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## Economic Commission for Europe

### Committee on Sustainable Energy

#### Thirtieth session

Geneva, 22-24 September 2021

## Report of the Committee on Sustainable Energy on its thirtieth session

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## I. Introduction and attendance

1. The work of the United Nations Economic Commission for Europe (ECE) on sustainable energy is designed to improve access to affordable and clean energy for all and help reduce greenhouse gas (GHG) emissions and the carbon footprint of the energy sector in the region. It promotes policy dialogue and cooperation among governments, energy industries and other stakeholders. The current focus of the Committee on Sustainable Energy (the Committee) is on energy efficiency, renewable energy, cleaner electricity systems, coal mine methane, gas, and sustainable resource management through the work of its six subsidiary bodies.
2. At its thirtieth session, the Committee exchanged views on how to accelerate country commitments to attain energy for sustainable development. The intent was to address the region's challenges with products and activities that deliver measurable and tangible results. Consultations concentrated on how to best support implementation of the 2030 Agenda for Sustainable Development (2030 Agenda) and the Paris Agreement through methane management, high-performance buildings, sustainable resource management, energy subsidies and carbon pricing options, electricity as a critical vector for transformation, carbon neutrality, and the possible role of hydrogen. The session was held in Geneva on 22-24 September 2021. Due to the unprecedented circumstances of the COVID-19 pandemic, the session was conducted in a hybrid format.
3. More than 300 delegates from the following ECE member States participated: Armenia, Austria, Azerbaijan, Belarus, France, Germany, Ireland, Kazakhstan, Kyrgyzstan, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovenia, Spain, Switzerland, Turkey, Ukraine, United Kingdom, and United States. Representatives of the European Union also participated. Experts from Argentina, Bangladesh, Brazil, China, Iraq, Malaysia, Mexico, Morocco, and Nigeria participated under Article 11 of the Commission's Terms of Reference.
4. The following United Nations specialised agencies, funds and programmes were in attendance: United Nations Framework Convention on Climate Change (UNFCCC), United Nations Environment Programme (UNEP), UNEP-DTU Partnership, UNEP International Methane Emissions Observatory, United Nations Development Programme (UNDP), and World Meteorological Organization (WMO).
5. The following intergovernmental and non-governmental organizations and academic institutions were in attendance: African Development Bank (ADB), African Union, Climate and Clean Air Coalition, Commonwealth Secretariat, Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP), EME, European Bank for Reconstruction and Development (EBRD), Gas Exporting Countries Forum (GECF), IEA Clean Coal Centre, International Energy Agency (IEA), International Energy Forum (IEF), International Gas Union (IGU), International Green Technologies and Investment Center, International Institute for Applied Systems Analysis (IIASA), Organisation for Economic Co-operation and Development (OECD), Union for the Mediterranean, World Bank Group, African Transport and Environment Association (ATEA), Assocarboni General Association of Coal Operators, Centre International d'Investissement, El-Wedad Society for Community Rehabilitation, The European Law Students' Association (ELSA), World Nuclear Association, World Petroleum Council, "SEG" Civil Society Support Center, Green Building Alliance, HiTech Materials Advisory, Scientific and Technical Mining Association, The Geneva Consensus Foundation, Alternative du Developpement Economique et Social (ADES), Apsu for water sustainability, Association of Donbass Mining Towns, British Geological Survey, COGEN Europe, Committee for Mineral Reserves International Reporting Standards (CRIRSCO), DE-RESS, Economic Cooperation Organisation (ECO), Electric Power Council of the Commonwealth of Independent States, Energy Efficiency Technology Institute, Geological Society of Africa, Green Building Alliance, Green Building United, GreenTech Foundation Bangladesh, Habitat for Humanity International, Innovationsregion Lausitz, Institute for Market Transformation, IPIECA, Mediterranean Energy Regulators, Municipal Budget Education Organization "Aerospace licey N13" Khimky, NREA/AIIC EOOD/ASK URBAN Academy, OASIS Organisation, Passive House Canada, Responsible Mining Foundation, Risen Energy HK, RMI, Siberian Coal Energy

Company (SUEK), Society of Petroleum Engineers, Solarspar association, SPE Canada, World Coal Association, World Nuclear Association, Baku Higher Oil School, Carnegie Mellon University, Dalhousie University Basin and Reservoir Lab, ENERPO Research Centre, European University Institute, Frankfurt School of Finance and Management, Freie Universität Berlin, Georgian Technical University, Goethe-Universität Frankfurt am Main, Harvard Kennedy School of Government, IASS Potsdam, Imperial College London, Institute for Energy Efficiency in Production (EEP), Institute of Power Engineering, Linköping University, Morocco National High School of Mines at Rabat, National Autonomous University of Mexico, NMBU, Oxford Institute for Energy Studies, Paul Scherrer Institute, Quaid-e-Awam University of Engineering, Science and Technology, Nawabshah, Research Centre for Gas Innovation – University of Sao Paulo, Reykjavik University and International Geothermal Association, Russian Academy of Sciences, Tashkent State Technical University, Technical University of Munich Center for Energy Markets, The PennState University, Brandywine, The Pennsylvania State University, Unicolmayor, Universidad Technica Particular de Loja, University of Coimbra, University of Dundee, University of Exeter, University of Gabes, University of Geneva, University of Glasgow, University of Leeds, University of London, University of Naples Federico II, University of Oslo, UiO:Energy, University of Porto, University of Sheffield, Warsaw University of Life Sciences.

6. Independent experts and representatives of the private sector also attended at the invitation of the secretariat.

## II. Opening and adoption of the agenda (agenda item 1)

*Documentation:* ECE/ENERGY/136 – Annotated provisional agenda for the thirtieth session

7. The Chair of the Committee opened the meeting and presented the provisional agenda, which was adopted with the addition of a special session for an awards ceremony during the high-level segment (agenda item 3).

