sustainable and modern energy services. A number of the member States noted the impact of the conflict in Ukraine on their energy systems. Representatives noted the critical need to consider achieving sustainability as the shared goal, and some highlighted the negative effects on air quality, water, health and climate change that increase because of the use of fossil fuels. They noted the need to consider long-term, social, economic and environmental priorities when making energy policy decisions and to identify and implement options that help achieve the set goals; current climate goals should not be compromised by a focus upon short-term energy challenges. They further noted the key role of circular economy in the energy transition and climate neutrality.

11. A resilient energy system ensures that energy makes an optimal contribution to a country’s social, economic, and environmental development and includes considerations of energy security, which strengthens energy independence through interconnectivity and trade, affordability, which reduces the costs of electricity, heating, cooling, and transport, and environmental sustainability, which lowers the carbon footprint and enhances efficiency across the energy supply chain. Member States recognized that the Committee and its six subsidiary bodies are in a unique position to support the building of resilient energy systems in the UNECE region.

12. The Bureaux of the six subsidiary bodies recommended a number of options and technical solutions that member States could consider in order to build resilient energy systems in the region. After a facilitated discussion between member States and technical experts on potential actions the Committee could focus on to support a rapid increase in the resiliency of energy systems in the UNECE region most effectively, the Committee agreed to prioritize and implement special activities that help member States coordinate and promote efforts related to energy resilience across the UNECE region, providing an *UNECE Platform on Resilient Energy Systems* for inclusive dialogue.

13. The Committee had numerous key cross-cutting achievements since the last report to EXCOM in December 2021. Specifically, it:

- Hosted one Committee session, six expert group sessions, 73 bureau meetings and thirty workshops, trainings and webinars, including cross-expert group workshops, reaching more than 3,000 attendees including nearly 1,000 women
- Engaged in 19 missions in ten member States, providing 52 days of onsite support, training more than 1,600 experts (including more than 725 women) via 100 meetings, workshops and trainings, and having individual interactions with more than 180 officials and experts
- Launched a new “UNECE Sustainable Energy” page on LinkedIn that the subprogramme uses to facilitate the spread of information quickly and more effectively to member States about products, events and resources

- Organized several side events and activities to take place during the twenty-seventh UNFCCC Conference of the Parties (COP27) in Sharm El-Sheikh, Egypt, 6-18 November 2022 (see the Annex II for a list of events) and
- Increased collaboration across subsidiary bodies on projects and outputs, for example:
 - Produced the informal document “Building Resilient Energy Systems: Technical Considerations and Actions for Achieving Greater Energy Security, Affordability and Net-zero in the ECE Region” (CSE-31/2022/INF.2) in response to the crises in the region. This timely document was jointly developed with input from all six Bureaux of the subsidiary bodies and recommended a number of options and technical solutions member States could consider to build resilient energy systems in the region
 - Developed the document “Digitalization: Accelerating the Electricity System Transformation”. This document was produced jointly by the Task Force on Digitalization in Energy of the Group of Experts on Energy Efficiency and the Group of Experts on Cleaner Electricity Systems”
 - Hosted a joint workshop of the Group of Experts on Energy Efficiency and the Group of Experts on Renewable Energy on "Improving the Resilience of Energy Systems through Energy Efficiency and Renewable Energy: Demand-Side Perspective and Cross-Sectoral Approach" (Geneva and online, 5 October 2022)

14. In addition to the cross-cutting accomplishments listed above, specific Committee achievements related to the individual priority areas of work include:

(a) Sustainable Resource Management

- Accelerated development and implementation of the United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS) in UNECE member States under the extrabudgetary project funded by the European Commission project “Supporting UNECE member States in the development and implementation of UNFC and UNRMS” (2020-2024). This project is in its third year of implementation. The last twelve months have seen a specific focus on application of UNFC to minerals, including critical raw materials, and anthropogenic resources, in countries of the European Union.
- Developed eight substantive UNFC documents, including (i) UNFC Europe Guidance (ECE/ENERGY/GE.3/2022/9), (ii) updated geothermal specifications (ECE/ENERGY/GE.3/2022/18), (iii) Social and environmental governance guidelines (ECE/ENERGY/GE.3/2022/7), (iv) UNFC Coal Bed Methane Guidelines (ECE/ENERGY/GE.3/2022/8), (v) Commercial Assessments guidance (ECE/ENERGY/GE.3/2022/10), (vi) Guidance Note on Competency Requirements (ECE/ENERGY/GE.3/2022/4), and (vii) updated Bridging Documents to Chinese minerals and (viii) petroleum systems (ECE/ENERGY/GE.3/2022/16 and ECE/ENERGY/GE.3/2022/16).
- Developed Draft UNRMS: Principles and Requirements (ECE/ENERGY/GE.3/2022/6). Additionally, three concept notes were developed on Systems approach to enabling the resource as a service paradigm through blockchain technologies (ECE/ENERGY/GE.3/2022/5), Sustainable management of critical raw materials required for the low-carbon energy transition (ECE/ENERGY/2022/6) and Resources as a Service: A catalyst to accelerate the energy transition, safeguarding climate action targets within the circular economy (ECE/ENERGY/2022/7).
 - Organized two online workshops to discuss and further develop UNRMS, with a special emphasis on the management of critical raw materials and the concept of “Resources as a Service” (26 November 2021 and 7 September 2022)

