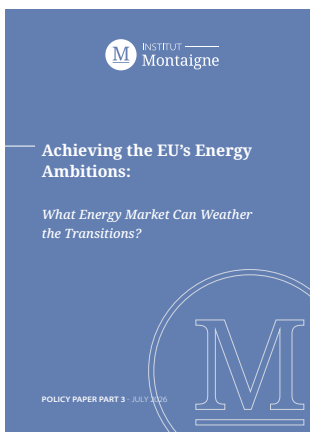


POLICY PAPER PART 3 - July 2026

Achieving the EU's Energy Ambitions:

What Energy Market Can Weather the Transitions?



This technical note concludes a series of three studies by Institut Montaigne on the issue. The first looked at the European governance framework, and the second focused on infrastructure. This third installment addresses the structure of the electricity market—specifically, the rules that finance producers and allocate electricity among European consumers.

The current market architecture is under severe strain. It fails to coordinate efforts between Member States, places a growing burden on their public finances, and lacks transparency in its decarbonization pathways. The critical nature of these new economic and security challenges has prompted us to propose several remedies:

- Europeanizing security of supply to lower the costs of blackout prevention policies, which are currently managed strictly at the national level.
- Strengthening private investment in low-carbon energy (both nuclear and renewables).
- Introducing a new consumer offering that enables tracking the origin of energy and better adapts to evolving usage patterns.

These solutions extend far beyond market mechanics alone. At a time when access to fossil fuels is once again becoming uncertain and conditional, Europe's ability to produce abundant and competitive electricity underpins its strategic autonomy and prosperity. It is absolutely essential to Europe's capacity for low-carbon reindustrialization.

As currently structured, the European electricity market lacks coherence. The following note provides policymakers and regulators with an operational roadmap to move forward in a concrete and responsible manner.

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Against the backdrop of an international context in which control over energy costs and reliability has once again become a dimension of power, Europe faces a crisis of competitiveness closely linked to its energy supply. Disruptions such as aggressive industrial policies on the part of the United States, Chinese overcapacity in clean technologies, fragile supply chains, the end of deliveries of Russian gas by pipeline, and hydrocarbon supply tensions following the blockades in the Strait of Hormuz... These disruptions require the Union to achieve a dual objective: On the one hand, decarbonizing its economy—meaning the de-fossilization of its energy systems in tandem with the transition of energy uses—and, on the other hand, preserving its industrial base. This is the third and final policy brief in a series of three dedicated to the energy agenda of Ursula von der Leyen's second term as President of the European Commission, following a first issue on energy–climate governance and a second on infrastructure. It focuses on the internal energy market, which is one of the pillars of the energy union. That is, it examines the rules by which producers and consumers exchange energy—and particularly electricity—sign contracts, and finance their investments.

A MARKET FRAMEWORK WITH SOUND FOUNDATIONS —BUT WITH RULES THAT ARE NO LONGER FIT FOR PURPOSE

The architecture of Europe's energy markets, which was inherited from the liberalization of the 1990s and 2000s, rests on three well-established principles: The establishment of wholesale markets where spot prices are determined by marginal costs (i.e., the price is set at the production cost of the last unit called upon to meet demand); the separation of network activities (which are operated by regulated monopolies) from generation and supply activities (which are competitive); and independent regulation of network operators. These principles represent the direct application of neoclassical economic theory to a commodity whose supply–demand balance must be maintained in real time to ensure the physical integrity of the system.

However, a profound transformation of the electricity mix is putting these foundations under strain. The lawmakers behind the successive energy packages from 1996 to 2018 did not fully anticipate the extent of the impact of variable renewable energy sources (such as wind and solar power), which are giving rise to repeated occurrences of negative prices, cannibalization of market value during periods of high output, increased intraday volatility, and erosion of the long-term signals needed for capital-intensive investments. In particular, the occurrence of negative prices reflects an oversupply of generation bidding at negative prices. This calls for a two-pronged approach: Better supply scheduling (see action policy paper No. 1) and the efficient operation of zero-marginal-cost assets, ensuring that public support mechanisms no longer incentivize 'produce-at-all-costs' behavior (see action policy paper No. 2). The Electricity Market Design (EMD), adopted in June 2024, laid useful initial groundwork in terms of providing for the widespread adoption of two-way contracts for difference (CfDs) for new public support schemes, encouragement of long-term power purchase agreements (PPAs), and initial provisions on flexibility—but largely remains to be put into action. This policy brief charts the path still to be traveled. It is structured around three key axes and eleven concrete proposals.

