Reforming European **Electricity Markets**

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In her State of the Union address in September 2022, European Commission President Ursula von der Leyen recognized the pressing need for a comprehensive overhaul of the European electricity markets: "The current electricity market design is not doing justice to consumers anymore. They should reap the benefits of low-cost renewables. So, we have to decouple the dominant influence of gas on the price of electricity. This is why we will do a deep and comprehensive reform of the electricity market.

Six months later, in March 2023, the European Commission released its proposed reform, followed by the subsequent release of proposed amendments by the European Parliament and the Council in July and October 2023, respectively. Final legislation will be the outcome of the *trilogues* among the three institutions in the upcoming months.

Will the final reform do justice to consumers? Will they reap the benefits of low-cost renewables (and other low-cost technologies, such as hydro and nuclear)? Will the reform contribute to fostering low-carbon investments? Will it strengthen the security of energy supply in Europe?...Or will it be another instance of *plus ça change, plus c'est la meme chose*...?

I describe the main ingredients of the reform before assessing it – with one caveat: pending the release and adoption of the definitive legislation, any assessments remain preliminary.

The main ingredients of the reform

As stated in the proposal, "*the changes to the electricity market design should mitigate the impact of high fossil fuel prices, notably that of gas, on electricity prices,*

aiming to allow households and companies to reap the benefits of affordable and secure energy from sustainable renewable and low carbon sources in the longer term."
To achieve these objectives, the proposal relies on the following main elements:

1. **Short-run electricity markets are preserved**: The proposal builds on existing short-term energy markets. They are considered critical to efficiently counteract the volatility of renewable resources through the dispatch of gas-fired generation, storage, and demand response while ensuring efficient trade across Member States. Gate closure is pushed until 30 minutes before real-time, and the minimum size of the offers is reduced to promote the participation of smaller players.
2. **Long-term contracting is promoted**: Reliance on short-run markets alone is considered to be inadequate, as their prices are overly volatile and fail to provide efficient market signals for long-run investments on the supply side (e.g., in renewable energies) and the demand side (e.g., in electrification by industry). Therefore, one of the pillars of the proposal is the fostering of long-run contracting arrangements capable of addressing those concerns: bilateral private Power Purchase Agreements (PPAs) between generators and buyers or retailers, and Contracts-for-Differences (CfD) between generators and a public counterparty on behalf of consumers. While the proposal attempts to push privately-backed investments, there is a widespread understanding that the Renewable Energy Directive's renewable target (42.5% plus an aspirational of 2.5% by 2030 at the EU level) will not be met without public investments.

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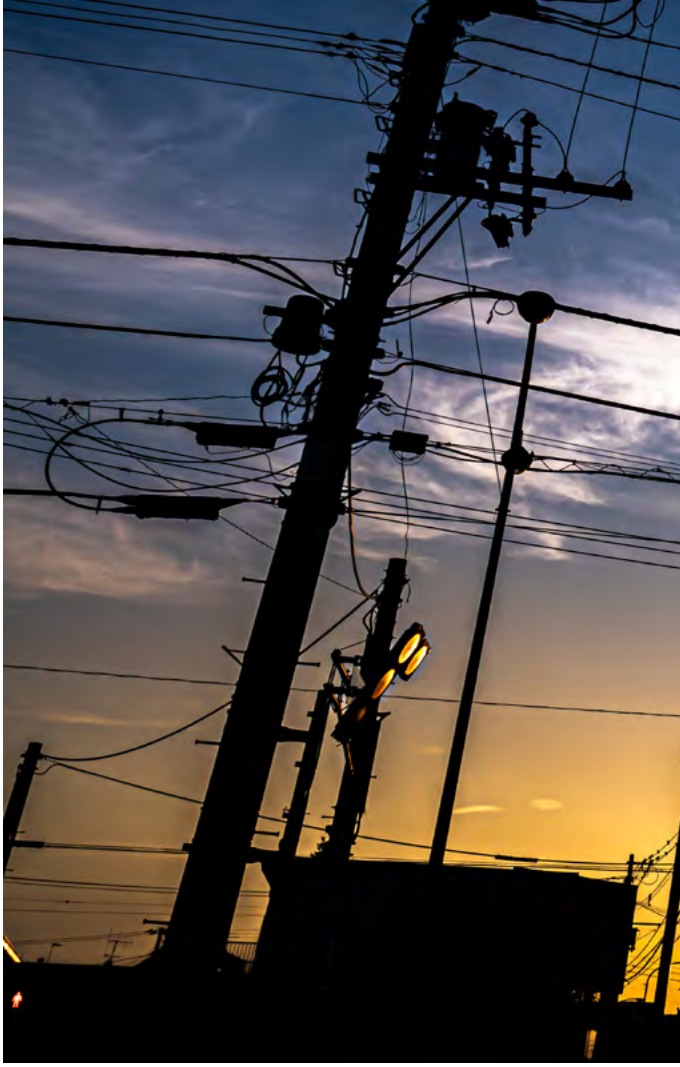


