Targeting European Preference Criteria Where They Matter Most

Assessing When, Where, and How “Made in EU” Can Strengthen Socio-Economic Resilience and Competitiveness

Jonathan Barth
Executive Chair, Geostrategic Europe Taskforce & Visiting Fellow Jacques Delors Institute
Affiliated Researcher, Cambridge University Bennett School of Public Policy

Lukas Bertram
Programme Lead: Economics of a Green and Just Transition, ZOE Institute for Future-Fit Economies

January 2026

About the Geostrategic Europe Taskforce

The Taskforce consists of 14 policy experts covering economics, finance, security and climate science from 10 member states. The members provide public policy institutions with thought leadership, foresight and targeted policy solutions for Europe's multi-dimensional security challenges at the intersection of economic, defence and climate security.

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Citation

When referencing this publication, please cite as:
Barth, J. and Bertram, L. (2026). *Targeting European Preference Criteria Where They Matter Most: Assessing When, Where, and How "Made in EU" Can Strengthen Socio-Economic Resilience and Competitiveness. Geostrategic Europe Taskforce.*

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Executive Summary and Recommendations

Increased geoeconomic rivalry, strengthened technological global competition particularly with respect to China, and the erosion of the free-trade order are stress-testing Europe's economic model**.** As a result, politically salient sectors like the automotive and steel industry face severe losses in employment and value-added without a clear pathway for the future. European Preference Criteria provide a promising response.

The following decision framework assesses where, when, and how to apply EU Preference Criteria (EUPC) to effectively support jobs, competitiveness, scale, and transition rather than the protection of incumbents. Based on Eurostat and product complexity data we provide a comprehensive sector analysis of 32 sectors and 234 products. The following recommendations set out a targeted, action-oriented approach to deploying EUPC:

1. **Adopt a single EU-wide decision framework for EUPC:** Apply EUPC only a) where sectors meet clear thresholds on socio-economic relevance, future competitiveness, b) where EUPC effectively addressing sectoral challenges posed by global competition, and c) where trade-offs (price, competition, international relations) are acceptable. Make this framework mandatory for all new EUPC proposals.
2. **DEFEND – Concentrate EUPC on sectors where the EU is already strong**: Use EUPC in frontier sectors such as mechanical engineering, capital goods, machinery, semiconductors, and electronic components, where the EU retains strong competitiveness and spillover potential. This includes the EU's clean and renewable energy technologies.
3. **STRENGTHEN – Target EUPC in growth sectors to accelerate scale and learning**: Prioritise sectors with growing markets where the EU holds technological leadership position (optical and precision equipment) or holds a moderate but recoverable competitive position where demand-side support can unlock scale effects (batteries, energy storage).
4. **TRANSFORM – Make EUPC strictly conditional and time-limited for sectors of high employment relevance but limited future relevance and competitiveness:** Use EUPC only where they support technological catch-up or value-chain restructuring towards competitiveness (e.g. steel and chemicals), with clear benchmarks and automatic phase-out if competitiveness does not improve.
5. **Apply EUPC to the automotive industry on a value-chain basis**: Restrict support to EV-focused value chains, to ensure catch-up to the technological frontier and steer the demand pull towards upstream sectors like batteries, vehicle assembly, electronics, and optical systems and away from legacy ICE supply chains.
6. **Anchor steel support in value-chain restructuring:** Focus EUPC on downstream steel segments to avoid protecting upstream primary iron production with weak cost positions.
7. **Avoid supporting structurally uncompetitive import sectors**: Do not apply EUPC in sectors with low current and future relevance, such as household appliances, coke production, basic textiles, industrial steam generators, and printing and media.
8. **Require ex-ante checks on prices and competition**: Approve EUPC only where consumer price impacts are acceptable and where EUPC design safeguards prevent entrenching incumbents or weakening innovation incentives.
9. **Build Partnerships around "Made with Europe":** use access to the Single Market as leverage in geopolitical partnerships to pursue the EU's geostrategic interests.

1. Security, Supply Chain Risks and Eroding Competitiveness are putting Europe's industry under pressure

Europe's trade-reliant economic model is undergoing a decisive stress-test. Intensifying geoeconomic rivalry, strengthened technological competition, and the erosion of the free-trade order are exposing three interlinked risks: national security risks, supply chain risks, and socio-economic stability. In several critical sectors, openness to trade has shifted from a strength to a severe vulnerability.

The initial policy response focused on national security and supply chain resilience. Declining trust in key trading partners has heightened scrutiny of imports of critical goods and technologies. Last year's almost-standstill of EU car production as result of export restrictions by China affecting semiconductors and critical raw materials illustrates the vulnerability of supply chains.[1] [2]

Attention is now shifting to the socio-economic impact of Europe's emerging "China shock," particularly in automotive manufacturing as result of their delayed innovation in the future car market.[3] [4] While import penetration from China on EV's remains limited due to the EV tariffs imposed by the EU Commission, European auto companies are increasingly outcompeted by Chinese competitors on technological grounds as can be seen by losses of market shares in China. Between 2020 and 2022, German imports from China rose by over 60 percent while exports fell by 30 percent.[5] Across the EU, nearly one million industrial jobs were lost between 2019 and 2023, with millions more at risk.[6] [7] These dynamics are already influencing policy, as reflected in the EU's Automotive Action Plan and the recent adjustments to the 2035 combustion-engine phase-out.

