

## Electricity Market Design after the crisis: wholesale reform?

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Since 2021, the EU has seen significant rises in energy prices<sup>1</sup>, exacerbated by various factors. Rebounding demand as the global economy emerged from lockdowns saw the import price of energy in the euro area more than double in the year to December 2021<sup>2</sup>. Rising gas prices had a major knock-on for wholesale electricity prices, often attributed to marginal pricing, which doubled in the year to October 2021<sup>3</sup>. These trends were hugely exacerbated by Russia's invasion of Ukraine<sup>4</sup>. Following emergency measures taken to protect European consumers from these impacts<sup>5</sup>, the European Commission set out a legislative proposal for reforming the Electricity Market Design<sup>6</sup>. This paper analyses that proposal; assesses whether a 'new' market design is needed in Europe; and concludes with some recommendations to build on the proposed reforms.

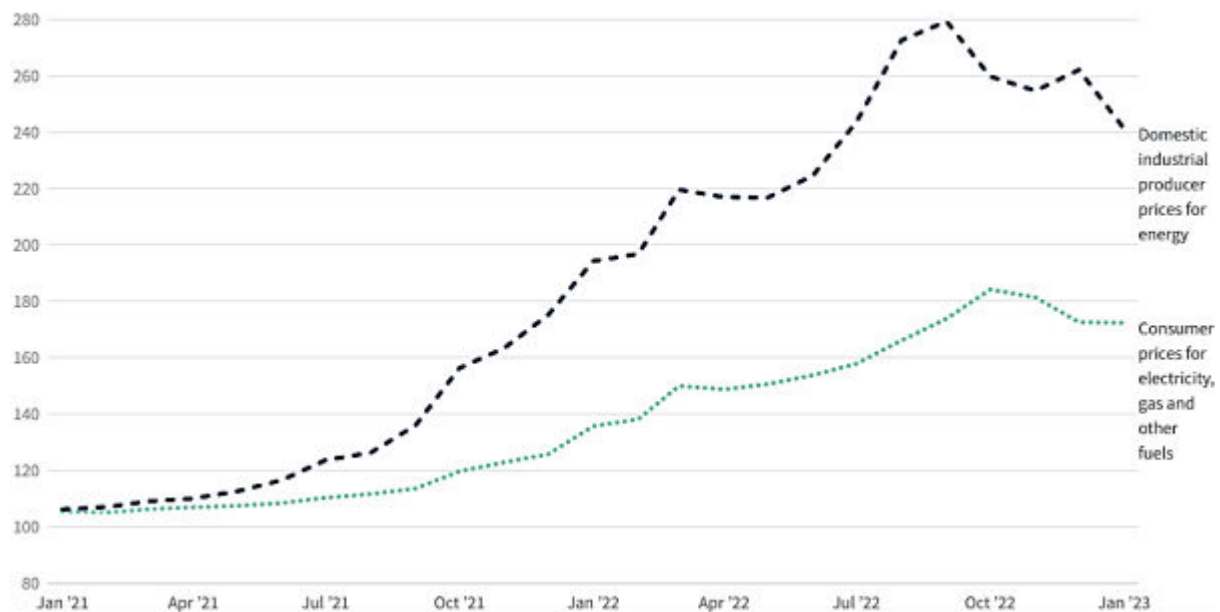


Figure 1: Electricity producers and consumers price variation trend since 2021<sup>7</sup>

### Defining crises

The proposal adds a provision on regional or Union-wide electricity price crisis, under which targeted public interventions in price setting are allowed for small and medium sized enterprises (SMEs) and a temporary price below cost can be set for electricity. If this article is triggered, and a regional or Union-wide electricity price crisis is declared, costs will be passed to the Member States (MSs) to compensate all suppliers. Even though this article has provisions to avoid demand increase it might still give a weak

<sup>1</sup> [Proposal for a Regulation of the European Parliament and of the Council amending Regulations \(EU\) 2019/943 and \(EU\) 2019/942](#)

<sup>2</sup> [Energy price rise since 2021 - Consilium \(europa.eu\)](#)

<sup>3</sup> [EC 'Toolbox for action and support'](#)

<sup>4</sup> [Commission Proposal](#)

<sup>5</sup> [EC Toolbox](#)

<sup>6</sup> [eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023PC0148](#)

<sup>7</sup> [Infographic - Energy price rise since 2021](#)

signal of the crisis and not incentivise consumers to decrease their consumption. Hence, such price regulation should be limited to 80% of median household consumption for households, and 70% of the previous year's consumption for SMEs. In addition, support could be solely targeted to energy poor and vulnerable consumers.

