



Economic Commission for Europe**Committee on Sustainable Energy****Thirty-second session**

Geneva, 13-15 September 2023

Item 2 of the provisional agenda

High-level segment: Building resilient energy systems in the United Nations Economic Commission for Europe region - Launch of the United Nations Economic Commission for Europe Platform on Resilient Energy Systems**United Nations Economic Commission for Europe Platform
on Resilient Energy Systems Work Plan****Prepared by the Bureau of the Committee on Sustainable Energy****I. Background**

1. The Committee on Sustainable Energy, at its thirty-first session in September 2022, agreed to prioritize and implement special activities that coordinate and promote efforts related to energy resilience across the United Nations Economic Commission for Europe (ECE) region, providing an ECE Platform on Resilient Energy Systems for inclusive dialogue ([ECE.ENERGY/143](#)).
2. The Committee called upon the subsidiary bodies to formulate proposals that support efforts to build more resilient energy systems in the ECE region, help member States understand and prioritize what they can realistically achieve and how, while ensuring they can balance their complex and unique socioeconomic priorities with goals for energy system resilience.
3. The Committee requested the Bureau, in cooperation with the secretariat, to examine how the Programme of Work of the Committee for 2024 might be modified to better support the corresponding efforts and provide strategic orientation to the subsidiary bodies of the Committee. The Committee requested the Bureau of the Committee, in cooperation with the secretariat, to develop a work plan and budget for the special activities to be organized under the Platform. The Committee noted that establishment of the Platform itself has no regular budgetary implications but recognized that some of the activities identified and coordinated by the Platform would require extrabudgetary resources.
4. The Committee also called on member States to provide needed resources and leadership to accomplish those additional or expanded activities that address the critical need to build energy resiliency in the ECE region and that cannot be delivered with existing regular budget resources. The Committee further requested the Bureau report progress on all the activities of the Platform during the thirty-second session of the Committee in September 2023.
5. Based on the discussion at the thirty-first session, a resilient energy system is one where energy:



(a) Reflects potential impacts of climate change on energy resources in its planning and operations;

(b) Makes an optimal contribution to a country's social, economic, and environmental development;

(c) Is able to prevent, withstand and recover quickly from any unanticipated shocks, including military or climate disaster shocks, which cause disruptions of energy systems;

(d) Is decentralized at all levels – regional, state and local – with widely deployed capacities (including reserved capacities) for alternative energy generation and transmission.

6. The experts concluded that a resilient energy system is based on:

(a) Energy security ensures energy needed at any time through diversity of supply;

(b) Affordability of green energy reduces the costs of electricity, heating, cooling, and transport while increasing systemic energy efficiency;

(c) Environmental sustainability lowers the carbon footprint and enhances efficiency across the energy supply chain in line with the Paris Agreement and the Agenda 2030 for Sustainable Development.

7. Member States' efforts to build resilient energy systems will be driven by perception of the geopolitical and regional context and the socioeconomic aspects of the various policy and technology choices, such as potential impacts on the overall economy and energy security, social or cultural practices, affordability, and/or local jobs. It will require an assertion of member State goals and priorities, an understanding of available and future technologies and resources to meet the development goals, macroeconomic situation, access and cost of financing, and a determination of the necessary frameworks and/or policy paths.

8. The types of activities member States will need to undertake to achieve energy system resilience in the ECE region, include but are not limited to:

(a) Prioritizing and maximizing the implementation of systemic energy efficiency solutions to drive down energy produced and consumed while meeting economic and societal needs;

(b) Digitalizing the energy system and taking advantage of increasing consumer digital literacy and enhancing cyber security, capturing the enormous optimization opportunity in the value chain;

(c) Accelerating fuel switching to optimize the carbon footprint of end-use energy and replace carbon intensive fuels where practical with low- and zero-carbon options, including hydrogen and its derivatives, and decentralized energy systems;

(d) Managing resources effectively, sustainably, and with circular economy considerations;

(e) Accelerating the deployment of low-, zero- and negative-carbon technologies for full energy system decarbonization, such as renewable energy, nuclear power, carbon capture, use and storage and direct air capture, and renewable and low-carbon gases, depending on the political priorities and a country's natural endowments; and

(f) Creating specific tools for tackling the challenges to the regional energy security - Energy Emergency Assistance Platform (strategic materials reserves) and Energy Emergency Response Centre (multidisciplinary expertise) as the components of the ECE Platform on Resilient Energy Systems.

