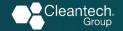
Cleantech for Europe





Time for Made in Europe Clean Technologies

With the support of







Introduction

Europe has come to a point where it cannot afford hesitation on industrial policy. Without decisive action, our cleantech and industrial base will wither under the weight of higher energy costs, fragmented markets, and foreign competition. The risks are clear: dependence on imported technologies with suppliers like the US and China not afraid to use that leverage, loss of competitiveness for large industrial sectors, loss of industrial jobs and as a result a short-term political push to slow decarbonisation, leaving Europe vulnerable to the volatility of fossil fuel prices.

What is needed is scale, speed, and focus – pooling resources across national borders, cutting permitting delays, and directing public procurement and other demand drivers to create real markets for European green steel, batteries, and clean technologies.

Anything less than a bold and coordinated European Cleantech industrial policy will leave Europe permanently behind in the race for the industries of the future and make us fully technology dependent from competitors (see Annex).¹ While the challenges for the EU in adopting a coordinated industrial strategy is not new – with similar challenges in forming a position on Japanese semiconductors in the 1970s² - the current geopolitical and economic environment requires a sea change.

The European Commission will propose end of November 2025 the Industrial Accelerator Act (IAA), part of which will be replicating the equivalent of the Net Zero Industry Act (NZIA) for energy intensive sectors. It is vital that the IAA translates into strong, clear and sustained demand signals for low-carbon industrial products and Cleantech made in Europe.

These demand signals are vital for two reasons:

- → Nascent European Cleantech companies and industries need a strong domestic European market shielded from unfair competition to scale.
 Robust demand and offtake for Cleantech made in Europe is necessary to have a chance of scaling the markets for emerging technologies, bring down marginal production costs and have a chance of competing when facing often heavily subsidized unfair competition from non-EU actors who may have scaled thanks to a protected domestic market.
- → Private capital will only invest with a bankable business case.
 In a context of limited public budgets and financial instruments for scaling-up in the current MFF and the proposed next MFF as well as strained Member States budgets, mobilising private capital is going to be key. Equity investors look for growth potential while debt providers (banks)

^{1.} Institut Montaigne, Cleantech: Reducing Europe's Strategic Dependence on China (July 2025)

^{2.} D. Zurtassen, Learning From the Past? EU Industrial Policy Challenges, Governance Volume 38, Issue 4.

want secure business models with revenues to service debt. Investors and banks will not mobilize unless they see a credible cleantech industrial policy with credible demand signals and an ecosystem where value chains have a realistic chance of competing against Chinese competitors. Currently, private capital is having strong doubts on technologies directly competing with Chinese manufacturers.³ Demand signals are a material factor to make these sectors investable.

We need to hardwire demand for cleantech Made in Europe at EU level to achieve the critical scale required and leverage the size of the EU single market. That means applying clear criteria on sustainability, resilience, innovation, and where needed a clear European preference (Made in Europe/local content requirement) to every lever of market creation. Concretely it means aligning EU and national public procurement rules, conditions on accessing EU funding like the Innovation Fund and national public support (State Aid), mobilising strategic (quasi-public) buyers like grids Transmission System Operators (TSOs) and shape private demand (ex. corporate fleets requirements). This is how Europe creates a strong home market and anchors its green industries at scale.

The strategic call for a Made in Europe preference for innovative Cleantech should not be confused or seen as a blanket call for protectionism and decoupling of the European economy of world markets, which probably would damage European competitiveness in the long run. It should rather be seen as a tool to be applied very strategically and precisely across certain technological value chains, aspart of a broader EU Cleantech industrial strategy based on the Draghi framework that identifies sectors where the EU has a comparative advantage, sectors in which it has none, sectors where partnerships will be needed to capture economic value, and sectors where security and resilience are critical factors.

Made in Europe requirements are also not a 'silver bullet'.

They are only one of the levers necessary to improve the overall business and investment climate in Europe that will require strengthening the EU single market by removing intra-EU barriers, simplifying and shortening permit processes and timelines, and enacting measures to drive down energy prices, all areas the EU is working on.

But they are an essential part of the policy toolkit.

^{3.} Bloomberg, China Road Trip Exposes List of Uninvestable Assets in the West, 22nd September 2025.

