REGIONAL DEEP DIVE

EUROPE

INTRODUCTION

The European Regional Commentary builds on the insights uncovered in the annual World Energy Issues Monitor, weaving together the rich dialogue shared by our community. The survey and dialogues were conducted prior to the ongoing situation in the Middle East and therefore reflect conditions at that point in time.

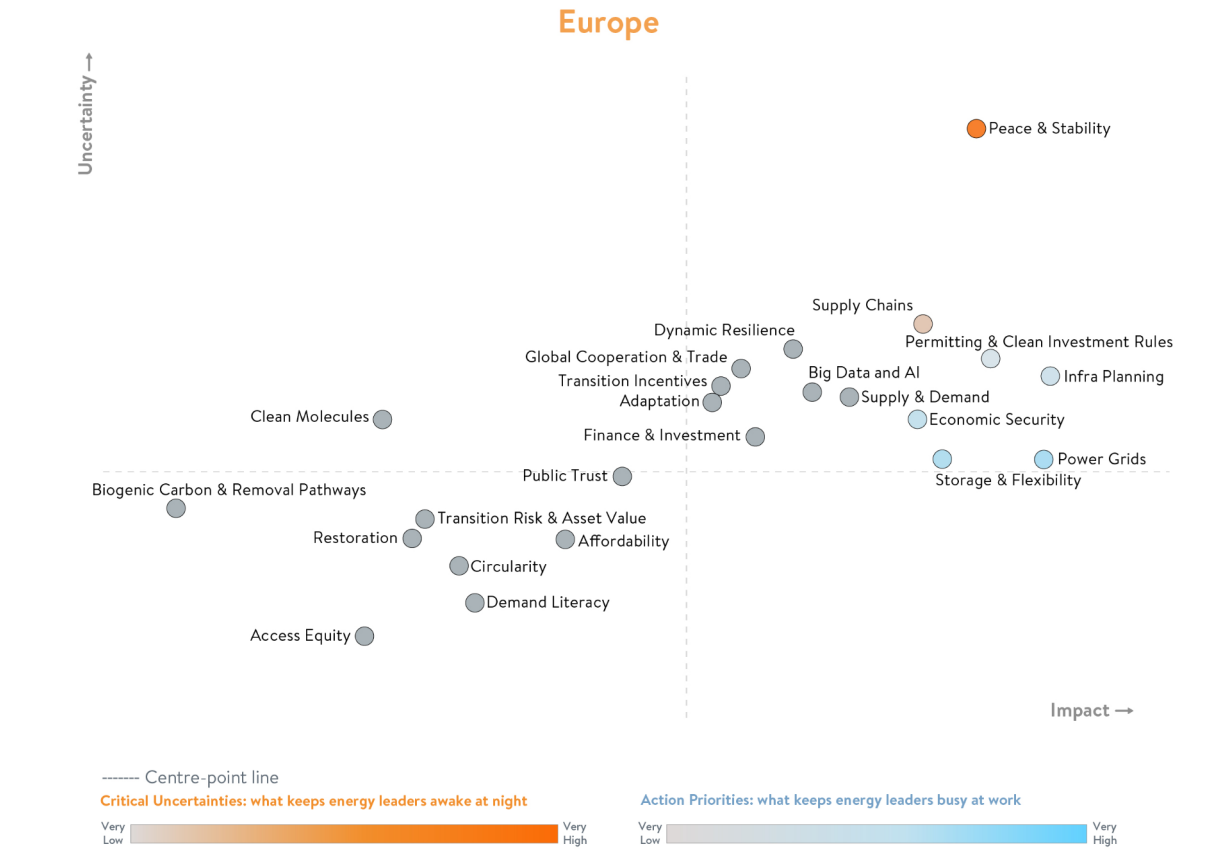
Europe's energy transition remains anchored in long-term climate ambition and a deep clean-energy industrial base. Yet the experience of recent years has clarified the limits of ambition-led framing when delivery is increasingly shaped by security, affordability, and system capacity. In Europe, the transitions are no longer unfolding as a linear programme; they are unfolding as system navigation under compounding pressure, where decision time is compressed and the cost of mis-sequencing is rising. Several 2025 signals reinforced this shift in Europe's operating environment. The end of Russian gas transit through Ukraine narrowed a once-familiar security margin and underscored how quickly supply conditions can change, even in systems built on interdependence. At the same time, affordability has moved from a background concern to a first-order political and industrial constraint – reflected in the EU's Affordable Energy Action Plan, which positions competitiveness, security, and sustainability as inseparable requirements for the next phase of delivery.

