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ENGIE Response to the consultation on the Roadmap / Inception Impact Assessment on the "*Hydrogen and Gas Markets Decarbonization Package*"

10 March 2021

ENGIE supports Europe's ambitious objectives to become the first carbon-neutral continent by 2050 and – as an important milestone on the pathway to 2050 – achieve a reduction of greenhouse gas emissions of at least 55% by 2030. We welcome the recognition of the role that gaseous energy carriers will play alongside energy efficiency, electrification, district heating and cooling, etc. in an integrated and increasingly decarbonized energy system, as expressed in the *Energy System Integration and Hydrogen Strategies*[1]. Indeed, natural gas can help to achieve quick wins for the climate by replacing more carbon-intensive energy carriers like lignite, coal and oil products in the years to come. Advancing further on the way towards carbon-neutrality, natural gas has to be replaced progressively by renewable and low-carbon gases. Gases will (continue to) provide back-up and storage capacities in the power sector to integrate wind and solar and help to decarbonize heating and cooling, industry and transport, thus complementing electricity-based and other solutions in these sectors.

A fully-fledged "*Gas and Hydrogen Decarbonization Package*" is key to make this happen and has to be designed in a coherent and complementary way with other relevant legislation, notably the *Renewable Energy Directive (RED).* We appreciate the stance taken in the Inception Impact Assessment / Roadmap document intending to enable a variety of solutions, acknowledging that "the reform should enable fair competition between smart electrification, energy efficiency, and renewable and low-carbon gases like hydrogen and bio-methane, or CCUS technologies in achieving decarbonization targets." Indeed European and national policy-makers and regulators should start addressing the challenges related to sector coupling/integration and the development of hydrogen and other renewable and low-carbon gases as soon as possible, investigating also the production and market potential of CCUS in order to enable the huge energy, industrial and service transformation that is needed and will depend on a global and cooperative vision and a favorable and clear legislative framework to be successful.

Scope of the *Gas and Hydrogen Decarbonization Package*

The scope as indicated in the IIA / roadmap document seems to put a strong focus on infrastructure questions. While fully recognizing their importance, we consider that the *Gas and Hydrogen Decarbonization Package* should also complement the RED in supporting investment in renewable and low-carbon gases and in creating markets for these gases. While the EU ETS is an important tool to drive decarbonization solutions, we cannot wait until carbon price signals are high enough and available in all relevant sectors to deliver adequate investment incentives. **EU legislation should provide a legal basis for**

[1] EU Strategy for Energy System Integration COM(2020) 299 final (July 2020) and EU Strategy on Hydrogen COM(2020) 301 final (July 2020)

targeted financial support, adapted to the needs of each technology, including measures to support the production as well as the demand for such gases.

Definitions and certification of different renewable and low-carbon gases are the basis on which market arrangements and support schemes can be developed. **A clear and practicable terminology is therefore urgently needed**. The carbon footprint is a key criterion to determine the decarbonization contribution and should be established on a life cycle basis. Moreover, a distinction should be made between renewable and non-renewable gases. Further overly restrictive criteria which risk to make renewable and low-carbon gas projects unnecessarily expensive and complex (as for instance currently discussed for renewable hydrogen in the context of a delegated act under the RED concerning additionality, temporal and geographical correlation) should be avoided. Indeed overly restrictive criteria would be counter-productive as they will limit renewable and low-carbon gas volumes and therefore slow down the pace of the energy transition.

Guarantees of Origin (GOs) should be issued for renewable and low-carbon gases in a standardized way while providing information on whether the gas is renewable or low-carbon and on the different production ways, in order to design a pan-European market for all types of GOs. GOs are the instrument to "implement" the terminology, creating transparency, serving as proof and allowing tradability based on a book & claim approach. This includes both gases that are injected in networks or not: For instance, in case of liquefied renewable methane, logistics optimization will require the usage of small-scale LNG infrastructure where a book & claim system (including to demonstrate sustainability) is the only practical solution. Creating a pan-European market for GOs also requires that these GOs are fully recognized in end-users mechanisms such as the EU ETS, energy taxation, but also sectoral CO_2 emissions regulations, the future Fuel EU maritime regulation, etc.

Integration of renewable and low-carbon gases in existing gas infrastructure

Renewable and low-carbon gases will play a crucial role to integrate variable renewable electricity in the system (e.g. through P2G, hybrid heating solutions, by fueling gas-fired power plants as the most economical way to manage intermittency, …). Moreover, they complement electrification in decarbonizing heating & cooling, transport and industry, where renewable and low-carbon gases are often an appropriate and cost-effective and – for some applications – even the only available decarbonization solution, according to the current state of technology. **Making optimal use of existing gas infrastructure (network, storage, LNG terminals) to transport and store renewable and low-carbon gases can partly relieve the investment pressure on the electricity side and contributes to an overall system cost-efficiency.** This should be recognized when assessing the support given to renewable and low-carbon gases: A fair comparison of all renewable and low-carbon energy vectors should take into account that renewable and low-carbon gases coupled with gas infrastructures can provide additional flexibility services and can help to limit peak electricity needs.

An important **advantage of renewable methane** (biomethane, synthetic methane, etc.) is the possibility to inject it in the gas grid and use it directly in existing applications (such as CCGTs, gas boilers, CNG and LNG vehicles) without the need of adaptations or changing end users' equipment. As such gases are often injected on distribution level (close to the production sites, mostly in rural areas), certain infrastructure

adaptation investments to accommodate all the renewable gas production could be necessary (e.g. reverse flow mechanisms to send renewable gases towards higher pressure grids, interconnection of grid sections, …). Such network adaptation costs are part of the evolution of the infrastructure to a more decentralized and sustainable model, facilitating renewable gas projects and thus accelerating decarbonization. They should be recognized as such in the regulation of infrastructure operators and financed, for instance, through tariffs. Moreover, Member States should be allowed to devise regulatory solutions that facilitate biomethane development including through the possibility to socialize connection costs of biomethane plants in gas infrastructure tariffs, subject to technical-economic criteria. The French system of connection and network integration of biomethane installations is an appropriate example.

