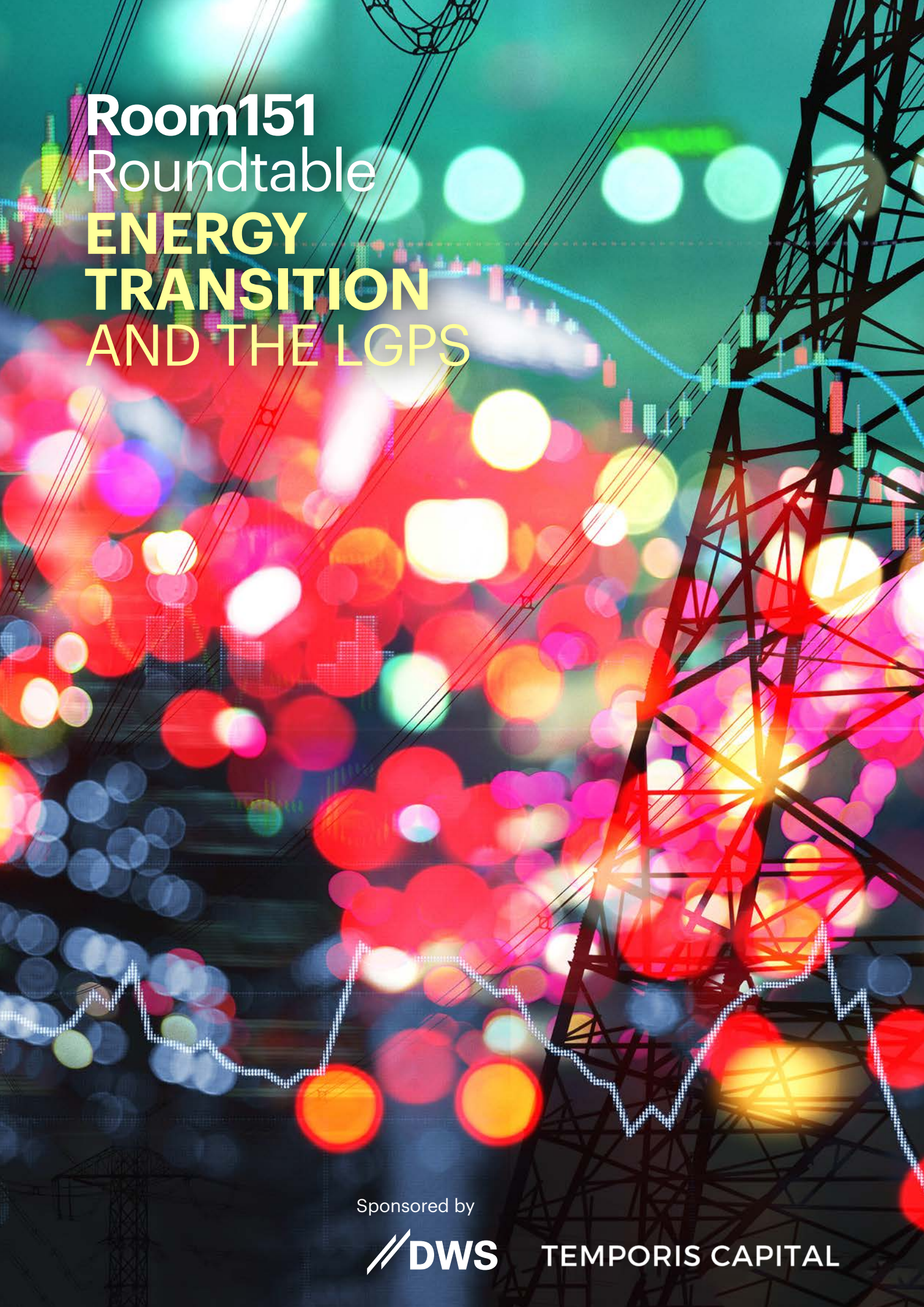


Room151 Roundtable
ENERGY TRANSITION AND THE LGPS

Sponsored by

DWS TEMPORIS CAPITAL

With global temperatures rising faster than anticipated and the world on course to miss the 1.5-degree target set by the Paris Agreement, stakes for investing in the energy transition are high. While 2022 has been a record year for this, estimates are that by the end of this decade the planet will need around $5 trillion per annum to be invested in the energy transition.

