I. Introduction

1. The eighth session of the Group of Experts on Energy Efficiency (the Group of Experts) was held for two days from 20 to 21 September 2021 amid circumstances caused by COVID-19, including travel restrictions.

2. This report summarizes the proceedings of the Group of Experts at its eighth session. All the documents related to the session are available on the website of the United Nations Economic Commission for Europe (ECE).

II. Attendance

3. The meeting of the Group of Experts was attended by 230 participants. Of these, 205 were participating virtually and 25 in-person.

4. Experts from the following ECE member States participated: Albania, Armenia, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Hungary, Ireland, Italy, Kazakhstan, Kyrgyzstan, Netherlands, North Macedonia, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Spain, Switzerland, Tajikistan, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, and Uzbekistan.

5. Representatives of the United Nations Development Programme (UNDP), United Nations Economic and Social Commission for Western Asia (ESCWA), United Nations Environment Programme (UN Environment), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Human Settlement Programme (UN-Habitat), United Nations Entity for Gender Equality and the Empowerment of Women (UN Women), UNEP-DTU Partnership Copenhagen Centre on Energy Efficiency, World Meteorological Organization (WMO) attended the meeting. The European Union was represented. Representatives from the European Commission (EC) also participated.

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1 Official documents, room documents, and presentations delivered at the meeting are available on the ECE website (see https://www.unece.org/index.php?id=54636). Official documents of the session are also available at Official Document System of the United Nations (see http://documents.un.org/).
6. The meeting was also attended by representatives of non-governmental organizations, academia, and private sector, as well as by independent experts.

III. Adoption of the agenda (agenda item 1)

Documentation: ECE/ENERGY/GE.6/2021/1 – Annotated provisional agenda

7. In accordance with the Rule 7 of the Rules of Procedure of the Commission (E/ECE/778/Rev.5), the first item of the provisional agenda is the adoption of the agenda.

8. The provisional agenda as contained in ECE/ENERGY/GE.6/2021/1 was adopted, provided interchange, in the interest of time, of item 5 and item 6, and item 7 and item 8.

IV. Election of officers (agenda item 2)

9. The Group of Experts re-elected Dr. Romanas Savickas (UNEP-DTU Partnership, Copenhagen Centre on Energy Efficiency) to the Bureau of the Group of Experts (the Bureau) to strengthen its activities. Following the recommendation from the Bureau, the Group of Experts re-appointed Dr. Piyush Verma (Harvard Kennedy School of Government) as the Chair of the Task Force on Digitalization in Energy and member of the Bureau ex officio. The term of office for the elected members of the Bureau is two years.

10. The Group of Experts has the following members to serve on its Bureau:

   (a) Until the conclusion of its ninth session: Mr. Vahagn Atayan (Armenia), Mr. Andrei Miniankou (Belarus), Ms. Sanja Kapetina (Bosnia and Herzegovina), Mrs. Natalia Jamburia (Georgia), Mr. Petr Bobylev (Russian Federation), and Mr. Kostiantyn Gura (Ukraine); also, Mr. Benoit Lebot (French Ministry of Ecological Transition), Prof. Martin K. Patel (University of Geneva), Mr. Zlatko Pavicic (Croatian Innovators Network), and Dr. Alisa Freyre (PAN DATA GmbH); further, ex officio, Mr. Hannes Mac Nulty (Green Growth Knowledge Partnership) and Mr. Stefan M. Buettner (Institute for Energy Efficiency in Production) as Co-Chairs of the Task Force on Industrial Energy Efficiency, and Mr. Vahram Jalalyan (UNDP in Armenia) and Ms. Irena Perfanova (Real Estate Tribune / AIIC Ltd.) as Co-Chairs of the Joint Task Force on Energy Efficiency Standards in Buildings;

   (b) Until the conclusion of the tenth session: Dr. Romanas Savickas (UNEP-DTU Partnership, Copenhagen Centre on Energy Efficiency) and ex officio Dr. Piyush Verma (Harvard Kennedy School of Government) as Chair of the Task Force on Digitalization in Energy.