2. European Preference Criteria Promise Ease but Face Trade-Offs

European Preference Criteria (EUPC) are increasingly discussed in the policy debate as a response to the EU's converging security, resilience, and competitiveness challenges. Initially proposed by the European Commission in the context of the Clean Industrial Deal[8] and subsequently adopted by several Member States, notably Germany in its support for the automotive sector[9], EUPC have gained rapid political traction and are expected to be proposed within the Industrial Accelerator Act. However, their effectiveness depends on a clear articulation of objectives and a selective, evidence-based application.

Based on the current policy debate, we identify three distinct policy objectives that can be put forward to justify the use of EUPC:

1. **Strengthening national security** by ensuring domestic production capacity in strategically sensitive sectors where external dependencies pose material risks to security of supply and operational autonomy. In these areas, market outcomes alone are insufficient to guarantee security in times of hybrid warfare and a worsening security outlook.
2. **Increasing supply-chain resilience** by onshoring or near-shoring the production of critical inputs exposed to concentration risks, external shocks, or coercive trade

practices. EUPC can support diversification and redundancy where global supply chains have proven fragile.[10]

3. **Protecting jobs, value creation, and fiscal revenues** through two channels:
   a) By supporting the business model transformation of politically sensitive sectors with high domestic socio-economic relevance, such as automotive or steel, that face structural disadvantages in global competition. In several cases, competitive pressure is no longer primarily driven by trade distortions addressable through conventional trade-defence instruments, but by persistent gaps in technology, production speed, and industrial know-how vis-à-vis global competitors like China.[11]
   b) By regaining competitiveness in emerging industry through two distinct channels: first, by leveraging scale effects that improve cost and price competitiveness as domestic production volumes increase; and second, by attracting foreign direct investment, which - when combined with appropriate conditions - can enable technology transfer and workforce skills development. Together, these effects can help emerging sectors scale and absorb employment from declining industry. [12]

While EUPC can contribute to these objectives, they also involve material trade-offs that require explicit consideration:

- **Price impacts –** reshoring or domestic production can increase consumer prices, although effects are highly sector-specific and often overstated (e.g. switching to domestic green steel and aluminium would raise total vehicle production costs by only around one percent[13]).
- **Reduced competitive pressure** – poorly designed EUPC risk entrenching incumbents, weakening innovation incentives, and solidifying inefficient industrial structures.
- **International tensions** – EUPC may strain relations with global partners, undermine trust in trade relationships, and trigger retaliatory measures.

Taken together, these trade-offs underline the need for a disciplined, selective, and proportionate approach to EUPC application. Given the already existing regulatory frameworks addressing national security such as strengthened investment screening[14] [15] and supply-chain resilience[16], the primary justification for applying EUPC lies in their socio-economic potential: protecting jobs and domestic value creation on the one hand, while helping to regain competitiveness on the other. With careful instrument design, EUPC can contribute to redefining the balance between addressing socio-economic hardship and restoring long-term industrial competitiveness.

3. Eight Conditions Can Assess the Application of EUPC in Achieving Socio-Economic Objectives

To assess when European Preference Criteria (EUPC) are an effective policy tool to achieve the forementioned socio-economic objectives, and how their socio-economic benefits compare with potential price impacts, efficiency losses, and competition or trade distortions, we propose to assess the EU's industrial sectors along three steps:

1. **Sectoral Relevance -** three criteria to determine whether a sector has material socio-economic importance today or strategic relevance tomorrow.
2. **Sectoral Suitability -** three criteria to assess whether the sector's economic structure allows EUPC to credibly advance the intended objectives.
3. **EUPC Acceptability -** two criteria to weigh the policy trade-offs, including cost impacts and compatibility with competition and trade principles.

The criteria are found in Table 1 and provide a strong basis for evaluating the targeted, proportionate use of EUPC.

Table 1: Relevance, suitability and acceptability criteria to evaluate the application of European Preference Criteria on EU industries

Relevance criteria	Suitability criteria	Acceptability criteria
1. High current socio-economic relevance OR high future relevance. Current relevance can be assessed through material contribution to employment, gross value added, and fiscal revenues, indicating political and economic significance. Future relevance include sectors producing high-growth products (e.g. batteries) or operating in structurally important, consolidated markets with enduring relevance for jobs and value creation (e.g. pharmaceuticals). **2. High global market exposure -** European producers compete directly in international markets. **3. Structural challenge** -the sector faces structural decline or persistent constraints to scaling.	**4. Strong EU technological position** -existing EU production capacity, skills, and knowledge provide a credible basis for current or the generation of future competitiveness. **5. EUPC effectiveness** -sectoral challenges primarily reflect insufficient demand or global technological competitiveness e.g. towards China, rather than deficits in skills, infrastructure, domestic market fluctuations, or limited access to inputs. **6. Competitiveness contribution:** The sector has specialized knowledge that is highly relevant for the EU to compete in the future and can play a role in reaching EU competitiveness in future markets, e.g. measures through the complexity of products produced by the sector.	**7. Acceptable price impacts** -consumer price increases resulting from reshoring or local production remain economically and politically manageable. **8. Preservation of competition** -EUPC can be designed to not entrench incumbents or disadvantage start-ups, innovators, or new entrants.

