



Consultation feedback

8 June 2020



EUROCHAMBRES' input to the public consultation on the Smart Sector Integration Strategy

EUROCHAMBRES, the Association of European Chambers of Commerce and Industry appreciate the opportunity to provide feedback on the Smart Sector Integration Strategy. In view of the Covid-19 pandemic Chambers would like to underline that all measures, including the work prior to and the actions included in the Strategy, must aim to best support businesses in the economic recovery and the transition to a more sustainable and less carbon intensive economy.

- 1. What would be the main features of a truly integrated energy system to enable a climate neutral future? Where do you see benefits or synergies? Where do you see the biggest energy efficiency and cost-efficiency potential through system integration?*

In our point of view the solution to this challenge can only be found in a combination of different measures. In order to achieve a climate neutral energy system in a cost-efficient manner, we have to optimise the interplay between existing and new technologies and infrastructures. This means an enhanced link between electricity and gas for heating, cooling, mobility, industry and agriculture based on strengthened R&D efforts and an adequate legal framework to test innovative solutions in practice.

On the one hand it is important to facilitate and promote the further development of renewable energy. It is therefore crucial to implement the Renewable Energy Directive (RED II) in the member states and to build the necessary infrastructure. On the other hand, carbon neutral gases have to be made available by an adequate, technology-neutral and market-based legislative framework. Explicit CO₂-pricing should be the main driver. Developing cost-competitive alternatives to fossil gas will be essential to achieve a significant greenhouse gas emission reduction, taking into account the availability and market maturity of the technology.

A better linkage of power and gas sector includes coupling and integrating them. Sector coupling will be necessary to ensure a cost-efficient and secure energy supply. The gas infrastructure is very well-suited to balance and store intermittent renewable electricity supply. By using existing infrastructure in combination with innovative Power-to-X solutions a surplus of renewable power can be integrated into the energy system in a cost-efficient way. Sector integration is the linkage of the different energy consumers, such as heating and cooling, mobility and manufacturing industries. In this context, the aim must be to facilitate behaviour that is conducive to the energy grid's stability by properly designed incentives. The building sector also has huge energy efficiency potentials still to be exploited.

2. *What are the main barriers to energy system integration that would require to be addressed in your view?*

Sector specificities and characteristics (gas, electricity, heating/cooling, mobility) have to be taken into consideration in the design of a long-term strategy, especially in order to guide and plan investment decisions.

Our recommendations:

- Grid development has to be thought as a whole, i.e. taking both gas and electricity into account. The TYNDP and its development is to be adapted accordingly.
- Comparable legal and fiscal framework conditions are a precondition for a level playing field for the different sectoral components of the energy system.
- The TEN-E-Regulation has to become a more effective tool for grid development, especially with regards to the length of permitting procedures.
- The new framework must ensure a cost-efficient and secure energy supply and facilitate sector integration to cover peaks in demand and supply.
- The power infrastructure also needs to be enhanced in order to comply with the requirements of an integrated energy system. The grids must be designed to cope with an increased production and usage of renewable energies and carbon neutral gases.
- The usage of low carbon gases requires market-driven investment both on the infrastructure and supply side, as well as on the demand side. These costs can still be economically reasonable in comparison to the potential costs of full electrification.

3. *More specifically*

- *How could electricity drive increased decarbonisation in other sectors? In which other sectors do you see a key role for electricity use? What role should electrification play in the integrated energy system?*

From today's perspective, complete electrification of all sectors by 2050 appears unrealistic more expensive than a more balanced approach and offering less resilience. The question arises as to the sources of renewable electricity - in particular for industrial processes. Analyses in a number of member states indicate the huge power demand if but one industrial sector completely electrifies. If other sectors, such as buildings and mobility, are added, we will quickly reach the limits of what is technically feasible.

Electrification must go hand in hand with the development and use of storage and control systems that connect energy generation, storage and consumers. This increases the use and availability of decarbonised electricity. In addition to construction itself, building renovation also has to include digitalisation measures.

For a large-scale electrification of the energy system based on renewables, a number of elements should be taken into account:

- Some sources of renewable electricity are limited, such as water and biomass. For the latter, there is the challenges of land usage and competition with food production which may lead to increase imports from third countries.
- For the economy it is essential that renewable energy is provided cost-efficiently. Permanent and excessive subsidies often create a huge burden for energy consumers. The objective of energy subsidies must be for a technology to reach market maturity as soon as possible.
- The Commission in its November 2018 "2050 long-term strategy" (LTS) assumed that by 2050 80% of the electricity generated will come from renewable energy sources (which are increasingly off-shore). Furthermore, at least 15% should come from nuclear power and thus constitute a CO₂-free European electricity system. This means that if the demand for electricity were to double by 2050, the production of CO₂-free electricity would have to triple.