11. The Chair of the Group of Experts, Mr. Aleksandar Dukovski (Macedonian Centre for Energy Efficiency), further informed the Group of Experts of his resignation from the office effective conclusion of the eighth session, and recommended, following the consultations with the Bureau and its favourable opinion, that the selected Chairs (Co-Chairs) of the Task Forces that report to the Group of Experts (namely, the Task Force on Industrial Energy Efficiency, the Joint Task Force on Energy Efficiency Standards in Buildings, and the Task Force on Digitalization in Energy) step in as Co-Chairs of the Group of Experts and guide its activities during the intersessional period until the conclusion of the ninth session. The following ex officio members of the Bureau were therefore proposed to assume the office as a.i. Co-Chairs of the Group of Experts: Mr. Stefan M. Buettner, Co-Chair of the Task Force on Industrial Energy Efficiency; Mr. Vahram Jalalyan, Co-Chair of the Joint Task Force on Energy Efficiency Standards in Buildings; and Mr. Piyush Verma, Chair of the Task Force on Digitalization in Energy.

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V. Opening remarks (agenda item 3)

12. The Vice-Chair delivered the opening remarks outlining the current developments in the area of energy efficiency, including expansion of scope of work under this topic, particularly as relates to circular economy, and increase of complexity of issues under the purview of the Group of Experts.

VI. Introductory plenary session (agenda item 4)

13. The discussion was facilitated by the Task Force on Industrial Energy Efficiency, the Joint Task Force on Energy Efficiency Standards in Buildings, and the Task Force on Digitalization in Energy.

14. The Group of Experts addressed the existing barriers for improving energy efficiency in industry and in buildings and also discussed how digital solutions could help facilitate energy efficiency improvements. Among other, behavioral barriers and the systemic inertia were specifically highlighted and argued to remain most challenging, often regardless of availability of investments, favourable regulatory framework in place, and access to relevant technologies.

15. It was stressed, also, that the energy efficiency component is key in the environmental agenda. Implementation of proved cost-effective energy efficiency measures would enable more rational use of energy, hence eventually reducing the need to expand power generation and transmission infrastructure. At the same time, the Group of Experts underscored that energy should be valued as the means to deliver and constantly maintain the normal level of comfort, which is hardly measured in monetary terms, and thus energy efficiency shall not be considered as only a cost-saving measure. An example of a kindergarten was provided, which, upon retrofitting, experienced higher electricity costs due to the consumption of equipment that ensures improved comfort and quality of life.

16. The Group of Experts was also informed of the support, through Regional Advisory services, towards implementation of its activities.

17. The Group of Experts:

   (a) Acknowledged that in various countries, taking the investment decisions is more of an issue rather than having a means to implement these decisions. Energy supply, energy transmission and energy consumption, getting rid of remaining emissions – these are the issues we are dealing with. Industrial sector is difficult to grasp because of its spectrum of activities and sizes of companies;

   (b) Recognized that from the users’ perspective, the level of comfort and improved health benefits, which are both hard to quantify, achieved by the means of retrofitting are oftentimes more important than savings (that in average do not exceed 40-50 per cent);

   (c) Welcomed support provided by the Regional advisory services to the work of the Group of Experts in several areas. Invited the ECE member States to consider potential requests for studies and capacity-building activities in the area of energy efficiency.

VII. Improving energy efficiency in industry (agenda item 5)


19. The Task Force on Industrial Energy Efficiency argues that achieving a reduction of the greenhouse gas footprint towards net-zero is feasible with the help of a wide variety of measures that can be grouped into three categories: reduction, substitution, and compensation. The document ECE/ENERGY/GE.6/2021/3 evaluates the six identified measures from an economic point of view and assesses them with regard to necessary actions and their consequences.

