Electrolysers for Europe

Electrolysers for Europe Manifesto

Made in Europe for the world - Built for resilience

FEBRUARY 2026

With this Manifesto, we set out our vision for 2030 and beyond: **Achieving Europe's electrolyser leadership and creating real economic value and lasting growth for the EU.**

Our vision for 2030 and beyond

Clean, locally produced energy is Europe's strongest guarantee of a resilient and sovereign economy. Today, almost all hydrogen used in Europe still relies on fossil fuels, most of which are imported. **By 2040, all European hydrogen demand can be covered by electrolysers**, crucially contributing to sustainability and resilience goals.

Clean tech is clearly turning into Europe's next growth engine. In 2024, European clean technology exports matched fossil gas imports[1]. With Europe leading the world in electrolysis, **we can unlock up to €200 billion in export value**[2], making electrolysers a key contributor to European industrial competitiveness.

Europe must invest in clean tech to spark a new wave of sustainable and high-skilled jobs. The green hydrogen value chain alone can create around **1 million direct jobs** across the EU — while **safeguarding millions more in downstream industries**[3]**.**

Renewable and low-emission electricity is already Europe's most affordable source of energy. With the right policy framework and successful scale-up, **electrolytic hydrogen will become the most competitive form of clean hydrogen**, providing industry with a resilient and predictable supply of clean molecules.

1. Bruegel European Clean Tech Tracker (2025) – Bruegel
2. Based on available market data and internal assumptions
3. Hydrogen Roadmap Europe (2019) – Fuel Cells and Hydrogen Joint Undertaking 2

This vision will only become reality **with bold, decisive political action.**

Industry Delivered

Manufacturing capacity:

1 GW → more than **10 GW** in just a few years.

Promise honoured. Capacity delivered.

Europe's Deployment Lags

Target:

6GW by 2024 and **40 GW by 2030**.

Reality:

<1GW installed.

The EU target is far from being met.

We kept our promise.
Policymakers must now do the same.

Europe needs decisive action, urgently.

Key numbers & trends

Hydrogen is

>95% fossil-based

and Europe is dependent on volatile imports. With less than 1 GW of installed capacity, **water electrolysis represented only ~0.5% of total production in 2024.**

***Source**: European Hydrogen Observatory 2024,*

With

~84 GW potential

in the green hydrogen project pipeline, **Europe is ready to scale deployment.**

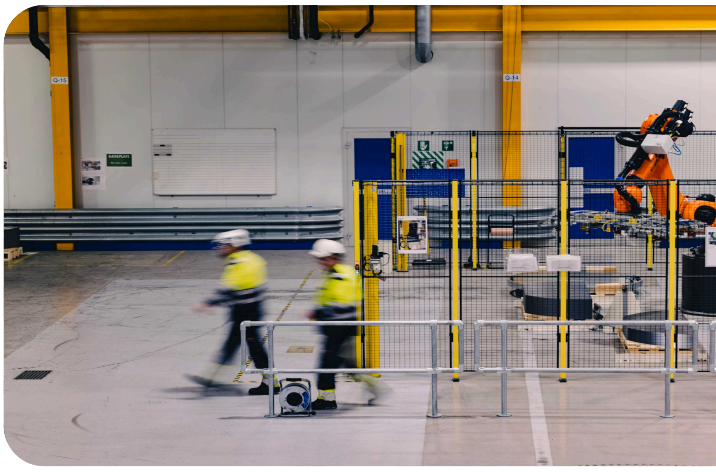
***Source:** Clean Hydrogen Monitor (2025) – Hydrogen Europe*

Only

~2.8 GW in construction

shows that electrolyser deployment continues to lag ambition. To meet the RED III binding targets, **Europe needs at least 25 GW of installed capacity by 2030.**

***Source:** Clean Hydrogen Monitor (2025) – Hydrogen Europe*



>50 projects cancelled

in the last 18 months, at least 80% of which were early-stage renewable hydrogen projects.