9. As policymakers look across the possible options and assess what will be best for their circumstances, it is important to bear in mind the following key considerations:

(a) Recognize that there is not a one-size-fits-all approach;

(b) Consider long-term goals as they design policies today;

(c) Raise awareness and address behavioural barriers to unlock innovation and digitalization potential;

- (d) Build and train a workforce to deliver on a just energy transition for all and address the skills shortage;
- (e) Integrate resiliency concerns into existing and related planning efforts;
- (f) Consider climate change impacts on energy supply and demand.

10. Attaining resilient energy systems for the ECE region that are energy secure, affordable and environmentally friendly would require the deployment of low- and zero-carbon technologies. For the region to succeed in this endeavour, the experts find that it will be necessary to: i) raise awareness and develop campaigns to inform all the stakeholders why the current energy system is fragile, and what is necessary to develop a resilient energy system and how this can be achieved; ii) develop a clear regulatory framework and energy system design to allow in principle all technologies to be deployed and integrated into such an energy system effectively, and iii) develop financing mechanisms and framework conditions to unlock both private and public funding to finance and manage the transition towards more resilient energy systems.

II. Proposed Activities under the Platform

11. There are two categories of activities under the ECE Platform on Resilient Energy Systems: activities to be implemented under each specific subsidiary body or expert group and those to be implemented across multiple expert groups of the Committee. The activities identified will support efforts under the Platform and may be incorporated in the Programme of Work of the Committee for 2024.

A. Activities implemented under each specific subsidiary body or expert group

Description:

12. Each expert group has unique value proposition to identify the most effective ways to address the needs and barriers and/or to promote the most significant opportunities with respect to their area of focus that help member States build resilient energy systems.

Work to be undertaken:

13. Between the thirty-first and thirty-second sessions of the Committee, each subsidiary body/ expert groups will explore and identify any specific activities it can implement beginning in 2023 to support efforts to build more resilient energy systems in the ECE region and incorporate them into their work plans for 2024-2025 as appropriate.

14. The Bureau will reflect and promote these items in the workplan for the ECE Platform on Resilient Energy Systems.

Deliverables and timeline:

15. Proposals of any expert group-specific activities to help member States build resilient energy systems to be incorporated into the Work Plan of the ECE Platform on Resilient Energy Systems and the Work Plans of the subsidiary bodies for 2024-2025:

- (a) Group of Experts on Coal Mine Methane and Just Transition (CMMJT) by March 2023;
- (b) Group of Experts on Gas (GEG) by March 2023;
- (c) Expert Group on Resource Management (EGRM) by April 2023;
- (d) Group of Experts on Cleaner Electricity Systems (EGCES) by July 2023;
- (e) Group of Experts on Energy Efficiency (GEEE) by July 2023;
- (f) Group of Experts on Renewable Energy (GERE) by July 2023.

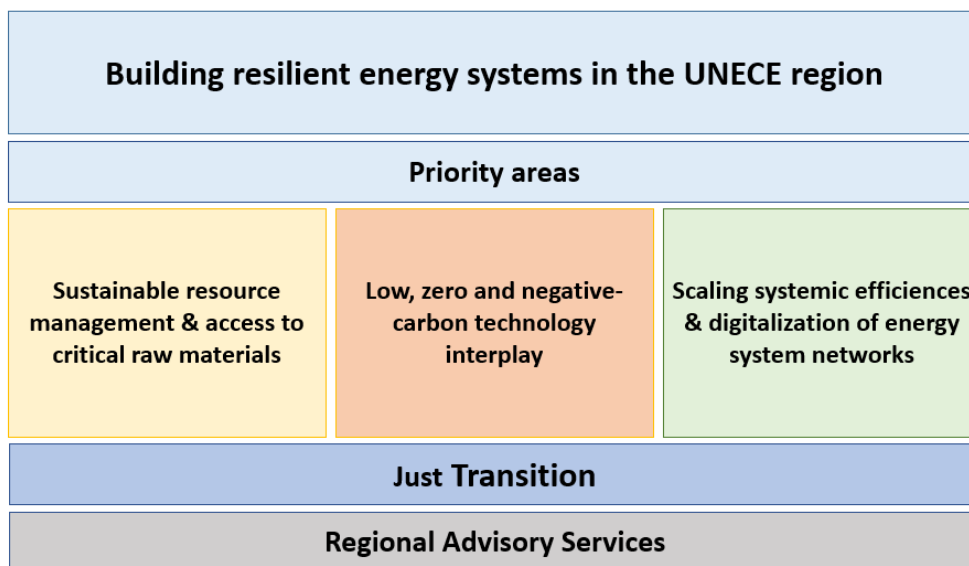
B. Activities implemented across multiple subsidiary bodies or expert groups

