



Antwerp Dialogue on Industrial Electrification & Competitiveness

Recommendations





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Introduction

The European chemicals (CEFIC), aluminium (European Aluminium) and electricity industry (Eurelectric) co-organised an Antwerp Dialogue on the topic of industrial electrification and competitiveness that was joined by relevant stakeholders from industry, the power sector, NGOs, unions, and think-tanks.

Energy-intensive industries are a **“vital part of the European economy and play a critical role in reducing the EU’s strategic dependencies”**¹ while contributing directly and indirectly to a large share of the European economy through downstream activities. Developments in energy prices and costs **“have had a strong impact”**¹ on their competitiveness. In addition, decarbonisation investments create additional costs for EU industry that need to be accounted for.

¹ [The Future of European Competitiveness](#)

To address these challenges, participants express full support for a European Industrial Deal to complement the Green Deal and keep high quality jobs for European workers in Europe.

One year after the peak of the energy crisis, **“the EU suffers from a major gap compared to its trade partners”**¹. The Antwerp Declaration in emphasizing the need for **“clarity, predictability, and confidence in Europe and its industrial policy”**¹, in the energy space calls for urgent action including reducing energy prices and costs, removing barriers to timely infrastructure development, ensuring strong public funding. In the short term particularly the prices and costs of energy are simply too high to compete. “Electricity retail prices – specifically those for industrial sectors – are currently two to three times those in the US and China”¹. Historically, retail electricity prices in the EU have been up to 80% higher than those in the US while moving around the same level as in China, impacting the business case, overall investment, and progressively cascading throughout the economy.

The extra-EU relocation, with subsequent loss of jobs and domestic resilience of the EU, has already started in certain Member States. Without dedicated industrial energy policies to redress high energy prices and costs, this trend is only set to increase. Against this background, **we view an EU Action Plan for Affordable Energy Prices as an essential pillar of the up-coming Clean Industrial Deal.**

In this context, participants discussed the root causes of the high energy prices and the costs faced by energy intensive industry across the EU vis a vis their international competitors, the potential effects of fully implementing the revised Electricity Market Design, and potential actions which could bring down the final cost of energy. Participants further addressed the urgent need to improve the EU’s industrial competitiveness and to accelerate direct and indirect industrial electrification, while at the same time contributing to the long-term goal of achieving a climate-neutral economy by 2050.

From that discussion emerged a set of policy recommendations that could be implemented in the short term and that have found broad consensus within the group. The discussion also addressed topics where stakeholders manifested diverging views. These included short-term solutions for industrial competitiveness, industrial exposure to wholesale price dynamics linked to fossil-fuels, and the adequacy of the revised market design in addressing such dynamics.

These recommendations are therefore not comprehensive, nor are they the panacea to the EU's competitiveness issues.

Rather, they offer some practically oriented action points to the incoming European Commission work on industrial electrification and competitiveness – a starting point to a necessary discussion, rather than its conclusion.

Recommendations

- 1. Remove Barriers to PPAs and other Forms of Market-Based Long-Term Contracts for Industrial Consumers 4
- 2. Boost Financing of Low-carbon Technologies for Industrial Consumption and Production..... 6
- 3. Taxes and Levies : Enabling Industrial Electrification, Competitiveness and a Level Playing Field 8
- 4. Development of Flexibility Options..... 9
- 5. Addressing Grid Fees, Permitting and Infrastructure Bottlenecks 10
- 6. Maintain and Create High-quality Jobs in the EU 13

1. Remove Barriers to PPAs and other Forms of Market-Based Long-Term Contracts for Industrial Consumers

The penetration of PPAs and other forms of long-term contracts such as Contracts for Difference (CfDs) is increasingly providing predictability to energy producers and consumers, encouraging investment in (clean) energy assets and supporting the EU's decarbonisation. However, limited availability in some EU Member States result in more volatility and higher average prices for baseload customers. High energy costs carried over from the wholesale market and exacerbated, in some instance, by the cost of matching variable renewable energy supplies to baseload consumption profiles of industrial consumers, are also hindering their up-take. The recent revision of the EU Electricity Market Design provides the means to remove some of the existing barriers. Its timely and full implementation plays an important role in this regard, but more needs to be done.

To address remaining barriers and support industrial electrification and competitiveness through the up-take of PPAs and other market-base long-term contracts, the participants to the Antwerp Dialogue recommend to:

a. Broaden access to clean power contracts by addressing the existing financing and economic barriers for industrial off-takers, including SMEs

The uptake of renewable and low-carbon PPAs for energy-intensive industries is currently hindered, amongst others, by costly and burdensome procedures to contract the needed long-term financial guarantees against payment default risks.