### Marginal pricing and inframarginal revenue caps

Perhaps the greatest achievement of the Commission's proposal is successfully defending marginal pricing, reiterating the conclusion that it is the most efficient model<sup>8</sup>. This maintains incentives for generators to bid their avoidable cost, rather than guessing the clearing price, producing the most efficient electricity supply. It is also worth noting that this is how most competitive markets are organised; the quirk in electricity is a published merit order which creates the perception of what generators 'could' have sold for.

The emphasis on 'true production costs' in political debate is misleading; decisions are made on the basis of opportunity cost – either of dispatching or building any given power plant. Marginal pricing should therefore be an encouraging investment signal for renewables and in the long-run produce more technologies which can undercut expensive gas. That we do not have a merit order of 'sufficiently cheap'<sup>9</sup> power is not indicative that marginal pricing is broken, but that we need a physical system and investment climate which enable the rollout of renewables, energy efficiency measures and infrastructure in Europe. It would be particularly dangerous to make permanent the inframarginal revenue cap on those technologies which require urgent investment, and the Commission's proposal ending such a measure is positive. As argued in the FSR Policy Brief<sup>10</sup>, it is critical that this is not compromised on during trilogues; the Council Mandate indicates a willingness to revisit the cap<sup>11</sup> and we have seen clear appetite from some MSs to limit revenues for renewables<sup>12</sup>.

The challenges faced under marginal pricing can best be addressed by:

- changing the mix so that volatile, global commodities are not price-setting;
- higher investment in energy efficiency and more flexible demand<sup>13</sup>;
- prices which reflect a relevant physical reality; and
- deep, liquid forward markets

Market reform should prioritise investment in the first two and consider how to develop the latter two. In this regard, the net zero transition is not something to pause due to the crisis; it is not competing with affordability; the solutions to both should be complementary.

### Contracts for difference (CfDs)

Under the proposal, two-way CfDs become the mandatory form for any direct price support provided to new electricity generation (including renewables and nuclear), though participation does remain voluntary. CfDs de-risk the upfront investment needed in renewables by guaranteeing a fixed price for the produced electricity over a fixed period of time. If market prices exceed the agreed strike price,

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<sup>8</sup> [European Commission](#)

<sup>9</sup> In a political sense; these prices are fair in economic terms, but unacceptable to pass on to consumers

<sup>10</sup> [FSR Policy Brief](#): Electricity market reform: what is (not) in the European Commission proposal, Issues 2023/07

<sup>11</sup> [Reform of electricity market design: Council reaches agreement](#)

<sup>12</sup> [Greece Non-Paper](#)

<sup>13</sup> When demand is highly inelastic, system tightness creates significantly higher costs for consumers as the market consistently solves by procuring expensive supply

the power producer pays the counterparty for the difference, and the proposal sets out that Members States should channel these back to final consumers.

According to the IEA,<sup>14</sup> competitive auctions will drive European renewable growth in 2023-2024, but the pace will depend on policy responses to volatile wholesale prices and rising costs.

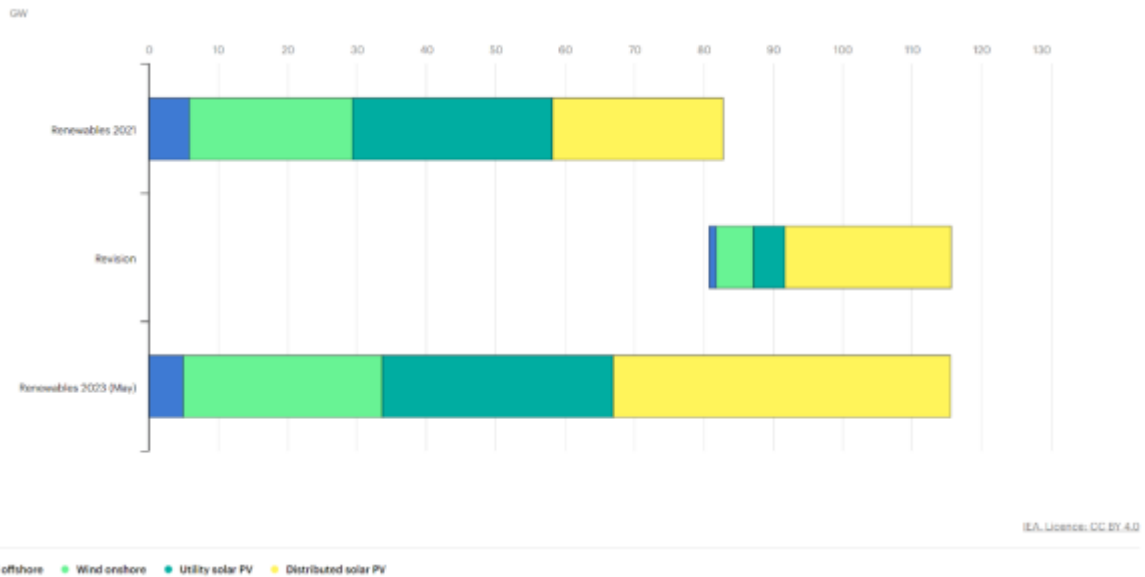


Figure 2: EU capacity additions in 2023-2024<sup>15</sup>

It is expected that almost half of capacity growth will be from auctions for two-way fixed contracts for difference<sup>16</sup>. In this regard, the proposal helps produce long-term solutions to the short-term price crisis.