- The adequate development of the grid is a core element of an integrated energy system. It must go hand in hand with the promotion of renewable energy to ensure a cost-efficient and secure supply. This is of the utmost importance for both businesses and households.
- The volatility of renewable energy sources also plays a crucial role. To maintain grid stability and security of supply, research and development in the field of electricity storage must be prioritised, especially if decentralised installations should be one of the structural elements of the future CO₂-free electricity generation. Double charges for electricity storage should be abolished in line with the electricity market directive.

In addition, the successful development and implementation of CCU/CCS technologies, which are key to the decarbonisation of many energy-intensive industries, depend on cost-competitive renewable electricity.

- *What role should renewable gases play in the integrated energy system?*

The existing gas infrastructure can help to decarbonise the gas market. Other options are extending the existing industrial grids (mostly for hydrogen) or building new rural and at first isolated hydrogen systems. In this respect, renewable gases will play a very important role. Renewable gases will also play an important role in a future energy system in connection with the expansion of renewable electricity, the lack of electricity grids and the necessary security of supply.

In order for decarbonised gases to play their intended role, large quantities will be necessary, which in turn means a large need for bio-based raw materials and renewable energy as basis for hydrogen and synthetic gas, as well as imports of carbon neutral gases. We therefore call upon the Commission to analyse demand, production capacity, the resulting gap and potential sources of climate neutral and renewable gas and to prepare an import strategy. We also suggest a concrete roadmap with all related programmes, projects, cooperation partners and associated costs.

With a view to overburdened power grids due to the fast expansion of renewables, low carbon gas will play a key role in our future energy system. The concept of power-to-gas allows for the necessary flexibility by using the gas grid to store energy and optimise its use and distribution in an integrated system. Unbundling should remain a guiding principle for the design of future gas market regulation since it is to the benefit of end-consumers.

Gas will also play a major role in decarbonising the heating sector at European level. The cost-efficient switch from coal or oil to renewable alternatives can only be achieved with carbon neutral gases. The decarbonisation of the heating market must be based on the principle of technology neutrality.

When it comes to the decarbonisation of mobility, carbon neutral gases can also play a role next to electricity. It is therefore important to extend the infrastructure, especially the charging points and refuelling systems for all technologies. Enhanced market penetration of alternative propulsion technologies must be promoted by improving the framework conditions and targeted incentive mechanisms.

- *What measures should be taken to promote decarbonised gases?*

A number of elements must be considered for the promotion of carbon neutral gases:

- Existing infrastructures will be used if this is the most cost-efficient solution. This also applies to CO₂ and hydrogen infrastructures for the production of carbon neutral gas and fuels.
- Technology-neutrality, cost-efficiency and fair competition must be the guiding principles. The flexibility of the gas infrastructure should be fully utilised if this is to the benefit of the end-consumer.
- The flexibility needs have to be analysed and it must be clearly demonstrated where gas can be best deployed compared to other solutions.
- The Guidelines on State aid for environmental protection and energy (EEAG) will be updated in 2021. Renewable and carbon neutral gases must be duly taken into consideration. Legislators have

to ensure fair competition across the EU, especially with regards to exceptions. The structure should be uniform across the EU to create legal certainty and ensure a European market. Errors made in relation to the promotion of renewable electricity should be taken into account. The renewable energy used to produce hydrogen is - as far as legally possible and economically sensible - to be exempt from network fees, charges and levies.

- In order to strengthen the production of decarbonised gases, an EU-wide regulatory framework with clear definitions and specifications in the corresponding gas directive is required. EU-wide uniform definitions are necessary. Threshold values should be set for carbon neutral gases. This must be the aim of the large-scale discussion at European level at the Madrid Forum in October 2020.
- Uniform definitions are also necessary to facilitate and foster cross-border trade in renewable and decarbonised gases and to enable transparent conversion to other energy types, e.g. from green electricity to green hydrogen. Similar to the power market, harmonised guarantees (GoO) of origin taking into account the specificities of gas are necessary from our point of view. The limitation of GoOs for renewable gas to 18 months as specified in RED II Art. 19 para. 3 should be reconsidered, since gas can be stored much longer. A gas should be categorised according to its greenhouse gas intensity over the entire life-cycle. Existing trading systems are to be used to avoid duplication and to ensure virtual cross-border trading where physical trading may not be possible. Last but not least, when feeding in carbon neutral gases, attention must be paid to the special features of the respective networks and their technical options, for instance in connection to flow rates, seasonal fluctuations and storage capacities.
- Under no circumstances should it be determined in advance for which sector climate-friendly gases must be used. The use must be market-based and could vary between member states. Also the heating sector could be decarbonised using carbon neutral gases, building on existing networks and infrastructure and without huge additional investment.
- *What role should hydrogen play and how its development and deployment could be supported by the EU?*

