

Electrification Acceleration Areas

Executive summary – aims of Electrification Acceleration Areas

The recently published proposal of an Industrial Accelerator Act and therein included Industrial Manufacturing Acceleration Areas are a welcome concept to inspire the designation of **system friendly zones where industrial electrification projects receive faster grid connection, simplified permitting and coordinated planning to speed deployment**. Such 'Electrification Acceleration Areas' would help:

- **Cut industrial emissions and fossil fuel dependence** by accelerating electrification of low and medium temperature heat processes especially for both new and existing industrial clusters.
- Boost European industrial competitiveness with **predictable investment conditions, lower administrative burden** and access to clean, stable electricity.
- Align with and strengthen existing EU frameworks (RED III, NZIA, IAA) by making **industrial decarbonisation through electrification where cost-effective an objective**.
- Support efficient energy system development through **co-location of industry with clean power areas**, reducing costs and improving grid utilisation with increased plannability of grid upgrades and connection locations.

The above recognises that while there are other industrial decarbonisation options where direct electrification is technically not yet viable, electrification is a cost-efficient solution to decarbonise in most use cases.

Introduction

The electrification rate in Europe has stagnated at ~23% for the last decade, illustrating the difficulty of decarbonising and/or electrifying certain sectors. Industry in Europe accounts for approximately 19% of total emissions, with nearly half (48.7%) of EU industry energy needs met with fossil fuels and non-renewable waste alone in 2023.¹ The electrification of industry is therefore crucial for not only decarbonising the sector, but also for reducing the dependency that European industry has on imported fossil fuels, particularly natural gas.

With the recent release of initiatives such as the Industrial Accelerator Act (IAA) and the Electrification Action Plan (EAP) on the horizon, Eurelectric has called for the direct

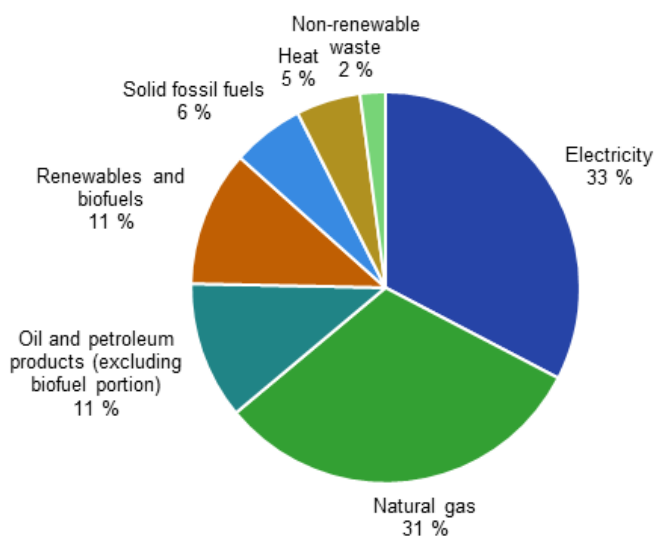


Figure 1: Final energy consumption of EU industry by source (2023)¹

electrification of industrial processes as a win-win situation for both decarbonisation and competitiveness, particularly for the **low and mid-heat** segments. Examples are calls for industry electrification commitments in our Tripartite agreements with demand side (industry) decarbonising and electrifying their processes and applications, along with our new asks for the EAP, where we call for the **electrification of industrial heat processes** and for the creation of **Electrification Acceleration Areas**.

Proposed definition of EAAs:

Electrification Acceleration Areas (EAAs) are designated zones - identified based on grid capacity, clean power availability, and spatial planning – especially where existing and new industrial electrification projects receive simplified grid connection, coordinated permitting, and system efficient clustering to accelerate decarbonisation and industrial competitiveness.

¹ [Eurostat - Final energy consumption in industry - detailed statistic](#)

Problem definition

With electrification rates in Europe stagnating for the last decade industrials have increased the electrification of their processes to some extent. Nevertheless, they remain **heavy users of natural gas and solid fuels**.¹ In a geopolitical climate where competitiveness, efficiency and reducing our reliance on imported fossil fuels are more important than ever, Europe's strategy to revitalise its industrial sectors must have electrification at its heart. If not, we continue to leave our industry vulnerable to the weaponisation of energy supply, while also reducing the demand for our own clean, home-grown electricity.