The Commission's proposal goes to lengths to stress the need for private PPAs alongside CfDs. Currently PPAs are currently mostly available only to large energy consumers in most MSs; it is encouraging that measures (such as demand pooling) are included to try and expand this access. However, the

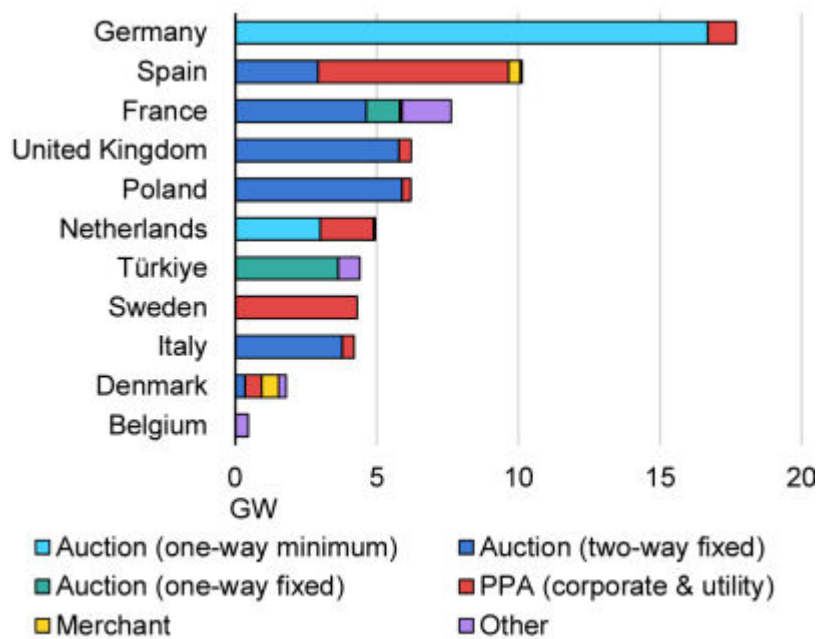


Figure 3: EU solar and wind forecast (2023-2024) by policy and procurement type

Commission's attempt to simultaneously encourage more of both types of contract does lead to some confused outcomes. For instance, the suggestion to prioritise projects which have a PPA signatory in

<sup>14</sup> <https://www.iea.org/reports/renewable-energy-market-update-june-2023/executive-summary>

<sup>15</sup> <https://www.iea.org/reports/renewable-energy-market-update-june-2023/executive-summary>

<sup>16</sup> <https://www.iea.org/reports/renewable-energy-market-update-june-2023/executive-summary>

CfD auctions is counterproductive, as those projects least able to secure such a deal are likely to be those most in need of the guarantee the CfD can offer; and those which can strike private PPAs should be incentivised to earn more in the market than via government guarantee.

#### A new market design?

Firstly, it is worth distinguishing between the European Electricity Target Model (ETM) and the reality of the market. The ETM is what regulation *aims* at, not what exists – for instance, “the zonal configuration of the market assumes that there is no or little congestion in the network within each zone”<sup>17</sup> which is not true given current bidding zone configuration. If we consider this to be the *design* of the market<sup>18</sup> then the debate over the role of the reform becomes whether to continue iterating towards the ETM, with improvements; or abandon it as unable to deliver the energy transition.

Most proponents of a radical new market design base this on the stated need to move away from marginal pricing. As argued in this paper, marginal pricing should remain a central tenet of electricity markets; it is uniquely able to handle electricity supply and demand. On this point, the ETM should be seen as fit for the future.

Additionally, the certainty of the ‘existing’ market design itself can be an argument for incremental changes if they can deliver required outcomes, by minimising the risk of investment hiatus.

