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Europe's Strategic Dependencies



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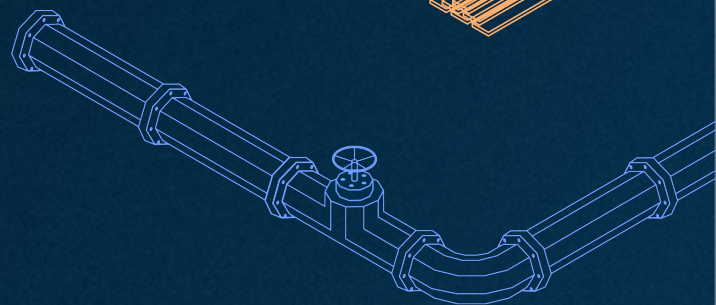
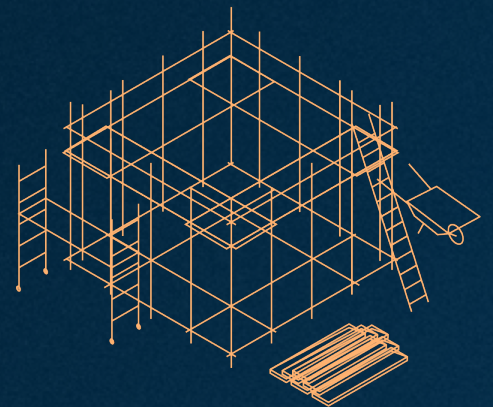
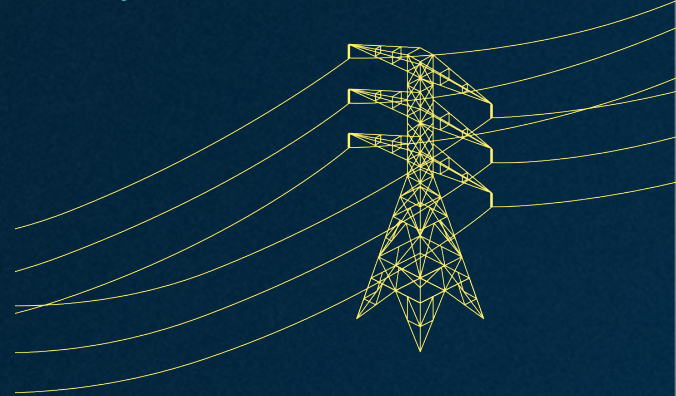
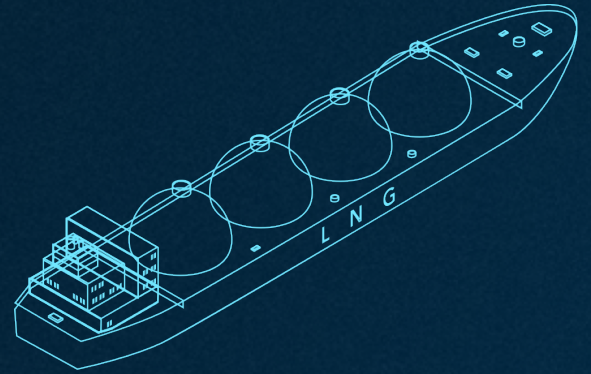
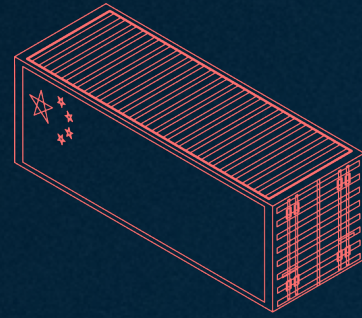
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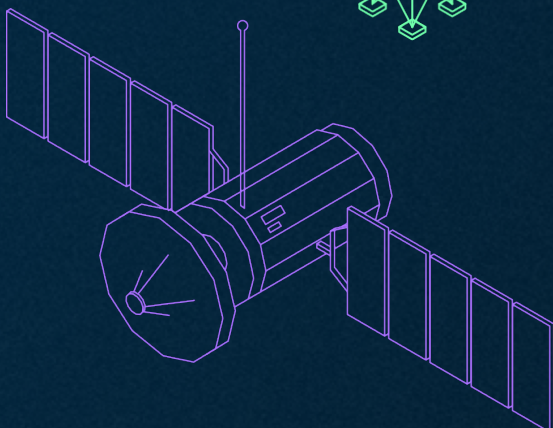
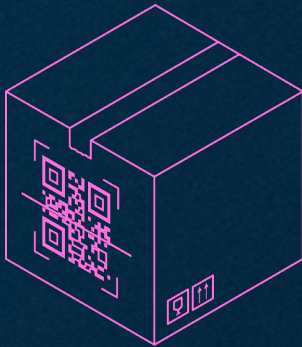
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Editor's Note:

The post-Cold War order is over. The assumptions that interdependence would restrain coercion, that American security guarantees were permanent, that rules-based multilateralism would hold, have not survived contact with the decade we are living through.

It is in this context that Euro Prospects launched its European Strategic Policy Unit, a team of analysts whose collective expertise spans energy, defence, digital infrastructure, trade, and industrial policy. Over the past two months, we have mapped ten of Europe's most critical strategic dependencies domain by domain: from 5G hardware and satellite connectivity to artillery propellant chemistry and the South Caucasus gas routes on which European energy security now rests.

Each brief identifies why its dependency persists and proposes policy responses grounded in what the EU's institutional architecture can actually deliver. The common conviction is evident: the window to act is open, and will not stay that way.

Francesco Bernabeu Fornara

Founder & Editor-in-Chief, *Euro Prospects*
Unit Head, *European Strategic Policy*

Meet the ESP Team:



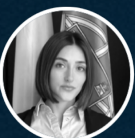
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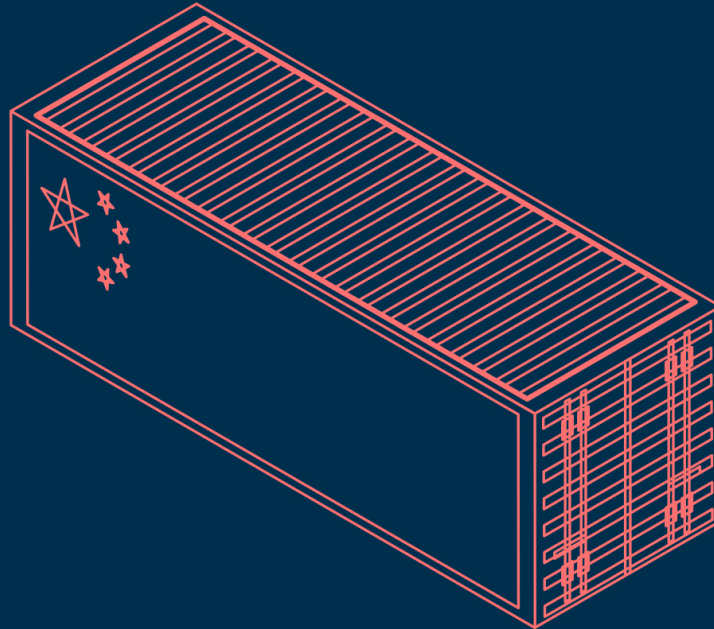
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EU-China Strategic Competition

Beyond Trade Defence: Europe Needs a Strategy Against Chinese Overcapacity

By **Matilde Minetti**

Series 1, Brief No. 1

Editor: **Finn Sands Robinson**

Unit Head: **Francesco Bernabeu Fornara**

*European
Strategic
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EP

China's industrial overcapacity is creating a competitiveness trap for the EU. Cheap supply lowers costs today, but weakens the industrial capacity and political room Europe needs to de-risk tomorrow.

Executive Summary

China has become the world's dominant manufacturing producer, accounting for 36% of global output and 20% of exports in 2022. Yet industrial capacity has increasingly outpaced domestic demand, producing destructive price competition sustained by state-directed investment and limited market exit. The issue now extends beyond China's domestic imbalance. For the EU, whose goods trade deficit with China reached €359.8 billion in 2025, overcapacity is reaching sectors central to competitiveness and the green transition.

This briefing analyses how overcapacity affects the Union through a transmission cycle. Excess Chinese production lowers prices and exports disinflation into the Single Market, strengthening Chinese competitiveness. While cheaper imports reduce costs in the short

term, persistent price pressure weakens the profitability and investment expectations EU firms need to scale. As domestic capacity erodes, dependence shifts to Chinese technologies, inputs and localised production inside Europe, reducing European control over strategic value chains. Economic dependence then becomes a political constraint, as de-risking measures can be framed as threatening costs, jobs and production continuity.

The EU should integrate existing trade defensive tools with a broader strategy to make European production commercially viable. This requires pragmatic engagement with China where interests overlap, stronger domestic capacity-building, and diversified supply through trusted partners.

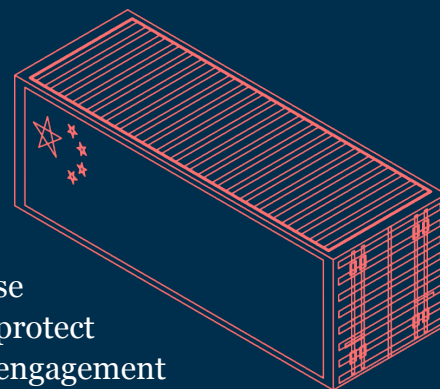
By Matilde Minetti

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Key Recommendations



The Commission's warning that "openness without security becomes vulnerability" captures the logic of EU de-risking. Current defensive tools contain specific distortions, but fail to solve the structural effects of Chinese overcapacity. The EU's response should follow the 2023 Economic Security Strategy's promote, protect and partner logic, combining market defence with pragmatic engagement with China, domestic capacity building and supply-chain diversification.

Selective protection against overcapacity spillovers

Use Trade Defence Instruments (TDIs), including anti-subsidy and anti-dumping measures, where border distortions are proven, but combine them with the Foreign Subsidies Regulation (FSR), FDI screening and the International Procurement Instrument (IPI) to capture spillovers inside the Single Market, including subsidised Chinese procurement bids and localised production.

Pragmatic engagement with China

Keep EU-China channels open where interests overlap. Price undertakings and sectoral dialogue on anti-involution, subsidies and capacity transparency can help curb destructive price competition that damages both European capacity and Chinese profitability, while preserving space for negotiated solutions where they are enforceable.

Promotion of EU domestic capacity

Use the Chips Act, NZIA and Clean Industrial Deal to make European production commercially viable where Chinese low prices deter private investment. Procurement criteria, clean-tech auctions and demand guarantees should help EU firms survive the scale-up phase while ensuring that localisation strengthens European sourcing, know-how and supplier integration.

Diversification through trusted partnerships

Finance China+1 supply chains with trusted industrial and resource partners, including Japan, South Korea, Canada, Australia, India and ASEAN. Global Gateway and EIB support should prioritise alternative input and processing capacity, while coordination with partners should prevent trade diversion from rerouting Chinese overcapacity through third markets.

China's Overcapacity Problem

Over the past decade, China has become the world's dominant industrial producer and exporter. Its share of global manufacturing output rose from 27% in 2011 to 36% in 2022, while its share of manufacturing exports increased from 15% to 20%, with near-monopoly positions emerging in green-technology supply chains. Since the mid-2010s, however, productive capacity has outpaced domestic demand across most Chinese manufacturing sectors, pointing to industrial overcapacity. This is not a simple cyclical imbalance, but a result of China's investment-led growth model, which channelled high savings and local-government incentives into infrastructure, real estate and manufacturing capacity. While this model delivered scale and productivity gains, it has become harder to sustain since the 2021 property downturn weakened demand, reduced investment returns and left consumption unable to absorb China's expanded output.

Rather than allowing unprofitable firms to exit, Chinese industrial policy has often sustained production through subsidies, tax incentives, R&D grants, preferential credit and below-market lending. This is especially relevant for SOEs, which retain large positions in sectors such as automobiles and ferrous metals while benefiting from lower financing costs linked to state support. This policy-shaped overcapacity has produced what Chinese policymakers call *neijuan* (内卷), or "involution". The concern is that low-price competition compresses profitability and obstructs techno-

logical upgrading, as OECD projections already expect China's growth to slow from 5.0% in 2024 to 4.3% in 2026. Under its anti-involution campaign, linked to 15th Five-Year Plan priorities, China is targeting both traditional sectors such as steel and emerging sectors including solar panels, EVs and chemicals.

The Spillover to Europe

China's overcapacity has also become controversial among its trading partners, as Beijing's dominant manufacturing position allows excess production to be channelled abroad. A recent European Parliament study describes it as "a threat to European manufacturers, distorting competition and straining bilateral trade". The EU is particularly exposed, as its goods trade deficit with China reached €359.8 billion in 2025, expanding more than fivefold in volume since 2015. The problem is especially concentrated in sectors central to Europe's technological leadership and green transition. Between 2020 and 2024, Chinese exports to the EU rose by 74% in electrical machinery, including lithium-ion batteries and static inverters, and 165% in automobiles, especially EVs. Recent EU initiatives make diversification part of the industrial response. The EU-Canada Strategic Partnership on Raw Materials was reaffirmed in 2026, while RESourceEU aims to advance aggregation, joint purchasing, offtake agreements and China+1 partnerships.

"This dependence can then create political resistance to de-risking, because reducing exposure appears inflationary, anti-

consumer or harmful to the green transition.”

Beyond trade exposure, the European Central Bank identifies a further macro-industrial risk. Excess capacity and policy-supported involution in China push prices down, strengthening Chinese export competitiveness. For Europe, cheaper goods reduce input costs, ease consumer prices and support clean-tech deployment. Over time, however, persistent low prices squeeze producers' margins, weaken investment and make industries more reliant on Chinese suppliers, components or Chinese-owned production inside Europe. This dependence can then create political resistance to de-risking, because reducing exposure appears inflationary, anti-consumer or harmful to the green transition. The result is a vicious cycle in which cheap imports lower costs today, but weaken the European capacity needed to avoid dependency tomorrow.

Price Pressure and Capacity Erosion

Weak inflation is the most direct spillover of China's overcapacity into EU markets. Linked to anaemic domestic demand, lower Chinese export prices transmit domestic disinflationary pressure into Europe. When persistent, this pressure reshapes firms' expectations and future investment decisions in Europe, as producers face not only lower current margins but also weaker expected future returns. This is decisive in capital-intensive sectors, where investment depends on confidence that firms can recover fixed costs, finance R&D and reach

sufficient scale. The timing is especially damaging: Chinese low-price competition weakens the investment case for domestic production just as the EU needs to mobilise green industrial capacity while facing tighter fiscal constraints, rising defence needs and greater pressure to act as an autonomous geopolitical actor.

Batteries show how price pressure can become capacity erosion. In 2024, China produced 81% of global EV battery cells, compared with 7% in Europe, while EU output covered only 43% of demand. Since battery packs represent 30 to 50% of an EV's value, Chinese battery prices directly shape European competitiveness. Low-cost supply helps carmakers, but weakens the investment case for European battery producers before they reach scale. This dynamic is already visible in the EU's anti-subsidy investigation into Chinese BEVs opened in October 2023. The Commission found unfair subsidisation threatening EU producers and imposed five-year countervailing duties, showing that TDIs can address proven import distortions. Yet duties do not rebuild European battery capacity. After China challenged the measures at the WTO, the Commission's January 2026 price-undertaking process with China's Ministry of Commerce suggests that engagement remains possible even in contested sectors, where it offers WTO-compatible consultation.

“The result is a vicious cycle in which cheap imports lower costs today, but weaken the European capacity needed to avoid dependency tomorrow.”

Hydrogen extends the same mechanism to a market still in formation. In 2024, China's electrolyser capacity was around 18 times its global deliveries, giving it almost 60% of global manufacturing capacity before demand had fully materialised. Chinese alkaline and PEM electrolyser prices roughly halved between 2022 and 2025, remaining 40–60% cheaper than European systems. Lower prices can accelerate deployment, but may also prevent EU producers from financing expansion and commercialising higher-value technologies before the market scales.

Solar PV signals further industrial erosion. China controls over 80% of the global solar supply chain, while rapid capacity expansion pushed panel prices down by 42% in 2023. This lowered deployment costs for European developers, but contributed to factory closures, relocation plans and financial distress among EU manufacturers, including Meyer Burger's German plant. The issue also reached EU enforcement in April 2024, when the Commission opened two Foreign Subsidies Regulation investigations into Chinese-linked bids for a Romanian photovoltaic park. When overcapacity reaches Europe through subsidised procurement bids, the distortion is no longer limited to import prices at the border. The FSR therefore complements TDIs by preventing publicly supported clean-tech projects from becoming outlets for foreign-subsidised excess capacity.

Localisation and Sovereignty Risk

As EU scrutiny of Chinese imports intensifies through tariffs and investigations, localisation

can become an alternative outlet for overcapacity. Chinese production inside Europe may reduce visible import dependence, but it does not restore European control if production still relies on Chinese intellectual property, upstream inputs, data systems and strategic decision-making.

This sovereignty logic is visible in digital infrastructure. The 2020 5G Toolbox sought to reduce dependence on high-risk suppliers in critical networks. By 2023, 24 Member States were involved in restricting providers such as Huawei and ZTE, signalling security concerns. EVs and batteries now raise a similar question. CATL already produces in Germany and is developing larger sites in Hungary and Spain, while other Chinese firms are investing in Hungary, Slovakia and Portugal. These projects may support European EV assembly, but also lock producers into Chinese battery technology, components and decision-making. New EU industrial tools, including the Net-Zero Industry Act and Clean Industrial Deal, offer a way to make localisation conditional on deeper EU capacity-building, including local sourcing, technology diffusion, joint research and workforce development.

Existing EU security tools, including the proposed 2024 revision of FDI screening, address ownership risks linked to foreign investment in critical infrastructure, technology supplies and sensitive information. Yet overcapacity-driven localisation requires a broader screening logic, as Chinese firms may produce inside Europe while retaining ownership across the supply chain. FDI screening should therefore complement TDIs by examining whether local production remains dependent on non-substitutable Chinese inputs, proprietary technologies, parent-company software and strategic decisions taken outside the EU. This would

separate productive localisation from investment that embeds strategic dependence inside the Single Market.

Political Lock-In

In response to rising dependence in strategic supply chains, the EU has reframed its China policy around de-risking. The Commission's 2023 Economic Security Strategy aims to minimise risks while “preserving maximum levels of economic openness and dynamism”. This agenda now spans the Critical Raw Materials Act for strategic inputs, the Net-Zero Industry Act for clean-tech manufacturing, the EU Chips Act for semiconductors, the Foreign Subsidies Regulation for distortions inside the Single Market, and the proposed revision of the FDI Screening Regulation for sensitive investments.

Yet overcapacity makes this strategy politically difficult because cheap Chinese supply creates constituencies with an interest in the status quo. Downstream firms, consumers, clean-tech developers and regional governments benefiting from Chinese localisation may resist de-risking when it appears to raise costs, slow decarbonisation or threaten jobs. The German carmakers' reaction to the 2024 countervailing duties on Chinese EVs is especially indicative, since Volkswagen, BMW and Mercedes-Benz criticised the measure as retaliatory and damaging to China-linked business models. In recent months, however, Berlin has signalled openness to stronger trade defence against Chinese overcapacity, suggesting a tougher political stance.

