

## Open Public Consultation on the Hydrogen and Gas Market Decarbonisation Package

EUGINE Contribution, June 2021

EUGINE, the European Engine Power Plants Association, welcomes and supports the European Commission's initiative to prepare gas markets for the increased EU's climate ambition. [As previously stated](#), a consistent EU-wide legal framework will be essential to drive the decarbonisation of European gas markets, namely by facilitating the emergence of a market for competitive renewable and low-carbon gases.

In this paper, we aim at providing some additional feedback and background information to the replies given in the online questionnaire. The feedback therefore follows the same structure than the consultation questions.

For the sake of clarity, our main messages are summarised in the box below:

- Gas power plant manufacturers support the full decarbonisation of the gas grid – that is, replacing natural gas by biomethane, renewable and low-carbon hydrogen and other clean gases.
- Gas power plant manufacturers support the blending of renewable and low-carbon gases into the existing gas grid as an interim step on the way to full decarbonisation.
- Gas power plants can handle blends to a considerable degree.
- Gas quality at the customer interface needs to be stable and predictable. For that, a clear pathway for the decarbonisation of gas will be essential.

## I. General questions on the review and possible revision of the Gas Directive and Gas Regulation

As stated in the questionnaire, renewable and low-carbon gases – which have the advantage that they can be stored in the long-term – will continue serving the needs of the energy system through flexible power production, also beyond 2050. Already today, gas power generation and cogeneration offer an ideal complement to variable generation technologies. **The capability of gas power plants to switch to renewable and low-carbon gases ensures that there is no carbon lock-in and will make them a key player in providing decarbonised and dispatchable renewable electricity and heat to the future energy system.**

The upcoming review of the gas market rules and other legislation under the Fit for 55 Package (e.g. RED, EED) should therefore **refrain from limiting the use of renewable and low-carbon gases to certain sectors**. Hand-picking “hard-to-decarbonise sectors” as preferred users will not only limit the effectiveness of market signals (such as the EU ETS) but also endanger a competitive and export-oriented European industrial sector committed to global decarbonisation.

In order to ensure that all investment is future-proof, **requirements related to the capacity to work with renewable and low-carbon gases (esp. hydrogen) could be considered**. In that context, the gas engine manufacturers are developing a H2-ready concept defining different levels of H2-readiness for their equipment based on the most frequently-discussed political targets of a hydrogen content of 10% (vol.), 20% (vol.) or 100% (vol.) in the grid. The work should be finalised soon.

## II. Consumer’s choice and renewable and low-carbon gases

While the questionnaire seems to be largely focused on household consumers, it should not be forgotten that **gas power plants are gas consumers too**. As pointed out in the recently published IEA Report “Net Zero by 2050, “A Roadmap for the Global Energy Sector” (p-76):

*“After 2030, low-carbon hydrogen use expands rapidly in all sectors in the NZE. In the electricity sector, hydrogen and hydrogen-based fuels provide an important low-carbon source of electricity system flexibility, mainly through retrofitting existing gas-fired capacity to co-fire with hydrogen, together with some retrofitting of coal-fired power plants to co-fire with ammonia. Although these fuels provide only around 2% of overall electricity generation in 2050, this translates into very large volumes of hydrogen and makes the electricity sector an important driver of hydrogen demand.”*

A Europe-wide market of tradable guarantees of origin (GoO) should allow all power plant operators to buy GoO for renewable and decarbonised gases to produce renewable electricity and heat. Focusing only on household consumers to drive the decarbonisation of gas would seriously limit demand for renewable gases.

## III. Integrated infrastructure planning

It is very important that the “energy efficiency first” principle is not seen as a stand-alone principle. This principle should not overrule other EU policy considerations, such as the contribution to the overall energy system, especially when evaluating specific investment decisions and operation practices.

In a similar way, national development plans should optimise the efficiency of the overall energy system, not limiting the efforts exclusively to the electricity network and recognising the value of existing infrastructures for gas and heat.

In addition, national and regional plans for the development of hydrogen valleys could accelerate the introduction of a hydrogen infrastructure and demonstration of hydrogen applications across sectors. Hydrogen valleys could be a fast and cost-effective decarbonization pathway and the valleys could grow over time and be connected to each other until, in the long term, a fully integrated hydrogen network exists.

#### **IV. Hydrogen infrastructure and a hydrogen market**

While this section mainly focuses on “pure hydrogen” infrastructure and markets, **the blending of hydrogen into the existing gas networks could be a possible interim step to help develop a hydrogen market.**

Whenever feasible, **preference should be given to the upgrading of existing gas grids** to allow hydrogen blends as an interim step leading to full hydrogen operation.

In the same vein and for the sake of simplicity, the same regulatory principles (esp. regarding neutrality of network operation, third party access, cost reflective and market compatible network tariffs) should apply to methane and to hydrogen networks.

#### **V. Access of renewable and low carbon gases to the existing methane gas networks and markets, including LNG terminals and gas storages**

While there are gas quality considerations to be taken into account (as explained below), ensuring the access of renewable and low-carbon gases to the existing gas networks will be essential to creating a market for renewable and decarbonised gases. In addition to more regulatorily complex measures such as preferential grid tariffs or priority dispatch, **a binding EU-wide GHG intensity reduction target for gas, in addition to a renewable gas target** set at European and national level would be the simplest and most effective way to decarbonise Europe’s gas supply.

Sufficient storage capacities for renewable and low carbon gases will be essential for their use in power generation. One of the main future roles of power plants will be to provide flexible back-up capacity. This means that, during limited periods, the system will need large amounts of renewable and low carbon gas to be used in power plants. Especially for seasonal peaks and supply gaps, the combination of sufficient storage and power plant capacities will be an important element of a resilient energy system.

#### **VI. Gas Quality**

As stated before, it is estimated by the industry that **most gas power plants today can be adapted to handle blends of up to 20% (vol.) hydrogen or more.** What is important, therefore, is not the gas composition *per se* but the **stability of the gas quality** (i.e. avoiding “plug flows” or very large quality changes in very short time-frames). In order to optimise costs and harness economies of scale, TSOs and DSOs should be responsible for ensuring a stable gas quality within an agreed range. Additionally, gas suppliers/network operators should provide the end user with a precise real time signal about the hydrogen content and the calorific

value of the final blend. Such a signal facilitates not only safe and efficient operation of gas appliances, but also accurate and transparent billing.

It should also be ensured that any future standards do not hamper the introduction and possibly the blending of low-carbon and renewable gases. Therefore, all efforts should be put in finding an equilibrium between the need to decarbonise the gas grid and the need to ensure a stable gas quality during a sufficiently long period of time.

Finally, in our view, **national or regional differences in gas quality can continue to exist** and should not pose a problem to the development of renewable and low-carbon gas markets. As stated before, what is important is that the gas quality is known and predictable over a certain timeframe in a certain area.

## **VII. Alignment of institutional rules for gaseous fuels to the Clean Energy Package**

We do not have any comments on this section.

## **VIII. Security of supply dimensions**

We do not have any comments on this section.

EUGINE is the voice of the European engine power plants industry. Its members are the leading European manufacturers of engine power plants and their key components, providing forward-looking solutions for flexible and efficient electricity generation.

Engine power plants are an optimal solution for both backing-up and generating electricity from renewable sources (such as biogas). Cogeneration, the combined generation of power and heat, is another typical engine power plant application.