Key Recommendations:

- → Strong Demand Signals for Cleantech Made in Europe -
 - 'Made in Europe' requirements across public procurement, access to funding instruments and strategic private procurement are needed to ensure a safe European domestic market in which EU cleantech can scale while facing unfair competition. This is a vital signal to capital markets to strengthen bankability of European clean technologies when mobilizing private capital has never been more important.
- → Prioritise and Protect Key Technologies (Draghi Framework) Local content requirements cannot be deployed for all clean technologies covered by the NZIA and should initially be focussed on certain key value chains wind, batteries (including the upstream processing of critical raw materials and downstream recycling), solar and electrolysers. However, the new toolkit explicit local content requirements, mandatory cybersecurity criteria, no disproportionate cost exception for strategic technologies should be available for all technologies covered by the NZIA to anticipate future supply chain shocks (precautionary resilience) and could be activated without legislative changes.
- → A Predictable, Clear and Phased Market-Based Approach The gradual phase-in of local content should be determined ex-ante with the share (%) increasing gradually and predictably between 2026 and 2030 with clear, evidence-based milestones, with the possibility for the Commission to delay timelines if EU supply chains do not adapt sufficiently rapidly.
- → Expand Made in Europe to Public Funding (EU & National) and Strategic Buyers - Resilience, sustainability and local content requirements should be streamlined in EU funding instruments and must be applied by Member States in their national support programs under EU Stated Aid Rules (GBER, CISAF, CEAAG). It is essential that this becomes a baseline to limit the intra-EU competition between EU Member States to attract foreign investors.
- → Enforcing Made in Europe: Foreign Direct Investment (FDI) Screening and Joint-Venture Requirements – Local content requirements must be complemented with an EU-level FDI screening regime. This should include requirements for joint ventures with EU companies, requirements around Intellectual Property and critical know-how transfer, and requirements to hire and train local staff. This must be agreed upon at EU level to limit competition between Member States to attract FDI.

The IAA and Cleantech demand signals: an essential tool in a coordinated EU Cleantech industrial strategy.

Demand signals for Cleantech Made in Europe and low-carbon industrial goods (through low-carbon labels) currently being considered under the IAA are only one of the tools in the toolkit of a coordinated EU Cleantech industrial strategy that the EU urgently needs to start elaborating.

This strategy needs to be grounded in a firm understanding of business cases, market dynamics, industrial processes and technological cost-reduction pathways for new technologies. That strategy must build the framework, process and governance to shape answers to key questions, based on scientific evidence, industrial know-how and financial expertise:

- 1. What are the value chains with a strong EU presence that should be preserved?
- 2. What are the new value chains where the EU wants to secure a share of the economic benefits and jobs, through partnerships where needed?
- 3. Which are the value chains where the EU should have a presence, to ensure its security and economic resilience?

This builds on the 'Draghi framework'⁴ of identifying: 1) industries where the EU's cost disadvantage is too large to be a serious competitor, 2) industries where the EU is concerned about the location of production – not the origin of the technology, 3) industries that are strategic and where the EU must preserve manufacturing capacity and know-how and 4) new infant industries where the EU has an innovative edge and could seize a sizeable market share under the right conditions. This approach will be vital to ensure the Competitiveness Coordination Tool and Competitiveness Compass do not end up in an administrative exercise. The outcome could result in a very small, targeted but vitally important set of technologies deemed 'Strategic'.

Once that identification is done, it will also require an open mind around the use of policy instruments for 1) creating demand signals, through leveraging public and private procurement and – in some cases – establishing clear European preference (in the IAA to start), 2) a strong competition and trade policy to both intervene in cases of unfair competition from non-EU producers (particularly China), structuring public financial support in smart ways (overcoming WTO and State Aid concerns) and enhancing the use and effectiveness of trade defence instruments, 3) astute budgetary policy (where and how to spend smartly) for example in how the European Competitiveness Fund should be deployed in the next MFF combined with smart de-risking instruments⁵ that signal private capital through bankability focus and 4) a smart Foreign Direct Investment (FDI) policy which combines screening, conditions for joint-venture and critical requirements around intellectual property sharing, know-how transfer and training

^{4.} Draghi Report, European Competitiveness, Joint Decarbonisation and Competitiveness Plan, p. 41. 5. Cleantech for Europe, Scale or Fail: a Trade Strategy for Europe's Clean Industry, May 2025 [Link].

of European staff. This is vital to ensure that 'made in Europe' requirements come with real substance and technological know-how and do not mean simply an assembly point for technology imported from elsewhere.