apply, the Council has proposed that **CfDs must be compulsory for the new low-carbon, non-fossil fuel electricity facilities, and voluntary for the investments aimed at repowering or extending the life of existing assets**. In contrast, the European Parliament had proposed that CfDs be compulsory for both the new and existing capacity, adopting stricter conditions for the CfDs for nuclear power plants. The revenues obtained through CfDs must be distributed to final consumers (or used to promote energy-saving investments) in ways that do not alter their incentives for demand response and energy savings and do not distort retail competition or trade among Member States. Nevertheless, **Member States have no obligation to promote publicly-backed investments other than to meet the renewable targets**.

Given the low liquidity of PPAs, the proposal aims to facilitate them by ensuring sufficient financial guarantees to back those contracts. The European Parliament and the Council push for market-based guarantees but also contemplate that those guarantees be given by Member States through State Aid, abiding by State Aid rules. It has also been proposed that Member States use evaluation criteria in the auctions of CfDs that favor producers that commit a fraction of their capacity through PPAs. Where PPA markets are mature, the obligation of energy suppliers to hedge their sales is also expected to promote the use of PPAs and increase liquidity in forward markets.

3. **Virtual hubs for forward contracts are envisaged:** Excessive fragmentation of bidding zones is considered the root cause of the lack of liquidity in forward markets. The aim is that the creation of a reference price reflecting the aggregated price of multiple bidding zones will allow liquidity pooling. No further measures to improve the liquidity of forward markets are envisaged.
4. **Inframarginal revenue caps are extended by six months:** While the Commission is not favorable to limiting the revenues of the inframarginal producers to reduce end-user prices, the Council has allowed Member States to implement it until 30 June 2024.
5. **Energy retailers are obliged to offer fixed-price, fixed-term contracts**: Electricity retailers with more than 200,000 customers will be required to provide fixed-price contracts to end-users and will not be allowed to change the terms of the contracts until they expire. Stress tests will be used to assess the suppliers' hedging strategies. Consumers will also

have the right to have multiple metering and billing points, enabling them to have more than one supply contract at a time.

6. **Retail price regulation is allowed during emergency episodes:** The Council may call for an emergency when wholesale electricity market prices exceed the average of the previous five years by 250% for more than six months, and retail prices increase by 70% for more than three months, affecting the whole economy. If those conditions are met, Member States will be allowed to fix retail prices below electricity wholesale market prices. While energy suppliers will be compensated, the text does not specify how this will be financed. The reduced prices should apply to fixed quantities to not distort the incentives for demand reduction, i.e., 80% of the median household electricity consumption and 70% of the previous year's consumption for SMEs.
7. **Energy sharing and energy communities are promoted:** The proposal wants to promote energy-sharing arrangements across private parties that own or lease renewable or storage facilities.
8. T**he introduction of capacity mechanisms is made easier and less stringent regarding emissions:** The proposal highlights the role of capacity mechanisms in promoting resource adequacy. The Council understands that capacity mechanisms should be considered as an integral part of market design, not as last resort instruments. Accordingly, it requires the Commission to simplify the process of assessing the need to put in place capacity mechanisms. The existing CO_2 limits for capacity payments are temporarily relaxed, allowing installations with emission rates above 550 $grCO_2/kWh$ to receive them.
9. **Flexibility support schemes for non-fossil generation are introduced:** The proposal also acknowledges the importance of flexibility, urges Member States to set national objectives for non-fossil flexibility (such as demand response and storage), and allows them to reward those investments with capacity payments.