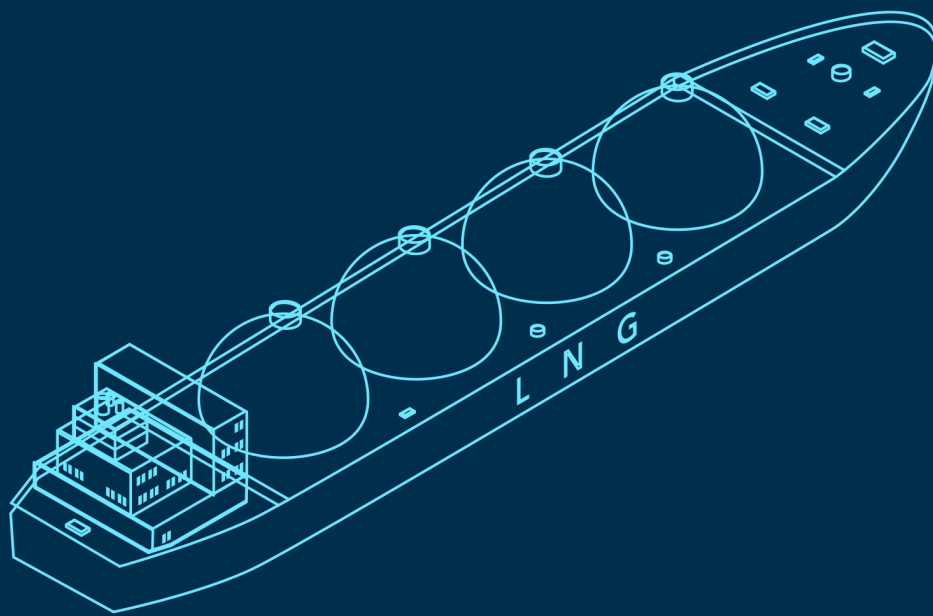
“The EU must therefore reduce the political cost of de-risking by

pairing tougher trade defence with domestic capacity-building, diversified supply chains and procurement rules.”

This tension captures how overcapacity turns economic dependence into political lock-in. The EU must therefore reduce the political cost of de-risking by pairing tougher trade defence with domestic capacity-building, diversified supply chains and procurement rules. The International Procurement Instrument is a tangible tool to prevent EU public tenders from automatically favouring low-cost Chinese suppliers when European firms face restricted access in China. By adding reciprocity to procurement, the EU can use public demand to reduce dependence on Chinese overcapacity.

About the Author

Matilde Minetti is an Italian student currently pursuing her postgraduate studies in Policies and Governance in Europe at King's College London. With a Bachelor's degree in Economics from Luiss University, her research sits at the intersection of evidence-based policy analysis and economic governance. Her work focuses on EU-China strategic competition, ranging from supply-chain dependencies to green transition sovereignty, themes she is also exploring in her master's dissertation. Her knowledge of Mandarin and academic exchange in Hong Kong shaped a strong interest in China's role in global governance, which she further explored at the 2025 World Food Forum as a delegate for China in multilateral negotiations on South-South Cooperation.



Energy Market Resilience

Towards A Coordinated Framework Out of Europe's Gas Dependency

By Rimsha Arif

Series 1, Brief No. 2

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Europe's grid system cannot function without gas-fired plants that are becoming commercially unviable. Having shifted from Russian pipelines to diversified LNG supply, the EU now faces a deep gas dependency, one it has built into its own grid architecture.

Executive Summary

Europe has built a gas dependency. For years, it invested in wind and solar to reduce its reliance on imported gas. But in doing so, it quietly made gas indispensable in a different way. Gas-fired plants are now the grid's last line of defence when renewables fail, and no viable alternative exists yet to replace them.

Dunkelflaute episodes of low wind and sun expose this dependency acutely, forcing gas into the marginal pricing role and sending electricity prices to extreme highs. These episodes are not the cause of the dependency, they are evi-

dence of it. As *dunkelflaute* become less frequent, the commercial viability of the gas peakers Europe still needs is eroding, even as their importance to the grid grows. The response has been 27 separate national fixes, at rising cost and uneven coverage.

This policy brief proposes an EU Strategic Balancing Capacity Framework, enforced through ACER and ENTSO-E, to manage this dependency collectively before the next stress event arrives.

By Rimsha Arif

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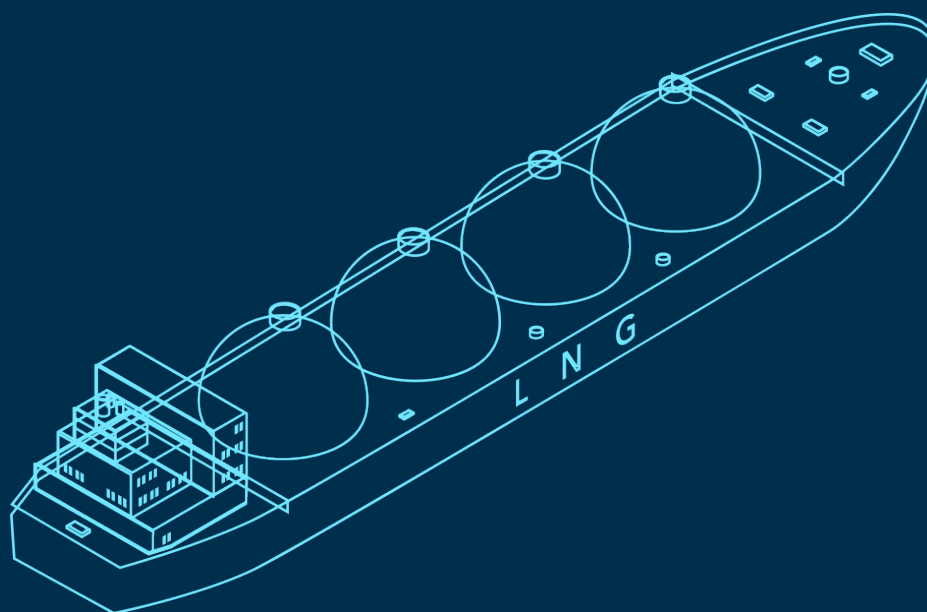
Key Recommendations

Establish an **EU Strategic Balancing Capacity Framework**, binding member states to coordinated backup electricity capacity outcomes rather than leaving adequacy planning to national discretion.

ACER should set and enforce a **binding minimum backup electricity capacity** standard for each member state, calibrated annually through ENTSO-E's ERAA. This will ensure no member state falls below the threshold at which grid stress becomes unmanageable.

Introduce a **managed retirement gate**. No gas plant may close until verified clean replacement capacity of equivalent speed and scale is confirmed operational in the same region.

Introduce a joint **cross-border procurement mechanism** through ACER, replacing the fragmented national procurement with a single coordinated process that could reduce additional installed capacity needs by up to 70%.



The Dependency Nobody Is Naming

Europe's energy system has changed fundamentally since the 2022 energy crisis, but not in the way most assume. Gas dependency has not disappeared. It has shifted from a supply problem to a structural one embedded in how the electricity system is priced. Gas now generates around 18-20% of EU electricity, down from roughly 25% before the crisis. Yet its grip on electricity prices has tightened, not loosened.

The reason lies in how European electricity markets are structured, as IEEFA's analysis explains. Prices are set by the most expensive generator needed to meet demand at any given moment, a system known as marginal pricing. Cheaper sources like nuclear, hydro, wind, and solar are used first. Gas plants, which cost more to run because of fuel and carbon costs, are called in when cheaper sources fall short or when the system needs to respond quickly to sudden changes in supply or demand. In most EU markets, gas only sets the price for a few 100 to 1,500 hours a year. But these tend to be the hours that matter most: peak demand, low wind, low sun. Gas therefore has an outsized influence on electricity prices relative to its share of generation.

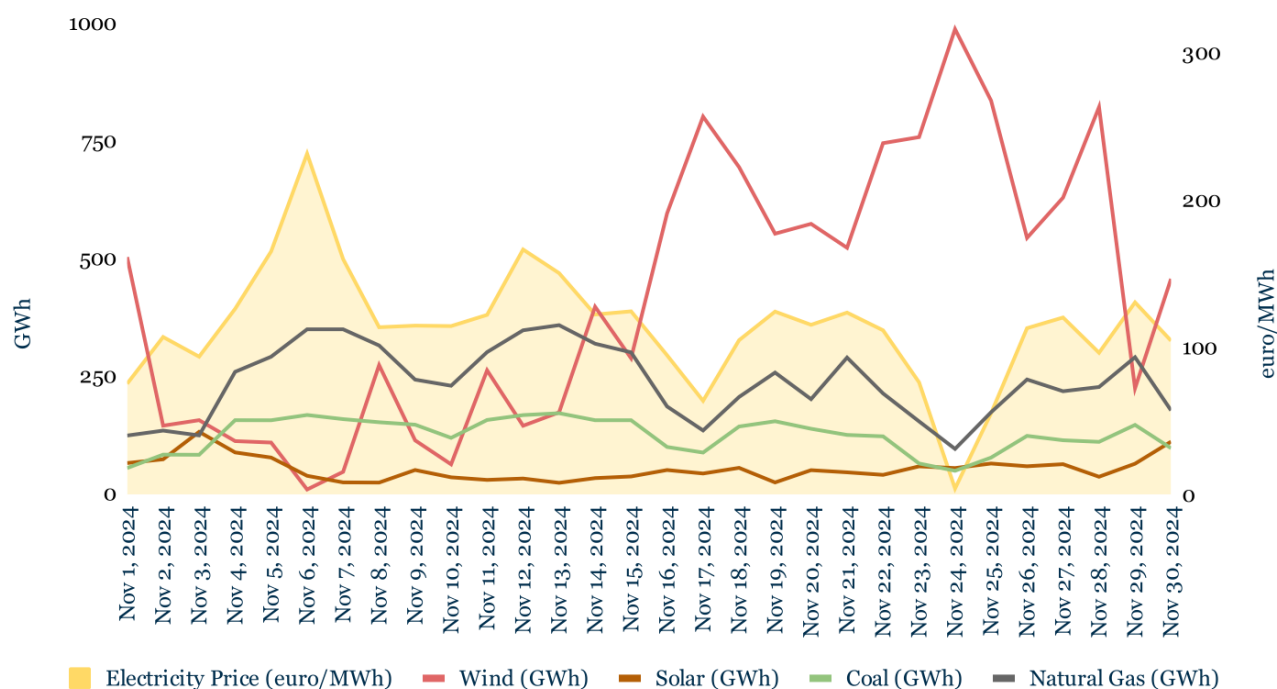
“Gas dependency has not disappeared. It has shifted from a supply problem to a structural one embedded in how the electricity system is priced.”

When gas prices spike, electricity prices follow, swinging from €20-30/MWh in calmer periods to above €60-70/MWh during geopolitical stress. The effect on electricity markets is immediate and uneven: day-ahead prices in Italy and Germany have exceeded €120-150/MWh during these episodes, while prices in France, with its higher nuclear share, have stayed closer to €60-80/MWh over the same periods.

The *Dunkelflaute* Problem

Dunkelflaute refers to prolonged periods when wind and solar output simultaneously decrease due to weather conditions, exposing the hard limits of a renewable-dependent grid. According to Wood Mackenzie, these events occur on average 1.6 times per year across European markets, concentrated between November and January, with 41% lasting longer than three days. The exposure is uneven. Northern markets relying heavily on offshore wind face the highest frequency, with Belgium averaging three events per year. Southern markets like Portugal record none.

The consequences are immediate and severe. During Germany's *dunkelflaute* episodes in November and December 2024, wind generation fell close to zero. Gas and coal filled the gap, supplying 40% of Germany's electricity load during peak stress, with net imports exceeding 20 GW. Wholesale prices spiked to €1,000/MWh, more than ten times the annual average. Intraday prices, the cost of electricity traded within the same day, reached €820/MWh. Figure 1 confirms that this is not an anomaly: every time wind collapsed in Ger-

Figure 1: Germany's Daily Electricity Prices and Generation Sources

Source: [SMARD](#)

many in November 2024, gas ramped up in direct proportion, and prices followed.

technology it is simultaneously trying to eliminate.

This is not a supply story. Germany did not run out of gas. What it lacked was any alternative to gas-fired plants capable of responding at the speed and scale the grid required. This is what balancing capacity means: the dispatchable power that a grid operator can call on instantly when generation from weather-dependent sources falls short. Unlike wind or solar, balancing capacity does not depend on conditions. It runs when commanded, stops when not needed, and exists precisely to absorb the gap between what renewables promise and what the weather delivers. The *dunkelflaute* is not the problem. It is the diagnostic. It reveals that beneath the EU's renewable expansion lies an unresolved structural dependency on a

The Viability Cliff

[Wood Mackenzie's](#) analysis of gas peaker revenues makes the structural problem concrete: merely two *dunkelflaute* events in 2024 generated over 50% of the annual wholesale revenues of the gas peaker plants, the gas-fired generators designed to switch on quickly during periods of peak demand. Their entire business model depends on stress moments being

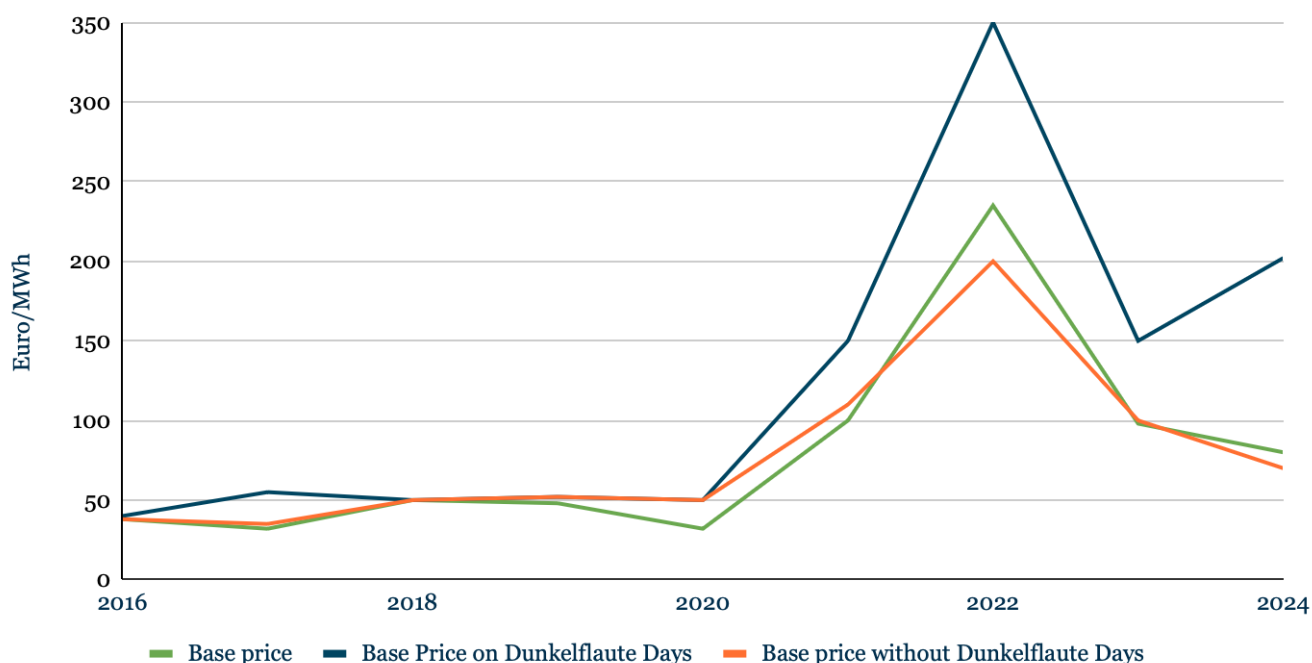
frequent enough and prices being high enough to cover fixed costs across the whole year.

That model is becoming increasingly precarious. *Dunkelflaute* events are becoming less frequent as the grid evolves, which means the revenue windfalls that gas peakers depend on are arriving less reliably. Yet the price impact of each event is growing. In 2024, the annual average electricity price fell to around €80/MWh, while prices on *dunkelflaute* days spiked to €202/MWh, a gap of over €120/MWh and the largest relative divergence since the 2022 energy crisis. Figure 2 illustrates this: as normal-day prices stabilised, *dunkelflaute*-day prices pulled sharply upward, compressing the window in which gas peakers can earn enough revenue to remain commercially viable.

“Unlike supply dependency, this structural dependency on gas as grid backup cannot be resolved by finding a new import partner.”

This creates a structural trap. Shutting these plants down before sovereign alternatives exist at scale would leave the grid with no safety net. Yet keeping them running means accepting that every *dunkelflaute* pushes emissions upward and pulls the system further from its climate commitments. Europe is simultaneously closing coal plants, watching its gas fleet age, and managing an uneven nuclear transition, with several reactors retiring in countries like Germany even as others expand capacity elsewhere. The result is a system with less and less

Figure 2: Comparison of Base Prices with and without Dunkelflaute Days in Germany



Source: [Montel Energy](#)

backup at the exact moment it needs more. A German grid operator has already warned that the country cannot afford to shut down backup capacity without first ensuring viable alternatives are in place. That warning applies across the EU. And unlike supply dependency, this structural dependency on gas as grid backup cannot be resolved by finding a new import partner.

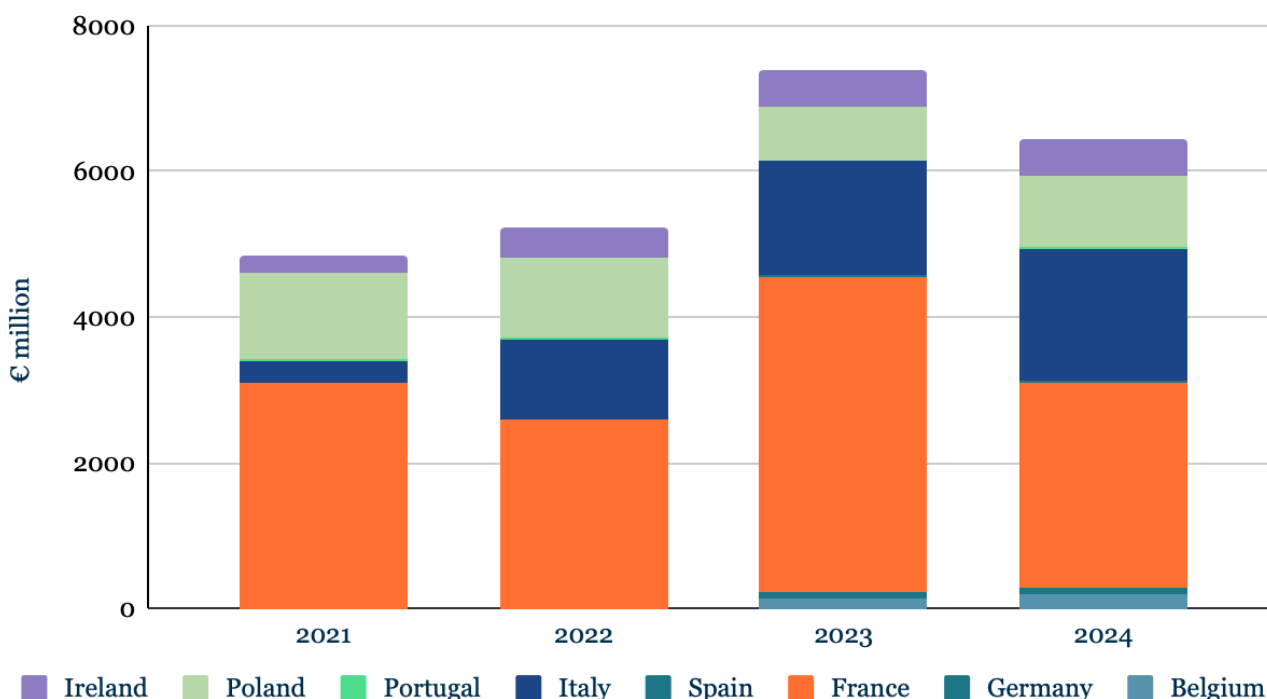
The Fragmented Diagnosis

The balancing capacity problem does not have a European solution yet, only 27 national ones. While Germany seeks Commission approval for 12 GW of new gas capacity under state aid

rules, France, Italy, Belgium, and Poland each operate under entirely separate capacity mechanisms with different designs, rules, and price signals. Each member state is essentially solving the same problem independently, at greater cost and with less certainty. Figure 3 illustrates the financial consequences. The amounts member states are paying to secure backup capacity are rising overall but concentrated in a handful of countries, primarily France, Belgium, Ireland, Italy, and Poland. Meanwhile most of the remaining 22 member states have no comparable mechanism in place at all.

