

Contribution of GRTgaz to the public consultation “Strategy for long-term EU greenhouse gas emissions reductions”

October 4th 2018

GRTgaz is a gas TSO operating more than 32,000 km of pipes in France. As a world expert in gas transmission networks and systems and a leading European TSO, we are fully committed and engaged in the energy and ecological transition. GRTgaz delivers innovative, sustainable and accessible solutions to accelerate and secure a successful energy transition by connecting the energies of tomorrow, driving the growth of renewables and new uses for gas while fostering synergy between electricity and gas systems. In order to support our vision and boost our research, development and innovation (R&D&I) capabilities, we created RICE, our own Research and Innovation Centre for Energy (around 100 PhDs, researchers and technicians and a portfolio of 54 inventions and 330 patents spanning the full range of gas infrastructure).

GRTgaz welcomes the consultation on the EU strategy for long-term greenhouse gas emissions reductions and the Commission’s commitment to find efficient pathways towards a low carbon future in line with the ambition of the Paris Agreement. We firmly believe that gas infrastructure has and will continue to have an important role to play in the future energy system of tomorrow. We are committed and ready to put our infrastructure to good use in service of the energy and ecological transition and the realisation of the EU’s long-term decarbonisation strategy.

Spurred by the 3rd Gas Package, this robust regulatory framework triggered an unprecedented wave of investments in the gas sector and fostered the homogenisation of market rules. In France, GRTgaz has invested over 7 billion euros over the last 10 years to develop interconnections with neighbouring countries and to create in 2018 a single country-wide market zone. At the European level, the European gas market has improved its interconnectivity, its security and has become increasingly mature.

Today, European gas infrastructure transports gas safely and efficiently from production fields to end consumers. Even in the severest of weather conditions, Europe’s gas infrastructure delivers on and enables the EU energy security strategy in terms of providing security and diversification of gas supply reducing single supplier dependence and ensuring competitive prices for all European citizens and European industry.

Beyond this traditional role, gas infrastructure already supports the energy transition to a low carbon energy system through the provision of flexibility to mitigate the intermittency of solar and wind power, thereby facilitating the development of renewable energies. Thanks to a well-developed gas network and storage facilities, European gas infrastructure contributes to the resilience of the global energy system and reduces the balancing costs of the electricity system.

While we believe that the EU should be carbon-neutral in 2050, the constraint of the EU carbon budget urges for immediate action. With existing infrastructures that are already well-spread all over Europe, gas offers no regret options to reduce emissions now and to improve air quality: as a substitute to more polluting fossil fuels such as coal and oil in the industry, power generation and heating; as a substitute to fuel oil and diesel in the road and maritime transport sectors. These conversion benefits will increase with the growing share of renewable gases.

With a view to 2050, the gas sector will have to become carbon neutral to play a role in the more decentralised, decarbonised, more versatile, and more digitalised energy system. It can even provide solutions for negative emissions in order to maintain economic activity and carbon-neutrality beyond 2050. Gas infrastructure’s role will evolve as well. It will enable the interconnection of the gases

produced at the local and distribution level to the transmission system where the gas can be transported in larger quantities and stored for seasonal storage. Gas infrastructure will still contribute to the global balancing of the energy system, in a cost efficient manner (utilisation of already depreciated assets), with the capability to transport a higher amount of energy on long distances compared to the power grid.

While the decarbonisation goals are set up to 2050, the pathways towards those targets are multiple and will be influenced by numerous factors, including: geopolitical context, development of new technologies, availability of resources, social trends, and economic development.

Full electrification of the energy system is not the silver bullet to the EU's decarbonisation challenge. Europe's decarbonisation strategy should explore multiple pathways, taking into strong consideration the role of renewable and low carbon gases and the principles of cost-efficiency, social inclusiveness and sustainability. While the evaluation of the EU biomass potential is only at a very early stage, several studies at the EU level show the benefits of pathways involving gases and the gas infrastructure compared to a full electrification of the energy system. Eurogas with the 2018 PRIMES study estimates savings of €335Bn based on all electric vs higher share of bio/synthetic gas scenarios. Frontier Economics 2018 FNB Green Gas Study estimated €12Bn per annum savings in Germany alone. According to Ecofys' Gas for Climate study, the production of renewable gas production can be scaled up within the EU to at least 122 bcm by 2050. Using this gas in existing gas infrastructure, smartly combined with renewable electricity, could save €138 billion annually compared to decarbonisation with no role for renewable gas. Some thorough evaluations of this potential at national level (e.g. ADEME study 100% renewable gas in 2050) hint at a much higher potential (460 TWh for France in line with REDII sustainability criteria) and identify positive externalities that would otherwise be unachievable through full electrification on its own (e.g. waste management, circular economy, additional revenue for agriculture, local jobs, reduced use of chemical fertilisers) in addition to reducing the need for additional EU gas imports.

