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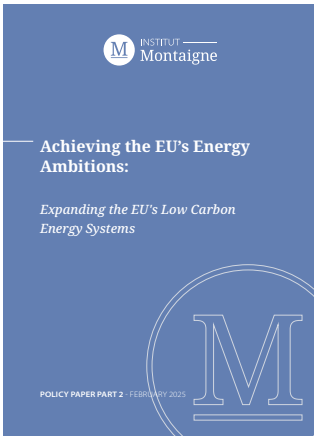
Achieving the EU's Energy Ambitions:

Expanding the EU's Low Carbon Energy Systems



This is the second in a series of three policy papers titled **"Achieving the EU's Energy Ambitions"**. *The first paper, published in November 2024, is dedicated to the challenges of reforming the European Union's energy and climate governance. It identifies several political, legal, and institutional bottlenecks that must be anticipated, and suggests various ways to overcome them.*

Achieving carbon neutrality – as the EU committed itself to doing in the 2021 European Climate Law, stemming from its climate commitments under the Paris Agreement – will require a profound transformation of Europe's energy infrastructure. Achieving carbon neutrality is also a lever for competitiveness and to strengthen Europe's strategic autonomy, when its fossil fuel resources are declining and limited. Fit for 55 has begun to make decarbonization a decisive paradigm for our competitiveness, a development which the Clean Industry Deal should complement.

Infrastructure dedicated to the processing, transportation, and distribution of fossil fuels will need to be phased out or adapted, accompanied by a **massive, rapid, and coordinated** deployment of infrastructure dedicated to low-carbon energy. It should be stressed that all three terms are important here. As fossil fuels still account for some 70 percent of Europe's energy consumption, the deployment needed to replace them must be achieved on a massive scale. If we are to achieve carbon neutrality by around 2050, it must be rapid. Finally, to avoid creating bottlenecks that would not only slow down the whole transition but also generate imbalances within the internal market, this deployment must also be coordinated. As the gas crisis of 2021–22 demonstrated, the security of the continent's energy supply is at stake.

The evolution of capacities for energy transformation, transportation, distribution, and storage lies at the heart of the efforts that European institutions, national authorities, and businesses need to make to move away from fossil fuels. **To accelerate this process, the EU should adopt a new regulation on European energy security** that could provide the backbone for the development of Europe's energy capacities in Europe. This would be in line with measures that other world economic powers, such as China and the United States, have already introduced or are in the process of introducing.[1]

First, it should be noted that European regulations – and particularly over regulation and gold-plating practices in the transposition of EU regulations into national law – have generated significant red tape that slows down all decarbonization projects. In France, for example, an offshore wind farm project has taken three years to build so far – but more than a decade of administrative procedures needed to be completed before building could even start. Unless this **red tape can be cut** – one of the key aspects in the Draghi report[2] – it is unrealistic to contemplate making the major changes to Europe's energy infrastructure necessary to move away from fossil fuels. The EU began to address this issue in an emergency regulation adopted with temporary effect in 2022, with some (but not all) of the measures subsequently enshrined in the Renewable Energy Directive (RED). However, the scale of the effort required calls for actions that are far more extensive and cover a wider spectrum of infrastructure. The Commission is well aware of this, as President Ursula von der Leyen has stressed simplification as one of its priorities.

Second, new energy conversion and storage capacities will need to be **financed**. This implies extending the tools already employed by the EU (such as contracts for difference)[3] to all infrastructure required for the transition while standardizing it on a European scale. These tools must be designed so that they do not support system-damaging or value-destroying behaviour. In the case of electricity, for example, this means discouraging production during periods of negative prices. The stability of the European power grid and the economic equilibrium of all its components are at stake.

In addition to support mechanisms, the need for liquidity to finance the transition argues for a greater role for the European Investment Bank (EIB). The EIB should make its support available for projects involving all types of low-carbon energy on an equal basis. This is in line with the principle that each Member State has the freedom to determine its own energy mix, but mainly the fact that, on a Union-wide scale, all types of low-carbon energy are going to be needed. Furthermore, Important Projects of Common European Interest (IPCEI) in the energy field should, as a matter of principle, be recognized as satisfying the EIB's lending guidelines.

Networks are an essential element of decarbonization. Without adapting them to the challenges of electrification and reducing the use of fossil fuels, the EU will be faced with bottlenecks that will slow down the energy transition and result in onerous additional costs for consumers and industry. Whether we are talking about developing electricity and hydrogen networks or adapting gas networks to reduce consumption, the problem is the same: achieving temporal equalization between current consumption (which largely determines current revenues) and future consumption. Meeting this challenge is far from straightforward, especially given the complexities of national network operator models, the rules imposed on their capital structures, and so on. This is why we propose the creation – for example under the direct management of the EIB – of amortization accounts that would help network operators address the challenge of temporal equalization.

