



Economic Commission for Europe**Committee on Sustainable Energy****Group of Experts on Cleaner Electricity Systems****Sixteenth session**

Geneva, 23-24 November 2020

Report of the Group of Experts on Cleaner Electricity Systems on its sixteenth session**I. Introduction**

1. The sixteenth session of the Group of Experts on Cleaner Electricity Systems (the Group of Experts) was held on 23-24 November 2020 in Geneva.
2. This report summarizes the discussions on the work of the Group of Experts at its sixteenth session. All the documents and presentations are available on the United Nations Economic Commission for Europe (ECE) website.¹

II. Attendance

3. The meeting was attended by some eighty experts from the following ECE member States: Albania, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Canada, Czech Republic, Estonia, France, Georgia, Germany, Kazakhstan, Kyrgyzstan, Latvia, Netherlands, Norway, Poland, North Macedonia, Romania, Russian Federation, Spain, Switzerland, Tajikistan, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, and Uzbekistan.
4. Experts from Brazil and India participated under Article 11 of the Commission's Terms of Reference.
5. Representatives from the European Union also participated.
6. Representatives of the following organizations participated: American Coal Council, Carnegie Climate Governance Initiative, Clean Energy Ministerial, European Association for Coal and Lignite (Euracoal), European Investment Bank, Global CCS Institute, Global Concrete and Cement Association (GCCA), IEA Clean Coal Centre, Institute for Energy Efficiency in Production, International Atomic Energy Agency (IAEA), International Institute for Applied Systems Analysis (IIASA), Joint Global Change Research Institute, United States Energy Association, World Meteorological Organisation, World Coal Association, World Economic Forum and World Nuclear Association.

¹ Official documents of the session are available at <http://documents.un.org/>. Unofficial room documents and presentations delivered at the meeting are available on the ECE website at: <https://www.unece.org/index.php?id=55063>.

7. The private sector and academia were also represented, at the invitation of the secretariat.

III. Adoption of the agenda (agenda item 1)

Documentation: ECE/ENERGY/GE.5/2020/1

8. The Group of Experts noted that the unprecedented circumstances caused by the COVID-19 pandemic had resulted in the sixteenth session being organised in a different and reduced format. The Acting Chair of the Group of Experts, Mr. Vladimir Budinský, opened the meeting and presented the provisional agenda, which was adopted without change.

IV. Opening remarks (agenda item 2)

9. The Group of Experts noted the sad loss of Mr. Barry Worthington, Chair of the Group of Experts from 2014 to 2020. Following a memorial speech, a minute's silence was observed in Mr. Worthington's memory and his invaluable and longstanding contribution to the work of the Group of Experts was noted.

V. Election of officers (agenda item 3)

10. The Group of Experts elected Mr. Jim Robb (United States of America) as Chair, and Mr. Georgy Popov (Russian Federation), Mr. Andrew Minchener (IEA Clean Coal Centre) and Mr. King Lee (World Nuclear Association) as Vice-Chairs with effect from the close of the sixteenth session and until the close of the eighteenth session.

11. The current Bureau comprises: Mr. Vladimir Budinsky, Acting Chair (Czech Republic), Mr. Sergey Katyshev (Kazakhstan), Mr. Aleksandar Puljevic (Serbia) and Professor Jon Gibbins (United Kingdom) as Vice-Chairs. All are elected until the end of the seventeenth session of the Group of Experts.

12. The Chair of the Group of Experts is a Vice-Chair of the Committee on Sustainable Energy ex officio.

VI. Attaining Carbon Neutrality (agenda item 4)

Documentation: ECE/ENERGY/GE.5/2020/3 – Pathways to Sustainable Energy – policy recommendations by the Group of Experts on Cleaner Electricity Systems

ECE/ENERGY/GE.5/2020/4 – Interplay of technologies including between flexible clean coal, natural gas and renewable energy

ECE/ENERGY/GE.5/2020/5 – Alternative electricity market models in support of carbon neutrality

ECE/ENERGY/GE.5/2020/6 – The role of Information and Communications Technology in enabling high-performance buildings and smart, sustainable cities

ECE/ENERGY/GE.5/2020/8 – Framework for attaining carbon neutrality in the ECE region by 2050

13. The Group of Experts reviewed the “Pathways to Sustainable Energy” project findings related to the electricity sector and revisited policy recommendations provided by the Group of Experts in the context of the ongoing energy transition and COVID-19 pandemic. The Acting Chair presented the summary of the policy recommendations to the Group of Experts. The Group of Experts endorsed the document “Pathways to Sustainable Energy – policy recommendations by the Group of Experts” (ECE/ENERGY/GE.5/2020/3) and recommended that it be submitted to the Committee on Sustainable Energy.