Source: *Clean Hydrogen Monitor (2025), PDF*

With

30 % market share

in the electrolyser manufacturing capacity globally, **Europe has a strong stake and is ready to build.**

Source: *BloombergNEF – Green Daily*

Our sector needs reliable demand and enabling regulation to unleash full lead market potential in:

Refineries

representing 58% of Europe's hydrogen demand and a **potential electrolysis capacity of up to 45 GW,** will play a key role in achieving RED III mobility targets.

Source: *Clean Hydrogen Monitor (2025)*

Ammonia

production representing 25% of Europe's hydrogen demand and a **potential electrolysis capacity of up to 20 GW,** will play a key role in achieving RED III industry targets.

Source: *Clean Hydrogen Monitor (2025)*

Steel

with a perspective ~9 GW of clean hydrogen production, capable of decarbonising ~24% of current primary steel production by 2030.

Source: *Clean Hydrogen Monitor (2025)*

Sustainable Fuels

for the maritime and aviation sector as key demand drivers, with a ~4 GW potential by 2030.

Source: *Clean Hydrogen Monitor (2025)*

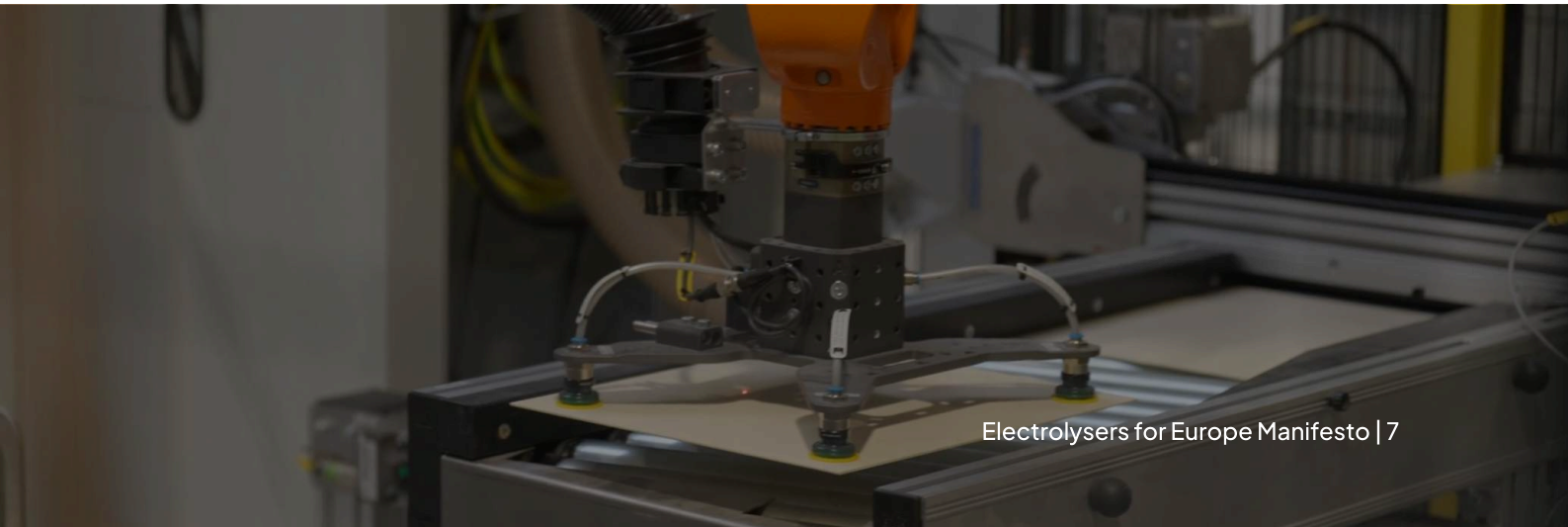
Our commitment to Europe

Electrolysers are a strategic cornerstone of Europe's clean energy transition and industrial resilience. More than a clean technology, electrolysers – built for resilience – strengthen energy security by turning renewable and low-carbon electricity into hydrogen, a storable, transportable molecule to decarbonise a wide range of applications, reducing exposure to volatile fossil imports and single country dependencies. By absorbing surplus renewable power, electrolysers can stabilise the grid and strengthen energy system flexibility.

