EASE reply to the European Commission's Public Consultation and Call for Evidence Feedback on the EU's Energy Security architecture

November 2024

Introduction

The European Commission's Public Consultation on the EU's Energy Security architecture aims to identify synergies within the framework and structurally internalise lessons learned from the COVID-19 and energy crises, as well as to prepare for the changing landscape due to the energy transition. Energy storage paired with locally generated renewable energy can replace gas peaker plants, reducing dependency on polluting fossil fuel imports. Clean energy technologies can also help stabilise and reduce consumer and industry exposure to high and volatile electricity prices[1]. As energy storage is vital for an affordable, secure, and just energy transition, EASE and its members are well-positioned to offer key insights into the current state and future pathways of EU electrification. This public consultation is structured in two main sections: one section with general questions on energy security for all respondents, and a second section with more specific and technical questions. EASE provided its responses to the section with general questions.

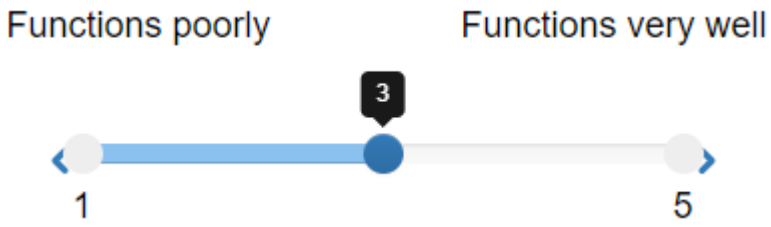
[1] EASE manifesto 2024

EU SURVEY PUBLIC CONSULTATION QUESTIONNAIRE

Note: Questions on certain topics were skipped as not relevant for the energy storage sector, outside of EASE scope, or as EASE does not have a position on these issues: hydrogen and LNG.

1. General questions on energy security

How would you grade the functioning of the current EU energy security framework?



Please elaborate your choice:

The EU energy security infrastructure has proven to be resilient in face of the recent geopolitical challenges and changes of flows. The system stability has proven to be robust, but energy price spikes has had detrimental effects to European industries and European households.

In the REPowerEU plan, the European Commission recognises that energy storage plays a key role in ensuring security of supply and supporting renewables integration, reducing the need for polluting gas power plants. EASE welcomes the provisions that aim at boosting energy storage deployment, e.g. through investments, better permitting, and coupling energy storage with building renovation. Yet, the absence of an energy storage Action Plan that would outline clear targets is unfortunate. Its announcement alone would have sent strong investment signals and accelerated technology deployment. Current EU policies often treat energy storage as an ancillary solution rather than a core component of energy security. To ensure resilience, storage should be placed at the centre of electricity risk-preparedness and in the NECPs, especially as the grid becomes more reliant on intermittent renewable energy sources.

EASE believes the European Commission can still develop and present such an action plan, building upon REPowerEU. The European Parliament's report on energy storage proposed the development of a strategy in 2020: such a report would provide a solid foundation for the strategy. EASE estimates that energy storage deployment needs to increase by at least 14-fold by 2030 to achieve decarbonisation targets and energy security: the absence of an energy storage Action Plan is a missed opportunity that may jeopardise EU objectives. [2]

[2] https://ease-storage.eu/news/repowereu/

The growth of low-carbon and renewable energy sources is a vital step towards achieving the EU's climate and energy goals. Along with grid expansion & optimisation, the EU's ambition depends on expanding energy storage capacity to meet increasing flexibility demands and to lower electricity prices.[3] The Demand Response Network Code (DR NC) establishes harmonised rules to facilitate market access for demand response, including load, storage and distributed generation. Its full implementation is key. A revision of the Risk Preparedness Regulation (EU 2019/941) could provide provisions for demand-side flexibility and energy storage as critical resources for grid stability. Emergency plans based on risk scenarios are essential to respond to emergencies in the short term. Streamlining approval procedures for capacity remuneration mechanisms (CRMs) and ensuring their design accommodates flexible resources would also bolster the EU's energy resilience.

