KEYNOTE INTERVIEW

Strong tailwinds propel Europe's energy transition



Renewable energy infrastructure opportunities are opening up across the UK and Europe, but a market-by-market approach is crucial, says NTR CEO Rosheen McGuckian

Historically, the US has been a magnet for global infrastructure funds, but that has changed over the past three years, with growing investment volumes finding their way to Europe. Geopolitical tensions are one driver, but only part of the story, says Rosheen McGuckian, CEO at Dublin-based energy transition specialist NTR. "If you look at what is happening in the renewable power generation and storage space, the money is following the opportunity. The train has left the station, and the opportunity set is simply getting bigger and bigger."

Across Europe the signals have turned green on many fronts, from social and geopolitical considerations to energy security. However, although attractive returns are possible, that does not mean all markets are equally well placed, McGuckian adds. "Europe is not one homogeneous market: investors need to navigate the opportunities and the risks per jurisdiction. Grid access is absolutely critical and in some markets there are major obstacles."

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Q What barriers do you see for renewable power generation in terms of grid capacity, and how do they differ per market?

Taking a step back, the energy transition in Europe was historically development-led. Developers would look for connection offers that suited their own needs but were not necessarily right for the grid. That led to enormous queues, with delays now stretching to several years and running to huge numbers of gigawatts in many countries.

In the past year or two, several countries, including the UK and Spain, have introduced gating systems to weed out so-called zombie projects – speculative developments that may never see the light of day. These reforms allow faster connection for projects that are strategically aligned with national or regional needs. Other countries such as Ireland and Finland have taken a different approach, with a

two-stage planning process before grid offers are given.

Timelines may look shorter in some countries than in others, but that's not necessarily the case in practice. Even when you get a connection offer, the question is whether the cost, starting date and capacity are dependable. Investors need to be aware of these differences when putting together their investment case, as time to grid can increase costs significantly. As a share of total capital expenditure, the grid could account for 15-25 percent, and in some markets even more. To manage those risks, you really need to do your homework. That said, these conditions do offer great investment potential.

Q The energy transition is firmly on the agenda in Europe, but do you see the same level of political commitment across individual countries?

The European Union is indeed very committed to the energy transition. Only this summer, the European Commission presented its latest policy in this area, the EU Electrification Action Plan, with a view to virtually doubling electrification levels to 46 percent by 2040. This isn't just about quotas for clean energy; it's about a commitment to electrifying sectors such as heating and to strengthening the grid. Within that framework, EU member states are all moving in the same direction, albeit at different speeds.

Q What underlying factors shape developments in individual markets?

We're seeing some political movement to the right in recent elections in certain countries, for example in Germany. On the whole, right-leaning governments may have less of a focus on clean energy sources such as wind. The UK had also been shifting towards the right, but now the Labour party is in power it should be able to consolidate its pro-offshore wind stance.

Q What policy direction are you seeing for power and grid provision for data centres?

Europe's data centre market is splitting in two. Established hubs such as the FLAP-D cities (Frankfurt, London, Amsterdam, Paris and Dublin) are running out of grid capacity, while countries such as Spain and Finland, where cheap power is readily available, are able to provide more.

This creates opportunities for energy-transition specialists, which can provide, for example, grid-forming battery systems that help data centres and the grid manage 'fault ride-through' – the ability to stay connected, or safely disconnect, during a sudden grid fault. When that occurs, data centres switch to their own generation to maintain their reliability, and that sudden drop in demand puts the grid under strain.

Ireland is the clearest example. Data centres already account for more than 20 percent of its electricity demand, and forecasts suggest that the share will rise above 30 percent. After a one-to-two-year moratorium on new connections, the regulator and the grid operator have set new conditions. New data centres must act as 'grid citizens': support fault ride-through, provide generation and storage equivalent to their maximum import capacity, and source around 80 percent of their power from additional clean generation in Ireland, through a PPA rather than government auctions.

The same direction of travel towards self-reliant data centres with a share of clean, additional power is visible in Germany, Spain and Finland.



Ireland is also highly committed to a combination of wind and solar. France is traditionally pro-nuclear, and certain political parties there are less supportive of wind power, but they back solar energy to varying degrees as well as batteries.

Further north, Sweden had been moving towards a more pro-nuclear stance, but with the centre-left coalition coming out on top in the recent national election, it will likely swing back to a focus on nuclear plus wind.

Although every country is working towards renewables, the definition of clean power and the technologies being harnessed may differ from country to country, and even within national boundaries.

To understand the local nuances and

what they mean for different technologies, you really need to have visibility on a regional government level. Our own portfolio is currently focused on Finland, Sweden, Italy, Spain, France, the UK and Ireland. We're also actively exploring Germany. As a result, we have quite a good feel for the particularities of different European markets.

Q How do power price volatility differences across Europe affect opportunities?

Negative power prices are becoming more common. A couple of years ago they made up 1-2 percent of hours across Europe. Now the average is around 4-5 percent. Behind that average are big differences, especially in very windy locations in the north and very sunny ones in the south, where negative prices rise as more renewables are added.

Last year Sweden recorded 7-8 percent negative-price hours, versus 3 percent in Poland. However, we look closely at how shallow or deep are the negative prices. Swedish prices in those hours averaged just below zero, while Poland's averaged around minus €15 ($17). It's important to be aware of these differences for revenue protection.

Producers can renegotiate power purchase agreements if the breakeven price is negative, and they can curtail production during negative-price hours. But if offtakers want the green power and the guarantees of origin, it may suit both sides to reopen the PPA. The offtaker pays slightly less on average but still pays for production in those hours. That works when prices dip only slightly below zero, as in Sweden, but is much harder at minus €15.

When revenues come from government-backed contracts for difference, many investors assume payments continue during negative prices. That is not necessarily so, and the small print matters. Some countries pay for only the first six consecutive hours, and the Netherlands is phasing out government funding altogether. France remains very supportive, the Netherlands and the UK are reducing assistance, while Ireland was very committed until recently but will not pay during negative prices in its next CFD round. As you can see, investors need to understand the nuances market by market.

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Q How is the role of battery storage evolving in Europe?

Battery storage is growing at a phenomenal rate, but its role differs by market. It starts with what the regulator is trying to solve. Where the aim is to manage price volatility, as in Finland and, to a lesser extent, Germany, batteries are usually paired with generation projects and used for energy arbitrage. In Ireland, the issue is not price volatility but curtailment. Up to 15 percent of wind power can be lost because the grid cannot absorb it. Batteries shift that surplus to later hours.

The use case changes the whole design of the project, affecting, for example, the size and duration of the battery, how it is used, the revenue streams and how often it is expected to cycle. The business case for managing price volatility is different from the one for managing curtailment, which is why specialist expertise is needed.

Q Is there equal room for private capital in grid-adjacent investments across Europe?

The opportunities may include the grid itself as well as assets that support it, such as synchronous condensers and long-duration energy storage. It varies by market. The UK, for example, is very advanced. Regulations and long-term support for the services that synchronous condensers provide are already in place, and the same is true of Ireland. Elsewhere, investors must rely on merchant pricing, though those markets are gradually catching up.

On the grid itself, the capital needed is estimated at two to three times the market capitalisation of the grid companies. Therefore, they cannot afford it alone. The UK is again ahead, with private capital in offshore grid and local distribution networks.

Other markets are beginning to open up, typically for small, self-contained connections, such as between heavy users and the main grid or between an island and the mainland. Over the next couple of years, I expect more markets will let private capital invest in the underlying grid assets, not just in the grid companies. ■