4. Assessing the Relevance and Suitability of EUPC

European Preference Criteria (EUPC) can deliver socio-economic benefits only when applied selectively and under clearly defined conditions. To distinguish where EUPC are economically justified the classification below maps sectors along two dimensions, current socio-economic relevance and future market dynamics, and translates structural conditions into four distinct policy categories (Figure 1). Each category implies a different role for EUPC:

- **Build and Grow** sectors combine low current relevance with positive market outlooks, where EUPC can accelerate scale-up and improve cost competitiveness in emerging markets.

- **Defend** sectors are economically and socially significant today and operate in markets with continued relevance. EUPC may help safeguard jobs, value chains, and fiscal revenues.
- **Transform** sectors of current high relevance which face declining or consolidated markets. EUPC should only be applied if they help support the restructuring of business models rather than preservation and future competitiveness can be expected.
- **Not Relevant** sectors lack both current socio-economic weight and future growth potential, making EUPC unlikely to generate net benefits.

To ensure policy relevance, we concentrate in the following on sectors that are structurally challenged and are exposed to international competition. A full list of the 32 sectors assessed can be found in the appendix.

Figure 1: *Suitability and relevance of applying EU Preference Criteria depends on the current relevance of the sector for the EU's economy and its future market outlook. Sectors can be clustered in Defend, Transform, Strengthen and Import Clusters. The figure summarizes structurally challenged sectors that are suitable for the application of EUPC and highlights sectors that require a conditional application.*

Current relevance \ Market outlook	***Positive market outlook / nascent market (qualitative)***	***Negative market outlook / consolidated market (qualitative)***
High current relevance (Value added & employment)	**DEFEND** **Suitable** *Electronics and optical industry* – **Precision and measurement instruments; Semiconductor and electronic components** *Machinery industry* – **Industrial equipment, capital goods and mechanical systems (incl. electrifications and renewable energy tech, see table 2)** **Conditional** *Automotive industry* – **Final car assembly** (only if EUPC supports technological catch-up) *Chemical industry* – **Specialty chemical products, Basic chemicals and materials** (only if value-chain restructuring restores competitiveness)	**TRANSFORM** **Conditional** *Automotive industry* – **Automotive parts and components** (exclude ICE-related legacy chains) *Basic metal industry* – **Iron, steel and ferro-alloys** (conditional on steel value-chain restructuring) *Fabricated metal industry* – **Tools and hardware** (only indirectly via downstream EUPC)
Low to medium current relevance	**STRENGHEN & GROW** **Suitable** *Automotive industry* – **Battery and energy storage** *Electronics and optical industry* – **Optical, imaging and precision equipment** **Conditional** *Automotive industry* – **Coach and car body production** (via EUPC for EV end-products) *Basic metal industry* – **Steel tubes and pipes** (conditional on steel value-chain restructuring) *Construction material industry* – **Refractory materials industry**[1] (conditional on steel value-chain restructuring)	**IMPORT** **Conditional** *Basic metal industry* – **Semi-finished steel products** (conditional on steel value-chain restructuring) *Chemical industry* – **Synthetic fibre production** (focus on niche markets)

[1]: refractory materials like ceramics are used in high-temperature processes to ensure material stability.

The classification provides a first-order prioritisation of trade-exposed sectors that are facing structural challenges, along the relevance criteria of Table 1: socio-economic relevance and market outlook. Sectors are furthermore structured with respect to their suitability of the application of EUPC based on the suitability criteria, which we elaborate in the next chapter. A more detailed analysis is provided in the annex. It combines Eurostat business statistics on long-term trends in value-added growth and employment to identify structural challenges between 2022 and 2024. Given the backward-looking nature of these data, we complemented the quantitative assessment with qualitative expert judgement to capture emerging dynamics not yet reflected in historical indicators. This was further integrated with a comprehensive AI-supported forward-looking assessment to evaluate future market outlooks and exposure to global competition.

The analysis deliberately distinguishes between sectors and sub-sectors, reflecting the fact that global market dynamics differ materially within the same value chain. Aggregated sector-level assessments risk obscuring these differences and leading to imprecise policy conclusions. For example, within the automotive industry, battery and energy storage activities face strong global growth dynamics and require a build and grow strategy, while large parts of the traditional automotive supply chain are structurally pressured and require transformation. Treating the sector as a single unit would mask these divergent trajectories.

In several cases, data constraints limit the granularity of the assessment. In iron and steel, for instance, available statistics don't differentiate between carbon-intensive primary steel production and clean steel pathways. As a result, the analysis may understate future growth potential in emerging clean steel segments, while appropriately identifying structural pressure in traditional production routes within the EU.

