EUROFER
THE EUROPEAN STEEL ASSOCIATION

Position Paper

EU Electrification Action Plan (EAP)

A milestone occasion to quickly and effectively restore affordable electricity, to relaunch the decarbonization and strengthen the international competitiveness of the European steel industry

Executive Summary

- Affordable electricity is a key enabler and driver of the international competitiveness and decarbonization of the EU steel industry
- European industrial sectors such as but not limited to steel are still facing 2-3x higher electricity costs and twofold energy expenditures compared to international competitors
- The Electrification Action Plan (EAP) should restore the ex-ante situation, in continuity with the findings and analysis of the Draghi's Report
- Our policy recommendations:
    - **CfDs carve-out**: Impose a requirement on electricity suppliers to supply part of their CfD-subsidized output for sale to energy-intensive sectors via PPAs
    - **PPAs:**
        - Severe the link between short-term markets and PPA's price structure
        - Adopt dedicated solutions to mitigate the costs of profiling associated with renewable PPAs and baseload energy-consumers
        - Expand the size of the European Investment Bank (EIB) lending window for the provision of PPA counter-party risk guarantees tailored for industry and SME off-takers
    - **Short-term relief measures:**
        - Maintain and improve the EU-wide full ETS indirect costs compensation
        - Ease up conditionalities to access CISAF Section 4.5 temporary price relief for energy-intensive industries
    - **Containing energy transition costs:**
        - Enable national governments to support its strategic energy-intensive industries in the form of network tariffs rebates
        - Mitigate the impact of the financing costs associated with investment support in new generation capacity and security of supply measures
    - **Flexibility**: Safeguarding baseload industrial energy users and exploiting untapped potentials from more variable loads
    - **Horizontal measures:**
        - Impact-assess alternative market design models and the effectiveness of the current design by at the latest June 2026
        - Monitor at EU level the evolution of price-formation dynamics in short-term markets towards 2030, 2035 and 2050.

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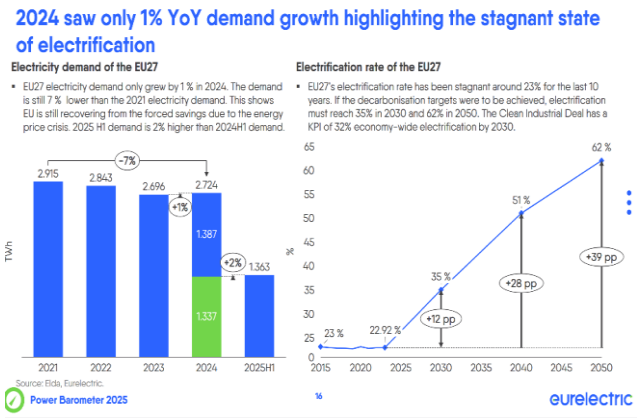
Introduction

Affordable electricity is a key enabler and driver of the international competitiveness and decarbonization of the EU steel industry, today consuming roughly 75TWh (twice Belgium's final energy consumption) per year. With more than 60+ low carbon energy projects running both on direct and indirect electrification, the steel industry is leading the CO2 reduction efforts, with estimated savings amounting to 80 million tons in 2030. To deliver such results, the sector needs to access quickly large amounts of fossil-free power and hydrogen by 2030, in the ranges of 165TWh and 2.12MtH_2 per year.

It is evident that industrial production is crucial for growth in demand for energy (IEA, World Energy Outlook 2025). However, from 2018 until 2023, 34 million tons of steel production has been lost in Europe, with 60% of current capacity utilization unviable, resulting plants idling and closures, and translating into the loss of 25% of the total EU steel workforce (~90.000 direct jobs loss). Alongside the spillover effects of global steel overcapacity and low-steel demand in the EU, high energy costs continue to be the leading cause of the loss of competitiveness of the steel sector (*EUROFER 2024*).

As of 2025, and few years since the adoption of a technical adjustment reform of the EU electricity markets regulatory framework (*EMD reform*), European industrial sectors, such as but not limited to steel are still facing 2-3x higher electricity costs (*i.e., wholesale market prices as the largest component*) and twofold energy expenditures compared to international competitors. In the current context, enabling affordable energy consumption shall remain a vital objective for the EU Electrification Action Plan (hereinafter as EAP).