AXIS ONE: FINANCING DECARBONIZATION AT MINIMUM COST TO THE PUBLIC

Decarbonized energy technologies (i.e., renewables and nuclear power) all have one thing in common: Although they are capital intensive, they operate at a very low marginal cost. Therefore, to deploy efficiently, project developers need to be able to forecast revenue over the long term in order to access the cheapest possible capital. This can be made possible through revenue top-ups (contracts for difference, or **CfDs**—that is, contracts by which the state guarantees a price for the output of generation assets) and bilateral contracts (power purchase agreements, or **PPAs**—that is, long-term purchase contracts between a producer and a private consumer without public intervention).

Although public support schemes (feed-in tariffs and CfDs) have enabled the massive deployment of renewable capacity over the past decade, their widespread adoption raises concerns regarding fiscal sustainability (between €113 billion and €167 billion in commitments taken on by France through end-2024 depending on the price scenario assumed) and the need to start transitioning toward a framework in which private counterparties will progressively take over.

Several levers are available to address these concerns. European standardization of PPAs (Proposal 1) would establish a liquid market for long-term hedging instruments. Mixed CfD–PPA auctions using a “proportional allocation” method (Proposal 2) would reduce the cost to public finances while automatically phasing out support once it is no longer needed by allowing project developers to bid only a part of their output for a CfD and to place the rest through a PPA. A European counterparty risk guarantee for PPAs (Proposal 3) would homogenize the cost of capital across public and private contracts. Auctioning synthetic hedging instruments to consumers (Proposal 4) would allow Member States to remove their historical public support commitments from the budget. Finally, clarifying the treatment of existing assets whose operating life has been extended—such as Belgian nuclear plants, hydropower facilities, and repowered wind farms—at a portfolio level rather than an installation-by-installation basis (Proposal 5) would avoid destroying economic value by forcing unnecessarily separate contracts.

AXIS TWO: ALIGNING PRICE SIGNALS WITH THE PHYSICAL CONSTRAINTS OF THE SYSTEM

Decarbonization is not just a question of deploying low-carbon generating capacity; it is also vital to foster the flexibility needed to economically absorb an increasingly variable electricity supply. However, current economic signals, along with the design flaws of legacy public support mechanisms (see action policy paper No. 2) largely fail to reflect these dynamics. Therefore, there are three reform areas that must be addressed.

Once the incentives to bid at all costs have been eliminated, the first challenge concerns **guarantees of origin** (GOs)—that is, certificates that supposedly make it possible to trace the renewable origin of electricity consumed. The system for GOs suffers from two major flaws. First, due to an oversupplied market (notably from Nordic hydroelectric production sold to consumers in continental Europe regardless of whether it is physically possible for capacity to be interconnected), the clearing price is below €2/MWh—providing renewable producers with next to no additional revenue beyond the price of the electricity itself. Second, GOs are currently subject to a twelve-month rolling validity period that creates virtual storage without a physical counterpart, making them an instrument of greenwashing at the expense of the electricity system. Proposals 6, 7, and 8 form an inseparable package aimed at transforming GOs into a robust traceability tool by restricting cross-border trading to booked interconnection capacity, introducing a European obligation to generate certificates for all electricity production (renewable, nuclear, or fossil), and moving to an hourly level of granularity, paired with a ban on cherry-picking only the cheapest hours for renewable claims.

The second area of reform concerns **network tariffs** (Proposal 10), which account for approximately one-third of household electricity bills. Too often flat, weakly differentiated (as in Germany), or frozen in time (as in France), they no longer send the price signals needed to incentivize demand flexibility. To properly value demand shifting and electricity storage, a systematic and regularly revised time-of-use tariff structure is indispensable.