5. Where and How to Apply European Preference Criteria

The EU's approach to defending, growing, and transforming its industrial base should start from a clear principle: **EU Preference Criteria (EUPC) are most effective where they reinforce existing strengths, accelerate scalable growth, or enforce credible transformation**, rather than compensating for structural decline. The sector prioritisation table provides a disciplined framework to apply this logic in practice.

Engineering Leadership: Defending Europe's Industrial Strength in High-Complexity Products and Clean-Tech Technologies

First, the EU should focus on defending its traditional areas of strength. EUPC are suitable without conditionality in sectors where the EU retains strong and defensible competitiveness, notably in mechanical engineering and capital goods which employs over 2.6 Mio people and contributes to 9% of the EU's value add. This includes highly specialised and integrated industrial equipment, advanced machinery, and tailored production systems, as well as clean-tech applications such as tailor-made electrification solutions, wind turbines, electrolysers or heat pumps. Table 2 provides an overview of about exemplary technologies of high political relevance and with a positive market outlook where the EU holds a strong market position.

In this context, applying EUPC pre-emptively can help secure lead-market advantages, anchor demand in Europe, and reduce the risk of sudden displacement. While many of

these sectors are not yet subject to severe competitive pressure from China, rapid catch-up in Chinese manufacturing and associated spillovers expect rapidly increasing competitive intensity.

Strong demand-pull effects can for example be expected where EUPC are applied to lead markets such as clean technologies (including electrification technologies, wind turbines, heat pumps, and renewable energy systems) and defence-related products. The deeper end-use markets are embedded in complex supply chains and therefore have the capacity to cascade demand across multiple industrial segments, the more will EUPC amplify their impact beyond the immediate final product.

A similar logic applies to those products in the semiconductors and electronic components listed in Table 2, a high-growth market employing around 310,000 people in the EU and one of the sectors that places Europe closest to the global technology frontier. Here, EUPC can be a decisive lead-market instrument, reinforcing investment, scale, and ecosystem effects in a sector of strategic economic importance. Careful treatment is warranted, however, in the case of the photovoltaic and wafer production, where the EU has only a weak competitive position. EUPC only make sense for next generation photovoltaic modules, where markets are not yet lost to Chinese manufacturing.

Table 2: Out of 104 technologies, the EU holds moderate or strong competitiveness in the following 84 technologies within the sectors that it should defend with EUPC. PCI shows products complexity based on OEC data.[17]

Sector	*Technology*	*Policy*	*PCI*	*Complexity*	*Market Outlook*
Electrical components, boards, semiconductors	Automotive semiconductors (ICs)	Auto AP	1,27	High	high
	Battery management systems (BMS)	Auto AP	0,65	Medium-High	high
	Vehicle control units (ECUs) & domain controllers	Auto AP	0,65	Medium-High	high
	Advanced logic chips (<10 nm)	Chips Act	1,27	High	medium-high
	Power semiconductors (Si, SiC, GaN)	Chips Act	0,92	High	high
	Analog & mixed-signal ICs	Chips Act	1,27	High	medium-high
	Cyber-defence hardware	EDIS	1,27	High	high
	Defence electronics & sensors	EDIS	1,27	High	medium-high
	Advanced Distribution Management Systems (ADMS) hardware/controllers	Grid Package	0,65	Medium-High	unclear
	SCADA hardware	Grid Package	0,65	Medium-High	high
Electrical equipment industry	Charging connectors & plugs	Auto AP	0.7	Medium-High	High
	High-voltage transmission cables (AC & DC)	Grid Package	-0.5	Medium-Low	High
	Medium- & low-voltage distribution cables	Grid Package	NA	Medium-Low	High
	Electric road systems	NZIA	-0.5	Medium-Low	High
	Overhead contact lines	NZIA	-0.5	Medium-Low	Moderate
Electronics and optical industry	Energy management systems	NZIA	1,16	High	medium-high
	Automated demand response systems	NZIA	1,16	High	high
	Building automation systems (BAS)	AEAP, NZIA	1,16	High	unclear
	Counter-drone systems	EDIS	1,67	High	high
	Grid monitoring sensors	Grid Pckg	1,67	High	high
	Smart meters	Grid Pckg	0,18	Medium	medium
	Home energy management systems	AEAP	1,16	High	high