Hydrogen will play a decisive role in the decarbonisation of industrial processes, but also as a supplement or replacement for fossil gas in energy use. In order to ensure solid competition and growth prospects for the affected sectors (in particular steel, chemicals, mineral oil, cement, brick, glass, etc.) in Europe, development of a corresponding market demand for CO₂-neutral products and extensive support in financing research and innovation in technologies and their implementation is essential. Hydrogen will also play a crucial role in CCU technology.

The following elements should be considered for the successful deployment of hydrogen in the European economy:

- Sector coupling through the integration of hydrogen into the gas market is one of the central objectives and ideally maintains the internal energy market instead of dividing it into individual fragmented markets. EU-wide standards for blending with hydrogen are necessary. Harmonisation at EU level as well as the implementation of necessary adjustments at the transfer points is required to prevent market fragmentation. Furthermore, these are necessary to maintain the common energy market and to meet security of supply obligations.
- In order to achieve market maturity for hydrogen technologies and develop the market as a whole, both carbon neutral as well as low carbon hydrogen will be necessary. The different types should be assessed based on their energy content, supplemented by their climate contribution through corresponding EU-wide certificates.
- The entire hydrogen value chain must be taken into consideration, not only the production stage. For instance, at a certain share of blended hydrogen, infrastructure would need to be adapted. Technical feasibility in the different applications, e.g. various industries, will have to be thoroughly assessed. Chambers oppose a blending obligation, because it could put additional burden on energy-consumers.

- Roles and responsibilities of power and gas market operators (producers, distributors etc) have to be clearly defined from the start. Unbundling shall remain the guiding principle for future gas market regulation.
- Only an adequate legal framework and incentives will ensure the development of significant green hydrogen production capacities and promote sector coupling, i.e. power-to-gas installations. The additional costs for power-to-gas (levies, network fees, charges etc) should be reduced, for instance by creating the necessary scope in the Guidelines on State aid for environmental protection and energy (EEAG) for it to be categorised as conversion service.
- International cooperation must be promoted, on the one hand for technological development, and on the other hand in order to have the necessary amounts of hydrogen available.
- *How could circular economy and the use of waste heat and other waste resources play a greater role in the integrated energy system? What concrete actions would you suggest to achieve this?*

Waste is already used today as a fuel for the production of energy-intensive products. They are part of an integrated circular economy. Also, the thermal recycling of waste contributes to the climate and renewable energy goals.

Waste can also become a raw material for the production of renewable gas. Biomethane, for example, can play an important role in the greening of the gas network. However, there are economic, ecological and technical limits that need to be considered. The availability of carbon neutral gases at affordable prices is important for successful decarbonisation. However, the necessary requirements, for example on gas quality, have to be ensured.

The waste heat resulting from combustion processes can also be used to supply the surrounding industries and municipalities with heat and to generate electricity. Waste heat can demonstrably replace fossil fuels or applications and must therefore be counted as renewable heat. In addition to using the waste heat from gas-fired power plants (CHP), residual heat from waste incineration and industrial plants can be fed into the heating network. However, regarding regulation, CHP systems cannot be compared to the cross-border electricity and gas networks. They are self-contained local systems with demand-optimised heat production. The role of waste heat as part of national decarbonisation strategies should be enhanced.

The recognition of the sustainability of waste heat projects in the EU taxonomy is a positive signal. Waste Heat recovery projects have high CAPEX and financial risks. Support for research and development of risks insurance schemes, as well as business models and standard contracts would further help waste heat recovery projects.

Various waste materials are not suitable for recycling due to their pollutant content and composition, hazardous substances have to be removed from the cycle. These pollutants are destroyed or immobilised by thermal recycling.

- *How can energy markets contribute to a more integrated energy system?*

The goal must be to combine climate protection and a secure and cost-efficient energy supply. Open and integrated markets significantly contribute to this objective. An integrated energy system allows for the optimal and cost-efficient coverage of flexibility requirements. Sector coupling (power-to-gas and gas-to-power) and sector integration significantly expand the flexibility of an energy system.