Europe's transition is also becoming more visibly "system-bound" in operational terms. The 28 April 2025 blackout affecting Spain and Portugal highlighted how quickly stability constraints can surface when systems run close to capacity – bringing grid resilience, system services, and flexibility to the centre of transition credibility. In parallel, demand uncertainty is sharpening: data centres and AI-related load growth are becoming material variables for planning, investment sequencing, and public consent – adding concentrated demand centres to an already widening set of electrification drivers. And as transition boundary expands across sectors, the start of Sustainable Aviation Fuel blending mandates in the EU and UK signals how policy is now creating new demand pull and investment expectations beyond the power system – linking decarbonisation to industrial scale-up and supply chain readiness.

This is why Europe's 2026 Issues Survey results emphasize this view: constraints are now systemic – rooted in infrastructure readiness, regulatory predictability, investment frameworks, and social licence – rather than a shortage of solutions. Under these tighter conditions, the leadership task becomes a World Energy Trilemma-tested delivery: sustaining climate ambition while holding together security, affordability, and sustainability in real time, and protecting what works while modernising what blocks delivery.

ABOUT THE WORLD ENERGY ISSUES MONITOR

Energy transitions are complex, evolving, and deeply interconnected, shaped by shifting priorities, emerging uncertainties, and regional realities. Since 2009, the World Energy Issues Monitor has offered a unique lens into the dynamic forces driving energy transitions worldwide. This year's survey spans 23 core transition issues across six categories – spotlighting blind spots, new signals, and shifting leadership priorities. Amid growing uncertainty, leaders across the World Energy Council community are asking sharper questions: What's working? What can be adapted across regions? And where are the real opportunities to turn blind spots into bright spots?



CRITICAL UNCERTAINTIES AND ACTION PRIORITIES

TOP CRITICAL UNCERTAINTY: PEACE AND STABILITY

Peace and stability has become Europe's defining operating condition – shaping investment horizons, industrial strategy, and market confidence. The uncertainty is less about whether disruption occurs, and more about how Europe navigates three compounding pressures: geopolitics as a market-shaper, rising trade fragmentation and contested standards, and climate impacts increasingly treated as operational security risks.

Figure 2 shows that, between 2025 and 2026, perceived impact rises across **Peace & Stability Risks, Global Cooperation & Trade Rules, and Economic Security & Industrial Competitiveness,** with a larger share of respondents rating each as High/Very High Impact in 2026. Uncertainty also increases for **Peace & Stability** and – more sharply – for **Global Cooperation & Trade**, reinforcing the sense that geopolitics is hardening into an operating condition where contested rules and alignment pressures are shaping market outcomes. **Economic Security** is the exception on the uncertainty axis: the share perceiving very high impact increases, while the share perceiving very high uncertainty stays the same.