[1] *Article 5 of the Executive Order of January 20, 2025 "Unleashing American Energy" signed by President Trump thus directs federal executive agencies to implement all measures deemed necessary to accelerate permitting procedures for energy projects. Since the US States have extensive powers in this area, over which the federal executive has no control, a simplification policy at the European level could have a greater impact than such a policy at federal level in the United States.*

[2] *Mario Draghi, The Future of European Competitiveness – Part B, September 2024., https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en, accessed 14 February 2025.*

[3] *The "complément de rémunération" (contract for difference) is a mechanism designed to guarantee remuneration to an energy producer. The producer sells its output on the market, and if the average selling price is lower than a predefined reference price, the public counterparty (mainly the government) will compensate the producer for the difference. The remuneration supplement is said to be "bidirectional" when the producer must pay the difference to the public counterparty if the sale price is higher than the reference price.*

As the energy system serves the whole of the European economy, transfers between sectors and intertemporal transfers – through debt – appear natural as long as they are embedded in a consistent logic of pursuing the economic and industrial competitiveness of the EU. Investments in the transformation of the energy system cannot be financed by mandatory levies on energy consumption and certainly not by levies or tariffs on consumption subject to international competition. Generally speaking, the EU must ensure that energy taxation does not undermine the energy and climate objectives it has set itself, as is currently the case in some Member States. A key resource for the energy transition is to avoid squandering states' limited resources on subsidies for fossil fuels, particularly subsidies based on final consumption.

This policy paper will be followed by a third section dedicated to energy markets, covering, in particular, the challenges of making Europe's electricity system more flexible in order to adapt it to the massive deployment of renewable energy, dependent on external conditions, to replace fossil fuel power plants.

Summary of proposals

Proposal 1

Introduce a **European Energy Security Act (EESA)**. In order to simplify and accelerate the permitting process for low-carbon energy projects, this would establish a single integrated procedure with clear maximum deadlines (six months for simple projects, one year for others) and provide for automatic recognition of low-carbon energy zones to facilitate the siting of projects without needing to go through different procedures in the various Member States.

For networks and interconnections, energy production, import/export terminals, and storage projects, a technology-neutral list of Projects of Common Interest (PCIs) would be drawn up, for which the EESA would provide accelerated direct authorization at the European level and extensive recourse to dedicated financing, extending what is already in place for networks.

Proposal 2

Coordinate – at the level of a technical group of the Council of the EU with the help of a dedicated Commission (inter-DG) task force – an approach to simplify and harmonize the transposition of European directives into national law, particularly those impacting project authorization procedures. This would involve empowering European authorities to oversee over-regulation and gold plating and ensure as uniform an implementation as possible. This measure would aim to limit the gold plating of European law, which makes procedures more cumbersome and creates imbalances between Member States – often wrongly perceived as being attributable to the EU when in fact they stem primarily from the choices of the Member States themselves.

Proposal 3

Include in the **European Energy Security Act** a prohibition on any direct price support system for sales during periods of negative market prices, unless the system includes a clause encouraging or obliging the producer to reduce or even cease production during these periods.

Proposal 4

In the **European Energy Security Act**, prohibit feed-in tariff schemes, including for small-scale facilities, as these do not take grid balancing issues into account. For small-scale facilities, participation in calls for tenders could be intermediated by national aggregators so as not to increase the administrative burden on project developers.

Proposal 5

In the **European Energy Security Act**, harmonize support frameworks for new installations contributing to supply security, following the harmonization of support for low-carbon energy included in the Electricity Market Design Regulation. This harmonization should include the following elements:

- A uniform definition of a plant's available capacity, understood as its market presence and actual capacity to produce or reduce consumption during certain hours, designated ex ante by the transmission system operators, along the lines of the capacity definition in the French or Polish mechanisms.
- Ensuring that support for flexibility can only be granted on the basis of a fixed or variable premium proportional to this availability, the amount of which is defined as part of a transparent, nondiscriminatory, and competitive procedure based on objective criteria.
- Ensuring that support for flexibility services may only be granted to low-carbon installations, i.e., those meeting a maximum carbon intensity threshold (gCO_2/kWh) over their life cycle, with the possibility of separate allotments for diffuse load shedding, other forms of load shedding, stationary storage, and flexible generation, if it can be demonstrated that this allotment does not affect the competitive nature of the procedure for each of the lots.

Proposal 6

In the **European Energy Security Act**, harmonize support for load shedding and storage in the EU by making bidirectional remuneration supplements based on the generation capacity available on demand or making load shedding more widespread.

Proposal 7

Within the framework of the **European Energy Security Act**, include a provision to harmonize support frameworks for nonelectric low-carbon energy carriers (gaseous and liquid). This should clarify that such support is generally based on the exchange of certificates of incorporation, reserve direct price support measures for small installations, and provide for the free circulation and mutual recognition of certificates of incorporation throughout the European market.