14. The Group of Experts took note of the Committee's recommendations to develop ambitious instruments to reduce the environmental footprint of fossil energy use, including finalizing guidelines for new investment in fossil energy in line with the objectives of the Paris Agreement and the objectives and targets of the 2030 Agenda for Sustainable Development, undertaking finalization, deployment, and dissemination of best practice guidance on methane emissions, and further deployment of ECE recommendations on carbon capture and storage (CCS) (ECE/ENERGY/123 and ECE/ENERGY/2019/2).
15. In response, the Group of Experts initiated a project on "Enhancing understanding of the implications and opportunities of moving to carbon neutrality in the ECE region across the power and energy intensive industries by 2050" (Carbon Neutrality project). A Task Force on Carbon Neutrality (Task Force) was formed to provide expertise and help in project implementation.
16. The Task Force has developed the carbon neutrality framework for the ECE region to attain carbon neutrality and to initiate a dialogue about the challenges in delivering on the 2030 Agenda. The framework was presented to the Group of Experts by the Acting Chair, The Group of Experts endorsed the document "Framework for attaining carbon neutrality in the ECE region by 2050" (ECE/ENERGY/GE.5/2020/8) developed by the Task Force and concluded that the framework serves as a basis for further implementation of the Carbon Neutrality project.
17. The Group of Experts recommended conducting a closer assessment of the roles of energy efficiency, Carbon Capture, Use and Storage (CCUS), nuclear energy and hydrogen in attaining carbon neutrality across the power and energy intensive industries in the ECE region. The Group of Experts encouraged closer collaboration with all the other Groups of Experts to deliver on the Carbon Neutrality project.
18. Professor Jon Gibbins, Vice-Chair of the Group of Experts, provided an overview of the CCUS brief and presented a paper on "Electricity market models for carbon neutrality" (ECE/ENERGY/GE.5/2020/5). Professor Gibbins concluded that CCS power generation is needed for carbon neutrality specifically because it differs from renewable energy. The Group of Experts welcomed the progress made on the CCUS brief and insights about the role of CCUS in the power sector to attain carbon neutrality.
19. Mr. King Lee, Vice-Chair of the Group of Experts on Cleaner Electricity Systems and Chair of the Nuclear Fuel Resources Working Group of the Expert Group on Resource Management presented a brief on nuclear energy. The Group of Experts noted with appreciation the progress made on the nuclear energy brief and welcomed the contribution from and the collaboration with the Expert Group on Resource Management.
20. Mr. Andrew Minchener, Vice-Chair of the Group of Experts, presented a paper on "Interplay of technologies including between flexible clean coal, natural gas and renewable energy" (ECE/ENERGY/GE.5/2020/4) highlighting that there is no one-size-fits-all global energy and environmental solution in a carbon constrained world, that there is need to ensure robust operability and low carbon emissions for sustainable power generation and that establishing effective technology interplay to ensure reliable cost-effective low carbon power generation is essential.
21. The Group of Experts stressed the importance of electricity for energy system transformation, including notably the interplay of technologies such as flexible clean coal, natural gas and renewable energy (ECE/ENERGY/GE.5/2020/4).
22. The Group of Experts requested the Task Force to continue engaging in the dialogue on technology interplay under the auspices of the Carbon Neutrality project. Document ECE/ENERGY/GE.5/2020/4 is to be the basis for future work and should be expanded further to explore the roles of other technology options.
23. The Group of Experts requested the Task Force to conduct a series of sub-regional workshops to gather data and improve understanding about market conditions in the eastern reaches of the ECE region, namely the Caucasus, Central Asia, Russian Federation and Eastern and Southeast Europe. A report on the interplay of selected technology options within the carbon neutrality concept will be presented at the seventeenth session of the Group of Experts.