The Industrial Accelerator Act – key elements

The IAA, expected end of November, will need to be decisive on a number of points:

1) introducing the clear and unequivocal possibility of Made in Europe (local content requirements) for net-zero technologies deemed strategic, 2) a broad scope of technologies covered (out of precautionary resilience) to anticipate future supply chain shocks, 3) ensure any requirement is gradually and transparently phased-in, in a way that is easily understandable for the market. The IAA should here probably amend the NZIA to ensure it is integrated with the requirements therein. Once adopted, the blueprint in an IAA (amended NZIA) can be deployed throughout a range of policy instruments beyond procurement, such as EU funding instruments and national support schemes.

01. Explicit 'Made in Europe': stronger demand signals in the NZIA to unlock private capital

The Net Zero Industry Act (NZIA) sustainability and resilience criteria – in public procurement (Article 25), renewable energy auctions (Article 26), pre-commercial procurement (Article 27) and other public interventions (Article 28) – aim at ensuring that equipment entering the Single Market meets certain sustainability performance requirements and that the EU avoids becoming over reliant on one single country for its supply of critical clean technologies such as solar, wind, hydrogen, and batteries, to name but a few.

But avoiding overreliance is a different policy objective than creating demand signals for value chains and technology made in Europe. Sustainability and resilience criteria will only create 'partial' incomplete demand signals that are complex for markets to decipher. The decision-making weight of non-price criteria in procurement⁶ and auctions is limited and is likely to be applied differently by different Member States. Moreover, it contains a significant loophole whereby Member States can waive non-price criteria if their application would lead to cost increases exceeding 15% in auctions or 20% in public procurement. Such thresholds risk excluding key strategic technologies where persistent price gaps – driven by assertive foreign industrial strategies – undermine the policy's intent. Finally, sustainability and resilience criteria are not enough to guarantee demand. Non-EU competitors can adjust to these criteria by shipping towards the European market the most sustainable products and restructuring their supply chains to avoid triggering some of the thresholds. As a result, companies and investors see a patchwork of incomplete demand signals which is not providing a clear signal to private capital to step in.

^{6.} Due to unfair competition, cost differentials on some of the critical cleantech manufactured technology can far exceed the percentages indicated.

Case study:

Resilience & Sustainability Criteria in the EU Innovation Fund -

Similar criteria have been used in deploying EU funding instruments such as the Innovation Fund in the 2nd EU Hydrogen Bank (EHB) call and the Innovation Fund batteries call. The first EHB auction demonstrates the risk of having no sustainability or resilience criteria. Because it lacked non-price criteria or local content rules, most of the winning projects are expected to use Chinese-made electrolysers—diverting EU public funding away from European manufacturers and weakening the business case for local production. Meanwhile, the second EHB auction limited the sourcing of stacks from China to 25% and was still oversubscribed, showing that non-price criteria can protect strategic supply chains without deterring bidders. Finally, the non-price criteria used in the 2024 Innovation Fund battery call around security of supply were considered as being insufficient to provide a strong market signal due to the very significant initial cost difference between cathode and anode active materials components made in Europe and Chinese components.

The IAA's core policy objective should be to equip the EU with the necessary policy tools to create strong demand signals for technologies, including explicit European preference for clean technologies made in Europe. The need to introduce local content requirements in the EU should be further strengthened by the fact that a number of EU trading partners, including the EU's biggest trading partners, are not shying away from such instruments and are strategically securing industrial capacity in core clean technologies⁷ while the EU holds back out of WTO compliance concerns.⁸

Case study:

Connecting the US Inflation Reduction Act (IRA) to the Buy American Build American Act (BABA) – While the impact of the IRA has been well documented and discussed, it is linking the IRA with the BABA and its tying of federal funding to local content requirements around (i) iron or steel products; (ii) manufactured products; and (iii) construction materials for infrastructure projects that create a seismic pull factor on investments and capital towards the US. While these requirements are mandatory

^{7.} See for example Institut Montaigne, Cleantech: Reducing Europe's Strategic Dependence on China (July 2025) and Forging a Post-Carbon Industry: Insights from Asia (October 2024) 8. NZIA Regulation, Recitals (51), (79) and (80).

eligibility requirements for IRA support measures (tax credits), meeting these requirements significantly increases the financial support possible. In the context of these measures, combined with a more assertive trade policy, the US has seen a fivefold increase in solar panel production⁹ and is forecasted to be self-sufficient for its production of battery cells by 2030. Finally, it should be noted that the One Big Beautiful Bill Act (OBBBA) preserved quite a few of the predictable ten-year production and investment tax credits.

