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Opinion of the European Economic and Social Committee on Cross-border energy infrastructure planning

(Exploratory opinion requested by the Belgian Presidency of the Council of the EU)

(C/2024/2100)

Rapporteur: **Thomas KATTNIG**

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Section responsible	Transport, Energy, Infrastructure and the Information Society
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1. Conclusions and recommendations

1.1. The EESC is of the opinion that energy infrastructure, like infrastructure for transporting and distributing energy, cannot be treated like any other commodity and must instead be classified as a service of general interest for the economy and the population.

1.2. Recent developments in the electricity market underscore the importance of finding a new and better balance between public and private entities' presence in the electricity market. The EESC is convinced that particular attention should be paid to defining grid development, including cross-borders interconnections, both onshore and offshore, as critical infrastructure of an overriding public interest, including climate protection as a regulatory objective and, more generally, synchronising the planning of renewable energies and the electricity grid more effectively. There is an urgent need for specific provisions under EU law.

1.3. The EESC strongly supports efforts to increase interconnectivity between Member States (MS) regarding energy connections, both onshore and offshore, in a manner that is in accordance with the EU climate goals and that reduces existing and prevents future carbon lock-ins, as well as measures to ensure harmonised trading.

1.4. The EESC recommends increasing investments in establishing higher energy network capacities both within as well as across borders as well as redimensioning gas grid connections in particular (e.g. phase-out of low-temperature heat and phase-in of renewable gases mainly for industrial sites). Decentralised energy production and switching to hydrogen-driven industrial processes need the right infrastructure in due time and in the right place, considering the energy transition and the related structural changes.

1.5. Recognising the rising demand, the EESC emphasises the importance of substantial investments in electricity networks to stimulate the European economy and create high-quality (green) jobs.

1.6. The EESC reiterates its call for a 'golden rule' to ensure investment in general infrastructure. At the same time, public investment can and must leverage private investment, given the positive effects on the labour market and economic wellbeing.

1.7. The EESC reiterates that massive investments in smarter, flexible energy infrastructure across the EU are imperative. At the same time, some companies in the energy sector are making significant profits which are currently not turned into grid investments in a liberalised market. Although Member States have temporary options to manage surplus revenues ([1]), the future of these measures is uncertain as they are due to be evaluated in mid-2024. Furthermore, the current measures do not provide a stable financial link from the private sector towards grid investments which is needed (as also stated in the EU grid action plan ([2])).

1.8. There is a need for more binding measures for Transmission System Operators (TSOs), Distribution System Operators (DSOs), but also including energy producers into grid stabilisation measures, in order to better coordinate their actions and enable the grid to benefit from digitalisation. The European Union Agency for the Cooperation of Energy Regulators (ACER) should therefore be equipped with competencies that enable it to speed up measures to ensure an overall European benefit.

1.9. Energy infrastructure such as large-scale energy installations need special attention in terms of security measures. Protecting critical infrastructure is important for securing supply — especially in light of recent geopolitical developments, the issue of (cyber-)security should become an even higher priority.

1.10. Due to the importance of renewable gases for decarbonising industry and energy production, transport and storage infrastructure needs to be put in place and flexibility options (e.g. Power-2-Gas) need to be developed.

2. **Background**

2.1. The Belgian Presidency of the Council of the EU has asked the EESC to draw up an exploratory opinion outlining proposals for cross-border energy infrastructure planning. Such planning is needed in order to make any sustainable energy system cost-effective, both for developing, integrating and transporting electricity from renewable sources and for importing and transporting hydrogen preferably from renewable energy sources. The need for physical infrastructure goes hand in hand with the question how integrated planning, oversight and financing is to be governed. The challenges arising from the various social and economic dimensions should also be taken into account.

2.2. Recently, the EESC has been looking into the challenges currently facing the energy market and has adopted a number of opinions on the subject, some of which are referred to in this opinion ([3]).

2.3. Electricity customers are still facing high costs, while the main beneficiaries of the electricity-generation profits are energy producers, not TSOs and DSOs and certainly not customers, who have pre-financed a large number of green energy installations in the past (e.g. renewable energy feed-in tariffs). It is therefore imperative that grids, and in particular interconnectors, operate efficiently to ensure that cross-border energy trading benefits the end users by mitigating price differences between member states.

2.4. Despite the Commission's initial criticism during the peak price phase, the existing merit-order pricing system was ultimately maintained on power exchanges. However, daily prices of around EUR 900/MWh led to massive disruptions in energy markets and, among other things, caused short-term difficulties for large energy suppliers, as well as — and above all — for their final customers.