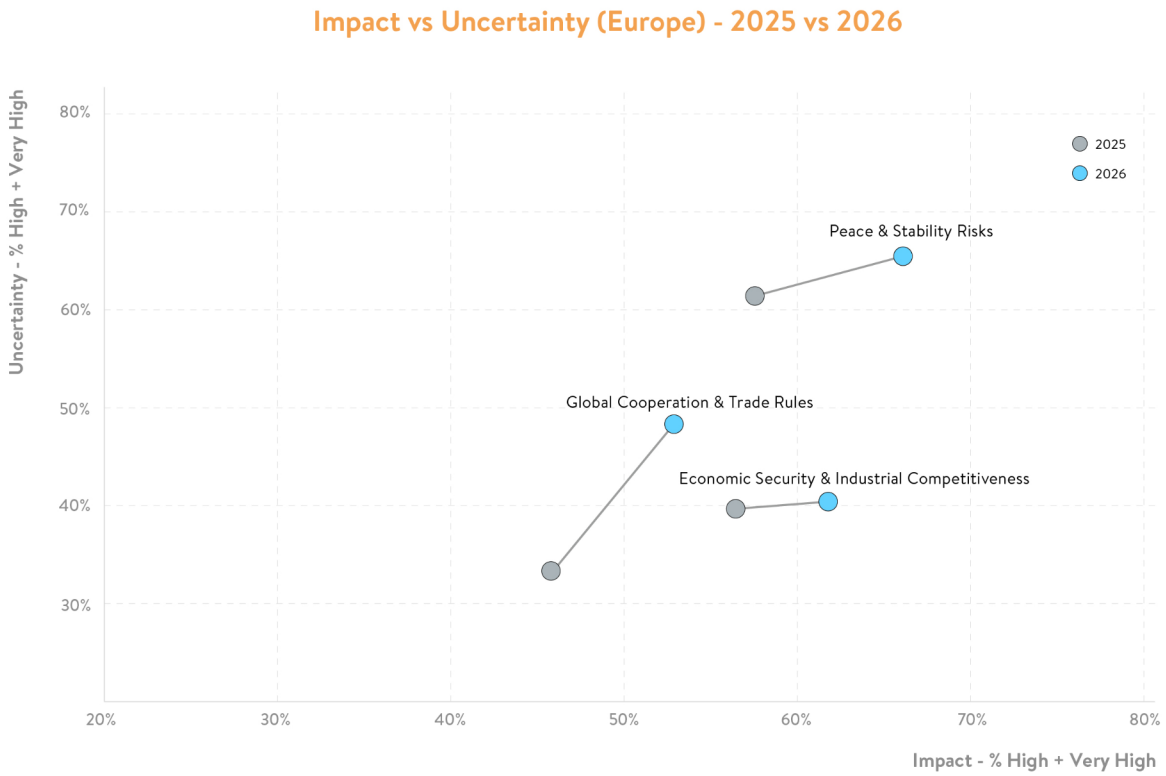


Figure 2: percentage increase in high/very high responses for **Peace & Stability, Global Cooperation & Trade, and Economic Security (big movers)**

One important source of consideration in Europe's outlook is the implications of peace and stability uncertainty across the whole system dynamics. The war in Ukraine, the end of Russian gas transit through Ukraine, and continuing rise in global geopolitical tension around trade, technology, and critical infrastructure have made security a first-order investment priority. These dynamics are visible in heightened scrutiny over foreign participation in ports, grids, digital infrastructure, and energy supply chains; in the reconfiguration of gas, nuclear fuel, and critical materials sourcing; and in growing alignment pressures that shape access to markets, capital, and technology. Together, these developments point to a pattern in which geopolitical instability and security alignment increasingly influence investment conditions, infrastructure governance, and long-term asset viability. For Europe, this raises uncertainty around continuity, risk pricing, and the durability of transition pathways tied to energy security, industrial competitiveness, and cross-border integration.

Three dynamics that underpin Peace & Stability uncertainty stand out:

- SOVEREIGN RELIABILITY IS NOW A PRICING FACTOR
  Europe's energy and industrial choices are being shaped as much by alignment, resilience, and strategic dependencies as by economics. As geopolitical forces act as market-makers, they raise the cost of capital, compress decision time, and increase delivery risk – especially where supply chains, critical materials, and infrastructure sit within contested spheres of influence.

- SECURITY RISKS ARE CONVERGING
  Climate shocks, cyber exposure, and geopolitical volatility are increasingly bundled into a single risk picture for energy systems. This convergence is reshaping investment horizons and public confidence, and is accelerating demand for resilience-by-design across grids, infrastructure, and supply chains.

- FROM FUEL SWAPPING TO DEPENDENCY RESHUFFLING
  Diversification away from Russian pipeline gas has reduced one strategic vulnerability, but also

reconfigured exposure to global LNG markets and supplier priorities. The result is not "energy sovereignty" in the traditional sense, but a new map of entanglements – where the nature of dependencies (and their political conditions) becomes as decisive as price.

TOP ACTION PRIORITY: THE DELIVERY SPINE – GRIDS + FLEXIBILITY + PLANNING

Europe's transition is now constrained less by technology availability than by system throughput – with grids, flexibility, and planning setting the pace. Delivery constraints have become systemic: infrastructure readiness, regulatory predictability, investment conditions, workforce capacity, and social licence must now carry a heavier load, because they are expected to serve security, competitiveness, decarbonisation, and political viability simultaneously.

- GRIDS ARE THE PACING FACTOR
  Network expansion, connection queues, and cross-border coordination increasingly determine how quickly renewables, electrification, and new industrial loads can scale. The binding question is no longer "what can be built", but what can be connected and operated reliably.

- FLEXIBILITY IS INSEPARABLE FROM GRID MODERNISATION
  Storage, demand-side response, and dispatchable low-carbon capacity are becoming core infrastructure, not optional add-ons. Without flexibility, high-renewables systems face rising curtailment, volatility, and higher system costs – undermining both affordability and legitimacy.

- PERMITTING AND PLANNING ARE THROUGHPUT CONSTRAINTS
  Complexity and timeline risk in planning and approvals – alongside local acceptance and overarching regulatory complexity – can delay or reshape critical transmission and generation upgrades. Where regulatory efficiency is enabling and early engagement is done well, delivery friction can be minimized while strengthening social licence for continued build-out.