20. The experts argued that applying on-site footprint optimization measures (such as self-generation of sustainable energy, energy efficiency, resource efficiency, and process decarbonization) increase companies’ resilience in terms of energy supply and help offset energy and emissions (compensation) price fluctuations. It was acknowledged that a composition of decarbonization measures depends on size of a company, sector it operates in, and its energy intensity, and further recognises that no mix can be of a static nature and rather requires continuous adjustment to maintain the desired outcome, i.e., carbon neutrality.

21. The experts emphasised that knowledge of a company’s current emission and energy profile, as well as measures already undertaken by a company, are foundational for assessing reduction potentials and developing effective (and economically feasible) decarbonization roadmaps. The necessity to create a mutual understanding among stakeholders and the need to use a common terminology in calculations (including on influencing factors and system barriers, i.e., “Scopes”) was further underscored.

22. The Group of Experts:
   
   (a) Recognized progress in implementation by the Task Force on Industrial Energy Efficiency of activities envisioned in the Industrial Energy Efficiency Action Plan (ECE/ENERGY/GE.6/2020/3);
   
   (b) Welcomed exchanges of know-how and best practices on improving energy efficiency in the industry sector in the ECE region, enabled by the Task Force on Industrial Energy Efficiency, along with its efforts to enhance involvement of industry in achieving more sustainable and energy-efficient production, logistics, and consumption;
   
   (c) Having discussed the document ECE/ENERGY/GE.6/2021/3, underlined that applying the notion of “Efficiency First” is central to reducing carbon footprint;
   
   (d) Commended consideration of a possibility for an emphasised focus on optimizing the demand-side carbon footprint, with the understanding that this leverages the effect of expanding transmission and generation capacity of sustainable energy, and respectively reduces shortages in supply and capacity;
   
   (e) Encouraged member States to identify the intentions of local businesses to reduce their carbon footprint, as well as timeframes to do so to identify infrastructure, generation and planning needs and timelines, and for this to engage with the Task Force on Industrial Energy Efficiency in applying tools to address the related issues;
   
   (f) Encouraged conducting an economic assessment of measures aimed at reducing carbon footprint of an industrial facility, hence encouraged further data collection on, and analysis of, available, intended, and practicable measures for increasing energy productivity and reducing environmental footprint by industries in the ECE member States;
   
   (g) Recommended organizing workshops to discuss practical implementation of measures aimed to advance towards carbon neutrality through industrial energy efficiency.

VIII. Improving energy efficiency in buildings (agenda item 6)


23. The work of the Group of Experts on energy efficiency in buildings is carried out by the Joint Task Force on Energy Efficiency Standards in Buildings, established under the Committee on Urban Development, Housing and Land Management and the Committee on Sustainable Energy, and hosted by the Group of Experts on Energy Efficiency.
24. ECE is implementing project “Enhancing National Capacities to Develop and Implement Energy Efficiency Standards for Buildings in the UNECE Region”. The project is overseen by the Joint Task Force on Energy Efficiency Standards in Buildings. One of the project’s activities includes conducting a gap analysis between the performance objectives set forth in the Framework Guidelines for Energy Efficiency Standards in Buildings (the Framework Guidelines, ECE/ENERGY/GE.6/2020/4) and the current energy efficiency standards and their implementation in the selected countries. The gap analysis was conducted, and the study is available online. It addresses the situation in South-Eastern Europe (Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia), Eastern Europe (Belarus, Republic of Moldova, Ukraine), the Caucasus (Armenia, Azerbaijan, Georgia), and Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan), and the Russian Federation.

25. The Group of Experts, at its seventh session (22 and 25 September 2020), requested the results of the gap analysis to be reported at the eighth session (ECE/ENERGY/GE.6/2020/2). The document entitled “Energy Efficiency Standards in Buildings: analysis of progress towards the performance objectives” (ECE/ENERGY/GE.6/2021/4) was developed in response to this request. It contains key conclusions of the gap analysis and recommendations on attainment of the performance objectives set forth in the Framework Guidelines.

