



Economic Commission for Europe**Committee on Sustainable Energy****Group of Experts on Gas****Eighth session**

Geneva, 25-26 March 2021

Report of the Group of Experts on Gas**I. Introduction**

1. The eighth session of the Group of Experts was held on 25-26 March 2021.
2. This report summarizes the discussions of the Group of Experts at its eighth session. All the documents and presentations of the session are available on the United Nations Economic Commission for Europe (ECE) website.¹

II. Attendance

3. The session was attended by more than 100 experts from the following United Nations Economic Commission for Europe (ECE) member States: Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, France, Georgia, Germany, Greece, Hungary, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, the Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, and Uzbekistan.
4. Experts from Australia, Brazil, Colombia, Egypt, Ghana, Indonesia, Mexico, Nigeria, Qatar, and Saudi Arabia participated under Article 11 of the Commission's Terms of Reference.
5. Representatives of the United Nations Economic and Social Commission for West Asia (UNEASCWA) and the United Nations Environment Programme (UNEP) attended. The European Union was represented. Representatives from the European Commission (EC) Directorate-General (D.G.) for Energy also participated.
6. Representatives of the following organizations participated: Energy Community, International Energy Agency (IEA) and International Renewable Energy Agency (IRENA).
7. The meeting also was attended by representatives of non-governmental organizations, academia and the private sector, as well as by independent experts.

¹ <https://unece.org/sustainable-energy/events/eighth-session-group-experts-gas>

III. Adoption of the agenda (agenda item 1)

8. The Expert Group adopted the agenda as circulated previously (ECE/ENERGY/GE.8/2021/1).

IV. Opening remarks and keynotes (agenda item 2)

9. In his opening remarks, the Chair introduced the sequence of events for the session. He reminded participants of the role of the Group of Experts as a platform for ECE member States to discuss sustainable and clean production, distribution, and consumption of gas in the ECE region. The primary mandate of the Group of Experts is to help ECE member States deliver on two key political commitments: (i) the 2030 Agenda for Sustainable Development, as outlined in the Sustainable Development Goals (SDGs), and (ii) the Paris Agreement on climate change.

10. Through its current work, the Group of Experts is engaged with reconciling the continuing use of fossil fuels and the urgent need to address climate change. The Chair observed that more could be done by expanding the Group's scope of work beyond natural gas into a broader domain of gases – that is, low carbon, decarbonized and renewable gases, including hydrogen – as vectors for energy transmission. In this regard, the Group of Experts could recommend to the Committee on Sustainable Energy to change the name of the Group to the Group of Experts on Gases.

11. The President of the International Gas Union (IGU) stressed that the issues being discussed at the eighth session – the role of gas in the post-COVID recovery, gas and the SDGs, best practices in methane management, decarbonization through synergies between gas and electricity, and low-carbon gases, including hydrogen – lie at the heart of the global debate about climate change and the role of energy. The energy debate is at a critical juncture, intense in recent years, but not much progress has been made in integrating the objectives of decarbonization, energy access and energy security. There may be an opportunity in the coming months to progress on these fronts with President Biden's Climate Summit, the G20 meeting under the Italian presidency and COP26 under UK leadership.

12. The UN report on National Determined Contributions covering 75 new Party Submissions showed that the combined impact of new commitments would result in a less than one per cent emission reduction by 2030, far short of the 45 per cent needed for a 1.5°C pathway. According to the IRENA report issued in March 2021, US\$131 trillion must be invested to limit global warming to 1.5 °C by 2050. The International Gas Union (IGU) believes an achievable transition is one that delivers clean, secure and affordable energy, using electrons and natural gas and hydrogen molecules, and provides the necessary infrastructure to help individual countries meet the UN Sustainable Development and Paris Goals. IGU is of the view that decision-makers must accept that a clean, secure, and affordable energy future requires electrons, molecules, and infrastructure.