The steel sector situation is well in line with the overall EU industrial sector, with stagnating electricity demand, amounting to 5% in 2023 (*European Commission, 2023*) and with no tangible sign of a meaningful recovery as of 2025 (*Eurelectric Powerbarometer 2025*), signs that more and stronger actions are needed to make electricity consumption economically viable.



In this direction, the EAP should restore the ex-ante situation, in continuity with the findings and analysis of the Draghi's Report and go beyond the technical adjustments brought by EU decision-makers in the EMD reform. The ultimate goal being the true attainment of the decoupling of fossil-fuel prices from electricity prices, to finally pass on the costs of low-cost fossil-free generation technologies on industrial consumers as a crucial part of the EU renewed industrial decarbonization policy.

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The key policies to make the EAP a success cover the following areas:

1. **Long-term contracts**: Improving the availability and accessibility of LTCs (CfD carve-out and PPAs) as tools to decouple fossil-fuel prices and electricity prices for industries,
2. **Short-term support measures:**
    a. Continuing CO2 indirect costs compensation,
    b. Improving electricity market price relief (CISAF),
3. **Containing energy transition costs:**
    a. **Network tariffs,**
    b. **RES financing costs & Security of Supply Costs.**
4. **Flexibility**: Safeguarding baseload industrial energy users and exploiting untapped potentials from more variable loads in a harmonized manner across the EU,
5. **Horizontal measures:**
    a. **Assessment of alternative market design models:** Conduct an in-dept impact assessment of alternatives market design model on the basis of Art.69(2) of the EMD Regulation,
    b. **Monitoring of price-formation dynamics in wholesale markets (Decoupling Factor):** Set up a centralized and transparent EU-tracker of the evolution of power-formation dynamics in wholesale markets in line with advancements in renewable energy capacity targets 2030, 2035 and 2040.

Our Policy Recommendations

***Long-term contracts*: Improve availability and accessibility of long-term contracts as tools to decouple electricity prices from fossil fuel prices**

Long-term contracts (minimum 10 years) such as PPAs and futures could be a viable procurement option as these can reduce industries exposure to short-term markets, improve their carbon footprint, and enable visibility on electricity volumes and prices. Unfortunately, PPAs remain overly costly due to lack of solutions to address the profiling costs and pricey due to the direct correlation between short-term and long-term markets (PPAs, hedging), leaving the sector fully exposed and no concrete solutions.

Similarly, CfDs by design can offer visibility on volumes and prices for industrial consumers and an alternative procurement route to wholesale markets. New low-carbon generation capacity in Europe will be mostly financed via two-way CfDs as per Art.19b of the revised EMD regulatory framework. To make these effective and to ensure fair distribution of decades long investment in lowering the production costs of renewable assets, part of the electricity output of CfD assets shall be reserved for sale to industrial energy consumers exposed to international competition via means of a requirement placed on suppliers, as suggested in the Draghi EU Competitiveness Report

Actions from the EAP should in particular aim at:

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- Increasing direct access to low-cost publicly financed electricity generation projects for industrial sectors with high energy intensity, and particularly exposed to international competition on the basis of the CfD carve-out concept through PPA,
- On PPAs:
    - Severing any link between PPAs and short-term markets as leeway toward truly decoupling electricity from fossil-fuel prices,
    - Introducing targeted mechanisms to reduce the costs of PPAs rising from shaping and firming of generation with industrial continues demand,
    - Expanding the EIB credit-risk co-guarantee schemes for energy-intensive sectors uptake of PPAs.

➢ **<u>CfD Carve-Out:</u> Impose a requirement on electricity suppliers to supply part of their CfD-subsidized output for sale to energy-intensive sectors via PPAs**

Building upon the principles introduced by the EMD reform in Art.19a(5) combined with two-ways CfD auctions (Art.19b) and proposed by Mr. Draghi Competitiveness Report, <u>the Action Plan should introduce a requirement on electricity suppliers to whom a CfD has been awarded to reserve part of this output for sale at cost of generation plus mark-up to energy-intensive industries exposed to international competition via a PPA</u>.

This measure, if correctly implemented, has the benefit of decoupling the sourcing of fossil-free subsidized (low-cost) electricity via a PPA from wholesale markets for consumers, by allowing the PPA negotiation from the CfD-strike price (defined from the LCOE of the project) instead of the wholesale market. On the other hand, project developers will have visibility and certainty on the demand, including a fair mark-up, and further increased project viability.