8. In his opening remarks, the Chair referred to the current strategic priorities of the Committee, mentioning sustainable resource management, methane management, carbon neutrality, renewable energy, gases and guidelines to ensure that investments are aligned with the 2030 Agenda and the Paris Agreement, high-performance buildings and the pathways programme. He described ECE as an effective platform for achieving actionable outcomes, bringing to the table North America, Europe, Central Asia, the Caucasus, Israel, and Turkey to explore politically-relevant subjects at a technical level. The Chair further referred to the sixty-ninth session of ECE and its theme of Circular Economy. He stressed the importance of physical, economic, and social resilience.

9. In her welcoming remarks, the Executive Secretary of ECE referred to the recent report of the International Panel on Climate Change (IPCC) and the urgency to find solutions to climate change while considering quality of life aspirations. She stressed energy as the critical vector that underpins quality of life and as the source of most greenhouse gas emissions, and she observed that energy systems could be transformed in ways that address challenges and meet objectives with integrated solutions, in particular regarding affordability and resilience. She noted the opportunity presented to Member States at the Secretary-General's High-Level Dialogue on Energy, to be held on 24 September 2021 in New York, and at the Twenty-sixth Conference of the Parties (COP26) in Glasgow to make serious and lasting change for the better. She looked forward to the joint dialogue with countries on bold action to implement the 2030 Agenda and the Paris Agreement. She called on countries to consider near-term and longer-term actions in their commitments and plans.

10. The ECE Executive Secretary dedicated her remarks to the thirtieth anniversary of the Committee. In the name of ECE, she thanked previous chairs and staff, notably previous director Dr. Klaus Brendow, for their relentless efforts in fundamental areas like energy security, subsidies and pricing, coal, gas, and, more recently, in supporting energy system transitions, reducing the environmental footprint of energy, and managing resources sustainably. These achievements could not have been reached without the support of member

States and an ever-growing expert network, providing enormous substantive and innovative capability across the range of energy topics. The Executive Secretary explained that in light of the foregoing accomplishments, a selection of individuals would be recognized for their contributions to specific, tangible results. An extended on-line event would be organized before the end of the year to recognize contributions from a wider spectrum of ECE's stakeholder communities and the Committee would be advised of that event.

11. The Chair informed the Committee that he would chair items 1 to 6 of the provisional agenda. Items 7, 8, and 9 would be chaired by Raymond Pilcher, Vice-Chair of the Committee.

12. The Committee agreed to consider recommendations and conclusions after each agenda item, followed by adoption of the report of the Committee at the end of the thirtieth session.

### **III. Election of officers (agenda item 2)**

13. The terms of certain Bureau members of the Committee were due to expire at the close of the thirtieth session. However, given the extraordinary situation caused by the COVID-19 pandemic, the Committee decided to extend the term of the current Bureau until the close of the thirty-first session in 2022 and to approve new nominations for the position of Vice-Chairs on an interim basis, to be confirmed at the next meeting of the Committee.

14. On this occasion, Alexey Kulapin will replace Alexander Tolparov (Russian Federation) and two of the current Bureau members have determined to step down as Vice-Chairs, namely Jelena Simovic (Serbia) and Jarad Daniels (United States).

15. On the basis of this decision, the Committee nominated on an interim basis until the end of the thirty-first session Alexey Kulapin as Vice-Chair, and extended the terms of Jürgen Keinhorst (Germany) as Chair, and Tigran Melkonyan (Armenia), Admir Softić (Bosnia and Herzegovina), David Tvalabeishvili (Georgia), James Gannon (Ireland), Gilberto Dialuce (Italy), Kairat Rakhimov (Kazakhstan), Pawel Pikus (Poland), Jean-Christophe Füeg (Switzerland), and Yaroslav Demchenkov as Vice-Chairs, to serve until the end of the thirty-first session of the Committee. Sergio Garribba (Italy) is invited as an observer to the Bureau. The Committee underscored the desirability, for the sake of ensuring continuity of the Bureau, that not all officers be elected at the same time.

16. The Chairs of the Committee's subsidiary bodies are Vice-Chairs of the Committee *ex officio*, currently, Stefan M. Buettner, Group of Experts on Energy Efficiency, Jim Robb, Group of Experts on Cleaner Electricity Systems, Raymond Pilcher, Group of Experts on Coal Mine Methane, Francisco de la Flor, Group of Experts on Gas, Kostiantyn Gura, Group of Experts on Renewable Energy, and David MacDonald, Expert Group on Resource Management.

### **IV. High-level segment – Country commitments on Energy in the Context of the United Nations High-level Dialogue on Energy (agenda item 3)**

*Documentation:* ECE/ENERGY/2021/17 – United Nations Economic Commission for Europe member States Delivering the 2030 Agenda for Sustainable Development and the Paris Agreement - A Commitment Trifecta

ECE/ENERGY/2021/18 – Achieving Sustainable Development Goal 7 in the United Nations Economic Commission for Europe Region - Status and Progress

ECE/ENERGY/2021/24 – Voluntary commitments of United Nations Economic Commission for Europe member States on sustainable energy

17. This session took place in parallel with the High-level Dialogue on Energy<sup>1</sup> convened by the United Nations Secretary-General in New York. Member States reported on the commitments they were making at the High-level Dialogue on Energy and reflected on thirty years of activity of the Committee, acknowledging the importance of east-west cooperation and energy security for regional stability. Member States had received the document called “United Nations Economic Commission for Europe member States delivering the 2030 Agenda for Sustainable Development and the Paris Agreement - A Commitment Trifecta” (ECE/ENERGY/2021/17). The Director of the Sustainable Energy Division presented key messages from the paper, referring to trends and tightening commitments on energy for sustainable development.

18. High-level representatives from the following countries presented statements in person or online: Austria, Germany, Ireland, Russian Federation, and Ukraine, followed by interventions from Norway and United States.