	Sensors (radar/lidar/camera modules)	Auto AP	1,67	High	high
	Smart charging / load management controllers	Auto AP	1,16	High	unclear
	Testing, validation & calibration equipment (vehicle electronics)	Auto AP	1,66842	High	high
Machinery industry	Geothermal direct-use systems	AEAP; NZIA	1.87	High	Unclear
	Heat pumps (air-air, air-water, ground-source)	AEAP; NZIA	0.59	Medium-High	Medium-High
	Large-scale heat exchangers	AEAP	1.30	High	Medium
	Thermal energy storage systems	AEAP	1.87	High	High
	Waste-heat recovery units	AEAP	1.87	High	Medium-High
	District heating and cooling systems (equipment)	AEAP	1.87	High	High
	Small hydropower refurbishment equipment	AEAP	0.18	Medium	Unclear
	Onshore wind turbines (incl. repowering)	AEAP	0.36	Medium	Unclear
	Flexible gas turbines (hydrogen-ready, peaking)	AEAP	0.77	Medium-High	Medium-High
	Hybrid heat pump systems	AEAP	0.59	Medium-High	Medium-High
	Fuel cell systems for heavy-duty vehicles	Auto AP	0.81	High	Unclear
	End-of-life battery recycling / recovery equipment	Auto AP	1.87	High	Unclear
	Hydrogen compressors (refuelling)	Auto AP; NZIA	1.23	High	High
	Vacuum systems and precision pumps	Chips Act	1.23	High	Medium-High
	Precision motion control & robotics for fabs	Chips Act	1.87	High	Medium-High
	Metrology and inspection equipment	Chips Act	1.67	High	Medium
	Semiconductor manufacturing equipment (lithography)	Chips Act	NA	Medium	Medium-High
	Missile & air defence systems	EDIS	0.74	Medium-High	High
	Electrolysers (as flexible loads)	Grid Pckg	1.37	High	Unclear
	Long-duration energy storage systems	Grid Pckg	1.87	High	High
	Pumped hydro equipment	Grid Pckg	0.18	Medium	High
	AEM electrolysers	NZIA	1.37	High	High
	Alkaline electrolysers	NZIA	1.37	High	Unclear
	PEM electrolysers	NZIA	1.37	High	Unclear
	Solid-oxide electrolysers	NZIA	1.37	High	Unclear
	Concentrated solar power (CSP) plants	NZIA	1.87	High	Medium
	Flettner rotors	NZIA	1.87	High	High
	Geothermal power plants	NZIA	1.87	High	Unclear
	Hydrogen distribution systems	NZIA	1.87	High	Unclear
	RFNBO plants	NZIA	1.87	High	Unclear
	Rigid wing sails	NZIA	1.87	High	High
	SAF plants	NZIA	1.87	High	Unclear
	Suction wing sails	NZIA	1.87	High	High
	Sustainable biogas plants	NZIA	1.87	High	Unclear
	Sustainable biomethane plants	NZIA	1.87	High	Unclear
	Tidal stream energy technologies	NZIA	1.87	High	Medium-High
	Towing kites	NZIA	1.87	High	High
	Wave energy technologies	NZIA	1.87	High	Unclear
	Submerged arc furnaces	NZIA	1,23	High	Medium
	Flash calciners	NZIA	1,30	High	0
	Electric arc furnaces	NZIA	1,23	High	Medium-High
	Hydrogen-ready DRI shaft furnaces	NZIA	1,23	High	Medium-High

	Industrial induction heaters / furnaces	NZIA	1,23	High	Medium-High
	Industrial microwave heaters / furnaces	NZIA	1,23	High	Medium
	Industrial radio-wave heaters / furnaces	NZIA	1,23	High	Medium
	Industrial resistive heaters / furnaces	NZIA	1,23	High	Medium
	Open slag bath furnaces	NZIA	1,23	High	Unclear
	Cryogenic capture plants	NZIA	1,30	High	High
	CO_2 utilisation technologies	NZIA	1,87	High	High
	Direct air capture plants	NZIA	1,87	High	Unclear
	Membrane capture plants	NZIA	1,87	High	Unclear
	Hydro turbine systems	NZIA	0.18	Medium	Medium
	Pumped hydro storage	NZIA	0.18	Medium	High
	Offshore wind turbines	NZIA	0.36	Medium	Unclear
	CO_2 transport technologies	NZIA	0.18	Medium	High
	Electric propulsion systems (waterborne)	NZIA	0.81	Medium-High	High
	Electric propulsion systems (air)	NZIA	0.81	Medium-High	Medium-High
	PEM fuel cells	NZIA	0.81	Medium-High	Unclear
	Solid-oxide fuel cells	NZIA	0.81	Medium-High	High
	Nuclear fission power plants	NZIA	0.77	Medium-High	Unclear
	Industrial infrared heaters / furnaces	NZIA	0.47	Medium-High	Medium-Low

Batteries & more: The EU Should Leverage Existing Opportunities in the Batteries and Optical Industry

Beyond defending incumbency, EUPC can play a catalytic role in growth sectors including precision and optical equipment, as well as batteries and energy storage where policy can leverage existing EU technological and skills positions. The optical and precision instrument industry retain meaningful competitive strength on which the EU can build. In the battery sector, the EU still holds a moderate overall market position on which competitiveness with scale can be rebuilt.

EUPC are particularly effective in the battery sector because the constraints are primarily scale-related, rather than driven by binding shortages of inputs or infrastructure, or energy prices. When combined with complementary instruments that facilitate technology transfer and learning from global leaders, including China, EUPC can accelerate scale-up and cost convergence in markets with strong future relevance.

Cars: Automotive Industry Requires a Pull Towards Frontier Markets

The automotive industry requires a value-chain–based approach. Different segments occupy different strategic positions: battery technologies clearly belong to the *grow* category; vehicle assembly remains a *defend* sector; automotive parts and components are a *transform* sector; and coach and car body production, which are due to smaller employment less central today, represents a future growth market given expected demand for electric vehicles.

