GD4S statement on the revision of the Trans-European Network for Energy Regulation

On the 8th of July 2020, the European Commission, as part of the Green Deal, presented its EU Strategy for Energy System Integration [COM(2020) 299] aiming at reaching climate neutrality by 2050. The strategy includes the revision of the **Trans-European Network for Energy (TEN-E) Regulation (347/2013)**. Since 2013, the energy landscape has significantly evolved with a strong increase in renewable and decentralised energies. Simultaneously, the EU has fixed ambitious climate and energy objectives and several landmark legislations have been passed (e.g. Renewable Energy Directive II), justifying an update of TEN-E.

GD4S welcomes the revision of the TEN-E Regulation underway by the European Commission, and in this vein, wishes to highlight the role of energy infrastructures at local and regional levels in contributing to the energy transition.

Energy infrastructures at regional and local levels for a successful energy transition

The European Union has set targets to 2030 for renewable energy and energy efficiency, targets that are likely to be raised, in line with the recently announced plan to reduce EU greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels.

Today, for example, **90% of the renewable gas injection points in France are at the distribution level**[1]. Accelerating the deployment of renewable energies and fostering energy decarbonisation as well as security of supply at EU level require new gas grid projects as well as grid adaptation projects, for instance, reverse flow installations to send biomethane from distribution to transmission grids.

Hydrogen will also play a critical role in decarbonisation at all levels, as highlighted in the corresponding EU Hydrogen Strategy [COM (2020) 301]. Hydrogen development necessitates adapting grids to incorporate an increasing share of hydrogen, financing the retrofit of gas pipelines to flow hydrogen and constructing new dedicated hydrogen pipelines.

Local and regional infrastructures are connected to numerous flexibility solutions. Hybrid heating solutions (micro-cogeneration units or hybrid heat pumps) allow for flexible generation at local level and interaction between gas and electricity networks. They are closely linked to the renovation and "smartening" of buildings. Thus, aggregated renovation projects allowing for development of demand side response and digitalisation are part of the local and regional infrastructures needed for the energy transition. The **uptake of smart grids** will allow better integration of renewable energies in the market and empower consumers, with tools such as smart meters, to optimise their energy consumption. Additionally, Power-to-Hydrogen and Power-to-Methane are promising technologies to integrate gas and electricity sectors. Investing in flexible solutions at local and regional infrastructure levels will improve energy system resilience, helping to **avoid excessive reinforcement of electricity networks**.

Investing in these technologies and infrastructures will boost Europe's global competitiveness in smart, decarbonised and distributed energy solutions. Moreover, the manufacture, installation, operation and maintenance of those small-scale installations will create numerous high skilled jobs across Europe. It will also respect the principles of the circular economy, with the production of decentralised energy, for instance with biomethane which manages and upcycles agricultural and municipal waste.

[1] For France, see: https://opendata.reseaux-energies.fr/

Therefore, we are calling on the European Commission to include infrastructures at distribution level in the revised TEN-E Regulation, as well as infrastructures increasing the share of renewable energies in the grid and developing hybrid networks. Please find below our four key policy asks:

1. Update the energy infrastructure categories and priority areas

The energy infrastructure categories and priority areas in the TEN-E do not align with the infrastructure requirements to reach the updated ambition of EU climate and energy objectives. We are calling for the revised Regulation to account for the following project categories:

- Distribution grid projects including grid reinforcements and reverse flow installations, contributing to renewable gases integration.
- Flexibility technologies (Power-to-Gas, Power-to-Methane) which allow the integration of gas and electricity networks and technologies.
- Enabling technologies such as smart gas grids (e.g. new chromatographs for dealing with variable gas quality and sensors to optimise the management of biogas injection).

In the context of the Energy System Integration strategy and the development of renewable energies, we would suggest having a priority area, "Sector Coupling", for projects integrating electricity and gas sectors and another, "Renewable gas development", for projects developing technologies to adapt the grid to accommodate the increasing share of renewable gases and to facilitate the circulation of these across the network. Concrete examples of smart gas grids are presented in the annex. The Projects of Common Interest (PCI) framework would help to reproduce these projects at an industrial stage and throughout EU Member States, developing technical standards across borders.

2. Loosen the cross-border criterion

In the new energy system, the security of supply objective of TEN-E can not only be met by importing large quantities of natural gas from outside the EU, but also by producing renewable gases within Europe and by optimising and integrating the energy system. Today, these new solutions are constrained by the cross-border criterion in the TEN-E. Therefore, this rule should be loosened to incorporate projects that contribute to the EU climate and energy security objectives and are therefore naturally generating benefits across borders. These new projects often include multiple actors (DSO, TSO, producers, administration etc.) and would benefit from the PCI framework to accelerate their development.