Moreover, in the new geopolitical situation where the US and China are not hesitant to use Europe's technology dependence as leverage, it is essential to start integrating the resilience and security rationale much more forcefully into EU policymaking, to ensure the EU is not excessively reliant on non-EU technology for key equipment, including in the Cleantech space. For example, as we electrify the economy, electricity grids, demand response, and energy storage are going to play a vital role to absorb and deploy a higher share of intermittent renewable energy sources. It is vital that security and resilience factors are integrated fully in the design of 'made in Europe' requirements. As we will expand below, this is not a call for local content requirements across all technologies covered by the NZIA or blanket protectionism. The EU will need to adopt in parallel a system to determine which sectors are 'strategic' (see below).

Recommendations:

- → The NZIA should be amended (Article 25, 26, 27 and 28) to clarify that when the EU has determined that a particular Net-zero technology or one or more of its subcategories have been deemed of strategic interest to the EU, the Commission will be required to specify a share of local content.
- → For a Net-Zero technology or one or more of its subcategories deemed strategic, the possibility of disapplying sustainability, resilience and local content criteria due to disproportionate costs (Article 25(10) and Article 26(5) should be suspended.
- → Cybersecurity requirements (Article 25(3)) should no longer be part of an optional list of criteria but should become a mandatory criterion, at least for all technologies or sub-categories of technologies which can be connected to electricity grids. As a greater share of the European economy is expected to electrify over the next years, it is vital that the physical and digital resilience of grids is strengthened.

^{9.} Solar Energy Industries Association, United States Surpasses 50 GW of Solar Module Manufacturing Capacity, 4th February 2025 [Link].

02. Economic Resilience demands a broad scope: anticipating future supply chain shocks

We recommend adopting a strong toolkit for all the technologies

in the NZIA scope. While recognizing that some value chains (solar, batteries, wind, electrolysers) may be at more imminent risk from unfair competition than others (heat pumps), or more suited to demand signals than public funding tools to compete, we believe including all NZIA technologies in the scope will ensure that the legislation is adaptable to future market evolution and supply chain shocks that can happen faster than EU legislation can be updated.

This should be born out of a precautionary resilience principle to anticipate negative market developments (for example electrolysers and heat pumps) will avoid requiring a legislative change to update the scope of the legislation, ensuring it is proactive rather than responsive.

The adoption of this legislation with a wide, precautionary scope would already send a strong signal to markets that the EU is serious about competing in the future of clean industry and will help the EU avoiding being caught off-guard by future supply chain shocks.

Recommendations:

→ The IAA should not be limited to only a subset of technologies covered by the NZIA such as solar or batteries. Instead, it should provide the updated NZIA toolkit – the possibility of introducing local content requirements – for all technologies in scope (Annex NZIA). That does not mean this toolkit should be activated everywhere and instead should be focussed on technologies and value chains deemed strategic. But the perception of the possibility of the EU activating the toolkit could already be a strong signal to trading partners.

03. Operationalising demand signals – creating visibility for companies and investors

Implementing clear 'Made in Europe' criteria and enhancing resilience criteria for technologies deemed strategic will need to address two concerns. First, certain industries and value chain segments exposed to international competition or a very

price sensitive demand may fear the 'inflationary' pressure on costs local content requirements create. Sourcing EU made equipment may command a premium compared to equipment coming from countries which maintain distortive non-market policies and practices. In most cases it will be important to assess how manageable that premium could be and how fast it may come down overtime, particularly for clean technologies with a proven cost reduction potential.

Second, building localized production capacity at scale may not be sufficiently fast to meet European demand and substitute non-EU imports. This is why the introduction of local content requirements may need to be gradual and based on a sound evaluation of potential economic impacts with a granular assessment per value chain – recognizing there may initially be some inflationary effects that need to be evaluated against economic resilience arguments (negative externalities of supply chain dislocations) and security elements.