Description:

16. There are numerous advantages to leveraging expertise across multiple expert groups to implement activities that address the complex challenges and unique opportunities associated with building more resilient energy systems in the ECE region. By increasing collaboration and inclusiveness on activities, the outputs and outcomes will better reflect a comprehensive set of perspectives to better inform and support the member States.

17. The Bureau has identified several work areas that would benefit from cross-collaboration among the Expert Groups to enhance the impact of the outputs, including: i) Sustainable resource management and access to critical raw materials; ii) Low, zero and negative-carbon technology interplay, iii) Scaling systemic efficiencies and digitalization of decentralized energy system networks, and iv) Just transition, as shown in the figure and described in greater detail below.

Figure



18. The Bureau recognized that it is critical to ensure that all resources and activities developed and implemented under the Platform are readily accessible and promoted widely to the member States.

1. Sustainable resource management and access to critical raw materials to help countries understand what resources they have available

Work to be undertaken:

19. Develop an international hydrogen taxonomy and specifications according to the United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS), subject to the availability of extrabudgetary funding. This activity, commissioned by the Committee independently from the Platform, is aiming to contribute to the decarbonization of the energy system and the industrial sector. Hydrogen and its derivatives can contribute to diversity and resiliency of energy supply. This would involve experts from the follow groups: GEG, EGRM, GERE, CES, GEEE.

20. Develop an early warning system for critical minerals and other resources with UNFC and UNRMS, subject to the availability of extrabudgetary funding. An early warning system would enable countries to make informed decision and adapt their national action plans accordingly to avoid shortage of the resources, esp. critical raw materials, necessary for the transformation of the energy system and the supply chain diversification. This would involve experts from the follow groups: EGRM, CES, GERE.

Deliverables and timeline:

(a) International hydrogen taxonomy and specifications under UNFC and UNRMS, April 2025 (subject to extrabudgetary funds);

(b) Early warning system for critical and other resources with UNFC and UNRMS, April 2025 (subject to extrabudgetary funds).

2. Low-, zero- and negative-carbon technology interplay**Work to be undertaken:**

21. Enhance the low-, zero- and negative-carbon technology interplay across the energy system in the ECE region, including the interaction between natural gas, biogas, hydrogen and electricity to facilitate a cost-effective energy transition - subregional deep-dives subject to the availability of extrabudgetary funding. It is envisaged to start with a deep-dive in Central Asia. It would involve experts from the follow groups: CES, GEG, GERE, GEEE, CMMJT.

Deliverables and timeline:

(a) Development and initial implementation of work plan for targeted, subregional, and country-specific analysis and/or materials on technology choices, business models and policy solutions in Programme Countries in Central Asia, December 2024.

3. Scaling systemic efficiencies & digitalization of energy system networks**Work to be undertaken:**

22. Develop support resources related to energy storage. Scaling of intermittent renewable energy will require vast energy storage solutions. This activity can strengthen the interaction between gas/gases and electricity to facilitate a cost-effective transition and would help member States raise awareness about various energy solutions as well as help countries identify opportunities to enhance energy connectivity and regional cooperation. This would involve experts from the follow groups: GEEE, CES, GERE, GEG.

23. Cybersecurity in the energy sector. Addressing the cybersecurity is one of the key challenges associated with digitalization of energy systems that can both enhance and jeopardize the system resiliency. This would involve experts from the follow groups: GEEE, GERE, CES, GEG, EGRM, CMMJT.

Deliverables and timeline:

(a) Resources that support energy storage identified, December 2024 (subject to extrabudgetary funds);

(b) Assessments and/or guidance resources that support cybersecurity in the energy sector, December 2024 (subject to extrabudgetary funds).