The costs are measurable. Since no binding cross-border solidarity obligation exists, each member state plans for worst-case scenarios independently, building in redundancy that a coordinated system would not require. ACER

Figure 3: Capacity Payments Across EU States



Source: Bruegel based on ACER

modelling, from the EU's energy regulatory agency, shows coordinated procurement could reduce additional EU installed capacity needs by up to 70%, a saving that fragmented national approaches fail to capture. Meanwhile, capacity auction prices differ by more than tenfold across the EU. These prices are set through competitive processes where generators bid to provide backup electricity capacity. Cross-border participation also remains minimal despite the EU Electricity Regulation, which sets general principles for capacity mechanisms but does not require member states to open their auctions to generators in other countries.

The Commission has recognised the problem. In March 2025, it released the Clean Industrial Deal State Aid Framework (CISAF) to accelerate approval processes and harmonise capacity mechanism design parameters across member states. But it speeds up approvals without mandating coordinated outcomes and lacks a common vision on design.

Without a coordinated framework, fragmented national bets on gas plant survival will produce uneven adequacy across the internal market, recreating at the system level the same asymmetric vulnerability that has defined Europe's energy dependency since 2022.

Towards a Pan-European Standard

Existing crisis instruments, including the Risk-Preparedness Regulation and the 2022 emergency intervention measures, address acute

short-term shortages and price spikes. Neither establishes a binding long-term capacity standard or a managed retirement pathway, which is why the structural problem persists beneath them. The Commission should establish an EU Strategic Balancing Capacity Framework. Unlike CISAF, which accelerates national approvals without coordinating outcomes, this framework would bind member states to a collective European standard.

The starting point is a binding minimum dispatchable capacity standard, meaning a guaranteed floor of electricity generation capacity that can respond instantly to demand, regardless of weather conditions. The standard would set a floor below which no member state's balancing capacity may fall, calibrated through the European Network of Transmission System Operators for Electricity's European Resource Adequacy Assessment (ENTSO-E's ERAA) and enforced through ACER. ENTSO-E's ERAA 2025 identifies Austria, Czechia, Slovakia, Hungary, the Netherlands, and Luxembourg as facing projected adequacy shortfalls. These are smaller, less interconnected markets with limited fiscal capacity to fund backup capacity, precisely the member states least equipped to address shortfalls alone. The Commission sets the minimum standard. Member states choose how to meet it. This mirrors how EU renewable energy targets already work, binding on the outcome, flexible on the means. The standard does not prevent member states from maintaining more backup than the minimum requires. It ensures no part of the interconnected EU grid falls below the point at which stress events become unmanageable.

The second element is a managed retirement gate for gas plants. No balancing capacity may be decommissioned until a verified replace-

ment capacity of equivalent response speed is operational and confirmed through the [ERAA](#). The ERAA is the EU's independent annual assessment of whether each member state has sufficient electricity generation capacity to meet demand reliably under stress conditions. This does not permanently protect gas plants. It conditions their exit on evidence rather than market timing. [ENTSO-E projects](#) that 6 to 8 GW of balancing capacity faces decommissioning between 2028 and 2030 before replacements are in place. Without this gate, those plants exit before anything fills the gap they leave behind.

The third is a coordinated cross-border procurement mechanism. In March 2026, [ACER](#) received [ENTSO-E's proposal](#) to integrate capacity mechanism parameters into the [ERAA](#) 2026 framework. That is progress in planning coordination. But the Commission must go further by setting a joint procurement target through the [EU Electricity Regulation](#), while leaving member states free to choose how they meet it. This would convert the coordination savings already identified by ACER into an actual reduction in costs for consumers and industries across the internal market. Planning coordination alone, without a binding target and managed retirement pathway, stops short of a European solution.

“Every dunkelflaute between now and then will test a grid that is becoming less buffered, not more. The next stress event will not wait.

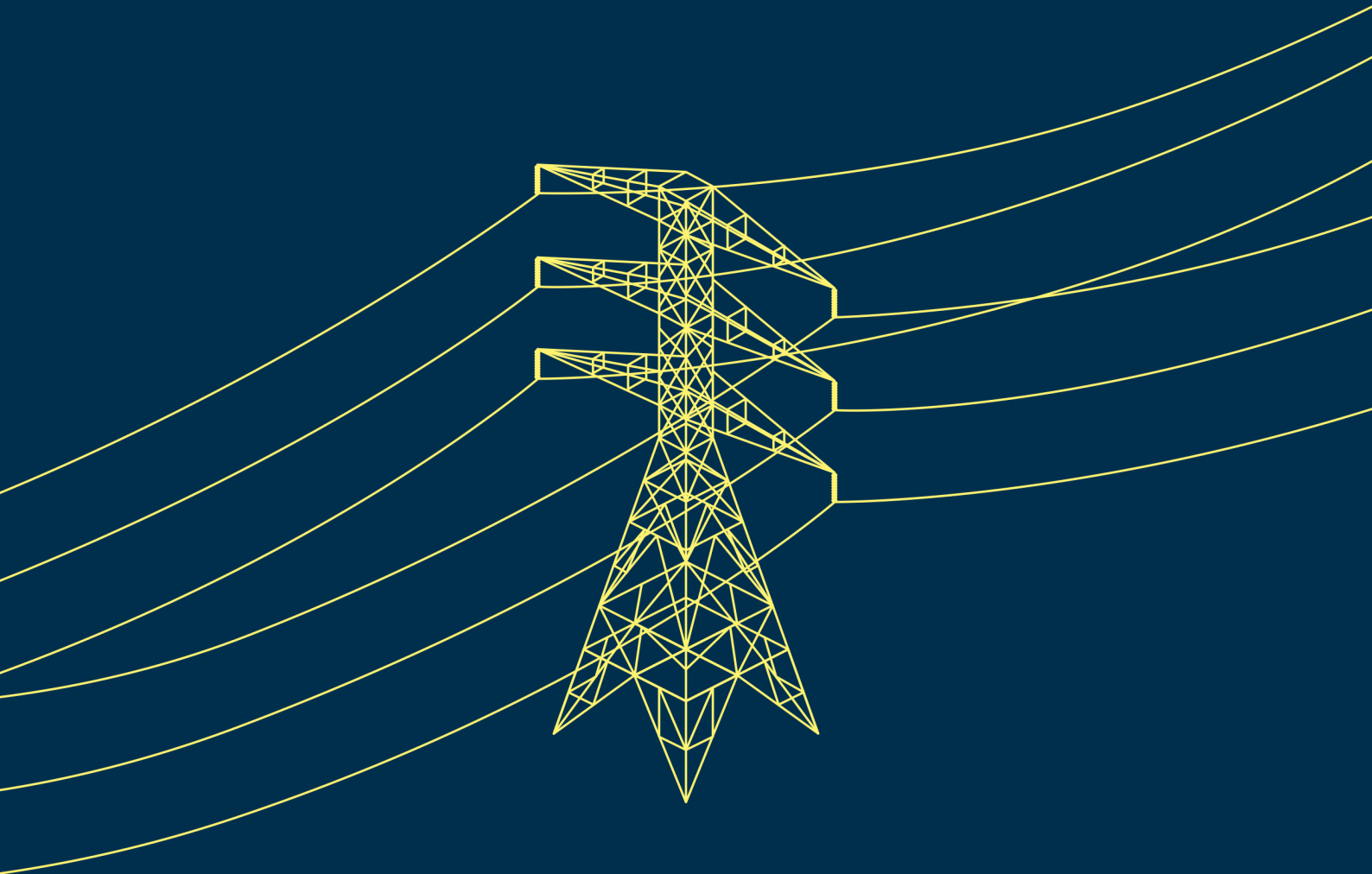
The Commission has the legal basis to act through the [EU Electricity Regulation](#) and the state aid framework. What is missing is the po-

litical will to bind member states to collective outcomes. The proposed framework includes a built-in sunset condition: the obligation dissolves once each member state's [ERAA](#) assessment confirms that clean backup capacity not dependent on imported fuel covers its adequacy needs. This is not a permanent entrenchment of gas dependency. It is a mechanism for managing its exit on Europe's terms.

Every *dunkelflaute* between now and then will test a grid that is becoming less buffered, not more. The next stress event will not wait.

About the Author

Rimsha Arif is an applied economist based in the Netherlands. Originally from Pakistan, she holds a Master's in Economics with Distinction. She specialises in energy pricing, market design, and the distributional impacts of energy policy. Her professional experience spans applied econometrics and public-sector policy evaluation at the World Bank and Oxford Policy Management. Having relocated to the Netherlands, Rimsha is now focused on European energy and industrial policy, with particular interest in domestic energy market integration, pricing coordination, demand estimation and forecasting, and industrial energy policy during the clean energy transition.



Energy Connectivity

Green Electrification Diplomacy: A Credibility Test for the EU

By Juan Carlos Leunissen

Series 1, Brief No. 3

Editor: **Rimsha Arif**

Unit Head: **Francesco Bernabeu Fornara**

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The EU's external energy partnerships will be credible only if they create tangible benefits for partner countries, rather than new dependencies.

Executive Summary

The emerging 'age of electricity' demands a fundamental reshaping of energy grids that support electrification. Being an inherently cross-border matter, such a transformation needs a global leader with ambition, credibility, and the capacity to build sustainable global partnerships. As a pioneer of the green transition, the EU has an opportunity to act as a global connector and advance cross-border green electrification partnerships that are strategic and inclusive.

However, the EU faces credibility challenges and to overcome them, its external energy partnerships must create tangible value for

partner countries. Examples from EU energy and electrification partnerships around the world show that partners face bureaucratic burdens, and in some contexts, the EU fails to meaningfully include local communities. The EU must ensure that its approach is not perceived as extractivist, focused only on energy supply, or centred on its own strategic priorities. To overcome these tensions, the EU should present its Global Gateway strategy as a development strategy that supports green energy corridors through genuine reciprocity, including with non-state actors and vulnerable groups.

By Juan Carlos Leunissen

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Key Recommendations

A Team Europe Initiative for electricity connectivity

Green electricity interconnectivity partnerships remain under-resourced and poorly integrated. The EU should mobilise a Team Europe Initiative for electricity connectivity and adapt lessons from the German PtX Development Fund for how grants, loans, equity and blended finance can make green energy projects bankable.

Launch a “Green Corridor” label

The European Commission should develop a “*Green Corridor*” Label for electricity interconnectors and grid projects, aligning Projects of Mutual Interest (PMI) with the shared energy priorities of EU Member States and third countries, including partners beyond the EU’s immediate neighbourhood. Projects should receive financial and permitting advantages only if they meet well-defined criteria on local grid benefits, environmental protection, community participation and fair distribution of benefits.

A leaner, more credible COP agenda

The EU should come to COP with fewer priorities, but a more credible agenda: green electrification, adaptation finance and just transition delivery. This requires showing leadership by example, including by agreeing internally on its own phase-out pathway and by making climate finance less dependent on rebranding existing commitments.

Fund Africa-Europe Investment Packages, don’t rebrand them

EU energy partnerships with African countries should not replace development cooperation. The Global Europe Instrument in the 2028-2034 MFF (the new EU budget) should contain Africa-Europe Investment Packages focusing on climate adaptation and resilience. Projects should not be a rebranding of old initiatives, but should support local grids, including through additional blended finance.

Make community ownership a condition

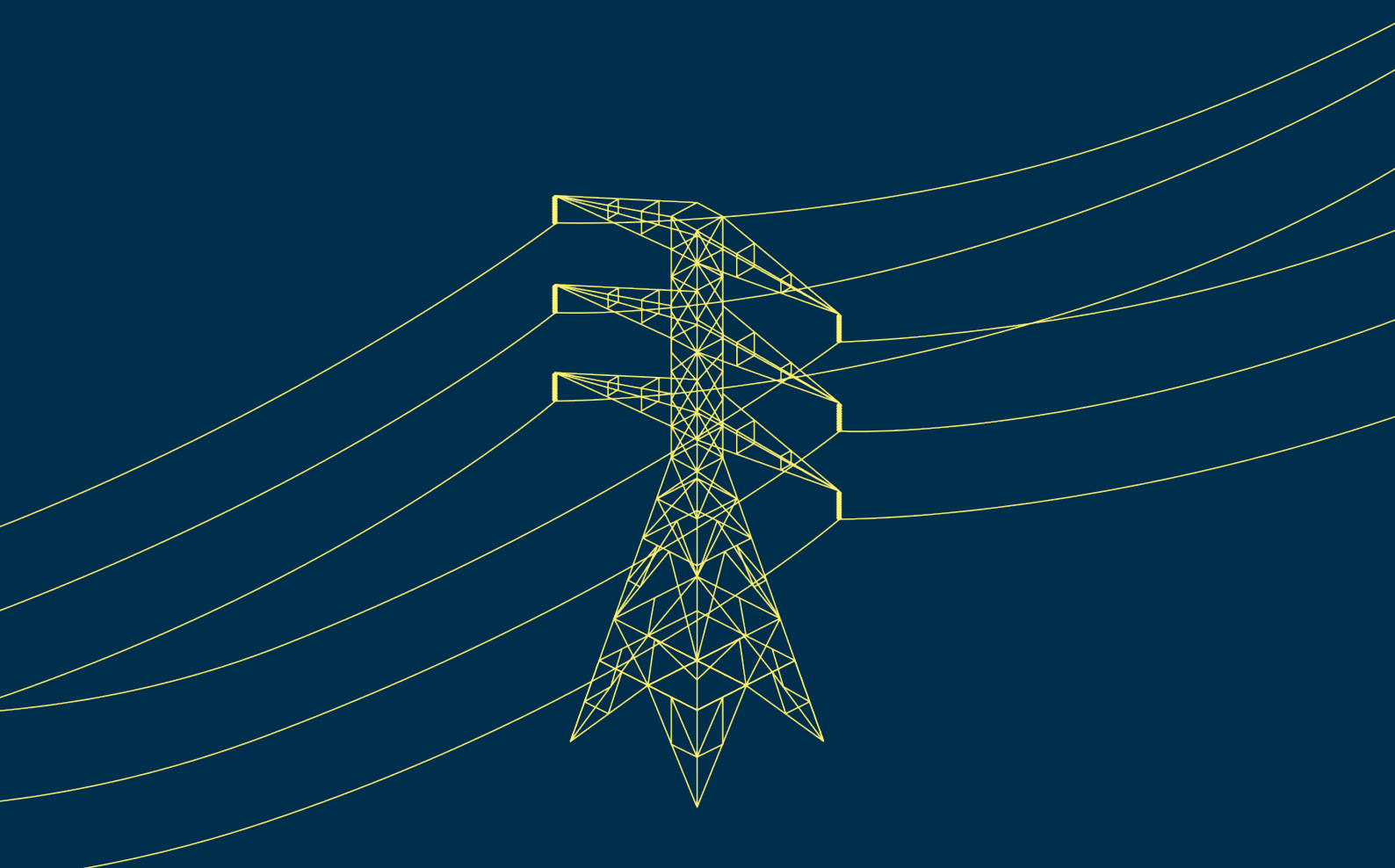
The European Commission should make community ownership and participation of Indigenous groups a condition for green energy and critical raw material projects. That includes revenue sharing and evaluations based on local social performance, in order to avoid situations such as the Atacama community affected by lithium extraction.

Give civil society a real seat in the Western Balkans

In the Western Balkans, electricity market integration should not be shaped only by governments, financial institutions and the private sector. Civil society organisations should have a stronger role in Energy Community fora through working groups and reform follow-up.

Assess political and social risk in Central Asia first

In Central Asia, the EU should introduce *Political Economy* and *Social Risk* Assessment before expanding green electricity corridors. Such an assessment would make it easier to understand how state actors, semi-state actors, and non-state actors shape the project environment and affect communities and vulnerable groups. It can also reduce the risk that EU cooperation is perceived as too eurocentric.



Europe's Electricity Partnerships Need Shared Resilience

The world is entering an *Age of Electricity*, writes the International Energy Agency (IEA), and it could not come at a more critical time for Europe. Russia's full-scale invasion of Ukraine has exposed the EU's dependence on fossil fuels at an alarming rate. Electrification and fossil fuel phase-out are therefore two sides of the same coin. Under an IEA scenario, electricity is expected to account for more than half of the global final energy consumption by 2050, and electrification will be a major theme for COP31.

“Electrification and fossil fuel phase-out are therefore two sides of the same coin.”

Yet, reducing that dependence is not merely about securing sufficient, sustainable energy supply. As Europe moves towards a more electrified system, it must also reimagine the energy links on which that system will depend. If the EU wants to prevent one dependency from simply being replaced by another, however, it must not only redesign its own energy grid, but also place electrification more centrally in its external policy.

In doing so, the challenge goes beyond identifying reliable partners for sustainable energy

supply. It raises wider questions regarding how Europe should structure new energy links, who would benefit from them, and what risks they may pose. Supply contracts must be complemented by shared investment, local grid development, environmental protection, fair access to energy and community involvement. Energy diplomacy is therefore not merely a technical issue, but a matter of governance, trust and political legitimacy. Without a clear commitment to building shared resilience, energy connectivity risks becoming hierarchical and extractive, rather than genuinely cooperative. This would weaken the credibility of the EU's external energy policy, put its global position at risk, and endanger the achievement of global climate objectives.

The EU has already been introducing a growing arsenal of policy instruments aimed at shaping its international role in the green energy transition. Through bilateral and multi-lateral climate partnerships and numerous Global Gateway projects, the EU and its Member States have attempted to address the global energy transition. In theory, this allows the EU to offer more than access to markets or demand for green energy: it ought to support the local development of energy systems, regional interconnections, jobs, and industrial capacity.

However, those ambitions are not unequivocally credible. For many partner countries and societies, EU green energy projects are not viewed in isolation. They are interpreted through a broader lens of debt burdens, extractive interests, unmet or slow climate finance promises, and European ambiguity around fossil fuels. This is of particular relevance with regard to the increased attention towards strategic autonomy as a central theme in EU policy debates. This emphasis is timely,

but also feeds an ambiguous perception; if green energy connectivity is framed too strongly around Europe's own strategic autonomy, it may deepen existing concerns about the credibility of the EU's external climate diplomacy. This perception is reinforced when different Commission departments and member states pursue their own deals. For partners, this can appear fragmented and transactional: is Global Gateway development cooperation, a commercial strategy, or is it geopolitics?

“If green energy connectivity is framed too strongly around Europe's own strategic autonomy, it may deepen existing concerns about the credibility of the EU's external climate diplomacy.”

This ambiguity underscores the importance of developing a credible green corridor label: one that is tied not only to sustainability standards, but also to meaningful participation by local communities and civil society. Without reciprocity and shared resilience, energy diplomacy may lose its credibility. The following selected cases illuminate where tensions arise in EU green electrification diplomacy.

Lessons from Africa: Beyond EU Templates

Those tensions are sharply illustrated by EU energy partnerships in Africa. There is persistent scepticism towards European initiatives

that are presented as sustainable and mutually beneficial. Actors fear that in practice, such partnerships are a disguise for a new sort of green extractivism. Sustainability is generally a shared Euro-African agenda priority, but contexts do not always align. While climate adaptation is a top priority for many African countries, EU strategies often place more emphasis on emission cuts and the energy transition. A green corridor centred primarily around exports or climate targets will therefore be viewed very differently from one that also supports local power grids, adaptation planning and access to energy in vulnerable countries. There is also mistrust about the scale and quality of European funding for climate adaptation. African partners point to the relabeling of existing funds and overpromises in financial commitments. This comes just as official development assistance (ODA) from EU institutions fell by 13.8% in 2025, feeding into the perception that the EU is acting in pursuit of its own strategic autonomy, rather than addressing the shared perils of climate change.