2.5. National generation options vary widely and at the peak of the energy crisis also led to different impacts on electricity customers. A well-developed cross-border trade in electricity has the potential to generate and distribute energy in a way that optimises costs. However, this must be done transparently and in line with the public interest.

([1]) Council Regulation (EU) 2022/1854 of 6 October 2022 on an emergency intervention to address high energy prices (OJ L 261I, 7.10.2022, p. 1)

([2]) European Commission Communication on 'Grids, the missing link — An EU Action Plan for Grids'.

([3]) See, inter alia, OJ C 293, 18.8.2023, p. 127, OJ C 184, 25.5.2023, p. 93, OJ C 293, 18.8.2023, p. 112, OJ C 75, 28.2.2023, p. 102, OJ C 323, 26.8.2022, p. 123 and OJ C 486, 21.12.2022, p. 185.

2.6. Grid expansion and transformation are lagging behind due to inadequate incentives for digitalisation, among other factors. The existing grids are no longer suitable for transmitting and distributing energy from volatile sources in current amounts. In order to prevent grid failures in the digitalised energy system, and with a view to creating the enabling physical framework for the further roll-out of renewable energy, anticipatory investments in the transformation of the energy system and the development and expansion of the grid are urgently needed.

2.7. Geographically uneven expansion of renewable power plants leads to compensatory measures within grid zones in the MS. These compensatory measures have to be provided by the transmission grid; however, this in turn leads to a lack of capacity in that grid for the international electricity trade.

2.8. New sources of supply, such as LNG from the US and Qatar, are meant to ensure the supply of natural gas for the coming years. However, given the high price and environmental impact of LNG, this can be no more than a transitional solution. This is important in light of the EESC's call ([4]) for less strategic dependence on unreliable third countries.

2.9. Traditional gas transportation routes from the north (Nordstream) and the east (Yamal and Transgas) are losing importance, making new connections necessary through new as well as existing pipelines within Europe, in order to enhance transport capacity from the south and west. At the same time, eastern MS have the opportunity to use existing pipeline infrastructure to promote production of renewable gases. This can ensure local self-sufficiency and offers export opportunities to central Europe.

2.10. Offshore wind park potential has reached a scale, in terms of potential energy generation output at certain times, where a flexibility option is useful. Generating electricity or hydrogen (e.g. using electrolysis on site) dynamically, based on TSOs requirements is useful to avoid congestion measures and ensure economic feasibility. Besides TSO requirements, an integration of energy market-based storage capacities can be useful to stabilise any turbulence in the future gas supply.

2.11. Energy infrastructure (e.g. large wind and PV parks and transmission systems) should be considered, even more so than at present, part of critical infrastructure and requires special attention in terms of (cyber-)security measures — especially in light of recent geopolitical developments.

2.12. The production of biomethane is very costly but can make a valid contribution to current supply. REPowerEU suggests that biomethane production should be boosted to 35 bcm by 2030. Biomethane offers the possibility of using existing infrastructure, thereby reducing costs of converting pipelines and compressor stations, whereas hydrogen entails high conversion costs and should therefore be limited more to local applications.

3. **General comments**

3.1. Energy infrastructure, like infrastructure for its transportation and distribution, cannot be treated like any other commodity: it is a cornerstone of our economic and social system and thus plays a central role in the provision of public services. The supply of energy is therefore classified as a service of general interest for the economy and the population. At the same time, the expansion of electricity transmission networks between MS is key to ensuring an environmentally friendly, affordable and reliable energy supply and to guarantee the citizens their right to energy as consumers. Community and solidarity-based security of supply at EU-level requires well-developed infrastructure with specific attention paid to this. However, structural congestion within and between MS regularly leads to disruptions that give rise to high costs for managing that congestion. This is something that needs to be addressed as soon as possible.

3.2. Recent developments in the electricity market underscore the importance of finding a new and proper balance between public and private entities presence in the electricity market. The Committee has explored this issue thoroughly in earlier opinions ([5]). The EESC is convinced that particular attention should be paid to defining grid development as an overriding public interest, including climate protection as a regulatory objective and, more generally, synchronising the planning of renewable energies and the electricity grid more effectively. There is an urgent need for specific provisions under EU law.

([4]) See OJ C 275, 18.7.2022, p. 80, among others.
([5]) See e.g. OJ C 486, 21.12.2022, p. 67.