Art.19a of the revised Electricity Markets Design introduces the right sense of direction and obligations on Member States to provide solutions in reducing costs by enabling grouping of demand and to ensure that counter-party risks guarantees are available. More should be done at EU level to provide companies with alternative options in cases where these instruments do not materialise in time such as by creating a dedicated lending window within the EIB as centralised provider of financial guarantees to off-takers. New solutions under the CEEAG are also needed to support both decarbonisation efforts and to help these retain international competitiveness.

Mr Draghi's report highlights the potential role of "long-term contracts (PPAs and 2-way CfDs) to limit" exposure to wholesale market dynamics. Against that background, we call upon a swift and uniform implementation across the EU of the instrument provided in Art.19a(5) allowing project developers participating in a public support tender to voluntarily reserve a share of the generation for sale through PPAs, for instance contracted by energy-intensive off-takers exposed to international competition, or by SMEs.

b. Ensure public financing support to improve matching of industrial consumption where appropriate

Matching variable energy supply with less flexible demand raises challenges for baseload electro-intensive industrial processes. In particular, the additional costs and risks could be a key barrier preventing more industrial consumers from signing PPAs. In a number of countries markets are already providing some solutions thanks to the amount of supply flexibility available today, which allows for competitive cost of matching variable renewable energy supplies to industrial baseload consumption profiles.

There may be instances where new solutions under the CEEAG may be needed to directly support industry via national state aid schemes. These should be targeted, of temporary nature to reduce transaction risks and be granted separately from the market instrument in order not to distort the functioning of the overall power market. In addition, more flexibility needs to be developed both on the supply and, where possible, the demand side, as well as for storage, alongside new contractual tools.

c. Broaden access to clean power contracts by addressing systemic supply side bottlenecks to scaling renewables, low-carbon assets and grids

The scale-up of decarbonised energy assets and grids is multi-faceted. Swift implementation of the revised Electricity Market Design, alongside reinforcing the electricity grids, easing permitting procedures and adding interconnection capacity, will aid in bringing more renewables and low-carbon assets to market and – importantly – get that power to the point of consumption with the necessary grid infrastructure in place.

Despite EU legislation to that effect, barriers to signing multiple suppliers per delivery point remain. In line with the recent EMD reform, the updated article 4 should be enforced appropriately. That shall enable consumers to contract multiple suppliers per delivery point and thus better tailor their energy sourcing to their needs and enable its different (flexible) assets to play in the electricity markets. In addition, to complement market-based investments realised with PPA, EMD Article 19d on two way CfDs for investments should be adequately implemented and facilitate industrial decarbonisation targets.

d. Promote PPA designs that meet the evolving market needs of suppliers and consumers

Suppliers can help address volume and, depending on the contract, volatility risks for consumers through long-term contracts, including PPAs. Their development and market participation should be promoted.

In addition to long-term PPAs, medium-term (4-5 years) future contracts should receive sufficient attention. These contracts should go beyond the currently available peak-and-base models and allow for contracts that can factor in the intra-day variation of renewable energy sources.

Co-investment in renewable and low-carbon electricity assets by large industrial users in exchange for access to electricity at competitive cost could be another option to contract renewable or low-carbon power whilst facilitating investments in these assets. These can materialise through the setting up of platforms or joint ventures between electricity producers and large industrial consumers with similar consumption patterns. In all cases, due consideration needs to be given to derisking options for both the producer and the consumer.

e. Remove barriers such as the limited timeframe of long-term interconnection rights and excessively high financial guarantees

At present, EU Regulation requires long-term transmission right of only up to one year. This inhibits long-term planning and – by extension – renewable and low-carbon deployment and electricity market integration. In line with the recent EMD reform (updated Art. 9 of the Electricity Regulation), an impact assessment is underway as preliminary step to update the design of the Union's forward markets. In this regard, electricity TSOs can further play a role as providers of hedging opportunities across borders by issuing LTTRs with characteristics that are in accordance with market parties' hedging needs. High financial guarantees for the different parties involved (market players and TSOs) moreover inhibit their uptake.

