



EASE Position Paper on the Third Gas Package Revision

Brussels, September 2021



This document is divided in two parts. To read about the high level policy decisions needed to reshape the energy system, taking into account Power-to-Gas role, head to Chapter 1. To discover the specific regulatory changes necessary to improve the Power-to-Gas legislation at the EU level, head to Chapter 2.

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1. High Level Messages for an Hydrogen and Decarbonised Gas Market Supported by Energy Storage Solutions

1.1 Introduction

Hydrogen and Power-to-Gas are chemical energy storage technologies that can enhance decarbonisation and contribute to the European Green Deal and the achievement of carbon neutrality by 2050. Electricity-produced hydrogen can be used for transport (for heating (fuel), as a raw material (chemical feedstock); to balance electricity demand and supply and to support the management of the electricity grid (through storage).

The European Commission stated in its 2021 Work Programme that it will revise in 2021 the Third Energy Package for gas to regulate competitive decarbonised gas markets. This opens an opportunity to address the lack of clear legislation on renewable and low carbon hydrogen, as well as other dossiers relevant for Power-to-Gas. The previous Directives and Regulations are outdated and need to be deeply revised to allow for Power-to-Gas solutions' uptake. This is paramount to allow to contribute to the EU decarbonisation strategy. Today, hydrogen is still not sufficiently developed and contributes to the EU needs only to a limited degree.

EASE sees the proposed revision of the Third Energy Package as a great opportunity to enhance sector integration and deployment of renewable and low-carbon gases. In response to the EC initiative, EASE has decided to develop a paper outlining the main suggestions for a proper revision of the Package.

1.2. Background

Hydrogen and Power-to-Gas are chemical energy storage technologies, one of the five energy storage technology 'families' identified by EASE [1]. Electricity-produced hydrogen can be used for transport (fuel), for heating (fuel), as a raw material (chemical feedstock); and finally, to balance electricity supply and demand by a) allowing conversion of (excess) electricity to hydrogen, i.e., effectively securing demand for electricity; and b) re-electrification (Hydrogen-fired gas turbines, fuel cells), i.e., effectively securing supply of electricity at times of deficit.

Power-to-gas technologies could bring the following key advantages:

- PtG and PtL are key technologies for smart sector integration that are able to decarbonise key sectors of the European economy, especially the ones which cannot be decarbonised by just electricity.
- PtG and PtL facilities, as part of energy storage technologies, can contribute to a more stable and flexible electricity system, supporting the further integration of variable Renewable Electricity Sources (RES) both in the short and in the long term. By converting renewable and low carbon electricity into a gaseous or liquid energy carrier, Power-to-Gas (PtG) and Power-to-Liquid (PtL) technologies have the potential to support seasonal storage (e.g. renewable energy produced in spring could be stored until the winter).
- Finally, it can be used to produce renewable or low-carbon fuels (e.g. synthetic methane, methanol) or chemicals (e.g. ammonia).

Hydrogen could be stored in different ways, e.g. in underground salt caverns (in gaseous form) or tanks (in gaseous or liquid form) or as a chemical like ammonia. It can be transported over long distances by trucks, trains, or maritime vessels in the form of ammonia, or in a compressed or a liquid form, by hydrogen pipelines, or, under certain conditions, through the existing natural gas pipeline system.

EU policymakers have recognised the promising role that hydrogen can play to decarbonise high-value end-uses, such as part of the industrial applications and very heavy-duty transport. Seasonal storage is also another key driver. In this document, we will focus solely on hydrogen produced through Power-to-Gas, i.e. by electrolysis. Other technologies to produce hydrogen are not considered.

[1] EASE, Energy Storage Technologies, 2019.

1.3. EASE Recommendations for the Third Gas Package Revision

1. Develop definitions of energy storage, power-to-gas within the Third Energy Package

The current Directive 2009/73/EC doesn't appropriately mentions the role of energy storage and Power-to-Gas and doesn't contain any references to the existing EU legislation definitions. This issue should be dealt with in the incoming new Gas Package. It is essential that the Package addresses the role of storage and further look into Power-to-Gas and the services it can provide, so that this gap is fixed in the incoming legislation and new applications aren't hindered.

Definitions should be in line with the ones already present within EU legislation, and be in line and conscious of the EU Strategy on Energy System Integration.