19. Recognizing that (i) each country has its own endowment of natural resources and its unique cultural, legislative, and regulatory heritage; (ii) addressing climate change is a critically urgent imperative; and (iii) achieving the quality-of-life objectives of the 2030 Agenda remains an important opportunity for collaboration among member States, the Committee called on member States to deliver tangible outcomes at scale in the near term and over the long term through their commitments, plans and actions and to:

- (a) redefine energy and resources as services to facilitate the transition to sustainable energy systems;
- (b) deploy more effective and pragmatic approaches to managing energy systems with a goal to increase sustainability and to achieve carbon neutrality;
- (c) ensure that actions taken are cost effective, resource-efficient, and socially responsive in their respective contexts; and
- (d) consider the life cycle and transversal consequences of alternatives, including embedded carbon/GHGs, water and resource implications.

20. Further, the Committee took note of the document “A Commitment Trifecta” (ECE/ENERGY/2021/17) and the informal companion document, “A Push to Pivot” (CSE-30/2021/INF.5) and called on member States to consider taking action in the six areas indicated in the documents.

21. At the occasion of its thirtieth anniversary, the Committee contemplated achievements and reflected on the fast-moving energy agenda. A jury comprised of the Deputy Executive Secretary of ECE, two Vice-Chairs, an energy expert and regular meeting participant, and the secretariat had assessed nominations made to honour tangible, long-standing contributions to the work of the Committee and its subsidiary bodies.

22. The Committee honoured the following individuals for their outstanding contributions: Sigurd Heiberg; Raymond Pilcher; Barry Worthington (*in memoriam*) and Jarad Daniels; Tomas O’Leary, Jim Freihaut, Helge Schramm, Bob Cavey, Richard Yancey, and Jenna Cramer; Jin Zhixin, David Creedy, Beau Jia, Jacek Skiba, Lukasz Kroplewski, Piotr Kasza and Janusz Jureczka; Professor Friedrich-Wilhelm Wellmer and Andrej Subelj (*in memoriam*); Sergey Katyshev; Shamil Dikambaev; David MacDonald; Dr. Klaus Brendow; Tim Farrell, Aleksandar Dukovski, Stefan M. Buettner and Hannes Mac Nulty; and Charlotte Griffiths.

## V. Strategic review of the sustainable energy subprogramme (agenda item 4)

*Documentation:* ECE/ENERGY/2021/16 – Thirtieth session of the Committee on Sustainable Energy - Looking back and peering forward

<sup>1</sup> <https://www.un.org/en/hlde-2021/page/hl-dialogue>

ECE/ENERGY/2021/4 – Revised strategic review of the United Nations Economic Commission for Europe sustainable energy subprogramme

23. Member States exchanged views on ways to address the region’s challenges and objectives with products and activities that deliver measurable, concrete results in the near term but with enduring impact. Deliberations were based on the strategic review of the ECE sustainable energy subprogramme (ECE/ENERGY/2021/4) that was presented to the Committee following an extended consultation process among member States.

24. The Committee noted with appreciation achievements over the past thirty years (ECE/ENERGY/2021/16), notably early on in the areas of energy security, subsidies and pricing, coal, and gas, and more recently in supporting energy system transitions, reducing the environmental footprint of energy, and sustainable resource management.

25. The Committee endorsed the revised strategic review of the ECE Sustainable energy subprogramme (ECE/ENERGY/2021/4), requested the groups of experts to reflect the strategic review in their future work plans and programmes of work, including considerations to avoid duplication and ensure value added, and called on member States to provide needed resources to accomplish those activities that cannot be delivered with existing regular budget resources.

## VI. Pathways to sustainable energy (agenda item 5)

Documentation: ECE/ENERGY/2021/5 – Pathways to sustainable energy programme concept note

ECE/ENERGY/2021/15 – Considerations for draft position on attaining carbon neutrality in the United Nations Economic Commission for Europe region

26. The “Pathways to sustainable energy programme concept note” (ECE/ENERGY/2021/5) provided contextual background for discussions related to: (i) deep dives on ECE sub-regions, including assessments of specific opportunities and challenges, testing strategic options, capacity building, and further development of an early warning system and (ii) achieving carbon neutrality by optimal deployment of relevant technology.

27. After the discussion, the Committee noted the “Pathways to sustainable energy programme concept note” (ECE/ENERGY/2021/5) and called on member States and other partners to provide extrabudgetary resources to enable continuation of the Pathways programme, including its second phase with its sub-regional focus, early warning system, and training in the use of its analytical architecture, and the carbon neutrality project with its review of technologies, business models, and additional economic sectors.

28. Noting the connections between the work on the Pathways programme and the support for regional analyses under the Global Tracking Framework to track progress of ECE member States to the energy-related objectives of the 2030 Agenda and the Paris Agreement, mandated the secretariat to raise funds to support the regional work of the Global Tracking Framework.

## VII. Follow-up to the 2021 session of the Economic Commission for Europe (agenda item 6)

Documentation: ECE/ENERGY/2021/25 – A call to action on methane management

United Nations Secretary-General’s Policy Brief on Transforming Extractive Industries for Sustainable Development<sup>2</sup>

29. In this session, the Committee reviewed progress on decisions and recommendations concerning the sustainable energy subprogramme coming from the sixty-ninth session of the

<sup>2</sup> <https://unece.org/sites/default/files/2021-05/SG%20Policy%20Brief%20Extractives%20NOemb.pdf>

Economic Commission for Europe (Geneva, 20-21 April 2021) (E/ECE/1494).<sup>3</sup> Its deliberations were based on four consecutive panels addressing (i) methane management; (ii) high-performance buildings; (iii) a global framework for sustainable resource management; and (iv) subsidies and carbon pricing as follows:

### **Methane management**

30. An expert panel presented views on methane management as a priority action for countries and called on ECE member States to support a declaration by the United Nations General Assembly of an International Decade for Methane Management. The panel further explored the impact of methane on global warming and the extent of human involvement, barriers to meaningful action on methane, and benefits of proper methane management.