During the COVID-19 and energy crisis the industry faced severe supply chain bottle necks resulting in cost increases for renewable projects. Especially in the wind industry, the supply chain bottlenecks and cost increases on materials caused severe stress to European manufacturers. Higher costs for deploying renewable and storage assets resulted in a cooling down of the integration of renewables and storage in Europe. The EU's energy security architecture should ensure the application of a diverse mix of clean technologies, which mitigates the EU's dependencies and strengthens its capabilities regarding supply chains in line with the Net-Zero Industrial Act, and encapsulated in the mission statements to the incoming European Commission.

Which of the following objectives do you consider the most important for the EU energy security architecture?

Between 1 and 5 selections

☒ Cybersecurity

☐ Securing energy-related supply chains

☒ Investments in domestic decarbonised energy system

☐ Allocating the costs of energy security fairly

☐ Diversification of energy sources, suppliers and routes

☐ Phase-out of Russian fossil fuel supply

☐ Physical protection of critical energy infrastructures against man-made attacks

☒ Making the most of existing infrastructure

[3] https://energystoragecoalition.eu/action-plan-on-energy-storage/

☐ Enhancement of interconnections and smartening of infrastructure between Member States

☒ Strengthen the use of energy storage (electricity, gas, liquid fuels, heat) for energy security

☐ Resilience of energy infrastructure, e.g. to climate change

☒ Energy demand response and reduction

Please elaborate your choice(s):

Cybersecurity: The digitalisation of Europe's energy system and the real-time operation and balancing of generation, load, energy storage and the power grid infrastructure will be a key enabler for an accelerated and cost-effective energy transition in Europe. The implementation of the already existing EU cybersecurity rules needs to be a priority for the affected entities. In the long-term, a practically feasible, robust and coherent approach to cybersecurity issues in the energy sector can be a focus for the European Commission. Furthermore, smartening of the infrastructure, including with digital solutions provides a more secure and resilient integrated EU energy network.

Investments in a Domestic Decarbonised Energy System: Investing in domestic, low-carbon energy sources is key to reaching the 2050 EU climate target, reducing dependence on imported fossil fuels and enhancing energy security. Energy storage is vital in this transition, as it enables the integration of renewable energy by storing excess electricity for periods with less renewable electricity. Investing in domestic energy sources – such as energy storage – is vital in reducing external dependencies while reaching the EU's climate targets and provide new jobs.

Making the Most of Existing Infrastructure: Energy storage can optimise the EU's already existing infrastructure, including the operation of interconnections, by rapidly adapting production and consumption to ensure balancing and security of supply in the power grid. Energy storage can provide ancillary services, services to support Behind-the-Meter customers, services to support the transmission and distribution infrastructure, and bulk storage and generation support services. EASE believes that an efficient mix of the flexibility options is needed to mitigate the various risks, and that energy storage should be a priority for EU policy makers seeking to support the transition to a decarbonised energy system.[4]

Strengthening the Use of Energy Storage for Energy Security: Energy storage has the potential to be available even during supply shocks or demand surges. Expanding storage capacity, across different forms improves the EU's energy resilience and security by allowing for more flexible and reliable energy systems. This reduces external dependencies, lowers prices for consumers while accelerating the energy transition.

[4] EASE Study on Energy Storage Demand

Energy Demand Response and Reduction: Storage enables demand response strategies by providing backup power during peak periods and allowing consumers to shift energy use to off-peak times. For this however, an EU wide strategy and common Member State policies is needed. Energy storage reduces the strain on the grid and lowers the need for natural gas-powered flexibility solutions, helping to manage energy demand more effectively.

Enhancement of Interconnections and Smartening of Infrastructure between Member States: Grid-scale batteries and pumped hydro storage, can complement these interconnections by stabilising grids across borders and enhancing the ability to handle renewable energy. Smartening of the infrastructure, including with digital solutions provides a more secure and resilient integrated EU energy network.

How do you think electrification has already impacted and can further impact EU energy security in the medium term? Was the EU energy security framework sufficient to address such impacts and if not, what improvements you think are needed?