Lessons from Latin America: Community Agency

The same criticism surfaces in Latin America, where the EU's green agenda intersects with sensitive questions of indigenous rights and resource extraction. Tensions emerge around the interaction between the EU's green policy agenda and affected communities in third countries. The climate neutrality targets of the European Green Deal and the objectives of the

Critical Raw Materials Act for extraction, processing and recycling are part of a legitimate attempt at decarbonisation. However, they risk externalising environmental and social burdens. In Chile, Bolivia and Argentina, Indigenous peoples, such as Atacama communities, are affected by lithium projects. Concerns have been raised about water scarcity, ecological damage, and limited consultation. Similar concerns regarding environmental impact and Indigenous rights may arise for the power interconnection project between Colombia and Panama, subject to recent Global Gateway calls.

Lessons from the Western Balkans: Civic Participation

EU enlargement is increasingly relevant for the EU electrification efforts. Up to 70% of the electricity flowing through the Western Balkans ultimately ends up in the EU. Integration of electricity markets can accelerate the green energy transition, particularly in Bosnia and Herzegovina and Kosovo, which remain highly dependent on coal for electricity generation.

Electricity market integration is thus not only an EU priority. For Western Balkan countries with EU ambitions, this is part of the regulatory convergence and alignment with the EU acquis, in which the Energy Community Electricity Integration Package plays a pivotal role. The first EU-Western Balkans electricity market coupling may take place in 2028 or 2029.

However, just as in other regions, the EU's efforts require inclusive strategies.

Civil society participation plays an important role as a societal bridge to represent local voices in the policy process. Not least is this the case for a green energy transition, which affects local employment and electricity prices, and which in turn can shape public support for EU integration. However, the involvement of civil society organisations in the revision of the Green Agenda for the Western Balkans Action Plan is reportedly limited and inconsistent. Many organisations were excluded from working groups, while monitoring the sustainable transformation efforts.

Lessons From South Caucasus and Central Asia: Corridors that Deliver

Further into the South Caucasus and Central Asia, extending green electricity connectivity offers genuine strategic potential. The Caspian Sea alone is estimated to have 845 GW of offshore wind technical potential, nearly double that of the Black Sea. Armenia's grid modernisation, as a step towards a regional electricity corridor, and the planned trans-Caspian cable for green energy from Azerbaijan, Kazakhstan and Uzbekistan to Europe are timely and strategically relevant. In Central Asia, the EU can use its comparative value by strengthening support for reliable data flow, smart metering and capacity-building with transmission sys-

tem operators. For that, it must better assess how state, semi-state and non-state actors shape the project environment. Otherwise, its approach risks being perceived as bureaucratic and Eurocentric, in particular when combined with EU strategic autonomy ambitions.

By contrast, China's approach, built around cooperation with authoritarian local elites, has in fact proven more effective at getting projects off the ground. However, its informal elite networks leave local residents, in particular vulnerable groups, poorly informed and excluded from decision-making, undermining public support as well. This allows China and local elites in Central Asia to amplify each other's framing of EU climate action, such as CBAM, as unfair external interference, and thereby justify delays in climate action.

Green Electrification Diplomacy Needs Legitimacy

The examples described above provide clear policy lessons. A credible strategy for green connectivity requires deeper changes regarding ownership and participatory governance. Communities, workers, civil society organisations, and Indigenous groups are often well placed to demonstrate whether a project is socially sustainable.

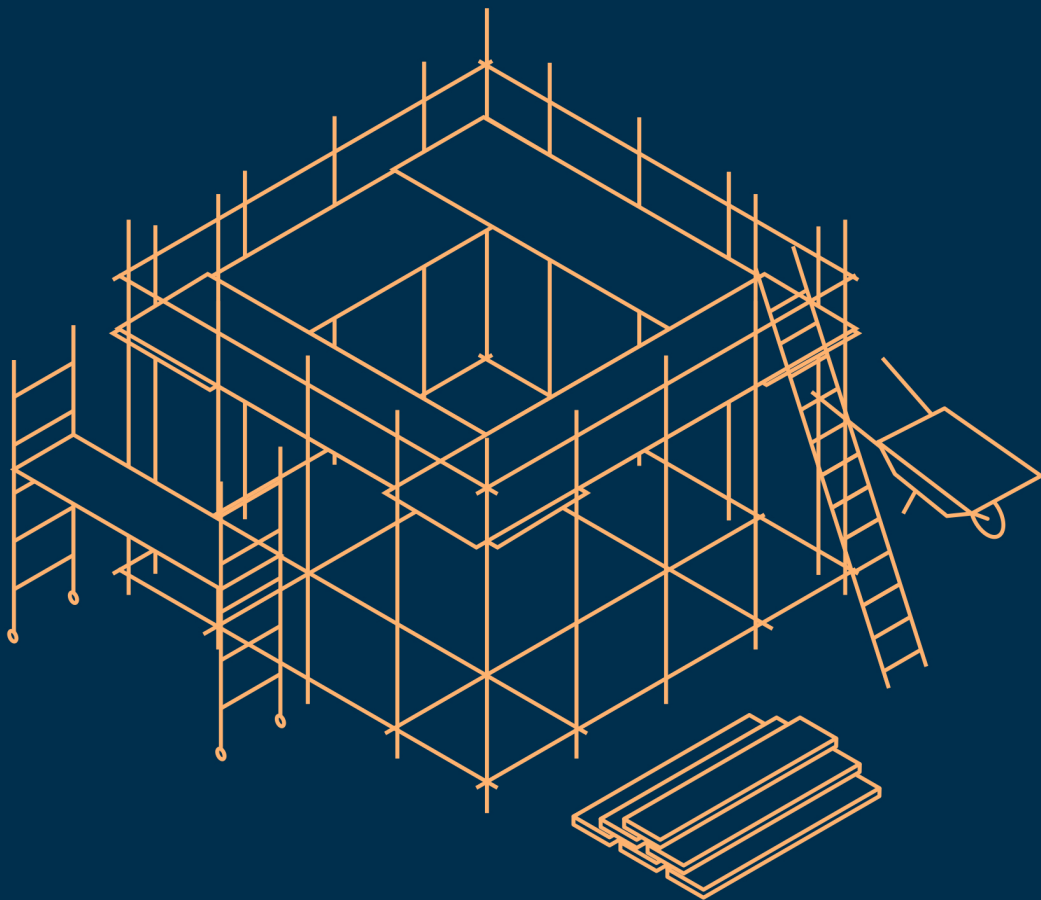
Credibility on green connectivity is much needed. The rather unambitious outcome of COP30 and the struggle to finance Just Energy Transition Partnerships (JETPs) demonstrate

that the EU cannot afford a passive attitude. Even as China steps forward more assertively as a global leader in the green transition, there remains a need for an actor capable of linking green partnerships with trust, social protection and local development. The EU, however, faces a serious credibility deficit abroad, reinforced by internal fragmentation. It should not give up on taking a leadership role, but recover it through a more credible and focused COP agenda: one centred around electrification and just transition delivery and targeted enough to limit internal fragmentation. Where differences between EU Member States remain inevitable, Team Europe Initiatives can help move EU action forward.

Yet, the biggest challenge is whether the EU can show that green electrification diplomacy serves not only its own strategic autonomy and energy security, but also accelerates partnerships that create value in partner countries. It must build partnerships even when they do not proceed exactly as Europe would prefer. Only then can connectivity build shared resilience rather than replicate the dependencies Europe is trying to leave behind.

About the Author

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Trade & Industrial Strategy

Reshaping the EU's Trade and Industrial Policy To Protect Emerging Critical Industries

By Finn Sands Robinson

Series 1, Brief No. 4

Editor: **Matilde Minetti**

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The EU has identified the critical industries that it needs for economic security, but not how to effectively protect those that are being established. Its trade defence instruments were designed to protect industries in decline, not the developing and not-yet-established industries its strategy now prioritises.

Executive Summary

The EU has rightfully shifted its priority onto economic security. In doing so, industrial capacity building and protecting established industry are at the core of European sovereignty strategy. There is, however, a misalignment between the trade defence instruments architecture and the industries it now prioritises; and those that could emerge in the future.

At the core of this misalignment lies the legal structure and its implementation. The rules on legal standing within the anti-subsidy and anti-dumping regulations expose a problem of timing; where a strategic industry is most exposed to being undercut during the very years

before it is established enough to seek protection. The injury component compounds this where the provisions intended to protect developing industries remain largely unusable. The machinery to enforce them has not been built, and capacity issues render the tools insufficient to deal with growing demands.

Current reforms move in the right direction but presuppose that industries can establish and scale in the first place. Forthcoming policy should make protecting future capacity a priority, moving toward a coordinated industrial policy.

By Finn Sands Robinson

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Key Recommendations

Coordinated EU Industrial Policy

The EU and Member States should prioritise the necessity for fostering a productive climate for emerging critical industries, forming part of a coordinated EU industrial policy.

Reform of Trade Defence Instruments

Build on proposals for reforms to the EU trade defence instruments to strengthen their effectiveness and ensure that they cover the risks for developing and not-yet-established industries.

Increase Capacity of DG Trade

DG Trade should be strengthened with the resources and personnel necessary to meet the rising demands on the EU's trade defence system and to deliver effective protection for European industry.

Expand Legal Standing Under Trade Defence Instruments

'Threat to future capacity' should be considered as a standing under the EU trade defence instruments. Supplementing proposals for integrating economic security as a consideration in the assessment of the Union's interest.

Increase Ex Officio Powers

The powers of ex officio investigations against threats to critical developing and not-yet-established industries should be expanded in the forthcoming trade defence instrument reforms.

Reactive By Design

On the back of a series of wake-up calls, the EU has fundamentally shifted its priority onto promoting a proactive approach to economic security. EU industrial capacity building, alongside protecting the established industrial base, sits squarely at the core of the new EU strategic sovereignty strategy ([Atlantic Council](#), [The Draghi Report on EU Competitiveness](#)). There is, however, a critical misalignment – a structural flaw – between the current protection and promotion architecture and the kind of industries the EU's strategy prioritises.

In this brief, it is argued that the tools at the EU's disposal are reactive to industrial decline, a focus that presupposes that domestic producers can be protected whilst they establish themselves. A 'coordinated industrial policy to bolster the EU's long-term economic resilience and strategic autonomy,' that is called for by [Draghi](#), should lay the foundation for capacity building presently and create the conditions to allow for future development.

What The EU Says It Needs

The [European Economic Security Strategy](#) in 2023 outlined the policy, and the updated [Joint Communication on Strengthening Economic Security](#) at the end of last year embedded much of the realisation that systemic issues need to be addressed concretely (see, for example, declarations from [France](#), [Belgium](#)). It states the 'need for the EU to act with

greater boldness, speed and unity'. Such a strategy fits within the EU's 'open strategic autonomy' policy, but the viability of this approach is coming under increasing strain and scrutiny.

Dependency analysis is settled in EU policy, and the EU has committed to domestic build-out across all of it. The EU has done a good job in identifying the critical vulnerabilities that exist. For example, in the annex to the Commission Recommendation on critical technology areas for the EU's economic security for further risk assessment with Member States, a [10-area list](#) has been presented.

The 2025 update develops the 2023 Economic Security Strategy, which launched risk assessments covering supply chain resilience and energy security, critical infrastructure, weaponisation of economic dependencies, and technology security and technology leakage. Here, taking the most assertive position seen yet, the Commission has identified six high-risk areas where it will concentrate its efforts in the immediate to short term, in close cooperation with Member States, industry and trusted partners. At the same time, it is stated that it will 'continue to monitor developments and, where needed, assess and act on newly emerging high-risk areas,' with clear indicators for the designation of 'high-risk'.

In addition, the Commission has committed to further developing its 'economic security information gathering capability,' where it will 'speed up the mapping of strategic dependencies along value chains that lead to vulnerabilities for the Union's economy and strengthen monitoring and anticipation of third country actions to create new dependencies or sustain existing ones.' ([Joint Communication on Strengthening Economic Security](#)).

The proposal to the [Industrial Accelerator Act \(IAA\)](#) published in March 2026 would set a target to increase the share of all industrial manufacturing to 20 % of EU GDP by 2035 (up from 14.3% in 2024) ([European Parliament Think Tank](#)). The key sectors covered by the proposed act include energy-intensive industries, net-zero technologies and the automotive industry. This supplements and solidifies the [Critical Raw Materials Act](#), which lists such materials, and the [Net Zero Industry Act](#). Additionally, the proposal would introduce measures to apply 'Made in EU' and low-carbon preferences in public procurement and public support schemes, set conditions on foreign direct investment (FDI), launch industrial acceleration areas to boost manufacturing, and simplify permitting processes for industrial manufacturing projects.

The Critical Misalignment

The misalignment between the trade defence architecture and the EU's strategic priorities exists across different parts of the legal structure. Under the current rules, there are two key issues that emerge.

The standing problem. To initiate an [anti-dumping](#) or [anti-subsidy](#) investigation, the complaint must be lodged by Union producers accounting for at least 25% of the production of the like product. For established sectors, this is a modest bar – where the question then becomes about effectiveness. However, for certain producers, including some of those that have been designated strategically critical, this can be an insurmountable barrier. The underlying issue is one of timing: a strategic industry

is most exposed to subsidised undercutting in the years before it is established enough to clear the thresholds for standing, where the competition that the industry would need protection from has already foreclosed it.

“The underlying issue is one of timing: a strategic industry is most exposed ... in the years before it is established enough to clear the thresholds for standing...”

The injury problem. [Solvay](#) began commercial production of [rare earths for permanent magnets in April 2025](#), which they state are ‘essential components in electric vehicle motors, renewable energy, advanced electronics and defence systems,’ with the objective of satisfying 30% of European demand by 2030 under the [Critical Raw Material Act](#). The [IEA](#) has [highlighted](#) how ‘The supply of rare earths remains among the least geographically diversified among all critical minerals.’ Using the example of rare earths used in magnets, China accounted for around 60% of global mining output in 2024, with their dominance even greater in the separation and refining stages, representing about 91% of global production. Because it may be the dominant or sole provider, Solvay could plausibly satisfy the standing threshold. Therefore, to impose measures, the Commission must establish injury, defined as material injury to the Union industry, the threat of material injury, or material retardation of the establishment of such an industry (Article 3(1) of the [anti-dumping regulation](#)).

There are provisions to relax the standard injury assessment, as seen in the provisions for

‘the material retardation of the establishment of such an industry’, and also in Article 4(2) of the anti-dumping rules, for geographically isolated producers within the Union. The issue remains that there is still the risk that producers are undercut before they are given the opportunity to develop or in industries that are not-yet-established. The causes for this range from lack of investment to market-demand, but also, importantly, in relation to the utilisation of the rules that are designed to prevent such injury. For material retardation, the EU has not built the surrounding machinery for not-yet-established industries, and this provision cannot be effectively enforced.

One topic that is currently being debated is in the power of the Commission to launch an investigation on their own initiative, without having received a formal complaint. Under the current rules, such ex officio investigations are possible, and provide a potential mechanism to close this gap. However, on two levels, this procedure currently fails to provide an effective solution. First of all, there is the same evidentiary burden which largely inhibits the case-building capacity of the Commission and second, although the legal power exists, the monitoring, data-collecting and triggering criteria does not.

These misalignments result in developing and not-yet-established industries suffering from a lack of protection against strategic competitors that actively undermine EU sovereignty and create a critical vulnerability. The current instruments available do not offer adequate protection. Both reform of these tools along with the fundamental re-shifting of priority onto domestic capacity building through a coordinated industrial policy are required to fully address the critical vulnerabilities that exist in the European economy.

Why Existing and Proposed Reforms Don't Close the Gap

One of the most promising policies is that the Commission has outlined that it will ‘Assess by Q3 2026 ways of strengthening the protection of the industry from unfair trade policies and negative global market developments, such as overcapacity.’ With this, they state that they will ‘evaluate the effectiveness and adequacy of the existing tools and consider the necessity of possible new measures.’ ([Joint Communication on Strengthening Economic Security](#)).

Indeed, the [May 2026 non-paper Propositions for the Trade defence of the European Union](#), supported by Spain, Italy, the Netherlands, France and Lithuania, goes in the right direction. In this, these states call for action on three levels. The first proposes actions without changes to the existing legal framework, including, for example, ‘increased capacity for trade defence tools implementation, open safeguard investigations for sector-wide trade disruptions.’ The second calls for improving the design of trade remedies. The third, in the long-term, proposes in-depth reforms, including exploring ‘the WTO compatibility of improving the anti-subsidy instrument by allowing the Commission to apply countervailing duties at a company-level, rather than a country and product-levels combined.’

These proposals still largely presuppose the ability of industries to develop and scale in the EU in the first place. The legislative architec-

ture must provide the structural environment for this to be possible. A good illustration of this necessity appears in the 2025 update to the Economic Security Strategy, where the Commission commits to, 'Explore putting in place on a pilot basis an EU-level start-up monitoring mechanism aimed at identifying startups in critical technology areas that are vulnerable to the risk of hostile foreign acquisitions.' This approach is welcomed but this acknowledgement should be incorporated into the wider reform of EU TDIs and given stronger prioritisation, where the issue for start-ups does not only result from foreign acquisitions or investment.