- Emphasis was provided for developing UNRMS tools required for the sustainable management of critical raw materials, including the progress towards a circular economy.
 - Organized, in cooperation with the UK Permanent Mission in Geneva, an event on “Future-proofing Supply of Critical Minerals for Net-Zero: Cross-sectoral Perspectives” (Geneva, Switzerland and online, 23 November 2021). This briefing and discussion featured leading specialists on how to secure a resilient, sustainable supply of critical minerals for the transition to a net-zero economy. Speakers and participants explored how minerals are mined, distributed, tracked through supply chains, and re-used and recycled effectively and ethically for a circular economy
 - Organized the pre-COP27 UNECE Regional Forum on Climate Initiatives to Finance Climate Action and the SDGs with the focal theme of “Regional cooperation on enhancing sustainable management and financing for the critical raw materials required for low-carbon transitions” (Geneva, Switzerland and online, 17 October 2022). A pipeline of indicative projects that can potentially support the low-carbon energy transition was prepared
 - Organized, in cooperation with all the Regional Commissions, UNDP, UNEP, UK, Egypt and the African Union Commission, an official side event to take place at COP27 on “A global sustainability framework for the critical raw materials required for low-carbon transitions”
 - Prepared, in collaboration with UNDP and UNEP, a briefing note for the UN Secretary-General to use in COP27 messages on critical minerals required for the energy transition
 - Developed a study on Energy and Mobility as a Service with focus on CRMs in Ukraine. The study was prepared in collaboration with the UNECE Sustainable Transport Division
- UNECE, the African Minerals Development Centre (AMDC) and the Geological Society of Africa organized a session entitled “The Role of Resource Management Tools in the Raw Materials Value Chain in Africa and Beyond” during the 7th EU-AU Business Forum 2022 (Brussels, Belgium and online, 18 February 2022). The workshop presented initiatives to raise awareness on universal sustainable resource management systems and the potential to integrate EU and African value chains through shared capacity-building, training, and implementation of UNFC.
- Provided strong support to the establishment of the United Nations Working Group on Transforming the Extractive Industries for Sustainable Development Co-chaired by the Regional Commissions (on an annual rotation basis, with UNECE Co-chairing in 2022), UNDP and UNEP. The Working Group is tasked with implementing the proposals included in the United Nations Policy Brief on “Transforming the Extractive Industries for Sustainable Development,” published in 2021, which recommends implementation of UNFC and UNRMS. The Sustainable Energy Division is in the lead from UNECE in supporting this Working Group and does so in cooperation with the UNECE Environment and Economic Cooperation and Integration Divisions.
- Conducted training sessions with European decision-makers on UNFC and UNRMS:
 - (i) UNFC training for European Institute of Technology on Raw Materials (EIT), European Raw Material Alliance (ERMA), and European Battery Alliance (EBA), online, 2-3 February 2022.
 - (ii) UNFC training for EU Member States, online, 5-6 April 2022.
- Created a Network of Practitioners Europe (NoPE) to build a strong European network of practitioners to build capacity on, develop and implement UNFC and UNRMS.

- Developed case studies on a range of applications of UNFC, including in Austria, Bosnia and Herzegovina, Germany, Kazakhstan, Kyrgyzstan, Norway, Serbia, Sweden, Tajikistan, Ukraine and United Kingdom. A study on geothermal resources in Albania is under progress. Namibia and Uganda are working on additional UNFC case studies.
- Fostered adoption of UNFC and UNRMS by the African Union. In February 2022, African Heads of State endorsed the UNFC and UNRMS for Africa for continent-wide application under the work programme of the African Union Commission led by AMDC. Special emphasis will be given to sustainable production of critical minerals.
- UNFC was mandated as the standard for geothermal energy reporting in Queensland, Australia in September 2022.¹
- The Central American Integration System (SICA) is building capacity to apply UNFC for geothermal energy and other resources in SICA and considering mandating the use of UNFC for geothermal energy and other resources. The work is supported by the Federal Institute for Geosciences and Natural Resources (BGR), German Agency for International Cooperation GmbH (GIZ) and the International Geothermal Association (IGA). SICA Member States are Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and the Dominican Republic as an Associated Member State.
- Collaborated with all the Regional Commissions and, in particular, enhanced cooperation with the UN Economic and Social Commission for Asia and the Pacific (ESCAP) and the UN Economic and Social Commission for West Asia (ESCWA).
- Enhanced communications activities, including development of training materials, publications, as well as press releases and social media posts to raise the visibility of the subprogramme's work on sustainable resource management.

(b) Gas and Hydrogen

- Continued implementation of the extrabudgetary project “Improving capacities of the UNECE member States to decarbonize the transport sector by increasing the use of natural gas as a motor fuel”, funded by the Russian Federation. The project produced a comprehensive study including (i) assessment of the state of development of CNG and LNG refueling and storage infrastructure in 14 countries; (ii) case studies with effective regulatory, legal, economic, technical, and public perception promotional activities to increasing the share on CNG/LNG vehicles in the light- and heavy-duty road fleets; (iii) life cycle analysis of competing fueling options; (iv) comparative analysis of safety requirements for refueling stations as one of the most serious barriers to market development; (v) case studies on CNG/LNG refueling infrastructure. As a result of this analysis, recommendations on removing regulatory, legal, economic, technical and public perception measures aimed at promoting the use of gas in transportation have been developed. The findings of the study and its recommendations were presented at various sub-regional and national fora and workshops during 2022.
- Recommended to UNECE member States to investigate integrated hydrogen production, transport, and consumption in the UNECE region and to examine regional potentials for hydrogen production and use at a local scale.
- Started implementation of the extrabudgetary project “Sustainable hydrogen production in the UNECE region and its role in the development of a hydrogen ecosystem and export potential”, funded by the Russian Federation. This is the first time that work on hydrogen at this scale has been carried out in the subregion. The project has already evaluated the national capacities of nine countries (Azerbaijan, Armenia, Belarus, Kazakhstan, Kyrgyzstan, Republic of Moldova, Tajikistan,

¹ <https://unece.org/media/press/370359>

Turkmenistan, and Uzbekistan) to develop hydrogen ecosystems, including in the regions with resource and technology constraints.