<u>Power Purchase Agreements (PPA): Making their affordability a reality</u>

The uptake of PPAs in energy-intensive industries and in steel in particular is stagnating, due to, *primarily* financial and economic barriers, including:

a) The high degree of price-correlation of PPAs with short-term markets, with differences from country to country due to national energy mixes, geographical conditions and type of contracts,
b) The so-called shaping and firming costs (risk-premium) associated with the matching of renewable intermittent supply profile with baseload industrial demand,
c) Heavy financial requirements on off-takers for the signing of long-term guarantees against payment default risks.

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➢ **<u>PPA Affordability</u>: Severe the link between short-term markets and PPA's price structure**

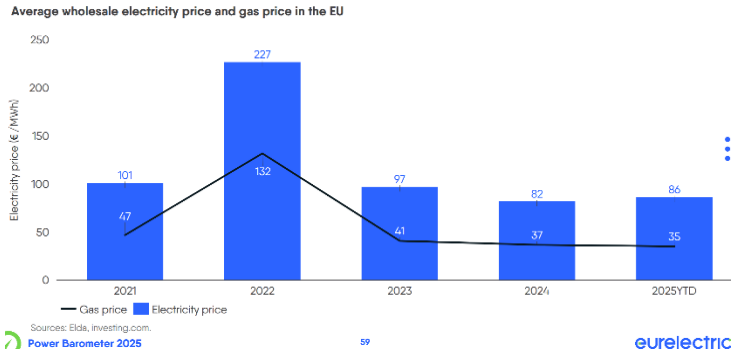
PPAs, have been placed at the forefront of the EU efforts to decouple electricity prices from fossil-fuel prices. However, as shown by Table 1 (*Brainpool, part of MontelGroup, 2024)* short-term electricity markets display a direct correlation with long-term contracts pricing trends, depriving *for large part* these contracts of the possibility to offer decoupled fossil-free electricity prices.

Table 1: Renewable energy price indices, forward market valuation of an electricity delivery from solar and wind power plants, valuation at settlement prices on Oktober 11, 2024

Delivery Period		Wind Onshore [€/MWh]	Wind Offshore [€/MWh]	Solar [€/MWh]
Month	Nov 24	79.22	72.75	84.58
	Dez 24	75.26	59.69	93.22
	Jan 25	91.02	82.31	103.45
Quarter	Q1 25	86.21	78.61	87.01
	Q2 25	69.27	65.62	60.73
	Q3 25	78.46	72.53	66.52
Year	2025	78.87	70.45	68.55
	2026	74.65	66.76	64.69
	2027	66.41	59.45	57.36

Leaving this issue unaddressed will render fossil-free PPA of no use for industrial electrification and competitiveness, and thus undermining the very EAP electrification targets

In this regard, <u>the European Commission should encourage the progressive move-away of PPA prices from spot-market prices and increase transparency and production cost-discovery at EU level</u>, with the objective of having a convergence towards cost of production plus fair mark-ups.



➢ **<u>Shaping/Firming Costs</u>: Adopt dedicated solutions to mitigate the costs of profiling associated with renewable PPAs and baseload energy-consumers such as the Green Pool model**

The European steel industry requires access to a stable, predictable and affordable fossil-free electricity supply. Its processes tend to run on close to a 24/7 fashion, contrary to intermittent renewable generation asserts. PPAs with an underlying renewable asset could in principle be of use, provided that the variability and intermittency of the production-side do not translate into missed volumes or exposure to market-prices, often impacted by fossil-fired power plants.

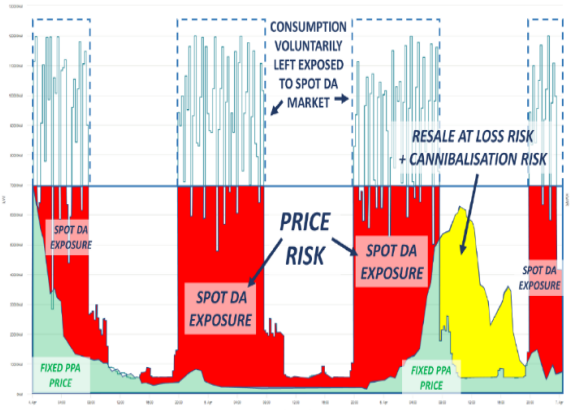


Figure 2-34: Illustration of mismatch between PPA production and demand profile

One of the key obstacles for signing PPAs by heavy-industry is the price-premium associated to the costs of imbalances between the intermittent generation from the underlying PPA-asset(s) and the baseload industrial energy off-taker (*European Investment Bank Advisory Hub 2022; Eurometaux report on RES PPAs 2024*), also known as shaping & firming costs.