EUPC should be applied across the EV-oriented value chain, with strict conditionality tied to technological upgrading and movement toward the electric vehicle frontier. Applying EUPC in this way can create a coordinated demand pull that shifts the entire supply chain

toward future-proof technologies to regain competitiveness. Importantly, this approach also generates positive spillovers into adjacent EU strength areas, including electronics and optical technologies such as ADAS optics, automotive semiconductors, power electronics, vehicle control units, and advanced manufacturing equipment like precision motion control and robotics.

Sectors Undergoing Transformation Need to be Assessed Regarding Their Future Competitiveness Contribution

In "Transform" sectors EU Preference Criteria (EUPC) should be used as a transitional instrument, clearly distinguishing between temporary adjustment needs and permanent competitiveness gaps as shown in Table 3. Their role is not to shield sectors from competition, but to prevent premature deindustrialisation and employment losses where medium-term recovery of competitiveness is realistic.

In sectors where competitive pressure mainly reflects a loss of position at the technological frontier, EUPC criteria can help preserve downstream manufacturing and supplier networks, assuming the core challenge is delayed innovation and insufficient scale rather than structurally uncompetitive costs. EUPC can be justified if they support technological catch-up and stabilise industrial ecosystems during transition phases.

In sectors where disadvantages are driven primarily by high energy prices, especially in energy-intensive industry, policy must assess whether cost gaps are temporary or structural. EUPC can be justified only if the industry remains competitive at the technological frontier, if cost disadvantages result from temporary or policy-driven distortions such as delayed grid expansion, and if firms are improving their position by actively investing in adaptation through efficiency gains, process innovation and electrification – where a business case exists.

EUPC are counterproductive where high energy prices reflect long-term structural disadvantages and no credible pathway exists to close the cost gap. In such situations, support risks masking declining productivity and only preserve jobs in the short-term by delayed restructuring. The survival of the sector would then depend on long-term structural state support and subsidies.

Table 3: Justification of EUPC for transform sectors based on future developments of the EU's technological position and comparative advantage

Dimension	EUPC justified	EUPC not justified
Type of sector	Energy-intensive sectors facing temporary energy-price pressure	Energy-intensive sectors facing persistent cost disadvantages
Nature of cost disadvantage	Temporary and reversible cost gap	Structural and long-term cost gap
Technological position	Sector remains competitive at the technological frontier	Sector is not competitive or losing productivity
Source of high energy prices	Policy-driven or temporary distortions (e.g. gas price shocks, delayed grid expansion)	Enduring structural factors with no realistic prospect of convergence
Firm behaviour	Firms are actively investing in adaptation (efficiency, process innovation, electrification)	Limited or no credible investment in productivity or cost reduction
Outlook for cost convergence	Credible pathway towards more competitive long-term cost structures	No credible trajectory to close the cost gap

Steel: A competitive European steel sector requires value-chain restructuring

From a purely socio-economic perspective, focusing on employment, value added, and market outlook rather than security considerations, the future competitiveness of the EU's steel and aluminium sector in the face of its decarbonization can realistically only be restored through value-chain restructuring.

Decision-making should be guided by the socio-economic importance of value chains. The first value-chain segments - the transformation from ore into iron –with the biggest impact on the EU's cost competitiveness –**employs 10% of jobs involved in steel production**[18]. In total, the manufacturing of steel and ferro-alloys as well as semi-finished steel products, account for roughly **385,000 jobs** in the EU. Downstream activities that are structurally under pressure, such as casting, steel tubes and pipes, and non-ferrous metal processing employ around **495,000 people**.[19]

Yet, given the tight interlinkages value-chain segments cannot be assessed in isolation. Current production structures evolved around a fossil-based energy system, often geographically anchored near former coal mines due to historical energy abundance. With the transition to a decarbonized energy system, it is unlikely that large-scale upstream iron and primary steel production can regain cost competitiveness in these geographies.

A more viable pathway may lie in relocating or sourcing energy-intensive pre-products[20], which account for the far smaller share of employment (10%), such as iron production, from more energy-abundant regions within the EU (e.g. Sweden or Spain) or through imports from third countries (e.g. Brazil, Australia, South Africa, or India as part of the EU-India partnership), embedded in a cooperative decarbonisation framework. This would allow the EU to leverage its technological leadership in green steel production while partnering internationally on deployment. Under such a scenario, downstream segments of the steel value chain could plausibly regain competitiveness, although this hypothesis warrants further empirical assessment.

EU Preference Criteria should therefore, from a socio-economic standpoint, be applied selectively, focusing on downstream segments of the steel and metal industry such as steel tubes, metal casting, and potentially semi-finished steel products, rather than shielding upstream primary iron refracturing from structural adjustment. In doing so, the EU incentivises the search for more cost-efficient production structures for steel pre-products. At the same time they should include clear benchmarks and automatic phase-out if competitiveness does not improve.

Impacts on end-user prices can be expected be limited in this case. Research suggests that fully switching to clean steel and aluminium would increase the cost of manufacturing a car by only around 1%, increases that are modest relative to other inflationary forces such as volatile energy prices. [21]

Chemicals: A specialisation strategy for the chemical sector?