31. After the discussion, the Committee:

- (a) Noting that the United Nations Economic and Social Council (ECOSOC) adopted its decision on the Best Practice Guidance for Effective Methane Recovery and Use from Abandoned Coal Mines,<sup>4</sup> welcomed the attention given by many member States to mitigate and/or prevent methane emissions from abandoned coal mines;
- (b) Called upon member States to address methane emissions from active coal mines that are much higher in volume than those from abandoned coal mines and that continue to escape to the atmosphere from coal mines across the UNECE region. In this regard, invited member States to obtain a better understanding of the amounts of methane being released from active coal mines through improved measurement and reporting methods, more accurate inventories, and participation in the work of the Group of Experts on Coal Mine Methane and international fora fostering exchange of information and experience on these emissions;
- (c) Endorsed the contribution of the Group of Experts on Coal Mine Methane to the development and dissemination of standards for mine closure (section V of ECE/ENERGY/2021/25 refers);
- (d) Noting with appreciation the growing interest from member States and organizations, including the Global Methane Initiative, the Climate and Clean Air Coalition, and the World Meteorological Organization, to undertake tangible action to mitigate methane emissions, encouraged member States to support a resolution at the United Nations General Assembly on declaring an International Decade for Methane Management (an indicative sample of a declaration is presented in the Annex to document ECE/ENERGY/2021/25 “A call to action on methane”). Further noted that preparation of a draft resolution will require active engagement of one or more countries to take the lead in

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<sup>3</sup> [https://unece.org/sites/default/files/2021-05/E\\_ECE\\_1494\\_e\\_Final.pdf](https://unece.org/sites/default/files/2021-05/E_ECE_1494_e_Final.pdf)

<sup>4</sup> **Decision 2021/249 Best Practice Guidance for Effective Methane Recovery and Use from Abandoned Coal Mines.** At its twelfth plenary meeting, on 21 July 2021, the Economic and Social Council, noting that the ECE, at its sixty-ninth session, held on 20 and 21 April 2021, endorsed the Best Practice Guidance for Effective Methane Recovery and Use from Abandoned Coal Mines, recommended that the Best Practice Guidance be disseminated widely, invited States Members of the United Nations, international organizations and the regional commissions to consider the possibility of taking appropriate measures to ensure the application of the Best Practice Guidance in countries worldwide, and proposed to the Council that it recommend the application of the Best Practice Guidance in countries worldwide, noting also that this proposal does not have financial implications, and recalling its decision 2011/222 of 25 July 2011, invited States Members of the United Nations, international organizations and the regional commissions to consider the possibility of taking appropriate measures to ensure the application of the Best Practice Guidance in countries worldwide. [Ref: E/2021/15/Add.1, chapter I, draft decision 1]



drafting and proposing a document for consideration by United Nations Member States.

### High-performance buildings

32. An international panel presented views on how to achieve high performance in buildings and the built environment and invited ECE member States to commit to action. Points made included how to operationalize decisions taken by ECE at its sixty-ninth session, particularly regarding the kind of stakeholder engagement that has proved successful for dissemination, research, and education efforts. Panellists also mentioned alignment of building codes and their deployment with high performance targets; ensuring new buildings are certified compliant; reduction of the average energy requirement per square metre in the new building “fleet” and in existing buildings to best practice; reduction of CO<sub>2</sub> emissions associated with meeting buildings’ energy needs; improvement of indoor air quality and reduction of pollution-linked health issues; and the improvement of the global supply chain for the construction business.

33. After the discussion, the Committee, noting with appreciation the progress in pursuing the High-Performance Buildings Initiative, requested the secretariat to continue developing the network of international centres of excellence on high-performance buildings, to support the global building network of academic institutions working on research and education for the built environment, to extend the industry leadership group to develop case studies on application of high performance buildings principles, to continue convening the thought leadership group to elaborate the outcomes expected of high-performance buildings.

34. The Committee noted with appreciation the plans of the international centers of excellence to improve the coordination of their activities through support of their own self-funded secretariat.

### A global framework for sustainable resource management

35. An international panel reviewed the urgency for integrated and sustainable management of natural resources and demonstrated the commitment to the development and implementation of the United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS). Various stakeholders are applying these tools to transform production and use of natural resources along sustainable pathways to deliver positive social and environmental outcomes. The panel referred to the social contract on natural resources in realizing the goals of the 2030 Agenda and stressed the importance of international collaboration in the sustainable management of natural resources. Mention was made of the role of International Centres of Excellence in Sustainable Resource Management to promote collaboration, knowledge-sharing, and capacity-building.

36. After the discussion, the Committee:

- (a) Noting that ECOSOC adopted its decision on the updated UNFC,<sup>5</sup> encouraged member States to consider taking measures to ensure the application of

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<sup>5</sup> **Decision 2021/250 Updated United Nations Framework Classification for Resources.** At its twelfth plenary meeting, on 21 July 2021, ECOSOC, noting that ECE, at its sixty-ninth session, held on 20 and 21 April 2021, endorsed the updated United Nations Framework Classification for Resources of 2019, recommended that the updated Framework Classification be disseminated widely, invited States Members of the United Nations, international organizations and the regional commissions to consider the possibility of taking appropriate measures to ensure the application of the updated Framework Classification in countries worldwide, and proposed to the Council that it recommend the application of the updated Framework Classification worldwide, noting also that this proposal does not have financial implications, and recalling its decisions 1997/226 of 18 July 1997 and 2004/233 of 16 July 2004, invited States Members of the United Nations, international organizations and the regional commissions to consider the possibility of taking appropriate measures to ensure the application of the updated Framework Classification worldwide. [Ref: E/2021/15/Add.1, chapter I, draft decision 2]