26. The Group of Experts was informed on specific activities under the topic of energy efficiency in buildings as addressed by the Committee on Urban Development, Housing and Land Management, with its specific focus on economic well-being, improving quality of life and addressing the issues of affordability of renovations (and other improvements of buildings) especially for vulnerable groups.

27. The Group of Experts:

(a) Expressed appreciation to the Russian Federation for funding the extrabudgetary project “Enhancing National Capacities to Develop and Implement Energy Efficiency Standards for Buildings in the UNECE Region”;

(b) Took note of the progress made towards implementation of the project’s activities, notably the conducted gap analysis between the performance objectives set forth in the Framework Guidelines and the current energy efficiency standards and their implementation in the countries of South-Eastern and Eastern Europe, the Caucasus, Central Asia, and in the Russian Federation, and three in-depth national studies with a detailed gap analysis in Armenia, Kyrgyzstan, and the Republic of Moldova. Welcomed the findings of a study on gap analysis and the findings of three in-depth national studies;

(c) Expressed its support to member States in their efforts to ensure implementation of energy efficiency standards for buildings in conformity with the Framework Guidelines. Invited member States to implement recommendations from the studies under the project to overcome barriers to effective achievement of energy efficiency policies potential, to bridge the existing gaps, and to enhance national capacity to develop and implement high-performance energy efficiency standards for buildings;

(d) Requested the secretariat to report on the results of project implementation, including on trainings on high-performance energy efficiency standards in buildings and outcomes of an impact study on how member States could better use and implement best practices and guidelines developed by ECE to improve energy efficiency in buildings, at the ninth session of the Group of Experts;

(e) Welcomed the continued collaboration between the Committee on Sustainable Energy and Committee on Urban Development, Housing and Land Management on the issues of common concern in the area of energy efficiency in buildings and welcomed further joint activities. Therefore, requested renewal of mandate of the Joint Task Force on Energy Efficiency Standards in Buildings, with a possibility for extension, as contained in the Annex Work Plan of the Group of Experts on Energy Efficiency for 2022-2023 (ECE/ENERGY/2021/10, Annex, Terms of Reference for the Joint Task Force on Energy Efficiency Standards in Buildings for 2022-2023;
(f) Encouraged collaboration with the Group of Experts on Renewable Energy on the issues of buildings energy supply, with a view to apply a holistic, systems approach to building design, delivery and operation, hence to help align buildings with the highest standards of health, comfort, well-being and sustainability, including improving energy efficiency and reducing carbon dioxide emissions;

(g) Encouraged Member States to propose local institutions to join the network of international centres of excellence for high-performance buildings, which aims to deploy and disseminate the Framework Guidelines globally. In pursuing this target, also encouraged collaboration with the other United Nations Regional Commissions;

(h) Encouraged the ECE member States to continue support for the Joint Task Force through extrabudgetary funding;

(i) Took note of the conducted training workshops on energy efficiency standards in buildings and high-performance buildings for building sector practitioners, policymakers and trainers, held in-person and through means of telecommunication in the framework of implementation of the activities of the Joint Task Force on Energy Efficiency Standards in Buildings, and recommended continuation of such trainings subject to availability of resources and as circumstances permit.

IX. Unlocking energy efficiency potential through digitalization (agenda item 7)


28. The work of the Group of Experts on digitalization is carried out by its Task Force on Digitalization in Energy. The Task Force on Digitalization in Energy, recognizing that the building sector globally represents over one-third of total final energy consumption, focused on exploring opportunities that digital technologies provide to achieve higher energy performance of residential, commercial, and industrial buildings at any stages of their lifecycle (construction, occupancy, or retrofitting).

29. As a result of this work, the Task Force on Digitalization in Energy developed an evidence-based document entitled “Improving Efficiency of Buildings through Digitalization – Policy Recommendations from the Task Force on Digitalization in Energy” (ECE/ENERGY/GE.6/2021/5) that elaborates on the role that application of digital technologies could play and aims to raise awareness of policymakers and stakeholders of related benefits, risks, uncertainties, and trade-offs. The document also contains key recommendations for further consideration by the Group of Experts on Energy Efficiency and the Committee on Sustainable Energy.

