

How to facilitate industry electrification: a proposal for an EU Electrification Bank

A Eurelectric Position paper

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:

- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

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Electrification & Sustainability Committee
Customers & Retail Services Committee
Markets & Investments Committee
WG Wholesale Market Design & IF
WG Sustainable Finance
WG Industrial Competitiveness & Innovation
WG Electrification & Energy Efficiency

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KEY MESSAGES

- On 4 April 2024, Eurelectric signed the Antwerp Declaration, showing the power sector's clear support for a strong, competitive and decarbonised industrial base in Europe followed by detailed policy recommendations jointly agreed between the energy intensive industries and the power sector. The achievement of Europe's energy and decarbonisation objectives hinges on a competitive industry.
- Industrial sectors have three main paths to achieve climate neutrality: carbon capture utilisation and storage (CCUS), decarbonised molecules (such as biomethane and hydrogen) and industry electrification¹, with direct electrification being the most cost- and energy-efficient option in most cases. Despite this,² regulatory and financial incentives for direct electrification remain insufficient to date.
- High upfront investments, long investment cycles and lock-in effects through ongoing incentives for fossil-fuel based processes are key barriers for industrial consumers to electrify their heat processes. Under the forthcoming Clean Industrial Deal, swift action to de-risk and facilitate investments into industrial processes based on electricity is needed to improve the case for electrification across relevant industrial sectors.
- Industrial electrification requires an electricity supply that is competitive compared to other regions, and compared to other energy resources such as gas and oil.³ Recent increases in energy prices and costs have had a strong impact on their competitiveness, as highlighted in Mario Draghi's report on the future of European competitiveness.⁴ Policy needs to step up to prevent this dynamic from causing the relocation of industry outside of the European Union.

¹ European Commission: Masterplan for a competitive transformation of EU energy-intensive industries enabling a climate-neutral, circular economy by 2050, 20 November 2019, [Link](#).

² Many studies have outlined the high potential of direct electrification of industrial heat processes, which could reach almost 90% in 2040, electrification rates for industry remain flat at around 33%.

³ Electrification Alliance: Clean Industrial Deal, Policy Paper, p.2, [Link](#).

⁴ Mario Draghi: The future of European competitiveness, September 2024, p.92, [Link](#). Cited in Antwerp Dialogue on Industrial Electrification & Competitiveness, [Link](#).

- Our proposal for a European Electrification Bank addresses these policy gaps by centralising existing and new funding opportunities at the EU and Member State level in order to efficiently cover the funding gap experienced by industrial consumers when switching to electrification.
- Through a single, advertised point of access for industry, the Electrification Bank will create synergies between different risk-sharing instruments and help gather a critical mass of expertise.
- In parallel, we call on regulators to address regulatory bottlenecks that disincentivise investments into electric processes, such as timely deployment of electricity network capacity, fossil fuel subsidies, the unequal treatment of electricity compared to natural gas under the Energy Taxation Directive (ETD), and outdated state aid rules in the Climate, Energy and Environmental Aid Guidelines (CEEAG).

Introduction: the case for an Electrification Bank

By the end of February 2025, the European Commission is set to publish its proposal for a Clean Industrial Deal, designed to reinforce the EU's industrial competitiveness without jeopardising its climate ambition under the Green Deal. This initiative provides an opportunity to align policy with ambition when it comes to industry electrification and to implement efficient public support for the transformation of Europe's industrial base.

On 4 April 2024, Eurelectric signed the Antwerp Declaration, recognising the important role the power sector can take to support a strong, competitive and decarbonised industrial base in Europe.