Considering where the Commission appear most enthusiastic for reform:

- CfDs certainly have a role to play, but they can be a useful addition to the existing sequence of electricity markets, and the major design questions to address in implementing these is to maximise their consistency with the ETM – such as not distorting the PPA market, or blunting the signals provided to renewable generators
- Requirements for suppliers to provide long-term contracts and hedging for consumers are changes to retail markets which would be best-supported by the development of forward markets towards those envisioned by the ETM; overly prescriptive regulation in this space could have the opposite effect, forcing a large chunk of demand to hedge in the same way and reducing freedom in forward markets
- The Commission’s proposal for virtual trading hubs is a good example of iterating towards a policy aim. ACER have emphasised the massive benefits of electricity trade<sup>19</sup>, but the proposal is an early, imperfect idea; given the rapid timeframe, it would have been difficult to perfectly revolutionise cross-border trade. Whilst some feedback dismissed the idea, it has focused attention on the need to pool liquidity across borders and maximise trade, and more productive responses, such as the ITRE report proposed by the European Parliament<sup>20</sup>, call for more work to understand the implementation and benefits.

It is not, then, a binary choice of ‘new v. existing market’. We can clearly set out the long-term vision whilst recognising it will not be an immediate switch to the decarbonised, efficient system. This is encouraging given Europe’s experience of making incremental progress towards its electricity market

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<sup>17</sup> [FSR Policy Brief](#): Recent energy price dynamics and market enhancements for the future energy transition, Issue 2022/05

<sup>18</sup> Any alternative design would describe how a market *should* operate, not how it already does

<sup>19</sup> “These benefits are estimated to be approximately 34 billion Euros a year”

[Final Assessment EU Wholesale Electricity Market Design.pdf \(europa.eu\)](#)

<sup>20</sup> [Committee on Industry, Research and Energy Report](#)

goals<sup>21</sup>. Whilst the ETM is a useful basis<sup>22</sup> for the energy transition, then, it is not without room for improvement. We consider certain elements that should be built upon below.

### Recommendations for the EU electricity market

*CfD Design:* The position on availability but not imposition of CfDs is right, as part of the answer to the question of renewables can share their long-term costs with consumers. In the longer-term debate, the Commission and MSs should consider innovative CfD models which can best align incentives with system need. Attractive incentives are needed to support renewable energy project, however, it is important to ensure they do not place excessive fiscal pressures on MSs. Potential improvements to the CfD design could include:

- A price corridor could be used within which capture prices fluctuate, bringing some greater exposure to market signals;
- A 'deemed generation' model to separate real time signals from the revenue certainty needed to underpin project investment<sup>23</sup>. By determining the level of subsidy on the basis of what *could* be produced, this model leaves real time production incentives to the market, and when effectively designed can ensure that the dominant strategy for any power plant is to bid their true opportunity cost<sup>24</sup>

*Harmonisation and interconnection:* support schemes such as the CfD being harmonised in their implementation can maximise their benefit across the European market. Where any interventions are applied – including those we have argued against here – their distortion is minimised if done in a uniform manner. This will best preserve the price signals which best direct the flow of electrons.

Europe's plans for decarbonising the power system need to be matched by development plans for supporting cross-border infrastructure. Depending on forward planning decisions taken now, this could mean expanding cost effective interconnection that would come with multiple co-benefits, while strengthening European unity in the face of geopolitical uncertainty and energy insecurity. But with current plans for grid development falling short, Europe needs to act swiftly to close the gap or risk choosing riskier and more expensive pathways that rely more heavily on storage and flexibility technology or much higher volumes of renewables deployment. In an ideal world, this would also include accurately configured bidding zones or nodal pricing, though we should note the political difficulty and certainty impacts of change in this regard.

*Demand:* even in times of crisis, the cheapest energy is the unit not used. As argued above, consumer protection measures should therefore retain incentives for energy efficiency. Building on the Peak Shaving product, market design should maximise the access and incentives for demand-response to participate directly in the sequence of electricity markets, moving beyond a bespoke scheme for the procurement of these resources. The hardware and consumer buy-in required for this will take time to build, but the long-term vision for Europe should anticipate and encourage these developments.

### Conclusion

Whilst the price spikes of recent years demanded immediate interventions, the longer-term challenges emerging from the crisis – protecting consumers and decarbonising the European

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<sup>21</sup> examples include market coupling, cross-border balancing, the smart meter rollout, ability to achieve the 70% target

<sup>22</sup> It is not the true baseline for evolution of the *market* from today, as the market still has some way to go to reflect the ETM; however, it is a useful basis for reform, which can build on regulations that we are still progressing towards in order to make clear the steps beyond their achievement for the continuous improvement of a European market

<sup>23</sup> or the profile of cost consumers should expect to share with the CfD assets

<sup>24</sup> [Newbery's yardstick CfD model](#) shows mathematically that this should be the case where the contract is well-designed

electricity system – have long-term, complementary solutions, which can build on the fundamental basis of the ETM. The Commission’s proposal makes a strong start to this, and should spark consideration of deeper reform, but not an abandonment of the electricity market fundamentals which have served Europe fairly well.