These refer to cases where the PPA asset cannot deliver the volumes contracted due to insufficient generation to the customer and must recover these from wholesale markets – often at prices set by fossil-fired plants, which are then passed on to the consumers.

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Although widely recognized as a key cost-barrier for the uptake of PPAs, no concrete solutions have to this date been adopted. The EMD reform Art.19a on its end refers to demand-aggregation as a possible solution to reduce the financial risks associated with PPAs but no EU initiative has followed at the time of writing to contain these costs.

We therefore encourage the European Commission to put forward an EU-wide instrument aimed at supporting the costs of shaping/firming associated with industrial PPAs in line with EU competition policy, drawing inspiration from existing (or new) initiatives such as the Greek Green-Pool Model – a national measure developed as a tool to decarbonize electro-intensive industries via PPA demand-pooling.

- **Off-taker Credit-Risk Support: Expand the size of the European Investment Bank (EIB) lending window for the provision of PPA counter-party risk guarantees tailored for industry and SME off-takers**

Medium-long term PPAs require strong financial commitment on off-takers, adding to the costs associated with the materialisation of either one or both price and volume risks. The guarantees required can cost up to 500.000EUR per MW of capacity contracted. Given the magnitude of the electricity consumption associated to steelmaking in out-of-crisis operating conditions, these costs represent a serious accessibility barrier.

As a step in the right direction, the European Commission has proposed the adoption in the Clean Industrial Deal of the first lending envelope as EIB-backed pilot program for the provision of counter-party risks guarantees associated to corporate PPAs – building on the regulatory framework pursuant to Art.19a of the EMD Regulation. The project has been approved in 19 June 2025. It is endowed with 500mln euros to de-risk long-term PPAs to absorb part of the credit risk that has previously discouraged lenders and energy suppliers from engaging with non-investment grade stakeholder

For it to produce tangible benefits for industrial consumers nonetheless, it is necessary that the size of the EIB dedicated budget is increased significantly and that streamlined access is guaranteed to industrial consumers exposed to international competition.

Short-term relief measures: Shield industrial electro-intensive sectors from high electricity market prices as bridging measures accompanying the energy transition

As industrial production is crucial for demand growth in energy and since cost-affordability is essential for boosting industrial production, restoring competitive power prices (and overall system costs) should be a pivotal target of the upcoming EAP. In particular, high electricity market prices are playing a strong de-incentivising effect toward electro-intensive business operation and the roll-out of decarbonisation technologies.

As outlined in the International Energy Agency (IEA) World Energy Outlook 2025 "***market design has a significant influence: if natural gas or oil-fired units continue to set prices most of the time even as their energy share falls, infra-marginal rents for other generators may rise***". This has repercussions on the total price of an industrial energy bill, including rising CO2 costs and wholesale

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prices. To this extent, alongside long-term contracts and infrastructure expansion, the IEA confirms the necessity of protecting consumers from such negative effects.

The package of measures proposed in the 2022 EMD reform and picked up by the CID and the APAE have a long-term time horizon before their benefits materialise, while more and better efforts are needed in the short-term. Industrial sectors will continue to be exposed to high wholesale prices due to the predominant impact of fossil-fuels as marginal technologies, depriving companies of the necessary capacity to procure the large volume of electricity needed.

Therefore, short-term effect relief measures against high electricity prices are of the utmost importance for the electrification to continue and international competitiveness to be safeguarded.

- **ETS Indirect Costs Compensation (Review): Maintain and improve the EU-wide full indirect costs compensation**

As demonstrated above, fossil-fired power plants will continue to play a predominant role as marginal price setters in wholesale electricity markets as industrial sectors strive for business competitiveness and decarbonisation efforts. Shielding industries exposed to carbon leakage from the CO2-costs passed on from the power sector ETS remain vital.

The overall context is much more challenging than the one envisaged when the current Guidelines were developed. As highlighted also in the recent Draghi report, even though electricity prices have fallen from their peaks registered in 2022, EU companies still face electricity prices that are 2-3 times those in competitors like USA or China.