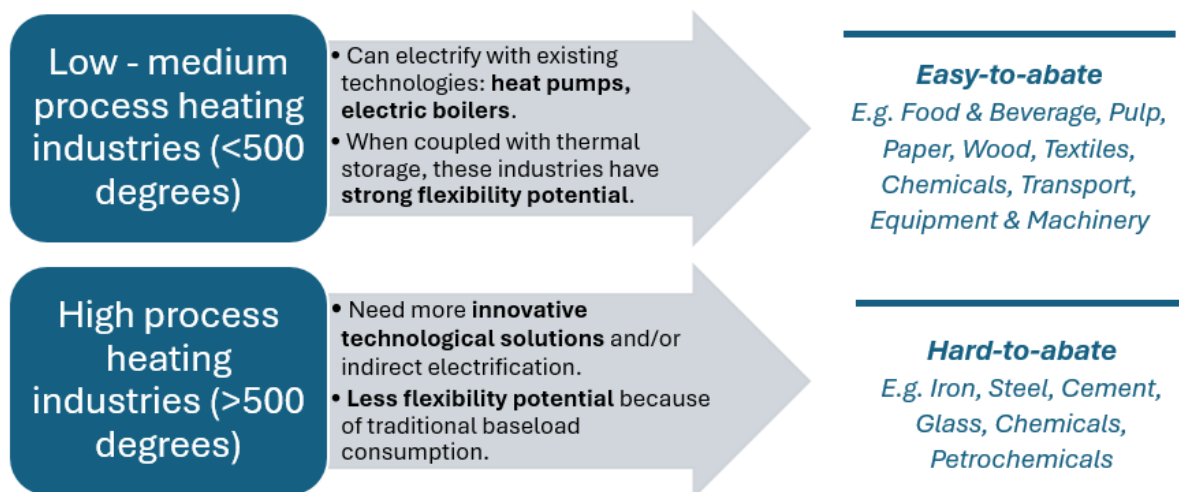
The role of electrification in reaching the EU's climate targets has been recognised in the European Commission's impact assessment for a 2040 climate target.⁵ As the EU electricity mix decarbonises, direct electrification becomes the most cost-efficient way to reduce emissions in various end-use sectors. At the same time, however, electrification rates, indicating the share of electricity consumption in final energy consumption, have remained stagnant at 23% overall and around 33% in industry for nearly the past decade.

Different alternatives are currently being considered to decarbonise industries' energy supply, including decarbonized molecules (such as biomethane and hydrogen) and CCUS. While all low-carbon solutions will be needed to achieve net zero, some of these technologies are less efficient than direct electrification, remain at different stages of deployment and continue to reflect high marginal costs depending on the industrial uses they apply to. Therefore, their application should be focused on hard-to-abate sectors where electrification does not answer industry needs, such as certain high-temperature processes (typically above 500 degrees Celsius).

Direct electrification solutions already exist for certain high temperature processes, however, there are significantly more commercially mature and competitive technologies available on the market for industrial sectors with low-to-medium temperature heat processes (below 500 degrees Celsius), which can be deployed today.⁶

⁵ European Commission: Communication on Europe's 2040 climate target and path to climate neutrality by 2050, 6 February 2024, [Link](#).

⁶ Compass Lexecon study on Reviving Europe's Industrial Power



So why is industry not deploying those technologies? The energy crisis has deeply shaken the EU's industrial base, with strong impacts on energy prices. Aggressive fiscal policies implemented by competing jurisdictions have created additional pull-factors to relocate their production abroad. These points add up with knowledge gaps and technological barriers for more advanced solutions. Other project-related factors, including high upfront costs, the amortisation time of certain electrification technologies and the spread between electricity and fossil energy prices have impacted the attractiveness of electric solutions. In the exceptional context of the energy crisis, high prices have thus led to a reduction of electricity demand from industry.

Reversing this trend requires decisive and coordinated action to change the perception of risk associated with investments into the industries' switch to electrification. As the electricity sector invests vast amounts into the construction of additional clean electricity production and infrastructure, it is crucial that this trajectory is embedded into a coherent cross-sector strategy involving industrial off-takers. We need to add a demand pull to the supply push. Recent studies have reported that industrial heat processes could be electrified with new and innovative solutions as much as 90% by 2035.⁷

We therefore propose the creation of a European Electrification Bank to act as a one-stop-shop for industries transitioning to electrified heat processes, allocating support that will close the funding gap between fossil-based reference technologies and their electrified alternatives. Additionally, this model would rely on de-risking solutions from the European Investment Bank (EIB) and a favourable regulatory and tax environment at the national level to create the much-needed level playing field.