Permitting and long waiting times for grid connection pose a significant obstacle for industrial customers in their electrification journey. Besides inducing high levels of planning uncertainty for their project sites until the grid connection point is awarded, industrials are at times also confronted with high grid connection costs after the award of the contract. On the other hand, grid operators that also face permitting challenges are required under the current legal framework to evaluate each grid connection request individually, and to name the most technically and economically advantageous grid connection point. This fragmented processing is **inefficient for all parties involved**.

In response to these concerns, electrification acceleration areas could provide **reliably plannable locations for new loads** based on readily available grid capacity. Importantly, individual connection requests could be evaluated and clustered by the grid operator in the designated area, speeding up the entire investment process and ultimately facilitating anticipatory grid investments.

Existing references in legislation

Acceleration areas or areas with special designation are seen throughout EU legislation, particularly with relevance to energy. RED III introduced Renewable Acceleration Areas (RAAs), streamlining the designation of areas suitable for RES development, as well as Dedicated Infrastructure Areas, specifically created to allow Member States to develop grid expansion and storage projects necessary to integrate these RAAs into the electricity system. The Net Zero Industry Act (NZIA) provides the concept of a Net-Zero Valley and the designation of projects as "Net-Zero Strategic projects", incentivising the production of critical clean tech in Europe. Finally, the recent proposal of the Industrial Accelerator Act (IAA) includes the concept of **Industrial Manufacturing Acceleration Areas**.

The acceleration areas under the IAA aim to boost EU industrial production & strategic autonomy, accelerate industrial decarbonisation, and speed up project deployment. They do this by supporting the deployment of low carbon industrial technologies, reducing bureaucracy, streamlining and simplifying permitting, and improving the access of projects in these areas to energy, critical minerals and finance. While references to the decarbonisation of industry are frequent and clean energy - enabling provisions are present throughout the proposal – such as energy intensive decarbonisation projects benefitting from a presumption of OPI - **they do not explicitly include electrification of the industrial site as a factor**.

Therefore, as the IAA and the included Industrial Manufacturing Acceleration Areas enter co-decision, this is a timely opportunity to support increased electrification of industry.

Electrification Acceleration Areas - Advantages

Simplification

The German concept of an “Einspeisesteckdose”, or “feed-in socket” introduces the idea of a centralised connection point for renewable energy systems, integrating them into the power system in a **fast, simplified and economically efficient** manner. The concepts seen in this paper can be adapted for use with industrial loads, while the use of a simplified “feed in point” could simplify load integration to the grid for all parties involved.

The ongoing simplification agenda and efforts to cut red tape could be used to promote these areas to business and industrial groups. This kind of initiative has been seen with both the Automotive and Environmental omnibuses, as well as with the simplification of grid permitting requests and Environmental Impact Assessments for certain energy infrastructure such as recharging stations. Such EEAs would therefore provide benefits with regards to plannability of grid upgrades and connection locations – and vice-versa an area with spare grid capacity (and supply) can be a suitable one for new industrial activities and similarly on connection pooling.

In the IAA proposal, it is stated that the designation of Industrial Manufacturing Acceleration Areas (IMAAs) (Article 25 (2) (b)) **may also be applied to acceleration areas and strategic projects defined under other Union legislation**. This opens the possibility that a strategic project under NZIA could also be counted as an IMAAs, increasing the priority of the area and further increasing the ease of doing business incentivise the electrification of the industrial cluster.

- NZIA-defined technologies are also explicitly listed as one of the “strategic sectors that these IMAAs aim to boost the production of (Annex I of the IAA).

Electrification of Industry

In 2024, **six sectors** (chemicals, steel, non-metallics, food & beverage, paper and aluminium) **accounted for 80% of industrial energy consumption**.² Eurelectric welcomes the fact many of these energy intensives are included in Annex I of the proposal, therefore making them eligible to participate in an IMAA. The potential for electrification in many of these sectors is high, with a significant amount of these industrial processes below 500°C.

- Notably, the food & beverage sector is among other sectors **not** included in this Annex, even though this industry has proportionally the most “low hanging fruit” of electrification as a substantial proportion of the industrial processes involve temperatures of <150°C, a heat segment in which existing technologies are mature and are competitive with fossil fuel alternatives.