The third reform area concerns **forward products** of electricity (Proposal 11), which are currently structured around two overly broad time bands (“base load,” covering the full 24 hours, and “peak load,” from 8 a.m. to 8 p.m.), preventing suppliers from designing offers that truly incentivize flexibility. Dividing the day into four homogeneous periods (morning, afternoon, early evening, and night) would better reflect expected price variations to consumers.

AXIS THREE: EUROPEANIZING SECURITY OF SUPPLY

As fossil fuel plants—which obviously have higher operating costs and thus set high prices for the entire market via marginal cost pricing—are wound down and spot prices for electricity go into a structural decline in a mix dominated by low-marginal-cost producers, the energy market alone is even less capable than before of financing the capacity needed to ensure security of supply by itself. Therefore, capacity mechanisms, which pay for availability rather than energy produced alone, are becoming structurally essential. The recent convergence of major Member States (France, Poland, Belgium, and now Germany) around centralized market-wide mechanisms opens an unprecedented window to take further steps toward harmonization (Proposal 9). Achieving this will require four things: Writing capacity mechanisms permanently into the core rules of the European electricity market rather than approving them case by case as state subsidies; ruling out “strategic reserve” schemes for good, as they are distortionary and keep fossil fuel plants running that would otherwise close; agreeing on one common standard for certifying capacity across countries; and fully linking national capacity markets so that capacity in one country can help meet demand in another, since this principle is legally mandated.

A POLITICAL OPPORTUNITY—GROUNDED IN TECHNOLOGICAL NEUTRALITY

The eleven proposals in this policy paper constitute a coherent package, not a catalog of isolated measures. Financing the transition, aligning price signals with the physical realities of the system, Europeanizing security of supply—removing any one of these building blocks weakens the others.

The twenty-seven Member States seem to be converging toward shared conclusions: The need to mobilize private capital alongside public support; the urgency of securing supply in the face of hydrocarbon disruptions and geopolitical tensions; and the growing recognition that current price signals no longer reflect the physical reality of electricity systems.

The European Commission must seize this opportunity and champion these reforms. Aligning our energy systems with the Union's climate and industrial ambitions is the political responsibility of Ursula von der Leyen's second term as President of the European Commission.

Summary of Proposals

Recommendation 1 Establish a Common Contractual Framework at the European Level for Long-Term Energy Procurement.

Require the European Union Agency for the Cooperation of Energy Regulators (ACER) to set general contractual clauses for standardized financial PPA models in each price zone of the Union, with the support of national regulators where required by the specificities of national contract law, while ensuring EU-wide consistency in their overall structure—on the understanding that energy system participants would remain free to use these standard products or not, depending on the risk profiles they deem suited to their own situations.

Require Nominated Electricity Market Operators platforms (NEMOs) to create dedicated market segments for trading these standard contracts under three product types:

- settlement of the difference between the contract *strike price* and the spot market reference price for the average photovoltaic profile in the delivery zone over the year preceding delivery commencement,
- settlement of the difference between the contract *strike price* and the spot market reference price for the average onshore wind profile of the delivery zone over the year preceding delivery commencement,

- settlement of the difference between the contract *strike price* and the spot market reference price for a flat profile over the year preceding delivery commencement.

Recommendation 2 **Reduce the Cost to Public Finances of Supporting Decarbonized Energy Deployment Through Proportional Method Auctions.**

Make mixed two-way auctions using the “proportional method” the default support mechanism for decarbonized technologies (wind, solar, run-of-river hydro, geothermal, and nuclear power), and make the “tranche method” option available for certain technologies (notably offshore wind) or make it mandatory under a revision of Article 19d of the Electricity Market Design (EMD).

Allow participation in CfD auctions to include stationary batteries behind the meter, as well as any grouping of production installations and batteries, whether behind the meter or at another location. For this to work, revenue top-up mechanisms must be reformed to anchor them not to physical output but to a normative potential output volume.

Recommendation 3 **Position the European Union as the Guarantor of Counterparties to Long-Term Contracts.**

Establish a European counterparty risk guarantee scheme for PPAs associated with new decarbonized energy projects in Europe, replacing national schemes. At a minimum, all industrial consumers should be eligible.