Electrification has increased the demand for electricity, requiring greater generation capacity and more robust distribution grid infrastructure, but concerningly today electricity makes up only 24% of all the energy consumed in Europe. As electrification in a variety of sectors, such as the heating and transport sector is set to increase, while the increasing integration of renewable energy introduces supply volatility due to the intermittent nature of solar and wind power. Energy storage is crucial for managing this volatility, ensuring grid stability by storing excess electricity during periods of high generation and discharging it when demand peaks. Energy storage, including with hybrid solutions and co-locations would keep the production and supply of electricity within the EU's borders and lessen the dependencies. Furthermore, energy storage is a solution which can shift the load. This helps ease grid congestion and storages can charge when EU electricity prices are low and discharge when high. Complimentary to the already announced EU electrification strategy, an energy storage Action Plan, could provide a pathway for storage solutions to balance the electricity system.

Are there energy security risks associated with possible future electricity imports from third countries?

☐ Yes

☐ No

☒ No opinion

If yes: To what extent are there energy security risks associated with possible future electricity imports from third countries?

Are there improvements to the EU energy security framework that are needed to prepare for the ongoing transition (towards e.g., more electrified, renewable-based and integrated EU energy system)?

☒ Yes

☐ No

☐ No opinion

If yes: Please elaborate

The EU has recognised the importance of energy storage. Continued regulatory support and investment are needed to meet the challenges of a more electrified, renewable-intensive energy system in the next decade.[5] First, accelerating the permitting processes for large-scale energy storage projects is crucial to avoid delays in deployment. Second, regulatory barriers such as double taxation for energy storage operators need to be addressed, as highlighted by the European Commission's recommendations.[6] Thirdly, while remaining cost-reflective, grid fees should reflect the positive net-benefits that grid-responsive storages have in easing congestion, integrating renewable energy sources (RES) and shifting the load. Lastly, enhancing long-term visibility and predictability for energy storage investments through clearer market rules and revenue streams is also essential to attract more financing and encourage the expansion of storage capacities. This includes opening all markets for ancillary services in the European members states, including advanced stabilisation services such as inertia. The role of energy storage in capacity mechanisms needs to be further strengthened and a clear and strong role for energy storage in market-based congestion management must be established and enforced.

What role can decarbonised and renewable hydrogen, including in the form of liquid fuels, play for future EU energy security?

Low-carbon and/or renewable hydrogen, particularly through Power-to-Hydrogen-to-Power (P2H2P) technologies, can support the EU's energy security by storing energy for long period of times - providing seasonal energy shifting. This solution can bridge seasonal imbalances in the renewable energy supply and demand. P2H2P is limited due to high production costs, insufficient infrastructure, and a lack of clear market incentives to support long-term investments in hydrogen storage technologies. The just-mentioned seasonal energy shifting service is currently not properly remunerated. Changes in regulatory frameworks remain

[5] https://energy.ec.europa.eu/topics/research-and-technology/energy-storage_en

[6] COMMISSION STAFF WORKING DOCUMENT Energy Storage – Underpinning a decarbonised and secure EU energy system

essential to unlock the potential in energy storage (such as P2H2P as well as other long-duration energy storage technologies) for seasonal and long-term timeframes.

Beyond P2H2P, low-carbon and/or renewable hydrogen can also provide energy security for certain industrial/mobility usages that are very difficult to decarbonise directly through electrification. At the same time, it is vital that European hydrogen strategies are constantly reviewed, considering technology advancements. As cost declines for non-hydrogen storage technologies, the electrification of applications may become more cost-effective than switching them to hydrogen. As an example, over the last years, we have seen electrification options of hydrogen powered long-haul trucking, busses or trains with battery-based systems. It is critical that the role of hydrogen in the decarbonisation of the European energy sector is not prioritised over the electrification of sectors, if the latter is more cost-effective.

What are the potential risks to hydrogen supply security and to what extent should they be mitigated? How do you see the role of hydrogen imports in the future? Should the EU energy security framework play a role?

According to the REPowerEU plan, both the production and import of hydrogen to the EU are foreseen. Any decision to import hydrogen from third countries or to support domestic production of hydrogen should be constantly reviewed, by considering the decline of cost of green and low-carbon technologies inside the EU that are able to provide similar applications. Other forms of energy storage (batteries, PHS, thermal, etc) could play a supportive role for this aim of producing low carbon hydrogen within the EU.