In this context, retaining predictability and visibility on indirect costs compensation is even more crucial at a time when companies are required to take investment decisions to decarbonise their production assets. Moreover, the EU carbon price has increased at around 80€ and is estimated to reach between € 100-150 by 2030. Therefore, in line with the objectives of the new Clean Industrial Deal, the review process should strengthen the carbon leakage protection of the current eligible sectors and secure it by 2030.

In particular it will be crucial to:

- **Geographic areas:** retain price convergence as criterion for defining relevant geographic areas. Information from national electricity markets should be used only for reassessment.
- **Emission factors:** the existing methodology based on the relevant emission factor of fossil technologies should be retained, since it is the most appropriate to define the indirect carbon costs passed on in the electricity prices, taking into account also the functioning of the electricity market and the bidding strategies of electricity suppliers.
- **Eligible sectors:** current eligible sectors are by nature the most exposed to the carbon leakage risk since they are the most electro-intensive. Costs linked to the exclusion of sub-sectors in the steel value chain such as industrial gases (NACE code 2011), coke ovens (NACE 1910) and mining of iron ores/sintering (NACE 0710) should be eligible. Funding budgets allocated for indirect costs compensation have been identified on the

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basis of the current list. Therefore, if the list is extended without an increase of the related budgets, current eligible sectors would see a reduction in their carbon leakage protection. In order to avoid that, any possible extension of the list should be accompanied by and conditional to a proportionate adjustment of allocated budgets. To this purpose, if the list of eligible sectors is extended on the basis of more recent data, the Commission should issue a recommendation to member states to increase their budgets for compensation of indirect carbon costs and the indicative share of ETS auctioning revenues to be used for this purpose should be increased from the current 25%.

- **Benchmarks:** benchmarks play a key role in defining the level of carbon leakage protection. Being set already by the most efficient installations, they are by nature already very stringent. Any further reduction undermines the objective of avoiding the carbon leakage risk. Therefore, no reduction rate should be applied to the benchmarks during the trading period. Moreover, the possible review of the benchmarks formerly based on the fuel exchangeability principle deserves particular attention. The two benchmarks related to carbon and high-alloy electric arc furnace steel fall in this category. For these benchmarks the carbon leakage protection on both direct and indirect emissions is crucial. As indicated in the latest ETS Directive and the Free Allocation Rules, the modification of the exchangeability principle in the benchmark definition requires an adjustment of the methodology for indirect costs compensation. Such adjustment should clearly ensure that financial compensation rightly reflects all the carbon costs passed on in electricity prices that are not covered by free allocation (considering also the CBAM factor as well as any other reduction factor), as foreseen by the new provisions. The end result of the new methodology should not reduce the carbon leakage protection granted so far. In addition, the European Commission should issue a recommendation to Member States to remove the 1.5% threshold of gross value added for reimbursement of indirect costs
- **State aid intensity:** as a result of the aid intensity cap at 75%, a significant amount of indirect carbon costs is still burdening the international competitiveness of electro-intensive sectors like steel. In order to ensure full carbon leakage protection, the aid intensity cap should be removed.
- **Conditionality:** given the energy-intensive nature and the exposure to global competition, steelmaking companies have the strongest incentive to be as energy efficient as possible. Moreover, it should be noted that compensation of indirect costs does not distort incentives for energy efficiency investments because it is based on very strict benchmarks reflecting the best performance in the sector. Therefore, conditionality criteria should be removed in order to provide more legal certainty and better carbon leakage protection.
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- **CISAF Temporary Electricity Price Relief: Ease up conditionalities to access CISAF Section 4.5 price relief support for energy-intensive industries**

The JRC 2023,the OECD 2025 Economic Survey 2025, alongside Draghi's Competitiveness Report and the IEA World Energy Outlook 2025, confirm that fossil-fired power plants will continue to set the marginal price for the majority of the electricity trading hours, exposing industrial sectors to high and volatile fossil-based electricity prices. The new state aid framework adopted to support the objectives of the Clean Industrial Deal (CISAF) as part of the CID, enables national governments to apply a discount on the normal market price of electricity, regardless of the procurement source, to energy-intensive industries particularly exposed to international trade until the end of 2030.