Preliminary assessment of the proposal

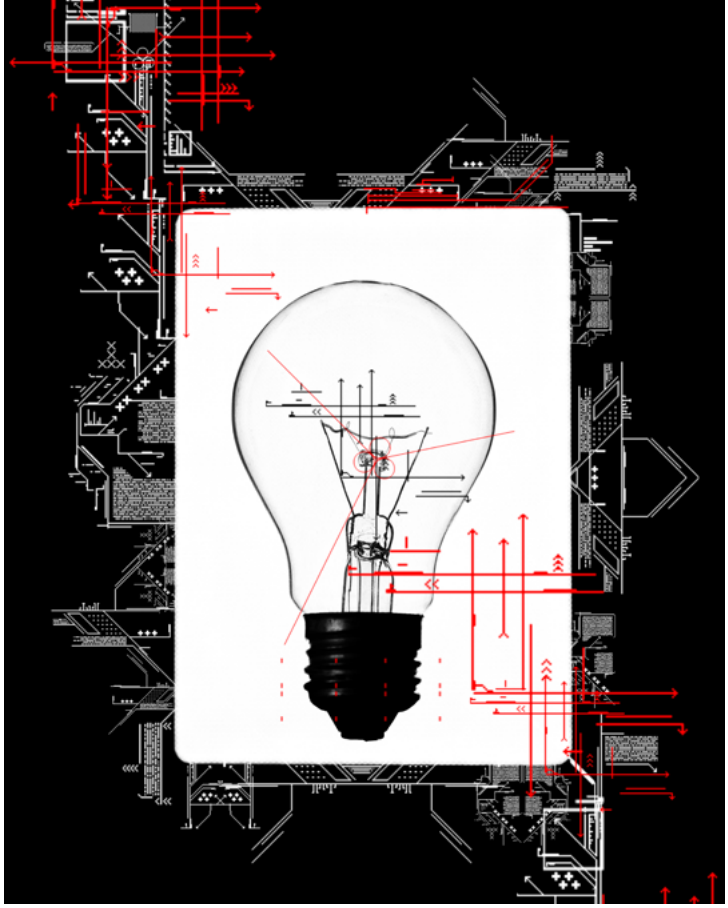
The potential impact of the proposed electricity market design reform remains uncertain, as most of its measures are already available to Member States – yet the energy crisis proved them insufficient. The proposal contains only a handful of new possibilities and obligations, with the bulk serving as a reminder of the existing regulatory constraints and tools at the disposal of regulators and Member States. However, explicitly mentioning those tools in the legislative proposal might facilitate their implementation. For these reasons, the proposed reform's capacity to mark a before-and-after remains to be seen.

Protecting consumers?

The proposal's key measure to decouple electricity prices from gas prices is to allow Member States to regulate retail prices for households and SMEs during crises. However, **this measure fails to impede power generators from reaping unprecedented profits during these critical times – as has been the case during the recent energy crisis** – as they will keep receiving uncapped electricity market prices. And while consumer retail prices will be capped, the issue of who bears the burden of the price differential remains unclear. Once more, asymmetries in the fiscal capabilities of Member States are poised to generate disparities in the level of protection European consumers receive.