13. The Secretary-General of the Gas Exporting Countries Forum (GECF) discussed long-term global economic prospects and projected gas markets up to 2050. According to newly available projections, global GDP will be 7 per cent, or USD 13 trillion, lower in 2050 than was forecast in 2019 (equivalent to the size of China's current economy in absolute terms) because of COVID-19. At the same time, the share of ECE in the global economic output would decrease to 40 per cent from 52 percent in 2020. Other projections shared by the Secretary-General of GECF included: natural gas will remain a destination fuel, indispensable in the transition to a low carbon economy; in 2050, global gas trade will reach 2,000 billion cubic metres (bcm) per year; liquefied natural gas (LNG) will overtake pipeline gas helped, in part, by the introduction of green LNG; and natural gas will become the leader in the global energy mix by 2050, as its share will increase from 23 per cent today to 28 per cent in 2050.

14. The representative of the Ministry of Energy and Mining of Serbia informed the participants about the development of Serbia's National Energy and Climate Plans under Recommendation 2018/01/MC of the Energy Community. In line with this recommendation, the Republic of Serbia was obliged to develop and adopt these Plans for the period 2021 -

2030, including the projections to 2050, to ensure consistency with long-term relevant policy objectives at the levels of the European Union (EU), the United Nations Framework Convention on Climate Change (UNFCCC) and the Energy Community. The new Law on Energy will define the obligation to develop Integrated National Energy and Climate Plans, and thus a part of the "Governance" regulation has been transposed into the legislation of Serbia. This document will define national targets for decarbonization in terms of greenhouse gas emissions and energy from renewable sources, energy efficiency, energy security, the internal energy market and research, innovation and competitiveness.

15. Regarding natural gas, Serbia is a highly import-dependent country. In 2019, 84 per cent of total gas demand was imported. Having in mind EU policy in the field of energy and climate, the role of gas in the energy transition of Serbia will be considered in the process of decarbonizing the economy. Projects in the Energy Community framework would include Serbia-Bulgaria, Serbia-Northern Macedonia and Serbia-Croatia gas interconnections.

16. The Deputy Executive Secretary of ECE informed participants about the principal commitments in sustainable energy: the 2030 Agenda for Sustainable Development and the Paris Agreement on climate change both of which set the world on a path to carbon neutrality by 2050. Achieving the 2030 Agenda and delivering on the commitments of the Paris Climate Agreement is possible through integrated solutions that do not sacrifice one for the other. The work of the Group of Experts, and that of the Committee on Sustainable Energy, lies at the intersection of the two commitments and is key to achieving them both timely, economically and equitably. He observed that, in his view, the most important theme of the meeting is hydrogen as a key to achieving carbon neutrality, especially in the hard-to-abate sectors. He underlined the need to look in an agnostic, open and neutral way, at all options for producing, transporting or using hydrogen. ECE provides a platform for such work.

V. Elections of officers (agenda item 3)

17. The current Bureau, elected in September 2020 to serve from the close of the seventh session for two years, comprises: Mr. Francisco de la Flor (Spain) as Chair and Mr. Florian Marko (Austria), Mr. Loghman Damirli (Azerbaijan), Mr. Boris Maksijan (Croatia), Mr. Uwe Wetzel (Germany), Mr. Torstein Indrebø (Norway), Mr. Dmitriy Shvedov, (Russian Federation), Ms. Denise Mulholland (United States) and Mr. Luis Bertran (International Gas Union) as Vice-Chairs.

18. Two nominations, to serve from the close of the eighth session for two years, were received: Mr. Amir Foster (Israel) and Mr. Saša Stojanović (Serbia). The Group of Experts elected Mr. Foster and Mr. Stojanovic as Vice-Chairs of the Bureau for a period of two years from the close of the eighth session to the close of the tenth session.

19. The Group of Experts on Gas expressed its appreciation to the Bureau for its contribution to the deliverables of its 2020-2021 work plan.

VI. Activities and priorities of the United Nations Economic Commission for Europe and its Executive Committee (agenda item 4)

20. The Director of the Sustainable Energy Division updated the Group of Experts on the outcomes of the twenty-ninth session of the Committee on Sustainable Energy, the Group of Expert's parent body, and on the preparations for the thirtieth session of the Committee, 22-24 September 2021. He informed the Group of Experts on preparations for the sixty-ninth session of the Economic Commission for Europe, 20-21 April 2021, in which the Committee will play an active role. The Commission is the Committee's parent body.

