

# Reform of the European Electricity Markets

## An urgent and comprehensive reform restoring affordability in a secure and sustainable electricity system

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- ✓ Cost-competitive carbon-free electricity is key for the competitiveness and decarbonisation of the EU steel industry
- ✓ The economic situation is very urgent and without dedicated solutions, for energy-intensive industries, the ongoing de-industrialization triggered by the high energy prices will continue and decarbonisation will be hindered
- ✓ The upcoming reform proposal shall bring swift and effective support to energy-intensive industries exposed to international competition
- ✓ The decarbonisation of electricity implies that carbon-intensive technologies largely based on operating costs will be replaced steadily -but not fully at least in the medium term- by carbon-free capital-intensive technologies
- ✓ No option concerning the short-term markets contributing to secure, affordable, and sustainable energy should be left off the table unassessed
- ✓ The reform and the overall EU energy regulatory framework should:
  - Deliver a market system that provides cost-affordable carbon-free electricity and adequate investment signals to power generators
  - Empower the necessary investments in carbon-free generation
  - Provide long-term stability and visibility on the affordability of carbon-free electricity for consumers
  - Minimise the costs of the overall system (i.e., flexibility and capacity) for consumers while securing the liquidity of the system
- ✓ The electricity market reform shall pursue the following priorities:
  - Delivering resilient and more cost-reflective short-term markets
  - Improving access to long-term contracts for energy-intensive industries
  - Ensure, whenever necessary, an effective redistribution of excess profits to energy-intensive industries
- ✓ Empowering genuine, voluntary, and cost-efficient demand response
- ✓ Furthermore, the reform needs to be complemented by other initiatives:
  - Further diversification of energy sources
  - Faster permitting procedures
  - Non-market-based instruments to support the competitiveness of industry exposed to global competition
  - Strengthen market surveillance
  - Monitoring and adjusting the short-term energy emergency measures launched

## **Introduction: electricity is key for EU steel's competitiveness and climate neutrality**

The European steel industry is a strategic sector for the EU economy and the resilience of its value chains, including the cleantech sector. **Access to affordable, secure, and sustainable energy, particularly electricity, plays a fundamental role in the competitiveness and climate neutrality of the steel sector.**

**Today, the sector consumes around 75 TWh of electricity annually.** Of these, about 45 TWh mainly purchased from the grid are consumed by electric arc furnaces that recycle steel scrap; around 30 TWh mainly produced from on-site waste gases are consumed by primary steel making.

EU's gas and electricity markets are currently experiencing an unprecedented crisis due to a series of extraordinary events affecting the supply/demand balance. This results in extremely high and volatile prices, which threaten the viability of steelmaking in Europe. Even with the reductions in January 2023, they are still (February 2023) at around double levels compared to pre-crisis levels and the medium-term trends are still extremely uncertain. **Energy-intensive companies have been forced to react to this unprecedented situation with plant closures, production curtailments, and layoff programs.** This trend risks intensifying as companies' price-hedging positions gradually expire unless emergency action is taken to revert the trend in the energy markets.

Looking ahead, **the decarbonisation of the steel sector** will increase exponentially the electricity needs since the transition to breakthrough technologies such as hydrogen-based steel making and carbon capture and utilisation and storage combined with the increase of steel recycling **will raise significantly the electro-intensity of production processes.** Notably, the steel sector estimates around 165 TWh of electricity consumption by 2030 and 400 TWh by 2050. The such transition will be possible only if access to electricity is secured at internationally competitive prices.

## **Structural elements affecting the electricity market**

While the ongoing energy crisis may have contributed to a deeper debate around the functioning of energy markets, the reform of the electricity market is naturally meant to address the structural, medium/long-term trends that will characterise the market at least in the next decade **to make the EU electricity system resilient to future similar shocks**

In this regard, a key element to be addressed by the reform is the transformation of the electricity market arising from the decarbonisation of the power mix across the EU while maintaining the fundamental pillars of energy affordability and security of supply. This transformation entails that **carbon-intensive technologies largely based on operating costs will be replaced steadily -but not fully at least in the medium term- by carbon-free technologies characterised mainly by capital costs.**