- UNFC worldwide and requested the secretariat to work with the other regional commissions and relevant international organizations to do the same;
- (b) Noted with appreciation the development of the UNRMS based on principles and requirements included in the document United Nations Resource Management System: Guiding principles and structure (ECE/ENERGY/2021/21) and recommended accelerated development of UNRMS. Requested the secretariat to raise funds and mobilise the expert communities needed to advance development of UNRMS. Requested the secretariat to publish the UNRMS when ready in the six United Nations languages;
  - (c) Noted with appreciation the growing interest from Member States, including in Kazakhstan, Russian Federation, Slovenia, United Kingdom, China, and Mexico, to establish International Centres of Excellence on Sustainable Resource Management in the ECE region and beyond, and requested the secretariat to work to facilitate their institution;
  - (d) Noted the United Nations Secretary-General's "Policy Brief on Transforming Extractive Industries for Sustainable Development" and encouraged member States to act on the 18 Calls for Action contained therein;
  - (e) Noting that progress towards a more circular economy is crucial for sustainable management of natural resources, requested the Expert Group on Resource Management to explore alternative approaches such as "Resources as a Service" to improve the efficiency of resource production and use, including the critical raw materials required for low-carbon energy transitions. Such activities could align with other similar principles such as "Energy as a Service" and "Mobility as a Service;"
  - (f) Noting the need for rapid expansion of renewable energy in many member States, requested the Expert Group on Resource Management to support the application of UNFC and UNRMS to renewable energy in close cooperation with the Group of Experts on Renewable Energy, considering the diversity of sources, modes of production, models such as zero-energy neighbourhoods, linkages to the food-water-energy nexus and the role of Micro, Medium and Small Enterprises (MSMEs);
  - (g) The Committee noted the proposal from the Russian Federation to create a Task Force to develop a Clean Energy Index as part of the development of UNRMS;
  - (h) The Committee noted the potential for sustainable hydrogen resource management in sustainable energy transitions; and
  - (i) Pending availability of extrabudgetary resources, requested the Expert Group on Resource Management, and the Groups of Experts on Gas and on Cleaner Electricity Systems to develop:
    - (i) international standards for hydrogen classification and management, including labelling according to its origin and CO<sub>2</sub> footprint,
    - (ii) more generally and building on existing tools, a standard for transparency and traceability that compares, among other things, the carbon footprint of all energy sources on a life cycle assessment basis.

### **Subsidies and carbon pricing**

37. The Chair introduced and moderated the topic of making reference to the relevance of subsidies and carbon pricing for energy transitions and decarbonisation. He stressed that for a sustainable transition it would be necessary to understand which types of regulatory and economic instruments are most efficient.

38. An international panel presented topics on subsidies and carbon pricing relevant for the ECE region with a view to develop best practice guidance regarding reform of subsidies

and institution of effective GHG pricing mechanisms. The panel highlighted the need to create more transparency on subsidies and GHG prices and to understand their consequences. The panel raised the need to explore comprehensively end-use consumer subsidies, subsidies on fossil energy, and subsidies to support renewables, and addressed what such a reform would mean for the goal of limiting temperature increases to 1.5-2°C.

39. The Committee reiterated the need to continue to explore how best to address efficient use of resources and in this regard the impact of subsidies and carbon pricing options and called on member States to provide extrabudgetary resources to that end.

## VIII. Future work of the Committee on Sustainable Energy (agenda item 7)

*Documentation:* ECE/ENERGY/2021/14 – Responding to the challenges of a just transition in the United Nations Economic Commission for Europe sustainable energy subprogramme

ECE/ENERGY/2021/19 – Decarbonizing transport with natural gas - draft policy recommendations

ECE/ENERGY/2021/20 – Attaining carbon neutrality - The role of hydrogen

ECE/ENERGY/2021/21 – United Nations Resource Management System - Guiding principles and structure

Evaluation of UNECE Collaboration with UN and other Partners in Delivering on Energy for Sustainable Development<sup>6</sup>

40. In this session, the Committee took a closer look at its future work. Its deliberations were based on five consecutive panels focussed on (i) just transition; (ii) electricity as a driver for transformation; (iii) carbon capture, use and storage; (iv) scaling up hydrogen in the ECE region; and (v) energy and resources as services:

### Just transition

41. An international panel presented the concept of a Just Transition and the challenges that it poses for public and private entities. The panel explored regulatory matters and the legal framework that need to be put in place to prepare and implement just transition in an organized and planned manner; and the institutional side of a just transition process and how governments could adapt to the current situation. The panel examined the financial aspects of just transition, the costs of inaction and shared lessons learned from the past, and the recurring mistake of addressing social issues with an overly technical approach.

42. The Committee concluded that the transitions to a carbon-neutral economy, although technology driven, have a strong social component – “just transition” – aimed at achieving a greener and fairer society and requested to explore organization of a region-wide forum on Just Transition including preparing a draft agenda for review and approval by the Committee.

43. The Committee noted that coal-based infrastructure is at the heart of industrial complexes that include mines, power stations, steel, cement and concrete production, other affiliated industries, and urban areas in many member States. The Committee further noted that substantial industrial and urban ecosystems have developed around the coal facilities and represent an important socio-economic and hence political barrier to diversifying away from coal mining. The Committee urged member States to support a just transition through industrial modernization to address short-term political drivers, notably employment in coal mining regions and the functioning of the local supply chains, that should be considered as

<sup>6</sup> [http://staging2.unece.org/net4all.ch/fileadmin/DAM/OPEN\\_UNECE/03\\_Evaluation\\_and\\_Audit/Evaluation\\_Reports-with\\_SPs/05-SustainableEnergy/SP5\\_2020\\_Eval\\_Report.pdf](http://staging2.unece.org/net4all.ch/fileadmin/DAM/OPEN_UNECE/03_Evaluation_and_Audit/Evaluation_Reports-with_SPs/05-SustainableEnergy/SP5_2020_Eval_Report.pdf)

one of the factors in taking action on energy for sustainable development, including climate change. The Committee requested that the groups of experts collaborate with other international organizations to develop principles or standards that address not only the technical, economic, and environmental issues associated with mine closure, but also the socio-economic challenges faced by the surrounding communities and associated industries.

44. The Committee then invited member States to provide financial support for extrabudgetary projects on Just Transition under the sustainable energy subprogramme and urged its subsidiary bodies to build broad partnerships to increase the effectiveness of their actions on the topic. The Committee requested the groups of experts to submit an overview of challenges and barriers to a just transition in the ECE region with a focus on coal mining regions.

