The challenges of Europe's energy markets

"WHERE BESS BECOMES CRITICAL IS IN MARKETS WITH HIGH RENEWABLE PENETRATION, GRID CONGESTION, AND RISING CURTAILMENT RISK, WHERE MERCHANT EXPOSURE IS UNAVOIDABLE AND CAPTURE PRICES ARE STRUCTURALLY WEAK"

Europe's energy markets are facing unprecedented pressure as volatility, supply constraints, and the accelerated push toward renewables reshape the landscape. Geopolitical tensions, regulatory shifts, and fluctuating demand continue to test resilience across the region. Investors and policymakers alike are navigating uncertainty while seeking long-term stability and affordability. To help us understand these complex dynamics, we are joined today by market analyst Kim Keats to share his forward-looking insights and outlook.

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What signals are European electricity futures markets currently sending, and how are they influencing the medium- and long-term planning of renewable energy projects?

European electricity futures are signalling that volatility remains structural, while long-term price expectations are increasingly shaped by renewable penetration and capture-price compression. Forward curves reflect growing concerns around **cannibalisation, curtailment risk, and congestion** rather than pure fuel price risk. As a result, developers and investors are moving away from simplistic merchant assumptions and focusing more on bankability, location quality, and grid deliverability.

There is also greater emphasis on contracting strategies, including corporate **PPAs, CfDs, and hybrid structures**. Project selection is becoming more sensitive to negative pricing exposure and the ability to manage profile risk. Overall, futures markets are rewarding renewable projects that can demonstrate stable revenues and grid resilience, not just low LCOE.

Source: Wilson Power

Looking 5-10 years ahead, which energy price scenarios do you consider most likely in Europe and what role will PV play in mitigating those risks?

Over the next five to ten years, Europe is likely to see lower average wholesale prices as renewables expand, but also persistent volatility and stronger seasonal spreads. Gas will still set prices in scarcity periods, meaning Europe remains exposed to global shocks even if fewer hours are gas-driven. **Solar PV will continue scaling rapidly due to cost and speed**, but it is not a geopolitical panacea given supply-chain concentration and its tendency to depress prices during peak production hours.

Source: Canva

Wind will remain equally critical, particularly as Europe's natural hedge for winter demand and heating electrification. Importantly, wind and solar complement each other: **wind output tends to be stronger in winter while PV peaks in summer**, improving portfolio capture and reducing system imbalance.

In some locations this **complementarity can even occur on shorter timescales**, supporting hybridisation strategies. However, there are limits to what can be profitably exploited as competition increases and capture prices compress.

Has the time come when BESS are indispensable for ensuring the profitability of solar projects in Europe?

Not universally. **BESS is becoming increasingly important in Europe, but it is not automatically indispensable for solar profitability**. A solar project contracted under a strong PAP/PPA can remain bankable without storage, since its economics are primarily driven by contracted pricing rather than merchant capture dynamics.

Where BESS becomes critical is in markets with high renewable penetration, grid congestion, and rising curtailment risk, where merchant exposure is unavoidable and capture prices are structurally weak. In those cases, storage can protect value by reducing curtailment, enabling shaping, and accessing balancing and ancillary service revenues.

However, **BESS is not a guaranteed solution**: as deployment accelerates, arbitrage spreads compress and balancing revenues become more competitive. The reality is that flexibility is increasingly essential at system level, but at project level BESS must be justified on its own fundamentals, not assumed as a default add-on.

What lessons should Europe have learnt from recent years in order to develop its energy sector, and why?

Europe should have learned that the energy transition is not only about adding renewable capacity, but about maintaining a stable and operable power system. The transition has a dark side: **if flexibility, grid stability, and operational rules do not evolve fast enough, the system becomes more fragile, not more secure.**

Events such as the April 2025 Spain outage highlight how high renewable penetration can expose weaknesses in balancing, inertia, and system response when adaptation is too slow. The key lesson is that **Europe's bottleneck is no longer technology**—it is governance, grid delivery, and market design.

Regulators and TSOs need stronger authority and faster decision-making to implement new grid codes, congestion management tools, and incentives for flexibility.

Too often, innovation moves faster than regulation, leaving system operators managing 21st century generation with 20th century rules. Without faster reform, **reliability events risk undermining public trust and political support for the transition**.