3.3. The EESC reiterates that there is an undoubted need to invest massively in energy infrastructure across the EU and to make the energy system smarter and more flexible. After all, the system is being overstretched due to shortcomings, including an inflexible transmission and distribution grid resulting from insufficient investment in energy infrastructure. While some energy providers have made significant profits from the market situation, not enough has been invested in smart grids to achieve the energy transition. Those profits are not being turned into grid investments in a liberalised market with transmission and energy production separated. Therefore, grid investments that draw on energy companies' capital (to some extent respecting energy market rules) should be used to develop the infrastructure. Overall, the necessary conditions (grid expansion, storage capabilities, etc.) must be put in place to ensure that the energy produced can also be used. In this way, MS with excess potential for electricity generation are incentivised to develop in a manner that goes beyond meeting their own energy needs.

3.4. The EESC recommends that synergies with other energy policies, such as the new EU industrial strategy, be given greater consideration in the context of governance and management.

3.5. The pace of expansion varies widely across MS and is not coordinated with network infrastructure. This is true of Germany, for example, where expansion of wind power in the north and lack of capacity in the south risks splitting the country into two price zones. Structural network congestion and the need to manage congestion (redispatching) should be avoided by developing transmission systems as quickly as possible, in a targeted way and with a well-coordinated approach at national and European level. This is especially important as the demand on transmission networks will be further increased by the obligation to make up to 70 % of cross-border transmission capacity available for cross-border trade from 2025 onwards ([6]).

3.6. The EESC recommends increasing investments in establishing higher energy network capacities as well as redimensioning gas grid connections in particular. Decentralised energy production and switching to hydrogen-driven industrial processes need the right infrastructure in due time and in the right place, considering the energy transition and the related structural changes.

3.7. Joint action such as cooperation between smart cities and communities can provide the best and most affordable solutions a region needs. Investing in renewable energy infrastructures (e.g. PV systems) in remote areas can help to reduce the competition between energy-related and agricultural use of land, considering cost of network access and operation in peripheral areas. Local demand, which determines if there is a massive backload impact on higher grid levels (e.g. PV peaks during summer months), has to be anticipated and managed.

3.8. The EESC is convinced that, in principle, a distinction should be made between prosumers and consumers when setting network tariffs. With this in mind, different network tariffs should be set to reflect electricity customers' individual options. Those who can provide flexibility should do so. At the same time, those who cannot must not suffer any detriment as a result of 'inflexible' behaviour. As stated in TEN/798, special attention should be paid to vulnerable groups. Overall, the Committee strongly supports price-related measures to benefit final customers and protect vulnerable households.

3.9. The EESC points out that past failures to strengthen the lowest grid levels led to congestion and delays in developing renewable energies. With the sharp increase in domestic and commercial PV systems, as well as large outdoor PV installations, this situation is now clearly recognisable.

3.10. Some TSOs ([7]) assume that in a few years, many large batteries will be connected to the power grid and that will not only have major consequences for the deployment of baseload power stations but will also give rise to demands for the national and cross-border electricity grid to be designed in the best way possible.

3.11. Smart or digitalised grids, especially distribution grids, are essential to enable electricity customers to participate in new forms of community energy supply, such as renewable energy communities. In order to create these, both technical and administrative barriers need to be removed.

3.12. The EESC reiterates the appeal it made in TEN/798 for effective incentives to invest in the digitalisation of electricity grids. In parallel, flexibility markets need to be developed in order to render flexible consumption, generation and prosumption based on digital technologies attractive.

([6]) In accordance with Article 16(8) of the Regulation on the internal market for electricity.
([7]) https://www.volkskrant.nl/economie/is-de-energietransitie-gebaat-bij-co2-arme-nucleaire-centrales~bf2710e5/.

3.13. There is a need for more binding measures for TSOs, DSOs but also energy producers, in order to better coordinate their actions and enable the grid to benefit from digitalisation. Instead of just monitoring and voluntary cooperation, especially in cross-border exchanges, there is a need for more compulsory measures. ACER should therefore be equipped with competencies that enable it to speed up measures for an overall European benefit.

3.14. Energy traders use electricity grid infrastructure to carry out transit transactions between and across national borders, with no transit charge for the use of the infrastructure, and often with limited benefits for final customers. The Committee calls for coordinated development plans by the MS and for solidarity-based funding for network development, including connecting ports and railways, as is already the case for cross-border transport ([8]).

