

Paving the way for Europe's net-zero industry

A power sector manifesto



eurelectric
powering people

Paving the way for Europe's Net-Zero Industry: a power sector manifesto

Gas supply shocks. External volatility. Staggering inflationary pressure. Europe is at a crossroad: it must build up its energy sovereignty or face the prospect of a struggle in global competitiveness.

Electrification, powered by clean, home-grown generation, scaled grids, resilient supply chains and energy efficiency are key to achieving Europe's open strategic autonomy.

Yet, to power a carbon neutral European economy, **electricity capacity will have to triple by 2040**, together with a **ten-fold expansion in renewables** and a stable basis of firm capacity to match around **4,600 TWh of final electricity demand by 2040**. Such an unprecedented scale-up needs to be done cost-efficiently.

From petro- to electro-states: electricity delivering cost-efficient decarbonisation and much more

Approximately 70% of the final European energy demand in transport, buildings and industry currently relies on fossil fuels. This is the main target for decarbonisation to deliver on the climate neutrality objective enshrined in the European Climate Law. Securing Europe's energy independence and fostering our competitiveness must start with accelerated electrification.

The potential is massive: **direct electrification could reach 58-71%** in the mix of final energy demand by 2050, following a decade-long stagnation at around 23%. Road transport and buildings have the highest potential to electrify, whereas innovation in light and heavy industries are bringing promising results.

The **power sector is on a trajectory to be carbon free around 2040**, thus asserting electrification as the most direct, efficient, and effective way to accelerate Europe's decarbonisation and ensure energy security.

Final electricity demand 2030 and 2050 - TWh

Note that Y-axis scales differ per graph

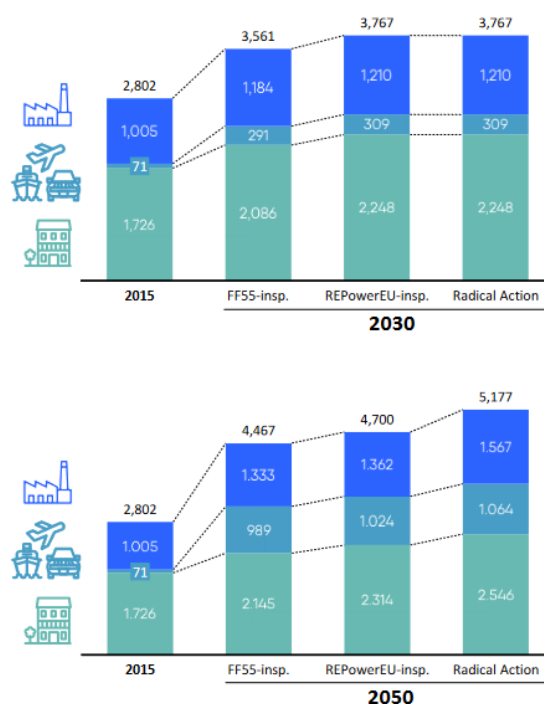


Figure 1 Decarbonisation Speedways, Eurelectric

Have you already delayed or cancelled investments plans due to supply chain issues ?



Figure 2 Eurelectric Internal Survey, May 2023

Speeding up permitting procedures, alongside substantial investments in power generation, grid infrastructure and flexibility are essential to a successful energy transition and therefore a successful transformation of the EU economy. While the [annual investment needs by 2050](#) have been estimated around €100 billion for generation capacities and €65 billion for distribution grids, the price increase of minerals and metals is pushing costs upwards. In a sector-wide survey conducted by Eurelectric, around 70% of respondents confirmed **disruptions caused by price volatility in raw material markets** and they had experienced **supply chain issues for critical components** of net-zero technologies sourced outside the EU. This has **led to the cancelation or delay of investment plans** for over a third of respondents.

New approaches to leverage synergies

The alignment of national and EU industrial policies is pivotal in achieving net-zero industries and addressing the critical raw materials challenge. Coherent policies at both levels are fundamental for effective and efficient decarbonisation of end-sectors, meeting 2030 EU targets on the path towards net-zero by 2050. National policies can be tailored to address regional disparities and unique industrial landscapes, fostering a conducive environment for the development of net-zero technologies and practices. Simultaneously, EU-level policies play a crucial role in coordinating national efforts but also providing a comprehensive vision and standardised guidelines for improving Europe's industrial competitiveness.