Recommendation 4 **Authorize Member States to Mobilize Publicly Supported Installations to Issue Long-Term Consumer-Oriented Contracts.**

Authorize Member States to issue synthetic hedges symmetric to their outstanding public support commitments, within the volume limits of the supported production installations, either through ascending auctions (on the upfront payment) or descending auctions (on the hedge strike price), and to move their outstanding public support commitments off budget.

Recommendation 5 **Apply Support Measures to Existing Installations at the Fleet—Not the Individual Installation—Level.**

Clarify in sector-specific law that when two-way CfDs are applied to an existing asset, they may cover the full output of a fleet of operationally co-optimized interdependent installations at a strike price corresponding to full production costs, including depreciation and remuneration of the net book value (NBV) at a weighted average cost of capital (WACC) determined by the independent regulator.

Recommendation 6 **Reform the Supply of Guarantees of Origin to Better Reflect the Associated Physical Production.**

Such a reform would require cross-border trading in electricity GOs to be limited to booked interconnection capacity.

Recommendation 7

Improve Transparency in the Supply of Guarantees of Origin.

To this end, make the issuance of electricity GOs—whether of renewable, nuclear, or fossil origin—as well as their transfer to the final consumer mandatory at the European level. To avoid double-compensating power plants that already receive public support, electricity GOs must be taken into account in electricity revenue top-up mechanisms.

The **life-cycle carbon intensity** of electricity produced must also be included in the information contained in GOs.

Recommendation 8

Align Guarantee of Origin Requirements with Real-time Physical Production to Ensure the Credibility of Demand.

Change, without delay, the validity period of GOs, which is currently twelve months, to the calendar year in which the electricity was generated, thereby ending the accumulation of GOs on the market.

At the same time, announce a timeline for progressively reducing the period over which GOs can certify production, down to an hourly or sub-hourly granularity.

To prevent contracts that only certify the origin of electricity during periods of high generation (i.e., when GO prices are low), ban supply contracts that provide only partial guarantee-of-origin coverage. In other words, the energy sources claimed by a supplier (if it chooses to incorporate GO criteria in its offer) must cover 100 percent of the customer's consumption at all times.

Deterrent penalties (i.e., exceeding the cost of purchasing GOs when renewable generation—and thus GO supply—is scarcest) must be established at the national level against suppliers unable to present their customers with a contractually guaranteed GO.

Recommendation 9

Harmonize the European Capacity Market.

Introduce the principle of capacity mechanisms as an integral part of the European market framework, at a minimum across Europe excluding Scandinavia, by establishing an ad hoc framework in a future revision of Regulation 2019/943 and by regulating capacity mechanisms' operating principles in a dedicated network code entrusted to ACER on a joint proposal from the national TSOs.

At the same time, definitively rule out the possibility of using strategic reserves for generation capacity, as they are liable, under the current legislation, to artificially keep fossil fuel capacity in operation and create implicit distortions in energy price formation.

To establish such a market, it is necessary to do the following:

- Require Member States, for each bidding zone in the European system (at a minimum, continental Europe), to define their security-of-supply objective (loss-of-load expectation) and their system's peak hours, according to a public, transparent, and nondiscriminatory methodology.
- Establish a harmonized capacity certification methodology and a European capacity registry, operating at a minimum at the daily time step (and eventually quarter-hourly), which is technologically neutral and open to all generation or explicit demand-response capacities.
- Provide for explicit, systematized cross-border participation in the European capacity mechanism through full coupling of local capacity markets.

Recommendation 10
Adapt Network Tariffs to New Uses.

Require Member States to establish a time-of-day and seasonal structure for electricity-network tariffs. This pricing should be differentiated between injection and withdrawal, since the incentives are a priori opposite: During periods of local overproduction, withdrawal should be encouraged and injection discouraged, and vice versa. The pricing should also be adapted to the relevant territory.

Tariffs must also be regularly revised to best reflect the needs of the electrical system, independently of any political considerations or conservatism regarding previously applicable tariffs.

Recommendation 11
Rethink Market Products to Adapt to New Generation Modes and Encourage New Consumption Patterns.

Revise the hourly breakdown of electricity forward products, ensuring that the new products taken together cover the entire day and correspond to broadly homogeneous states of the electrical system (i.e., morning, afternoon, early evening, and night).