Implications: Moving Towards Coordinated Industrial Policy

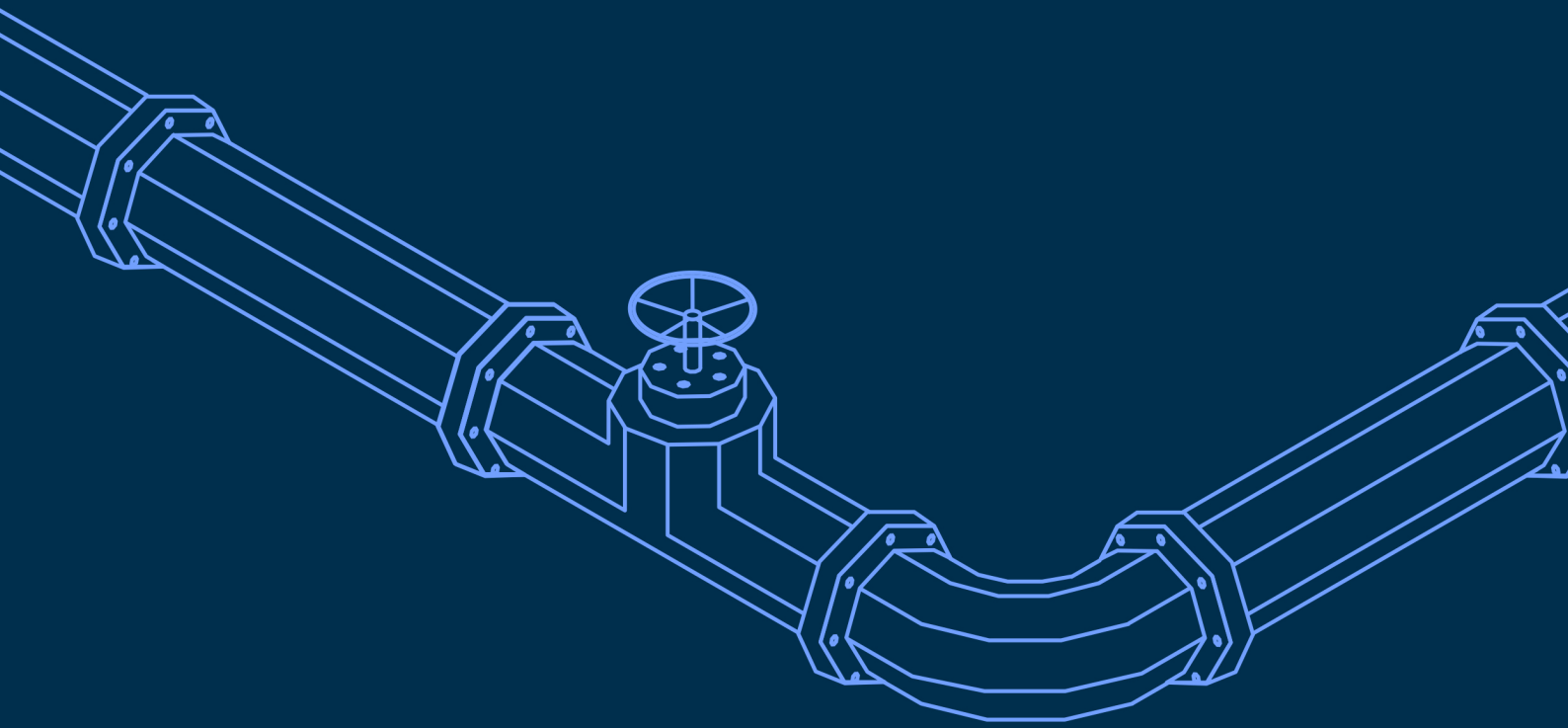
A 'coordinated EU strategy to bolster domestic production capacity' that is called for by [Draghi](#) requires future capacity to be embedded systematically into structural reforms. In China's latest five-year plan, the CCP outlines their strategic economic ambitions, where the aims to achieve technology supremacy and self-reliance are supplemented with increased early-warning and risk monitoring systems, which will support an already-established industrial policy ([The International Institute for Strategic Studies](#)). Looking westward, there has been the [resurgence of US industrial policy](#), with ambitious policies such as the [Inflation Reduction Act](#) and the current administration's interventions, supplemented by the aggressive use of tariffs and export controls.

However, the key layer here is that effective coordination of these strategies requires effective policies to protect the industries that are promoted or designated as critical. The protection of already established industries is important, and the design and proposed reforms of the EU's TDIs in many ways address this. The 2025 update to the Economic Security Strategy outlines an assertive approach, whilst the non-paper offers a strong move forward. What is key, though, is ensuring that future capacity for critical industries is considered and implemented as a priority. The current trade defence architecture does not offer this protection procedurally.

Therefore, the upcoming reforms and further forthcoming policy must make this a priority; both through implementing reforms to TDIs, including the potential to expand ex officio powers and capacity, and assessing where new instruments are required in relation to novel and developing industries.

About the Author

Finn Sands Robinson is a legal professional based in Amsterdam, currently working as a Junior Researcher at the Amsterdam Centre for Transformative Private Law (University of Amsterdam), where he contributes to the ERC-funded N-EXTLAW project. His areas of interest include EU regulation, competition law, industrial and trade policy, and economic security. Originally from Ireland, he holds an LL.M. in European Competition Law and Regulation from the University of Amsterdam and an LL.B. from SOAS, University of London. He is interested in how the EU is reshaping its regulatory and economic toolkit to address the economic, geopolitical, and societal challenges it faces.



Eastern Neighbourhood

Only a Region-Wide Strategy Can Solve the EU's Pipeline Chokepoint in the Caucasus

By **Luka Okropirashvili**

Series 1, Brief No. 5

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In actively diversifying its energy and infrastructure since 2022, the EU has, in effect, pooled its operational risk into three partners in the South Caucasus, even as their political paths head in starkly different directions. While Brussels handles the strategic relationship with each bilaterally, the dependency exposure it faces is anything but. What is at stake is not only regional connectivity but the structural coherence of the EU's post-2022 energy security agenda, which rests on assumptions about corridor stability that have not yet undergone an actual stress test.

Executive Summary

Following the 2022 Russia-Ukraine gas crisis, the EU has committed to extracting up to 20 billion cubic metres of pipeline gas yearly from Azerbaijan via the Southern Gas Corridor, has strengthened its commercial and logistical ties with the Georgian Middle Corridor supply chain infrastructure, and most recently signed a first-ever connectivity partnership with Armenia. Yet, each regional relation has been treated separately, without recognizing the structural interconnectivity and interdependence of all three: the EU's engagement with Azerbaijan is principally conditional upon stable Georgian vital transit nodes, as the Georgian Middle Corridor route has no other functional EU-supported substitute at present; and even a limited alternative, the land passage through Armenia, has remained contested and undeveloped.

This strategic and operational dilemma, however, has created a notable blind spot in EU foreign policy. Without an integrated response mechanism, a single disturbance to any link generates an acute vulnerability in the entire chain. All of this is compounded by the region's dynamic geopolitical context: from Georgia's strategic ambiguity and expanding Chinese capital-driven investments to Azerbaijan's downstream involvement in EU Member States' energy sectors through SOCAR and the uncertain nature of Armenia's participation in EU-sponsored connectivity frameworks.

To abate yet another energy crisis, the EU needs to swiftly adopt a coordinated, competitive, and long-term strategy regarding South Caucasus connectivity, rather than three separate yet overlapping agendas.

By Luka Okropirashvili

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Key Recommendations

Corridor Strategy and Governance

1. Adopt a South Caucasus Corridor Strategy, establishing a unified framework that treats the Azerbaijan supply relationship, Georgian transit infrastructure, and the Armenian redundancy corridor as a single strategic system with shared contingency protocols and minimum redundancy requirements across all three nodes.
2. Employ existing EU foreign investment screening tools to conduct a formal review of SOCAR's downstream asset positions across Member States and establish clear transparency requirements for state-owned energy companies with significant supply leverage before any further acquisitions are approved.
3. Operationalize the May 2026 EU-Armenia Connectivity Partnership with binding investment timelines and capital commitments under the Global Gateway framework, moving it from a declaration to a funded programme with measurable targets.

Investment and Redundancy

4. Seek EU observer or co-investment status in the TRIPP corridor process to ensure Brussels is not structurally absent from a US-led infrastructure initiative.
5. Establish a focused EU-Georgia infrastructure governance dialogue, decoupled from the stalled accession process, with conditionality tied specifically to pipeline and corridor operational transparency.
6. Build on the EU's existing Black Sea Synergy framework by adding a dedicated Middle Corridor maritime security and continuity component, addressing its current limitations in scope and resources relative to the strategic presence of China, Turkey, and Russia in the region.

Geopolitical Risk Management

7. Implement EU-level contingency SOP for Middle Corridor disruption, specifying alternative routing options, minimum response timelines, and emergency procurement mechanisms.

Azerbaijan's Transition from Supply Partner to Critical Infrastructure Actor

The EU's 2022 Strategic Partnership with Azerbaijan set out a doubling of EU gas imports via the Southern Gas Corridor, from 10 to approximately 20 billion cubic metres (bcm) annually by 2027. Azerbaijan has substantially progressed toward that target, supplying approximately 12.9 bcm to EU member states in 2024, a nearly 60 percent increase on 2021 volumes, and by 2026, ranking among Europe's top seven gas suppliers. SOCAR, Azerbaijan's state-owned oil company, now provides gas to eight EU member states.

The dependency has expanded beyond supply contracts in ways that EU policy has yet to systematically tackle. For instance, in early 2026, the European Commission approved SOCAR's acquisition of Italiana Petroli, granting an Azerbaijani state company a 99.82 percent stake in a downstream platform covering two Italian refineries with combined processing capacity of approximately 200,000 barrels per day, over 4,500 fuel stations, and a nationwide logistics network, in a deal valued at approximately EUR 3 billion. As a result, SOCAR now accounts for 10% to 12% of Italy's crude refining capacity, up from 7% pre-acquisition, along with access to Italiana Petroli's roughly 22%

ownership of the country's entire retail fuel station network.

The Southern Gas Corridor was conceived explicitly to reduce dependence on a single dominant supplier following the 2022 disruption of Russian pipeline gas, though the selective mechanism employed to achieve that diversification has reproduced a similar concentration risk configuration with a different counterpart. Azerbaijan's downstream integration into the European energy infrastructure mirrors, in miniature, the pattern of supplier embeddedness that made disentangling from Russian gas so costly and slow. The EU's institutional memory of that experience has not yet transformed into a comparable model for monitoring or limiting equivalent exposure to Azerbaijan. Without such an operational and oversight framework, Brussels risks discovering the scale of its new dependency only at the point where reversing it becomes politically and economically expensive, precisely the dynamic the 2022 diversification strategy was designed to avoid in the first place.

“Brussels risks discovering the scale of its new dependency only at the point where reversing it becomes politically and economically expensive...”

The combined effect is a structural shift, with Azerbaijan now acting simultaneously as a contracted gas supplier and a growing owner of downstream energy infrastructure within EU territory, a position that gives Baku powerful leverage in any future renegotiation of supply terms or bilateral conditionality.

Georgia as the Strategic Transit Pivot

Notably, both the Baku-Tbilisi-Ceyhan oil pipeline and the South Caucasus Pipeline run through Georgia before entering the European market. Georgia's ports on the Black Sea, specifically the port of Poti, which handles about 80% of the country's containers, are key gateways for Middle Corridor shipments, where Caspian trade increased by 63% in recent years, totaling 4.1 million tons. Both the ports of Poti and Batumi are likely to operate near capacity, consequently reinforcing the rationale for an adequate alternative facility for exports to Europe.

The Commission's 2026 cross-regional connectivity meta-study names the long-discussed Anaklia deep-water port as a TEN-T extension project that, if realized, could significantly expand Georgia's maritime capacity beyond what Poti and Batumi can offer. Brussels has identified the right project on paper, but turning that political will and strategic effort into a financed, time-bound investment plan requires more applicable policy actions. There is a real and existing opportunity for the EU to advance a robust strategy for its Black Sea flank, one that would provide growing commercial, investment, and energy interests in the region with the continuity and security framework that is currently absent, while positioning Brussels as a credible long-term partner rather than merely a normative one.

The political environment for this infrastructural network has taken a turn for the worse.

While the European Council officially granted Georgia EU candidate status in 2023, the governing Georgian Dream party has shown an increasing Euroscepticism in recent years, marked by hostile official rhetoric toward Brussels, domestic anti-EU messaging, and a series of restrictive legislative measures widely viewed as undermining democratic standards, with this shift considered as the root cause of the bilateral tensions that followed. The EU has responded with both financial and diplomatic measures, halting direct financial aid to Georgian authorities since June 2024 and later restricting visa facilitation for Georgian diplomats, while the Georgian government has pushed back its own EU membership talks until at least 2028.

“Brussels has identified the right project on paper, but turning that political will and strategic effort into a financed, time-bound investment plan requires more applicable policy actions.”

The EU has dealt with Georgian backtracking primarily through political conditionality, which can somewhat address democratic decline but has never been devised to safeguard vital infrastructure under conditions of a major supply or transit disruption. EU-level contingency strategy for potential setbacks to Georgian transit and logistic resources remains limited, as that infrastructure has been absorbed into the broader accession process at the exact moment it may need to stand apart from it.

Armenia's European Aspirations and the Limits of Connectivity Framework

The overland corridor via Armenia and into Turkey, avoiding Russia and Azerbaijan-controlled territory, constitutes the only geographically realistic partial substitute to Georgia's corridor. The latter has only become a competitive element of EU investment in connectivity now, following Armenia's shift toward the EU, its democratization, and progress in the Armenia-Azerbaijan peace process. Brussels has also increased its strategic engagement to secure a stake in regional connectivity next to the US-brokered TRIPP framework agreed in 2025.

The first EU-Armenia Summit took place on 5 May 2026 in Yerevan with a resulting agreement on a connectivity partnership concerning transportation, energy and digital connections. In it, EU investments in Armenia are expected to amount to EUR 2.5 billion within the Global Gateway initiative.

Yet despite being the closest substitute to the SGC pipeline, Armenia's overland corridor remains an impractical alternative because there exists no pipeline infrastructure to enable route-bypassing via Armenian territory. Its principal value lies in ensuring partial Middle Corridor trade redundancy and in equipping

Brussels with functional negotiating leverage within the Georgian transit relationship. It is a practical risk-mitigation instrument rather than an at-the-ready replacement supply route, which is precisely why binding investment timelines and clear scope definitions are essential.

“The Armenian alternative exists, both politically and diplomatically, but not yet in terms of operational EU foreign policy.”

There is still much room left for translating such potential into tangible projects. While the May 2026 connectivity partnership does account for Armenia as part of the transit network, it fails to address the obvious issue: the Zangezur transit route. Crossing through the Armenian-Azerbaijani contested territory, only a predictable and long-term dispute settlement that resolves the question of transit rights and sovereignty claims can turn it into a viable substitute for the SGC pipeline. Indeed, the Armenian alternative exists, both politically and diplomatically, but not yet in terms of operational EU foreign policy.

One Regional System, Three Policy Tracks

These three dependencies are interconnected structurally in such a way that fragmented bilateral approaches cannot comprehensively account for. Firstly, the EU's gas supply contract with Azerbaijan is essentially dependent on reliable Georgian transit lines. Secondly,

and notably, Georgia's route remains the only EU-backed option currently available for the corridor. Thirdly, the only partially redundant route (via Iran) has been underfunded and unmanageable due to the absence of the EU's proactive involvement, which implies that any vulnerability at any one node multiplies the risk of system-wide problems.

Currently, EU policy organizes the triangular chain as three discrete dependencies within separate strategic domains. The agreement with Azerbaijan in 2022 emphasizes the volume of supply and infrastructure objectives, with the Georgian corridor holding safety largely irrelevant for that particular treaty. In addition, recent EU policy toward Georgia largely consists of democratic conditionality, with a regional framework for infrastructure governance and disruption contingency arrangements receiving comparatively limited focus as distinct priorities. In turn, the agreement with Armenia (concluded in May 2026) lacks both measurable content and operational track record.

So far, no official EU document treats these three relationships as a single strategic system or provides a *modus operandi* for anticipating and navigating a potential crisis that spreads across them. In the face of this, the EU-Armenia summit in May 2026 represents a turning point in actionable policymaking from rhetoric towards substance. Whether it leads to feasible contingency-oriented infrastructure initiatives or merely acts as a superficial institutional signaling is yet to be seen. The EU's cumulative exposure has emerged within three separate, isolated relationships. Managing it now requires treating them as one system.

“The EU's cumulative exposure has emerged within three separate, isolated relationships. Managing it now requires treating them as one system.”

About the Author

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Strategic Digital Security

To Close Its Military Tech Gap, Europe Needs a Binding Defence Technology Union

By **Trinabh Banerjee**

Series 1, Brief No. 6

Editor: **Annika Gerbig**

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In an increasingly unpredictable geopolitical context, Europe can still develop the defence tech it needs for the 21st century and ensure that European defence decisions remain in European hands.

Executive Summary

Defence has become increasingly digitalised, including in the EU, where technology and software form the backbone of modern military operations. Yet European militaries remain dependent on American systems for the vast majority of their digitised military capabilities, from cloud to AI to advanced and networked fighter jets. This locks them into systems they do not fundamentally control and poses grave risks to strategic autonomy. European militaries built on US technology must ultimately account for Washington's interests. While this situation cannot be resolved in the short-term, Europe's reliance on the US for advanced technology in the medium-to-long-term can be alleviated by addressing barriers that impede the development of capable European alternatives, thus giving militaries the choice they need when adopting critical technology in subsequent planning cycles.

This brief proposes changing existing political, economic, and structural incentives to reshape how Europe approaches developing advanced defence technology. The aim is to strengthen member state cooperation and industry in this domain. Establishing a focused and structured European Defence Technology Union (EDTU) would lend political capital to European defence technology autonomy and integrate member-state cooperation around shared goals. The EU should invest more resources in building tailored short-, medium-, and long-term financing packages to unlock the R&D and finance potential of Europe's tech base. Finally, the EU should execute a military technology simplification package to remove unnecessary bureaucratic hurdles that impede fast and effective innovation.

By Trinabh Banerjee

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Key Recommendations

Political Will

1. Establish a European Defence Technology Union (EDTU) as a regulation under 173(3) TFEU to formalise defence technology cooperation between like-minded member states and partners.
2. Empower the European Defense Agency (EDA) or the Commission to lead specific European coordination programmes for short-, medium-, and long-term military technology projects.

Finance

3. Create specific programs designed to leverage finance for R&D in military technology with the stated objective to establish European critical alternatives within 5-10 years.
4. Harness wider financing architectures, including the creation of a European Defence Bank or a specific public-private initiative, to boost available funding for innovative, advanced projects.

Structural Incentives

5. Implement a military technology simplification package by cutting red tape, allowing greater exceptions in EU legislation for military applications, and harmonising technology, testing, and standards for interoperability between member states.



Europe at a Crossroads

When Russia began its full-scale invasion of Ukraine in 2022, it became abundantly clear that Europe was unprepared for war on its borders. Decades of underinvestment in military capabilities suddenly came face-to-face with the realisation that Europe could not meet the very real security challenges facing it. In a geopolitical context where warfare has become increasingly digitalized, Europe lacked the high-tech hardware and software needed for 21st-century warfare. Once aware, the EU and Member States unlocked unprecedented levels of funding for military procurement continent-wide. Yet, from 2022 to 2024, 50.7% of that European military spending went to the US for off-the-shelf hardware and software, including for highly advanced F-35 jets, drones, missiles and software.

“European militaries built on US technology must ultimately account for Washington’s interests.”

While these initial purchases may have been a pragmatic choice to quickly restock military warehouses, they continued a cycle of technological dependence that has plagued European defence decisions. The EU recognises the geopolitical consequences of this issue. After all, digital sovereignty has been on the Commission’s agenda since at least 2019. Nevertheless, the effort has not extended concretely to the military realm. European militaries continue to buy advanced American high-tech because of a lack of European alternatives and

few coordinated efforts to vitalise the continent’s military tech base.

This dependence poses a significant strategic risk for Europe. Reliance on American hardware, software, and maintenance technology means that decisions over how Europe plans, structures, and uses its own military remain contingent on continued US political support and industrial access. The F-35, widely regarded as the most advanced fifth-generation fighter, illustrates this dependency clearly. While the US denies the existence of any remote “kill switch,” European operators remain almost entirely reliant on American support for proprietary maintenance, spare parts, and critical software updates that power their networking and sensor systems. Any restriction of this access, for whatever reason, would significantly degrade performance and operational readiness. In a scenario where European and US security interests diverge, such constraints would limit Europe’s ability to act independently.

The development of advanced military tech is not easy, as it is often expensive to develop, test, and deploy, especially at scale. But when Europe uses limited defence budgets to buy foreign technology that makes it dependent, governments reduce incentives to build European alternatives and starve domestic industry, which already needs to overcome fractured markets, market scaling issues, variations in national strategies, and bureaucratic red tape to be successful.

Europe is at a crossroads. It faces a rapidly changing geopolitical landscape and a fundamental reorientation of the US-EU relationship. As the US begins to pull away from Europe, it is clear that Europe needs to stand up for itself. Certainly, Europe can continue to

buy advanced foreign technology. But if Europe is to safeguard its own security convincingly, it needs to develop, build, and deploy its own high-tech military hardware and software. This does not mean shutting out foreign alternatives altogether, nor engaging in protectionism by mandating the use of less capable technologies simply for the sake of buying European. To do so would risk politicising an already tense relationship and leave European security vulnerable at a time when geopolitical uncertainty is growing.