⁷ Compass Lexecon study on EIs competitiveness Full Report, 2024, slide 22, [Link](#)

This proposal actions the following recommendations of the Antwerp Dialogue:

1b. 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.

2b. 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:
 - o 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;
 - o Avoid cannibalisation of market-based contracts and not unduly affect the single market;
 - o 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;
 - o Optimize renewables auction design with a focus on project delivery underpinned by revenue visibility for investors.
 - o Employ social conditionalities to maintain high-quality jobs in the EU.
 - o Avoid cross-subsidisation.

A one-stop shop for industry

Currently, CEEAG includes possibilities for Member States to provide aid for industrial decarbonisation, basing the economic principle on the ‘funding gap’ between business-as-usual and low-carbon processes. According to the State aid repository, of the 57 CEEAG initiatives, only nine State Aid approvals are directly linked to industrial decarbonisation.⁸ In addition, Member States have extensively relied on the Temporary Crisis and Transition Framework (TCTF), under Section 2.6, to provide aid limited to CapEx for industrial decarbonisation projects.⁹

Although State aid at the Member State-level is a necessary tool, a more coordinated solution at the EU level is urgently needed to centralise expertise, funding and additional de-risking tools.

An EU Electrification Bank could provide this one-stop-shop for industry’s transition to electrified heat processes by allocating temporary and conditional support to close the competitiveness gap between fossil-based reference technologies and their electrified alternatives, mitigating the initial strain on industries. The Electrification Bank should provide compensation for critical CapEx, including electrified technology deployment and costs related to the reinforced grid connection of the industrial site. In addition, certain OpEx related to re-skilling, critical maintenance and the cost of electricity should be temporarily covered during a transition period. The deployment of on-site renewable generation should not be within scope.

Our proposal for an Electrification Bank does not aim at creating a physical investment firm. Instead, it would be a financing instrument, which aims to centralise existing and new EU and Member States’ funding opportunities for industry electrification through a single, advertised point of access. This instrument would be managed internally by European Commission services, combining different tools including dedicated calls for funding through a competitive bidding process to ensure a fair and efficient distribution of funds.

Its expertise could rely on a new Electrification Forum composed of relevant stakeholders in charge of monitoring and analysing industries that require timely support to transition and identifying the existing market barriers. The information gathered via the Forum would then feed into the definition of appropriate criteria for the competitive bidding processes in the context of the Electrification Bank. The criteria withheld would be reflected in detailed Terms of Reference to be designed and consulted on by the European Commission.

⁸ Compass Lexecon study on Ells competitiveness Full Report, 2024, slide 62, [Link](#)

⁹ Consolidated TCTF, [Link](#).

Eligibility criteria

Eligibility criteria for funding under the Electrification Bank should differentiate between industrial consumers based on the segmentation of heat processes. As outlined above, industrial consumers that seek solutions to electrify low-to-medium-heat processes already have access to commercially mature technologies, such as large-scale heat pumps or electric boilers. Conversely, industries with high temperature heat processes require more innovative solutions than currently available.

In order to accurately reflect this distinction, there could be separate calls under the Electrification Bank for low-to-medium heat process industries and for those within the high-heat segment, taking into consideration different geographic specificities. Different funding slices and adapted support designs would, therefore, be made available for both mature and more innovative electrified heating solutions as a result of similar projects only competing against one another. This model also has the potential to stimulate more innovative technology solutions for the industrial actors operating within their respective segment.

