

Work plan UN Hydrogen Task Force

Prepared by the UN Hydrogen Task Force

I. Introduction

1. Energy is critical for assuring quality of life and underpins attainment of the 2030 Agenda for Sustainable Development (2030 Agenda). Recognizing that gaseous fuels will continue to serve as an energy vector in a foreseeable future, the UNECE Group of Experts on Gas and the Group of Experts on Renewable Energy are exploring the pathways that lead to decarbonization. The two Groups joined forces and offered their support to ECE member States in developing policies needed to accelerate development, demonstration and deployment of renewable, decarbonized and low- and zero-carbon gas projects.
2. The scope of work of the Task Force on Hydrogen (Decarbonised Gases) (hereinafter: Task Force) is to provide a technical support and advice to the UNECE Committee on Sustainable Energy on how to improve the capacity of the UNECE member States to harness hydrogen and other decarbonised gases and meet their international commitments and further decarbonise their energy systems. The Task Force's ambition is to elevate the debate / dialogue on clean hydrogen to the highest levels of policy making across the UNECE region and beyond.

II. Background

3. In the UNECE region, there is large potential to enhance the interplay between renewable energy and natural gas: renewable energy is abundant, and the gas infrastructure is well developed. As fossil fuels will be required in the region over the longer term, it is advantageous to use them to accelerate the deployment of renewable energy. The Group of Experts on Gas and the Group of Experts on Renewable Energy are exploring the synergies between renewable energy and gas to develop solutions to limit GHG emissions of the energy sector and to enable new zero carbon technologies, such as hydrogen, to emerge.
4. Decarbonised gases/fuels emit less carbon to the atmosphere during their use in transport, heating or energy production. These gases/fuels can also be described as zero-carbon energy carriers. One of the most versatile energy carriers is hydrogen, as it can be produced from renewable energy or natural gas, be transported and be stored. Hydrogen forms the basis of chemical industries and is having huge potential in decarbonising transport, heating or energy production across the UNECE region.
5. The UNECE region increasingly seeks to develop flexible systems that would enhance the potential of decarbonised gases. A modern energy system relies on a combination of electrons (electricity) and molecules (gas) as more integrated and interlinked gas and electricity models will accelerate and deepen energy transition. Decarbonisation projects such as power-to-gas, energy storage and renewable, decarbonised and low-carbon gases (e.g. green/blue hydrogen and biomethane) will reduce the environmental impact of the energy sector. Power-to-X technologies that can be used for production of hydrogen and subsequent conversion of hydrogen into hydrocarbons such as synthetic methane and methanol, might play important role in deep decarbonisation of the energy system. Renewable/decarbonised gases, such as hydrogen produced through renewable energy and biomethane/biogas, could be used for power generation to phase out natural gas and can play

a critical role in decarbonisation of sectors where electrification is difficult - such as aircraft, ships, lorries.

6. Despite innovation across the decarbonised gases' value chain, this emerging industry is still facing legislative and structural challenges. The value chain for decarbonised gases is still at its infancy with the focus on trial projects. There is still no common standard concerning the transmission of hydrogen through the natural gas pipelines. For instance, while the Netherlands allows a natural gas pipeline to carry up to 12% as hydrogen and Germany allows up to 10%, Belgium only allows up to 0.1%. Advocates of hydrogen economy consider it is safe for natural gas pipelines to carry as much as 18-20% of hydrogen in the gas mix.

7. In addition, public acceptance and perceived safety impose barriers for implementation and further commercialisation. The Task Force aims to facilitate international and cross-sector knowledge-exchange around public acceptability and the potential of hydrogen economy for UNECE region.

III. Concrete Activities

8. The Task Force will undertake activities broadly related to the enabling role of decarbonised gases in achieving the goals of the United Nations 2030 Agenda for Sustainable Development.

9. The Group of Experts on Gas and the Group of Experts on Renewable Energy notes that under the current resource constraints successful implementation of this work plan will require strong commitment of dedicated experts who form the Task Force.

10. The Group of Experts will prepare and select evidence – case studies, position papers, and other materials – that highlight the role of decarbonised gases on achieving the SDGs under various geopolitical and economic circumstances.

11. The Task Force will explore how gas infrastructure could accelerate development of renewable / decarbonised and low carbon gases.

Deliverables and timeline:

- (a) Policy dialogue on role of decarbonised gases in attaining sustainable energy in the UNECE region.
- (b) Dissemination of selected materials, case studies, position papers and proceedings from the policy dialogues on the role of gas in attaining the SDGs.
- (c) Dissemination of good practices and policies on the role of renewable / decarbonised and low carbon gases (Subject to availability of resources)
- (d) Development of policy recommendations on how to update the gas infrastructure to accept an increased fraction of hydrogen (Subject to availability of resources)