Energy markets based on such flexible systems can promote the integration of renewable energy and support the introduction of demand response systems in the economy. Sector integration is necessary in order to exploit synergies, ensure a cost-efficient energy supply, make the energy market more climate-friendly and continue to offer a high degree of security of supply.

As for electricity, the Member States must implement the rules of the Clean Energy Package. In the gas sector, market rules need to be adapted to reflect the necessary switch to carbon neutral gases. The focus must be on technology-neutral, market-oriented and competitive development. For the European gas market

to work, the requirements of the 3rd Energy Package must be implemented in all EU member states and Energy Community members. There should be no more regulated energy prices in the EU as they prevent competition, create false incentives and complicate important investment decisions.

Ideally, new gases should be integrated into the existing gas market in order not to lose the advantages of the internal energy market, differentiated by their energy content and climate value (secured by guarantees of origin).

A number of elements to consider in relation to the Clean Energy Package:

- Sector coupling must be promoted in national and European regulation in the form of attractive framework conditions.
 - Rules from the electricity sector must not be transferred 1: 1 to the gas sector. Differences between the gas and electricity sectors must be taken into account. Unbundling should remain a guiding principle for the gas market design and any further regulation.
 - The market rules for electricity and gas must work be synchronised nationally and at EU-level in order to facilitate sector coupling.
 - The implementation of the Market Design Directive and Regulation will help move towards a smarter energy system. Additional barriers, for instance through energy taxation, have to be tackled as well.
- *How can cost-efficient use and development of energy infrastructure and digitalisation enable an integration of the energy system?*

Data and digital solutions are at the core of smart, green, decentralised and integrated energy systems. They can facilitate increased flexibility, increasingly decentralised power generation and demand response management.

In relation to decentralisation, bi-directional and smart grids will have to be strengthened. It will be the task of markets to establish the optimal distribution across sectors. Combined TSOs and DSOs may gain in importance.

In relation to demand response, digital solutions will play a key role when it comes to balancing supply and demand. This requires coordinated planning and management.

The digitalisation also offers the consumers (both businesses and final) more options to optimise their energy management, for instance when it comes to self-consumption of renewable electricity.

The revision of the TEN-E-Regulation also plays an important role in this context. In the future, the topic of sector coupling must be taken into consideration to a higher extent. In addition to power PCIs, gas PCIs must also remain on the list, which can also include storage and network operator projects. With the exception of natural gas-operated compressor stations, the gas infrastructure has no CO₂ emissions per se, as long as it is used as a transport or storage medium. In order to fully integrate the energy system, the heating and cooling sector must also be included in a comprehensive assessment.

4. *Are there any best practices or concrete projects for an integrated energy system you would like to highlight?*

Supermarket H₂-Initiative: <https://fuelcellsworks.com/news/europe/supermarket-giant-mpreis-investing-in-hydrogen-technology/>

https://news.wko.at/news/oesterreich/3_H2B_MPreis_Perwoeg.pdf

Wind2Hydrogen (W2H): <https://www.energy-innovation-austria.at/article/wind2hydrogen-w2h-2/?lang=en>

<https://www.klimafonds.gv.at/wp-content/uploads/sites/6/1508017Factsheet-Wind2HydrogenDE-FINAL-1.pdf>

- H2Future:** <https://www.h2future-project.eu/>
- Renewable Gas field:** <https://www.ea-stmk.at/renewable-gasfield>
- The Vienna Model:** https://www.youtube.com/watch?v=J0C8rZp_0uE (The Vienna model combines the use of waste heat from power generation (known as cogeneration), the generation of energy from **800,000 tonnes** of municipal waste, **200,000 tonnes** of sewage sludge and **100,000 tonnes** of industrial and commercial waste per year, the use of industrial waste heat and the use of renewable energy sources, thereby guaranteeing the supply of electricity, heating and natural gas to around **1.4 million** customers and saving up to **three million tonnes of CO2** annually by maximising efficiency.)