### **Electricity as a driver for transformations**

45. An international panel explored the opportunities for and issues in leveraging a future electricity system in deep transformation of the end-to-end energy system from power generation through to end use including widespread expansion into non-traditional end uses for electricity such as transportation, industrial process, and space heating. The panel discussed how realistic a deep transformation of the energy system vision really is, especially considering the timeframe of current country pledges, presented enabling technologies and discussed the impacts on utilities, utility operations and the power grid.

46. The Committee, recognizing that not all countries take the same view of various technologies, noted that electricity continues to be the critical energy vector driving and shaping energy systems' transformations, that the power system will need to deliver greater demand flexibility and responsiveness, and that it will require a holistic approach involving accelerated deployment of the range of approaches.

47. The Committee requested the Group of Experts on Cleaner Electricity Systems, in collaboration notably with the Groups of Experts on Renewable Energy, on Energy Efficiency, and on Gas and, pending available resources and mindful of other priorities, to explore the opportunities and barriers to reforming energy market design towards greater sustainability. Some members of the Committee requested to conduct research on the full cycle of electricity systems in transportation, industry and building management.

### **Carbon capture, use and storage**

48. An international panel explored the status of CCUS development in ECE countries and gave particular emphasis on emerging business models and solutions and lessons learned.

49. The Committee noting that attaining the objectives of the Paris Agreement may not be possible for some countries without deployment of CCUS, reiterated its previous recommendations on CCUS regarding policy parity with other low- and no-carbon technology and on timely investment in CCUS capabilities and capacity. Further requested the Group of Experts on Cleaner Electricity Systems to consider the impact of CCUS and sustainable hydrogen on embedded carbon in steel, concrete, and other hard-to-abate sectors and to assess business models.

50. The Committee further noted that many countries in the ECE region are currently dependent on fossil fuels so technology transfer and investment will be needed to enable decarbonization. The Committee noted as well that, for some countries in the ECE region, coal with high-efficiency, low emissions (HELE) technologies and CCUS, and gas with CCUS can be a viable economic choice and that further technological advances might have a positive spillover effect on energy intensive industries across the region, namely for the production of cement, steel and iron or chemicals.

51. The Committee requested the Group of Experts on Cleaner Electricity Systems to lead on the issue of sustainable energy system transformations in cooperation with the other expert groups and to explore technology interplay, including technical and societal nexus areas for

the range of technologies covering low-carbon and no-carbon technologies, negative carbon technologies, direct air capture with carbon storage, as well as innovative solutions.

### **Scaling up hydrogen in the ECE region**

52. An international panel informed the Committee on current and future hydrogen projects in the ECE region and identified how to scale them towards a sustainable “hydrogen ecosystem”. The panel presented a transition to carbon neutrality through deployment of hydrogen, harnessing gas infrastructure for hydrogen scaling up, sustainable hydrogen production pathways and hydrogen applications in the transport sector.

53. The Committee recognized the critical role of gases for some of its members in achieving carbon neutrality by 2050.

54. The Committee noted that renewable and low-carbon gases, including sustainable hydrogen, were already an important energy vector. As member States take different views on the least emissions path to a carbon-neutral society, a “portfolio approach” might be needed. Different regions and countries have views on optimal approaches to achieving carbon neutrality that reflect their national circumstances.

55. The Committee noted further that a future decarbonized energy system might be characterized by an optimal combination of “photons, electrons and molecules”, in which variable renewable electricity (photovoltaics and wind) and gas systems are interlinked progressively. The Committee noted that existing gas infrastructure could help accelerate the transition to a carbon-neutral economy through energy system integration.

56. The Committee noted the potential value of blending of natural gas, biogas, sustainable hydrogen, and other gases, as possible approaches to decarbonizing the energy system in the short and medium terms.

57. The Committee noted that production of sustainable hydrogen was a necessary but not sufficient condition – boosting sustainable hydrogen demand and addressing challenges in transport and storage of hydrogen also require attention.

58. The Committee concluded that it is necessary to agree on a comprehensive and science-based terminology and classification of different types of hydrogen that would provide a clear taxonomy, foster collaboration and investment flows, and support better understanding of the origin of hydrogen to accelerate its sustainable deployment.

59. It noted the progress in implementing the project “Improving capacities of ECE member States to decarbonize the transport sector by increasing the use of natural gas as a motor fuel”, funded by the Russian Federation, and took note of the importance of the common principles and recommendations stemming from the project, such as: to relate transport transition to energy transition; to differentiate segments of the transport sector; and to harmonize technical regulation among different countries.

### **Energy and resources as a service**

60. An international panel explored the promise offered by Energy and Resources as a Service Model to help progress towards a circular economy. Several models being applied by information and communications technologies (ICT), mobility and other sectors could be easily adapted by energy and resource industries. The panel focused on the identification of key policy aspects, innovative business models, and financial sector requirements.

## A. Results of independent assessment of sustainable energy subprogramme partnerships

61. A review of ECE collaboration with the United Nations and other partners in delivering on energy for sustainable development was undertaken in 2020.<sup>7</sup> The purpose of the evaluation was to review the relevance, effectiveness, and efficiency of ECE collaboration with United Nations and external partners from 2016-2020 in delivering on energy for sustainable development.

62. The evaluator presented the results of her independent assessment to the Committee. The Committee noted the results<sup>8</sup> of the independent review of ECE collaboration with United Nations and other partners in delivering on energy for sustainable development. The Committee further noted the Management Response<sup>9</sup> and follow-up actions to be undertaken by the Sustainable Energy Division in response to the evaluator's recommendations, including:

- (a) to continue to focus on diversifying sources of funding. The secretariat will attempt to attract extrabudgetary sources from public and private sources for near-, mid-, and long-term technical assistance;
- (b) to continue introducing gender-responsive S.M.A.R.T. (Specific, Measurable, Attainable, Relevant, Time-bound) indicators to measure progress made regarding the gender mainstreaming agenda and to continue to encourage active participation of female subject-matter experts in relevant activities; and
- (c) to consider planning impact evaluations for recently established International Centres of Excellence at the programme level or through future Technical Cooperation projects of the sustainable energy subprogramme to be submitted to ECE Executive Committee (EXCOM) by December 2022.