Expecting that the suppliers' obligation to offer fixed-price contracts will benefit consumers is an illusion. **Fixed-price contracts will reduce price volatility by construction but will not necessarily reflect competitive prices**. At the very least, suppliers will add risk premia to those contracts on top of the average price they would offer under variable price contracts, which inevitably reflect expectations over future gas prices. Furthermore, to the extent that forward markets are not liquid enough, the vertically integrated retailers will stand in an advantageous position to offer fixed-price contracts compared to the stand-alone retailers, which would further limit the competitive pressure for these contracts.

Electricity prices remain unregulated for firms other than SMEs, leaving them vulnerable to market fluctuations. While the proposal encourages them to engage in long-term contracts to hedge against price spikes, this strategy alone appears insufficient. Despite the eagerness of industrial



players to secure long-term contracts at competitive rates, the market has failed to provide an adequate supply of such contracts at competitive prices. The survival of the European industry hinges on their ability to buy energy at competitive and stable prices, an objective better achieved through an adequate electricity market design than through subsidies.

Promoting long-run contracting: PPAs vs. CfDs

The proposal rightly preserves short-run markets as a necessary tool to ensure that electricity demand is met by the lowest-cost facilities at all times. Furthermore, it rightly reckons that more long-term contracting is needed to provide long-run signals and efficient hedging. In order to boost long-term contracting, the proposal urges Member States to facilitate private bilateral contracting through PPAs. This could include providing state-backed financial guarantees to mitigate counterparty risks. The European Parliament has also proposed the creation of a PPA exchange, the standardization of PPA contracts, and the increase in control and scrutiny through a newly created PPA database. These changes should contribute to making the PPA market more transparent and competitive. However, whether this will be enough to increase market liquidity at competitive prices without putting taxpayer money at stake is unclear. Socializing the costs of private contracting might create moral hazard problems, which could be costly for taxpayers.

The proposal has failed to require Member States to hold auctions for regulator-backed Contracts for Differences (CfDs) to cover a significant fraction of the renewable objectives. This would have been a more effective way to provide liquid long-run contracting options at competitive prices. One of the few obligations included in the proposal is to require Member States to use CfDs if they want to procure low-carbon, non-fossil fuel electricity from new facilities. However, if Member States voluntarily decide not to be the counterparty of those contracts, the PPA market remains the only available option for long-term contracting.

CfDs provide several advantages relative to a system exclusively based on private PPAs. First, by relying on contracts between power producers and the regulator, CfDs significantly reduce counterparty risk, which is instrumental in reducing the costs of procuring renewable energy. No other market player can credibly parallel the regulator's ability to commit over long periods. Furthermore, private counterparties have shown to be unwilling to bear the risk of future price fluctuations for more than a few years. This has resulted in a lack of liquidity in PPA markets, particularly for contracts of enough duration relative to the plants' payback periods.

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Markets for PPAs are not frictionless or transparent, which weakens competition and raises barriers to entry for new players. Furthermore, electricity generators commonly stand at stronger bargain-

ing positions *vis-à-vis* the buyers, giving rise to prices that exceed the generation costs while providing an inadequate hedge for the buyers' consumption profiles. This outcome is particularly problematic for smaller actors, for whom reliance on PPAs puts them in a disadvantaged position relative to the larger players. The proposal aims at strengthening the bargaining power of smaller players by fostering the pooling of PPAs, or favoring generators in CfD auctions that reserve a fraction of their capacity for PPAs with disadvantaged buyers. However, It is unclear whether this will be enough to level the level-playing field between the large and the small buyers without further distortions.

In contrast to PPAs, **regulator-backed auctions for CfDs provide a tool that could ensure a sufficient scale of long-term contracts to offer a credible investment perspective for the required volumes of renewable energy projects**. This perspective is essential to unlocking investments into an EU supply chain of renewable energies' manufacturing capacity. The downside is that CfDs might not be adequately designed or that CfD auctions are not sufficiently competitive, in which case consumers would lock in significant distortions for extended periods. Contract and auction design should be a priority to minimize these risks.