3. Reform the planning of European energy infrastructures

The current planning of our infrastructures must be revised to take the right infrastructure decisions to ensure a successful energy transition that meets EU climate and energy targets. The TYNDP scenarios should take a closer look at flexibility solutions at a local level, such as hybrid heat pumps, micro-CHP units, Power-to-Hydrogen and Power-to-Methane, which allow the coupling of gas and electricity grids. To have a better understanding of those technologies in the TYNDP, we are asking for greater involvement of European DSOs associations.

4. Ringfence the sustainability of future PCI projects

In the present TEN-E Regulation, sustainability is only one of four criteria (along with market integration, security of supply and competition). We are suggesting making the sustainability criterion mandatory for PCI projects to promote projects contributing to CO_2 and methane emissions' reductions.

Gas Distributors for Sustainability (GD4S) is the voice of gas DSOs in Europe. Its members are the leading gas DSOs in seven countries (France, Greece, Ireland, Italy, Portugal, Romania, Spain) are strongly committed to the development of renewable gases. For more information: contact@gd4s.eu

Annexe – Examples of smart gas grid projects

1. TEX (tele-exploitation), a project to improve operational performance and industrial security of the gas grid

Safety and quality of service are at the heart of DSOs' concerns. TEX (Remote monitoring of critical points in the network) is the flagship industrial program of GRDF for this topic. The acronym TEX stands for the operational program for digitizing GRDF distribution network. TEX encompasses all solutions for remote monitoring and possibly for remote operation of the network. The first phase of this program consists in deploying remote monitoring solutions (sensors) for critical network units (4000 pressure reducing stations and 100% of biomethane injection stations). It aims to improve the quality of service by avoiding customer outages thanks to increased anticipation of critical phenomena on the network (acts of vandalism, pressure surges, flooding of workstations, etc.), and to reduce the number of major incidents which can have significant costs for GRDF. Then, the solution will be further developed on the network, including on reverse flow installations between TSO and DSO grids to optimise the injection and circulation of biomethane in the grid.

2. West Grid Synergy to improve collaboration between DSOs and TSOs on biomethane injection

GRDF is a partner of the West Grid Synergy demonstrator, which is experimenting "reverse flow installations", also called "intelligent compressor". Reverse flow installations allow to increase gas pressure level with the objective to circulate biomethane to additional areas of consumption. In 2017, two intelligent distribution-transport compressor pilot projects were initiated in Brittany (Pontivy) and Pays-de-la-Loire (Pouzauges) regions.

These areas show proven needs for an intelligent compressor: production of biomethane higher than local consumption, sufficient maturity of the biomethane injection projects, a local dynamic favourable to the development of renewable gases and uses of these renewable gases (bio-NGV mobility in particular) supported by a strong involvement of communities (regions).

3. Interflex and GHRYD, two projects coupling gas and electricity grids

a) Interflex/Nice Smart Valley, a sector coupling project at consumer level

In order to demonstrate and test the technical and economic performance of smart gas solutions (hybrid heat humps and cogeneration units) installed on the DSO network, GRDF is participating in the French demonstrator of the project Interflex, located on the territory of the metropolis of Nice.

This Horizon 2020 project focuses on the use and promotion of multi-energy flexibilities at the local level. The French demonstrator is acting as a pioneer by integrating flexibilities offered by gas products. Interflex has several aims:

- Realize and demonstrate the value created by the complementarity of electricity networks and gas
- Make smart gas solutions controllable by aggregators to enable them to create flexibility portfolios and thus give gas consumers the means of accessing new sources of emerging value (markets / mechanisms of flexibility)
- Evaluate the technical and economic performance of smart gas solutions

b) GRHYD, a project aiming at producing and testing the injection of hydrogen in the grid

GRDF participates in the GRHYD demonstrator project on the territory of Cappelle-la-Grande (North) which aims to test the injection of hydrogen at rates of 6 to 20% by volume in a network distribution system supplying a new district of around one hundred housing units and one tertiary establishment. The GRHYD project objective is to measure the feasibility and interest of production and storage of green hydrogen mixed with natural gas. The project is led by ENGIE Research Center (CRIGEN) and brings together 11 partners covering all links in the value chain: laboratories (CRIGEN, CETIAT, CEA, INERIS), equipment manufacturers (AREVA H2GEN, McPhy Energy), operator (Ineo), DSO (GRDF), local authority (Urban Community of Dunkirk). The project consists of two batches: one batch piloted by GRDF will test the injection into the gas grid of a variable part of hydrogen on a natural gas distribution island, the second batch aims to test the Hythane® fuel (natural gas - hydrogen mixture) for a fleet of buses.

c) Future projects: Power-to-Methane (or methanation)

Methanation represents an alternative to facilitate the coupling of networks and the decarbonization of uses, while overcoming the constraints associated with direct injection of hydrogen and developing optimized solutions for coupling with anaerobic digestion plants. This coupling will also have the interest of improving the carbon footprint of anaerobic digestion plants. In the work carried out by gas infrastructure operators in 2019, methanation appears as one of the complementary avenues for integrating hydrogen into networks. In the event that mixed injection would lead to very high hydrogen levels locally, the methanation solution appears to be more cost effective.