The UK government wants institutional investors to play a key role in this process. But what do asset owners make of it?

Our latest roundtable, sponsored by Temporis Capital and DWS Group, looks at the investment risks and opportunities that arise from the energy transition. The event was held at the London Stock Exchange as part of Room151's LGPS Private Markets Forum 2023.

Room151

ATTENDEES

Mona Dohle
LGPS editor
Room151

George Graham
director
South Yorkshire Pension Fund

Matthew Hubbard
head of UK investments
Temporis Capital

Leandros Kalisperas
CIO
West Yorkshire Pension Fund

Mark Lyon
deputy CIO
Border to Coast

Hamish MacKenzie
managing partner
DWS

Adil Manzoor
senior portfolio manager – alternatives & monitoring
Merseyside Pension Fund

Bola Tobun
treasury & pensions manager
London Borough of Harrow

ROOM151 ROUNDTABLE:
Energy Transition and the LGPS

Room151 brought together Matthew Hubbard, investment director at Temporis Capital; Hamish Mackenzie, global head of infrastructure at DWS Group; and a panel of five LGPS investors to discuss how institutional investors can help fund the transition to renewables.

With UK inflation remaining stubbornly high and equity markets still volatile, LGPS investors are increasingly looking towards private markets for further diversification.

Within private markets, funding the energy transition and the drive towards net zero has rapidly developed as the dominant theme.

For LGPS investors, who compared to their private market peers continue to have a longer investment horizon and greater flexibility, this strategy could offer a perfect opportunity to put pension savings to a good cause while also delivering attractive returns for members. But higher levels of risk and increased complexity of the asset class remain a concern.

Temporis Capital's Matthew Hubbard kicks off the debate by outlining the opportunities for additionality that arise from investing in the early stages development and construction of renewable energy projects.

DWS' Hamish Mackenzie adds to that a perspective of the benefits that investing in a diversified portfolio of renewable energy projects can offer.

Matthew Hubbard: To give some context, Temporis is an investment manager focusing on the energy transition, and is largely focused on the UK and Ireland.

We invest in renewable energy and the energy transition, primarily in wind, solar and battery storage. This often includes development and construction projects and the focus is particularly on new projects and the additionality that it brings. This is important to us and, we believe, attractive to our investor base.

We generally come into projects early. To do that successfully requires a lot of experience; it also requires a willingness to take on risk. We have now completed over 80 projects in the UK and we are developing over 7GW. At the moment, there is a significant pipeline of projects out there: over 30GW of onshore wind and solar that is in some form of planning stage and there is perhaps another 30GW or so behind that.

From a returns perspective, there are attractive returns available; that is in part the reason for our focus on bringing projects through from the earliest stages. We are therefore accepting that we are bringing projects through from a riskier phase in their life cycle. We believe we can do that because we have the skills and experience to put in place structures which perfectly mitigate that risk and allow us to take on that journey in an appropriate fashion.

Generally in the market, we have also seen the changes in risk free rates come through in the price of assets.

And we have significant targets to meet; a lot of these targets have been set by the UK government, and so there are a number of policies in place, whether that be Contracts for Difference (CfD) or changes to planning frameworks, there is a lot more to do on that front and more clarity that could be provided.