The temporary electricity price relief could be a crucial tool to shield industrial electro-intensive sectors from skyrocketing wholesale market prices provided that the following adjustments are brought in:

- **Remove the link with ETS indirect costs compensation (Para 125, 4.5.5):** ETS indirect costs compensation and Section 4.5 of the CISAF cover two different aspects of an industrial electricity bill: the CO2 costs passed on by the power sector (the former) and the wholesale market price determined by the price-formation dynamics in the current market-design (merit-order plus marginal pricing). As such, these two tools should remain separate, compatible and understood as complementary in order to provide a fair cover to an industrial electricity consumer.
- **Expand the maximum amount of electricity consumption coverable up to 70% of the yearly average (Para 120, 4.5.3):** Given the large consumption of electricity in energy-intensive processes such as steel and in consideration of the obligation to channel 50% of the aid received to investments in decarbonization, the overall amount payable to an industrial plant on 50% of its electricity consumption will be largely insufficient in providing the necessary operating relief. Accordingly, in line with the TCFT Framework 2023, the electricity consumption to be covered should be extended to 70% of the yearly total.
- **Extend the duration of the scheme beyond its current 2030 deadline (Para 126, 4.5.6):** Based on the JRC, Draghi's Report and the OECD Economic Survey 2025 it is clear that short-term markets will display for the majority of the hours a wholesale price set by *expensive* fossil-fired power plants well beyond 2030. Considering as well the low pace of electrification in the EU (*Eurelectric Powerbarometer 2025*), the duration of the measure should be postponed to 2035, subject to periodic reviews in line with the developments as regards price formation dynamics in wholesale markets.

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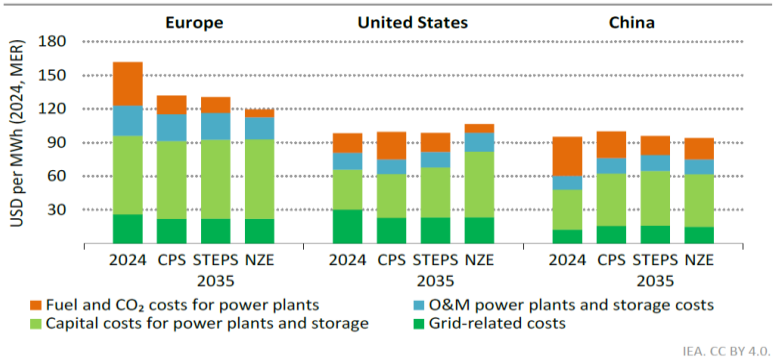
Containing Rising Supply Costs Associated with Investments in the energy transition

The clean energy transition, according to the recent European Commission State of the Energy Union Report 2025, requires a massive number of investments *already* by 2030, at unprecedented levels. From 240bn euros spent in 2022, the period from 2026-2030 is estimated to require 660bn euros per year. These resources will be spent on investing in renewable generation capacity, grid modernization and expansion (including cross-border infrastructure) and *inter alia* in measures reinforcing the security of supply.

Figure 1.14 ▷ **Average electricity system cost by component and scenario in Europe, the United States and China, 2024-2035**



The transformation of electricity systems entails a shift in cost structure, from fuel and operational expenses towards upfront investments in clean technologies and infrastructure

Notes: MWh = megawatt-hour; MER = market exchange rate; O&M = operation and maintenance. CPS = Current Policies Scenario; STEPS = Stated Policies Scenario; NZE = Net Zero Emissions by 2050 Scenario. Grid-related costs include capital recovery costs for electricity transmission and distribution systems and grid operation and maintenance costs.

As reported by the Commission, most of these resources will be leveraged from private actors and in several jurisdictions, such resources are often levied from consumers. The IEA World Energy Outlook 2025 confirms how European electricity consumers bear an international cost-disadvantage with average electricity system costs higher than *key competitors* such as China and U.S.

Therefore, targeted support is necessary to contain such costs as part of the overall Union industrial policy aimed at improving CO2 emissions reduction, creating a stable demand for clean electricity and boosting the international competitiveness of its strategic industrial sectors. In particular, targeted measures, outlined below, shall address:

- Rising network tariffs, including the shadow costs of flexibility,
- Rising costs due to the public financing of investment support for investment in generation and security of supply.