- The Committee held a webinar in December 2021 and a Workshop in March 2022; and the project has led to the creation of a subregional hydrogen community that has been actively involved
- The Group of Experts on Gas concluded in March 2022 that a hydrogen classification based on colours has limited value in international trade. As a follow up, the Group drafted the document Comprehensive and science-based terminology, classification and taxonomy for hydrogen (ECE/ENERGY/2022/8) which illustrates the need to develop a classification for hydrogen that goes beyond colours and addresses the full life cycle of hydrogen production and transport.
- Hosted the first in a series of energy resilience dialogues, “Energy system resilience: The future of gas supply in Europe: Responses to possible interruptions in the gas supply,” 18 October 2022, online and in-person, to explore: possible interruptions in the gas supply to Europe; rebalancing Europe’s energy gas supplies; mapping alternative supplies for natural gas; and security of supply and climate agenda.

(c) Cleaner Electricity Systems, Pathways Programme and Carbon Neutrality

- Conducted 15 capacity-building workshops and multi-stakeholder dialogues about the potential of low- and zero-carbon technologies and their interplay to attain carbon neutral energy systems in UNECE region. More than 150 participants from Central Asia, the Caucasus and Western Balkans attended.
- Promoted the findings on Carbon Neutrality at high-level international events, including the UN High-Level Dialogue on Energy (New York, USA, September 2021), COP26 (Glasgow, Scotland, 31 October – 13 November 2021) and the first Almaty Energy Forum (Almaty, Kazakhstan, 1-3 November 2021).
- Launched the online Carbon Neutrality Toolkit in September 2022. The toolkit includes three technology briefs on CCUS, hydrogen and nuclear power, one brief on carbon neutral energy intensive industries, and three publications: (i) Geologic CO₂ storage in Eastern Europe, Caucasus and Central Asia; (ii) Technology Interplay under the Carbon Neutral Concept (ECE Energy Series No. 72); and, (iii) Life Cycle Assessment of Electricity Generation Options (ECE Energy Series No. 73).

(d) Energy Efficiency:

- Developed five studies, reports and documents, in addition to the joint report cited earlier, to support decision-making by member States: (i) “Report on enhancing national capacities to develop and implement energy efficiency standards for buildings in the UNECE region” (ECE/ENERGY/GE.6/2022/3); (ii) “Addressing behavioural barriers to Energy Digitalization” (ECE/ENERGY/GE.6/2022/5); (iii) “Policy discussion – Challenges of big data and analytics-driven demand-side management” (GEEE-9/2022/INF.3); (iv) “Potential for Improving Industrial Energy Efficiency in Kazakhstan and Ukraine” (GEEE-9/2022/INF.2); and (v) “Leveraging Financial Mechanisms for Increased Investment in Energy Efficiency” (GEEE-9/2022/INF.4).
- Conducted seven trainings and workshops in addition to the joint workshop cited earlier, including:
 - Two training workshops conducted with support from the Regional Advisory Services, on energy efficiency standards in buildings and high-performance buildings (Republic of Moldova, 20-21 January 2022; Yerevan, Armenia and online, 11 March 2022)
 - Four online workshops on improving energy efficiency in the industrial sector in the UNECE region (1 December 2021, 10 February 2022, 4 April 2022, and 16 June 2022) reaching an audience of around 100

industry experts. These events served to enhance involvement of industry in achieving more sustainable and energy-efficient production, logistics, and consumption and

- Roundtable for policymakers from UNECE member States, on unlocking energy efficiency potential through digitalization, at which the findings, conclusions and recommendations from the aforementioned studies were presented and discussed (4 October 2022, in the framework of the ninth session of the Group of Experts on Energy Efficiency). The aim was to better understand the opportunities and challenges that digitalization represents across the energy system under national circumstances, to tailor future thematic activities to better respond to country needs and to develop a systematic roadmap embedding digitalization in the work of the Committee on Sustainable Energy and its subsidiary bodies
- Improved coordination of International Centres of Excellence on High-Performance Buildings (ICE-HPB) and co-hosted, in cooperation with ICE-HPB and international partners, two thematic side-events at the Global Clean Energy Action Forum (Pittsburgh, 21-23 September 2022): “Clean Energy, Climate and the Built Environment: Ensuring a Healthy, Just and Sustainable Future for All” and “Towards a Buildings Breakthrough: Raising the Performance of the Built Environment”.
- Collaborated with the UNECE Sustainable Transport Division and the Group of Experts on Cleaner Electricity Systems, contributed to the document “Taking stock of new trends towards electric vehicle charging infrastructure” (ECE/TRANS/WP.5/2022/2) and participated in the “Inter-regional Workshop on Electrification of Mobility - Challenges and opportunities for transport, energy and spatial planning” (5 September 2022) of the UNECE Working Party on Transport Trends and Economics.
- The mandates of the Task Force on Industrial Energy Efficiency and the Task Force on Digitalization in Energy were extended by the Committee from 2023-2024. The mandate of the Joint Task Force on Energy Efficiency Standards for Buildings is until 2023.