A holistic and technology neutral approach should be at the heart of the future EU Energy and climate policies. Sectoral integration should be promoted to foster synergies between different energy infrastructures (electricity, gas, heat networks), synergies across sectors (industry, agriculture, transport) as well as synergies across geographies (local, regional, national and EU). Beyond cost savings and positive externalities, such approach also guarantees the long-term competitiveness of European industry and places Europe as a front-runner on low- and zero-carbon sustainable technologies.

Among the technologies that will help tackle climate change, renewable and low carbon gases, together with Europe's gas infrastructure, have a significant role to play in achieving the EU decarbonisation and energy transition objectives in a smart; cost-efficient and sustainable way. Renewable gases include biomethane (renewable methane gas produced from biomass e.g. through anaerobic digestion, pyrogasification or hydrothermal gasification), green hydrogen (renewable hydrogen produced from renewable electricity) and synthetic methane produced via Power to Gas process. Low carbon gases include "blue" hydrogen (hydrogen produced e.g. from natural gas with pre-combustion Carbon Capture technology or hydrogen produced by pyrolysis of natural gas with solid "carbon black" production) and natural gas with CCS (methane combined with Carbon Capture and Storage technology). Renewable and low carbon gases can be stored, transported and distributed using the existing gas infrastructure. These infrastructures play a critical role in ensuring that energy is delivered when needed independently from production and their use should be optimised.

Through all these new innovations, GRTgaz strongly believes that gases will play a critical role in achieving the EU long term climate objectives to 2050 of the European sectors such as transport, industry and agriculture that are not only the primary CO₂ emitters but also sectors that are particularly hard to decarbonise and hard to electrify.

GRTgaz would like to highlight that the financial support via European programs is paramount to provide the industry- and TSOs in particular - with the appropriate incentives to engage in research and development activities and trigger market interest for new low-carbon technologies. While such support

has already allowed GRTgaz to launch the Jupiter 1000¹ power to gas project that will be commissioned in 2019, GRTgaz has recently entered in partnerships for pyrogasification and methanation projects and is actively preparing the FenHYx project² that will foster development of industrial scale solutions.

In relation to the future gas package currently under preparation, we believe that the current regulatory framework needs to be amended in order to ensure that gas and gas infrastructures can play their full role in the energy transition to the maximum and to facilitate the emergence of a carbon neutral energy system by 2050.

Our main proposals:

- The European framework must allow gas infrastructure operators to broaden their responsibilities to facilitate the industrial deployment of new technologies such as Power to Gas
- European infrastructure funding will have to be recalibrated and aligned with the European decarbonisation objectives and take into account positive environmental and social externalities
- R&D&I effort should be encouraged in green gas production and gas end-user technologies to levy renewable gas potential through energy efficiency (e.g. micro-cogeneration, hybrid heat-pump, gas hybrid vehicles)
- Market rules will also have to evolve to better integrate renewable gases and ensure their development :
 - Harmonisation of the connection regime for renewable gas production facilities with transmission and distribution networks, with in particular the socialisation of connection costs in network access tariffs.
 - The gradual establishment of a European system for the certification of renewable gases and guarantees of origins, which should ultimately enable cross-border trade. This implementation must take into account the national specificities of the member states and prevent market distortions and poorly calibrated deployment (Some fear, for example, that the massive importation into France of guarantees of foreign origin could hinder the development of the French sector).
 - While we see a need for harmonisation at the EU level, support mechanisms for the production of renewable gases will have to be tailored to member states, respecting national specificities.

¹ Jupiter 1000 is the first the first industrial demonstrator of Power to Gas with a power rating of 1 MWe for electrolysis and a methanation process with carbon capture. More info : <https://www.jupiter1000.eu/>

² Fenhyx is collaborative platform with the aim of solving technical barriers to injection of hydrogen into the European high pressure transmission network at different levels of concentration, from 0 to 100%