Do you think that the current EU energy security framework has sufficiently taken into account climate risks, such as energy disruptions due to heat and drought or damage to energy infrastructure due to extreme weather events?

☐ Yes

☐ No

☒ No opinion

If no: Please provide concrete examples and/or suggestions how this can be achieved.

Are there specific energy security measures in other countries (US, China, Japan, Canada, Switzerland, UK, etc.) that you would like to see mirrored in the EU's framework?

☐ Yes

☐ No

☒ No opinion

If yes: Which measures would you like to see mirrored?

Would you see enhancing international cooperation with close partners as beneficial for EU energy security?

☐ Yes

☐ No

☒ No opinion

If yes: Please elaborate, if appropriate:

What is the additional value for EU energy security resulting from EU legislation, compared to what could reasonably have been achieved (in terms of effectiveness and efficiency) by Member States acting at national level?

EU-level legislation provides a harmonised approach across Member States (MS), while MS-level actions alone lead to fragmented regulations, creating barriers for cross-border energy flows and the deployment of energy storage solutions. Long-term predictability is key for the energy storage industry when investment decisions are made. A unified EU framework ensures consistency in grid fees, market access, and revenue streams for storage operators. Additionally, EU legislation can drive coordinated infrastructure development that individual Member States cannot efficiently manage on their own,

Has the EU level action and coordination become more important or less important for energy security due to recent developments, e.g. due to the rising importance of LNG, the enhanced cross-border infrastructure and the joint phase out of Russian gas, or other?

☒ More important

☐ Equally important

☐ Less important

☐ No opinion

Please elaborate:

Enhanced EU-level coordination is key to ensuring that energy storage plays a central role in balancing supply and demand and stabilising the grid. Cross-border coordination can pool storage resources in order to strengthen the resilience in the face of supply shocks, thus strengthening member states' energy security. Harmonised EU policies, incentives, and market designs are necessary to encourage investment in storage infrastructure, which in turn keeps the grid stable, makes it flexible and lessens the dependencies on fossil fuels.

Has the EU's energy security policy tackled the needs of EU citizens and/or businesses (e.g., in terms of energy availability, affordability, etc)? Will it continue to be relevant for them in the next decade?

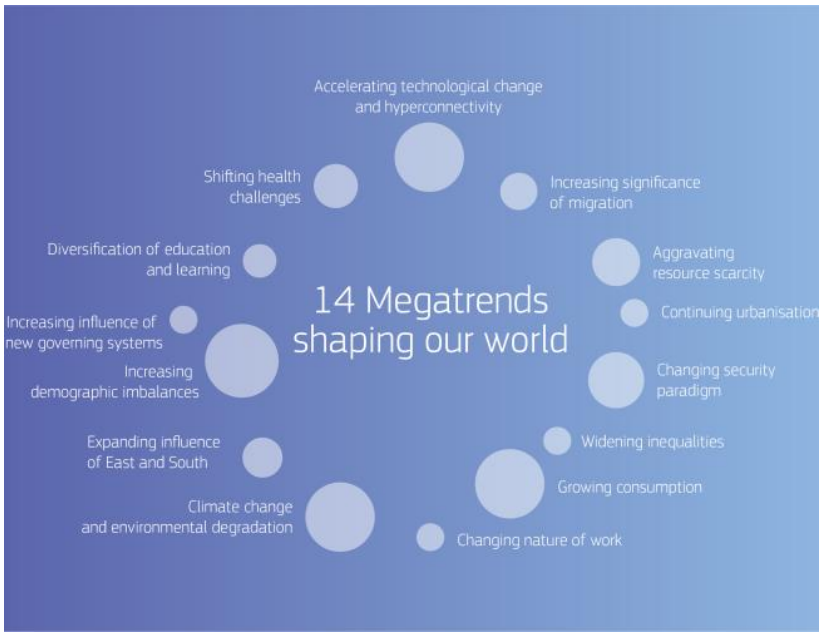
The EU's energy security policy has addressed the needs of citizens and businesses in terms of energy availability, but it has not fully leveraged energy storage to ensure affordability and resilience. Diversifying energy sources and improving cross-border infrastructure have enhanced supply security, but energy storage remains underutilised, despite its potential to lower costs by reducing reliance on volatile fossil fuel markets and balancing renewable energy supply.