(e) Methane Management and Just Transition

- Published the “Best Practice Guidance for Effective Management of Coal Mine Methane at National Level: Monitoring, Reporting, Verification and Mitigation” (ECE/ENERGY/139 and ECE Energy Series No. 71).
- Hosted four meetings of its online series “Methane Mondays”. This initiative facilitates an open discussion on methane-related issues between relevant stakeholders operating in that field.
- Conducted and posted online seven interviews with experts presenting their views on key topics related to methane management.
- Following approval by EXCOM, expanded the mandate of the Group of Experts on Coal Mine Methane to include just transition and changed the name of the Group to the Group of Experts on Coal Mine Methane and Just Transition.
- Established cooperation on just transition with local communities in mining areas in Ukraine.
- Organized a technical session on Coal Mine Methane - regulations, monitoring, capture and use at the XXXI School of Underground Mining (Cracow, Poland, 12 April 2022).
- Hosted a joint side event on just transition with the International Energy Agency (IEA), Centre for Strategic and International Studies (CSIS), and Green Building

Alliance (GBA) at the Global Clean Energy Action Forum (Pittsburgh, Pennsylvania, USA, 23 September 2022).

- Delivered a session on Policies and Practices in Methane Regulations: Coal Sector’s perspective at the Global Methane, Climate and Clean Air Forum (Washington, D.C., USA, 27 September 2022).

(f) Renewable Energy

- Hosted four Renewable Energy Hard Talks in Albania, Georgia, Republic of Moldova and Serbia. All four countries continue to progress in increasing renewable energy use. This progress includes creating the necessary regulatory framework and adopting targets, policies and regulations, including on Net Energy Metering mechanisms. The Governments of the four countries shared a range of energy challenges, which could become drivers for renewable energy deployment as the countries embrace a more active approach through renewable energy policies.
- Organized an online Renewable Energy Course that took place from November-December 2021. This online course, run by UNECE, MASHAV and the Arava Institute for Environmental Studies, provided an opportunity for government officials and mid-level professionals from the public and private sectors to gain knowledge about the use of renewable energy technologies as a catalyst for regional development.
- Implemented the RE-Uptake project with dena (German Energy Agency) and REN21. In addition to the four Renewable Energy Hard Talks, a report was prepared on the status of renewable energy in UNECE member States, and to accurately identify key factors that determine the pace of the uptake of renewable energy in each member States, ECE/ENERGY/GE.7/2022/4 – Status and Perspectives for Renewable Energy in the UNECE region.
- Launched the UNECE Renewable Energy Status Report 2022² on 14 September 2022. This report and flagship activity of the Group of Experts on Renewable Energy was prepared jointly by the Renewable Energy Policy Network for the 21st Century (REN21) and UNECE. The report provides a comprehensive overview of the current status of renewable energy and energy efficiency trends in Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kosovo, Kyrgyzstan, Republic of Moldova, Montenegro, North Macedonia, the Russian Federation, Serbia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan (ECE/ENERGY/GE.7/2022/3 – Renewable Energy Status Report 2022 - Key findings).
- Facilitated an exchange of information on policies, experiences and good practices in countries of the region during the annual session of the Group of Experts on Renewable Energy, 6-7 October 2022, including on the REN21 UNECE Renewable Energy Status Report, on the outcome of the four Renewable Energy Hard Talks, on water-energy nexus challenges, on bioenergy, on the potential of green hydrogen and on the role of women in the energy sector. A focused discussion took place on renewable energy and infrastructure development in Ukraine.
- The Group of Experts on Energy Efficiency and the Group of Experts on Renewable Energy jointly organized a workshop on “Improving resilience through energy efficiency and renewable energy: a demand side perspective and cross-sectoral approach” (Geneva, Switzerland and online, 5 October 2022).

² <https://unece.org/media/press/370569>

III. Major activities planned for 2023 and beyond

15. **Resilient Energy Systems.** As noted previously, the Committee called on member States to continue, expand and increase international policy dialogue and cooperation on efforts to build resilient energy systems in the region that ensure access to affordable, reliable, sustainable and modern energy for all (Sustainable Development Goal (SDG) 7) and that help reduce greenhouse gas (GHG) emissions and the carbon footprint of the energy sector in the region.

16. As such, the Committee agreed to prioritize and implement special activities that help member States coordinate and promote efforts related to energy resilience across the UNECE region, providing an **ECE Platform on Resilient Energy Systems** for inclusive dialogue. In the coming months, the Bureau of the Committee, in cooperation with the secretariat, will develop a work plan for the special activities to be organized under the Platform that were identified at the session and can be done with the existing budget plus a proposed budget for additional activities identified, post these to the website and report on progress at the thirty-second session of the Committee. Based on the discussion at the thirty-first session of the Committee, the cross-expert group types of activities under this category of special activities will likely include:

- (a) Hosting dialogues to facilitate an exchange among member States, academia, technical experts, industry, and others on energy system resiliency;
- (b) Increasing awareness on resiliency-related analyses and actions that can enhance access to affordable, reliable, sustainable and modern energy for all, including increased energy efficiency, renewable energy, sustainable resource management and climate financing;
- (c) Helping member States with the selection and implementation of effective policies that move to carbon neutrality and net zero across the UNECE region; In particular, working directly with member States in Central Asia, if resources are available;
- (d) Expanding efforts to reduce methane emissions, increasing short-term energy supply and eliminating methane leaks, and link resiliency objectives to long-term methane mitigation goals, including of the Global Methane Pledge; and
- (e) Increasing engagement with other organizations, conferences, coalitions and alliances, ministerials and initiatives working on similar or complementary objectives.

17. The six subsidiary bodies will formulate proposals that support efforts to building more resilient energy systems in the UNECE region. The Bureau of the Committee, in cooperation with the secretariat, will explore how the Programme of Work of the Committee for 2024 could be modified to better support the corresponding efforts and provide strategic orientation to the subsidiary bodies of the Committee.