We as European electrolyser manufacturers drive local value creation by anchoring robust European hydrogen value chains from components to system integration, driving innovation, securing skilled jobs and reinforcing Europe's global technological leadership in hydrogen technologies. Since 2020, we have scaled annual production capacity more than tenfold from **1 GW to more than 10 GW**, moving rapidly from pilot projects to industrial-scale deployment – demonstrating our commitment to deliver electrolysers to meet the 40 GW by 2030 target of the EU Hydrogen Strategy under the Green Deal.

With less than 1 GW of installed capacity, Europe is falling short of its scale-up ambition. Many large electrolyser projects fail to reach FID because demand signals are unclear, bankability is insufficient, and off-takers show limited willingness to pay a clean and resilience premium. Compounding this, regulatory uncertainty - including the RFNBO Delegated Act's additionality, temporal correlation, and geographic proximity rules - further undermines viability. In some cases, these requirements can double the cost of RFNBO hydrogen[6] in Europe crushing the business cases. RED III transposition into national law – needed to create predictable, policy-supported demand – was requested nearly two years ago and remains outstanding in 25 of 27 Member States, severely delaying predictable offtake for electrolysis technology and RFNBO hydrogen. Without swift, consistent implementation, Europe's RFNBO market will fragment and the electrolysis sector's scale-up will fall short of expectations. Today, European manufacturers lead on quality, reliability, performance and efficiency, helping to set international standards. Europe cannot afford losing this mission critical clean technology sector and its valuable supply chain.

6. Frontier Economics (2021) – Grünstromkriterien der RED II – Auswirkungen auf Kosten und Verfügbarkeit grünen Wasserstoffs in Deutschland, cost increase by 2–3 EUR/kg through rules on additionality and timely correlation



Strategic asks

Our Manifesto **outlines three areas for urgent political support** where EU policymakers have a key role in supporting regulations in current and upcoming legislative and non-legislative initiatives. At the core of these asks lies a clear priority: **a reflection on today's industrial, geopolitical, and climate realities**. The EU must place global leadership in electrolyser industry at the heart of the Union's industrial policy, enabling targeted support that unlocks investments, and bridges the deployment gap.

1. Accelerate market creation and demand stimulation

Demand creation is indispensable because without firm offtake, projects stall, innovation cycles slow down and factories idle. The EU and its member states should implement RED III swiftly, extend and align RefuelEU initiatives and leverage public procurement mandates to **make demand predictable and bankable, reducing risks for investors** and reaching the economies of scale quickly to stay competitive on global markets.

- **Make RED III implementation work**
  - Implement RED III RFNBO quotas ambitiously and on time, with clear compliance trajectories and sectoral sub-quotas (industry and transport) to create predictable, binding offtake and avoid market fragmentation.
  - Monetise RFNBO compliance and introduce a book-and-claim system (modelled on the Dutch scheme with binding RFNBO use targets, tradable certificates, and full traceability) that serves as a virtual pipeline until the European hydrogen backbone is operational. This allows cost-effective flexibility in temporal and geographic correlation requirements while maintaining environmental integrity and deployment momentum.

- **Create growing demand via RefuelEU initiatives**
  - Extend and align RefuelEU initiatives with binding, escalating RFNBO sub-quotas per sector, to create predictable demand and accelerate investment in electrolysers and e-fuels made in Europe.

- **Leverage public procurement for early market creation**
  - Mandate that a percentage of public sector procurement be sourced from electrolytic hydrogen.
  - Extend these measures to defence, incorporating e-fuels made in Europe into military standards and capability targets following SAF leadership examples from the UK and Nordic countries.

- **Implement product labelling**
  - Introduce product labelling as part of the Industrial Accelerator Act, which clearly allows a differentiation of fossil-based vs renewable based content.

2. Establish workable regulatory definitions for hydrogen

While we acknowledge the European Commission's plan to assess the effectiveness of the RFNBO Delegated Act through a study, **urgent amendments and simplification are required to specific provisions that are putting the very survival of the RFNBO sector at immediate risk**. When it comes to low-carbon hydrogen production, Europe must prioritise the **deployment of "renewable-ready assets" by leveraging the electrolytic pathway.** More flexible rules on the use of low-carbon/nuclear PPAs are necessary to facilitate production.