According to the figures from the European Commission, both the absolute amount and the share of renewables in the electricity mix will need to increase significantly in the next decade: with approximately 467GW installed renewable capacity in 2020, Europe requires a threefold increase to 1.236GW in 8 years by 2030. This will raise the share of renewables to around 65% of the electricity mix and even further thereafter. Moreover, while considering further development of storage technologies, it is clear that the stability and security of the overall electricity system will still require important contributions from fossil fuel sources with significant carbon emissions. For instance, the latest State Aid Guidelines on Emissions

Trading System indicate an average carbon content of the marginal electricity of around 0.4-0.5 t CO<sub>2</sub>/MWh across the EU, with peaks up to 0.9 t in some member states.

Regarding the interaction of the electricity market with other energy sources, the recent geopolitical trends indicate **the crucial importance of diversifying energy supplies**. In the case of natural gas, this translates into an exponential increase in relevance of the globally traded -and structurally more expensive- liquified natural gas over pipeline gas.

On the demand side, **it is clear that the achievement of climate neutrality of the European economy will require an exponential increase of direct or indirect electrification in most sectors of society** (notably industry, buildings, and transport), **which are characterised by different consumption profiles**.

Along this transition, **the reform needs to contribute to a well-functioning and resilient market that can address** such medium-term challenges to avoid such sectors to be left behind. To this extent, **it should ensure that the benefits of carbon-free technologies stemming from the decrease of their production costs and the absence of carbon costs are seized by energy consumers while empowering the necessary investments in the system and minimising the overall costs**. The competitive decarbonisation of the EU's industry and the overall economy will only be possible if the electricity market delivers successfully on these objectives.

#### **Delivering Resilient and Cost reflective Short-Term Markets as Primary Objective**

**The functioning of short-term markets plays a crucial role in the overall energy system** (i.e., efficient dispatch and cross-border exchanges) **and in particular as regards long-term and future markets**. Therefore, any option that can contribute to more resilient and better cost-reflective short-term markets must be deeply assessed and considered. As mentioned above, **the reform needs to contribute to an electricity market that is resilient to the medium-long-term trends affecting the supply/demand of electricity**. On one side, this requires securing the liquidity of the system by unlocking the necessary investments in capacity, storage, transmission, and distribution, while taking into account also non-market-based instruments offering economically viable solutions for final customers. On the other side, it should deliver the cost-efficient dispatch of the cleanest generation plants and ensure that the benefits of fossil-free technologies stemming from the decrease of their production costs and the absence of carbon costs are reflected in the price met by energy consumers. The costs of any production technology should also reflect the system costs of for example ancillary and capacity caused by that technology.

Therefore, **we urge the European Commission to assess all possible options** for alternatives to marginal pricing:

- *The split-market proposal (Greek proposal), which separates inframarginal generators under an average-costs-based pricing system from marginal generators with the marginal pricing system;*
- *The Spanish Government proposal for 1) voluntary state-backed CfDs for wind and solar generators, 2) mandatory CfDs from inframarginal generators such as hydro and nuclear, and 3) capacity markets;*

- *The “Price Shock Absorber” proposal<sup>1</sup>;*
- *EU-wide implementation of the price cap over natural gas used in electricity generation (the Iberian measure).*

In this regard, it **should be assessed to what extent the current marginal pricing mechanism is compatible to deliver cost-reflective carbon-free electricity to consumers**, with particular regard to **energy-intensive industries exposed to international competition**, considering that fossil-based technologies are likely to play an important role in the stability of the system for the foreseeable future.

In the absence of any modification to the current marginal system, the electricity market and prices will be exposed to **1) the increasing relevance of the global LNG market** (including its vulnerability to large international partners such as China) and **2) increasing carbon costs of marginal, fossil-fuel-fired power generation assets passed on in electricity bills**, despite years of subsidized investments in fossil-free power generation.

Besides, **the electricity price would remain closely linked to the energy input of such technologies** - whose long-term trends remain at least uncertain, and most likely higher than the pre-crisis levels for the foreseeable future- and **their embedded carbon costs**. In particular, with the carbon price forecasted at around 100€ in the next years, carbon costs of current marginal technologies would be around 40€-50€ across the EU, with peaks up to 90€/MWh in some member states. Against this background, all options that can contribute to more cost-reflective and affordable electricity while not undermining the sustainability and security objectives should be carefully assessed. No option should be left off the table.

