



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

Geneva, 24-25 March 2022

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

1. The ninth session of the Group of Experts was held on 24-25 March 2022.
2. This report summarizes the discussions of the Group of Experts at its ninth 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 130 experts from the following United Nations Economic Commission for Europe (ECE) member States: Albania, Armenia, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, France, Finland, Germany, Israel, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, the Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Ukraine, and the United States of America.
4. Experts from Cameroon, Islamic Republic of Iran, and Nigeria participated under Article 11 of the Commission's Terms of Reference.
5. Representatives of the United Nations Economic Commission for Europe (ECE) 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: Organisation of Arab Petroleum Exporting Countries (OAPEC), Gas Exporting Countries Forum and Global Methane Initiative (GMI).
7. Representatives of non-governmental organizations, academia and the private sector, as well as by independent experts, attended the meeting.

¹ <https://unece.org/sustainable-energy/events/ninth-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.8/2022/1).

IV. Opening remarks (agenda item 2)

9. In his opening remarks the Chair stressed that the Group of Experts on Gas is a technical body, and not a political or intergovernmental organ. Its members are experts and most work in the gas industry. The mandate of the Group of Experts is to advise ECE member States on how to deliver on key commitments, such as the 2030 Agenda for Sustainable Development, how to reduce methane emissions, or how to achieve carbon neutrality. The member States, through the Committee on Sustainable Energy, can decide whether or not to accept the Group's advice.

10. The Chair outlined the work plans for 2022 and 2023 that were approved by the Committee in September 2021. He presented the timetable for the ninth session of the Group of Experts on Gas. The agenda focused on hydrogen production and consumption, methane-hydrogen blending, hydrogen gas assets readiness, methane management in the gas sector, the impact of high gas and electricity prices on achieving UN Sustainable Development Goals, carbon capture, utilisation, and storage (CCUS) and the role of gas infrastructure in it, sustainable and clean production, distribution, and consumption of gas and LNG in the ECE region.

11. Welcoming the participants, the Director of Sustainable Energy Division referred to the September session of the Committee on Sustainable Energy. The Chair of the Committee 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 referred to the 69th session of ECE and stressed the importance of physical, economic, and social resilience.

12. The Director informed the participants that UNECE will continue its technical work with all experts invited to participate. He noted that the UN Secretary-General has made clear that the invasion of Ukraine by the Russian Federation and the ongoing war is a violation of the principles of the UN. He further observed that the Committee and its expert groups must find ways to deliver on the long-term species existential imperatives without compromising on fundamental principles in the short term.

V. Elections of officers (agenda item 3)

13. The Group of Experts elected a new Bureau to serve until the end of the 11th session. The new Bureau members are Mr Francisco de la Flor (Spain) as Chair, and Mr Florian Marko (Austria), Mr Loghman Damirli (Azerbaijan), Mr James Diamond (Canada), Mr Boris Maksijan (Croatia), Mr Uwe Wetzel (Germany), Mr Amir Foster (Israel), Mr Torstein Indrebø (Norway), and Mr Andrew Meluch (United States) as Vice-Chairs.

VI. Activities and priorities of the United Nations Economic Commission for Europe Committee on Sustainable Energy (agenda item 4)

14. The Director updated the Group of Experts on the outcomes of the thirtieth session of the Committee on Sustainable Energy held in September 2021. He pointed out that ECE works 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. The intent at the thirtieth session last September was to address the challenges we face in energy with products and activities that deliver measurable and tangible results. The Committee explored how best to support implementation of the 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.

15. 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 through actions 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.

16. The Committee took note of the document “A Commitment Trifecta” and the informal companion document, “A Push to Pivot” and called on member States to consider taking action in the six areas indicated in those documents. I note that methane management, sustainable resource management, carbon neutrality, and hydrogen are central to those documents. The Committee also endorsed the revised strategic review of the ECE Sustainable energy subprogramme, requested the groups of experts to reflect the strategic review in their future work plans and programmes of work, and called on member States to provide needed resources to accomplish those activities that cannot be delivered with existing regular budget resources.

17. The Committee reviewed progress on decisions and recommendations concerning the sustainable energy subprogramme coming from the sixty-ninth session of the Economic Commission for Europe in four areas, (i) methane management; (ii) high-performance buildings; (iii) a global framework for sustainable resource management; and (iv) subsidies and carbon pricing.

18. On methane management, the Committee noted the growing interest from member States and organizations to undertake tangible action to mitigate methane emissions, encouraged member States to support a United Nations General Assembly resolution declaring an International Decade for Methane Management. Preparation of a draft resolution will require active engagement of one or more countries to take the lead in drafting and proposing a document for consideration by United Nations Member States.

19. With respect to sustainable resource management, the Committee noted the potential for sustainable hydrogen resource management in sustainable energy transitions. Pending availability of extrabudgetary resources, the Committee 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 CO₂ footprint, and (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.