Project applications should contain a credible electrification strategy backed by a quantitative business case and impact assessment. The impact assessment should clearly outline the level of support needed to bridge the competitiveness gap associated with electrifying for a period of up to ten years. It should also evaluate the industry's flexibility potential, identifying opportunities to optimise energy use, which can be factored into the total cost estimation.

Furthermore, applicants could commit to long-term electricity contracts, such as a PPA for the procurement of a portion of their electricity supply. This would support long-term price stability for the applicant while advancing the decarbonisation of the electricity grid. As outlined below, the EIB can be leveraged to de-risk such long term contracts and to mitigate the off-taker risk which industrial consumers face.

Auctions under the Electrification Bank should consider the existence of regional specificities. Industries in the EU are exposed to different electricity price levels, reflecting differences in key cost components such as commodity prices, differences in underlying technologies and different intra-day and long-term electricity load curve shapes. The auction design needs to strike a balance between these considerations and selecting the most efficient projects.

Furthermore, applicants from the entire European Economic Area should be considered eligible to funding to ensure a level playing field across the single market.

Sources of funding and competitive allocation

Eurelectric supports a coordination of funding at EU level, combining both European and national funds to maximise impact.

The exact source of funding should be further assessed by the European Commission, leveraging on unspent funds. To ensure fairness, however, it should be ensured that unspent funds from the current Multiannual Financial Framework (MFF) and the Recovery and Resilience Facility (RRF) corresponding to a specific Member States will be re-allocated to electrifications projects only from that Member State.

According to a recent study carried out for the European Parliament Committee on Regional Development, the average absorption rate at the end of 2023 for all structural and investment (ESI) funds was around 90%.¹⁰ However, eight countries that account for more than 30% of the total resources were below this average, including Spain, Italy, the Netherlands and Denmark, showed rates even lower than 80%.¹¹

In addition to a more efficient uptake of ESI funds, at least five EU funding mechanisms can be considered for investments into industrial manufacturing sectors seeking to switch to low-carbon processes: the Innovation Fund, Horizon Europe, Recovery and Resilience, Just Transition Fund and the Modernisation Fund. The upcoming Competitiveness Fund should also be made available for project bids under the Electrification Bank.

It should be ensured that funding under the Electrification Bank can be combined with other sources of available funding. While the main objective of funding under the Bank consists in enabling coverage of funding gaps faced by mature projects, the increase of financing costs following the energy crisis raises the need to cumulate different support programmes while ensuring it does not lead to over-compensation and avoiding a subsidy race among Member States.

AUCTIONS (EU pillar)

Auctions provide a competitive and transparent process to allocate EU funds for dedicated projects, especially when they involve technologies that are similar or at least comparable for ranking purposes.

In the context of electrification, auctions would allow for the ranking of projects based on a single cost metric, such as EUR/MWh of heat. This metric would ensure a level of comparability among the variety of electrification solutions being proposed.

Such auctions would be performed under a selected European Fund, leveraging on proven and robust procedures used also in the context of the Innovation Fund with the Hydrogen Bank.

¹⁰ Study on Absorption Rates for European Parliament Committee on Regional Development, p 24. [Link](#).

¹¹ Ibid.

AUCTIONS-AS-A-SERVICE (National pillar)

Member State resources will be critical to increase the level of available funding under the Electrification Bank to a meaningful level. For this reason, the Electrification Bank should rely on an ‘auction-as-a-service’ scheme as introduced in the context of the Hydrogen Bank to maximise the utility of auctions performed at EU level.¹²

The ‘auction-as-a-service’ scheme enables Member States to finance additional projects participating in Electrification Bank auctions after the EU funds budgeted for a given call have been allocated. This allows Member states to identify competitive projects on their territory that have not secured EU funding without having to organise a separate national auction, and to benefit from the expertise collected in the Electrification Forum. Reliance on EU funding procedures additionally allows for a streamlined State aid approval process for the national resources allocated under the Electrification Bank, since the auctions are designed in line with the Guidelines on State aid for climate, environmental protection and energy.