Similarly, EU Preference Criteria (EUPC) should be applied to the chemical industry in a highly selective manner. The dominant structural pressures on the sector stem from international overcapacity and price competition, primarily driven by China, in upstream basic chemical production but these pressures are amplified by structurally higher EU energy costs.

However, with the basic chemical industry employing over 500.000 people, trade-offs between socio-economic objectives and value-chain restructuring are much higher than in the steel and metal sector. Only from a purely competitiveness standpoint, EUPC can only be socio-economically justified where they help preserve or restore future competitiveness.

One option is to consider EUPC in a way that supports value-chain restructuring, such as relocating or outsourcing the most energy-intensive production stages within Europe or build global decarbonized supply chains with partners. Given the political and social sensitivity, this requires further analysis. Initial analysis suggests, that in the case of basic chemicals and synthetic fibre production scale advantages, sustained overcapacity, and import prices in Asia are far below EU production costs and compound with domestic energy prices that are structurally higher and unlikely to converge in the medium term.

Another option is to focus on niche markets. Specialty chemical products remain closer to the technological frontier, are less exposed to pure price competition, and benefit from EU strengths in innovation, quality differentiation, and downstream integration. Applying EUPC here can help stabilise value chains until measures lowing energy prices are implemented.

6. Choosing the Right Design for EUPC

Where EUPC are justified, their effectiveness ultimately depends on how they are designed. Similar to the local content rules in the U.S. Inflation Reduction Act, they should be conditional and tie eligibility of companies to clear commitments to EU societal objectives, including decarbonisation, high environmental and social standards, and long-term value creation through investment, skills, and innovation.

EUPC should be technology-dynamic, supporting technologies rather than incumbents and linked to transparent benchmarks on cost, efficiency, emissions, and scalability, so that support shifts toward better-performing solutions over time. To ensure administrative feasibility, they must remain simple and unbureaucratic, relying on standardised definitions, existing data sources, and minimal reporting requirements.

Crucially, EUPC should be temporary and regularly reviewed, with built-in sunset clauses and review cycles that assess continued need, price impacts, and progress toward competitiveness. Their application must preserve the integrity of the Single Market, requiring consistent EU-level definitions and implementation to avoid fragmentation and subsidy races. Finally, EUPC should be predictable and complementary, providing investment certainty and reinforcing, rather than substituting for, other industrial policy instruments.

7. Conclusion

This paper shows that European Preference Criteria can be a powerful tool. Their value does not lie in shielding industry from competition, but in strategically shaping demand to defend existing strengths, accelerate scalable growth in new markets, and enforce credible transformation where future competitiveness remains attainable.

Applied selectively and on the basis of clear relevance, suitability, and acceptability criteria, EUPC can help protect jobs and value creation while supporting Europe's long-term industrial upgrading.

Applied indiscriminately, they risk entrenching inefficient structures, raising costs, and undermining the integrity of the Single Market. If designed and applied accordingly, EUPC can help the EU navigate intensifying global competition while safeguarding socio-economic resilience and the foundations of long-term prosperity.

One of the main risks of EU Preference Criteria is that, if poorly designed, they could undermine trust with third countries at a moment when Europe is already facing transatlantic strain and intensified great-power rivalry. Used defensively, EUPC risk reinforcing perceptions of fragmentation and protectionism. Used strategically, however, they offer a significant opportunity: to redefine access to the Single Market not solely on short-term efficiency grounds, but as part of structured geopolitical partnerships.

By selectively linking market access to cooperation on decarbonisation, technology, and the EU's interest, the EU can deepen partnerships with middle powers, jointly build resilient value chains, and help shape a global economic order anchored in openness, stability, and shared prosperity.

Annex: Sector analysis and EUPC suitability assessment based on Eurostat (VA and employment data), OEC (PIC data) and subsector specific research summaries by perplexity research

Sector	Subsector	EUPC suitability	Share of GVA [%] (2022)	Employment (2022)	Current relevance (VA)	Current relevance (jobs)	Future relevance	Global market exposure	Structural Challenge	Highest PCI of product	Industry category2
Automotive industry	Final car assembly	Conditional: Only if EUPC supports technological catch-up with frontier technologies	6,16	1090000	High	High	high	high	Strong (Marketshare loss)	0,83	Defend
	Battery and energy storage	Suitable: high growth sector with moderate EU technological position	:	:	NA	NA	High	High	Constrained growth	1,192674	Grow
	Coach and car body producton	Conditional: high growth sector, but should be addressed through EUPC for automotive end-products and conditional on moving the technological frontier on EV vehicles	0,44	160000	Medium	Medium	high	medium-high	medium	1,047193	Grow
	Automotive parts and components	Conditional: Ensure EUPC support the catch-up to the technological frontier by excluding support for legacy industries and supply chains of ICE production	2,84	1164953	High	High	Medium	Medium–High	Strong	1,047193	Transform
Basic metal industry	Semi-finished steel products	Conditional: only if value-chain restructuring of the steel and metal industry improves future competitiveness position of the EU	0,3	74755	Medium-low	Medium-low	Medium	Medium–High	Strong (-21% VA)		Accept Import dependence
	Steel tubes and pipes	Conditional: only if value-chain restructuring of the steel and metal industry improves future competitiveness position of the EU	0,32	90800	Medium-low	Medium-low	Medium-High	Medium–High	strong (-12% Employment)	1,604147	Grow
	Iron, steel and ferro-alloys	Conditional: Only if EUPC supports value-chain restructuring, given the questionable long-term competitiveness of the existing value-chain	1,72	310626	Medium-high	Medium-high	Medium	High	strong (-30% VA)	1,67204	Transform
Chemical industry	Synthetic fibre production	Conditional: Since chinese overcapacity-induced import competition amplified by unfavorable domestic energy costs are at scale that make future competitiveness unlikely, focus should be on winning niche markets	0,08	25256	Low	Low	medium	High	Strong (-25% VA)		Accept Import dependence
	Specialty chemical products	Conditional: only if EUPC supports value-chain restructuring to regain competitiveness by shifting the production of energy-intensive parts of the value-chain	1,05	198000	Medium-high	Medium	high	Medium–High	Medium (-10% Turnover, -5% VA)	0,61783	Defend
	Basic chemicals and materials	Conditional: only if EUPC supports value-chain restructuring to regain competitiveness by shifting the production of energy-intensive parts of the value-chain	3,97	551298	High	Medium-high	Medium-High	High	Strong	2,002721	Defend