30. The Task Force on Digitalization in Energy also informed the participants of its activities during the intersessional period, including: (i) organizing a Joint event with the Informal Working Group on Electric Vehicles and the Environment on Real-Time Upstream Emissions of Electric Vehicles During Recharge; (ii) co-organizing an upcoming joint workshop with the Group of Experts on Cleaner Electricity Systems in the framework of its 17th session; and (iii) ongoing collaboration with International Telecommunication Union (ITU), including co-hosting upcoming Sustainable Digital Transformation Dialogues.

31. The Group of Experts:

(a) Welcomed the effort of the Task Force on Digitalization in Energy towards driving the digitalization agenda and noted a wide range of international expertise available owing to its membership. Encouraged the member States to nominate national experts to join the Task Force on Digitalization in Energy to further strengthen its activities and further leverage expertise at national level;

(b) Underscored that whilst benefits of applying digital solutions are plentiful, aspects of cybersecurity must be considered by design in both Internet of Things products
and services, to structurally avoid security threats and subsequent loss in trust by stakeholders to adopt digital solutions that help optimizing energy use;

(c) Recognized that data is as a strategic asset for utilities and that it is important to be able to develop strategic use cases that can drive effective deployment of digital technologies for utilities to optimize the use of the data that is collected and managed across the enterprise. Also highlighted that having a data and analytics maturity roadmap is key to realizing those substantial grid impacts and benefits for customers and utilities. Underscored that there needs to be a deep understanding of how to define the value of data to an enterprise (utility or industry) and how it can be useful to make a larger impact;

(d) Took note of the conclusions and recommendations made by the Task Force on Digitalization in Energy in the document entitled “Improving Efficiency of Buildings through Digitalization – Policy Recommendations from the Task Force on Digitalization in Energy” (ECE/ENERGY/GE.6/2021/5) and, mindful of challenges and opportunities of digitalization in energy, reiterated that:

(i) Digital technologies have direct and indirect effects on climate change. The reduced emission benefits from digitalization on other sectors and activities are potentially much larger than its direct footprint, but these effects are complex and difficult to quantify. Strong climate policies are needed to ensure digital technologies are applied to reduce emissions and not increase them;

(ii) The fast deployment of information and communications technologies (ICT) imposes redoubling efforts to promote energy efficiency in every sector; Resource-efficient ICT is possible, but forces redefining the type, the pace, and the way policy interventions are addressed, and requires international collaboration to reduce cost and save time;

(e) Took note of the conducted and upcoming workshops on digitalization in energy led and co-led by the Task Force on Digitalization in Energy, as well as its engagement in other sustainable energy initiatives including work on transport. Recommended conduct of relevant trainings for stakeholders and energy system actors subject to availability of resources. Therefore, encouraged the ECE member States to consider supporting activities of the Task Force on Digitalization in Energy through extrabudgetary funding;

(f) Welcomed collaboration of the Task Force on Digitalization in Energy with the other subsidiary bodies of the Committee on Sustainable Energy, notably the Group of Experts on Cleaner Electricity Systems that aims to explore the opportunities and challenges with digitalization in the electricity sector, as well as with relevant organizations, notably ITU, on the issues of common concern. Encouraged collaboration with the other United Nations Regional Commissions to drive the digitalization agenda in their respective regions.

X. Regulatory and policy dialogue addressing barriers to improve energy efficiency (agenda item 8)

32. Regulatory and policy dialogue was held in the form of a plenary session. The plenary session featured a dialogue among the Task Forces on their respective thematic areas and enabled sharing experiences and observations on the raised issues concerning barriers to improve energy efficiency by a concerted effort.