If we just look at onshore wind and solar, there is a huge amount of capital to be invested by 2030-2035. We like to roll up our sleeves and that will sometimes involve taking through more challenging projects, in doing so we achieve more additionality. We are very familiar with the challenges out there. When I ask anyone about the biggest challenges to the

renewable energy transition, they will say 'grid, grid, and more grid'. They will say connecting to the network is the biggest challenge. The lack of investment in wires and cables is part of that, as is the modelling of the system which can be overly conservative through to queue management that hasn't functioned very well.

There are a number of processes in place to try and resolve these problems, whether that is OFGEM changing its responsibilities to become focused on net zero as one of its core commitments, to the network operator reforming and establishing the future system operator, through to initiatives around queue management, capacity and remodelling.

Hamish Mackenzie: We approach the theme from a slightly different perspective. We're not specialised energy transition investors; we are more generalist infrastructure investors. We focus on the European mid-cap space, and are research-driven.

Typically, what we are looking for are key macro themes that will support the long-term investment that we're looking to make within the fund. The dominant macro theme of the last decade has probably been the sustainability agenda, and within that, the energy transition.

Within the infrastructure space, energy transition investment accounts for something like 56% of the transactions that took place during 2022. So not only is it a strong macro theme, it's also a rich source of investment opportunities.

Given that we are a more generalist investor, typically targeting double digit, mid-teen type returns, we're looking at spaces adjacent to renewables. The renewable deployment has historically accounted for a vast amount of capital flowing into the energy transition space and that has accelerated post the 2022 energy crisis.

But for energy transition to have an impact, investment needs to move beyond generation and the energy ecosystem in order to support the decarbonisation of the entire economy, not just the energy generation. Key focus areas for us are around storage in terms of battery, hydrogen and hydro storage.

Within Europe, the opportunity sets vary massively by country and so do the associated risks and frameworks the governments support. So properly understanding the broader European market and its intrinsic differences is important.

"Investment needs to move beyond generation and beyond the energy ecosystem in order to support the decarbonisation of the entire economy"

Hamish MacKenzie, DWS

Looking at transmission and distribution networks, clearly the networks that we have aren't designed for anything like the flows that we have. There's a massive need for investment.

Another key focus area for us is decarbonisation of transportation and mobility. The most obvious area of that is electric vehicle (EV) charging. Every day there's a news article about the lack of pace kept by EV charging. The idea that we're all driving electric vehicles by 2030 or even 2035 is fanciful unless something changes about the pace of deployment of EV charging.

Beyond that, we are looking at the movement of goods, moving freight transportation from road onto rail and ultimately electrification of heavier vehicles, or alternative sources of fuel such as hydrogen for those sorts of vehicles. In short, we are spending a lot of time on rail freight.

The third step is buildings and how we make them more efficient. The opportunities around retrofitting the buildings that are clearly the most intense utilisers of electricity datacentres for which, with the growth of AI, there's going to be an ever increasing need. Compound that with the Internet of Things where you have fridges speaking to phones speaking to TVs, all of which needs to go back to datacentres.

There is a massive need for the rollout of data centres which have to be powered by green energy, whether that's solar wind or hydrogen.

This ties into the circular economy theme: We need to reuse what we have. Most directly related to the energy transition theme is the biofuels sector, where we're seeing significant opportunities around biogas, methane gas to grid projects. There are also huge opportunity sets around utilisation of waste and bringing that back into the productive economy.

Mona Dohle: There has been an uptick in investment in the energy transition but if we look at the average LGPS portfolio, they are still largely dominated by conventional assets. Leandros, what do you think are some of the main challenges from an LGPS perspective to investing in the energy transition?

Leandros Kalisperas: The West Yorkshire Pension Fund has about £18bn in assets and 300,000 members. Like the rest of the sector, it is very much open and long-term in its investment horizon and therefore theoretically able to be a capital provider for the sorts of things that we're talking about.

From a CIO perspective, ultimately everything that you invest in has to be funded from

somewhere. That's the funding sources model in terms of thinking about benchmarking and thinking about investments.