2. Boost Financing of Low-carbon Technologies for Industrial Consumption and Production

Energy costs comparable to those faced by other global players is an essential pre-condition for a flourishing competitive EU economy and industrial electrification. Reducing the financing costs of decarbonised generation and infrastructure assets, industrial electricity procurement, and industrial electrification projects plays a central role in realising competitive prices in the medium to long-term. To that end, the participants to the Antwerp Dialogue recommend to:

a. Mobilise economic resources to support the penetration of electrification technologies

Accelerated electrification of energy intensive industry requires the mobilisation of funds to support the technological transformation in both the case of CAPEX intensive and OPEX intensive technologies. To that end it is necessary to unlock the necessary public and private resources to provide funding for electrification and decarbonisation of energy-intensives by increasing green funding programmes and amounts granted from other sources, inter alia such as State Aid, Competitiveness fund, and the Recovery and Resiliency Facility.

b. Promote use of improved forms of financial support during the market-ramp up of industrial electrification

To mitigate high costs during the market ramp-up of industrial electrification, public support may be necessary. We call for a new financial instrument, for example in the shape of a new 'Electrification Bank' to foster investments in direct electrification solutions, with a commensurate focus on off-take support that is financed at EU level and complemented through an 'auction-as-a-service' scheme.

It is important that support schemes:

- Are targeted and well defined to the needs of continuous industrial energy consumers including the time frame and also prioritise the funding allocation to the most cost-efficient electrification technology in a given project;
- Avoid cannibalisation of market-based contracts and not unduly affect the single market;
- Make a greater use of joint capex and opex support especially in the case of innovative decarbonisation projects such as provided e.g. by the Innovation Fund;
- Optimize renewables auction design with a focus on project delivery underpinned by revenue visibility for investors.
- Employ social conditionalities to maintain high-quality jobs in the EU.
- Avoid cross-subsidisation.

c. Facilitate access to investments in energy efficiency and clean energy generation and storage

Promote access to financial instruments such as credit guarantee schemes to companies, including SMEs, that stimulate investments in clean energy generation and thereby access to decarbonised electricity. Promote EU regulatory sandboxes within new 'electrification acceleration areas' in order to more effectively support already electrified industrial capacities as well as industrial electrification projects across different industrial sector/uses. Such electrification acceleration areas could similarly to RES acceleration areas provide for streamlined permitting procedures for industrials, as an example.

3. Taxes and Levies: Enabling Industrial Electrification, Competitiveness and a Level Playing Field

Taxes, levies, and regulatory costs are generally lower in other regions of the world, contributing to the risk of re-location of industrial processes and complicating the business case of industrial electrification and energy-intensives more broadly. Taxes on electricity in the EU on average are respectively 3 and 3.5 times higher for household and industrial consumers than the respective taxation on natural gas. In the interest of promoting industrial electrification and competitiveness, the tax burden on electricity will need to decrease.

On the contrary, in the coming years, taxes and levies are expected to make up an even greater share of total electricity. To help address these challenges, we recommend to:

a. Encourage EU Member States to make full use of ETS Indirect cost compensation funds to protect electro-intensive assets against relocation risks

ETS indirect cost compensation is a key tool to protect trade intensive and electro-intensive industries against carbon leakage. To date, not all EU Member States make full use of the State Aid provisions allowed under the revised ETS Guidelines and very few member states spend the maximum amount of 25% of their auction revenue on compensation. The use of such funds remains limited and subject to national governments' fiscal capabilities.

Therefore, the EU Commission should maintain the practice of indirect cost compensation beyond 2030 and strengthen it to accurately reflect the evolving economic circumstances impacting the competitiveness of European industry.

The EU Commission should also work closely with national governments to make full use of the aid provisions allowed in the ETS Guidelines, increase the resources available and encourage them to allocate sufficient funds to support existing electro-intensive industries exposed to international competition.

b. Align the EU Energy Taxation Framework with the objectives of climate neutrality and the need for internationally competitive energy costs

The energy taxation framework needs to be aligned with the EU's objective of climate neutrality and to ensure internationally competitive energy costs. For example, network charges include several hidden taxes depending on each EU Member State. The EU Commission should pursue a mapping study outlining the level of taxes in each EU Member State, distinguishing which taxes are related to the functioning of the electricity system and which ones are related to other services of general interest, such as social policies, or unrelated to it.

c. Strengthen state aid provisions vis-à-vis energy and environmental objectives

Energy intensive consumers can – and should - be protected against levies and fees charged to finance energy and environmental objectives, following section 4.1.1 of the State Aid Guidelines on Climate, Energy and Environment (CEEAG). These provisions and national schemes should be maintained and the CEEAG be strengthened to reduce the relocation risk due to uncompetitive energy costs compared to international competitors.

4. Development of Flexibility Options

Flexibility solutions are essential for balancing supply and demand, integrating renewable energy sources, and enhancing grid stability. Recognising and appropriately valuing flexibility services ensures that the benefits of flexible resources are fully realised, promoting efficient energy system operation and effective price signals, ultimately supporting industrial competitiveness and electrification.