However, for national funding under the Electrification Bank to meet the needs of industry in terms of both capital and operating expenditures related to electrification, targeted changes to EU state aid rules are necessary. The upcoming review of the CEEAG and the GBER should therefore include the possibility for recipients of state aid under the Electrification Bank to benefit from temporary compensation for operating costs.¹³

The Hydrogen Bank: a blueprint for the Electrification Bank?

The **Hydrogen Bank** helps unlock private capital for the scale-up of hydrogen production in Europe by awarding a fixed premium in EUR/kg of verified and certified hydrogen to the winning project of a competitive bidding process or auction. These auctions are conducted under the EU’s Innovation Fund. Funding under Hydrogen Bank auctions is paid for up to 10 years.

Member States can additionally leverage Hydrogen Bank auctions to allocate national State aid resources to hydrogen production. Under the possibility of ‘Auction-as-a-Service’, individual countries provide an additional budget that is allocated to national hydrogen production based on the auction results, thereby saving administrative costs and ensuring compliance with the CEEAG which apply to State aid for climate-friendly projects.

A key distinction between the Hydrogen Bank and a future Electrification Bank lies in the product or process to be awarded support. While the Hydrogen Bank supports a single commodity (decarbonised hydrogen), regardless of its use, the Electrification Bank needs to allocate support for an electrification solution and certain associated costs. The design of financial support under the Electrification Bank should therefore be tailored to clustered industrial applications.

¹² See e.g., European Commission: Auctions-as-a-Service for Member States, Concept Note, [Link](#). For a specific example, see Joint EU-Germany statement on Germany’s participation in the European Hydrogen Bank “Auctions-as-a-Service” scheme, 20 December 2023, [Link](#).

¹³ This proposal aligns with the Electrification Alliance proposal for a Clean Industrial Deal. See: Electrification Alliance, Clean Industrial Deal Position Paper, p.3, [Link](#).

DE-RISKING SUPPORT

In the context of the Electrification Bank, the expertise of the EIB can help to ensure the viability of electrification projects and to further improve their risk profile, thereby allowing them to raise additional private capital sources. The EIB should therefore be closely involved with the European Commission services in the vetting and implementation of projects under the Electrification Bank.

Targeted de-risking measures should leverage on the EIB's tested toolbox of financing instruments, including budget guarantees, equity investments or loans.

The supply of electricity at a competitive price is a key factor for industrial investments into electrification. Considering the importance of PPAs in ensuring a reliable electricity supply for industrial consumers, the EIB should be closely associated in the design of appropriate funding solutions under the Electrification Bank.

In addition to the financial support awarded to Electrification Bank funding recipients, the EIB should allocate budget guarantees to help securing stable electricity supply through long-term PPAs and support Member States in adopting similar measures. By securing the industrial consumer's creditworthiness, adequate guarantee schemes can reduce the market barriers which prevent industrial consumers from signing PPAs, while ensuring effective price signals remain on the electricity market.¹⁴

Lastly, the EIB could rely on its network of financial intermediaries in Member States, such as InvestEU implementing partners, which have a strong track record of cooperation with industrial players.

Flanking support measures

As the Electrification Bank represents an opportunity to coordinate EU and national measures, Member States have a key role to play.

First and foremost, national measures should include a favourable fiscal treatment of electricity and incentives to move away from fossil fuels, as planned in the Energy Taxation Directive (ETD), which remains under negotiation. Overall, it is estimated that Member States' subsidies for fossil fuels amount to over €55 billion per year, with most subsidies benefitting three sectors: industry, transport and agriculture.¹⁵

Alongside this, a significant portion of revenues generated at the national level by emissions trading system (ETS) carbon allowances should be re-directed back to industrial decarbonisation. Total auctioning revenues generated under the ETS system amounted to €43.6 billion in 2023, of which €33 billion went directly to Member States.¹⁶

¹⁴ See, for example, EIB: Developing potential financial instruments and advisory solutions to stimulate more investment in renewable energy generation by means of commercial power purchase agreements, 19 January 2023, [Link](#)

¹⁵ 2022 Report by the European Court of Auditors on Energy taxation, carbon pricing and energy subsidies. [Link](#).