Made in Europe criteria should therefore reflect a careful balance of minimum EU content requirements per technology value chain, while identifying the optimal point in the value chain to implement the criteria and set a clear and realistic timetable to gradually increase the share of local content. Here simplicity and transparency to the market is critical to ensure that exercise results in strong demand signals for investors and financiers. To avoid unforeseen situations, the IAA could integrate a system of waivers of local content requirements to ensure a pre-agreed timeframe remains attuned to the realities of adjusting value-chains.

Recommendations:

- → For technologies for which local content is deemed necessary, the gradual phase-in of local content should be determined ex-ante with the share (%) increasing gradually and predictably between 2026 and 2030 with clear, evidence-based milestones.
- → If EU supply chains struggle to adjust in time to meet the local content requirements, the Commission should have the possibility under the IAA/NZIA to adopt a decision temporarily delaying the entry into force of the local content requirements.

04. Use of Criteria/Made in Europe in public funding instruments and other specific private demand policy

It is likely that sustainability, resilience and 'Made in Europe' criteria and their calibration may look different, depending on the type of public intervention in which they are used

(regulation vs. financial support) and for what part of the market (public vs. private demand). But the starting point should be to incorporate them in all public interventions.

In parallel to the strengthening of the sustainability, resilience and local content requirements in the IAA, a similar approach must be deployed in EU funding instruments such as the Innovation Fund (already happening) and Horizon Europe in line with the announcement in the Clean Industrial Deal. EU funding should create as much as possible a made in Europe demand signal for technologies and their supply chains. The IAA criteria also serve as a baseline that Member States must use in their support schemes via the state aid rules, such as for the recent Clean Industrial Deal State Aid Framework (CISAF).

Recommendations:

- → Resilience, sustainability and local content requirements should be streamlined in EU funding instruments, similarly to what the EU Innovation Fund has been experimenting with in its auctions and calls. Since this covers EU public funding, these criteria may go further than the minimum baseline of the future IAA.
- → The minimum baseline of the future IAA must be applied by Member States in their national support programs under EU Stated Aid Rules (GBER, CISAF, CEAAG). It is essential that this becomes a baseline to limit the intra-EU competition between EU Member States to lure foreign FDI into the EU.
- → Local content requirements should also be considered in the review of the EU Public Procurement Directive planned for 2026

These criteria could also be used in private demand voluntarily or through mandates in specific sectors (for example having batteries made in Europe for a % of corporate fleets). It could also be used for procuring Battery Energy System Storage (BESS) and Long-Duration Energy Storage (LDES) by regulated utilities, Transmission and Distribution System Operators (TSOs/DSOs) or capacity mechanisms by Member States.

The criteria considered should cover both pre-qualification criteria (i.e. % of local content of number of key components or specific requirements around key components) as well as bid evaluation criteria, through a bonus system for bids with strong local content or a malus factor for bids having no or little domestic content.

Recommendations:

- → Local content requirements can be implemented through a variety of tools depending on the policy instrument in which they are used. It can take the form of pre-qualification criteria to bid on procurement or accessing funding instruments. This can be either a generic share of local content (%) or target very specific equipment or component for security and resilience reasons, particularly for Net-zero technologies deemed strategic.
- → It can also be applied through a bonus system in scoring bids in procurement processes.
- → A bonus system should also be applied for funding instruments, for example under EU State Aid rules. Under the CISAF, Member State schemes for cleantech manufacturing should be able to offer higher aid amounts and intensities to projects that have a strong commitment to procuring local European equipment.

05. Foreign Direct Investment Screening – a necessary complement to 'Made in Europe' requirements

A shift towards Made in Europe/local content requirements in public procurement, the access to public funding instruments and potentially strategic private demand segment, combined with the perceived risk of a more assertive EU approach to trade such as the recent steel sector safeguards, is likely to drive non-EU companies to consider more Foreign Direct Investment (FDI) in the EU, either via green field investments or joint-venture such as the BYD investment and CATL/Stellantis joint-venture, or through acquisition of European companies.