20. 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.

21. 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.

22. 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. We would anticipate that the gas industry has an important role to play in any just transition.

23. The Committee 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.

24. The Committee requested the Group of Experts on Cleaner Electricity Systems, in collaboration notably with the Groups of Experts on Renewable Energy, Energy Efficiency, and Gas to explore opportunities and barriers to reforming energy market design towards greater sustainability.

25. The Committee noted that for some countries, gas with CCUS can be a viable economic choice. 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 to explore technology interplay.

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

27. The Committee adopted the proposed draft programme of work of the sustainable energy subprogramme for 2022 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. The Committee further noted and agreed to the proposed modifications to the programme of work for the sustainable energy subprogramme for 2023 and requested the secretariat to reflect the modifications in the proposed programme plan of the sustainable energy subprogramme for 2023.

28. Finally, the committee took note of the report of the Group of Experts on Gas and expressed appreciation for the progress the group made on delivering on mandated activities and work plans for 2020-2021. The Committee approved the extension of the mandate of the Group of Experts on Gas and the work plan for 2022-2023.

29. The Group of Experts noted with appreciation that the Committee adopted the Group of Experts' work plan for 2022-2023.

30. The Group of Experts noted the Committee's endorsement of the strategic review of the ECE Sustainable energy subprogramme (ECE/ENERGY/2021/4). The Group of Experts is committed to reflecting the strategic review in its future work. The Group of Experts once again called upon the member States to provide resources needed to accomplish all the activities that cannot be delivered through regular budget resources.

VII. Update on implementation of the 2020-2021 work plan (agenda item 5)

31. The Group of Experts noted with appreciation the work of the Bureau and the secretariat in successfully delivering on the 2020-2021 work plan.

VIII. Implementation of the 2022-2023 work plan (agenda item 6)

A. Gas and Sustainable Development Goals

32. The Group of Experts was informed about the outcomes of the workshop on gas prices² held in December 2021. The Group of Experts endorsed the outcomes and concluded the following:

(a) High energy prices and current energy policies, including higher demand due to the post-pandemic economic recovery, have jeopardised attainment of 16 of the 17 Sustainable Development Goals (SDGs). Particularly negatively affected are the goals on poverty, hunger, health, and gender;

(b) Securing affordable access to natural gas could enhance attainment of SDG7. Higher penetrations of intermittent renewable energy generation will require flexibility and back-up power to balance and integrate the electricity system, and natural gas could contribute these services if atmospheric methane emissions are remediated;

(c) Several risk new factors to achieving the United Nations 2030 Agenda for Sustainable Development have emerged due to high gas and energy prices:

(i) Slow economic recovery, diminished energy access and compromised industrial competitiveness;

(ii) Derailed and postponed carbon neutrality, as long-term high gas prices may slow coal-to-gas switching and possibly even lead to gas-to-coal switching;

(iii) The crisis in European gas and electricity markets is becoming an infrastructure and political crisis that may affect, inter alia, post-Covid economic recovery;

(iv) As Europe faces unprecedented energy poverty, unsustainable energy prices threaten the climate agenda (notably the switch in power generation from gas to coal) and its support in many social strata. An inclusive and informed dialogue on the relationship between climate mitigation and energy poverty is needed, and the Group of Experts offers a platform for such a conversation;

(v) The very different North American and European circumstances in terms of availability of domestic gas supply explains the differences in gas prices.

B. Methane management in the gas sector

33. The Group of Experts was informed about the growing interest from ECE member States to accelerate action to mitigate methane emissions. The Group of Experts is committed to supporting these activities along the entire gas value chain. The Group of Experts recommended to ECE member States to support a resolution at the United Nations General Assembly declaring an International Decade for Methane Management. The Group of Experts also recommended to continue co-hosting and coordinating events that foster dialogue and information exchange about methane mitigation best practices, such as the 23 March methane workshop co-hosted by the Group of Experts on Gas and the Global Methane Initiative.

34. Concerning the declaration of an International Decade of Methane, the Group of Experts recommended to ECE member States to ensure robust and accurate monitoring, reporting and verification (MRV) processes based on comparable approaches, as well as to continue engaging with others active on methane mitigation, including the OGMP, IMEO, the Global Methane Initiative and the Global Methane Pledge, to roll out the best available techniques to mitigate methane emissions. Sharing knowledge and raising awareness is key to achieving further reductions of methane emissions throughout the gas value chain.

² <https://unece.org/sustainable-energy/events/natural-gas-prices-and-un-development-agenda>

C. Climate neutrality through synergies between gas(es) and renewable electricity

35. Gas and renewables gases play a key role in the energy system. The Group of Experts concluded that the potential role of gases has not been considered fully in the scenarios of the “Technology Interplay Report” and recommended further work to address the shortfall.