Instead, Europe should focus on addressing barriers that limit the effective development and deployment of sovereign defence technology. Political fragmentation, a huge R&D and finance gap, markets unfit for scale, and a burdensome regulatory framework all work to undermine Europe's ability to keep defence decisions in its own hands. By formalising how Europe cooperates on defence technology development, instituting better R&D funding, and reducing unnecessary market fragmentation, Europe can accelerate toward building the hardware and software alternatives that 21st-century warfare demands while protecting its own security interests.

“Political fragmentation, a huge R&D and finance gap, markets unfit for scale, and a burdensome regulatory framework all work to undermine Europe's ability to keep defence decisions in its own hands.”

Focusing on Defence Technology Cooperation

The EU's project has historically been peace-focused and market-based. As geopolitical conditions shift, however, a different approach is needed to address the structural constraints within its political and economic framework. The Union is not built to generate the full set of conditions necessary for the development of advanced military technology. With 27 member states maintaining distinct procurement systems, defence policies, and strategic priorities, the result is a deeply fragmented market where the high costs of developing advanced capabilities are not matched by sufficient or coordinated demand.

“The Union is not built to generate the full set of conditions necessary for the development of advanced military technology.”

Previously, proposals to fix the EU's deficit in defence were met with fears that they would be a distraction or serve as EU overreach, especially given that national security remains a Member State competence. But given the wider strategic consequences of continuing to rely on foreign technology for defence, it is clear that something needs to change. European states should invest political capital to establish a European Defence Technology Union (EDTU), narrowly focused on a 'lab-to-warfighter' or 'research-to-capability' pipeline

approach, maintaining a direct link between development, manufacturing, and deployment of advanced European military technologies, rather than treating these as separate phases owned by different actors with different incentives. An EDTU should be designed and led by participating parties who set out participant competencies preemptively, rather than attempt to do so after the fact. Focusing on key critical military technologies and the bottlenecks preventing their development would further ground the EDTU's mission, making it a model worth implementing to overcome fragmentation, coordination issues, and issues of political will within the EU.

To overcome the unanimity requirements that have constrained PESCO and the non-binding character that has limited the EDA, an EDTU can be established as a regulation under Article 173(3) TFEU, the Treaty's industrial-competitiveness legal basis, decided by qualified majority through the ordinary legislative procedure. This is the same basis that the Council and Parliament used to adopt the European Defence Industry Programme (EDIP) in December 2025. This route requires no treaty ratification and no unanimous Council decision to launch. An EDTU should construct a framework incorporating like-minded EU member states and key partners, including private and academic sectors, whose capabilities can contribute to building critical technology, with participation open to any member state willing to accept the EDTU's milestone commitments, rather than restricted to a closed founding group.

An EDTU would not only demonstrate that demand exists for pan-European high-tech solutions, but also show that this demand can be pooled and bound by enforceable commitments. Existing ad-hoc military cooperation

forums, like the 'Coalition of the Willing', E3, JEF, and others, demonstrate that European states can act outside the EU's ordinary institutional channels when the political will exists. Yet the voluntary nature of these forums makes critical long-term commitment vulnerable to domestic politics. Establishing the EDTU under Article 173(3) TFEU would tie participating states to binding obligations and clear delineations of responsibility, anchored in the same performance-based funding logic that the EDIP already applies. Disbursement of EDTU support should be explicitly conditioned on meeting agreed development, manufacturing, and deployment milestones.

“The voluntary nature of these forums makes critical long-term commitment vulnerable to domestic politics.”

Separately, the EDA or the Commission, or a separate suitable body, should take primary charge in orchestrating a set of programs to take advantage of the increased military funding already available. Indeed, this should go beyond the current ReArm Europe/Readiness 2030 and beyond EDIP's existing industrial-base mandate, by comprehensively designing a suite of short-, medium- and long-term projects that focus more heavily on developing high-tech military alternatives, particularly in cloud, AI, and military software. These are capabilities for which no existing EU instrument currently carries a narrow, named mandate, and which an EDTU, as a dedicated Article 173(3) programme, would be legally positioned to deliver.

Funding the Change

Beyond political will, Europe also requires a more suitable economic strategy to better deploy R&D funding for critical capability gaps. Current European military-related R&D budgets far trail overall equivalent US spending. Given that Europe already lacks sovereign high-tech military capabilities, the R&D gap only intensifies the issue. Europe has a variety of R&D budgets, both national and EU-led, available. However, these resources need to be better marshalled to focus on developing sovereign military technology capabilities. Instituting a specific program to use this funding to focus on advanced military technologies will not only help close the research gap but also contribute to establishing European advanced capabilities. The goal should be to establish European alternatives within 5-10 years, so that development keeps pace with advances in technology and militaries' procurement strategies can run their course.

The European Defense Fund already provides a framework for a European-led R&D approach. But the ambition should be to tie military, academic, private, and public institutions together, backed by greater economic resources. The push to unlock funding by allowing Horizon Europe to invest in dual-use technologies is a start, but must be explicitly directed toward boosting R&D for critical military technologies. The upcoming budget-enhanced Horizon Europe programmes, and more importantly, the European Competitiveness Fund, should cement these priorities.

“The ambition should be to tie military, academic, private, and public institutions together, backed by greater economic resources.”

Europe should also commit to constructing broader financing architectures, through a European Defence Bank or comparable lending and guarantee facility. This would provide a dedicated channel to mobilise long-term capital for Europe's strategic technology base and reduce costs of capital for European critical technology projects that are underfinanced by existing institutions, especially in security-critical technologies and infrastructure-heavy domains like cloud computing. Given its continued reliance on US providers for military applications and the associated data sovereignty and defence autonomy risks, Europe needs alternatives. A facility offering long-term loans, guarantees, and risk-sharing would help crowd-in private capital, de-risk investment, and accelerate opportunities for developing and deploying technologies, especially for key areas like quantum-tech, AI, and space. The facility need not be established from the ground up. Instead, it can leverage existing expertise by folding into the European Investment Bank (EIB) as a defence technology-specific division, whereby the EIB's prohibition on security and defence-related investments is lifted to allow for maximum flexibility and access to financing.

“...Europe needs alternatives.”

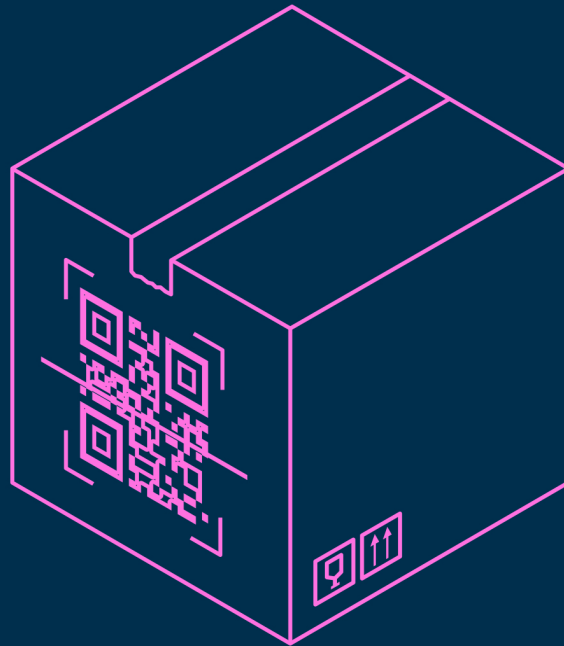
Changing the Structure

Finally, a military technology simplification package can provide the structural incentives to meaningfully accelerate development and deployment of high-tech capabilities. The sector suffers from a range of structural issues, including fragmented certification schemes preventing continent-wide deployment, duplicate procurement frameworks, and a lack of support for small and medium-sized enterprises (SMEs) that are at the cutting edge of technology development. Cutting red tape, carving out clear military-only exemptions in EU legislation, and harmonising interoperability standards across member states should be priorities for the EU to pursue to help develop a level playing field for advanced technology. This can involve introducing a ‘military technology passport’ to allow technology developed and deployed in one member state to be automatically approved across the Union, or increased interoperability mandates to allow for greater technological efficiencies. Simplifying regulations would allow SMEs to more effectively compete while encouraging innovation to spread.

Concurrently, the EU should rework the AI Act to reduce its impact on AI military systems. Given the current split in European thinking on AI, the Union would benefit from reworking existing regulations to account for military, dual-use, and fast-developing AI, while proposing shared technical standards to better integrate EU military AI use. These steps will allow for faster sovereign development and accelerate the move toward European-owned defence technologies fit for the 21st century.

About the Author

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Supply Chain Resilience

How Digital Product Passports Can Map Europe's Supply Chain Dependencies

By **Jerfi Wigley**

Series 1, Brief No. 7

Editor: **Luka Okropirashvili**

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The EU's supply chain policy will remain reactive unless it builds a clearer system for seeing where product-level dependencies actually sit.

Executive Summary

The EU has made supply chain resilience a central part of its economic security agenda, yet many of its most serious dependencies remain difficult to identify before a disruption occurs. Final goods often hide long, complex chains of suppliers for each of their components. Digital Product Passports (DPPs) offer a practical way to address this visibility gap. A DPP is a digital record linked to a product that shows what the product contains and where its key inputs came from throughout its production cycle.

DPPs should be developed as policy intelligence instruments for supply chain resilience, rather than only as sustainability or consumer information tools. The European Commission should use DPPs to enable policymakers to detect hidden dependencies and compare vulnerabilities across sectors. In turn, this would allow for the use of more precise policy interventions in targeting specific supply chain dependencies. If connected to AI-assisted risk analysis, DPPs could help the EU move from a reactive to a proactive approach to managing supply chain fragility.

By Jerfi Wigley |

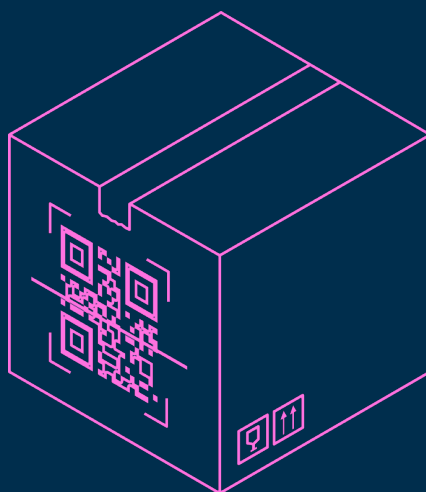
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Key Recommendations

1. Digital Product Passports should be used to analyse product-level supply chain data to identify precise trade dependencies and risks to the EU.
2. DPP data can, in turn, inform more targeted policy design, directing support toward the specific components or production stages where European capacity is weakest.
3. The European Commission should use DPPs to shift from crisis response to early prevention, identifying supply chain vulnerabilities before supply shocks expose them when the damage has already been done.
4. Macro-level trade data should be combined with product-level evidence for a more efficient policy response.
5. The European Commission should create clear access rules for DPP data, giving public authorities the information needed to assess risk while protecting firms from having sensitive supplier information made public.
6. Member States should support smaller firms with funding and technical guidance, so DPP requirements do not become a burden that only large firms can manage.
7. The European Commission should test AI-assisted analysis of DPP data, using it to flag patterns of supplier concentration or possible disruption risks for human review.



Hidden Dependencies

Dependence on external suppliers is unavoidable, but there are certain goods and sectors (such as energy) where dependence has become a vulnerability that undermines sovereignty. While this may also be a natural consequence of a free trading environment, the issue is that identifying these vulnerabilities often comes too late, with critical supply chain weaknesses only becoming apparent in times of crisis. By this point, the damage has already been done, and a reactive policy can at best merely mitigate the fallout.

“By this point, the damage has already been done, and a reactive policy can at best merely mitigate the fallout.”

A finished product can hide a reliance on a narrow set of suppliers for one component. A European firm may assemble final goods, yet depend on vital inputs that come from a small number of non-European producers. Aggregate trade data can show that Europe imports a category of goods, but it is too blunt a tool to reveal the vulnerable point inside the product itself. It is valuable data for sector-level policy, but more precise data is required to identify where targeted interventions (such as supplier diversification or domestic subsidies) would be most effective.

“A finished product can hide a reliance on a narrow set of suppliers for one component.”

DPPs, or Digital Product Passports, narrow down data from broad trade flows into product-level information. The European Commission defines such passports as a product-specific dataset that can be accessed electronically and used to share product information between firms, authorities, and consumers. The EU introduced DPPs mainly as a tool for sustainability, as part of its circular economy policy framework. Yet, the same information infrastructure can also serve a strategic purpose. Properly designed, DPPs have the potential to serve at the forefront of Europe's de-risking agenda, identifying specific exposed parts of a product's chain before they become disruptive to the Single Market.

“Aggregate trade data can show that Europe imports a category of goods, but it is too blunt a tool to reveal the vulnerable point inside the product itself.”

What DPPs Are

A Digital Product Passport is best understood as a digital identity card for a product. It hosts a detailed record of what the product is made of and where and when its internal materials were manufactured. This information is usually accessed through a digital carrier, such as a QR code or another identifier.

Originally, the EU's DPP agenda was developed through the Circular Economy Action Plan and the Ecodesign for Sustainable Products Regulation. The battery passport is the clearest early model. It is expected to include information on the manufacturer, battery composition, critical raw materials, durability,

and access rules for different users. Such information is invaluable for policy addressing supply chain vulnerabilities. DPPs already have supply chain use cases linked to traceability and compliance management. 82 use cases suggest that DPPs are already being tested as a way to improve compliance with sustainability regulations, meaning implementing a supply chain resilience function would be fairly straightforward.

The EU Cannot Fix What It Cannot Identify

The EU's self-reliance agenda depends on the quality of the information behind it. Before policymakers can reduce a dependency, they need precise data on where exactly a vulnerability exists within a supply chain, along with the firms that would be most affected by a potential disruption. This sounds obvious, but current policy tools often operate under incomplete information. DPPs would be most useful as a way of identifying supply chain weaknesses before they become visible through crisis, when it's already too late.

"The EU cannot fix what it cannot identify."

For example, consider how DPPs could have identified our gallium and germanium dependence on China. Both are critical inputs in semiconductors and other advanced technologies. Yet China's 2023 export controls, which imposed licensing requirements for both minerals' exports, showed how a concentrated input can become a strategic vulnerability

overnight. The Commission could have identified the supply as highly concentrated in China and which European products rely on these materials. Policy support could then have been directed toward the exposed component through, for example, subsidising local production or diversifying the range of suppliers. Rather than waiting for a shortage to reveal a vulnerability the hard way, DPP data would help identify said vulnerability, turning industrial policy more proactive while there is still time to act.

AI-assisted Early Warning

DPP data will become valuable only if the EU can implement it at scale. AI and machine learning could become crucial here, provided their role remains limited and accountable. AI would not replace policy judgement but would scan large datasets for patterns and make predictions that humans may miss. The level of detail that DPPs provide means the sheer quantity of data will be overwhelming to a human analyst. This means AI can be used not only to analyse datasets more efficiently, but could also use the vast data available to make complex models and predictors with very precise policy implications.

For example, a tailored AI-assisted tool could flag when multiple strategic goods rely on the same component from one region. It could identify repeated supplier concentration across sectors, predicting the economic impact of a potential supply shock. It could also detect when a disruption in one product chain may affect other industries. The EU should treat this as an early warning function. DPP data

could feed a secure dashboard for the Commission and Member States. AI tools would identify possible risk patterns, after which policymakers would assess whether those patterns require a policy response.

Risks and Limitations

Poor data produces poor policy. If suppliers provide incomplete information, the EU may gain the illusion of visibility without any real insight. This is especially likely in global supply chains where non-EU suppliers may resist disclosure. Supply chain transparency is also politically complicated. Firms often disclose some information while withholding other details. For example, a study of Nudie Jeans found that transparency can become selective, especially when disclosure threatens commercial relationships or exposes sensitive supplier information. A digital passport will not automatically solve the transparency problem if firms can decide too freely what counts as relevant data.

“Poor data produces poor policy.”

The EU therefore needs to distinguish between public transparency and institutional visibility. Consumers do not need access to every supplier relationship. Competitors should not gain access to commercially sensitive information. Public authorities, by contrast, need enough standardised information to detect where supply chain risk is concentrated. A DPP system that balances these needs would be more politically realistic than full public disclosure. It would also be more useful for policy design.

Interoperability is equally important. DPP systems must be coherent across EU initiatives and compatible with other systems where possible. If every sector builds its own system, DPPs will become fragmented databases rather than a usable policy tool.

Policy Framework

The Commission should begin by adding a supply chain risk layer to DPP rules under the Ecodesign for Sustainable Products Regulation and related sectoral legislation. This layer should be narrow enough to avoid overburdening firms, but with enough detail to inform policy. The minimum dataset should cover component origin, location of major production stages, supplier concentration, and the difficulty of replacing critical inputs. This information should feed directly into EU economic security work. The EU Observatory of Critical Technologies should use DPP data to identify recurring dependency patterns across sectors. DG GROW (The EU Commission's industry department) should then connect these findings to industrial policy instruments, especially where DPP data reveals a repeated lack of European production capacity. Implementation should start through pilots. For example, a battery sector pilot could test whether DPPs help policymakers identify dependence on specific critical minerals or foreign processing capacity before those weaknesses affect electric vehicle supply chains.

A tiered access model should guide the whole system. Public authorities should receive the data needed to map risk under strict confidentiality rules. Firms should not be forced to

publish commercially sensitive information to competitors. The EU should also support capacity-building for firms that lack the technical capacity to implement DPP requirements, especially smaller enterprises, which may need technical guidance. Reporting obligations should be proportionate, with lighter information requirements for firms whose products are not part of strategically important supply chains. Finally, the Commission should test AI-assisted analysis on DPP datasets. These tools should flag possible vulnerabilities and make predictive models, not make policy decisions.

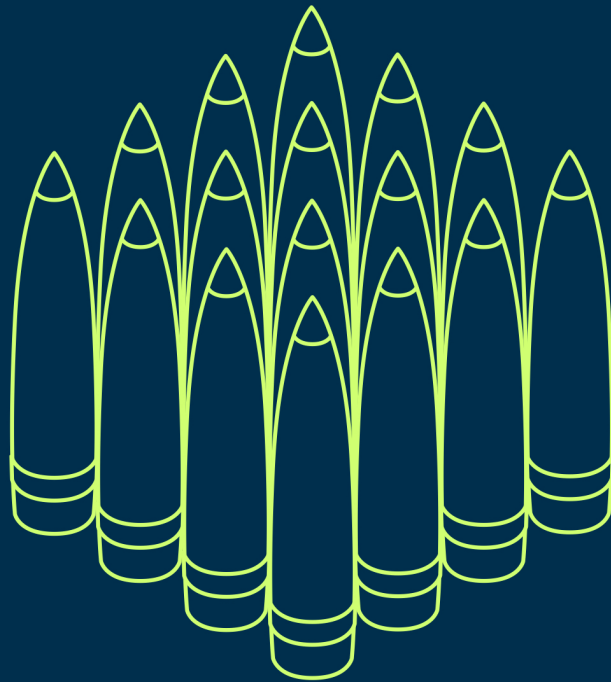
Conclusion

DPPs will not remove Europe's strategic dependencies by themselves. Their value is in how they can inform policy design by helping the EU see where dependencies are hidden and cementing a proactive industrial policy. If the Commission designs DPPs with supply chain resilience in mind, they can become a practical foundation for sharper industrial policy and earlier crisis detection. Europe cannot make policy responses blindly. It first needs to know precisely where the risk is.

“Europe cannot make policy responses blindly. It first needs to know precisely where the risk is.”

About the Author

Jerfi Wigley is a Master's student in International Development Studies at the University of Amsterdam. He previously completed an MA in Political Science at Simon Fraser University in Vancouver, where he held a teaching assistantship, following an honours degree in Philosophy, Politics and Economics from Utrecht University. Originally from Turkey and New Zealand, his academic and professional background focuses on political economy, comparative politics, development economics, global value chains, democratic institutions, and data analysis in political science.