21. The Group of Experts noted the decision of the Committee on Sustainable Energy at its twenty-ninth session to request the Economic Commission for Europe at its sixty-ninth session to consider a decision on near-term acceleration of the 2030 Agenda for Sustainable Development through action on gases and buildings (ECE/ENERGY/133, paragraph 7).

22. Noting that the ECE region is falling short of its commitments and objectives on sustainable energy, the Group of Experts concluded that its key contribution to achieving these objectives could be in two areas: (a) transition to sustainable energy; and (b) reducing the environmental impact of energy.

23. The Group of Experts actively participated in the preparation of the draft strategic review of the ECE sustainable energy subprogramme (ECE/ENERGY/2020/12) initiated at the twenty-ninth session of the Committee. The Group of Experts noted that its catalytic role in reconciling the reality of fossil fuels' enduring share of the energy mix with the need to address climate change would be further strengthened if the scope of its work were to be expanded beyond natural gas into the domain of gases as vectors of energy transmission, including notably hydrogen and bio-gases. The Group of Experts requested the Bureau in cooperation with the secretariat to submit a proposal to change the name of the Group to the Group of Experts on Gases to the thirtieth session of the Committee.

24. The Group of Experts noted that its work on gases, including biogas/biomethane, bio-LNG and hydrogen, creates momentum to facilitate attainment of the environmental, social and economic goals of the 2030 Agenda for Sustainable Development. Interactions among governments and the private sector are key to achieving these objectives. The Group of Experts offered to provide a platform for such interaction.

VII. Implementation of the current work plan (2020-2021) (agenda item 5)

25. The Group of Experts noted with appreciation the work of the Bureau and the secretariat to manage and direct the Group's activities between annual sessions despite human and financial resource constraints and the unprecedented situation caused by the COVID-19 pandemic.

A. Gas-powered post-COVID-19 recovery as a step towards a decarbonized world

26. The Group of Experts noted that changes in work and life patterns caused by COVID-19 put energy infrastructure under enormous stress and that energy markets experienced significant volatility. At the same time, the health crisis opened opportunities for accelerating the energy transition, including by blurring the line between consumers and suppliers of energy. The Group of Experts agreed to offer its assistance to member States in defining optimal paths for recovery from the current pandemic. Optimal paths towards a decarbonized world could be country-specific, minimizing overall emissions and increasing efficiency of energy use. Gas infrastructure will play an important role in this transition.

B. Role of gas in attaining the Sustainable Development Goals: air quality

27. The Group of Experts thanked IGU for presenting case studies on the role of gas in improving urban air quality. The Group of Experts invited ECE member States to share experiences in improving air quality and offered its expertise to all interested countries and cities.

28. To meet tightening air standards in many countries and reduce pollution levels, the Group of Experts concluded that the key success factors will be:

- (a) Improved access to natural gas supply;
- (b) Improved monitoring and remediation of methane losses;
- (c) Upgrade of bus fleets with natural gas-powered buses;
- (d) Cleaning marine transport by developing LNG bunkering in city harbours;
- (e) Best practices in methane management in the gas sector.

29. The Group of Experts reiterated its strong support for declaration by the UN General Assembly of an International Decade for Methane Management. The Group of Experts agreed to liaise with the Global Methane Initiative (GMI) and other key stakeholders to seek the support of UN Member States to secure such a declaration and to collaborate on other efforts to mitigate methane. The Group of Experts recommended to set up a Task Force, together with the Group of Experts on Coal Mine Methane, GMI and other interested organizations and companies, to accelerate progress on adoption of a declaration and action that would follow should it be adopted.

C. Decarbonization through synergies between gas and electricity

30. The Group of Experts acknowledged that the concept of gas(es) should be broader and include not only natural gas but also low carbon, decarbonized and renewables gases.

31. The Group of Experts recognized the critical role of gas(es) in decarbonizing the energy sector and achieving carbon neutrality by 2050. Technology development, together with economies of scale, will foster deployment of progressively decarbonized gases.