D. Hydrogen: production and consumption

36. Given the importance of possible future work on hydrogen classification, the Group of Experts invited all ECE member States to support work on terminology, taxonomy, and classification through extra-budgetary and in-kind support.

37. The Group of Experts concluded that a hydrogen classification based on colours has limited value in international trade, since such colour coding can aggregate several projects or production methods that have quite different greenhouse gas (GHG) footprints. Colour coding often does not take in account the entire value chain when calculating GHG footprints.

38. The Group of Experts stressed the need to develop a scientifically based terminology for hydrogen that reflects the volume of GHG emissions throughout the life cycle (“GHG footprint”). Developing an internationally recognized terminology requires broad-based agreement on fundamentals.

39. The Group of Experts concluded that effective deployment of a Guarantee of Origin mechanism requires that clear and agreed common terminology be adopted in national legal definitions as a basis for the underlying taxonomy. ECE member States could develop their own classification systems using the thresholds and benchmarks based on common terminology which might be developed within the framework of the UNECE and take in account the interests of all member States. A future UNECE taxonomy could include other economic, social, and environmental considerations as set forth in UNFC framework. The Group of Experts will carry out this work in collaboration with all other expert groups under the Committee.

40. The Group of Experts recommended to ECE member States to investigate further integrated hydrogen production, transport, and consumption in the ECE region. The Group of Experts further recommended to ECE member States to examine regional potentials for hydrogen production and use at a local scale.

41. The Group of Experts recommended to ECE member States to promote pilot projects that foster regional energy security and climate neutrality.

42. The Group of Experts recommended to ECE member States to investigate and highlight commercial showcase hydrogen projects in the ECE region and further develop best practices.

E. Hydrogen: system development and gas asset readiness

43. The Group of Experts examined alternatives for transport of hydrogen and found them relevant to facilitating the connection between growing supply and demand markets. These alternatives include transport by vessels, pipeline, railway, trucks, or other types, as economic and safety circumstances demand.

44. The Group of Experts concluded that the current natural gas infrastructure can play a significant role in ramping up and developing a hydrogen market. Based on the cumulative effect of hydrogen on materials and equipment, pluriannual studies to evaluate the possibility of repurposing gas infrastructure might be required. The Re-Stream project showed how the natural gas transmission network in certain cases could be repurposed to transport hydrogen in a cost-efficient way at a small fraction of the cost of building a new hydrogen pipeline network. At the same time the Group of Experts agreed to review other studies on the topic and present their results.

45. The Group of Experts concluded that hydrogen blending provided a possible pathway to enabling a hydrogen ecosystem in certain regions, notably in the ramp-up and transition to a hydrogen economy. Blending enables a flexible location for injection, is not linked to clusters, facilitates hydrogen projects and is compatible and complementary with other hydrogen infrastructure deployment (local clusters development, core infrastructure and grid, etc.).

46. The Group of Experts welcomed collaborative initiatives such as H2GAR and HIGGS that share and develop detailed technical knowledge. These initiatives entail possible repurposing or retrofitting of the current gas infrastructure and could facilitate the deployment of hydrogen. The initiatives will assess the state of gas transmission infrastructure and costs related to certification and insurance of gas transmission equipment for use of methane-hydrogen mixtures. The Group of Experts requested to be updated, at its future sessions, on the progress achieved in these initiatives.

F. Use of gas in transportation – challenges and opportunities

47. The Group of Experts noted with appreciation the progress made in implementing the project “Improving capacities of the UNECE member States to decarbonize the transport sector by increasing the use of natural gas as a motor fuel”. The project produced a comprehensive study including (i) assessment of the state of development of compressed natural gas (CNG) and liquefied natural gas (LNG) refuelling and storage infrastructure in the project countries; (ii) case studies with effective regulatory, legal, economic, technical, and public perception promotional activities to increasing the share on CNG/LNG vehicles in the light- and heavy-duty road fleets; (iii) life cycle analysis of competing fuelling options (diesel, natural gas, electricity, hydrogen) in the project countries evaluating total energy use, fuel economy, energy efficiency and greenhouse gas emissions; (iv) comparative analysis of safety requirements for refuelling stations as one of the most serious barriers to market development; (v) public opinion research on introducing natural gas as a motor fuel; (vi) case studies on popularization of using natural gas for vehicles, such as advertising, video, films; and (vii) recommendations on removing regulatory, legal, economic, technical and public perception measures aimed at promoting the use of gas in transportation.

48. The Group of Experts appreciated the discussions on the findings of the study, its recommendations, and the state of development of CNG and LNG markets during the workshops on “Decarbonizing Transport with Natural Gas” on 8 October 2021 and “Support to Decarbonization of Transport in Kazakhstan” on 24-25 November 2021.

