



Elia Group study on “Powering Industry towards Net Zero” notes one constant demand: electrification combined with access to low-carbon electrons at stable and affordable prices

- Over the past year, Elia Group has worked very closely with over 50 industrial stakeholders, whose processes make up 70% of industrial energy consumption in Belgium and Germany (50Hertz area), to sketch out possible pathways to net zero
- In all considered scenarios, access to affordable low-carbon electrons is crucial for accelerating the electrification of industry, making it more resilient and sustainable
- The rapid expansion of renewable energy therefore occupies a crucial position in industrial decision-making

BRUSSELS - BERLIN | European industry is undergoing an immense transformation. Over the past few years, industry’s approach to the climate crisis has become a combative urge to invest in sustainable practices and processes. Electricity will play a key role in this transformation, as confirmed in the present study. By 2030, industrial electricity consumption is expected to grow by 40% and 50% in Germany and Belgium respectively.

Today, most industries have a rather straightforward relationship with our grids: we provide them with a stable source of supply. However, that relationship will rapidly change and become increasingly complex. Companies will start to use our network in a more intense and dynamic way. Therefore, it is important to better understand what changes will happen as a consequence of this industrial transformation. How much electricity will industry need and by when? To what extent are the load profiles of companies that are connected to our grids changing? What potential is held in more flexible consumption?

Interestingly, as we discovered over the course of our research, this transformation will not only be good for the climate: companies that have made the most progress on their transition to carbon-free processes have been the least affected by the energy crisis. Together, electrification and access to renewable energy through long-term commitments (via power purchase agreements or their own RE production) offer companies long-term price stability and protection against price inflation in the gas and electricity markets.

“While the conclusion might sound straightforward, its implementation will be a Herculean task. It will mean putting in maximum effort at a time of rising interest rates and inflation. In addition to major investments in industrial electrification and renewable generation, important ‘leading’ investments in grid infrastructure and digitalisation will be needed to make this industrial transformation a success. More cooperation between industry, the electricity sector and public authorities will therefore be needed, including with regulators and local authorities.

Chris Peeters, CEO of Elia Group

The results of the study can be grouped together under 5 key findings:

- 1. Industrial electricity consumption will increase by 40-50% in the run-up to 2030. Electrification and the accelerated development of renewables is our main tool for reducing our exposure to fossil fuels over the next two decades.**
- 2. In all investigated scenarios, electrification will play a major role in industry's journey to net zero. Building out leading grid infrastructure is therefore critical for keeping pace with industry's electrification ambitions, attracting new innovation projects and anchoring industry in Europe.**
- 3. Carbon capture, utilisation and storage will be essential for dealing with unavoidable process emissions and will have an important effect on power consumption.**
- 4. There will be a gradual shift towards low-carbon (green) molecules in heavy industry with an increase in volume demand beyond 2030. A vast amount of green molecules will need to be imported.**
- 5. Industrial flexibility lowers future energy costs and benefits the power system in multiple ways. It will therefore become an inherent part of future business cases.**

"There is a growing understanding that integrating more renewables and connecting markets are flattening price curves. Elia and 50Hertz interact regularly with industry and industrial associations. Grid operators will only be able to anticipate the grid infrastructure that industry requires on its pathway to net zero if they understand industry's need for green electricity at an early stage."

Stefan Kapferer, CEO of 50Hertz

To enable the industrial transition towards net zero and anchor it in Europe, four key levers have been identified, as follows:

- 1. To kick start electrification, industry needs favourable political and regulatory frameworks in place.**
The electrification of industry ticks all the right boxes: it reduces GHG emissions and our exposure to fossil fuels. The technology required to facilitate this process is mature and ready to be rolled out at scale. However, not all investments in electrification that anticipate the future have a clear business case from the start. The right policy measures and incentives are needed to ensure that early investments in industrial electrification and flexibility will take off.
- 2. Speed up the development of RES to drive prices down for society and industry.**
The electrification of industry requires access to affordable, low-carbon electrons. The accelerated development of renewables (both domestic and foreign, through imports) is needed to drive down electricity prices. To ensure that the benefits of renewables are felt by consumers, mechanisms like PPAs, CfDs or direct investment in RES are necessary. Barriers to participation need to be reduced. As green electrons will be scarce in Belgium and Germany, investments in import capacity for green molecules will be required.

3. Accelerate the build-out of the transmission grid as an enabler for industrial transition.

An early view of the future needs of industrial clusters is key to making sure the right electricity transmission infrastructure is developed in time. The regulatory framework must allow for anticipatory grid investments to keep pace with the industrial transition. Project lead times for grid infrastructure (study, permits, realisation) must be shortened significantly. Finally, a technically skilled workforce, a stable supply chain that can scale up its products and the right investment framework need to be put in place to enable successful realisation of infrastructure projects.

4. Foster flexibility as a double accelerator for industrial electrification

The continued development of flexibility in industrial power demand will enable the uptake of industrial electrification in several ways. Flexibility facilitates the integration of renewables into the system, optimises electricity costs for industry and eases the connection of industry to the grid by tackling potential congestions. Elia Group's Consumer-Centric Market Design aims to remove barriers to providing flexibility, demonstrating the need for it to be implemented.

Elia Group's commitment to industry goes further than anticipating the necessary grid infrastructure developments. In partnership with its industrial clients, Elia Group is also bringing innovations to industry like a new market model to unlock industrial flexibility or a better standard to trace the origins of sustainable electricity.

More information

The Elia Group study on anchoring industry in Europe can be downloaded [via this link](#).

The results of the study were presented during a livestreamed event that can be revisited [via this link](#).



About Elia Group

One of Europe's top five TSOs

Elia Group is a key player in electricity transmission. We ensure that production and consumption are balanced around the clock, supplying 30 million end users with electricity. Through our subsidiaries in Belgium (Elia) and the north and east of Germany (50Hertz), we operate 19,192 km of high-voltage connections, meaning that we are one of Europe's top 5 transmission system operators. With a reliability level of 99.99%, we provide society with a robust power grid, which is important for socio-economic prosperity. We also aspire to be a catalyst for a successful energy transition, helping to establish a reliable, sustainable and affordable energy system.

We are making the energy transition happen

By expanding international high-voltage connections and incorporating ever-increasing amounts of renewable energy into our grid, we are promoting both the integration of the European energy market and the decarbonisation of society. We also continuously optimise our operational systems and develop new market products so that new technologies and market parties can access our grid, thus further facilitating the energy transition.

In the interest of society

As a key player in the energy system, Elia Group is committed to working in the interest of society. We are responding to the rapid increase in renewable energy by constantly adapting our transmission grid. We also ensure that investments are made on time and within budget, with a maximum focus on safety. In carrying out our projects, we manage stakeholders proactively by establishing two-way communication channels between all relevant parties very early on in the development process. We also offer our expertise to different players across the sector in order to build the energy system of the future.

International focus

In addition to its activities as a transmission system operator, Elia Group provides consulting services to international customers through its subsidiary Elia Grid International. In recent years, the Group has launched new non-regulated activities such as re.alto - the first European marketplace for the exchange of energy data via standardised energy APIs - and WindGrid, a subsidiary which will continue to expand the Group's overseas activities, contributing to the development of offshore electricity grids in Europe and beyond.

The legal entity Elia Group is a listed company whose core shareholder is the municipal holding company Publi-T.

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