32. The Group of Experts concluded that existing and new gas infrastructure – transmission, distribution, underground storage, and facilities to manage liquefied gases – will be the backbone (core network) of a future low-carbon energy system that contributes cost-effectively to decarbonization.

33. The Group of Experts concluded that a future decarbonized energy system could represent an optimal combination of “electrons and molecules”, in which the electricity and gas sub-systems are progressively more interlinked, increasing the share of renewable energy, either as electricity or as gas.

34. The Group of Experts on Gas concluded that the gas industry and gas infrastructure, through energy system integration, would play a crucial role in the transition to a decarbonized economy.

35. The representative of the European Commission’s (EC) Directorate-General for Energy, Mr. Ballesteros Torres, informed participants of the European Union’s Green Deal that sets the ambitious but realistic target to reduce significantly carbon dioxide (CO₂) emissions by 2030 and to become net carbon zero by 2050. The decarbonization policies of the EC address energy efficiency improvements first and then decarbonization, while paying attention to the transport and industry sectors. Given the strong social impact of the energy transition – the EC envisioned and allocated substantial funds to a “just transition”. The transition to a decarbonized EU should not only bring the region to a greener but also to a fairer social reality. The Hydrogen Strategy, presented in July 2020, is part of the Green Deal. It focuses on renewable hydrogen that the EC predicts will become competitive by 2030. Hydrogen is expected to play an increasingly important role in the aftermath of the current pandemic. The EC is very interested to collaborate with other ECE member States in this field.

36. The Group of Experts stressed the need to scale up projects on carbon capture and storage (CCS) in Europe. In this regard, the Group of Experts welcomed the December 2020 investment decision of the Norwegian parliament to fund “Longship”, a commercial scale CCS project. This project demonstrates how, through economies of scale, barriers to implementing future CCS projects in ECE member States can be reduced. The Group of Experts offered its assistance in disseminating the knowledge and technology needed for large-scale CCS projects.

D. Hydrogen

37. The Group of Experts agreed that all technological and financial options for hydrogen production, transmission, storage and use should be considered agnostically and discussed from a level playing field perspective.

38. The Group of Experts concluded that retrofitting (blending) and repurposing existing natural gas infrastructure would accelerate the transition to a future hydrogen economy in a cost-effective way.

39. The Group of Experts agreed to offer its support to facilitate international and cross-sectoral collaboration to increase awareness and public acceptability of hydrogen and to accelerate the transition to a future hydrogen economy in the ECE region and beyond.

40. The Group of Experts noted that an ECE Workshop on Attaining Carbon Neutrality: The Role of Hydrogen² took place on 24 March 2021. The event, organized in the framework of the project “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”, focussed on the hydrogen value chain in three parallel breakout sessions that covered production, transport/storage, and use of hydrogen. Paragraphs 41-43 summarize the discussions and recommendations of the three breakout sessions. A detailed report from the workshop will be published separately.

41. Participants in the breakout session on production agreed that all low-carbon technologies should be considered through a technology neutral approach, with a focus on efficient emissions reduction, life-cycle carbon footprint, and CO₂ abatement costs. Promoting research and innovation in all hydrogen technologies is crucial. Participants recommended to design and implement supportive mechanisms such as Guarantees of Origins across ECE regions that would address an initial green premium before learning-by-doing and scale effects ensure a further cost reduction for clean hydrogen projects. In terms of finance, participants recommended to elaborate and implement innovative risk sharing schemes between public and private investors to finance clean hydrogen production projects. Participants also recommended to industry to ensure and contract long-term offtake commitments for clean hydrogen produced for industrial, transportation, heating and e-fuels projects. Strategies containing realistic targets should be developed at global, regional and national levels. Participants suggested to strengthen cross-border cooperation with ECE support through strategies based on realistic targets.