2. Develop clear, technologically neutral definitions of renewable and low carbon gases

Hydrogen should be classified with reference to its carbon footprint and the nature of the electricity used for its production, following the CertifHy project's recommendations (e.g. certified as "renewable" if produced in a PtG facility powered entirely by renewable electricity; "low-carbon" if produced in a PtG facility powered by low-carbon electricity).

It is important to have a clear definition of renewable and low-carbon gases, in the Renewable Energy Directive and in the Gas Package, respectively. The proposed definition should be technologically neutral and rely solely on gases' carbon content.

3. Rely on a market-based approach for power-to-gas regulation

Power-to-Gas could be used by market operators to provide market services in order to avoid distortions and inefficient market outcomes, when appropriate market conditions are given. With this goal in mind, the regulatory framework should allow PtG technologies to compete on the market on a level-playing field with other technologies. Unbundling provisions should be applied to renewable and low-carbon gases storage operators. Besides, the EU regulatory framework should explicitly enable revenue stacking to allow for market-based development of energy storage.

Also, EASE suggests that there should also be clarity about the fact that the legislation has to deal with natural monopolies: namely, the infrastructures related to both power and gas transmission and distribution. In addition, it is paramount to ensure interactions between the two fields.

Finally, it is key to ensure a level playing field between imported and EU-produced hydrogen.

4. Develop a regulation in line with the EU Strategy on Energy System Integration

In coincidence with the ongoing revision, it is crucial to promote a system integration approach, ensuring green, smart, interconnected networks. Energy storage is a key enabler of system integration. In this sense, it is key to ensure Power-to-Gas facilities are able to participate in different markets on a level-playing field with other flexibility providers across different sectors.

Moreover, a no-regret approach should be applied: prioritising the replacement of current fossil-based EU hydrogen consumption with renewable and low-carbon hydrogen avoids an uncontrolled deployment, the risk of stranded assets and of conditioning the future development of efficient infrastructures.

5. Strengthen the European R&D&I

Research on renewable and low-carbon gases should focus on maturing/gaining competitiveness to strengthen their role in reaching 2050 goals. To this end, up to 2030, R&D&I should be complemented with scale-up efforts, especially in hard-to-electrify sectors.

1.4. Conclusions

The upcoming Revision of the Third Energy Package for Gas is a great opportunity to strengthen the regulatory framework and foster the uptake of energy storage, Power-to-Gas solutions. The recommendations set up in this document would significantly contribute to better regulation, but alone they may not be sufficient.

It is key that the EU and its member states, especially at the local levels, work together to ensure that permit systems do not create unjustified barriers to energy storage facilities development. Finally, it is key to ensure a coordinated network planning between the gas and other systems, such as the electricity, to favour cost-effective solutions, the stability of the different grids, and energy optimisation, efficiency and flexibility.

As stated in the beginning, and as discussed in the [35th Madrid Forum](#), renewable and low-carbon gases play an important role in a decarbonised energy system. But significant regulatory changes are needed to ensure that the potential of energy storage solutions does not remain untapped.

2. Modest but Specific Proposals to Foster Energy Storage in the Hydrogen and Decarbonised Gas Market Package

2.1. Introduction

The European Commission is working on the revision of the Third Gas Package. The Third Gas Package, tracing back to 2009, is not able to fully empower renewable energy and energy storage. The new legislation is expected to address the gas sector decarbonisation and be in line with the European Green Deal.

In this sense, the European Commission aims to facilitate the market entry of renewable and low-carbon gases and remove any undue regulatory barriers. EASE agrees with these objectives: energy storage technologies can play a key role in the new renewable and low-carbon gases and hydrogen system and can interconnect it with other sectors. In this document, EASE will highlight which regulatory changes are needed to untap the energy storage potential.

This position paper is the follow up of the paper “High Level Messages for a Hydrogen and Decarbonised gas Market Supported by Energy Storage Solutions”, and it is complemented by the EASE Public Consultation reply on the Revision of the Hydrogen and Gas Market Decarbonisation Package.