Finally, **when energy retailers sign PPAs, there is no guarantee that PPA prices will be passed on to the final end-users**. This concern is founded on the evidence of weak competitive pressure in retail energy markets. Instead, CfDs guarantee that all consumers - regardless of their bargaining powers - benefit equally from the reduced counterparty risk and the enhanced bargaining power of the single buyer. Yet, CfD settlements must be paid/received by all customers connected to the electricity system in ways that do not distort the short-run price signals or retail competition, as rightly required by the EU proposal. If so, consumers would remain incentivized to hedge and realize their flexibility potential.

What to do with the existing inframarginal plants?

The leading cause of the electricity bill shock during the energy crisis lies in the "*enormous*" profits that inframarginal plants have made due to the pass-through of inflated gas prices to electricity markets. This term was used by Ursula von der Leyen when she stated that "*the low-carbon energy sources are making in these times – because they have low costs, but they have high prices on the market – enormous revenues…revenues they never dreamt of; and revenues, they cannot reinvest to that extent. These revenues do not reflect their production costs*." Yet, the reform proposal does little to address this major problem.

While the Council proposes to allow Member States to apply inframarginal revenue caps until June 2024, it has failed to include it as a permanent measure of market design. With energy firms making record-high profits at the expense of consumers and businesses, the inframarginal cap proved to be an effective tool to partly mitigate the distributional imbalances during the energy crisis. As Joseph Stiglitz referred to it, "*the system's incentive effects are small, and its distributive effects are enormous*." Hence, given the possibili-

ty that the market will experience extreme conditions in the future and the challenges experienced will repeat, it would have been best to retain a pre-defined safety valve to partly avoid the turmoil observed during the energy crisis. It is not credible to expect governments to not intervene in markets during emergencies to limit the burden of energy costs on businesses and households. **Pre-defined caps provide critical certainty for investors, retailers, and traders in forward markets. Not specifying how governments will react in the face of a crisis exposes them to additional risks, which can have a bearing on their investment and trading decisions**.

Member States can now voluntarily apply cost-reflective CfDs to existing plants that engage in repowering or lifetime extensions. These contracts provide a hedge for generators and consumers, effectively preventing these plants from earning windfall profits when gas prices are high. However, the Council's proposal does not make CfDs mandatory for these investments (note, however, that the European Parliament has a different view on this), and, in any event, CfDs are not compulsory for existing assets that do not engage in repowering or lifetime extensions. **The *"enormous revenues* (that low-carbon energy sources) *never dreamt of"* will keep inflating European consumers' energy bills as long as gas remains the price-setting technology and gas prices remain above their historical average**.

Capacity mechanisms and flexibility support schemes are welcome

Energy-only markets do not allow market agents to internalize the social value they create when they invest in firm and flexible resources that contribute to security of supply. This issue is particularly relevant as more renewables get deployed: the load factors of backup plants will go down and become increasingly uncertain, inflating the risk premia of the investments, and energy storage and demand response will become increasingly valuable to counteract the volatility of intermittent renewables. Accordingly, **the proposal does right in considering capacity mechanisms and flexibility support schemes an integral part of market design**.

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Nevertheless, the design of these mechanisms should seek three critical objectives. First, investments must be additional, i.e., they could not have occurred without the support. Second, the value of the capacity payments and flexibility support schemes must be set competitively to guarantee they are limited to the minimum required. Furthermore, capacity payments can be bundled with one-way contracts for differences so that the plants entitled to them return the excess if market prices exceed a certain threshold. On the contrary, flexibility support mechanisms require full price exposure to guarantee appropriate incentives. Last, **capacity payments must not contribute to artificially delaying the phase-out of polluting resources**. It is unfortunate that the Council has had to concede regarding the latter ·

Further reading

Fabra (2023), "Reforming European Electricity Markets: Lessons from the Energy Crisis," *Energy Economics, 126.*

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