¹⁶ European Environment Agency data on ETS revenues, [link](#).

Major electrification projects should also apply to the Important Projects of Common European Interest (IPCEI) status to coordinate national State aid in their regard, highlighting common benefits of technology switching and of electricity use.

That said, taxation policy is not the only instrument affecting energy use, and the challenge is to find the right mix between regulatory and financial measures. In order to employ this holistic approach, Member States must raise awareness through targeted campaigns about the collective benefits of electrification in terms of climate change mitigation and prosperity.

Conclusion

The electrification of industrial processes is essential for Europe to meet its decarbonisation targets while strengthening industrial competitiveness under the Green Deal. However, the transition remains hindered by high upfront costs, long investment cycles, national tax regimes and further burdens on the electricity supply.

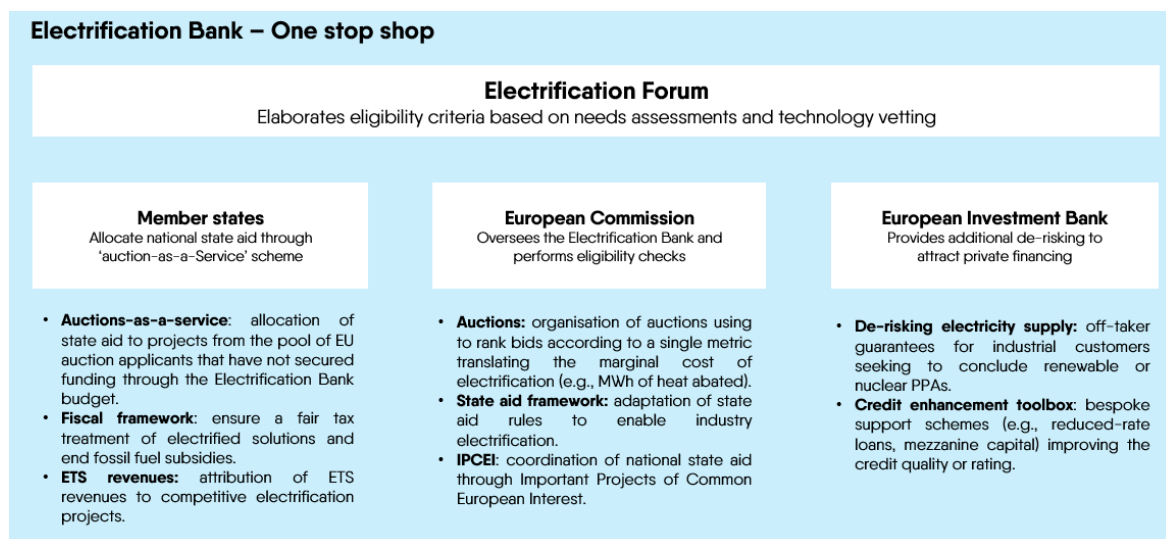
To overcome these barriers, an EU Electrification Bank should be established as a central pillar of the forthcoming Electrification Action Plan at the beginning of 2026, in close coordination with the Clean Industrial Deal. This dedicated mechanism would streamline access to funding, consolidating existing EU and national financial support into a single, simplified framework. By providing targeted support, the Electrification Bank would accelerate the electrification of industrial heat processes and ensure its viability to remain competitive.

Industrial electrification requires an electricity supply that is competitive compared to other regions and compared to other energy resources such as gas and oil. Recent increases in energy prices and costs have had a strong impact on their competitiveness, as highlighted in Mario Draghi's report on the future of European competitiveness. To prevent the relocation of industry outside of the European Union, policy needs to step up to mitigate the funding gap while continuing to reduce the overall cost of the electricity system through investments in grid infrastructure, expanding fossil-free generation capacity and enhancing flexibility and storage assets.