33. The Group of Experts was also informed of the findings of the studies conducted in the framework of implementation of its activities, specifically:

(a) The study “Energy Transition and Post-COVID-19 Socio-economic Recovery: Role of Women and Impact on Them”, supported by case studies from five countries in the UNECE region (Albania, Belarus, Ukraine, the United Kingdom, and Uzbekistan), which factors in a set of recommendations that are deemed useful for UNECE member States to help facilitate green energy transition by addressing the issue that women remain underrepresented in policymaking, corporate leadership and governance, and labour workforce, so experiences, skills, and talents are missing in energy sector;
(b) The study “Updated Guidelines and Best Practices for MSME in delivering energy-efficient products and renewable energy equipment” that provides recommendations to MSME working in the areas of energy efficiency and renewable energy on measures to recover from the crisis caused by the COVID-19 pandemic.

34. The Group of Experts:

(a) Took note of the ongoing studies, acknowledging that engagement of women in the energy sector can have multiple benefits, including contribution to skilled labour, entrepreneurs, and investors in the development of energy efficiency, and noting the recommendations to MSME that may aid their recovery from the crisis caused by the COVID-19 pandemic through delivery of energy-efficient products and renewable energy equipment;

(b) Welcomed the concept of quasi-dynamically optimized decarbonization roadmaps and welcomed work of the Task Force on Industrial Energy Efficiency exploring this direction. Recommended that costs of inaction are duly considered and taken account of in calculating economic efficiency of decarbonization options, along with the changing energy and emission prices;

(c) Discussed that companies are looking for strong leadership on how to plan the net-zero emission in a longer term, thus concluded that further considerations should encompass reality check and discussions on matters related to implementation of actions. Recognizing that legislation and law enforcement mechanisms are crucial for implementing energy efficiency measures, also underscored that transparency and predictability are of crucial importance for businesses;

(d) In this context, encouraged the ECE member States to share considerations on how to address the challenges and come up to concrete plans of action, also invited countries to provide the perspective on provision of a strong and well-planned roadmap for companies to follow the path towards net-zero manufacturing.

XI. Status of implementation of the Work Plan of the Group of Experts for 2020-2021 and considerations regarding Draft Work Plan for 2022-2023 (agenda item 9)


35. The Group of Experts reviewed the activities implemented over the period 2020-2021 mandated by the respective Work Plan, as well as other sustainable energy initiatives that the Group of Experts was involved in.


37. The Group of Experts:

(a) Noted that activities mandated by the Work Plan of the Group of Experts on Energy Efficiency for 2020-2021 (ECE/ENERGY/2019/8) were timely implemented and expressed appreciation to the experts for their contribution to the results achieved by the Group of Experts so far, and to the Bureau, notably its ex officio members, for strategic guidance and overall leadership in the thematic areas;

(b) Requested the Committee on Sustainable Energy to approve the Work Plan of the Group of Experts on Energy Efficiency for 2022-2023 (ECE/ENERGY/2021/10) and extend the mandate of the Group of Experts until 31 December 2023 with a possibility of further extension.
XII. Other business (agenda item 10)

38. The Group of Experts expressed appreciation to the outgoing Chair serving the Group of Experts since its fifth session, Mr. Aleksandar Dukovski, for his contribution to the work of the Group of Experts and its Task Forces, and acknowledged the progress of the Group of Experts achieved under his chairmanship.

XIII. Dates of the next meeting (agenda item 11)

39. The ninth session of the Group of Experts is scheduled to take place in Geneva on 3 and 4 October 2022. The Group of Experts confirmed its proposal from the previous sessions that its meetings may take place in venues outside Geneva.

XIV. Adoption of conclusions and recommendations (agenda item 12)

Documentation: GEEE-8/2021/INF.1 – Draft Conclusions and Recommendations arising from the eighth session of the Group of Experts on Energy Efficiency

40. The conclusions and recommendations were adopted and are included under the relevant agenda items highlighted in this report.

XV. Adoption of the report and close of the meeting (agenda item 13)


41. The report of the meeting was adopted, including conclusions and recommendations, subject to any necessary editing and formatting. Following that the Chair closed the meeting