Defence Industrial Autonomy

Without Stabilisers, Europe's Ammunition Stockpiles Are Just Years Away From Failure

By Annika Gerbig

Series 1, Brief No. 8

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At a moment where EU defence policies aim to produce two million 155mm rounds a year, the need to secure a supply of stabilisers cannot be understated.

Executive Summary

The EU and its Member States have scaled up their defence industrial manufacturing, including ammunition production, at a pace not seen since the Cold War. Such upscaling efforts, however, rely on a particular chemical input, creating a dependency that falls through the cracks. Propellant stabilisers are compounds that stop artillery propellants from decaying into dangerous storage hazards. They are made from aniline, whose production is concentrated in China at levels higher than those of almost any other major defence-relevant chemical. Despite its importance to the stability of artillery, the dependency on Chinese aniline goes unregistered by EU monitoring tools due to its overall limited use in the chemical

make-up of said propellants. That smallness is deceptive: aniline stabilisers are disproportionately important relative to their volume. Were Beijing to restrict the necessary upstream chemistry, Europe would only realise its dependency once existing stockpiles are depleted, by which point the window to respond would already be closed.

Without aniline-based propellant stabilisers, newly produced ammunition shells would begin to degrade within one to two years. At a moment where EU defence policies aim to produce two million 155mm rounds a year, the need to secure a supply of stabilisers cannot be understated.

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Key Recommendations

Three steps that can circumvent stabilisers to be at the heart of unsafe stockpiles:

Map the Dependency

DG DEFIS, together with the EDA and national material agencies, should commission audits of stabiliser and aniline-precursor sourcing across European producers, covering suppliers, inventory and the origin of upstream feedstocks, within twelve months. Nothing should be able to stockpile or reshore that has not first been measured.

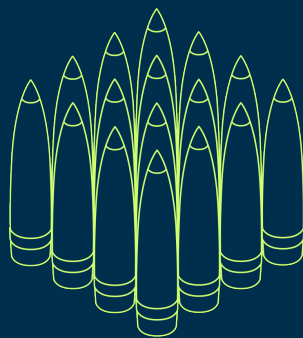
Close the Monitoring Gap

Defence-critical intermediate chemicals should be tracked as a category in their own right, to complete the raw elements covered by the Critical Materials Act and the finished outputs that are covered by ASAP and EDIP. The next scheduled review of the CRMA strategic-material lists would be a natural choice to do so, together with the Joint Research Centre adapting its supply-risk methodology to flag inputs which are below volume threshold but are non-substitutable.

Bridge the Portfolios

Establishing a permanent channel between ECHA and DG Environment on one side and DG DEFIS on the other, so that REACH decisions on dual-use stabiliser chemistry are taken with their defence-supply consequences in plain view. This does not need to be a new institution; a joint working group with a standing mandate would be sufficient; however, it should be created in the near future before potential future REACH decisions on stabilisers force this issue.

Those actions are not focused on new chemistry, but rather on redirecting the EU's focal points toward watching an input that it currently cannot see.



Dependency Hiding in Plain Sight

Every nitrocellulose-based propellant carries a stabiliser, often diphenylamine (DPA), centralites, akardite II, and the wider family of aromatic-amine compounds such as aniline. Those additives, which account for under 5% of the full propellant load, keep ammunition safe in storage by capturing and neutralizing the reactive nitrogen oxide gases that are released as propellants age, thereby preventing an explosive chain reaction. By keeping the propellant chemically stable, stored ammunition is safe, meaning that a shell stockpiled today will still be safe to store and fire two decades from now.

That same component of propellants, however, is defined by underlying upstream choke-points. The majority of plants that produce stabilisers, in addition to substitutes that REACH, the EU's chemical safety regulation, administered by the European Chemicals Agency (ECHA), is trying to implement due to fewer health and environmental concerns, rely on aniline-derived feedstocks. China holds the largest single share of global aniline capacity at roughly 44% as of 2020. This share, however, is climbing, with the Chinese company Wanhua Chemical alone on course to become the world's largest aniline producer, already producing two million tonnes of aniline yearly, accounting for roughly a quarter of global capacity. This chokepoint is therefore not defined by one compound, but a whole branch of chemistry that shares a single upstream bottleneck.

Timing is what makes this urgent. Europe is scaling up ammunition production through the Act in Support of Ammunition Production (ASAP) and the European Defence Industry Programme (EDIP), pushing towards two million 155mm rounds a year while supplying Ukraine and refilling national stockpile depots. Yet all of that production and its safe storage depend on steady, reliable access to propellant stabilisers. Without them, stockpiles begin to degrade within one to two years. Without a secure supply of stabilisers, Europe could scale up production and still end up with stockpiles it cannot safely keep or use.

Why Is a Quick Fix Not Possible?

Nitrocellulose propellant is not stable; it slowly breaks down over its lifespan, which results in it releasing gases such as nitrogen oxides that then speed up the breakdown process even further. This autocatalytic reaction is what accelerates the decomposition process towards instability if left unchecked. Stabilisers are therefore added to the propellant as they absorb the released nitrogen oxides before the chain reaction can take place. This mechanism is what turns propellant shelf life from one or two years into twenty years plus.

Two important variables make existing stabilisers hard to replace, complicating the move away from dependency. One is the lack of interchangeability of propellants, stabilisers, and related ammunition components. Each propellant is mixed with a specific stabiliser at specific dosages and tested for compatibility with the nitrocellulose and shell components such as coatings and plasticisers. If a stabiliser recipe

were to change, a reformulation of the whole charge would be needed, followed by re-qualifying the new formulations ballistically, re-clearing their use on every weapons system in use, and re-testing them according to NATO stability standards. This process alone would take years per propellant per weapons platform.

The Chokepoint

When following the production of a European 155mm shell backwards, the chain and the emerging choke point become evident. The shell holds a propellant charge; the charge holds a stabiliser; the stabiliser is made from an aniline compound; aniline comes from benzene and ammonia; and aniline capacity sits disproportionately in Chinese industrial clusters. Just five steps from a finished artillery shell, a dependence on a Chinese chemical plant is laid open. A handful of Chinese producers, Wanhua Chemical among them, dominate the top of this chain, while Europe's own propellant base is comparatively thin. Firms such as Eurenco in France, Nitro-Chem in Poland, Rheinmetall Nitrochemie in Germany, and MAXAM in Spain make the propellants; their stabiliser inputs however trace back to the same Chinese aniline.

“Just five steps from a finished artillery shell, a dependence on a Chinese chemical plant is laid open.”

REACH offers no way out from this dependency either. Stabilizers such as DPA are being pushed out under REACH due to its decomposition products being carcinogenic. The safer

alternatives offered as replacements, such as arkaridite II or other nitroaniline and urea-derived stabilisers, are themselves also made from aniline. Substituting away from DPA, therefore, shifts the dependency from one compound to another within the same chemistry family without reducing it. Therefore, the exposure is structural to aniline-based chemistry, rather than tied to any one compound.

This concentration would matter less if it weren't paired with China's demonstrated willingness to exploit such dependencies. China has used export licensing as a coercive tool several times in the past, namely in July 2023 with gallium and germanium, in October 2023 with graphite, in 2024 with antimony and tungsten, and in February 2025. Each of these Chinese export restrictions has been conducted through the Chinese Ministry of Commerce dual-use licensing regime, which also governs the chemistry sitting upstream of stabilisers. The legal machinery for a propellant stabiliser restriction therefore already exists, and is just one political decision away from execution.

Brussels' Blind Spot

The dependency is invisible by design, not by neglect, as it slips through three institutional and regulatory gaps at the same time. Propellant stabilisers are too small by mass, making up only a small percentage of a propellant charge, and thus fall below the volume thresholds that supply-chain dashboards are built to flag. Stabilisers fall into a blind spot between the different EU monitoring tools. Each tool watches a different layer of the supply chain: the Critical Raw Materials Act tracks raw ele-

ments, while ASAP and EDIP track finished outputs. Stabilisers are neither a raw element nor a finished product; it is an intermediate chemical sitting in between, letting it slip through the gap, resulting in it going unmonitored.

This is further exacerbated across the EU's division of portfolios. REACH and chemicals policy sit within the Directorate-General Environment (DG ENV) and the European Chemical Agency ECHA, while ammunition policy sits within the Directorate-General for Defence Industry and Space (DG DEFIS). However, the two do not coordinate on dual-use chemistry, resulting in the same compound facing phase-out pressures on environmental grounds, while simultaneously remaining defence-critical and unwatched on the other side. Both the Niinströ preparedness report and the Draghi competitiveness report recognised the problems with this kind of cross-portfolio blind spot, while ironically overlooking propellant stabilisers.

What Disruption Would Look Like

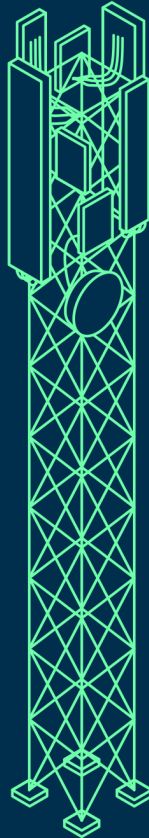
Disruption would not announce itself, and the following is a plausible scenario rather than a forecast, but it illustrates why this dependency is so dangerous. For the first six months, no visible problem would arise as production runs on stabiliser already in inventory. Between six and twenty-four months, the inventory is drained, new propellant outputs slow down, and ageing stockpiles begin failing periodic stability tests based on batches and storage. After two years, Europe is left scrapping entire batches of ammunition that failed safety test-

ing, paying to reprocess the propellant in order to salvage them, or leaving unstable, potentially dangerous stock in storage.

Simultaneously, the substitution path would still be years away from delivering alternatives. Unlike the visible supply shocks caused by export restrictions of antimony and tungsten, that resulted in immediate price surges, a stabiliser disruption quietly degrades existing stockpiles. If there were to be a stabiliser shock now, in the middle of sustained resupply of artillery shells to Ukraine, NATO stockpile replenishment commitments, and the largest European defence build-up in decades, the shockwaves could be immense. By the time this disruption became obvious, months down the line, the time to act would have already passed. This is why action needs to be taken in anticipation rather than in response.

About the Author

Annika Gerbig is a German national currently based in the Netherlands. She holds a degree in European Languages and Cultures and is completing her MSc in Crisis and Security Management at Leiden University, specialising in War and Peace Studies. Her professional interests centre on evolving geopolitical dynamics and security policy, with particular attention to strategic competition and great power rivalry. She is especially interested in how contemporary geopolitical developments are shaping the future of defence, international security, and global stability.



Digital Infrastructure Sovereignty

To Secure 5G Hardware, Europe Needs a Transparent Sovereignty-First Procurement Policy

By **Orla Harris**

Series 1, Brief No. 9

Editor: **Giulia Convertini**

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China creates, the US innovates, and the EU regulates; the infamous motto which has instilled Europeans in a 'catch up' race in global tech. What if this did not have to be the case? How do we begin remedying our strategic dependencies in tech?

Executive Summary

The European Union (EU) is racing to have the hardware and software necessary to create a fully integrated European Stack (EuroStack). In doing so, Europeans are catching up on a nearly 40-year-old Stack model developed by ISO whilst adapting it to emerging technological needs.

One area of relevance in this Stack is the *network layer*, where the *communications sector* lies. More specifically, this brief focuses on 5G networks. To harmonise legislation in this area, the European Commission is proposing the Digital Networks Act (DNA), which would

make investment and manufacturing more attractive within the EU. In addition, the Cybersecurity Act would play a key role in safeguarding mobile, fixed, and satellite networks against high-risk suppliers. Thanks to these efforts, European businesses will see favourable conditions to secure their footing in this Stack layer, thereby enabling the creation of potential pathways towards European digital sovereignty and resilience.

Overall, this Brief will shed light on *why* and *how* the EU should achieve a sufficient level of sovereignty in this layer.

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Key Recommendations

1. **Rethinking Foreign Public Procurement** by strategically redirecting national public partnerships away from foreign-influenced companies and towards EU businesses in the 5G network sector.

2. **Preemptively Account for Simplification** by carving strategic pathways for targeted amendments in sovereign-enabling legislation whilst ensuring afforded protections to mitigate Omnibus debates.

3. **Supply-side Transparency Measures** by adding a sub-paragraph to the DNA, creating an EU-wide transparency registry for suppliers to register their business and services with strategic BEREC oversight and certification scheme.

These recommendations are to be taken on the EU level and supported by Member States. Further elaboration is found in Section *IV, Recommendations on Future Steps*.

Network Types and Their Policy Grounds

The most up-to-date legislation relevant to 5G networks is the EU’s Digital Networks Act (DNA). As a draft act, its aims are to harmonise and boost connectivity networks whilst making sure that resilience and sustainability are not amiss. It is a piece of a larger picture on technological infrastructure, providing a much-needed examination of the EU’s current level of communications network and overall digital infrastructure, also known as its ‘*level of digital architecture*.’

One of the most important communications networks in the EU, and the focus of this brief, is 5G networks. 5G is a cellular standard developed from 3G and 4G technology that operates on different frequencies (low/mid/high band), with that spectrum being licensed, shared, or unlicensed via mobile network operators (eg., Orange, Tango, T-Mobile). 3G enabled mobile data, 4G/LTE scaled it for smartphones and streaming, and 5G builds on 4G’s existing architecture while multiplying speed, reducing latency, and connecting far more devices simultaneously.

Important to this conversation is the hardware that enables and maintains this network. Unfortunately, no central EU body or group has released a comprehensive overview encompassing 5G network hardware components. Rather, this leaves for a fragmented understanding which must be pieced together:

- Modem (the chipset enabling connection from mobile/IoT to network);
- Base station (radio units, power supply systems for interface between users and the networks);
- Small cells (DAS, picocells to help manage dense urban coverage);
- Core (central component for managing data traffic and network services);
- Antenna array (antenna configuration to enhance signal strength); and
- Ran (interface between user devices and the 5G core network).

“Collectively, this is most of the hardware that enables our 5G network.”

Operating this hardware is no small feat. To which, there are two problematic associated costs that legislation has attempted to remedy: permit granting and licence terms.

The former costs are mainly imposed by local authorities that relate to digging and installation rights for towers, masts, and other network infrastructure hardware. The 2014 Broadband Cost Reduction directive (BCR) was supposed to be key in remedying this burdensome cost. Yet, as the BCR faced significant inconsistent transposition across MS, that translated into less reduction of uptake costs. To remedy this, the Gigabit Infrastructure Act (GIA) was introduced in 2024, nearly 10 years after the BCR, and it was supposed to support faster and more cost-effective deployment of very-high-capacity networks. However, in a key provision, public-private partnerships

were weakened by the exclusion of municipalities from their scope. Leaving this policy area weakened and unfinished.

The latter costs are associated with licenses for the use of radio network spectrum by mobile operator networks. These licenses were given for 15-20 years, which posed reliability issues for these network operators. Operators could not confidently invest millions when their license might expire before they recovered the costs. Similar to the BCR, the EU introduced legislation to remedy this problem, the DNA. The DNA resolves this problem by imposing indefinite licenses with a 40-year minimum limit (with exceptions and safeguards to prevent abuse). Under the DNA, EU mobile operating networks would have the financial certainty they need for long-term investments. This allows for both incumbents and new entrants to plan long-term capital expenditure without fear of license expiration or regulatory uncertainty.

The Call for Sovereignty

In an increasingly digital world, networks form an integral part of our day-to-day lives. At both extremes, from emergency preparedness to ensuring day-to-day business activities, communication and its networks are vital to advanced economies. Any destabilisation in our communications would essentially paralyse society and economic activity.

The cost of using non-sovereign solutions is apparent in various digital sectors. From technological policing due to geopolitical tension (Microsoft revoking ICC judges' software ac-

cess) to cases of foreign election interference (Cambridge Analytica scandal and, more recently, TikTok's indirect involvement in the 2024 Romanian elections). The push for EU sovereign solutions has gained substantial momentum in recent years. From civil society to academics, industry, and even ordinary people in the Union, sovereignty is at the forefront of technological development.

Thereby, the rationale is at least two-pronged: *control and independence*. Europe must have control over its technology, as technological sovereignty = controlled independence.

Hardware Origins & Potential Challenges

I: Europe's Hardware Suppliers:

Europe has typically preferred to purchase communications hardware from non-EU companies due to their ready availability, low cost, and overarching relationship-building advantages with foreign suppliers.

In Europe, mobile network operators have often outsourced parts of their costs, such as expensive tower operations, with private equity buyers readily willing to take on the costs. Most of these companies are long-term European-based businesses, but some are also US-based (3i is US-based, and Apax is UK, Paris, and US-based, but with long-term near billion investments in Israeli technologies).

Huawei and ZTE are two of Europe's biggest foreign companies supplying the EU with 5G network hardware, both being China's flagship tech firms. Together, these companies provide hardware components for some of the EU's most critical and sensitive 5G network infrastructure in Europe. As recently as 2024, countries' 5G RAN hardware has been supplied by Chinese companies, particularly in Cyprus, Austria, and the Czech Republic.

Such unhindered prosperity in the European market, however, would be short-lived. By 2023, growing skepticism over embedded Chinese surveillance technologies and legislative crackdowns would begin constraining the Chinese telecommunications industry. The Cybersecurity Act would empower European authorities to phase out "countries posing cybersecurity concerns" such as China.

"EU network operators are at the forefront of the development and transformation of the digital infrastructure that supports our digital economy and society."

II: Dependencies & Supply Challenges:

Setting aside the competitive argument that limited suppliers limit competition, having key hardware components manufactured outside of the EU's reach creates a deeply insecure supply chain reliance.

Reliance on Chinese companies is not inherently bad if it were not for their national intelligence laws mandating that every organisation and citizen "support, assist, and cooperate [...] in national intelligence work," even in times of peace. In cases of increasing geopolitical ten-

sions, the People's Republic of China could leverage its laws to require Huawei and ZTE to destabilise European networks.

While a full-blown deterioration of EU-China relations might be backstopped by the nearly 900 billion EUR trade of goods between the two actors, tensions are already creeping in as the EU pushes to exclude Chinese companies from 5G network contracts. The EU is mandating the phase-out of high-risk suppliers of ICT components in electronic communication networks. As a result of this sovereign-enabling legislation, we are seeing heightened lobbying by Beijing to remove such provisions.

This is why the EU must advance in its goals to lead, support, and develop sovereign solutions.

Recommendations on Future Steps

I: Rethinking national public procurement

One of the larger claims in the sovereignty debate lies in leveraging public procurement to enable the development and uptake of sovereign applications. One of the leading voices on this topic is Cecelia Reik. In a key paper on the topic, Reik's research sheds light on 'offer[ing] a democratic, public-led digital stack' and 'end contracts with BigTech'. A fine line would nonetheless have to be drawn in order not to disproportionately exclude foreign companies from being able to operate within the EU market. Implemented radically, such policies may interfere with the single market's

principles of competition and lead to tech decoupling and isolation.

Concretely, one suggestion is to borrow this public procurement idea and apply it to 5G network ecosystems built in the EU. In practice, the EU's steps would look like;

1. Reevaluate 5G network public procurement deals (tenders and aid) on the national and EU levels.
2. Not renew public 5G network procurement deals with companies that have deep non-EU government ties.
3. Buying European: implementing new public tenders and creating mechanisms for financial aid that support EU businesses in the 5G network ecosystem.
4. Create a centralised platform that provides open-source 5G network solutions that EU businesses can reliably use.