➢ **<u>Affordable Network Tariffs</u>: Enable national governments to support its strategic energy-intensive industries in the form of network tariffs rebates**

Alongside wholesale prices, network charges make up 1/3 of the total electricity bill of an industrial consumer. Energy-intensive industries are often connected at TSO level, acting as balancing responsible parties and as providers, within specific limits, of ancillary services (*i.e., tertiary reserves, mFFR*). Additionally, given their baseload profile, such industries provide stability to the grid and visibility on the load to system operators, as well as act as market anchors of electricity demand.

The number of investments needed for 2030 to expand and to modernize electricity grids as the fossil-free electricity transition materializes is unprecedented, with 583bn euros and a yearly average expenditure of 78bn euros per year. Comparably, energy network fees, crucial for financing and costs-recovery, are projected to rise from 50% to 100% by 2050, and for several steelmakers

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increases of such scale have materialized already (*Agora, Grid Fee Outlook for the Netherlands 2045; EUROFER data)*.

Without targeted support, network fees can irremediably compromise the affordability of electricity consumption in strategic manufacturing sectors such as steel and their decarbonization. Accordingly, the EAP should reinforce the EC Recommendations on Future-Proof Network Tariffs[1] incentivizing governments to shield large energy-intensive consumers with baseload profiles, beneficial for grid stability, and amend existing state aid guidelines to allow public support in the form of rebates.

- **Energy Transition Costs: Mitigate the impact of the financing costs associated to investments support in new generation capacity and security of supply measures**

The renewable electrification of the EU system passes through the financing and roll-out of large-scale investments in renewable generation and in security of supply to ensure the safe and stable operation of the electricity system (*i.e., capacity mechanisms*). Through different degrees both types of investments will require massive public support, via two-ways CfDs for direct price support schemes and via capacity mechanisms to secure adequacy. In several jurisdictions such public costs are recovered via general budgets or taxation of specific consumers.

In line with the objective of unlocking affordable electricity to drive up the electrification of industrial processes and to safeguard their competitiveness, and considering the large amount of investments in new generation capacity that these sectors will drive (*i.e., only the steel sector will require access to more than 165TWh per year in 2030*) it is crucial that large industrial consumers exposed to international competition are shielded against such rising costs.

In particular, the relevant state aid framework should be amended to allow governments to apply CRM rebates for particularly trade and electro-intensive sectors and to prioritise the channeling of CfD captured revenues to households, SMEs and such sectors alike.

[1] European Commission Recommendations on *inter alia* network charges, 4024 (C 2025) para. 38 reminds that "*Special tariff regimes can be offered to specific classes of grid users such as energy intensive-users, prosumers, energy communities and bi-directional charging in justified cases. The NRA should provide objective grounds that these grid users, based on their consumption profile and the flexibility they offer to the overall system, have a lower impact on the overall cost of the electricity network*" – 2 July 2025.

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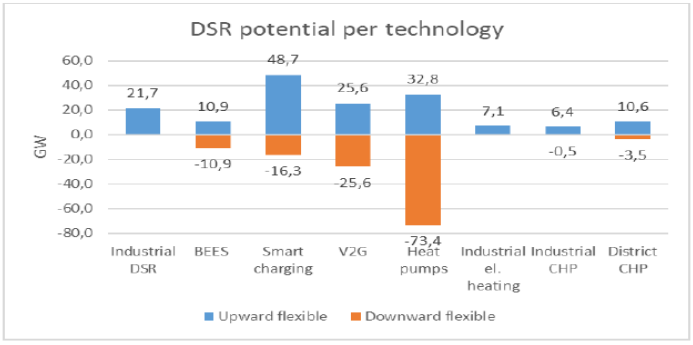
Flexibility: Safeguarding baseload industrial energy users and exploiting untapped potentials from more variable loads

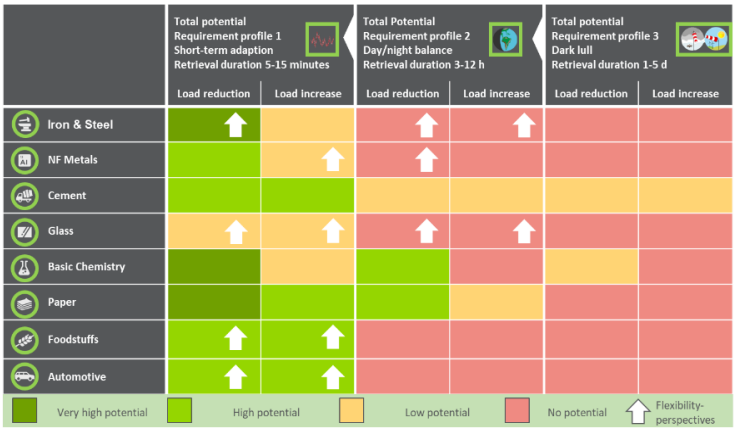
The European steel industry supports the focus and the effort of the European Commission in safeguarding electricity system functioning and stability via increased flexibility as more intermittent and decentralized energy generation points are gradually phased-in. The sector calls upon greater efforts to rapidly develop and deploy grid-level large scale electricity storage and in incentivizing flexible network users to contribute to shaving their demand in peak-price hours via market-based mechanisms properly remunerated and of voluntary participation.