A predictable and stable regulatory framework is crucial to attract private investments. Maintaining, implementing and enforcing EU environmental and climate laws is of paramount importance as businesses require certainty to integrate climate action and circularity into their strategies and to roll out the most efficient emission reduction technologies and pollution prevention techniques.[7]

The integration of energy storage solutions can ensure the smooth integration of renewables, protect against supply disruptions and dependencies, and deliver stable, affordable energy to EU consumers.

The European Commission's Joint Research Centre identified 14 megatrends (see figure below), which are long-term driving forces that are most likely to have a global impact in the future. For which one(s) of these megatrends do you think the EU Energy Security architecture is the least prepared and why? Please explain.

[7] https://ease-storage.eu/news/open-letter-the-eu-needs-an-ambitious-investment-plan/



Do you have anything to add regarding the general functioning and/or the future orientation of EU energy security policy?

The EU's energy security policy since Russia's war on Ukraine has focused on availability and security of supply. Both have been maintained. However, price shocks have been frequent, as well as volatility. The hourly negative and positive price fluctuations experienced in parts of Europe makes the case for the even faster deployment of energy storage solutions. Energy storage can bring flexibility to the grid and provide ancillary services for stabilisation. Energy storage can future-proof the grid, optimise the current infrastructure and lessen dependencies on both fossil fuels and external actors. In this regard digital smart solutions and cybersecurity are topics that further enhances the European energy security. Learning from the impact that Russia's war on Ukraine has for European energy security, the EU should focus its diversification strategy on Europe's energy mix and clean tech supply chains for renewable and green technologies, and assess the cooperation via third countries in this regard. This is also encapsulated in the Net-Zero Industrial Act, a key theme in the mission letters to the new European Commission and building block to the European Clean Industrial Strategy.

Are there any papers, reports or other documents that you would like to upload?

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CALL FOR EVIDENCE: FEEDBACK FORM

EASE Feedback:

EASE - The European Association for Energy Storage welcomes that in the REPowerEU plan, the European Commission recognises that energy storage plays a key role in ensuring security of supply and supporting renewables integration, reducing the need for polluting gas power plants. EASE welcomes the provisions that aim at boosting energy storage deployment, e.g. through investments and better permitting.

Yet, the absence of an EU energy storage Action Plan that would outline clear targets is unfortunate. Its announcement alone would have sent strong investment signals and accelerated technology deployment. Current EU policies often treat energy storage as an ancillary solution rather than a core component of energy security. To ensure resilience, storage should be placed at the centre of electricity risk-preparedness, especially as the grid becomes more reliant on intermittent renewable energy sources.

Secondly, price shocks have been frequent, as well as volatility. The hourly negative and positive price fluctuations experienced in parts of Europe makes the case for the even faster deployment of energy storage solutions. Energy storage can bring flexibility to the grid and provide ancillary services for stabilisation.

Thirdly, enhanced EU-level coordination is key to ensuring that energy storage plays a central role in balancing supply and demand and stabilising the grid. Harmonised policies, incentives, and market designs are necessary to encourage investment in storage infrastructure, which in turn keeps the grid stable, makes it flexible and lessens the dependencies on fossil fuels and the flexibility that climate-polluting sources provide.

Finally, the growth of renewable energy sources is a vital step towards achieving the EU's climate and energy goals. Along with grid expansion & optimisation, the EU's ambition depends on expanding energy storage capacity to meet increasing flexibility demands and to lower electricity prices. In order to achieve the EU's climate goals with a fast and secure energy transition, EASE would welcome a Commission Action Plan on energy storage, based on the already announced action plan on electrification.

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About EASE

The European Association for Storage of Energy (EASE) is the voice of the energy storage community, actively promoting the use of energy storage in Europe and worldwide. It supports the deployment of energy storage as an indispensable instrument within the framework of the European energy and climate policy to deliver services to, and improve the flexibility of, the European energy system. EASE seeks to build a European platform for sharing and disseminating energy storage-related information and supports the transition towards a sustainable, flexible and stable energy system in Europe.

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

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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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