18. **Sustainable Resource Management.** The Committee will:

- (a) Continue to implement the extrabudgetary project funded by the European Commission “Supporting UNECE member States in the development and implementation of UNFC and UNRMS” (2020-2024), to facilitate accelerated implementation of UNFC and encourage member States to participate in the project;
- (b) Continue establishing the International Centres of Excellence on Sustainable Resource Management to provide policy support, technical advice and consultation, education, capacity-building, training and information dissemination on UNFC and UNRMS in the UNECE region and beyond and seek to establish a collaborative network of the Centres coordinated by the secretariat and in full compliance with the adopted ECE standards and guidelines;
- (c) Publish the Draft United Nations Resource Management System: Principles and requirements (ECE/ENERGY/GE.3/2022/6) as an official UNECE publication, subject to further consideration and unanimous adoption of the recommendation by the Expert Group on Resource Management;
- (d) Further discuss and develop the concepts provided in the draft document “Sustainable management of critical raw materials required for the low-carbon energy transition”

(ECE/ENERGY/2022/6), which highlights the role of critical raw materials (CRMs) in low-carbon energy transitions, including large-scale deployment of renewable energy and energy storage further and then, based on common understanding, develop guidelines, best practices, and an information framework for the management of CRMs;

- (e) Further discuss and clarify the concept “Resources as a Service: A catalyst to accelerate the energy transition, safeguarding climate action targets within the circular economy” (ECE/ENERGY/2022/7) and develop case studies;
- (f) Engage fully in the activities of the United Nations Working Group on Transforming the Extractive Industries for Sustainable Development Working Group and support the implementation of UNECE’s five-point agenda on sustainable resource management that includes: (i) Social contract on natural resources; (ii) Sustainable investment guidelines; (iii) Sustainable resource management systems; (iv) Traceability and transparency of value chains; and (v) Strategic environmental assessments and environmental impact assessments;
- (g) Recommend to the Economic Commission for Europe (the Commission) to propose a draft decision to the Economic and Social Council (ECOSOC), inviting the application of the UNRMS principles and requirements worldwide, subject to further consideration and unanimous adoption of the recommendation by the Expert Group on Resource Management;
- (h) Recommend to the Commission that it consider requesting ECOSOC consider asking the Secretary-General to strengthen the secretariat’s role in supporting Member States in building resilient energy systems and modernizing resource management systems, as well as outreach efforts and transmit to the Commission at its session in 2023 a draft decision on this issue for consideration and possible adoption.

19. **Gases and Hydrogen Ecosystem.** The Committee will:

- (a) Support ongoing policy dialogue on hydrogen projects and, through it, foster cooperation within the UNECE region and with the global resource community;
- (b) Develop, in collaboration with all of the groups of experts, the Terms of Reference for the Task Force on Hydrogen, originally launched in 2019 by the Group of Experts on Gas, to coordinate efforts across the expert groups; develop a work plan with a timeline that reflects the latest needs and developments;
- (c) Investigate existing classifications and specifications for hydrogen and develop, where appropriate, specifications for the application of UNFC and UNRMS to hydrogen projects and production technologies;
- (d) Develop pilot hydrogen resource management projects and case studies applying UNRMS principles, if resources are available;
- (e) Work across the groups of experts to develop a scientifically-based terminology for hydrogen that reflects the volume of GHG emissions throughout the life cycle and to explore opportunities to move towards a Guarantee of Origin for Hydrogen (GOH), subject to the availability of resources;
- (f) Continue implementing the extrabudgetary project “Sustainable hydrogen production in the UNECE region and its role in the development of a hydrogen ecosystem and export potential”.

20. **Energy Efficiency.** The Committee will continue to:

- (a) Increase attention to energy conservation from a system level perspective to improve energy system resilience through cross-sectoral action on energy efficiency; (ii) Host inclusive dialogue to help increase energy system resilience across the UNECE region; and, (iii) Assess how improvements in energy efficiency across industry, buildings, transport, and other energy consuming systems can reduce the end-use energy demand, including by means of digitalization, as well as the need for redundancy to maintain resilience;

- (b) Develop the network of ICE-HPBs to support and advance the principles of the Framework Guidelines (ECE/ENERGY/GE.6/2020/4), aiming to ensure that new and existing buildings meet principles that reflect the frontier of knowledge of how buildings are conceived, built, operated, maintained, and eventually dismantled;
- (c) Call on the expertise of the Group of Experts on Energy Efficiency, in preparation for the seventieth session of UNECE on the theme “Digital and Green Transformation for Sustainable Development in the UNECE Region”, to assist the Committee to support the theme, namely in the areas of digitalization in energy, high-performance buildings, and low- and zero-carbon technology, which fall within the scope of its expertise.

21. **Methane Management and Just Transition.** The Committee will continue working to overcome barriers to mitigate methane emissions from extractive industries in the UNECE region and to build capacity in member States to reduce methane emissions through the development and dissemination of best practices via in-person and online training courses and workshops. It will also promote efficient environmentally sustainable transition of industries along the coal value chain ensuring the social equity of the process. Specifically, the Committee will:

- (a) Pursue opportunities to partner and co-host events with other initiatives that prioritize methane monitoring, reporting, verification and mitigation, such as by partnering with the Global Methane Initiative to hold the Global Methane Forum as part of the UNECE Sustainable Energy Week 2023 (11-15 September 2023), expand the Committee’s reach and foster the replication of methane monitoring, reporting, verification and mitigation activities that maximize climate benefits;
- (b) Continue to promote the “Best Practice Guidance for Effective Management of Coal Mine Methane at National Level: Monitoring, Reporting, Verification and Mitigation” (ECE/ENERGY/139 and ECE Energy Series No. 71);
- (c) Recommend to the Commission to propose a draft decision to ECOSOC, inviting the application of the Best Practice Guidance for Effective Management of Coal Mine Methane at National Level: Monitoring, Reporting, Verification and Mitigation (ECE/ENERGY/139 and ECE Energy Series No. 71) worldwide;
- (d) Undertake efforts to increase understanding of the sources and scale of methane emissions from open pit mines, as well as of existing opportunities for their mitigation;
- (e) Continue to advise member States on best practices and measures to effectively monitor and address methane-related dangers in underground coal mines, and work with the Group of Experts to tighten its cooperation with the International Labour Organization (ILO) to explore opportunities for further enhancement of the awareness and capacity for implementation of the recognized practices and measures that increase mining safety in member States;
- (f) Explore opportunities to engage member States in work to develop the relevant normative framework to harmonize methane emissions monitoring and reporting standards in the UNECE region;
- (g) Explore ways to speed up the process of decarbonization of their energy industries, including through provision of regulatory incentives and financial mechanisms fostering deployment of Ventilation Air Methane (VAM) installations, and enactment of rational legislation imposing a tax on methane emissions from coal mines that are avoidable at a justifiable cost;
- (h) Organize and support activities and initiatives promoting efficient environmentally sustainable transition of industries along the coal value chain, giving particular attention to providing protection to communities, local economies and the environment in accordance with the principles of just transition.

22. **Subsidies and carbon pricing.** The Committee reiterated the need to continue to explore how best to address the efficient use of resources and, in this regard, the impact of subsidies, and carbon pricing options. If extrabudgetary resources are available, the Committee will carry out research to identify and compile case studies and develop best practices for the UNECE region that leverage existing efforts and avoid duplication.

23. **Renewable Energy.** The Committee will continue to implement concrete activities to help significantly increase the uptake of renewable energy in the region and therefore contribute to fulfil the obligations of the Paris Agreement and achieve the goals and targets of the 2030 Agenda. These activities include, *inter alia*:

- (a) Identify ways to strengthen national action plans regarding renewable energy, drawing on experience of best practices on framework conditions and instruments;
- (b) Identify possible ways and best practices to address financing and efficient use of renewable energy, and in this regard the impact of subsidies on renewable energy as well as of carbon pricing options on renewable energy support;
- (c) Organize specific multi-stakeholder dialogues/Hard Talks, upon country request and fund availability, to use the results of the Renewable Energy Status Report 2022 for an open dialogue among stakeholders, including through inter-sectoral coordination and cooperation with relevant organizations;
- (d) Support the initiative to launch concrete mechanisms and measures for the effective development of bioenergy in UNECE countries, in close cooperation with the Global Bioenergy Partnership of the Food and Agriculture Organization of the United Nations (FAO);
- (e) Promote capacity-building activities on renewable energy project development and disseminate relevant material and information on projects at workshop and/or matchmaking event(s) among developers, investors and financial institutions;
- (f) Implement relevant cross-cutting activities in cooperation with other UNECE bodies, with the Group of Experts leading or contributing to the work and in close cooperation with other relevant actors; and
- (g) Implement concrete activities and projects as approved by the UNECE Executive Committee and/or included in the Work Plan 2022-2023 of the Group of Experts on Renewable Energy, depending on availability of funding.

IV. Any proposed change to the subsidiary structure of the Committee

24. There are no proposed changes to the subsidiary structure of the Committee to report.

25. At its thirty-first session (Geneva, 21-23 September 2022), the Committee on Sustainable Energy:

- (a) Adopted the proposed draft programme of work of the sustainable energy subprogramme for 2023 (ECE/ENERGY/2022/1); and
- (b) Approved the extension of the mandates of the Task Force on Industrial Energy Efficiency and the Task Force on Digitalization in Energy under the Group of Experts on Energy Efficiency, for the period 2023–2024 (ECE/ENERGY/143).

26. The Executive Committee is invited to approve the above decisions.

V. Follow-up to the 2021 session of the Economic Commission for Europe

27. As described earlier, the Committee reviewed progress on decisions and recommendations concerning the sustainable energy subprogramme made by the Commission during its sixty-ninth session in 2021. These decisions and recommendations related to (i) methane management; (ii) high-performance buildings; (iii) sustainable resource management; and (iv) subsidies and carbon pricing.

28. At its thirtieth session, the Committee also discussed ways that the Committee can contribute to the cross-cutting theme of the 70th session of the Commission, “Digital and green transformations for sustainable development in the UNECE region,” (18-19 April 2023), and

identify potential new activities the Committee can undertake to support the high-level theme. Noted that digital and green transformations related to energy are critically necessary steps for achieving sustainable development and circular economy in the UNECE region and welcomed the Commission's selection of this important topic.

29. The Committee noted the key areas where it has been actively supporting this subject area, including the Task Force on Digitalization in Energy; Sustainable Resource Management; Circular Economy; the High-Performance Buildings Initiative; and low- and zero-carbon technologies to facilitate the transition to a net zero economy and a resilient energy system.

30. The Committee also, noting the shifting priorities of governments in the UNECE region because of current geopolitical issues, decided to invite the Commission to consider exploring at the 70th session of the Commission how the current energy and climate challenges affect digital, green and circular transformations for sustainable development in the UNECE region and what strategic energy and environmental solutions can achieve both short- and long-term development goals.

31. Further the Committee decided to request that the Commission at its seventieth session consider decisions on resource management; near-term acceleration of the 2030 Agenda through action on gases and buildings; studying of the impact of subsidies as well as carbon pricing options; and strengthening the subprogramme's role in supporting member States in building resilient energy systems and modernizing resource management systems, as well as outreach efforts.