5. *What policy actions and legislative measures could the Commission take to foster an integration of the energy system?*

Market design and market maturity

- New framework conditions must enable an affordable and secure energy supply and enable sector integration (connection electricity / gas / industry / heat / mobility).
- Better coordination and a change in market design can better take into account the advantage of Demand Response management, along with the technologies that will become available as a result of digitalisation.
- Explicit CO2 pricing is at the core of European climate protection policies. Its further development also foreseen within the Green Deal will allow for the cost-efficient and demand-driven market uptake of carbon neutral gases.
- The strengths of all sectors are to be used according to efficiency and effectiveness to promote integration.
- In order to quickly bring new, low-emission technologies to market maturity, ambitious but realistic milestones must be set, such as the support of conventional energy components in a transition period. Otherwise, many technologies that are already technically mature, such as hydrogen, will not be able to achieve the Union-wide economic breakthrough.
- Creation of a level playing field for all energy sources: anchoring the basic principle at EU level that technologies of sector integration mustn't be burdened but incentivised.
- Enhanced market penetration of alternative propulsion technologies and fuels must be promoted by improving the framework conditions and targeted incentive mechanisms that follow the principle of technology-neutrality.
- Ensuring that all capacity providers, such as co-generation and demand side management, can participate in cross-border capacity mechanisms or flexible reserves.

Quantities

- We call upon the Commission to analyse demand, production capacity, the resulting gap and potential sources of carbon neutral gases. We also suggest a concrete roadmap with all related programmes, projects, cooperation partners and associated costs.

Definitions and Standards

- In order to enhance production of renewable and carbon neutral gases, an EU-wide regulatory framework with clear definitions and specifications in the corresponding gas directive is required. EU-wide uniform definitions are necessary. Threshold values should be set for decarbonised gases. This must be the aim of the large-scale discussion at European level at the Madrid Forum in October 2020.
- Uniform definitions are also necessary to facilitate and foster cross-border trade in renewable and decarbonised gases and to enable transparent conversion to other energy types, e.g. from green electricity to green hydrogen.
- EU-wide standards for blending with hydrogen are necessary. Harmonisation at EU level as well as the implementation of necessary adjustments at the transfer points is required to prevent market fragmentation. These standards are also necessary to avoid costly infrastructure adaptations (also taking into account technical feasibility in industry and heating)
- **Guarantees of Origin**
- RED II already allows for guarantees of origin for renewable gases. The aim must be a harmonised implementation for all carbon neutral gasses across the EU.
- Creation of a uniform EU-wide framework for guarantees of origin and certificates for renewable, carbon neutral and low-carbon gases.
- Registration systems should be standardised to ensure virtual cross-border trade where physical trade may not be possible. In each member state, an existing office should be commissioned with the administrative processing, which issues and deletes the certificates and also recognises the certificates of origin across borders.
- Ensure that guarantees of origin and certificates can be transferred from one energy source to another and across borders.
- Establishing compatibility between the legal framework for guarantees of origin and certificates for gas and the EU ETS and other sectorial legislation.

Infrastructure

- The electricity infrastructure must be upgraded to meet the demands of a networked energy system. The existing gas infrastructure can continue to be used and adapted. The expansion of intermittent renewable energy sources must go hand in hand with the expansion of flexibility options as back-up.
- A precise analysis of production and consumption is also required in order to make the best possible decisions about further infrastructure development (TSO / DSO level).
- Grid development has to be thought as a whole, including all energy carriers, i.e. taking gas, electricity and (waste) heat into account. The TYNDP is to be adapted accordingly, including the consideration of heating and cooling networks.
- The TEN-E-Regulation has to become a more effective tool for grid development, especially with regards to the length of permitting procedures. It should also take into consideration heating and cooling networks.

State Aid, funding, support

- The Guidelines on State aid for environmental protection and energy (EEAG) will be updated in 2021. Carbon neutral gases must be duly taken into consideration. For example, the production of

hydrogen should be seen as an energy-intensive activity, which would be key to preventing levies and surcharges.

- The structure of market-oriented support should be uniform across the EU to create legal certainty and ensure a European market (especially with regards to exceptions). Errors made in relation to the promotion of renewable electricity should be taken into account.
- Conversion processes should be exempted from network fees, charges and levies, as far as possible and economically sensible.
- There is a need for incentives for producers of carbon neutral gases, for example by reducing or exempting the grid usage fee for the feed-in.
- Possibility of funding through the innovation fund of research on green co-generation plants to promote their development.
- In the framework of the revision of the Guidelines on State aid for environmental protection and energy (EEAG) rules for the financial support for the generation of electricity from waste heat should be considered and analysed.

International dimension

- To meet the high demand of carbon neutral gases, Europe will depend on imports. The EU should adopt a global strategy to foster energy partnerships with potential partner countries, support the development of global standards and import infrastructure and lay the foundation for sufficient financing.

EUROCHAMBRES – The Association of European Chambers of Commerce and Industry represents over 20 million enterprises in Europe – 93% of which are SMEs – through members in 43 countries and a European network of 1700 regional and local Chambers.

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