- AFFORDABILITY IS A DELIVERY INPUT
  High energy costs are not only an economic challenge but a legitimacy constraint. Policy is increasingly judged by whether it delivers visible cost relief and competitiveness, alongside decarbonisation – reflected in the EU's Affordable Energy Action Plan and its emphasis on reducing costs while accelerating investment.

AI-DRIVEN DEMAND GROWTH AND SYSTEM READINESS CONSTRAINTS

AI is emerging as both a powerful accelerator of Europe's energy transition and a rapidly growing source of electricity demand. On the system-enabling side, **AI-optimised grid operations are already delivering measurable benefits:** advanced monitoring and dynamic line rating can increase the effective capacity of existing transmission lines by around 10–30%, depending on system conditions, reducing congestion and curtailment without new build. Countries such as France are also using AI-enabled planning tools to proactively connect new data centres to high-voltage, low-carbon nodes, strengthening operational stability.

However, the same technologies are also intensifying pressure on electricity demand and exposing system-readiness bottlenecks. Data centre expansion is driving steep and uneven load growth – UK and Spain are seeing rapid demand increases, and in Ireland, data centres already account for more than 20% of national electricity use, forcing grid operators to impose moratoria on new connections. Similar grid congestion challenges are emerging in Amsterdam and Frankfurt, where AI-related demand is outpacing networks' ability to connect and accommodate new load.

The European Commission warns that data centre electricity consumption could nearly triple by 2030, posing risks to climate objectives and affordability unless planning, siting rules, and grid investment accelerate. The EU's forthcoming digitalisation and AI roadmap aims to close these gaps by standardising data frameworks and strengthening system resilience – reinforcing that as demand surges, Europe's binding constraint is increasingly system readiness: grids, planning, connections, and operational robustness.

BLIND SPOTS AND BRIGHT SPOTS

Europe continues to scale renewables, but the 2026 picture is increasingly shaped by system constraints and **social licence enablers** that are often treated as secondary until they stall delivery. The Europe Issues Map and regional discussions point to a stress point: transitions are moving faster than the foundations – institutions, infrastructure, and public consent – can comfortably support.

BLIND SPOTS

- MARKET DESIGN CREDIBILITY IS BECOMING A STABILITY RISK
  Public and political questioning of marginal pricing and burden-sharing is rising. If mishandled, this can become a disruptive fault line – undermining investability, slowing grid build-out, and weakening the legitimacy needed for delivery.

- AFFORDABILITY IS NOT A SIDE ISSUE: IT IS A STRUCTURAL CONSTRAINT ON DELIVERY
  Affordability pressures in power, gas, and electricity are driven less by under-investment in resilience or modernisation than by exposure to expensive gas and the accumulation of charges, levies, and taxes that disproportionately burden electricity compared to other energy carriers (as highlighted in the Draghi report). Prices must remain socially and industrially acceptable to sustain consent, even as systems require continued investment for resilience and modernisation.

- PERMITTING AND PLANNING REMAIN UNDERESTIMATED THROUGHPUT CONSTRAINTS
  Despite being underrated on the map, approval timelines and local acceptance continue to decide what gets built, where, and how fast – especially for networks and new infrastructure. Planning must be proactive and early, and aligned with energy targets.

- THE "MISSING HALF" OF SYSTEM DESIGN: CLEAN MOLECULES STRATEGY
  The lagging cost efficacy compared to other sources is obscuring the build-out required for clean molecules (including hydrogen) for hard-to-abate sectors. The strategic pressure point is that Europe is building a dual system (electrons + molecules) while operating under legacy market rules – adding friction under time pressure and contested policy conditions.

BRIGHT SPOTS

- SPAIN: DISRUPTION AS AN ACCELERANT FOR RESILIENCE
  Spain is using system stress to accelerate the update of operating rules and procedures – moving beyond frameworks designed for early-2000s systems toward rules fit for today's high-renewables reality. The experience reinforces that resilience is strengthened through adaptive governance and learning-by-doing, not only through advance planning.

- FRANCE: STRATEGIC CERTAINTY AS AN INVESTMENT SIGNAL
  France is using long-horizon system planning and clarity on firm capacity to reinforce security and investability. Even as the mix evolves, the signal to markets is one of continuity and strategic intent.

- GERMANY: RENEWABLES BECOMING STRUCTURAL
  Germany's progress reflects a broader shift: renewables are increasingly treated as core system infrastructure – supported by reforms that aim to reduce connection and curtailment friction and keep scaling aligned with grid reality.