VI. Intersectoral activities: new activities and/or progress in existing intersectoral activities

a) Nexus Activities

32. The sustainable energy subprogramme has contributed substantially to UNECE's nexus activities on sustainable use and management of natural resources, sustainable and smart cities for all ages, sustainable mobility and smart connectivity, and measuring and monitoring progress toward the SDGs. That work will continue, but there are also have cross-cutting areas of opportunity on circular economy and circular carbon economy. The latter brings to bear our work on carbon capture, use and storage and on hydrogen. In addition, further activities on digitalization, mobility, resilience, the built environment, and the water-food-energy-ecosystems nexus are underway and under discussion.

b) Sustainable Energy and Gender

33. At its thirty-first session, the Committee received a presentation under the agenda item on "Technical assistance, regional outreach and collaboration activities" on the study "Energy Transition and the Post-COVID-19 Socioeconomic Recovery: Role of Women and Impact on Them" and noted the opportunities and challenges facing women's participation in the economy – specifically in the energy sector – and the benefits of promoting the participation of women in facilitating a successful transition to a sustainable energy system and green economy post-COVID-19. The Committee will continue its efforts to promote the gender perspective throughout its work, including by raising awareness on gender mainstreaming in energy-related activities; promoting the incorporation of a gender perspective in meeting agendas and presentations; and creating a supportive environment for expert participation, policies, regulations and innovative development that consider both women's and men's needs in the energy sector.

34. The Expert Group on Resource Management continues to focus on the role of women in resource management, including through its Working Group on Women in Resource Management.

VII. Technical cooperation activities

35. The Committee was advised at its thirty-first session on regional advisory services since its last session. The Regional Adviser provided information about the need to adjust services, including capacity-building and technical assistance activities, given the multiple challenges caused by the COVID-19 pandemic and by the consequences of the ongoing geopolitical crises in the UNECE

region. The Regional Adviser described field projects that were developed as a rapid response to these challenges and ongoing fundraising activities. Four member States and one technical expert delivered presentations about advisory service-related activities and noted the value of the services provided by the sustainable energy subprogramme. The Committee stressed the importance and value of regional advisory services and capacity-building activities, particularly under the current circumstances.

36. The Regional Adviser continued to work closely with colleagues in the Sustainable Energy Division, other UNECE Divisions, other UN Regional Commissions, UN Resident Coordinator Offices (RCO), organizations of the UN system, and international and national organizations in support of needs of countries eligible for technical cooperation activities based on demand expressed by countries. The activities undertaken in the region are described in detail in document ECE/ENERGY/2022/5.

37. Since document ECE/ENERGY/2022/5 was issued, the following activities were completed by the Regional Adviser with other members of the Sustainable Energy Division:

- a) Side event “Overcoming Challenges and Exploring Opportunities for Sustainable Energy Transition through South-South Cooperation” at the Global South-South Development Expo 2022 (Bangkok, Thailand and online, 13 September 2022³).
- b) Twelfth International Forum on Energy for Sustainable Development is being organized in hybrid format with events taking place in various locations and online (September-November 2022⁴).

38. The following activities with the support of the Regional Adviser are planned for October-December 2022 and 2023:

- (a) Preparation phase of the German International Climate Initiative (IKI) project on Improving the energy efficiency of the global building supply chain industry and its products to deliver high-performance buildings (selection of the proposal for further development has been confirmed) – led by UNECE, with 13 implementing partners.
- (b) IKI project on Regional mechanisms for the low-carbon, climate-resilient transformation of the energy-water-land nexus in Central Asia – led by the Organization for Economic Co-operation and Development (OECD), with the UNECE Environment Division.
- (c) Joint SDG Fund project on Green financing facility to improve air quality and combat climate change in North Macedonia – led by the United Nations Development Programme (UNDP) in North Macedonia.
- (d) United Nations Development Account (UNDA) project Strengthening energy policies of Countries with Special Needs to build back better from COVID-19 – led by ESCAP.
- (e) UN4Kharkiv: Integrated Rehabilitation of Settlements (Territories) in Ukraine with a pilot project in the City of Kharkiv – joint ECE Regional Programme for Technical Cooperation (RPTC)-funded project led by the UNECE Housing and Land Management Unit.
- (f) UNECE early development response: reconstruction of Ukraine – restoring connectivity and rebuilding infrastructure (with a specific part under the sustainable energy subprogramme: Rebuilding the energy system in Ukraine under the carbon neutrality and just transition concepts) – joint UNECE RPTC-funded project.
- (g) Joint SDG Fund project Strengthening Georgia’s food and energy resilience – led by UNDP in Georgia.
- (h) Joint SDG Fund project Addressing the compounded food and energy crisis in Ukraine through innovative technologies and adaptive agricultural practices – led by the FAO).
- (i) Study to assess the geothermal energy potential in Albania.

³ <https://unece.org/info/Sustainable-Energy/Regional-Advisory-Services/events/370052>

⁴ <https://unece.org/info/Sustainable-Energy/Regional-Advisory-Services/events/371236>

- (j) Study with an in-depth analysis of the dynamics of coal demand in Tajikistan, including the price factor (including environmental costs) of coal consumptions and an assessment of the viability of replacing coal with alternative domestic energy source.
- (k) Study to identify principle-based guidelines for designing and implementing a programme for an efficient, safe, and environmentally conscious mine closure in Albania and Serbia.

VIII. Cooperation with other organizations

39. UNECE has applied, and continues to follow, a decentralized resource mobilization approach to reduce its dependency on the Regular Budget and to attract extrabudgetary sources of funding. The Division's access to extrabudgetary funding in 2022 was significantly impeded or delayed through circumstances beyond the Division's control. An example of this is the extrabudgetary project on "Strengthening capacities of selected UNECE member States in sustainable and harmonious management of natural resources" (January 2022-December 2026, with a project budget of USD 2,736,400 (547,280 per annum); the donor is Autonomous Non-Commercial Organization - International Centre of Excellence on Sustainable Resource Management (ANCO "ICE-SRM")) that was approved by EXCOM in December 2021 and that has been frozen since March 2022. More efforts will be required to secure extrabudgetary funding in 2023. The sustainability of UNECE's partnership with its member States and external parties depends on the value added by UNECE and its recognition by stakeholders as a leader in sustainable energy.