In the same vein, promoting healthy competition and cooperation with like-minded non-European countries to address supply chain constraints can pave the way to ensure sustainable, diverse and reliable sourcing, as well as research, development and deployment of breakthrough technologies.

We welcome the Green Deal Industrial Plan as a timely element in developing Europe's much needed integrated approach on industrial policy. The Net Zero Industry and Critical Raw Material Acts (NZIA and CRMA, respectively) can play an instrumental role in accelerating the decarbonisation of our economy while reducing the exposure to geopolitical perils. Importantly, this is a key opportunity to ensure that Member States use the EU-provided instruments to speed up procedures for energy infrastructure.

Going forward, Eurelectric expects these policy developments to act as catalysts, reducing the red-tape that has been a major roadblock in delivering net-zero industries. Simplified permitting procedures, and regulatory frameworks promoting anticipatory investments are essential for the deployment of clean and renewable technologies, as well as the connecting networks.

The NZIA can stimulate this further by recognising physical electricity infrastructure projects as strategic net-zero activities, since the production of net-zero technologies cannot be achieved without such infrastructure.

Distribution grids must be at the centre of these policy developments if Europe want its industrial facilities to be truly net-zero. Thus, we encourage policymakers to have a holistic approach to the grid, going beyond manufacturing grid-edge components, given their role in powering industrial facilities with clean and decarbonised electricity.

Also, an assessment and balance in how the different policy tools affect power prices, system integrity, security of supply, emissions, social fairness and the value chain is needed when considering green industrial policy in relation to the power sector. While there is no single solution to these issues, a proper sectorial assessment could provide this balance when devising green industrial value chains, and the need for policy action in that respect, for example related to how strict resilience criteria should be. It is important to mitigate the risk that relatively higher costs of technologies could translate into relatively higher power prices and thus challenge the acceptability.

Effective financing: the carrot and stick approach

Investment frameworks act as a financial backbone facilitating the transition to sustainable, net-zero industries. A harmonious integration of national and EU industrial policies (including their respective investment frameworks) is needed for the sake of preserving the level playing field within the internal market. This could provide benefits in terms of cross-border resources and funding pooling for projects with cross-border impact, such as large-scale renewable energy initiatives or critical raw material processing and recycling facilities. This coordinated approach ensures that capital flows efficiently to where it is most needed, accelerating progress towards sustainable decarbonisation and strategic

independence of the EU, while preserving the internal market and avoiding hinderances to the electrification of the EU economy.

Yet, the low absorption rates of EU funds signals a structural issue: complexity hampers accessibility. Like with the US Inflation Reduction Act – acclaimed for its simplicity – policymakers should seek to improve the accessibility of EU funding and ensure this is accompanied by positive incentives.

Key steps to deliver on this ambition include:

- Simplifying European funding rules, the application process and implementation requirements, along the value chain including distribution grids.
- Providing guidance and support on how organisations can combine national and EU funding, while remaining state-aid compliant.
- Driving circularity by supporting the upgrade, repair and maintenance costs for EU infrastructure programmes, rather than uniquely focusing on new build.
- Designating a single point of contact that advises clean tech project promoters on accessing funding via the Strategic Technologies for Europe Platform (STEP).

In addition, for a successful delivery of net-zero industries, targeted stimuli of temporary nature will be needed, where functioning markets do not (yet) exist. As subsidies are not a sustainable long-term solution, Europe should foster free markets and competition to drive the learning curve and price formation. In any case, subsidies shall be designed in a manner that fits an if-needed approach and reduces distortions as much as possible.

Moreover, measures that support the development of local manufacturing facilities should not affect the relative competitiveness of electricity *vis-à-vis* other energy vectors and, thus, the much-needed electrification itself.

Sparking innovation: from cost-saving to anticipatory investment frameworks

Innovation comes in multiple shapes and forms. From breakthrough technologies to state-of-the-art business models, multiple avenues of action emerge to advance the Green Deal Industrial Plan's ambition of making the EU industry a front runner of the transition to net zero.