Therefore, it will be necessary to complement local content requirements with a robust FDI screening regime and common EU rules on joint-venture, technology transfer and upskilling of local EU workforce, particularly in technological sectors where the EU has identified the need to partner to benefit from more advanced technologies from non-EU companies. The FDI screening should focus have a materiality threshold to cover large greenfield and brownfield investments. But it may be less relevant when it concerns minority equity investors in a funding round.

It is vital that requirements on FDI screening and substance of joint-ventures are agreed at EU level to avoid potential 'forum shopping' and 'beggar thy neighbour' policies by Member States.

This could for example take the shape of requiring non-EU players in certain sectors that the EU has identified as strategic to enter a joint-venture with a European company (50%-50%). These requirements could for example be waived for companies from countries where the EU has a Free Trade Agreement (FTA) or Clean Trade and Investment Partnership (CTIP). The joint-venture will need to pass existing FDI screening rules and will need to require a sharing of critical Intellectual Property Rights and know-how with the European partner.

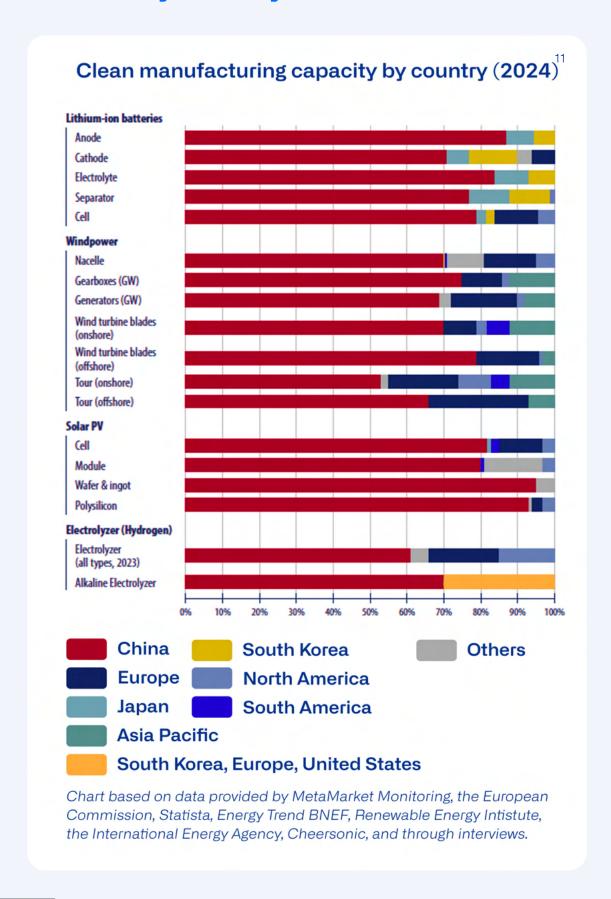
Recommendations:

Tesla and CATL vs. EU Joint Ventures - US policy—including 100% EV tariffs, 25% battery tariffs, and IRA subsidies and 'foreign entity of concern' provisions—has effectively laid the groundwork to ensure Chinese investment is conditioned on tech transfer: in the Tesla-CATL joint venture, Tesla secured IP rights, in-house capabilities, and workforce training. This kind of structured technology transfer does not happen through business-to-business deals alone, especially given Beijing's restrictions on outbound IP sharing. Instead, it requires a strong political framework that mandates such arrangements. Europe lacks a comparable strategy. In Spain, Stellantis and CATL are building a battery gigafactory with €300 million in EU recovery funds, yet no requirements for IP sharing or local supply chain development are in place. European companies are struggling to compete with foreign firms that benefit from open access and no obligations.¹ Similarly, there are no details provided regarding technology transfer around the BYD investment in Hungary.

It can also require non-EU companies to ensure that for every non-EU engineer or critical staff coming from outside the EU, the company is required to hire and train an EU-based engineer. This should be connected to the visa-approval policy of EU Member States. Non-EU companies may need their home staff to deliver the project fast and on time within the EU, particularly in sectors or segments where the EU may have a limited pool of skilled workers. Therefore, the EU should not block this. However, it is entirely reasonable to require in exchange a strong commitment to train local staff.

^{10.} Cleantech for Europe, Scale or Fail: a Trade Strategy for Europe's Clean Industry, May 2025 [Link].

Annex – Clean energy manufacturing capacity by Country



^{11.} Institut Montaigne, Cleantech: Reducing Europe's Strategic Dependence on China (July 2025)