2.2. Infrastructure Planning

1. Adapt current gas and H2 infrastructure planning, focusing on renewable and low-carbon gases and enabling integration of energy systems (electricity, gas, hydrogen and heat)
2. Plan infrastructures whilst taking into account system efficiency and energy optimisation
3. Plan infrastructures following national plans developed based on a joint European infrastructure planning scenario

1. Infrastructure planning should follow an integrated approach considering electricity, gas, hydrogen and heat in a joint scenario, according to the “energy efficiency, optimisation first” principle (but still maintaining the network development plans separate for all carriers). In other words, the increasing importance of links between energy carriers’ infrastructure should be reflected in new requirements for joint grid planning/joint market activities, at both EU/MS levels. Scenarios for different carriers must be aligned with the 2030/2050/NECPs targets.

2. Moreover, when electricity/hydrogen storage facilities reduce additional infrastructure investment needs, the plans should include this information and highlight potential suitable areas for said facilities; but only with informative value, without legal consequences. Especially in this context, strong collaboration between TSOs and DSOs is needed for planning purposes. It is important to take into account the evolution of the gas demand in the long run when assessing the investment decision on gas infrastructure, in order to ensure its economic efficiency/viability and to avoid stranded assets.

3. ACER should set the integrated planning methodology and ensure strong oversight: national network development plans should be aligned with the Ten Years Network Development Plan. The network development plans should provide transparency, enable investments, ensure matching of supply and demand, provide regulatory prerequisites for cost acceptance in regulated network tariffs. Stronger oversight by ACER is needed: it should be empowered to oversee the effective functioning of the integrated markets and cross-border infrastructure; ACER should also set the planning methodology alongside NRAs.

2.3. Market Regulation for Energy Storage in the Gas Sector

4. Clarify regulatory regime applying to Power-to-Gas facilities
5. Rely on a market-based regulation, enable non-discriminatory integration of renewable and low-carbon gases
6. Facilitate the provision of flexibility services (e.g. to the grid) and their remuneration, through clear principles, and a timeline for regulatory revisions
7. Develop rules to ensure the neutrality of hydrogen network operations - unbundling
8. Ensure the full, smooth access of renewable and low-carbon gases' to the existing gas networks

4/5/6. Regulation of hydrogen storage is necessary and market rules need to be in place to facilitate the development of competitive energy storage services. Power-to-gas is for example necessary for intra- and inter- seasonal storage and provision of strategic storage reserves - services that must be remunerated. In this sense, to allow the development of storage facilities, clarity is necessary to attract investors. In other words, a clear way forward for the legislation is needed (e.g. consider the definition of a H2 market Target Model to be gradually implemented), thus ensuring the convergence of national regulatory developments.

The current legislation itself needs to be clarified. For example, hydrogen (stored in e.g. underground salt caverns) may either be classified as gas storage, and fall under the scope of the Gas Directive; or as energy (electricity) storage, and fall under the Electricity Directive. It is also important to distinguish between installations connected only to the electricity network (that can therefore be considered electricity users) and installations connected to both the electricity and gas networks: in this case, they are integrating elements that enable the functioning of the energy system across multiple energy carriers. There is a need to reconcile the regulatory frameworks for energy storage according to the meaning of the Electricity Directive and gas storage. Clarifications and consistent definitions are therefore needed to prevent Power-to-Gas facilities from being subjected to two different and potentially conflicting regulatory. Besides, unfair tariff structures hinder PtG in the gas system.

7. Vertical unbundling should be ensured: exemptions for network operators to own or operate Power-to-gas installations should only be allowed in clearly defined circumstances. It is paramount to ensure these specific cases will represent the exception and not the rule: EU legislation should ensure as much as possible the creation of a competitive market through the remuneration of different services, as explained in the previous paragraphs. For future private investments, no special treatment should be envisioned.

8. The framework needs a few key revisions to guarantee a smooth transition to a gas market led by renewable and low-carbon gases. First, it is important to incentivise and promote renewable and low-carbon gases access into LNG terminals, gas storages, and gas pipelines; second, more harmonisation and transparency in access to available capacities are needed; finally, EU-wide platforms to ensure transparency between terminal service tariffs and capacities must be introduced. Besides, it is key to have procedures and tariffs for non-discriminatory connection of energy storage facilities. It is necessary to develop provisions preventing the operator from refusing capacity for hydrogen on the ground of possible future limitations of network capacity or additional costs linked to capacity increase. While such refusal would may not appear as an evident problem at the moment or in the near future, it will eventually become critical. Other key measures include, for example, extending the energy community model to the gas sector; develop short-term capacity products for pipelines and storage for the sake of system integration; and ensure a level playing field by e.g. abolishing special treatment for fossil ToP capacity contracts.

