

CurrENT response to the European Commission's public consultation on the EU energy security architecture

3 General questions on energy security

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

3/5

22 Please elaborate your choice:

The current EU energy security framework is still very much dependent on fossil fuels to ensure energy security. As Europe moves toward the full decarbonisation of the European economy based on high levels of electrification and the mass uptake of renewables, significant investments in the electricity grids will be needed to ensure energy security. This will require increasing interconnection and planning for a pan-European grid to connect all sources of renewable energy across the continent, as well as using grid enhancing technologies to get the most out of the existing grid.

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

between 1 and 5 choices

Preparedness (assessment of risks and formalisation of emergency plans)



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- Phase-out of Russian fossil fuel supply
- Strengthen the use of energy storage (electricity, gas, liquid fuels, heat) for energy security
- Making the most of existing infrastructure
- Securing energy-related supply chains
- Physical protection of critical energy infrastructures against man-made attacks
- Investments in domestic decarbonised energy system
- Allocating the costs of energy security fairly
- Energy demand response and reduction
- Diversification of energy sources, suppliers and routes
- Cybersecurity
- Resilience of energy infrastructure, e.g. to climate change
- Enhancement of interconnections and smartening of infrastructure between Member states

24 Please elaborate your choice:

Europe needs to invest in its electricity infrastructure, by both optimising the existing grid and building new lines with a much higher capacity, to support the mass uptake of renewables produced all over the European continent.

*25 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?

Integrating increasing shares of renewables is posing new technological challenges. The EU energy security framework needs to ensure that grid operators are equipped to manage these new technological challenges.

There are many innovative grid technologies, such as Advanced Power Flow Control (APFC), Dynamic Line Rating (DLR), Digital Twins, Advanced Conductors, High Temperature Superconductors, Grid Inertia Measurements, and Storage as a Transmission Asset (SATA) which are commercially available and can enhance the resilience of the European grid and support the mass uptake of renewables. These technologies can provide a better understanding of line limits and grid inertia limits, dynamically control power flows and increase the transmission capacity of a given line. Despite the huge potential of these technologies, they are still not being deployed en masse.

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

- Yes
- No
- No opinion

*28 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

*29 Can you please elaborate?

Europe should work towards increasing cross-border capacity between Member States and start planning for a truly pan-European electricity grid.

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

No opinion

*31 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?

No opinion

*32 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

33 Please provide concrete examples and/or suggestions how this can be achieved.

As mentioned above, there are many innovative grid technologies, such as Advanced Power Flow Control (APFC), Dynamic Line Rating (DLR), Digital Twins, Advanced Conductors, High Temperature

Superconductors, Grid Inertia Measurements, and Storage as a Transmission Asset (SATA) which are commercially available and can enhance the resilience of the European grid and support the mass uptake of renewables. These technologies can provide a better understanding of line limits and grid inertia limits, dynamically control power flows and increase the transmission capacity of a given line. Despite the huge potential of these technologies, they are still not being deployed en masse.

*34 Liquefied Natural Gas (LNG) has become an increasingly important gas supply source (represents now ca. 50% of EU imports). Do you see any risks associated with the increased reliance on the global LNG market?

- Yes
- No
- No opinion

35 Which concrete risks do you see (e.g., reliance on unstable democratic countries, exposure to global markets fluctuations, infrastructure bottlenecks or oversize, etc.)? How should they be addressed?

As mentioned above, Europe needs to invest in its electricity infrastructure, by both optimising the existing grid and building new lines with a much higher capacity, to support the mass uptake of renewables produced all over the European continent.

*36 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



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- No
- No opinion

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

- Yes
- No
- No opinion

*40 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?

As mentioned above, Europe needs to invest in its electricity infrastructure, by both optimising the existing grid and building new lines with a much higher capacity, to support the mass uptake of renewables produced all over the European continent. Increasing interconnection and building a pan-European grid can only be achieved at a European level, rather than acting alone.

*41 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 phaseout of Russian gas, or other?

- More important
- Equally important
- Less important

No opinion

42 Please elaborate:

As explained above, EU action needs to be coordinated and coherent in order to be effective.

*43 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?

Optimising the existing grid and building an optimal pan-European grid will help keep the energy transition and energy security as cost-efficient as possible. According to a report by Compass Lexecon, deploying innovative grid technologies could result in a reduction in conventional expansion costs of 700 billion euros by 2040. The report is available at: <https://www.currenteurope.eu/wp-content/uploads/2024/06/CL-CurrENT-BE-Prospects-for-Innovative-Grid-Technologies-final-report-20240617-2.pdf>.

*44 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.



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The EU Energy Security framework must effectively address key challenges such as climate change and environmental degradation, growing consumption, accelerating technological change and hyperconnectivity and aggravating resource scarcity. These long-term factors are causing greater instability in electricity generation and consumption patterns. To meet these challenges, Europe must develop an electricity system capable of adapting to and managing these dynamic shifts.

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

Only files of the type pdf,txt,doc,docx,odt,rtf are allowed

[Prospects for innovative power grid technologies, Final report- Compass Lexecon](#)