VII. Roundtable on carbon capture, and storage (agenda item 5)

Documentation: ECE/ENERGY/GE.5/2020/5 – Alternative electricity market models in support of carbon neutrality

ECE/ENERGY/GE.5/2020/7 – Technology brief: Carbon capture, utilization and storage

24. Panellists and participants examined the potential of CCUS technologies, discussed ways to overcome policy and regulatory barriers, and identified financing mechanisms to allow full commercialization of these technologies across North America, Europe and Central Asia recognizing that CCUS will be required in order to reach net zero and then net negative emissions.

25. The Group of Experts noted that there is need to actively engage different stakeholders in order to raise awareness on the potential of CCUS, including net-negative technologies, across the ECE region and for institution of policy mechanisms and regulatory frameworks to advance the economic viability of CCUS projects. Both public and private sector actors need to ensure early readiness for CCUS projects before full commercialisation of CCUS technologies can be achieved.

26. The Group of Experts reiterated that continued financing of low- and zero- carbon technologies is crucial to modernise the energy system and to meet the Paris Agreement and the 2030 Agenda. In addition, the Group of Experts requested the Task Force to continue with its inclusive dialogue and development of financial guidelines for the modernization of the power and energy intensive industries.

VIII. Sub-regional workshop on attaining carbon neutrality (agenda item 6)

Documentation: ECE/ENERGY/GE.5/2020/4 – Interplay of technologies including between flexible clean coal, natural gas and renewable energy

ECE/ENERGY/GE.5/2020/8 – Framework for attaining carbon neutrality in the ECE region by 2050

27. An interactive workshop with a focus on South-Eastern Europe, Eastern Europe, the Caucasus, and Central Asia allowed for an exchange between the modelling team for the Carbon Neutrality project and experts to improve understanding of the role of CCUS technologies and nuclear energy technologies to attain carbon neutrality in the focus regions and to advance the modelling architecture that will be used in the implementation of the Carbon Neutrality project. The dialogue provided needed insights to strengthen assumptions and cost curves featured in the project's model.

28. A number of presentations were delivered to share insights and perspectives from Albania, Belarus, Kazakhstan, North Macedonia, Russian Federation, Ukraine and Uzbekistan on attaining carbon neutrality nationally.

29. The Group of Experts requested the Task Force to explore the potential for carbon storage in the Eastern part of the ECE region, namely South-Eastern Europe, Eastern Europe, the Caucasus, Central Asia, and Russian Federation.

30. The Group of Experts requested the Task Force to conduct workshops with a sub-regional focus to improve understanding on similarities and differences across sub-regions.

IX. Activities and priorities of the United Nations Economic Commission for Europe and its Committee on Sustainable Energy (agenda item 7)

31. The Group of Experts agreed to continue its activities on: (a) attaining carbon neutrality in the ECE region across the power and energy intensive industries by 2050; (b) dialogue on financial guidelines for the modernisation of the power and energy intensive industries; and (c) promoting the concept of “just” transition in collaboration with the Group of Experts on Coal Mine Methane.

32. The Group of Experts agreed to collaborate with the other Groups of Experts on appraisal of opportunities for digital technology to enhance system efficiency and accelerate attainment of country commitments.

X. Preparations for the seventeenth session of the Group of Experts (agenda item 8)

33. The Group of Experts recommended the topics of its Work Plan for 2020–2021 for the substantive portion of its seventeenth session, with achieving carbon neutrality as a priority. The experts proposed to initiate a consultation process on topics that will serve as a foundation for the development of the Group’s Work Plan 2022-2023.

34. The seventeenth session of the Group of Experts is scheduled to take place on 7-8 October 2021 in Geneva, immediately after the eighth session of the Group of Experts on Renewable Energy (5-6 October 2021). The Group of Experts confirmed its proposal from previous sessions that its meetings may take place in venues outside Geneva.

XI. Any other business (agenda item 9)

35. No issues were raised under this item.

XII. Adoption of conclusions and recommendations (agenda item 10)

Documentation: CES-16/2020/INF.1 - Unofficial room document: Draft Conclusions and Recommendations arising from the Group of Experts on Cleaner Electricity Systems, dated 18 November 2019

36. The adopted conclusions and recommendations are included in this report.

XIII. Adoption of the report and close of the meeting (agenda item 11)

Documentation: ECE/ENERGY/GE.5/2020/2 – Report of the Group of Experts on Cleaner Electricity Systems on its sixteenth session.

37. The report of the meeting was adopted, subject to any necessary editing and formatting.