These certificates should adhere to design criteria such as being awarded through competitive, transparent, nondiscriminatory procedures based on objective criteria and include incentives for supported facilities to participate effectively in the markets, echoing the general design criteria already established for electricity.

Proposal 8

Undertake a comprehensive review of the architecture of the General Block Exemption Regulation (GBER), with a view to achieving technological neutrality during the current mandate. This revision would make it possible to eliminate redundancies with other European sectoral legislation, automate exemption notifications for national aid schemes that mirror those implemented by the Commission (in line with Proposal 7 of the first note) without any amount threshold, and re-evaluate upward the amount thresholds enabling the beneficiary to benefit from the exemption regime in other cases.

Proposal 9

Align the EIB's actual lending policy with the lending policy guidelines it drew up in 2019 to fully open up the eligibility of projects related to nuclear energy. More generally, rebuild the EIB's lending policy framework around the concept of technological neutrality with the goal of decarbonization.

This shift would involve indiscriminate support for low-carbon energy conversion, with nuclear projects falling within this new framework and no longer within the framework devolved to other thermal power plant projects. The new framework could also consider IPCEIs in the energy sector to be aligned in principle with the EIB's lending policy so as to secure loans for these Projects of Common Interest.

Proposal 10

Modeled on the InvestEU fund, create a **European Energy Security Fund** within the framework of the **European Energy Security Act** (EESA), consisting of a permanent EU guarantee line (unlike the recovery and temporary resilience scheme under NextGenerationEU), coupled with an EIB equity intervention pocket. Both would be dedicated to key investments in the energy system transition (decarbonization and supply security), particularly Projects of Common Interest (PCIs).

Proposal 11

Extend the European Interconnection Mechanism to low-carbon production facilities in the form of a European Energy Security Mechanism. This mechanism constitutes the subsidized part of the **European Energy Security Act** (EESA). It would be based on the pan-European tendering scheme proposed in Recommendations 6 and 7 of the first note (reform and extension of the platform for renewables), supplemented by the possibility of granting direct investment aid to IPCEIs in the energy field.

Proposal 12

In the **European Energy Security Act**, introduce the principle of a European amortization account for each of the electricity, gas, and hydrogen networks to solve the problem of intertemporal equalization arising from the nonconcurrent evolution of the costs borne by operators and the volumetric demand for the associated vectors. The account could be managed by the EIB, which would finance it through a loan secured by an ultimate guarantee from the EU against certain predetermined risks.

Proposal 13

Within the European Energy Security Fund, set up a compartment dedicated to strengthening the equity capital of network operators, either through a direct stake in their capital or through funds of funds.

Proposal 14

The European Energy Security Mechanism, which would double as the financial component of the EESA, could integrate the current European Interconnection Mechanism, extending it to cover all energy production, transmission, distribution, and storage facilities in a technologically and vectorially neutral way. Given the extended scope of this new mechanism, the resources allocated to it in the multiannual financial framework should be increased accordingly.

Proposal 15

The EU's transition to a low-carbon, non-fossil-fuel energy system does not, as a matter of principle, need to be entirely or mainly supported by levies on energy consumption. Quite apart from the stakes in terms of Europe's competitiveness, opting for this approach would probably lead to deadlock due to the unanimity required to legislate on taxation at the European level.

Proposal 16

In general, the structuring of energy consumption prices can contribute to the transition to a low-carbon, non-fossil-fuel system without necessarily increasing average levies for consumers, provided that the following is true:

- The full costs of the lowest-emission energy types should be made as stable as possible.
- The full costs of the highest-emission energy types should not be secured.

If the EU makes the political choice to base the capture of resources needed for the energy transition on energy consumption, these resources should come primarily from the highest-emitting energy sources and should not affect the competitiveness of low-carbon energies.

Proposal 17

Prohibit, within the **European Energy Security Act**, any measure instituted by Member States involving payments to consumers, market operators, or any intermediary in the value chain based on the volumes of fossil energy placed on the market or having equivalent economic effects. This is to ensure that resources are not squandered in a direction directly opposed to the energy transition, such as indiscriminate support measures for fossil fuel consumption, even in times of crisis (such as discounts at the pump). If intervention is necessary, it must be socially targeted and designed so as not to diminish incentives to reduce fossil fuel consumption (e.g., by increasing certain social benefits).

Proposal 18

As part of the Energy Taxation Directive, introduce a clause requiring Member States to prioritize the taxation of different energy carriers according to their life cycle carbon intensity.

Proposal 19

Allocate a share of the cost of extending the Emissions Trading System to the transport and building sectors (ETS 2) to finance the tools proposed in this paper (the European Energy Security Mechanism, the European Energy Security Fund and EU guarantee, pan-European platform tenders, etc.). This extension could be achieved by raising the ETS 2 price ceiling, as the sectors concerned are not subject to much risk of carbon leakage.