63. The Committee further noted the role that women can play towards sustainable energy, welcomed the efforts during the reporting period and reiterated the need to promote gender parity in the programmes of the Committee and its subsidiary bodies and to update on the progress in future sessions.

64. With regard to Recommendation 5 of the evaluation report "To continue raising awareness through presentations and analytical papers (linkage to relevant Sustainable Development Goals (SDGs) could also be useful in this regard), of the member States on the human rights dimension and the impact of the sustainable energy agenda on marginalized and vulnerable groups (including women, youth and elderly)", the Committee noted the right to access affordable, reliable and sustainable and modern energy (SDG 7) and the impact of the sustainable energy agenda on people in vulnerable situations (including women, youth and elderly), as reflected in the 2030 Agenda, and agreed that these topics should be reflected in the future programmes of work of the sustainable energy subprogramme.

65. With regard to Recommendation 6 of the evaluation report "To introduce S.M.A.R.T. indicators to measure the progress made with regard to the impact of ECE's activities on marginalized and vulnerable groups (including women, youth and elderly)", the Committee noted the need, subject to donor interest and EXCOM approval, to study the impact of the sustainable energy agenda on people in vulnerable situations (including women, youth and elderly) as reflected in the 2030 Agenda.

<sup>7</sup> [http://staging2.unece.org/net4all.ch/fileadmin/DAM/OPEN\\_UNECE/03\\_Evaluation\\_and\\_Audit/Evaluation\\_Reports-with\\_SPs/05-SustainableEnergy/SP5\\_2020\\_Eval\\_Report.pdf](http://staging2.unece.org/net4all.ch/fileadmin/DAM/OPEN_UNECE/03_Evaluation_and_Audit/Evaluation_Reports-with_SPs/05-SustainableEnergy/SP5_2020_Eval_Report.pdf)

<sup>8</sup> [http://staging2.unece.org/net4all.ch/fileadmin/DAM/OPEN\\_UNECE/03\\_Evaluation\\_and\\_Audit/EvaluationReports-with\\_SPs/05-SustainableEnergy/SP5\\_2020\\_Eval\\_Report.pdf](http://staging2.unece.org/net4all.ch/fileadmin/DAM/OPEN_UNECE/03_Evaluation_and_Audit/EvaluationReports-with_SPs/05-SustainableEnergy/SP5_2020_Eval_Report.pdf)

<sup>9</sup> [https://unece.org/sites/default/files/2020-12/MR\\_SEE~1.PDF](https://unece.org/sites/default/files/2020-12/MR_SEE~1.PDF)

## B. Regional advisory services in sustainable energy

*Documentation:* ECE/ENERGY/2021/6 – Report on regional advisory services in sustainable energy

66. The Committee received an update of regional advisory services since its last session. The report included information on adjusting regional advisory services, including capacity-building and technical assistance activities, in light of the COVID-19 crisis. Field projects under implementation, including those that were developed as a rapid response to the crisis, and ongoing fundraising activities were reported.

67. The Committee took note of document ECE/ENERGY/2021/6, stressed the importance of regional advisory services and capacity-building activities for its work, in particular in the current circumstances and the need to build back better from the COVID-19 pandemic, and requested a report on regional advisory services at its thirty-first session.

68. The Committee took note of the presentation of main findings of studies “Women Entrepreneurship in Natural Resources Management: Challenges and Opportunities for MSMEs in the Post-COVID-19 Socio-economic Recovery” and “Energy Transition and Post-Covid-19 Socio-economic Recovery: Role of Women and Impact on Them” and acknowledged that greater engagement of women in the energy and natural resource management sectors can have multiple benefits, including contribution to skilled labour, entrepreneurship, investments, innovation, new employment opportunities, and enhanced socio-economic recovery from the COVID-19 crisis.

69. The Committee welcomed the work done by the secretariat with the use of regional advisory services on exploring the role of women in energy transition and post-COVID-19 socio-economic recovery.

## C. Programme of work for 2022 and recommendations on key components of the programme of work for 2023

*Documentation:* ECE/ENERGY/2021/1 – Draft programme of work of the sustainable energy subprogramme for 2022

ECE/ENERGY/30/2021/INF.1 – Outline of key components of the programme of work of the sustainable energy subprogramme for 2023

70. The secretariat presented the draft programme of work for 2022 (ECE/ENERGY/2021/1). This document is based on the ECE proposed programme budget for 2022 (A/76/6 (Sect.20)) which was reviewed by the ECE Executive Committee in December 2020 and submitted for consideration by the seventy-sixth session of the United Nations General Assembly. The programme of work document reflects the annual budget format presented in 2020 in line with General Assembly resolution 72/266, with enrichments reflecting General Assembly resolutions 74/251 adopted on 27 December 2019 and 75/243 adopted on 31 December 2020.

71. At its meeting on 5 March 2021, the Executive Committee adopted a document entitled “Sequential review of the proposed programmes of work of ECE subprogrammes” (document 2021/8). In line with the sequential review procedure, the Committee was invited to consider the “Outline of key components of the programme of work of the sustainable energy subprogramme for 2023” (ECE/ENERGY/30/2021/INF.1) and provide recommendations on these components.

72. After discussion, the Committee adopted the proposed draft programme of work of the sustainable energy subprogramme for 2022 (ECE/ENERGY/2021/1) and recommended submission to EXCOM for subsequent approval. The Committee requested a draft programme of work of the sustainable energy subprogramme for 2023 be submitted for adoption at its next session.

73. The Committee further noted and agreed to the proposed modifications to the programme of work for the sustainable energy subprogramme for 2023

(ECE/ENERGY/30/2021/INF.1) and requested the secretariat to reflect the modifications in the proposed programme plan of the sustainable energy subprogramme for 2023.