First, this is an opportunity to advance innovative regulatory principles. Anticipatory investment frameworks allow for a long-term approach with focus on security of supply and future needs, of parallel rather than sequential development of i.e., generation and grids. Considering the increased urgency to tackle climate change, which translates into ever higher decarbonisation targets and even higher costs for not delivering them, a long-term approach to investment is needed. Anticipatory investments are key to doubling the generation capacity by 2030 and tripling it by 2040, as well as deploying the grid infrastructure required for a climate-neutral economy.

Second, the interplay between tried-and-tested technologies alongside innovative solutions could contribute to advancing the energy transition. Established technologies, such as hydropower, nuclear, solar panels and wind turbines have demonstrated their reliability and efficiency over the years, providing a foundation for clean and affordable electricity generation. Breakthroughs in flexibility sources, such as energy storage systems, smart grids and related advanced materials have the potential to overcome some of the current system limitations, thus supporting system wide decarbonisation. By synergising tried-and-tested technologies with cutting-edge advancements, we can optimise energy generation, distribution, and consumption, ushering in a cleaner, more sustainable energy landscape that addresses climate change while meeting the growing global demand for power.

Stronger together: between re-shoring and friend-shoring

The availability of raw materials key to the energy transition becomes the linchpin of our success, as we accelerate the paradigm shift towards a decarbonised economy powered by cleaner and greener energy sources. While Europe's natural resources endowment is limited, its ability to develop processing and recycling facilities can be enhanced. So, we should enhance the Bloc's ability to foster cooperation with like-minded partners, ensuring the **mining and processing** of these minerals follow the highest environmental, ethical and societal standards. When developing such strategy, the EU must come with a value proposition that supports the development of third countries and offers fair trading conditions for all parties involved.

Diversification of supply will be key to ensure Europe has continuous access to materials critical for net-zero technologies and the energy transition. By fostering synergies and enhancing diplomatic ties, we safeguard our energy sovereignty and insulate ourselves against potential vulnerabilities in the global supply chain. Such a friend-shoring strategy could be complemented by the constitution of **strategic reserves**, which would act as a buffer against sudden disruptions in the supply chain, ensuring that we can continue to deploy the much needed clean and renewable electricity infrastructure even in times of crisis. However, a balance needs to be found between the potential short-term cost increase (i.e., when building strategic reserves).

Finally, developing **recycling** facilities in Europe will reduce the strain on finite resources and the environmental impact, offering a sustainable pathway to meet our raw material needs.

Together, these elements form a cohesive strategy that would both bolster the EU's energy transition and contribute to global efforts in mitigating climate change and advancing a greener, more sustainable future.

Building a competitive manufacturing base can deliver diversified supply and increased competition which would drive down the cost of the transition.

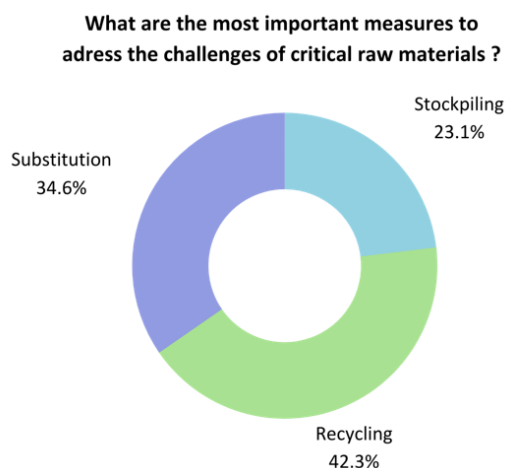


Figure 3 Eurelectric Internal Survey, May 2023

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.

WG Industrial Competitiveness & Innovation
Electrification and Sustainability Committee
Generation and Environment Committee
Markets & Investments Committee
Customers & Retail Services Committee
Distribution & Market Facilitation Committee

Contact:
Ioana PETCU, Advisor Climate – ipetcu@eurelectric.org



Union of the Electricity Industry - Eurelectric aisbl

Boulevard de l'Impératrice, 66 – bte 2 -1000 Brussels,
Belgium

Tel: + 32 2 515 10 00 - VAT: BE 0462 679 112 •

www.eurelectric.org

EU Transparency Register number: [4271427696-87](https://ec.europa.eu/transparency/regexp1/?query=4271427696-87)

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