Coke and fuel industry	Coke production		0,01	3682	Low	Low	low	Medium	Strong (-33% VA)		Accept Import dependence
Construction material industry	Refractory materials	Conditional: only if value-chain restructuring of the steel and metal industry improves future competitiveness position of the EU	0,07	23000	Low	Low	high	Medium	Strong (-11% Turnover, -9% employment	0	Grow
Electrical equipment industry	Electrical equipment	Suitable: high growth sector with strong to moderate EU technological position	0,74	256411	Medium	Medium	high	0	No Data	1,207374	Grow
	Household appliances	Not suitable: EU lacks sufficient technological and skill knowhow to compete at scale	0,62	220000	Medium	Medium	medium	High	medium (-7% employment)		Accept Import dependence
	Precision and measurement instruments	Suitable: Frontier sector of the EU with expected future competition from Asia	1,65	403101	Medium-high	Medium-high	High	Medium–High	future competition	1,668424	Defend
	Semiconductor and electronic components	Suitable: high growth market with moderate EU competitiveness position	:	310000	High	Medium-high	High	High	future competition	1,889001	Defend
	Optical, imaging and precision equipment	Suitable: Frontier sector of the EU with expected future competition from Asia	0,3	65426	Medium-low	Low	High	medium-high	future competition	0,642197	Grow
Fabricated metal industries	Industrial steam generators		0,05	19535	Low	Low	Low	Medium	strong (-10% turnover)	0,398854	Accept Import dependence
	Tools and hardware	Conditional: consolidated sector with high global market pressure and structural competitiveness gap. Support should only be considered through LCR for products of downstream sectors like machine building, robotics, automotive, to indirectly support relevant suppliers	1,08	350000	Medium-high	Medium-high	medium-low	High	medium (-8% employment)	1,642553	Transform

Furniture industries	Furniture manufacturing	Not suitable: EU competitive disadvantage towards Asia is structural and competitiveness cannot be expected to be regained in the mass market - premium market segments can probably defended but also without EUPC. Given the limited relevance of the sector for technological catch-up and overall EU competitiveness, EUPC should not be applied.	1,6	810000	Medium-high	High	Medium	Medium	medium (-12% employment)	0,917576	Transform
Machinery industries	Industrial equipment and mechanical systems	Suitable: Frontier sector of the EU with expected future competition from Asia	3,32	984568	High	High	High	medium	future competition	1,366585	Defend
	Industrial machinery and equipment	Suitable: Frontier sector of the EU with expected future competition from Asia	3,09	833332	High	High	High	medium	future competition	1,231898	Defend
	Specialised machinery for industrial production	Suitable: Frontier sector of the EU with expected future competition from Asia	2,98	760000	High	High	High	medium-low	future competition	1,942782	Defend
Paper industries	Pulp and paper production	No suitability: consolidated sector with high global market pressure and structural competitiveness gap due to energy costs. Limited relevance for competitiveness of EU frontier sectors. Limited spillovers due to low product complexity.	1,04	154313	Medium-high	Medium	medium	Medium	medium (-14% VA)	0,547972	Transform
Printing and media industries	Media reproduction		0,04	:	Low	NA	low	High	Strong (-15% Turnover)		Accept Import dependence
Rubber and plastics industries	Rubber products	No suitability: Strongly hit by contracting automotive sectors in addition to long-term structural disadvantages vis-a-vie Thailand, Vietanam and China are expected due better cost structures, despite equal levels of productivity and automatisation. Given the low product complexity, contribution to catch-up of EU to technological frontier unlikely.	0,97	313693	Medium-high	Medium-high	Medium	Medium	Strong (-9% employment)	0,310245	Transform
Wood industries	Wood and cork products	No suitability: Market pressures steming mainly from domestic factors in particular declining demand from the building sector	1,57	610000	Medium-high	High	consolidated	Medium	Medium (-3% VA, 0% Turnover)	0	Transform

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