On the supply side, flexible generation and storage solutions can respond rapidly to fluctuations in renewable output, while on the demand side – where possible technically and economically -, responsive loads can shift consumption to periods of lower demand or higher renewable availability. Industry’s core business is to produce commodities (metals, chemicals, paper etc.) with due consideration of commercial contracts. With that in mind, demand-side flexibility from industry, particularly baseload ones, faces economic barriers, technical including safety concerns, and organizational constraints.

Still, by activating flexibility to the degree possible on both ends of the energy equation – voluntarily and with adequate remuneration -, we facilitate the large-scale integration of variable generation capacities, ensuring the energy transition in a most cost-efficient way for both demand and supply.

To scale flexibility resources in the EU, the participants to the Antwerp Dialogue recommend to:

a. Ensure broad access to voluntary flexibility for all market participants and maximise the liquidity of electricity markets

Participation to all markets should remain voluntary, adequately remunerated, and open to all market participants, both on the supply and the demand side, and not limited only to new investments for example in non-fossil flexibility support schemes (EMDR Art. 19g-h). Seamless and interoperable access to data at the meter and behind the meter can aid in the scale-up of flexibility options. The demand side will voluntarily provide flexibility only if it gets the appropriate economic incentives to arbitrate between its own activities (producing more or fewer goods) and of valuing its flexibility on the markets (modifying electricity consumption). The risk of business losses caused by reducing industrial production, potential damages to the installations and the costs of restarting the installation will be priced within that framework.

Flexible connection agreements, static time of use tariffs or dynamic electricity price contracts can further provide price signals in favour of scaling flexibility resources, provided technical and commercial limitations allow it (see also the last section). Service providers (including aggregators) can help in facilitating flexibility market development and -access. The Electricity Market Design provides a general framework for ensuring broad access to flexibility in the different electricity markets and capacity mechanisms.

b. Support the efficient and timely roll-out of flexibility resources

While demand-side management can offer benefits to the power system, it also incurs additional, at times significant, costs for companies including through production losses, investments in additional storage and/or production capacities, as well as adjustment costs. Sufficient remuneration would be needed to overcome these costs, where technically feasible.

Accurate price signals provide invaluable incentives in favour of deploying flexibility efficiently, where technically and economically feasible. Market price signals – especially if flattened by taxation - may be insufficient to ensure optimal investments in flexibility resources. On the supply side there is a need to promote and accelerate new renewable and low-carbon energy projects in line with the 2030 targets, decarbonised dispatchable power generation, as well as storage solutions. On the demand side, support could also be needed, especially in those cases where already electrified industrial processes or industrial electrification of existing processes goes hand-in-hand with the development of flexibility solutions on industrial sites.

c. Identify and map flexibility potential by gathering relevant information and data flows

Such functions would reduce transaction costs and information barriers. In this context it is key to map EU-wide flexibility needs, including their economic barriers and available resources, their marginal costs, value added, and technical feasibility for different industrial sectors and processes – to help guide incentives and investments. This is also foreseen in the National Flexibility Assessment currently under development. Furthermore, an EU level data platform for energy and flexibility needs could be established. The information from that platform may further inform best practices and provide visibility for investments – both for traditional energy players and industrials.

5. Addressing Grid Fees, Permitting and Infrastructure Bottlenecks

Grids on both the distribution and transmission level are the backbone of the electricity system and their cost-effective development, be it physical expansion or modernisation, is instrumental in supporting industrial electrification, as well as competitiveness and climate ambitions. In this regard we recommend to

a. Recognise grid reinforcements and build out according to the integrated planning provisions of the EU Energy Market Design. Accelerate and streamline grid permitting including grid connection procedures and usage of existing capacities

EU public funding and grants, blended with private finance, must prioritise electricity infrastructure needs with the two main factors in mind: existing capacity issues manifesting in structural congestions AND that the grid is aging (on the distribution side alone, 30% of assets are over 40 years old, will be 90% by 2050 if we don't act). Appropriate incentives and dedicated funds for replacement and renewal are needed to ensure a reliable and secure supply of electricity to European businesses, while optimising grid capacity.