While legislation such as RED III and NZIA indirectly support the electrification of industry (promoting decarbonisation, accelerating grid connections), they do not give specific electrification incentives and do not explicitly facilitate the electrification of industrial

² Industry Decarbonisation: The key role of electrification - EDF & Agora Industrie study on industrial electrification

processes. Electrification acceleration areas have the potential to target **all industry** but also non-industrial sectors such as commercial & services or logistics & transport hubs.

While the manufacturing of clean tech is crucial for enabling decarbonisation in Europe, it is not high-tech NZIA sectors that consume vast amounts of energy - it is the large, energy intensive sectors that we need to electrify, and the designation of EAAs would directly address this.

The recent proposal lays out the business case for electrifying industrial heat, stressing the importance of reducing Europe's reliance on imported fossil fuels while at the same time safeguarding industrial competitiveness. It demonstrates how low- and medium-temperature processes – **half of industrial heat demand** – offer significant and near-term electrification potential. Such processes can already be competitively electrified compared to fossil gas-based applications, provided electricity prices stay below a certain threshold.

Energy Security & import reliance

European industry's heavy reliance on imported fossil fuels has always been a key reason to electrify, and numerous geopolitical events and subsequent rises in oil and gas prices in the past and present - and certainly future - have illustrated this overreliance on volatile commodities. Fluctuating gas prices erode the certainty that European industrials have in their outlooks while reducing their competitiveness on the global stage.

The electrification of industry provides a clear solution: ending energy intensive industry's dependency on imported fossil fuels, creating a more stable, predictable and secure environment for European industry to operate in and to make forward-looking investments.

Interaction with related legislation, tripartite agreements, and co-location

Electrification areas have the potential to interact with concepts that are found in other areas of legislation. The use of RAAs from RED III have been viewed as a positive and necessary tool, acting as a driver for spatial planning for new RES sites. RAAs provide a stronger business case to developers by reducing permitting time, legal risk, EIA requirements and grid connection waiting times. Designated Infrastructure Areas also included in RED III then allow exemptions for grid and storage infrastructure that facilitate the integration of the RES assets built in the RAAs. The designation of an electrified industrial area (and therefore a large consumer of electricity) can be proposed as the natural step to complete this chain of supply, distribution and demand, if coherently designed.

These designations overlap to some extent; locations in which there is both excess power and available grid capacity naturally present themselves as system-friendly locations where electrification should be first pursued. These areas represent the "low hanging fruit" of industrial electrification and would provide a win-win situation to both the generators of clean power in the region, as well as the industrial centres located in close proximity. Lastly, additional rules in such new EAAs that overlap with horizontal legislation on grid permitting such as the Grids Package should be made consistent and accordingly cross-referenced to avoid regulatory uncertainty.

Further wants in the Industrial Accelerator Act proposal

- In the IAA proposal, it appears as though the Commission has provided something akin to the EAAs as asked for in our more recent EAP requests. Factors that could be further expanded include:
 1. The explicit use of electricity in industry when cost-effective
 2. The inclusion of **all** industry

The current proposal focuses on “strategic sectors”; These consist of paper and paper products, coke and refined petroleum products, chemicals and chemical products, rubber and plastic products, non-metallic minerals, manufacture of basic metals, the automotive industry and Net-zero technologies as defined by the NIZA, and are listed as “strategic sectors” by virtue of their energy intensity and/or strategic importance. This provides a real opportunity to accelerate the electrification of these energy intensive industries. It is essential that the sectors that consume the most energy are given the best opportunities to electrify, ensuring that the re-industrialisation of Europe coincides with a parallel electrification of Europe and that this is used to our advantage.

- Broadening focus from only artificial and built surfaces, industrial sites and brownfield developments to include (or prioritise) co-location with areas of clean power generation. This would have the effect of moving some industry to areas of high renewable and low-carbon generation and structurally lower electricity prices. This also reduces the risk of new industry remaining in areas that it has traditionally been found, therefore locking in industrial centres to regions that are potentially not optimal from a power systems perspective with modern sources of clean power generation in mind. Also non-industrial sectors such as commercial & services or logistics & transport hubs can be considered in such a broader focus.
- A method of designating these EAAs in which the electrification potential of previously defined areas under different legislation – e.g. NZIA Net-Zero Strategic Projects – is assessed and subsequently given priority under the new designation, ideally in power-system friendly locations.



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