2.4. Guarantees of Origin

9. Develop transparent and credible certification system

9. A transparent and credible certification system, for renewable hydrogen is needed, based on harmonised H2 quality standards and RES-H2 certification and traceability based on mass-balance scheme (as defined in RED II or RED III). Guarantees of Origins – for renewable and low-carbon gases, including hydrogen, is needed to achieve the European decarbonisation goals for different sectors, such as the transport and industry ones. GoOs should be used for “customer disclosure”, not for certification or accounting of RES or any other targets.

It is key to ensure that renewable and low-carbon gases' origin can be proved: this would also facilitate cross border trade.

2.5. Consumers and Communities

10. Ensure transparency and strengthen consumers' rights

11. Fight energy poverty by ensuring low prices

12. Enhance the active role of consumers in the market

10. The rights for consumers in the gas market should mirror those provided in the electricity market (i.e. in the recast Electricity Directive and the Energy Efficiency Directive). The measures to be prioritised are the protection of vulnerable customers, through transparent, simple and inexpensive procedures, accessibility of information on the share of renewable gas consumed and gas quality, accessibility and transparency of information on gas consumption and costs, and support for the installation of smart meters. Besides, the bundling of utilities with a single energy provider should not reduce transparency and consumer protection: there should be no exceptions for bundled product in these areas.

11. It is key that the energy transition leaves no one behind. In this sense, competition can ensure affordability, and social measures should be applied for disfavoured consumers. Measures that distort competition between carriers (e.g. cross-subsidies) or obstacles for the efficient development of infrastructures must be avoided. There is a lack of a level-playing field in energy taxation between gas and electricity consumers. It is key to have taxation reflecting better the GHG content, or at least to carbon content, of the products, and contribution to the energy storage solutions to the system. Consumers would also significantly benefit from price signals, something that would furthermore contribute to energy optimisation/efficiency and decarbonisation.

12. A key approach to strengthen the rights of consumers in the gas market is through the empowerment and clarification of the roles of prosumers, energy communities, demand-response through aggregation contracts, and self-consumption for large consumers using gas absorption heat pumps. To do that, providing a legislative framework for the establishment and the participation of energy communities, in line with the Clean Energy Package provisions, would significantly help.

2.6. Gas Quality and Blending

13. Set quality standards and a target model for rapid scale-up of the hydrogen market

14. Establish national hydrogen blending levels set by Member States in a standardised and transparent way, based on EU rules

15. Develop EU-level standards for different hydrogen purity levels

13. At EU-level, it is paramount to set common standards for hydrogen quality across the Member States. To manage hydrogen quality responsibility and cost-allocation, EU-level principles providing a common approach are also needed. As the hydrogen market is still at its early stages, the priority should be to define regulatory principles rather than detailed rules. What should be set in the new market design are quality standards and a target model for the hydrogen market, ensuring the convergence of national regulatory systems. The development of transmission and distribution level differentiated rules for hydrogen should also be supported.

14. The blending of hydrogen or other renewable/low-carbon gases into the methane grid may lead to significant opportunities, but it also creates technical constraints and additional costs at injection and end-use appliances (the less cost-efficient option for decarbonisation). Eventually, blending levels should be set at national level, based on EU rules.

15. EASE supports the establishment of EU-level principles and common standards for ensuring different hydrogen purity levels for different uses: CEN standards should be harmonised and the transparency on their application should be increased. Gas quality information should be extended to more market participants, and more transparency on the costs of gas quality management is needed. Moreover, gas quality aspects should be included in the coordinated network planning.

2.7. Hydrogen Trade and Imports

16. Ensure hydrogen imports are subjected to the same requirements and thresholds for certification that are applied in the EU

17. Include the hydrogen sector in the Carbon Border Adjustment Mechanism

18. Define regulatory principles for hydrogen imports from outside the EU

16. The EU should not decarbonise its energy system by increasing emissions elsewhere. Hydrogen imports should be subjected to the same requirements and thresholds for certification that are applied in the EU in order to provide a level playing field between imported and domestically produced hydrogen. Otherwise, hydrogen production within the EU would be at a significant disadvantage compared to non-EU-based competitors in case these do not have to bear a comparable CO₂ cost: accurate information on the carbon content is critical for the credibility of the EU approach. Applying the standard carbon-leakage prescription (i.e. allocation of free CO₂ EU Emission Allowances (EUAs) according to BATs to EU-based producers) to hydrogen producers may not be an appropriate solution: it could cancel the incentives to resort to RES/low-carbon energy resources, hindering the energy transition.