When it comes to hydrogen, blending can be an interesting transitional option to provide flexibility to project developers allowing them to inject H2 volumes in gas (methane) grids. This can be relevant for instance while local / pure H2 demand still has to develop or to valorize volumes that exceed the local H2 demand. However, blending faces certain limits, both in terms of economic considerations (higher value of "pure" hydrogen) and technical nature (either related to infrastructure or the sensibility of some end-user equipment to gas quality and fluctuations thereof), so that dedicated hydrogen infrastructure will be required to accommodate increasing volumes of hydrogen. The planning and coordination of repurposing existing gas pipelines and building new hydrogen infrastructure should start already now with a holistic and collaborative approach associating gas and power TSOs/DSOs/SSOs, network users/shippers, LSOs and regulators.

The **development of smart gas grids** is essential to enable a progressive substitution of natural gas by renewable and low carbon gases. The operators should engage a digitalization of their networks and operations to adapt them to the green transformation with the costs taken into account by the NRA, especially for smart meters.

<u>Regulation of dedicated hydrogen infrastructure</u>

In general, the upcoming *Gas and Hydrogen Decarbonization Package* should **take into account the different phases of the development of renewable and low-carbon gases and the corresponding infrastructure requirements for each phase**. The need for regulation might differ depending on the stage of hydrogen development, which is moreover likely to happen at different speeds in different Member States.

As a rule, we consider that hydrogen networks should be regulated based on the same key principles as applied to the electricity and gas sector: H2 networks and in particular a H2 backbone should be developed and operated by TSOs/DSOs, which are unbundled from production and supply activities (OU or ITO, which is a pertinent model as well) and have to grant non-discriminatory access to third parties. The conversion of existing gas pipelines to transport hydrogen can be a relatively low-cost option in some countries, to be complemented by the construction of new dedicated pipelines where needed. In any case, the use of existing gas assets by adapting them to transport and distribute renewable and low-carbon gases should be foreseen wherever it makes sense instead of decommissioning them, thus preserving in consequence the financial and human resources involved. Gas TSOs/DSOs own existing gas pipelines and

have the necessary expertise in network planning and operation. They should clearly be allowed to build, own and operate H2 infrastructure.

However, there is still great uncertainty on how hydrogen production, future consumption patterns and transport needs will develop. Therefore, **the approach to regulation should provide predictability to all relevant parties but also remain flexible**, for instance by allowing national regulators to provide for exemptions.

When it comes to smaller, "point-to-point pipelines" (direct pipelines/industrial pipelines), national regulators should closely monitor the development of hydrogen markets and infrastructures. In case of behaviour constituting an abuse of a dominant position, regulation should kick-in and Third Party Access should be enabled. This should basically apply to both existing and new B2B pipelines. At the same time, principles/guidelines should be fixed on European level to give visibility to all relevant parties about when and in which form regulation will apply and secure investments from the market.

Ownership and operation of P2G assets

The investment and management of P2G assets should be a market activity and open to competition among market players. Regulated parties such as TSOs/DSOs should as a rule be precluded from such activities. The *Gas and Hydrogen Decarbonization Package* should include equivalent provision as the *Electricity Directive*. TSOs/DSOs should be allowed to engage in P2G activities only as a last resort, if it is established that the market failed to bring forth the needed investments despite appropriate incentives, financial support and information.

Imports of renewable and low-carbon gases from third countries

The *Gas and Hydrogen Decarbonization Package* should **also take into account future imports of renewable and low-carbon gases**. Some countries have already clearly signaled their intentions in this regard. Transparent certification of imports will be needed, with a system of "international GOs". Since hydrogen will be traded between regions, it is necessary to develop as soon as possible international standards. This system should be initiated by the EU, which is the most advanced region in terms of initiatives relating to hydrogen (see Certifhy project on H2 GO). It should also be applied to hydrogen derivatives such as ammonia.

European LNG terminals are already ready to import bioLNG ou liquid e-methane and/or could be repurposed to accommodate renewable and low-carbon hydrogen from abroad.

Integrated infrastructure planning

As Europe is striving for an energy system that is more integrated at all levels, more decentralized and complemented by imports, notably of renewable and low-carbon gases/fuels, full transparency has to be ensured as well as the neutrality of infrastructure operators. To optimize the whole energy system and costs for the final user, **infrastructure development should be based on integrated planning across**

energy vectors/commodities while providing transparency on cost, methodology, technical-economic assumptions and identification of best locations for the future production of new gases.

Moreover, ENGIE considers that the energy planification would greatly benefit from the contribution of the expertise of the DSOs and SSOs. In this respect, **an EU Gas DSO entity** should be set up and, together with SSOs, cooperate with the ENTSOs and support the work of the EU Commission on energy system integration and implementation of new regulations.

In order to ensure a better coordinated network planning including electricity, gas, hydrogen networks and storage, an **assessment of flexibility options across sectors from a system perspective should be required to demonstrate optimized system planning.** Indicators such as emissions savings, integration of RES-E but also renewable and low-carbon gases, system costs savings, etc. could be created to assess the sustainability of integrated energy projects.

Last but not least, also the development of infrastructure to transport captured CO2 will have to be tackled in EU legislation.