49. Transport remains a significant source of air pollution in many cities in the ECE region. The Group of Experts acknowledged the need to improve understanding by all stakeholders on the potential benefits of natural gas in transport as a viable and low-carbon option, especially in urban areas. The Group of Experts recommended conducting additional capacity-building activities on regional prospects for development of CNG and LNG market in the context of decarbonizing urban transport.

50. The Group of Experts highlighted the contribution that LNG could provide to decarbonising maritime transport. Ships using LNG in the future could be fuelled by bio-LNG and/or synthetic LNG. Worldwide development of bunkering infrastructure is essential for fostering development of the maritime market.

51. The Group of Experts noted that planned project activities are to be finalized in 2022 and requested the secretariat to report on final project outcomes at its tenth session.

G. Carbon capture, utilisation, and storage: The role of gas infrastructure

52. The Group of Experts of Gas acknowledged the potential, described in the Re-Stream study, for using existing European oil and gas infrastructure to transport carbon dioxide. The Group of Experts agreed to review other studies on the topic and present their results.

53. The Group of Experts recommended to ECE member States to consider the following perspectives:

(a) Carbon capture, use, and storage (CCUS) technology could be one of the pathways to climate neutrality to meet emission targets while mitigating the potential social and economic downsides of reducing of fossil fuel use;

(b) The viability of CCUS must be weighed comparing: 1) Costs of shutting fossil fuel-based production facilities and 2) Social, economic, and environmental costs of continued reliance of the fossil fuels;

(c) CCUS technology likely will be important for energy intensive industries with hard-to-abate GHG emissions, such as the cement and steel industries;

(d) CCUS technology can provide negative emissions through Biomass Energy with Carbon Capture and Storage (BECCS) and Direct Air Carbon Capture and Storage (DACCS), though carbon dioxide removal should be distinguished from CCUS;

(e) Biomethane from urban and agricultural waste can provide an additional domestic source of production which is fully in line with the principles of circular economy;

(f) Hydrogen produced from natural gas with CCUS may become a significant part of a future hydrogen economy. Use of gas infrastructure, both existing and new, will be key to cost-effective commercialisation of CCUS technology. Existing gas pipelines, both transmission and distribution, can be repurposed to integrate renewable and biomethane, CO₂ and low carbon hydrogen in a cost-efficient way under certain conditions;

(g) Some depleted gas fields, if technically and politically viable, could be used for CO₂ storage and some gas storage facilities could be converted to store hydrogen;

(h) CO₂ pipelines can be established where appropriate to facilitate transportation to storages;

(i) Technical resources and competence in the gas industry will be key to commercialisation and use of the CCUS technology.

H. Promoting sustainable and clean production, distribution, and consumption of gas and liquefied natural gas in the ECE region

54. The Group of Experts reiterated its recent conclusion that natural gas could reduce the GHG footprint of the energy sector. The progressive incorporation of renewable and low carbon gases (biomethane, Syngas and hydrogen), together with the development of CCUS can contribute to meeting climate ambitions.

55. The Group of Experts noted that existing and, where justified, new gas infrastructure — including pipelines, LNG installations and storage facilities — will be key to securing energy security in Europe. Diversification of sources, suppliers, and transport routes ensures the stability and reliability of the energy system. Additional efforts to improve connectivity in markets, notably where single source dominance prevails, is to be addressed as a priority.

56. The Group of Experts offered to organize, as soon as circumstances allow an inclusive dialogue on supply and demand of natural gas in Europe, aimed at improving the security, sustainability, availability, and affordability of natural gas.

57. 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.

58. The vice-chair Foster noted that the natural gas revolution in Israel led to massive benefits for Israel and the region: a 70 per cent reduction of emissions from electricity generation and 24 per cent reduction in greenhouse gas emissions, while the electricity

production increased by 15 per cent. Geopolitically, natural gas trade has strengthened relations with the countries of the region. Today gas produced in Israel is exported to Jordan and Egypt. The regional gas infrastructure that was developed enhances energy security for Egypt, Jordan, and Israel. Likewise, Europe needs to make crucial decisions that will improve security in the supply of natural gas. Without decisions to enable development of infrastructure, the security of supply of natural gas to Europe will not improve. Many options for supplying gas to Europe were mentioned: Azerbaijan, the Gulf states, Algeria, the United States, and the Eastern Mediterranean. The solutions are insufficient individually, so a comprehensive, collaborative approach will be needed. The main alternative to gas is coal. Without a substantial change in the European regulatory relationship with natural gas, the risk of increasing the use of more GHG-intensive fuels will persist and reducing greenhouse gas emissions will remain elusive. Action is required.

IX. Preparations for the tenth session of the Group of Experts on Gas (agenda item 8)

59. The Group of Experts recommended that the tenth session of the Group of Experts be held in early 2023 in Geneva.

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

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