17. Building up on the previous point, in order to avoid fossil based and highly emitting hydrogen imports, which would be similar to carbon leakage for hydrogen production, EASE calls for the inclusion of the hydrogen sector in the Carbon Border Adjustment Mechanism regulation. EASE welcomes that the EU Commission, in the CBAM Regulation Proposal, is considering the inclusion of imported hydrogen under the CBAM-covered sectors: it is key to move forward in this direction as swiftly as possible.

18. Hydrogen imports may have a relevant role in the context of the European Hydrogen Strategy and trade should therefore be facilitated. This will pose challenges in terms of e.g. accountability and transparency: the EU will have to collaborate at the international level so that a global Guarantee of Origin (GO) system is established, or at least to enable mutual recognition of Guarantee of Origins. Besides, "Projects of Mutual Interest" defined in the EC's TEN-E review proposal must play a key role.

The principles and rules defined in Regulation (EU) 2017/460, establishing a network code on harmonised transmission tariff structures for gas (NC TAR), should be fully transferred to the case of H2. This would ensure (a) building on the experience gained in the gas network (i.e. avoid past mistakes), and (b) a level-playing field in a context dominated by the need to advance in the energy system integration for the sake of the whole system's efficiency. It is paramount to define regulatory principles for access to storage and to import terminals for hydrogen, in order to facilitate the development of the market towards 2030.

2.8. Security of Supply

19. Amend the Security of Gas Supply Regulation to consider energy storage solutions

19. The Security of Gas Supply Regulation is currently limited to guaranteeing the provision of “methane gas”. It's important to consider that new security issues will arise with the use of renewable energy: energy storage is needed to ensure stability of the energy system at different timeframes (e.g. daily vs seasonal storage) and cost-efficient solutions that allow for energy efficiency and optimisation in the context of a competitive market. The Security of Gas Supply Regulation should be amended based on the experience of the application of the new gas market rules.

2.9. Conclusions

The upcoming Revision of the Third Energy Package for Gas is a great opportunity to strengthen the regulatory framework and foster the uptake of energy storage, Power-to-Gas solutions.

In this document, we highlighted how market legislative provisions are needed. Importantly, as stated in our previous paper, it is paramount to highlight that economic barriers are still of great concern: for example, in the context of electricity grid fees. Regulators must ensure that such grid fees reflect the costs that each user induces on the grid.

As stated in the beginning, energy storage can play a key role in decarbonising the energy system, and the current legislative framework lags well behind - renewable and low-carbon gases play an important role in a decarbonised energy system.

EASE is confident that with proper regulatory changes, energy storage potential will be untapped.

2.10. Relevant EASE Policy Papers

1. Recommendations on Certification of Renewable and Low-Carbon Hydrogen
2. Energy Storage and the Alternative Fuels Infrastructure Directive
3. Future EU Strategy for Smart Sector Integration
4. Power-to-Gas Business Cases: Revenue Streams, Economic and Regulatory Barriers, Business Opportunities
5. EASE Response to the Public Consultation on the Revision of the Directive on the Deployment of Alternative Fuels Infrastructure (AFID)
6. Power-to-Gas: Policies and Actions in Europe

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About EASE:

The European Association for Storage of Energy (EASE) is the leading member - supported association representing organisations active across the entire energy storage value chain. EASE supports the deployment of energy storage to further the cost-effective transition to a resilient, low-carbon, and secure energy system. Together, EASE members have significant expertise across all major storage technologies and applications. This allows us to generate new ideas and policy recommendations that are essential to build a regulatory framework that is supportive of storage.

For more information please visit www.ease-storage.eu

Disclaimer:

This response was elaborated by EASE and reflects a consolidated view of its members from an energy storage point of view. Individual EASE members may adopt different positions on certain topics from their corporate standpoint.

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