



Prime Movers' Group Gas Quality and Hydrogen Handling - Concept

Context

As the gas industry is gearing up its efforts to rollout increasing levels of renewable, decarbonised and low-carbon gases (including biomethane and hydrogen), the European gas system will have to be able to adapt and deal with diverse gas mixes which need to be handled technically. A wide range of research studies, regulatory and legislative works have been carried out to deal with different aspects related to these issues:

- the EASEE-gas Common Business Practice on H-gas Quality at cross-border points of 2005 (Common Business Practices 2005-001/02)
- the mandate M/400 of 2007 asking CEN to elaborate a standard on H-gas quality specifications based on a pre-normative study on the impact of gas quality on safety, performance, and fitness for purpose of residential gas appliances
- the EU network code on Interoperability and Data Exchange (EU regulation 2015/703)
- the EU standard EN 16726:2015 (ref. M/400)
- The EU standards EN 16723-1/2 on Natural gas and biomethane for use in transport and biomethane for injection in the natural gas grid
- ENTSOG Impact analysis of a reference to the EN16726:2015 in the network code on Interoperability and Data Exchange (2016)
- CEN SFGas GQS: Recommendations and considerations on Wobbe index aspects related to H-gas¹
- the EU Strategy for Energy System Integration (COM (2020) 299 final)
- the hydrogen strategy for a climate-neutral Europe (COM (2020) 301 final)

In this regard, and taking into account the upcoming *“regulatory framework for competitive decarbonised gas markets”* (2021), a coordinated EU approach to manage fluctuating gas compositions across Europe is needed to support the possible revision of the EU gas quality standard², ensure end-user appliances safety and guide decision makers in the process of grids decarbonization.

Scope

In the broader context of the Green Deal and on the pathway to achieve the 2050 decarbonisation targets, a whole system analysis of the energy system is necessary to assess the most efficient way forward, especially in the gas sector. In particular, decarbonisation of the grid in a cost-effective manner will require a whole system approach where the gas value chain works cooperatively together

¹ Final report to be published.

² As far as Wobbe index is concerned, the current concept foreseen in CEN SFGas GQS report will lead to a revision of the EU gas quality standard (EN16726). As a result, the definition or upgrade of gas quality handling processes and procedures (e.g. information exchange) will be needed.



and builds on existing tools whilst assesses potential shortcomings. In this context, coordination and information exchange between all gas systems operators, and other stakeholders is key to manage the system efficiently but is also pivotal to understand the reality behind gas uses today. In this regard, TSOs and DSOs are ready to collaborate with other stakeholders to achieve EU decarbonization goals, building on an integrated Energy System bridging different energy vectors and sectors.

Process

The primary objective would be to create a discussion among main gas-related stakeholders, to facilitate the development of innovative and cost-efficient ways to handle gas quality in fluctuating blends as well as pure hydrogen grids in our future gas system, by addressing the main technical challenges that stakeholders foresee. Given the current dynamics at European level, especially in the framework of the Energy System Integration and the Hydrogen Strategies together with questions related to hydrogen injection, it is essential for all stakeholders to participate at an early stage to ensure that their positions are well understood and shared among the group and that fundamental issues are discussed and solved at the earlier stages. The final stage will be to reach a better understanding on the main principles to handle gas quality related to renewable, decarbonised and low-carbon gases, that can optimise the diversification of supplies, decarbonisation of the grid and guarantee end-user safety and access to the product they require.

At the early stage of the prime movers group the stakeholders of the gas value chain will work on identifying the main problems we foresee related to variable gas quality in the short and long-term and on listing the main technical issues that need to be tackled at first. After categorising the various issues that have been identified, the group will assess possible solutions for each area of concern, considering the main barriers preventing the implementation of the proposed solutions. The expected outcome would provide policy makers and technical stakeholders with a regular update about evolving best practices, projects, and regulatory developments, as well as possible ways forward in addressing the upcoming issues related to blending and gas quality in general.

Alongside this process, tools provided by Interoperability Network Code (INT NC) could be rolled out to facilitate the implementation of new gas quality management solutions. In those cases where INT NC tools are not sufficient, the possibility to upgrade existing tools or propose new solutions to handle those issues could be considered. A clear definition of the problems foreseen and the rules that would be needed to handle gas quality variations is a necessary step before deciding whether any update to the existing legislative framework is required (e.g. Gas Directive, Interoperability Network Code).

Tools

The aim is to build up technically feasible solutions with especial focus on biomethane and hydrogen blends in the gas grids. Each stakeholder shall analyse and share the technical issues which in their view would/are hindering the standardisation of Gas Quality in Europe. By building on projects which have developed around Europe (e.g. ENTSOG Innovation Project Platform (IPP), CEN, Marcogaz, EASEE-gas work), the exercise shall ensure a cost-efficient approach.

Based on previous experiences, stakeholders could cooperatively work during the round table in addressing regional differentiations for gas quality handling and blending possibilities, identifying the processes and requirements needed to implement the proposed solutions and developing the main



principles to ensure an appropriate distribution of injection points and injection possibilities (e.g. non-discriminatory nomination of H₂). Eventually, the main goal will be to come up with solid and concrete principles for gas quality management to meet the needs of the consumer.

Timeline

The group has decided to have a first kick-off meeting by September to adequately lay down the relevant questions and start addressing them. The European Commission has been invited to follow the discussions and the work. The October Madrid Forum could possibly call for a formalisation of the work, or for a presentation of possible findings in 2021. This would ensure adequate debates ahead of upcoming gas legislation in 2021.