4. Just Transition**Work to be undertaken:**

24. Help ensure that modernization of the energy infrastructure is delivered according to the principles of Just Transition. Explore the "just transition" aspect of the transformation of the energy sector that is socio-economically acceptable, promote deep decarbonization of industries while protecting their competitiveness, and enable the workforce to reskill to deliver on energy transition. Social acceptance of the proposed changes is a necessary condition for sustainable and enduring results. This would involve experts from the following groups: GEEE, GERE, CES, GEG, EGRM, CMMJT.

Deliverables and timeline:

(a) Materials/dialogues that further the "just transition" aspect of the transformation of the energy sector, March 2024;

(b) Network of stakeholders on Just Transition, March 2024.

5. Urban planning and modelling of decentralized energy systems

Work to be undertaken:

25. Elaborate on the concept of technical decentralization of the energy system and the principle of “decentralization for resilience” in the context of urban planning. Across the region there is a need for scaling up renewable energy projects and integrating it into the energy distribution and transmission systems: GERE, CES, GEEE.

Deliverables and timeline:

(a) Preparation of the Concept of technical decentralization of the energy system, December 2023 (subject to extrabudgetary funds);

(b) Propose measures for implementing the principle “decentralization for resilience”, December 2024 (subject to extrabudgetary resources).

6. Emergency response in case of natural disaster or system failure

26. Create an Energy Emergency Response Centre, which would develop specific protocols, have its own employed staff - technical and legal, or establish an ad-hoc Task Force for Energy Emergent Response involving multidisciplinary experts with expertise and practical experience in the field of energy.

27. Consider the establishment of/propose the option of establishing the Energy Emergency Assistance Platform which accumulates strategic reserves of equipment and tools for urgent repairs of energy facilities (with equipment available, logistics, manpower (specifically engineers)).

Deliverables and timeline:

(a) Create Energy Emergency Response Centre, December 2025 (subject to extrabudgetary funds);

(b) Consider establishing the Energy Emergency Assistance Platform, December 2025 (subject to extrabudgetary funds).

7. Communication, Dialogues and Engagement: Across all groups

28. Host dialogues on Resilient Energy Systems to facilitate an exchange among member States, academia, technical experts, industry, and others on relevant topics identified by the Bureau, including the current challenges to resiliency, technical options, financing resilient energy systems and clean energy projects, lessons learned and best practices. These dialogues are intended to increase the capacity of ECE member States to attain more secure, affordable, safe and environmentally-friendly energy systems. These dialogues could inform the development of future activities and products under the Platform.

29. Create a devoted web page that links to all relevant materials and feature products prominently in social media.

30. Integrate the topic of resiliency into existing cross cutting efforts, such as by including a devoted topic on it during events that already involve multiple expert groups, such as at the sessions of the Committee, International Forum on Energy for Sustainable Energy, Almaty Energy Forum and Global Methane Forum.

31. Increase engagement with other organizations, conferences, coalitions and alliances, ministerials and initiatives working on similar or complementary objectives to expand the reach of the Committee and leverage others’ investments, providing greater support to the design and deployment of resilient energy systems that provide access to affordable, reliable, sustainable, and modern energy for all and that help reduce GHG emissions and the carbon footprint of the overall energy sector, including both energy supply and demand, in the region and support the shift to net zero GHG emissions. This could include but is not limited to the Clean Energy Ministerial, International Energy Agency (IEA), Organisation for Economic Co-operation and Development (OECD), Organization for Security and Co-operation in Europe (OSCE), United Nations Development Programme (UNDP), UN Environment, UN Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP),

United Nations Industrial Development Organization (UNIDO), World Business Council for Sustainable Development (WBCSD), World Economic Forum (WEF), World Energy Council (WEC) and World Meteorological Organization (WMO).

Deliverables and timeline:

- (a) Network of stakeholders working on Resilient Energy Systems, September 2023;
 - (b) List of relevant topics for dialogues based on the greatest needs and opportunities, September 2023;
 - (c) Devoted sessions and discussions related to Resilient Energy Systems during other cross-cutting events including sessions of the Committee on Sustainable Energy, International Forum on Energy for Sustainable Energy, Almaty Energy Forum and Global Methane Forum, Ongoing;
 - (d) Website devoted to the Platform, serving as a repository for all materials and activities under the Platform, June 2024.
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