- **Urgently revise and clarify the RFNBO delegated act before the end of 2026**
  - Revise the additionality principle to count subsidized renewable assets as additional.
  - Extend exemptions on additionality until 2035, while maintaining the grandfathering clause.
  - Conduct a thorough, data-driven assessment of the liquidity in the renewable PPA market and its ability to offer competitive PPAs to future RFNBO producers before transitioning to more granular time-matching requirements.
  - Consider adopting weekly, monthly, or daily matching instead of strictly hourly matching.

- **Ensure swift scrutiny and clear methodologies in the Low-Carbon Hydrogen Delegated Act**
  - Provide clear definitions for grid-connected electrolysis, including eligibility of low-carbon and nuclear PPAs.

3. Streamline and strengthen funding mechanisms

Europe's hydrogen funding landscape is complex, slow, and too fragmented to match global competition. The EU must consolidate and target funding to drive innovation, accelerate electrolyser deployment and support the offtake of downstream sectors. Our ultimate goal is to achieve a **self-sustaining, resilient clean hydrogen sector providing competitive products to global markets.**

- **Create an EU Financing Platform for RFNBO and low-carbon electrolytic hydrogen**
  - Unify the Hydrogen Bank and future tools into a one-stop-shop **to bridge the cost gap and accelerate deployment while strengthening resilience**. Prioritise mature FID-ready, EU-based projects, support both CapEx and OpEx, and introduce completion bonds at time of bidding to ensure credibility and value for money.
- **Back technology "Made in Europe"**
  - Introduce and strengthen "Made in Europe" in NZIA revisions, Industrial Accelerator Act and future regulations.
  - Anchor electrolyser manufacturing and critical component supply chains in Europe to increase resilience and reduce dependence on third country equipment.
  - Apply minimum European content and resilience criteria from NZIA across all funding and procurement programmes.
  - To safeguard Europe's strategic supply chains, the EU should explicitly recognize "resilience" - including energy security and critical supply chain robustness - as a compatibility criterion under Article 107(3) TFEU and elevate it to a priority in State aid and EU funding instruments on par with climate protection and innovation.
  - Expand "Made in Europe" and resilience criteria to non-EU projects accessing European funding support.
- **Integrate hydrogen into EU defence planning**
  - Recognise electrolysers, clean hydrogen, and hydrogen-based fuels as strategic sovereignty assets. Ensure funding reflects their role in strengthening Europe's climate, energy, and security resilience.
- **Strengthen the Hydrogen Mechanism**
  - Expand it with a dedicated EU electrolyser manufacturing database, giving investors and offtakers a clear view of European capacity — and making EU-made equipment the first choice for deployment.

Conclusion

Europe cannot afford another missed opportunity. The choices made now will decide whether Europe leads the technologies that define the clean industrial era or becomes dependent on importing them from elsewhere.

European electrolyser manufacturers have already shown what is possible. We have honoured our commitments, scaled annual production capacity and proven our ability to deliver world-class technology at industrial scale. Now, EU policymakers must match that ambition with policies that accelerate market demand, simplify regulation, and provide long-term investment certainty.

Taken together, the measures described in this Manifesto would unlock immediate demand creating a functioning market for renewable and low-carbon electrolytic hydrogen. The market forces based on growing demand and competitive supply will lead to minimized costs, funding needs and risks for investors. Binding and monetisable RFNBO compliance, combined with an EU-wide book and claim "virtual pipeline" and revised rules in the RFNBO Delegated Act would ease RED III implementation across Member States, accelerate industrial and transport projects, and deliver earlier emissions cuts while laying the groundwork for the hydrogen backbone. By anchoring electrolyser manufacturing and critical component supply chains in Europe, these measures bolster resilience, reduce reliance on third country imports, and secure local high-skilled clean energy jobs.

I**f we succeed, the benefit will be a competitive,** sovereign, and resilient Europe that controls the technologies underpinning its clean-energy future, builds its own supply chains, and exports them to the world. It will mean millions of skilled jobs, and a new generation of European workers building the future rather than watching it arrive from abroad. Electrolysers can and must be the next success story for Europe: a technology driving Europe's resilience, competitiveness, and ambition.