#### **D. Approval of documents**

- Documentation:* ECE/ENERGY/2021/2 – Provisional calendar of meetings of the sustainable energy subprogramme for 2022
- ECE/ENERGY/2021/3 – Revised publication plans for 2021 and 2022 and draft publication plan for 2023
- ECE/ENERGY/2021/7 – Work plan of the Expert Group on Resource Management for 2022-2023
- ECE/ENERGY/2021/8 – Work plan of the Group of Experts on Cleaner Electricity Systems for 2022-2023
- ECE/ENERGY/2021/9 – Work plan of the Group of Experts on Coal Mine Methane for 2022-2023
- ECE/ENERGY/2021/10 – Work plan of the Group of Experts on Energy Efficiency for 2022-2023
- ECE/ENERGY/2021/11 – Work plan of the Group of Experts on Gas for 2022-2023
- ECE/ENERGY/2021/12 – Work plan of the Group of Experts on Renewable Energy for 2022-2023
- ECE/ENERGY/2021/13 – Proposal to change the name, mandate and terms of reference of the Group of Experts on Coal Mine Methane
- ECE/ENERGY/GE.4/2021/2 – Report of the sixteenth session of the Group of Experts on Coal Mine Methane
- ECE/ENERGY/GE.8/2021/2 – Report of the eighth session of the Group of Experts on Gas
- ECE/ENERGY/GE.3/2021/2 – Report of the twelfth session of the Expert Group on Resource Management
- ECE/ENERGY/2021/22 – Supplementary Specifications for the Application of the United Nations Framework Classification for Resources to Petroleum
- ECE/ENERGY/2021/23 – Supplementary Specifications for the Application of the United Nations Framework Classification for Resources to Minerals

74. The Committee was requested to note or approve a range of documents to support the implementation of mandated areas of work and to recommend their submission to the Executive Committee of ECE for subsequent approval if required.

75. The Committee was invited to endorse the renewal of the mandates of the Groups of Experts on Cleaner Electricity Systems, on Energy Efficiency, on Gas and on Renewable Energy for the period 2022-2023 with the possibility of extension.

76. The Committee was invited to endorse the change of name, mandate and Terms of Reference of the Group of Experts on Coal Mine Methane as contained in document “Proposal to change the name, mandate and terms of reference of the Group of Experts on Coal Mine Methane (ECE/ENERGY/2021/13).

77. The Committee was invited to agree to the provisional calendar of meetings for 2022, the revised publication plans for 2021 and 2022 and a draft publication plan for 2023.



78. The Committee:
- (a) Endorsed the provisional calendar of meetings for 2021(ECE/ENERGY/2021/2) and the revised publication plans for 2021 and 2022 and the draft publication plan for 2023 (ECE/ENERGY/2021/3), noting that the title of the publication “Sustainable Resource Management: Transforming extractive industries and critical raw materials as drivers of the future circular economy” is now modified to “Best Practice Guidance for Effective Management of Coal Mine Methane at National Level: Monitoring, Reporting, Verification and Mitigation;”
  - (b) Noted with appreciation the progress that the groups of experts have made on delivering on their mandated activities and work plans for 2020-2021;
  - (c) Took note of the reports of the Expert Group on Resource Management (ECE/ENERGY/GE.3/2021/2), the Group of Experts on Coal Mine Methane (ECE/ENERGY/GE.4/2021/2), and the Group of Experts on Gas (ECE/ENERGY/GE.8/2021/2);
  - (d) Approved the extension of the mandates of the Groups of Experts on Cleaner Electricity Systems, on Energy Efficiency, on Gas and on Renewable Energy from 2022-2023;
  - (e) Approved the work plans for 2022-2023 for the Expert Group on Resource Management and the Groups of Experts on Cleaner Electricity Systems, on Coal Mine Methane, on Energy Efficiency, on Gas and on Renewable Energy (ECE/ENERGY/2021/7, ECE/ENERGY/2021/8, ECE/ENERGY/2021/9, ECE/ENERGY/2021/10, ECE/ENERGY/2021/11, and ECE/ENERGY/2021/12). The Committee requested that the groups of experts consider suggested clarifications in their work plans and submit a revised version to the Thirty-first session of the Committee.
79. Approved the change of name of the Group of Experts on Coal Mine Methane to Group of Experts on Coal Mine Methane and Just Transition and also approved the change of mandate and terms of reference of the Group as contained in document ECE/ENERGY/2021/13. The Committee requested that the group of experts consider the suggested clarifications in its mandate and terms of reference and to submit a revised version to the Thirty-first session of the Committee.
80. Endorsed the “Supplementary Specifications for the Application of the United Nations Framework Classification for Resources to Petroleum” (ECE/ENERGY/2021/22) and the “Supplementary Specifications for the Application of the United Nations Framework Classification for Resources to Minerals” (ECE/ENERGY/2021/23).

## **IX. Any other business (agenda item 8)**

81. The Committee requested the secretariat to proceed with preparations for its thirty-first session on 21-23 September 2022 in Geneva, including a draft agenda, draft report, and all supporting documents necessary for the implementation of the programme of work for the sustainable energy subprogramme for 2022-2023 and the work plans of its six subsidiary bodies. Preference should be given to dates avoiding overlap with other energy related high-level meetings.
82. The Committee reaffirmed its decision that meetings could also be held outside Geneva at no cost to the secretariat, should a host country be found.
83. The Committee thanked all non-governmental stakeholders for their continued contributions to the work of the sustainable energy subprogramme and renewed its wish to involve these stakeholders in its activities and meetings.

## **X. Adoption of the report and close of the meeting (agenda item 9)**

*Documentation:* ECE/ENERGY/137 – Report of the Committee on Sustainable Energy  
on its thirtieth session

84. The Committee adopted the report of its thirtieth session (ECE/ENERGY/137) subject to any necessary editing and formatting.

85. The thirtieth session was adjourned on 24 September 2021 at 17.30 hours.

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