In the context of United Nations Framework Convention on Climate Change (COP30) with the specific invitation to submit contributions towards the roadmaps, the **UNECE group of Experts on Gas** are submitting herewith its contribution towards the roadmap: “transitioning away from fossil fuels in a just, orderly, and equitable manner” (paragraph 28.d of the Global Stocktake (GST) adopted at COP28)

Biogas and biomethane are renewable gases particularly suited to replace fossil gas as an affordable, equitable, secure and sustainable gas, capable of being produced globally in every community, supporting rural economies, creating local jobs, integrating seamlessly into existing gas infrastructure, reducing carbon intensity, and driving cleaner transportation, heating, cooling, power generation, and product development.

Biogas and biomethane are attracting increasing attention world-wide with unfolding ramp-up in the European Union, the United States, China, India and Brazil with emerging **Best Practices**. Its international potential as renewable and circular source is well documented[1][2]. With a worldwide potential of nearly 1400 billion cubic meters (bcm) it can fulfil at least 35% of the global future gas demand and as such act as a major vector from **supply side perspective**. Recent Joint Biomethane Declaration[3] shows urgent call of leading industries in Europe for a fast rollout of biomethane and highlights the need for this renewable gas within the energy transition from a **demand-side perspective**.

The current volatile energy markets and **global security challenges**, underscore the critical role of biogas and biomethane in enhancing energy resilience, reducing dependence on imported fossil fuels, and fostering circular economy.

Biogas and biomethane are being produced from available waste streams and agricultural residues. These renewable gases play a substantial role in reducing the waste-sector methane emissions on a large scale and support the economic development of rural areas. Thanks to their flexibility, biogases can immediately offer renewable energy solutions to all countries adapting to all realities, independently of the different stages of development and degrees of dependencies on fossil fuels.

The pathways towards biogas and biomethane provides 3 distinct advantages:

1) flexible, sustainable fuel from organic waste,

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[1] IEA, Outlook for Biogas and Biomethane; A global geospatial analyses, 2025

[2] IEA, Renewables 2023: Analyses and forecast to 2028, 2023

[3] EBA, Press release: European industries release urgent call for EU leaders for fast biomethane rollout as a driver of competitiveness, energy security and defossilisation

2) direct financial support and potential large environmental improvement in the agriculture sector, including the production of organic fertilisers,
3) large amounts of highly pure biogenic carbon necessary in several activities and products, such as sustainable aviation fuels and low-carbon marine fuels.

Biogas and biomethane function as a vital pillar of energy security, offering a reliable, locally sourced alternative to imported fossil fuels. These green energy carriers can be produced at a constant pace, making them an accessible and scalable solution for achieving both climate goals and long-term energy stability. Furthermore, utilizing the existing natural gas and LNG infrastructure does not require additional infrastructure investments as it depends on facilities that are already in place and backed by a well-established international market.

However, persistent barriers remain to fully accelerate its deployment:

Recognition. As biogas and biomethane are often produced locally, they are often undervalued as scalable solutions in replacing fossil fuels. However, the potential of biogas and biomethane is large. In Europe, biogas and biomethane combined production reached in 2024 22 bcm, which represents nearly 7% of the total gas consumption in Europe for the same year. Recognition is needed at political level, including the right policy instruments to unlock the advantages of these cost-effective renewable gases.

Financial & Technical support. While being the most cos-effective renewable gas to date, biogas still needs to financial and technical support to enable practical implementation in developing countries, to accelerate investment in biogas and biomethane and in the use of the resulting organic fertilisers and biogenic carbon feedstocks.

Mobilisation of feedstocks. Biogas and biomethane are enabling a strong reduction of greenhouse gas emissions related to methane emissions from waste. Improvements in organic waste management and mobilisation are needed especially in regions with less developed organic waste infrastructure.

Promotion just transition. Promoting just transition and capacity building is needed to assist in reskilling and upskilling industry workforces. Moreover, providing essential information to policymakers is key to unlock quality jobs and new economic opportunities, green industrialisation and socio-economic growth. This is particularly important in emerging markets and developing economies, so to facilitate safe, inclusive and equitable just transitions, pursuing the acceleration of biogas and biomethane and its additional benefits.

International cooperation. Encouraging international cooperation mechanisms is needed for financing, technology transfer, capacity building, and the development of projects aimed at the production, purification, compression, and distribution of biomethane, with special focus on rural areas, developing countries, and traditional communities.

Carbon Accounting. The global uptake of biogas and biomethane will be greatly facilitated by standardizing carbon accounting and procurement methodologies across jurisdictions and between programs, including both voluntary and compliance markets, regarding the use of lifecycle assessment and data-based inputs, and the use of market-based instruments where biogas-based power and biomethane are transported within connected electricity and gas distribution networks, respectively.

The UNECE Group of Experts on Gas are calling to include biogas and biomethane as major vector in the roadmap: “transitioning away from fossil fuels in a just, orderly, and equitable manner” and expresses its intend to have included on the agenda of the COP31 a Biogas Declaration to support and accelerate the transition towards this scalable renewable gas which is offering additional multiple benefits to society.