A technology Europe builds.

Members of the coalition and figures (alphabetical order)

ITM Power, founded in 2000, designs and manufactures electrolysers based on PEM technology, with more than 500 MW deployed or under contract and over 550 MW of additional capacity reservations. As a one-stop shop for customers, ITM engineers their electrolysers into full green hydrogen production plants and builds them with their in-house EPC capabilities. ITM's subsidiary Hydropulse, based in Berlin, benefits from direct access to ITM's market-leading electrolyser systems. Hydropulse builds, owns, and operates modular hydrogen production plants to supply hydrogen to industry, making it accessible, affordable, and risk-free.

Driven since 1817 by the entrepreneurial spirit and thirst for innovation of its founder, the John Cockerill Group develops large-scale technological solutions to meet the needs of its time: facilitating access to low-carbon energies, enabling sustainable industrial production, preserving natural resources, contributing to greener mobility, enhancing security and installing critical infrastructures. Its offer to companies, States and communities consists of services and associated equipment for the sectors of energy, defence, industry, the environment, transports, and infrastructures. A pioneer in hydrogen and low-carbon technologies, John Cockerill is a global leader in pressurised alkaline electrolysers, delivering end-to-end industrial and utility-scale solutions. Since 2018, it has supplied 80+ stacks of 5 MW, including the world's two largest (>100 MW). Operating in 28 countries with 8,000 employees, the Group generated €1.4 billion in 2024. The integration of McPhy's Belfort gigafactory in France and sites in Aspach (France) and Seraing (Belgium) cements John Cockerill Hydrogen's role as a European industrial champion in electrolysis.

Founded in 1927, Nel is a pure-play hydrogen technology company with nearly a century of expertise in alkaline and PEM electrolysers. It has delivered 7,000+ stacks to more than 80 countries, supported by ~1.5 GW annual capacity across Norway and the USA. Nel leads on automation with the world's first fully automated electrolyser gigafactory at Herøya and setting a benchmark for Industry 4.0 manufacturing in Europe.

Sunfire is a global leader in the production of industrial electrolysers based on pressurized alkaline and solid oxide (SOEC) technologies. From its roots in Dresden, Germany, the company has grown into one of the world's leading electrolysis specialists. Today, with more than 700 employees from 25 nations and gigawatt-scale manufacturing capacity in Germany, Sunfire's electrolyzers are already operating across Europe, enabling energy companies, refineries, and steel producers to decarbonize. With an order book exceeding 800 MW, landmark projects with partners such as RWE, Repsol, and Uniper, Sunfire has become an established driving force in the global hydrogen industry. The company embodies a new industrial generation: technology developed and produced in Europe, and high-quality jobs created locally - particularly in Eastern Germany.

thyssenkrupp nucera offers world-leading technologies for high-efficiency electrolysis plants. The company has extensive in-depth knowledge in the engineering, procurement, and construction of electrochemical plants and a strong track record of more than 600 projects with a total rating of over 10 gigawatts already successfully installed. With its water electrolysis technology to produce green hydrogen, the company offers an innovative solution on an industrial scale for green value chains and an industry fueled by clean energy – a major step towards a climate-neutrality. thyssenkrupp nucera successfully made an IPO in July 2023. The shares are traded on the Frankfurt Stock Exchange.

TOPSOE

Topsoe is a leading global provider of advanced technology and solutions for the energy transition. Built on decades of scientific research and innovation, Topsoe works with customers and partners to drive energy resilience and to achieve their sustainability goals. With an average of 8–10 % of annual revenue invested in research and innovation, Topsoe is at the forefront of the most advanced technologies for fuel and chemical production. One-third of the world's hydrogen production and sustainable aviation fuel operating capacity is based on the company's technology. Topsoe offers the advanced solid oxide electrolyzer cell (SOEC) technology for the highly efficient production of green hydrogen. The technology enables the production of more hydrogen per unit of power input than conventional technologies, achieving around 20% higher efficiency, which can increase to 30% with steam integration. In late October, the company inaugurated Europe's largest SOEC manufacturing facility. Headquartered in Denmark, the company has over 2,800 employees serving customers all around the globe.