#### **Increasing the Availability of Long-Term Contracts as Alternative Energy Sourcing Instruments and A Consumer-Centered Design for Contracts for Differences**

From the electricity markets crisis perspective and against the background of the Commission questionnaire to the reform, **we wish to stress that** by their nature **long-term contracts** (whether PPAs or hedging instruments) **cannot be considered a silver bullet solution to solve the electricity price crisis** and particularly **to shield industrial consumers from the high electricity prices**.

The **current crisis has proven that a strong correlation exists** between **short-term markets** and **long-term contracts** and that this **has produced two harmful cumulative consequences**:

- **It has deprived such contracts of their competitive advantage for industrial consumers vis-à-vis spot markets** since these are being indexed at the levels of the spot market – de facto eliminating the opportunity offered of private negotiations when setting the prices as PPA price embeds spot prices;
- It has rendered these **unaffordable** and therefore **unavailable** for most consumers **fully reducing cost-affordable alternatives to electricity spot prices for energy-intensives**.

Hence, given that the correlation between short-term markets and long-term contracts emerges as the root cause of **today's slow uptake of long-term contracts**, the action of the European Union in this regard

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<sup>1</sup> “ELFI/TIF proposed market design: analysis of impact on wholesale power prices: Final Report – short version”, AFRY, 7 December 2022, cited in EUROMETAUX, Position Paper, “Electricity Market Reform recommendations: Targeted EU action for Industry competitiveness”, January 2023

shall first address the situation of spot markets and in a second phase addressing economic, technical and regulatory barriers impeding industry from accessing these tools.

✓ **Unlock Access for Energy Intensive Industries to corporate Power Purchase Agreements (PPA) as Alternative Energy Procurement Option**

From purely an industrial consumer perspective, **renewable Power Purchase Agreements (PPA) as private contracts could be** an effective option to **procure fossil-free energy supply** (i.e., energy procurement function) at cost-affordable and visible levels and to receive a secure supply over a compatible long period (min. 5 to 15 years). However, for this to hold, certain conditions must exist and fundamental barriers preventing access for industries shall be resolved – as elaborated therein.

We deem overly optimistic **any absolute assumption** claiming that renewable PPAs **can function as** [alleged] **hedging tools** for industry against spot-markets volatility **whereby** in certain cases the lack of electricity supply due to intermittency in generation **obliges the industrial off-takers to other procurement alternatives** such as the spot-market - and henceforth providing to the consumer little or no hedging capacity [often referred as shaping/firming costs].

Besides, **significant and unresolved barriers in the PPA market functioning are experienced by energy-intensive industries**. In this regard, **we regretfully notice that the background information** accompanying the Commission questionnaire on the **reform’ misrepresents the situation of energy-intensives** by limiting the existence of an issue purely to SMEs and by stating that all “large undertakings”, including energy-intensive industry, are not facing any challenge. Contrarily to this statement, **our situation on the ground shows that the steel sector has a greater difficulty in off-taking PPAs compared to other corporate buyers such as the ICT, the bank, and the transport sector** – structurally different in business models and energy systems.

After having addressed the spot-markets situation, the reform shall address the following barriers:

- **Lack of credit support for industrial off-takers to ensure appropriate guarantees against payment defaults and for shielding them against shaping/firming costs;**
- **Persistence of more attractive public support schemes compared to private PPAs;**
- **Regulatory complexity in terms of accounting rules of renewable PPAs, if treated as financial derivatives according to the International Financial Reporting Standards (IFRS).**

Against this background, **we wish to stress firstly the necessity for the European Commission assessment to strike a deeper distinction** within the corporate ecosystem **between those businesses that can access the PPA market** (i.e., sectors NACE J) and **those who do not** – and **adopt dedicated solutions** which emphasise the different needs and natures of Member States and economic sectors NACE C, B, and F - the manufacturing industry, from non-manufacturing sectors.