42. Participants in the breakout session on transport and storage of hydrogen reaffirmed that all technological and financial options for transport and storage of hydrogen should be considered from a technologically neutral perspective, through a life-cycle analysis approach. Participants noted that the transition to a future hydrogen economy needs to be cost-effective. The retrofitting and repurposing of existing natural gas infrastructure would accelerate the transition. Such an approach would minimise the “not-in-my-backyard” (NIMBY) effect when new infrastructure is built. The role of storage is essential to compensate for modulation and seasonality. There is a need for adoption of high-level regulatory principles based on the current regulatory framework for gas. There also is a need for large projects connecting hydrogen production areas to consumption areas (*i.e.*, from southern to northern Europe) to scale-up the deployment of a hydrogen economy. Participants further noted that ECE has a relevant role to play in addressing the inherent international dimension of hydrogen, especially by providing information and recommendations that facilitate the connection between production and consumption centres, which often are in different regions.

43. Participants in the breakout session on use of hydrogen reaffirmed that “clean” hydrogen (produced from low carbon energy or from gas with CCS) could cut the anthropogenic emissions by 45 to 60 per cent and decarbonize hard-to-abate sectors – long-haul transport, steel and chemicals production, heating, ammonia, and long-term power storage. The strong push for hydrogen on the road by 2030 across the United States and western Europe may put around 9 million fuel cell vehicles on the road. Participants further noted that industry could be the main early adopter. Existing and new hydrogen applications could be a catalyst for early deployment. Industrial applications for steel, cement and high-temperature applications should be supported and incentivised.

² <https://unece.org/sustainable-energy/events/workshop-attaining-carbon-neutrality-role-hydrogen>

44. A case study “Roadmap for production and use of hydrogen in Ukraine” presented at the workshop may serve as a model to other member States on how to develop pilot projects for production and use of hydrogen.

45. Following the twenty-ninth session of the Committee on Sustainable Energy at which the document “Hydrogen—an innovative solution to carbon neutrality” (ECE/ENERGY/2020/8) was presented, the Group of Experts stressed the importance of operationalizing the recommendations outlined in this document. The Group of Experts agreed that the most important among the recommendations are to:

(a) Agree a comprehensive and science-based terminology for renewable, decarbonized and low-carbon hydrogen and to use the agreed terminology to adapt national legal definitions and to provide a clear taxonomy to provide legal certainty and to foster collaboration and investment flows;

(b) Develop tradeable Guarantees of Origin for Hydrogen (GOH) to decouple physical and commercial flows and thereby accelerate hydrogen deployment. The Group of Experts offered its assistance to member States in developing GOH or similar mechanisms;

(c) Accelerate deployment of electrolyzers. The Group of Experts offered its assistance to member States in this regard;

(d) Support technical neutrality in the efforts to scale up and develop robust value chains.

46. Leveraging existing gas infrastructure is essential to achieving the decarbonization targets set by the EU cost effectively. Additionally, the support and commitment of local, regional and national governments is key, along with implementation of funding instruments, to developing sustainable, scalable and replicable ecosystems. The Group of Experts welcomed the EU-funded Green Hysland project that seeks to deploy a comprehensive and scalable hydrogen ecosystem in Mallorca, Spain. The project will provide green hydrogen to multiple end-uses, aiming to become a blueprint for other territories within the ECE region.

E. Sustainable production and consumption of gas and liquefied natural gas (LNG)

47. The Group of Experts welcomed the General Assembly Resolution A/RES/75/22, adopted on 21 December 2020 that, *inter alia*, “recognizes the key role that natural gas currently plays in many countries and its potential to expand significantly over the coming decades to meet demand in some countries as well as in new sectors, such as the transportation sector, supporting transitions towards lower-emission energy systems, and calls upon governments to enhance energy security through the sharing of best practices and knowledge for the security of gas supply and demand.”

48. In the light of the above, the Group of Experts welcomed the increased number of recently completed pipelines and LNG installations that will improve gas supply and energy security in Europe significantly, particularly in South-east Europe.

49. The Group of Experts recommended to ECE member States to consider exploring innovative policy approaches that would harness new supplies of LNG sustainably, decarbonize society, and improve competitiveness of the economy during the post-COVID recovery.

50. The Group of Experts concluded that new gas projects would catalyse job creation and foster just transition, social development, inclusiveness and innovation. In this transition, low-carbon, decarbonized and renewable gases should play a pivotal role.

