KEYNOTE INTERVIEW

Safeguarding Europe's energy security

In an era of heightened geopolitical tension, delivering flexible energy systems is now the most credible path to sovereignty, explains Sosteneo's Federica Gallina

Furthering the energy transition is no longer just about adding renewable capacity, but also about ensuring system flexibility. Battery storage has moved from an attractive investment to an essential one, particularly in the wake of recent geopolitical instability.

While Europe has abundant renewable sources, the continent's lack of fossil fuel reserves means storage represents the most credible path to achieving energy sovereignty, allowing countries to decouple from volatile gas prices. The challenge is no longer just about security of supply, but about protecting the economic viability of the transition itself. By directing capital in the right areas, infrastructure investors

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can help meet the challenge, explains Federica Gallina, head of investment and asset management at Sosteneo, part of Generali Investments.

Q How is geopolitical instability affecting specialist investment managers and, more broadly, the energy transition?

The Ukraine war and recent events in the Middle East are clear examples of Europe's exposure to geopolitical uncertainty and volatile energy prices. For example, following the disruption of gas supplies, due to the ongoing conflict in the Middle East, prices jumped almost 60 percent compared with the week prior to hostilities, pushing peak electricity prices up to three times higher across European markets. This is particularly evident when looking at the difference between day and night prices, as solar power must be replaced by expensive gas-fired plants after sunset.

It's also worth pointing out that the impact of these conflicts on energy prices is not necessarily being felt equally across different European nations. Countries with greater flexibility – like the UK with its high installed battery storage capacity, or Spain with

Q What are some of the challenges and opportunities that exist alongside the growth of digitalisation?

The rapid expansion of data centres is undoubtedly placing immense pressure on electricity systems. The scale of the opportunity for infrastructure managers is enormous. A traditional data centre requires 10-25MW, while a hyperscale AI facility can require up to 100MW. This year, Google alone plans to spend $185 billion on AI infrastructure – roughly equivalent to the entirety of the Russian defence budget. While the US is currently much further ahead in the digitalisation trend, we expect Europe to follow, even if the speed and market scale are likely to differ.

As of today, the grid infrastructure of many markets is simply not capable of meeting the concentrated energy demand quickly enough or reliably enough. These network constraints are a major bottleneck for new developments. However, for operators, this represents a significant opportunity. We're evaluating projects designed to supply electricity directly to data centres through dedicated infrastructure solutions. This includes off-grid or private wire models, where energy is produced and delivered directly to the end-user rather than passing through the traditional electricity grid. This approach is key to overcoming current limitations and supporting the continued expansion of digital assets.

its hydro and pumped storage – have witnessed more limited impacts. Conversely, in the Netherlands and Germany, where power is more dependent on gas-fired plants, electricity prices more than doubled between February and March. This is further evidence of the essential role battery storage is set to play in the transition.

Despite the increasing importance of energy sovereignty in the volatile geopolitical climate, Europe remains highly dependent on imported energy. LNG imports are one of the most expensive energy vectors available. Recent events have reinforced the need for systems that enable independence from unstable regions. And while Europe has abundant renewable sources, it has limited fossil fuels. As such, the most credible path to energy sovereignty is to accelerate renewable sources and their related technologies - including batteries.

Q How is the regulatory landscape evolving regarding the energy transition?

Recent instability is pushing regulators to pivot from climate change rhetoric towards frameworks focused on energy security, grid resilience and industrial competitiveness. Governments are prioritising security and AI-driven electricity demand over simple net-zero messaging. However, both drivers lead to the same result: policies aimed at supporting low-carbon technology.

Europe still faces a difficult balancing act between climate ambition and policy fragmentation among member states. Meanwhile, China is strengthening its regulatory dominance across the clean energy supply chain, investing more in the transition than the US and Europe combined. India is also emerging as a key player by coupling clean energy mandates with industrial incentives.

Europe has responded to China's ambitions in the energy market by shifting its regulatory targets. In Italy, for instance, recent regulations have come into force with the intention of supporting the European supply chain. However, because Europe is currently less competitive than markets further East, some of these efforts have inadvertently supported the reinforcement of the supply chain in India instead. We need to work significantly on making the European supply chain a real competitor to China, which is currently not the case.

Q Infrastructure in support of the energy transition covers a broad spectrum of assets. What role might biomethane play?

At Sosteneo, we regard biomethane as a highly compelling renewable fuel source. We believe it can act as a critical pillar for Europe because it's chemically identical to natural gas and can be used across existing infrastructure without costly retrofits. The EU has a target of increasing its annual biomethane production to 35 billion cubic metres a year by 2030. While we're currently a bit off-track meeting this target, as a result of permitting delays and feedstock constraints, countries like France, Italy, Denmark and Germany are emerging as leaders.

Biomethane fits the ESG mandate more comprehensively than almost any other technology. By utilising organic waste – such as agricultural residues, manure and biowaste – these technologies mitigate nitrate pollution and support nutrient recovery. They also create valuable circular economy co-products, such as digestate for use as fertiliser – all while capturing CO2 during the process. This means biomethane projects provide not just a green source of energy, but a material, multi-layered environmental impact that goes far beyond traditional wind or solar.

Q How can investors help support the modernisation of Europe's existing energy assets?

Repowering – replacing old wind or solar installations with modern, higher-yield technology – is a major near-term lever. It typically triples the output of a wind farm while reducing the number of turbines by about 25 percent. For example, replacing 20 1.5MW turbines with 6MW models increases capacity from 30MW to 48MW, even when using fewer turbines. Since these sites already have grid connections and proven wind resources, it's the most efficient way to maximise production while minimising environmental and land-use impacts.

Another way investors are looking to maximise value is by supporting hybrid projects – something we're seeing more and more as European power markets experience increasingly frequent negative pricing events. This is driven by high solar penetration and limited system flexibility. While standalone assets still have their place, and we continue to invest in them, the value of hybrid solutions is much higher in certain markets. In Spain, for example, negative price experiences are now extremely common for photovoltaic (PV) plants. In fact, the captured value of pure PV projects has dramatically decreased because of price cannibalisation – where so much solar is produced at once that the market price collapses.

In many cases, the hybrid model is the only way to protect some energy transition investments. While some mature markets have regulations supporting standalone battery energy storage systems, Spain's regulatory framework for standalone projects is not yet fully developed, for example. Therefore, combining the two technologies is currently the only viable solution in those countries. It allows the battery to work on an as-needed basis to shift production, protecting the value of the traditional solar technology. Spain is the clearest example of where storage is moving from a luxury to a necessity.

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Q How do you see the future investment horizon of the energy transition evolving in Europe across countries?

While we're exploring alternative technologies – such as bioenergy for sustainable aviation fuel – our primary focus remains on market underpinned by favourable and mature regulatory frameworks. Italy and the UK remain our core markets, but we're also looking closely at Germany and Spain for our next phase of growth.

In Germany, the strong policy commitment to decarbonisation is creating high demand for flexibility and auxiliary services. However, securing a grid connection there has become a major barrier and a key differentiator for successful projects. We see the market evolving towards de-risked, contracted assets through long-term tolling and floor agreements, which provide the stable cashflow profile essential for infrastructure investors.

Spain represents a different, yet equally compelling, opportunity. Its battery storage capacity remains remarkably low – at roughly 60MW – which is a fraction of the 5.6GW installed in the UK or even the 1GW in Italy.

Historically, Spain has relied on its significant hydro and pumped storage assets for flexibility. But here we're witnessing storage transition from an attractive add-on to a fundamental necessity for project viability. We intend to be a first mover in the Spanish market as the regulatory framework evolves to meet the country's storage targets. ■