



## Agenda Item 6 – 31<sup>st</sup> Session of the Committee on Sustainable Energy

### Enabling a Hydrogen Ecosystem

22 September 2022, 11:00 CET (Geneva time)

**Objective:** to discuss key enablers of a future hydrogen economy – classification of hydrogen projects, hydrogen blending, the reliance on gas infrastructure – and the role the Committee could play in them.

**Context:** At the Committee’s 30<sup>th</sup> session in September 2021 an international panel informed the Committee on current and future hydrogen projects in the United Nations Economic Commission for Europe (UNECE) region and proposed how to scale these projects towards a sustainable “hydrogen ecosystem”. The panel argued that a transition to carbon neutrality via hydrogen could be quicker and easier if gas infrastructure was used for sustainable hydrogen production and transmission. Following discussion, the Committee concluded that it is necessary to agree on a comprehensive and science-based terminology and classification 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 (ECE/ENERGY/137, paragraph 58).

Reaching carbon neutrality is of paramount importance: on current predictions, greenhouse gas (GHG) emissions are projected to rise, leading to a median global warming of 3.2°C by 2100. To avert such a scenario, a fundamental step-change in resource management and the ways we produce and transmit energy will be required. Sustainable hydrogen could be a fundamental part of the future energy system. However, UNECE member States are still not aligned on how to quantify the sustainability of hydrogen; to overcome this, the Committee could step in and help develop a comprehensive classification for hydrogen, as pointed out at the 30<sup>th</sup> session.

#### Recommendations and solutions from the UNECE Expert Community:

The Committee will be invited to support the policy dialogue on hydrogen projects and cooperation in the UNECE region, and to consider the following recommendations, namely to:

- (a) Extend the United Nations Framework Classification for Resources (UNFC) to all hydrogen projects and production technologies.
- (b) Establish a task force/working group to prepare Specifications for the application of UNFC to hydrogen projects and production technologies.
- (c) Develop a pilot hydrogen production project applying United Nations Resource Management System (UNRMS) principles.
- (d) Finally, establish a Guarantee of Origin for Hydrogen (GOH).

#### Plan of the session:

**Setting the scene:** The moderator will introduce the key questions of the session, such as:

- How can we know that is something green or sustainable?
- Emissions of carbon dioxide are the key criterion of sustainability – are there other concerns a Guarantee or Origin for hydrogen (GOH) should address?
- Could UNFC and a future UNRMS help design and maintain GOH?
- Is blending of hydrogen and natural gas (methane) a good idea?
- What are the key lessons in sustainable hydrogen production in the Eastern part of the UNECE region?

- Could the existing gas infrastructure and know-how help accelerate transition to a hydrogen-based carbon neutral energy system?

#### **Opening remarks**

- *Mr Francisco de la Flor Garcia, Chair, Group of Experts on Gas*

#### **Sustainable hydrogen production in CIS countries**

- *Mr Yuri Melnikov, UNECE Consultant*

#### **Towards a UNECE comprehensive classification for hydrogen**

- *Dr Satinder Purewal, Imperial College London and Co-Chair, Technical Advisory Group of the Expert Group on Resource Management*

#### **Hydrogen blending**

- *tbc*

#### **Can gas infrastructure accelerate transition to carbon neutrality?**

- *Ms Boyana Achovski, Executive Secretary, Gas Infrastructure Europe (GIE) (tbc)*

**Moderated interventions by UNECE member States:** All member States will be invited intervene and share their priorities, needs and concrete actions that may accelerate the transition to a hydrogen ecosystem. List of potential interventions: Austria, Azerbaijan, Czech Republic (in the capacity of the EU Presidency), European Union, France, Germany, Kazakhstan, Norway, Spain, Russian Federation, United States.

#### **Conclusions and recommendations**

**Next steps:** Act on the agreed conclusions and support the needed action on hydrogen project classification with concrete commitments.

---