3.15. In conjunction with smart grids, special attention should also be given to flexibilities in the electricity grid. The active timing of loads lowers pressure on electricity grids and thus reduces the need for expansion of individual network areas. This leads to immediate cost savings because network expansion is avoided in sub-areas of the grid.

3.16. In order for the electricity market to function effectively and flexibly, not only at the high and medium voltage level, large-scale flexibility options, such as major storage capacity, are needed. In addition, to increase the strength of the entire electricity infrastructure, it is desirable to aggregate small-scale flexibility options offered by prosumers at a low voltage level, e.g. households with their own PV installation, small storage facility and a heat pump.

3.17. The EESC believes that the cost benefits of fairly priced generation technologies with competitive generation costs must be passed on directly and reliably to final customers. To ensure this, energy traders need to pass them on to their customers in a way that is reliable and with minimum delay. Flexible tariffs with defined price caps and monthly bills offer the opportunity to react in a timely manner to price developments and to provide a strong incentive for final customers to act in a way that benefits the system. At the same time, in order to ensure affordable basic energy supplies, basic energy consumption must be guaranteed at regulated prices for vulnerable households and companies.

3.18. The further development of cross-border trade, network issues and, above all, PVs for self-supply have very different effects on electricity customers. Though prosumers can actively avoid contributing to solidarity costs such as network financing, consumers are facing ever-increasing costs ([9]). It is therefore crucial to develop a European solution for a solidarity-based electricity market with solidarity-based pricing.

3.19. The EESC views individual measures, such as electricity price subsidies for industries, as counterproductive. Such isolated non-structural measures distort electricity markets, directly impacting cross-border trade in energy.

3.20. The EESC recognises the need for a massive increase in investment in electricity networks given the growing demands at all levels. Investment in transmission networks alone would have to increase by at least EUR 2 billion per year ([10]). In distribution networks, similar levels of investment are likely to be needed in order to reliably integrate high-performance applications such as heat pumps, electric cars and PV systems. This offers the opportunity to create added value for the European economy and to maintain and create high-quality (green) jobs.

3.21. Decarbonising the gas supply requires investment programmes of at least EUR 4 billion per year ([11]), to develop renewable gas production sites and key pipeline connections. With regard to pipeline projects, care must be taken to bring production sites and centres of consumption as close as possible to each other in order to avoid unnecessary extension of pipelines, while taking into account discrepancies between the energy production potential of MS due to their diverse geographical circumstances.

([8]) See OJ C 290, 29.7.2022, p. 120, point 1.5.
([9]) See OJ C 184, 25.5.2023, p. 93, point 3.12.
([10]) TYNDP 2022 Scenario Report Version. April 2022.
([11]) ENTSO-G Ten Year Network Development Plan 2022.

3.22. Preparations are already underway to transport hydrogen within the EU by converting existing natural gas pipelines and by using newly built hydrogen pipelines. Keeping in mind transportation distances between supply and demand, energy efficiency has to be considered in infrastructure planning. This entails significant costs and is reflected in gas customers' network charges. The EESC therefore calls for a broad funding base, along the lines of the electricity sector, not only based on network charges or taxes, but also other sources (e.g. ETS revenues, specific tax revenues, RepowerEU, RRF, cohesion funds, etc.). Otherwise, the consequences will be much higher costs for final customers and therefore lower levels of public approval for the long-term development of renewable energies ([12]).

3.23. The importance of renewable gases (e.g. hydrogen, biomethane) for decarbonising industry and energy production is obvious. Therefore, transport and storage infrastructure need to be put in place and flexibility options (e.g. Power-2-Gas) need to be developed.

3.24. The EESC reiterates its call ([13]) for a 'golden rule' to ensure investment in general infrastructure. At the same time, public investment can and must leverage private investment, given the positive effects on the labour market and economic wellbeing.

3.25. In order to ensure a just transition, all stakeholders (households, agriculture and business) need to contribute to the costs of transformation in a way that reflects actual use. Overall, any measure must take into account the social dimension so as not to put public approval at risk, and to enable positive developments in the regional economy, including new jobs ([14]).

Brussels, 18 January 2024.

The President
of the European Economic and Social Committee

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([12]) See, inter alia, OJ C 75, 28.2.2023, p. 102 point 1.2 and OJ C 184, 25.5.2023, p. 93 point 3.9.
([13]) See, inter alia, OJ C 349, 29.9.2023, p. 87, OJ C 184, 25.5.2023, p. 93, OJ C 75, 28.2.2023, p. 102, OJ C 275, 18.7.2022, p. 50.
([14]) OJ C 367, 10.10.2018, p. 1.