KEY IMPLICATIONS FOR SUSTAINABILITY – EUROPE'S TRILEMMA

Europe's sustainable energy transition has delivered tangible results: emissions reductions under the EU ETS are around 50% below 2005 levels and remain on track for a 62% reduction by 2030, driven largely by rising renewable electricity generation and continued coal-to-clean shifts. Renewables have become the EU's dominant source of power (47% in 2025), reinforcing the ETS not only as a central decarbonisation instrument, but also as a driver of energy security – supporting the shift from external fossil-fuel dependency toward local energy production. ETS revenues are increasingly pivotal for the transition, with €38.8 billion raised through auctions in 2024 to support industrial decarbonisation and energy system investment.

Yet these gains are increasingly tested by delivery constraints and political pushback. Carbon prices fell sharply from above €90/t in January 2026 to around €70–73/t following public calls by several leaders to revise or delay ETS provisions over competitiveness concerns. At the same time, the transition is entering a more demanding phase, where policy design is no longer the primary bottleneck. Grid capacity limits, insufficient storage, weak interconnection, and persistent permitting delays are constraining renewable integration, while rising energy costs and uneven burden-sharing are amplifying political and industrial resistance. Public acceptance of new infrastructure – networks, generation, and flexibility assets – is emerging as a critical condition for progress.

New instruments such as the Carbon Border Adjustment Mechanism signal a further shift: from internal market decarbonisation toward the externalisation of European climate policy. While intended to prevent carbon leakage and protect domestic industry, CBAM also raises wider Trilemma questions around trade relations, global equity, and how transition costs are distributed across regions.

In short, Europe's sustainability challenge is no longer defined by ambition or policy architecture, but by delivery under constraint. The 2026 ETS review will test whether Europe can preserve emissions-reduction momentum while strengthening energy security, maintaining industrial competitiveness, and securing social and political consent for the next phase of transition.

CONCLUSION

The events and signals surfacing throughout 2025 reinforced a clear reality for Europe: transitions are not unfolding as a linear programme, but as system navigation under compounding pressure – where geopolitics shapes markets, affordability shapes legitimacy, and operational constraints shape what is feasible at pace. The 2026 Europe Energy Issues Monitor reflects this backdrop: uncertainty is structural, system pressures are higher, and progress and fragility now coexist in the same operating space.

Four signals stand out:

- **Peace & Stability has hardened into the dominant uncertainty,** shaping investment horizons, industrial strategy, and confidence—through reconfigured dependencies, trade fragmentation, and the convergence of geopolitical, cyber, and climate risks.

- **Delivery throughput sets the pace:** grids, flexibility, permitting, investability, and workforce capacity are no longer enabling "add-ons" but the delivery spine – determining how fast electrification, renewables, and new industrial loads can scale.

- **Affordability is a delivery input and a legitimacy constraint:** transitions are increasingly judged by whether they deliver visible cost relief and competitiveness while sustaining investment in resilience and modernisation.

- **Market design credibility and trust are emerging as stability variables:** contested pricing and burden-sharing debates can amplify uncertainty, weaken investability, and slow build-out if reforms do not land with public and industrial confidence.

Across Europe, the challenge is to sequence delivery under constraint – protecting what works while modernising what blocks throughput. The agenda now is delivery over declarations: strengthen grids and flexibility, reduce timeline risk through faster and more credible planning and approvals, and invest in social licence as deliberately as in infrastructure. The goal is Trilemma-tested progress – keeping security AND affordability AND sustainability advancing together, without allowing any one priority to crowd out the others.

Looking ahead, four questions frame the region's path forward:

- Where is system pressure accumulating – and where is resilience already emerging?

- Which constraints are structural, and which can be eased through better sequencing, coordination, and design?

- How can affordability be protected while mobilising the investment needed for resilience and modernisation?

- What reforms will strengthen market credibility and trust – so that intent and delivery stay aligned as the system absorbs stress?

The World Energy Issues Monitor is designed not simply to mirror debate, but to sharpen judgement in a more contested operating environment. It offers a shared basis for comparing perspectives, identifying pressure points, and focusing action where credible delivery can take hold. With 2030 approaching, Europe's transition must ever more be **Trilemma-tested, not only pledge-aligned** – built to absorb pressure and capable of sustaining momentum toward more secure, affordable, and sustainable energy.

ACKNOWLEDGEMENTS

The Europe commentary draws on insights from across the World Energy Council community, and we are grateful to those who shared perspectives and challenge points that helped sharpen this year's framing, particularly the Spanish Member Committee.