Figure 18: Demand side response potential per technology



Source: 'Demand-side flexibility: quantification of benefits in the EU' (2022).

At the same time, there are clear risks of misleading expectations as regards the *possible* contributions toward flexibility from industrial processes, which not only do not hold the highest potential compared to V2G, batteries, buildings and EVs (*see Figure 18 of the European Commission, Staff Working Document accompanying the EMD reform 2023 as per Figure 18)* but have also major technical, economic and organizational limits (*Navigant, Eurofer low-carbon energy transition report 2023*).



As a crucial pillar of the EAP, initiatives regarding flexibility should build on the following recommendations for it to be a success:

- Safeguard industrial baseload energy consumers from the effects of network tariffs designed to reward short-term flexibility,
- Maintain voluntary participation of industry to demand-side response schemes,
- Map out at EU level network users based on their flexibility and potential distinguishing sectors and civil society' applications,
- Map out at EU level the class of consumers exerting the most pressure in wholesale markets peak-hours,
- Prioritise the untapped potential of other flexibility technologies such as DSR from electric vehicles, heat-pumps, storage, in national assessments of flexibility needs under the new electricity markets regulatory framework,
- Enable access to public support schemes for investments in fossil-free demand-side response for energy-intensive industries under the new rules adopted with the technical reform of the Union electricity markets design regulatory framework.

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Horizontal measures

- **Market-Design Alternative Models: Impact-assess alternative market design models and the effectiveness of the current design by at the latest June 2026 to deliver affordable electricity and overall system costs**

The EMD Regulation in Art.69(2) introduced a mandate for the Commission to adopt a report on *inter alia* short-term market functioning. At the same time, relevant technical studies from the JRC to the OECD Economic Survey 2025, Draghi's competitiveness report, show that with the current market design, fossil-fuels will continue to set the marginal price until beyond 2030, compromising affordability of electricity for households and industrial consumers (i.e., *price inefficiency*).

Evaluating and possibly redressing the impact of the current market design model with its spill-over effect *among others* on long-term contracts should be a core concern of the upcoming Electrification Action Plan (EAP). A thorough impact assessment of alternative market-design models such as the Price-Shock Absorber and **the Segmented Pay-as-Clear (SPAC)** shall be conducted, to examine the feasibility in this current market-design to effectively and truly decouple fossil fuel prices from electricity prices.

- **Transparency of Wholesale Price-Formation: Monitor at EU level the evolution of price-formation dynamics in short-term markets towards 2030, 2035 and 2050 as corollary of the electricity system transition**

Alongside CO2 emissions reductions, another key objective of progressing towards lower-cost renewable energy generation is the reduction of market prices as lower-or-near 0 marginal costs power plants gradually come on line.

Accordingly, to ensure that investments, public support and decarbonization efforts are all converging properly toward such a goal, the EAP should commit to the set-up of a tool for the monitoring of wholesale market price formation-dynamic evaluating and tracking the degree of displacement of fossil-fired power plants from the EU merit-order in parallel to rising investments in new low-cost power generation. This tool should help provide visibility at governance level on cost-reduction progress as new fossil-free GWs are installed and *inter alia* the effectiveness of public support provided, certainty for consumers and investors in clean technologies.

The JRC 2023 modeling exercise and the OECD Economic Survey 2025, together with Eureletric Powerbarometer 2025 have shown that transparency and visibility over price-formation dynamics in wholesale markets is attainable. The decoupling of fossil-fuel prices is at the core of the EU objectives to restore affordability since the adoption of the European Commission EMD reform proposal, passing through RePowerEU, the Clean Industrial Deal (CID) and the Action Plan on Affordable Energy (APAE).

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