This first recommendation is similar to already-researched public procurement arguments and similar to legislative initiatives already on the table (cybersecurity ICT supplier phase-outs), making it an achievable goal. However, in order to effectuate it, safeguards need to be implemented. For instance, mechanisms to prevent 'EU washing' whereby companies subscribe to the 'Made in EU' model already in use in manufacturing.

Preemptively Account for Simplification

Alongside researching solutions and releasing press briefs about EU sovereignty needs, we need to find ways to take this topic from a *European desire* and turn it into *actionable measures*. To which, the EU has already begun proposing initiatives to 'achieve technological sovereignty [...] that are interconnected and mutually reinforcing'. These are all welcome initiatives with one major caveat: potential 'simplification'. Given the recent digital omnibus turmoil, one can only question whether today's good sovereignty-legislative intentions, such as the DNA, Cybersecurity Act and Technology Sovereignty Package, may be simplified with less protection down the line once the political will to keep on pushing for European-based solutions expires.

Instead of entrenching the law and making it un-amendable, the following preemptive policy recommendation is suggested:

Concretely, creating timelines and pathways for laws to be amended where additional protection is afforded in the DNA, Tech Sovereignty Package, Cybersecurity Act, and other sovereignty-enabling legislation.

The second point on *additional protection* is just as important as the first *amendment*. Without concrete scope for amendment, protections can be withdrawn, as claimed in the GDPR Digital Omnibus debate. Having this intention would guide amendments to prevent

potential regulatory capture from occurring. This recommendation is similar to the already existing ‘[fitness check](#)’ of laws, with the addition of this *guiding* element. Allowing for this amendment would preemptively remedy instances of regulatory stagnation.

“We need sovereignty solutions to be more than a political trend; we need them to materialise and stay.”

Supply-side Transparency Measures

As of writing this brief, there is no centralised information point on where EU 5G network hardware comes from. The only source with an EU overview is a 2020 report by [Strand Consult](#) that only covers Chinese operators and is available only upon request. Therefore, the only publicly available information on this is out of date and not accessible. By knowing what hardware is European and which is not, this transparency would allow for smoother compliance with the Gigabit Act and the Cybersecurity Act’s phase-out of high-risk suppliers from European 5G networks.

Concretely, this requires adding a subparagraph to Article 6 of the DNA allowing for the creation of an EU transparency registry of 5G network hardware suppliers.

This would make the [Body of European Regulators for Electronic Communication](#) (BEREC) in [Article 6 of the DNA](#) go further than just collecting information about the “architecture, capabilities and usage of network segments.”

To do so, BEREC would create a centralised transparency registry for this purpose and work with national telecommunication bodies to require businesses to verify whether their 5G hardware component suppliers have registered in this registry. Placing the burden on the suppliers of 5G components removes unnecessary compliance burdens from businesses building these networks. Businesses on the receiving end of the hardware would be required to verify compliance with said registration through an official document generated once supplier registration is approved in the EU registry. This would provide a publicly available and holistic understanding of where our 5G network hardware comes from.

Future Research

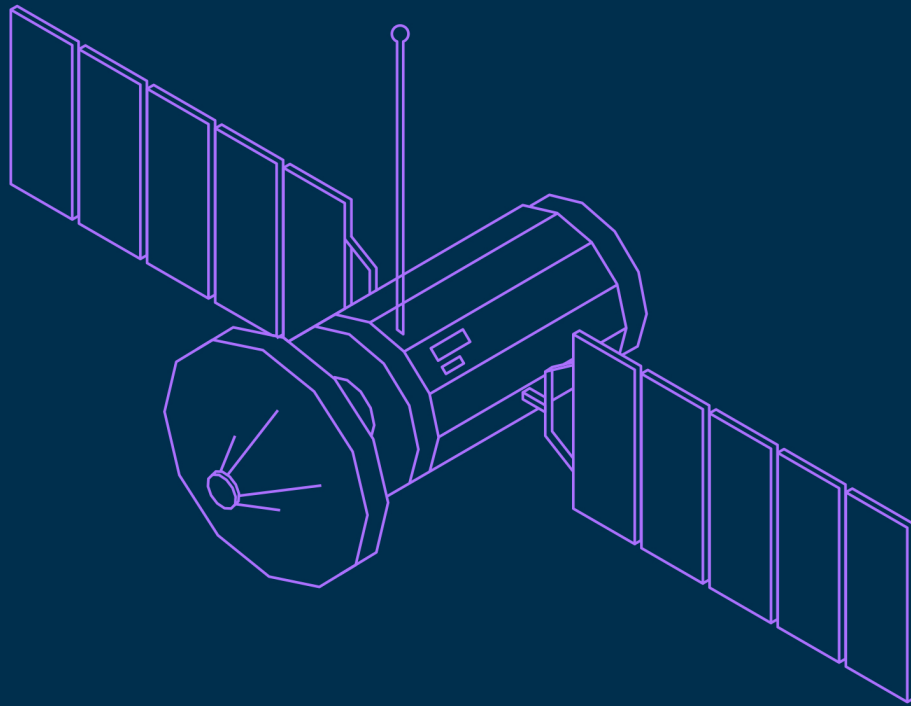
The topic of digital sovereignty is a well-studied field with ever-growing considerations. This policy brief sheds light on one important strategic sector, that of communications and specifically 5G networks. Yet, it cannot take into consideration all developments related to EU initiatives, as they are theoretical as of writing this brief.

Future research should map these theoretical (or soon-to-be practical) initiatives, such as the ‘Made in Europe’ tag, and see exactly to what this label is applied (most recently found in the proposed [Industrial Accelerator Act regulation](#) applicable to low-carbon emissions). Future research should also factor in the [proposed re-](#)

[view](#) of the EU's 2014 public procurement framework.

About the Author

Orla Harris LL.M is a policy analyst at Euro Prospects with a keen interest in leveraging sovereignty technology to fortify European digital values. With an LL.B in International and European law (data protection focus) from the Hague University and an LL.M in Technology law (tracking technology focus) from Utrecht University, Orla is well versed in how technology and the law co-exist in the European Union. With both consultancy and published research experience, Orla looks forward to working on meaningful policy reporting at Euro Prospects.



Digital Systems Sovereignty

Only a Fully Backed IRIS² Can Deliver Europe's Sovereign Alternative to Starlink

By **Giulia Convertini**

Series 1, Brief No. 10

Editor: **Orla Harris**

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Satellite connectivity has moved, in the span of three years, from a niche industrial concern to a core aspect of European security. Yet the continent's response has been to build a shared constellation while quietly hedging with national ones. IRIS² cannot deliver sovereignty if Member States do not unreservedly back it.

Executive Summary

The Russian invasion of Ukraine has transformed space from being a niche industrial sector and a long-term innovation project into a critical infrastructure and a matter of strategic autonomy. As satellites power, among other things, our phone's localisation systems, car navigation, commercial planes' takeoffs and landings, and emergency response systems, space has also become Europe's next service frontier and an increasingly increasingly geopolitical sector.

With a focus on space connectivity and the key role that Space X's Starlink plays in the Ukraine war, this policy brief assesses the ongoing EU Space Policy Initiatives such as the EU Space Act and IRIS² in order to highlight their limits, as well as calling for true coordi-

nation across Member States in building sovereign European space capabilities.

Europe is called on to act strategically, building on the successful space exploration and observation initiatives of Galileo and Copernicus, and ensuring Europe's leadership in the global space sector prevails. It should foster coordination among Member States and scale up the EU space and satellite ecosystem, positioning itself as a key player in the new space race. As such, harmonising rules and national approaches as well as ensuring long-term investment in the European Space Infrastructure will be crucial, especially as satellite connectivity becomes ever more vital to the EU's technological sovereignty.

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| Key Recommendations

| Consolidate national military satellite programmes under IRIS²

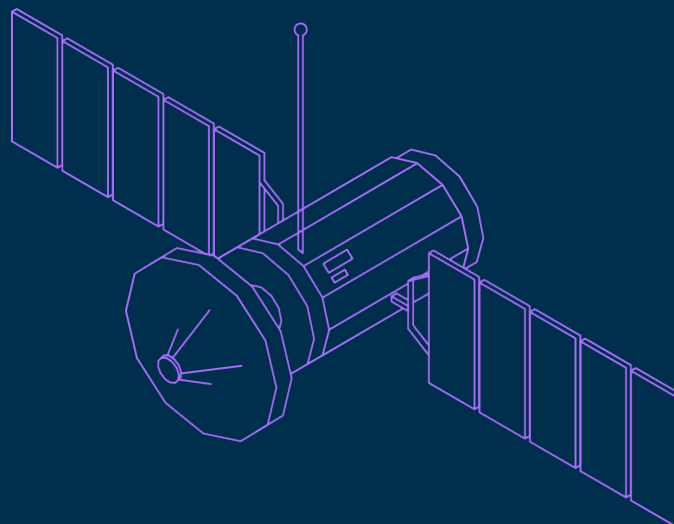
Member states operating or developing sovereign military satellite systems should commit to a structured convergence plan under IRIS², modelled on the consolidation logic that underpinned Galileo, the EU's Global Navigation Satellite System (GNSS). This does not require the immediate decommissioning of existing assets, but it requires political commitment to ensure that future investment flows toward the shared European constellation rather than parallel national ones.

| Reserve the 2027 spectrum window exclusively for European operators

The Commission's MSS proposal correctly identifies the 2027 frequency transition as a strategic inflection point. Member states, particularly France and Spain, which have already backed the proposal, should push for the framework to be binding rather than indicative, with EUSPA empowered to enforce spectrum allocation against non-European operators seeking access to the reserved blocks.

| Establish a European Satellite Sovereignty Compact through the MFF

The upcoming Multi-Annual Financial Framework should establish a dedicated structural investment mechanism for European satellite communications, administered through EUSPA with observer status on the space and defence advisory board. The Compact should set measurable consolidation targets, condition access to EU space funding on alignment with IRIS² architecture, and open cooperation frameworks with strategic third countries – beginning with EEA partners and extending to MENA partners where geopolitical alignment supports it.



The Increasing Importance of Space for European Strategic Autonomy

shaped how military planners across the continent understood the strategic value of Low Earth Orbit.

With the establishment of the European Union Space Programme and the European Union Agency for the Space Programme (EUSPA), as well as the launch of EU flagship initiatives Galileo and Copernicus, EU Space Policy adapted to the Ukraine war by reframing itself into an agenda driven by resilience, strategic autonomy, and security.

Within this framework, the Galileo and Copernicus initiatives were recognised as critical dual-use infrastructure in defence operations. The EU also launched IRIS² (Infrastructure for Resilience, Interconnectivity, and Security by Satellite), which is set to build a constellation of 290 satellites across the Medium Earth Orbit (MEO) and Low Earth Orbit (LEO), and is expected to be operational by 2032.

IRIS²'s key goal is to offer a sovereign, secure, and multi-orbital communications infrastructure that is strategically designed to reduce dependencies on foreign providers; a critical necessity in times of crisis. Ahead of the IRIS² launch, GOVSATCOM will ensure governmental Satellite Communications and allow for the pooling and sharing of resources to better manage crises like humanitarian emergencies and natural disasters.

Russia's full-scale invasion of Ukraine in February 2022 did something that years of EU space policy debate had not: it made satellite connectivity viscerally legible as critical infrastructure. Starlink replaced degraded Ukrainian communications networks almost overnight, enabling civilian coordination, government continuity, and military operations that encompassed the targeting, reconnaissance, and drone guidance in ways that re-

Starlink operates in low orbit

Low-Earth orbit satellites can link to Earth faster, but more are needed to provide coverage

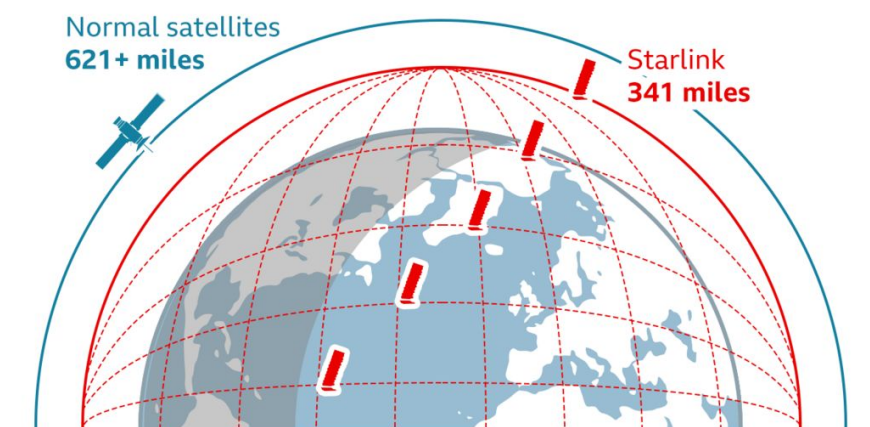


Figure 1: Source: *Starlink: Why is Elon Musk launching thousands of satellites?* BBC, 2022.

space, with a focus on boosting innovation to prevent collisions, ensuring the cybersecurity and sustainability of satellites. A proposal for expanding EUSPA's role and responsibility, progressively including secure connectivity, technological sovereignty and support to the EU space economy and cyber security is also being discussed. Such developments paint a clear picture of the direction of EU space policy at a time when it becomes increasingly vital for European security, strategic autonomy, and technological sovereignty.

The Fragmentation Problem

Europe has to deal with its dependence on US commercial satellite communication systems and their importance for European security. Starlink's dominance in the Low Earth Orbit, counting over 11,000 satellites available, together with its scale, makes it very hard for alternatives to successfully establish themselves.

“IRIS² cannot deliver sovereignty if Member States do not unreservedly back it.”

IRIS² will work as a sovereign European-owned satellite constellation operating 290 satellites, which is a small number compared to Starlink's scale. The risk is that it will only partially address the EU's dependence on a US foreign provider in satellite communications. We currently see major European countries support IRIS² while also building their own national sovereign satellites, such as Ger-

many's SATCOM BW and France's SYRACUSE IV. This exposes Europe to the risk of fragmenting resources and hampering the achievement of scale in the EU space industry.

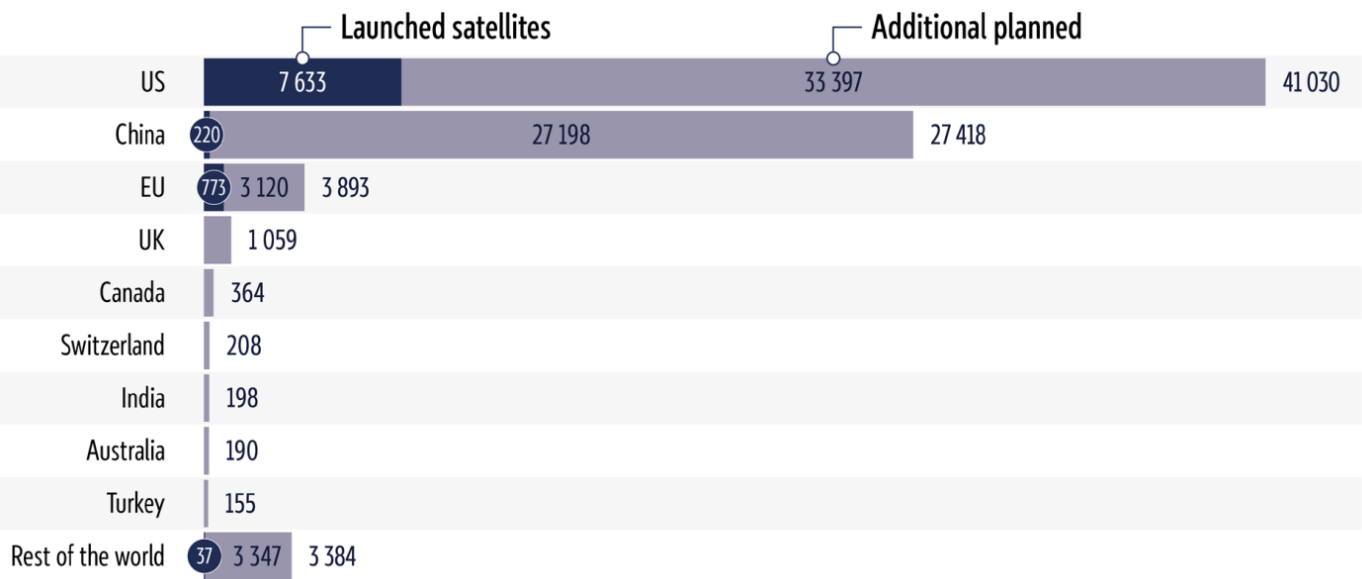
In this sense, a structural gap, and hence a dependency, remains: Europe has declared space sovereignty as a strategic goal while quietly building the conditions for continued dependency into its own programme architecture.

“Europe has declared space sovereignty as a strategic goal while quietly building the conditions for continued dependency into its own programme architecture.”

Towards a European Satellite Sovereignty Compact

Copernicus and Galileo initiatives' success in pooling resources at the EU level was driven by national governments' acknowledgment of the fact that, according to Agnieszka Łukaszczyk, such capabilities were too strategically important and expensive to duplicate nationally. This awareness should drive IRIS² as well, as the dilution of industrial capacity, launch capability, and money across Member States would naturally lead to the fragmentation of the very resources that are needed to develop a credible European alternative to Starlink.

Figure 2: *Satellite communication constellations (total launched and planned)*



Source: *Detecon International GmbH 2025*

Moreover, the European Competitiveness Fund, as part of the upcoming MFF, is set to put in place structural investments in the space sector. By guaranteeing EUSPA observer status in the space and defence advisory board, a European Satellite Sovereignty Compact could be created to ensure a stable and credible investment framework.

IRIS² represents a grounded starting point for Europe’s strategic autonomy in space, and its commitment to cooperation with non-EU states, such as Iceland and Norway, could be expanded to foster global cooperation in the space sector. Engaging at EU level with Countries from the MENA region would also be of strategic importance, given their role in the ongoing global race for space dominance.

The Spectrum Window Europe Cannot Afford to Miss

The European Commission’s recently launched proposal for the EU-level authorisation of systems providing mobile satellite services (MSS) correctly frames satellite connectivity as a fundamental part of European technological sovereignty. The MSS plans to reserve satellite frequencies for European operators when a prized spectrum band opens in 2027, transitioning away from the current frequency bands, which have been controlled since 2009 by US operators Viasat and EchoStar.

The Commission's framework would split the available frequencies into three blocks: one reserved for secure governmental communications through IRIS², a second earmarked for European startups, and a third open to European or non-European operators on competitive terms. In the current context, the European spectrum should be fully reserved to European operators and use the opening to build the competitive base that European satellite startups currently lack.

As the orbital environment becomes increasingly congested, competition for spectrum is expected to intensify. Thus, the MSS proposal is crucial and timely in securing EU sovereign space and satellite capabilities. It is yet to be seen how the US administration might welcome Europe's bid to retain its control over such critical assets and limiting access to US companies such as Starlink or Amazon LEO. Nevertheless, this is a crucial step towards reducing dependencies, backed by EU Member States such as Spain and France.

Space is central to Europe's strategic autonomy and critical in Europe's push for tech sovereignty, and it represents a window of opportunity for establishing itself as a key actor and enabler in the space sector. Ultimately, ensuring a collaborative approach is paramount to Europe's long-term security and global influence.

“Space is central to Europe's strategic autonomy and critical in Europe's push for tech sovereignty.”

About the Author

Giulia Convertini holds a Master's degree in International Relations from the University of Milan and a Bachelor's in Languages and International Relations from Università Cattolica del Sacro Cuore. She has gained practical experience through roles at the European Parliament, public affairs consulting firms, and a trade association, working on EU digital and healthcare policies. Her primary interests are at the intersection of geopolitics and technology. Her main focus is on how the EU can strengthen its resilience and strategic autonomy in an increasingly multipolar world.

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