To this end, there is a need to accelerate the implementation of what has been agreed in the network development plans – both at national and EU level. EC recommendations and ACER Guidelines for NRAs to facilitate anticipatory investments and to remove investments caps need to be published and implemented, as well as the Clean Energy Package (CEP), the revised Electricity Market Directive and the Grid Action Plan. Also, grid permitting to improve the connection of industrial consumers needs to be accelerated and streamlined. Innovative solutions such as an overriding public interest similar to the one applied for renewables deployment can ensure smoother integration. In addition, digitalisation can help reduce administrative burden and reduce costs. Last but not least, capacity building in public administrations is essential to reduce lead times.

b. Make use of available financing and non-financial mechanisms to support grid expansion while maintaining international competitiveness for all grid users

The annual investment in distribution grids could increase between EUR 55 and EUR 67 billion between now and 2050 so as to deliver RePower EU and the Grid Action Plan. The costs of transmission fees are similarly increasing, with adverse effects on the competitiveness of EU industry. Notably, grid fees will rise if the projected cost increases are not balanced out by increasing amounts of off-take. Securing financial resources for the grid build-out, whilst minimising the impact on total energy costs to consumers will be crucial. It is important to ensure that adequate methodologies are developed to ensure that such costs are socialised among grid users and that these consider re-location risks for trade exposed manufacturing industries.

The EU Commission should assess as a matter of priority the impact of grid charges and capacity mechanisms on energy intensive industrial consumers exposed to carbon leakage and propose appropriate changes in the CEEAG and support for network tariffs in particular at transmission level to address these. These provisions should accommodate the possibility for industry to benefit flexibly from low-price hours during the day and reward the balancing service that industrial users can provide to the grid.

² [Double investments in power distribution or lose Europe's race to net-zero](#)

In addition, more long-term and anticipatory investment frameworks for grid investments are essential for future cost-efficient infrastructure modernisation. Public support measures that attract private capital, such as EIB guarantees and EU and national funds will be instrumental.

The revision of the Connecting Europe Facility and the TEN-E with proper focus and resources for electricity infrastructure, duly including distribution grids, are adequate regulatory tools. A dedicated programme in the next Multiannual Financial Framework (MFF) to support decentralised grid projects should be considered as well.

c. Provide better visibility on planned grid developments as well as on planned new demand centres. Optimise grid connection procedures and usage of existing capacities

First, this should stem from a coherent integrated use of existing good practices in strategic planning such as the ENTSO-E TYNDP, as well as TSO and the DSO national development plans as required per Clean Energy Package. Second, this could result from the accelerated deployment of smart meters, which are essential for optimally monitoring and managing the grid. Lastly, initiatives like the establishment of electrification acceleration zones linked with an upcoming Electrification Action Plan, can also improve stakeholder visibility on either side of the meter. Moreover, flexible connection agreements (FCAs) and advanced smart technologies could reduce grid connection times and national authorities/NRAs would need to develop clear terms and conditions for these. FCAs should remain voluntary. Further, use of existing infrastructure capacities should be optimised through existing and proven measures. FCAs need to be developed in parallel with local flexibility markets to fully unlock their potential. While FCAs help with faster and more dynamic grid access, the development of robust local flexibility markets ensures that the energy system can handle the increased variability and demand efficiently, without overburdening the grid.

d. Further facilitate the proper, market-based use of cross-border interconnectors and their capacity reinforcement

This is essential not only for security of supply and internal energy market facilitation but also the creation of an internal EU market for PPAs. Regulatory vehicles for this are again the swift and thorough implementation of EMD the Clean Energy Package which was adopted already in 2019 but still not implemented adequately in many EU Member States including secondary legislation such as the relevant Network Codes. Interconnections play a key role to integrate onshore and offshore renewables and low-carbon assets, and access to energy at affordable prices within Europe as well as from third countries. In this regard, reestablishing a system of price coupling between the Internal Energy Market (IEM) and Great Britain market is key to enable EU's ambition for a competitive green transition and unlock investments in offshore investments and grid infrastructure to fully exploit the renewable energy potential in the North Seas, that will benefit both European industry and end-consumers.

6. Maintain and Create High-quality Jobs in the EU

a. Channel investments into good quality jobs through social conditionalities for new government funding programmes

Accelerating the decarbonisation of European industry while preserving its competitiveness must go hand in hand with maintaining jobs ensuring just transitions and social welfare in the Union. Scaling up new industrial electrification technologies, building up the power grid and boosting production capacity of existing industries will require a qualified workforce with good quality jobs. Therefore, it will be crucial to allocate financial resources at national and EU levels to address skill shortages and re-skill workers through training, and lifelong learning programmes. Social conditionalities should be integrated into new government funding programmes. These could include a commitment to social dialogue and collective bargaining with the workforce and trade unions, as well as investing in vocational education, training and upskilling.