

## *GIE Position paper*

# **Sector Coupling and policy recommendations**

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The following document sets out views and recommendations from GIE for EC's Sector coupling study assessing regulatory barriers. The terms 'sector coupling' and 'sector integration' are being used interchangeably. In this document the term 'sector coupling' is used to describe the integration of gas and electricity networks and the conversion of one energy carrier into another. Sectorial integration in GIE's definition is the integration of different sectors across the energy system: heating & cooling, industry and transport and the corresponding infrastructure in power, gas and district heating. The aim is to make optimal use of the potential of each energy carrier across all sectors to achieve an energy system that is sustainable and fulfills EU climate and energy goals, which provides a high level of security of supply at affordable costs and is broadly accepted by society.

GIE believes that sectorial integration is essential for the decarbonization of the energy systems. In this context gas infrastructure operators are actively testing new technologies and business models, which also depend on the appropriate regulatory and political framework. GIE believes that providing for peak capacity and flexibility needs is the key values brought by gaseous energy carriers and associated infrastructure for accelerating the energy transition and reaching a decarbonized economy in the most cost-effective way.

- The gas transmission system is mostly well interconnected across EU's Member States, and allows for efficient transport of any gaseous fuels over long distances;
- Gas storage facilities offer large-scale storage solutions for sustainable energy, thereby ensuring security of supply through physical availability of gas and providing up and running flexibility tools for intra-hourly up to seasonal operational needs to the benefit of an overall robust and resilient energy system; and
- LNG assets do not only provide diversification and security of supply, but also opportunities to reduce carbon, nitrogen dioxide, sulphur, noise and particulate matter emissions in the maritime and road transport sectors, while ensuring the EU's connection to a global LNG market and the supply of LNG to off-grid areas.

As the linking pin between the electricity and gas sectors, "Power to X" addresses the electricity conversion pathways that utilize electric power. The 'X' in the terminology can refer to power-to-chemicals, power-to-fuel, power-to-gas, power-to-heat, power-to-liquid and power-to-mobility. GIE aims to highlight the key role of Power to Gas (P2G) in coupling electricity and gas systems as well as between important demand sectors.

## GIE Policy Recommendations to enable Sector Coupling

### 1.1 Fair grid charges

Electricity grid charges have a substantial impact on the overall cost and profitability of P2G plants. By using energy conversion services and the underlying gas infrastructure, additional investments in the electricity grid might be avoided. This system value provided by the gas infrastructure to the future energy system needs to be reflected in the regulatory framework. Hence, the principle of cost reflectivity in setting grid charges should be extended to recognize the contribution of energy storage systems to avoid (i) electrical grid constraints and grid extension costs and (ii) curtailment of intermittent renewable electricity generation.

**Grid tariffs shall reflect the value provided by P2G plants to the electricity system by avoiding unnecessary investment in the power grid. In particular no additional levies and taxes should be applied to any energy unit transferred from one sector to another.**

### 1.2 Who shall operate P2G plants

TSOs and SSOs are already operating Power to Gas plants while TSOs as well as LSOs are involved in energy conversion activities held in a non-discriminatory way.

P2G will play a crucial role in balancing fluctuating energy supply from renewable sources. In terms of efficiency (i.e. both know-how and infrastructure in place), gas infrastructure operators are best placed to operate such facilities. GIE therefore believes gas infrastructure operators should play a central role in providing P2G services. In fulfilling the current EU legislation all market players should be given a possibility to invest during such a crucial period of the development and deployment of this technology.

**Gas infrastructure operators shall be entitled to own, develop, operate, and manage power to gas installations in order to provide the most cost-efficient conversion services of energy carriers in a non-discriminatory way.**

### 1.3 Increased coordination between power and gas infrastructure regulations

Currently national / bilateral operational processes between power and gas TSOs are in place to guarantee a high level of security of supply. The main focus of the exchange of information is on the general functioning of the network (including maintenance activities), planned network operation and use of gas-fired power plants. ENTSO-E and ENTSO-G have already started working collaboratively with a coherent scenario planning interlinking gas and electricity models. GIE views the cooperation in the planning of networks and alignment between the regulatory frameworks as important steps towards delivering the potential benefits of sector coupling.

**GIE recommends establishing institutionalizing at EU and national level communications schemes between electricity and gas network operators in order to better manage the balancing of supply and demand of energy. Coordination between electricity and gas sectors can be further improved by (i) strengthening the network planning activities and (ii) improving the interdependency of the power and gas sectors.**

#### 1.4 Incentives for the use of advanced fuels in transport and industrial sectors

Current legislation provides little incentive to use advanced fuels: (a) unlike biofuels, the use of zero-carbon hydrogen in fuel refineries has not yet been accepted as an emission reduction measure; (b) the Greenhouse Gas Emissions Trading System allows industry to use biomass to reduce emissions, however the use of zero-carbon hydrogen or biogas/biomethane is not yet recognized as a mitigation measure to fight carbon-emissions. If producers of gaseous fuels of non-biological origin, such as hydrogen, are able to prove the usage of 100% renewable electricity via guarantees of origin or power purchase agreements, the product should be allowed to count fully towards the respective targets, e.g. in the transport sector.

**Fuel cell, CNG and LNG mobility should be better reflected in CO<sub>2</sub> emissions reduction targets for car and truck manufacturers. Renewable and low-carbon hydrogen used in refineries should be acknowledged as carbon emissions reduction. The ability to prove the usage of renewable electricity via guarantees of origin should be allowed.**

#### 1.5 Developing a certification system for production pathways of renewable gas origins

The use of an EU-standard for guarantee of origin to provide evidence of the production of a quantity of renewable energy is currently only in place for electricity generation. A methodology which enables trading renewable and decarbonized gases is needed in order to create a Europe-wide market. In particular, it is necessary to make sure that the guarantee of origin attached to renewable (respectively low-carbon) electricity, which is converted into gas through P2G facilities, is converted into a guarantee of origin attached to the renewable (respectively low carbon) gas produced.

**A significant proportion of natural gas will be replaced by (renewable and low carbon) hydrogen and renewable and low-carbon methane (biomethane, synthetic methane etc.). The introduction of national targets towards 2030 could facilitate such a shift. To achieve this, a European platform for trading of all types of guarantees of origin is needed, such as the European renewable gas registry (ERgAR) and the Renewable Energy Certificate System (RECS). The principle should be that the guarantee of origin (renewable or low carbon) is attached to the gas used by the final customer, whatever the source of energy eventually converted into gas, provided that this source of energy has been primarily guaranteed as renewable or low carbon.**

#### 1.6 Harmonized level playing field for injection of hydrogen into the gas grid

Injection of hydrogen into the gas grid is growing in local networks. However, different national standards for injection of hydrogen apply within the EU. Favorable transmission tariffs schemes for renewable gases should be discussed as an appropriate incentive.

**GIE recommends to further harmonize the technical standards for injection of hydrogen into the gas grid taking into account the technical limitations in gas infrastructures and gas appliances, engines, turbines and other facilities.**

## 1.7 Investment supports for P2G pilot projects

Even though several studies have proven P2G to be an important building block in the transition of the energy system, it is not yet economically viable to invest in P2G facilities on an EU-wide scale. Gas Infrastructure Operators thus need support to invest in scaling this technology whilst gaining important experience in how to integrate these facilities into the existing energy system.

**GIE calls for the establishment of a clear regulatory framework at an EU level, in terms of objectives and criteria for P2G projects to be eligible for appropriate funding and incentives to bridge the economic gap between the actual costs of these technologies and the current market value of the services provided. More EU R&D funding should target the development of P2G technology.**

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