

ELECTRICITY MARKET DESIGN

Polish non-paper

Long term economic growth requires undisturbed access to electricity at affordable prices. The crisis on the electricity market we experienced since 2021 was primarily caused by surging prices of energy-carriers, to a large extent caused by Russia's manipulations on the gas market. The past months provided clear evidence on how detrimental the persistently high electricity prices are for the households budgets, as well as for business conditions and operating costs of institutional customers such as SMEs and energy intensive industries. Soaring electricity bills exacerbate energy poverty, drive inflation and undermine the competitiveness of the European economy. They may also discourage investments in electrification, hampering the achievement of broader decarbonisation goals.

The electricity market design based on short-term markets is vulnerable to external shocks and does not deliver sufficient incentives for new investments necessary for clean energy transition. The crisis has also shown that scarcity pricing on an energy-only market has its practical limits, as excessive price volatility over longer periods of time is economically and socially unacceptable and ineffective. Nevertheless, short term market price signals are important for ensuring optimal dispatch of sources, in particular essential for correct valuation of flexibility. Where generation adequacy is ensured by capacity mechanisms, price volatility is mitigated, however it still provides useful information for real-time reserve pricing.

Delivering on our net zero ambitions will require significant investment effort in clean generation technologies, as well as controllable, flexible generation necessary to compensate for the intermittency of renewables. Additionally, significant investments in grid infrastructure will be needed to allow for efficient use of the available generation resources. Finally, energy storage solutions will become indispensable to allow for gradual transition away from fossil backup generation. Changes in the market design should be introduced in a way that encourages security of supply by providing incentives for existing generation with desired characteristics to remain in operation and triggering investments in new generation capacity without worsening the conditions for units at an advanced stage of the investment process. Only Member States with a secure supply situation including sufficient dispatchable resources can guarantee security of supply at European level. Thus, each Member State should be responsible for its generation adequacy unless it decides to opt for a regional solution. The choice of the means to ensure adequacy should belong to each Member State or Member States in a region, respectively.

We propose the following ideas for the reform of the electricity market design:

1. Long term **capacity mechanisms**: with a growing share of intermittent renewable energy sources (RES) in the electricity system, there is a need for stable and dispatchable sources of supply to cover demand at all times. Short-term markets do not deliver sufficient incentives for such capital-intensive and long-payback-time investments. Capacity mechanisms proved to be efficient in correcting this market failure, by providing incentives for deployment of stable and flexible generation capacities, energy storage (including hydro-pumped) or DSR solutions. Nevertheless, they are currently considered a temporary instrument of last resort and require a complex approval process. Instead, capacity mechanisms should be treated as a

permanent feature of multi-commodity electricity market, and Member States should have an unrestricted right to implement them.

2. **Design requirements for capacity mechanisms should be reconsidered.** Member States should be able to adjust them to reflect the current investment and supply risks. It is of predominant importance to deliver sufficient amount of dispatchable sources to allow subsequent decommissioning of outgoing units without negatively affecting security of supply. This should include a transitional extension of the derogation from the emission limit of 550 g CO₂/kWh after 2025, in order to limit the volume of natural gas consumed by power sector and to ensure baseload capacity until adequate, stable and affordable low-emission sources and storage solutions are deployed.
3. **Technology neutrality** should be the cornerstone of the reform. We must ensure a positive regulatory environment for investing in all zero- and low emission technologies. This is especially important for **nuclear power projects**, both large-scale and SMRs (small modular reactors), which are characterised by high upfront capital costs and fairly long construction periods, as well as long operation (up to 80 years). It is also important that the reform provides **flexibility** to Member States to support investments in line with their national strategies. Long-term capital-intensive projects in nuclear power may require tailored approaches.
4. In order to **protect final customers** against exposure to excessive price shocks, Member States should be allowed to maintain contracts with regulated electricity prices. This should ensure **that both types of contracts – market-based and with regulated prices – are available on the electricity market** and final customers are able to choose which ones suit them best. Some consumers might be willing to benefit from market-based contracts (such as contracts with dynamic electricity prices) and accept the risks involved. Dynamic, voluntary tariffs may also encourage more customers, especially among larger electricity consumers, to find opportunities to monetise their demand side management capabilities. Other customers would rather choose regulated prices even without any additional benefits. Member States should therefore allow final customers to make a well-informed choice, based on their individual needs and possibilities.
5. With the growing significance of RES in the energy mix, **customers should benefit more from lower generation costs of renewables and play a more direct role in their development.** Several renewable technologies are now mature, accounting for a significant share of generation, and their costs have dropped significantly. Therefore, **investment in RES should incrementally shift from public subsidies towards commercially driven solutions, such as power purchase agreements** reflecting lower generation costs, so that customers could support RES development directly while also benefiting more from cheaper electricity. As an alternative to reliance on market revenues, various mechanisms, such as **two-way contracts for difference (CfDs)**, can be used to provide certainty to RES investors while limiting disproportionate profits during periods of high spot prices. Such long-term contracts (PPA, CfDs) could also be used to support the development of all technologies necessary for the development of zero-emission electricity systems, such as energy storage and nuclear.
6. An **efficient spot market** is a key element to reveal the value of electricity, allow market participants to respond to price signals and ensure secure and efficient

electricity delivery. Price volatility in the short-term market also allows the correct valuation of flexibility services, DSR and storage solutions. Short term prices often act as a reference point for other market mechanisms (including CfDs and power purchase agreements). To ensure competitiveness of bids and market results and discourage abuse of market power, spot market should be complemented with effective methods of **market power mitigation**.

7. The spot market should generate **appropriate locational price signals** reflecting the actual cost of energy delivery and state of the electricity system, thereby enabling the coordination of dispatch of high amount of distributed resources and prosumers. Trading of all commodities related to electricity (energy, reserves, transmission capacity) should be **integrated into one market process** ensuring optimal utilisation of all available resources.
8. Last but not least, no reform is going to happen without a robust regulatory framework. Ongoing and planned market design projects should be revised as to their compatibility with the principles of the reform to be undertaken, while the Union legislators and agencies should act upon appropriate legal bases and provide for realistic implementation timelines.

As a general principle, decisions on the detailed design of particular mechanisms within the above framework should be up to the Member States, reflecting their responsibility for security of electricity supply, specific national circumstances, energy mixes and transition pathways.