Electrifying industrial processes will improve energy efficiency, reduce operational costs over time and enhance energy security by lowering reliance on imported fossil fuels. By supporting industries in this transition, Europe can create a more resilient and cost-effective industrial base, better equipped to compete globally in a decarbonised economy.

ANNEX

1. Graphic illustration of the Electrification Bank



2. Direct electrification: a more mature, energy-efficient and cost-effective solution for low and medium heat processes

Recent studies highlight the high potential of electrification for industry: Compass Lexecon finds that the technical electrification potential of industry could reach 90% of in 2035. For low and medium temperature processes (food, paper, certain chemical processes), electrification is already achievable using mature technologies, like heat pumps and electric boilers.

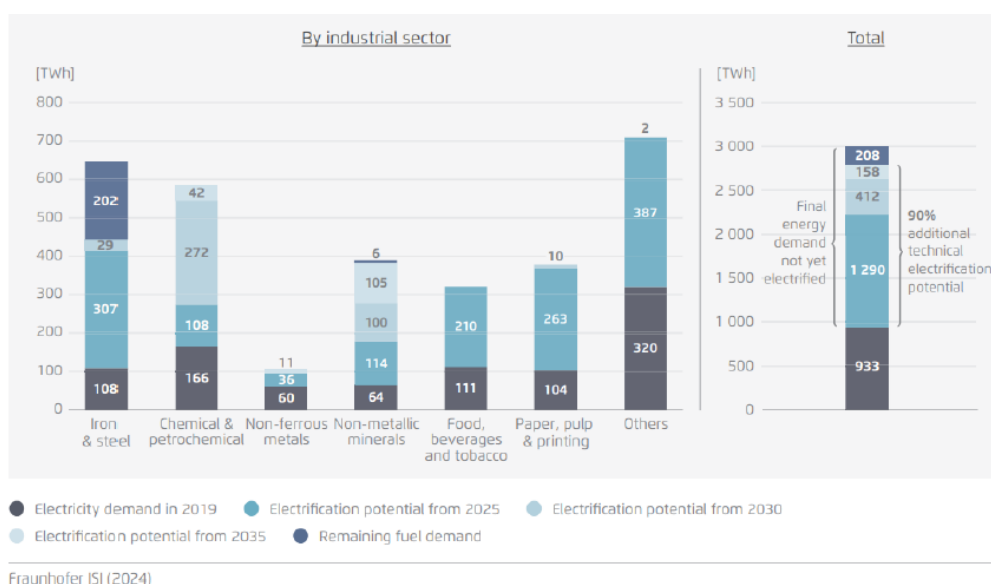


Figure 1 Electrification potential of EU industrial sectors. Source: [Agora Industry](#)

Furthermore, electrification reduces the final energy consumed due to higher efficiency compared to indirect electrification (e.g., hydrogen production using electricity via

electrolysis). Under direct electrification, industry consumption of electricity would increase from currently 933 TWh to around 2,800 TWh between 2019 - 2035. By contrast, industry decarbonisation via indirect electrification relying exclusively on hydrogen would increase electricity consumption to approximately 3,800 TWh. This means that direct electrification can reduce the additional electricity needed by 33% compared to an indirect electrification scenario.