40. As noted previously, the subprogramme has several successful activities ongoing with partners. Beyond the engagement of the expert groups with the full spectrum of stakeholders in each area of work, these include notably the International Forum on Energy for Sustainable Development, the Global Methane Forum, the Pathways Programme, the High-Performance Buildings Initiative, and the IKI project proposal on Improving the energy efficiency of the global building supply chain industry and its products to deliver high-performance buildings that has been selected for further development. The subprogramme has increased its engagement with the finance community, including through the work of the Group of Experts on Cleaner Electricity Systems which organized an event on Financing cleaner energy technologies within a carbon neutral framework⁵ on 20 September and the Towards COP27: UNECE Regional Forum on Climate Initiatives to Finance Climate Action and the SDGs⁶ on 17 October 2022. At its thirty-first session, the Committee recommended that the Commission consider a draft decision to study finance for energy-related climate change activities in the ECE region, particularly related to critical raw materials.

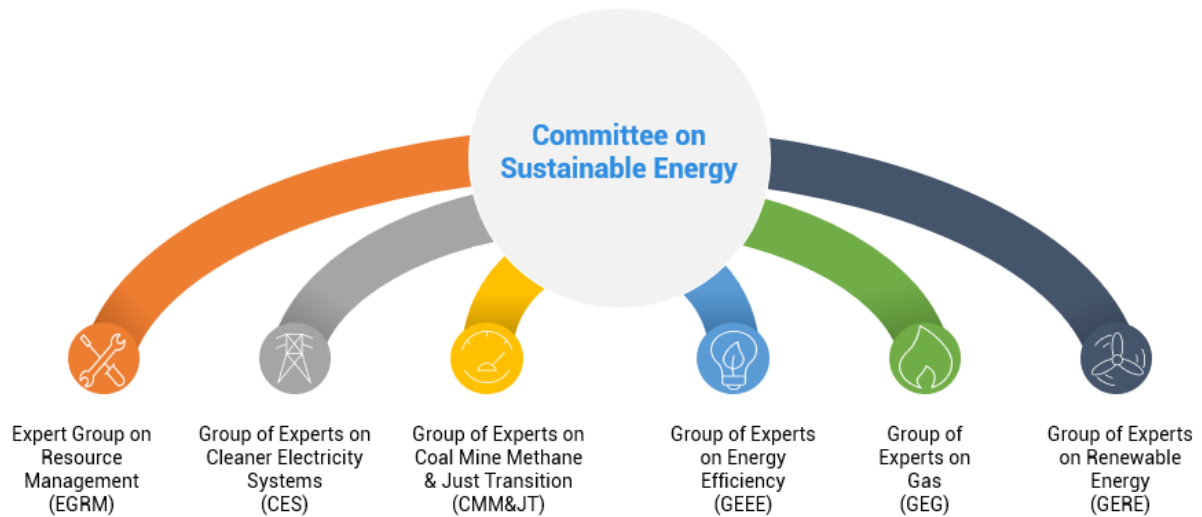
41. Engagement with the Regional Commissions, UNDP and UNEP has also been strengthened through the UN Working Group on Transforming the Extractive Industries for Sustainable Development. In addition, the subprogramme remains active in many multi-organizational pursuits, including UN Energy and the Technical Advisory Group on SDG7.

⁵ <https://unece.org/sites/default/files/2022-09/Session%20%20-%20Financing%20clean%20energy%20technologies%20FINAL.pdf>

⁶ <https://unece.org/info/Sustainable-Energy/events/368377>

ANNEX I

Structure of the Committee on Sustainable Energy and its subsidiary bodies



ANNEX II

Planned UNECE sustainable energy subprogramme side events and activities planned for COP27, 6-18 November 2022 *as of 31 October 2022*

Tuesday 8 November

- 15:30 hrs: Participating in a side event *Building climate resilience through cross-border cooperation: green hydrogen and renewable energy exports from the Middle East to Europe*
- 18:30-20:00 hrs: Official UNECE side event “A global sustainability framework for critical raw materials required for low-carbon transitions”

Wednesday 9 November

- 10.00-11:30 hrs: Providing opening remarks for the IAEA *Grand Opening Event #Atoms4Climate Pavilion*
- 11:30-13:00 hrs: Co-organizing a side event on “Accelerating circularity as a holistic response to the triple planetary crisis: The Economic Case”
- 14h30-15h30 hrs: Providing remarks at IAEA event on “Low Carbon financing to enable the clean energy transitions”
- 15:00-18:00 hrs: Attending *High-level Ministerial Dialogues on the New Collective Quantified Goal on Climate Finance*
- 17:30-18:30 hrs: Providing opening remarks for nucleareurope’s *Financing new nuclear for a resilient energy mix*
- 16:30-18:00 hrs: UNECE Executive Secretary participating in DZ Bank Pavilion Fireside Chat

Thursday 10 November

- 18:30-20:00 hrs: Joint UNECE, IAEA and UNIDO side event on “Interplay of low carbon technologies for resilient net zero energy systems”

Friday 11 November

- 10:15-11:15 hrs: Joint UNECE and ESCWA side event on “Enabling the Circular Carbon Economy: Upscaling Regional Cooperation for Sustainable Development”

Saturday 12 November

- 13:15-14:45 hrs: UN Energy side event “Accelerating SDG7 action: Implementing the UN-Energy Plan of Action Towards 2025 in support of the Global Roadmap for Accelerated SDG7 Action and Net-Zero Emissions”