As policy solutions, we call as a matter of priority for:

1. **Establishing EU-wide financial instruments supporting industrial off-takers against default risks and project developers against mitigation risks;**
2. **Supporting the standardisation of contracts** at European level - providing clear design-template offering solutions for intermittent consumption profiles, and to be implemented voluntarily;

Although addressing the harmful dynamics of short-term markets shall remain the root problem to be solved to enhance the affordability and availability of PPAs, **we could encourage the design of supply-side and volume-based incentives at Member States' level** to ensure that a given volume of PPA electricity is made available for negotiation with targeted customers such as energy-intensive industries. Contextually, it will be vital to ensure that the economic principles governing the functioning of such a well-established PPA market(s) **are preserved**.

✓ **Restore the Functioning of Hedging Markets as a Key Solution to Mitigate Risks of Price Volatility and Unaffordability for Industrial Consumers through Structural and Dedicated Actions**

As long-term contracts, hedging contracts are important tools for industrial energy consumers to cushion and balance volatility and price levels of short-term markets. However, like PPAs, **the ongoing energy crisis has shown that short-term electricity markets have a fundamental impact on the functioning of future markets** – from which it follows that the volatility and price spikes in such markets have spread over future markets **leading to unstable and unaffordable futures prices for most industrial consumers**.

This **calls for any strategy** from policy-makers to restore hedging markets **to primarily address the dynamics in short-term markets and bring back price stability and affordability to at least pre-crisis levels**. Hence, it is important to improve the framework of such hedging instruments to unlock their potential further. Where appropriate, **we call for publicly-backed guarantees to be used to support energy-intensive industries to back their energy supplies** and to **rapidly address the developments in short-term electricity markets** – as these are highly correlated to both long-term and future contracts.

Against the issue of structural lack of liquidity in hedging markets, we believe liquidity to be not an **artificial construct** of legislators but the **consequence of a functioning short-term market** that provides stable signals of affordability and availability of supply.

✓ **Ensure Effective Profits Redistribution and Government Pay-Outs vis-à-vis Consumers in the Design and Implementation of Contracts for Differences (CfDs)**

While two-way Contracts for Difference could provide more **predictable revenues for investments** making these less dependent on short-term prices and **preserving competition** in the supply to minimise the costs, **their design, and implementation shall deliver tangible results in terms of availability of cost-affordable clean electricity to industrial and household consumers as a matter of priority**.

To this extent, **we urgently highlight** the threefold challenge that CfDs have:

- 1) **Providing swift and stable support for investments in new fossil-free generation capacity;**
- 2) **Delivering predictable support against increased energy costs for consumers**, in particular and as a matter of priority, energy-intensive industries and households;
- 3) **Ensuring economic viability of their implementation vis-à-vis final customers** – who shall be safeguarded from bearing all costs of the measure.

As an energy-intensive sector affected by high energy costs, **CfDs design, and implementation shall therefore ensure the respect of the following principles:**

1. **Efficient and system-wide redistribution of captured revenues:** Given the magnitude of the European investment' targets in additional renewable GWs for 2030 and the urgent energy crisis

impacting public budgets and consumers, an **orderly** and **system-efficient redistribution of captured revenues is of the utmost necessity**. In this regard, innovative CfDs shall ensure support for **energy-intensive industries** and **household customers** alike while contributing to alleviating system costs, to increase fossil-free power capacity and grid stability;

2. **Economic viability of the measure in case of government's payment obligations:** Compatibly with the objective mentioned above, **it must be ensured that the *additional costs of governmental payments* from Member States to the contracted generators **do not affect electricity' affordability for consumers** – an effect that could be achieved via an EU-wide approach resorting to available legislation (e.g., CEEAG).**

✓ **Maintain and Improve the Inframarginal Revenue Cap Shielding Effectively Consumers Against Increasing Energy Costs as a Temporary Emergency Tool**

The ultimate objective of the reform should be a market capable of providing affordable carbon-free electricity with sufficient price stability and visibility while ensuring the right signals for investments in new generation capacity – a direction undertaken by the recent proposal for a “Price Shock Absorber Mechanism”<sup>2</sup> which could reduce volatility and price spikes. In times of economic and financial emergency and increased green investment costs across the economic sectors and society at large, **we believe the inframarginal revenue cap established via Council Regulation 2022/1854 of 6 October 2022, if correctly implemented, could be a key solution to provide Member States with the necessary budgets to support consumers afflicted by increased energy costs** for as long as the crisis persists within the revised electricity regulatory framework. However, the **claw-back mechanism** so far implemented **has proven inadequate in ensuring the redistribution of profits to affected consumers in several Member States** for two reasons:

- 1) Lack of visibility over the availability of excess profits – visibility which is necessary for afflicted companies to continue operations,
- 2) Lack of predictability over the effective channeling of these resources – given their energy-intensive profile and the impact of energy costs in sectors such as steel, certainty over the distribution of excess profits is crucial for the continued and efficient planning of operations.

Therefore, the **revised electricity markets shall ensure an EU-wide temporary and effective implementation of the claw-back mechanism** in the pursuit of market integration and precisely aiming at optimising the redistribution process in terms of **availability, predictability, and velocity** with particular regard to **energy-intensive industries**.

To ensure that industrial energy consumers can benefit from support measures, **two elements** of design are crucial:

1. **Prioritising the channeling of excess profits to financing measures in support of energy-intensive industries** exposed to international competition and **household customers**;
2. **Allowing the operability of the mechanism in a compatible manner with the principles of EU internal market integrity and fair competition**.

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<sup>2</sup> Ibid 1

## **Value Genuine, Voluntary Demand-Side Response while Avoiding Production Disruptions**

**Industrial demand-side response** and related flexibility services from industry and consumers at large **cannot be the solution to the structural lack of sufficient renewable generation capacity** and neither a solution to mitigate the impacts of marginal cost generators in the short-term wholesale markets. Although potentially able to **contribute to the flexibility and adequacy of the energy system in certain cases, demand-side response cannot occur evenly across all industries at large**, with sectors such as steel **which lack the necessary technical and economic flexibility** to “suspend production” upon request of system operators. Under no circumstances, demand response should lead to demand destruction.

Hence, only **voluntary market-based solutions should be promoted to activate the most cost-efficient solutions across the economy**. In particular, the ongoing energy crisis indicates the risks of extremely high energy prices translating genuine industrial demand side response into production disruption. The persistence or repetition of such shocks would lead to permanent production curtailments and loss of employment, investment, and overall EU welfare.

Within the same line of reasoning, **the role of capacity mechanisms to ensure system adequacy should be assessed deeply**. Adequacy mechanisms should be residual and limited to providing the strictly necessary adequacy needs after the market responsibilities have been determined. They should be as far as possible market-based and designed to minimise distortive impacts on energy markets.

## **Better Industrial Consumer Protection In the Context of A Globalised Energy Economy**

Skyrocketing energy prices have had a direct impact on the costs of steel production – affecting severely the profitability and therefore the international competitiveness of European companies, highly exposed to global and unlevelled competition in terms of climate and energy costs.

For the reform to succeed in restoring the competitiveness of European steelmakers, it will be essential that EU authorities secure the effectiveness of the short-term measures that have been launched in the last months to address the effects of the ongoing energy crisis. In particular, **the following elements should be considered focusing on the energy-intensive nature of strategic industrial sectors:**

1. **Effective monitoring of the implementation of the EU and national aid measures** and further improvements where appropriate depending on the evolution of the emergency;
2. **Possibility for the Member States to apply regulated electricity tariffs as well as for energy-intensive industries** – in line with *Council Regulation 2022/1854 of 6 October 2022* which enables government-regulated prices for electricity supplied to SMEs and vulnerable customers.

## **Conclusions: Toward a Holistic Approach to the Electricity Markets Reform**

Considering the deep transformation that the EU electricity market will face in the coming decade, it is clear that the reform of the electricity market needs to be complemented with additional initiatives that address the different elements of such transformation. In particular, the following initiatives complement the reform as no-regret options:

- Further diversification of energy sources;
- Faster permitting procedures for all fossil-free projects within and outside the power sector;

- Non-market-based instruments to support the competitiveness of industry exposed to global competition (e.g. exemptions/derogations from levies and taxes);
- Strengthened market surveillance on all market segments;
- Analysis and introduction of multiple bidding zones were effective to help stabilise the market and driving necessary investments in the EU electricity system.