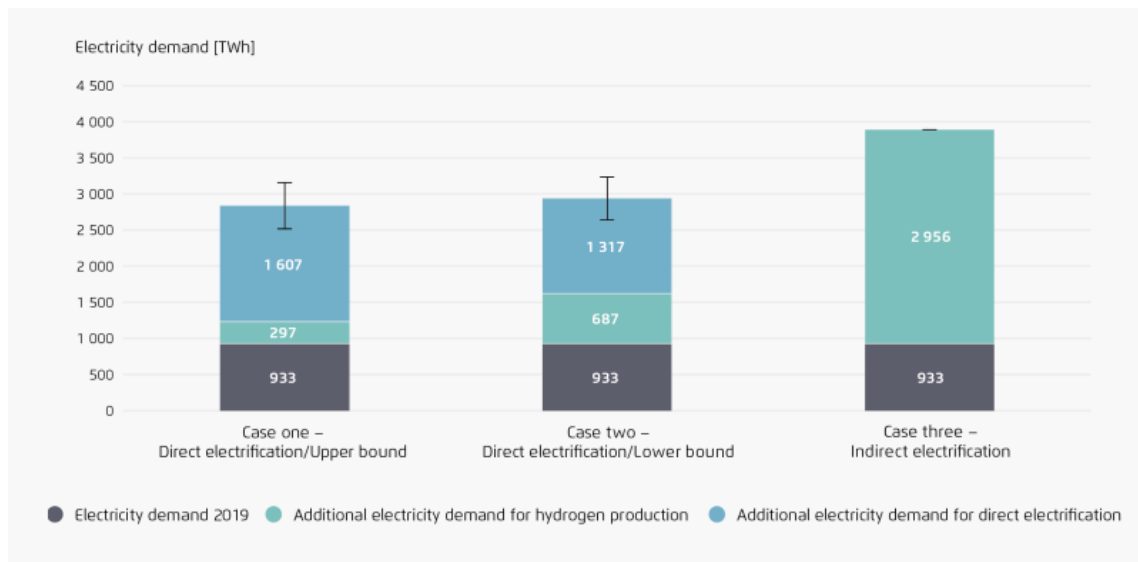


Figure 2 Direct electrification reduces total electricity consumption. Source: [Agora Industry](#)

In addition to energy savings, recent studies also highlight the economic value of direct electrification compared to indirect electrification using green hydrogen. For all low and medium heat processes, electrified solutions are expected to be cheaper than green hydrogen solutions across various sectors. For instance, research on chemical vapour supply has shown that direct electrification would cost around €100/ton for energy compared to €132/ton for hydrogen. Yet, a missing money issue persists between electrified solutions and fossil solutions. Addressing this financial gap is crucial to accelerate the decarbonisation of the industrial sector.

Energy production costs for 1 ton of chemical park vapour supply (€/ton)

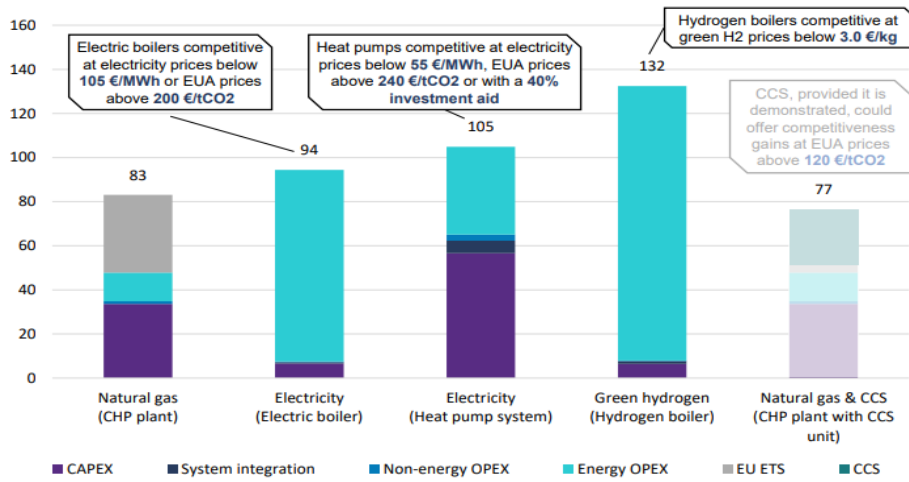


Figure 3 Compared cost of decarbonised solutions. Source: [Compass Lexecon](#), [ENEL Foundation](#), [ERCST](#)

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability



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