F. Update on gas in transport project

51. The Group of Experts welcomed the progress in implementing the extrabudgetary project funded by the Russian Federation “Improving capacities of the ECE member States

to decarbonize the transport sector”,³ including the inaugural workshop held on 9 December 2020.⁴ The Group of Experts noted that the project will enhance the capacity of ECE member States to develop infrastructure to harness the benefits of natural gas in transportation as a viable low-carbon alternative fuelling option and to improve air quality.

52. The Group of Experts noted with appreciation the project’s key recommendations. In this regard, the Group of Experts invited ECE member States to consider introducing a comprehensive programme for development of a natural gas vehicle (NGV) market in different segments of the transport sector, such as private cars, buses, heavy trucks, construction and communal machinery, agricultural and quarry machinery, railway transport, and water transport.

53. The Group of Experts concluded that technical regulations for NGVs require harmonization among ECE member States. The regulatory harmonization could include creation of a unified interstate register of cylinders to control their circulation in countries and simplification of procedures for the final consumer when crossing borders.

54. The Group of Experts welcomed the project proposal under development “Decarbonizing transport – a life cycle analysis” that would explore, from an energy perspective, different paths to a future decarbonized and sustainable transport system. The Group of Experts committed to participate in this ECE cross-divisional effort.

55. The representative of the Republic of Moldova supported the findings of the project “Improving capacities of the ECE member States to decarbonize the transport sector” and indicated that they were in line with the Nationally Determined Contributions of the Republic of Moldova. The development of the NGV market is important for economic and sustainable development of the country, as transport is the second most polluting sector nationally.

56. The representative of Kazakhstan also supported the recommendations of the draft NGV report and informed that Kazakhstan had several programmes and projects aimed at decarbonizing the country’s transport sector by expanding the use of natural gas as a vehicle fuel. All of them are interconnected and can be combined within the framework of the Nationally Appropriate Mitigation Actions for Low-carbon Urban Development (NAMA) project.⁵

VIII. Presentation of results and recommendations of the project “Pathways to Sustainable Energy” (agenda item 6)

57. The Group of Experts took note of the Committee’s recommendations to continue cooperating closely with the Group of Experts on Renewable Energy and the Group of Experts on Cleaner Electricity Systems on synergies between renewable energy and gas and to assess the role of decarbonized gases, including hydrogen, across ECE subregions (ECE/ENERGY/123 and ECE/ENERGY/2020/2).

58. The Group of Experts noted with appreciation the progress made in implementing the project “Enhancing understanding of the implications and opportunities of moving to carbon neutrality in the UNECE region across the power and energy intensive industries by 2050” (“Carbon Neutrality”) and agreed that the Group would continue to cooperate closely with other group of experts on this important topic and provide its technical support to further implementation of the project.

³ <https://unece.org/sustainable-energy/project-gas-transport>

⁴ <https://unece.org/sustainable-energy/events/unece-webinar-decarbonizing-transport-natural-gas>

⁵ <https://www.thegef.org/project/nationally-appropriate-mitigation-actions-low-carbon-urban-development>

**IX. Item 7: Emerging issues and work plan for 2022-2023
(agenda item 7)**

59. The Group of Experts agreed to its draft work plan for 2022-2023 as presented in GEG-8/2021/INF.2 and requested the secretariat to submit it to the thirtieth session of the Committee on Sustainable Energy for approval. The Group of Experts invited ECE member States to support this ambitious work plan with additional extrabudgetary and in-kind resources where possible, which would extend the scope and deepen the impact of the activities included in the draft work plan.

60. Noting that its mandate expires on 31 December 2021, the Group of Experts agreed to recommend to the Committee that its mandate be renewed for a further two years to 31 December 2023.

**X. Preparations for the ninth session of the Group of Experts on
Gas (agenda item 9)**

61. The Group of Experts recommended that the ninth session of the Group of Experts be held on 24 and 25 March 2022 in Geneva.

**XI. Adoption of the report and close of the meeting
(agenda item 12)**

62. The report of the meeting was adopted, including the conclusions and recommendations, subject to any necessary editing and formatting.