In practice, that means all these things we're talking about today need to have a home. We need to understand what that home is. What sort of asset is it? What's its profile? And so on. And whilst we are able to be very discretionary, active and flexible, if we don't understand what the homes for these things are, it becomes very difficult.

Within the Northern LGPS, there is great collaboration through two structures that Merseyside, Manchester and West Yorkshire get involved in, covering private equity and infrastructure.

The best ideas about private equity go into the Northern private equity partnership. For infrastructure, we are founding shareholders and partners in GLIL, which has a key focus on UK core infrastructure. One conversation we are having surrounds our beliefs about the portfolio construction of GLIL: how much do we want to inject our own sense of what GLIL should be doing and what it shouldn't be doing?

But of course, we have a big balance sheet of our own where we place our own investments in infrastructure. And the key question is again, how much are you going to prioritise and ring fence to this matter?

From my perspective, I would like to ring fence or make commitments above the line. But I struggle, in a good way, with what Matthew and Hamish have said – the taxonomy of this, the language and complexity of this. I'm used to more mainstream assets allocated to private markets and even private equity. Those asset classes are still fairly conventional. But when it comes to investing in the energy transition, there's a huge amount of education to do.

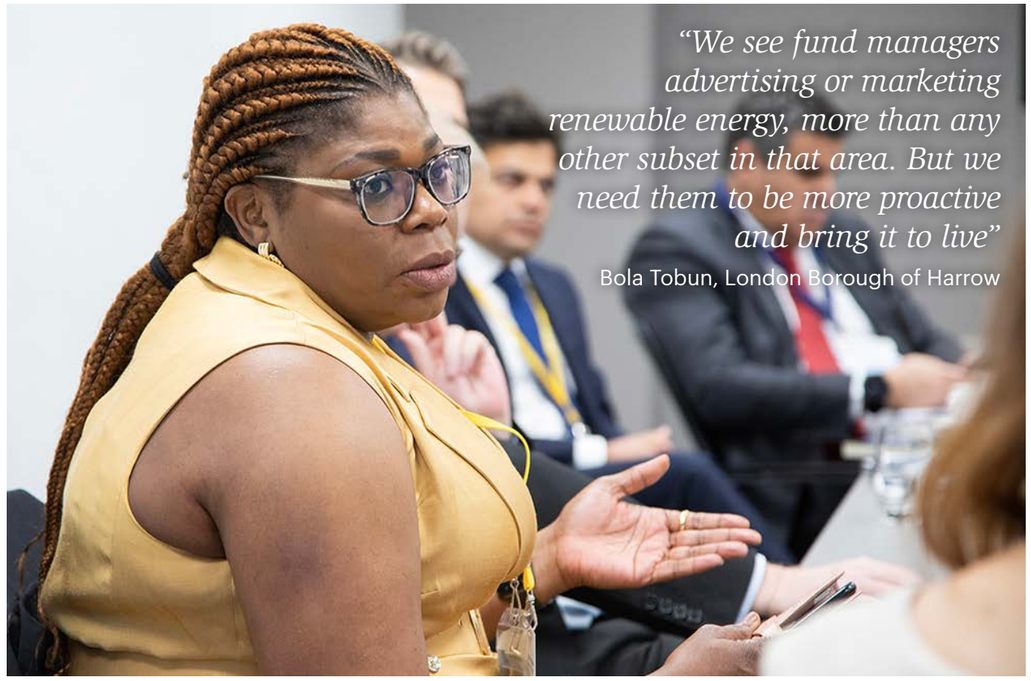
My view is that we have to do it, we have to get involved. I think West Yorkshire has a reasonable allocation to infrastructure, which will then incorporate some of these themes. The more that asset managers can frame the opportunity set in the context of investment governance and benchmarking, the easier it is for people like me to get involved.

Mona Dohle: When you used the term 'ringfencing', you meant allocating assets to the theme of an energy transition?

Leandros Kalisperas: I would like to get to that place, like any of us do. But you have to get data consistency, alignment mapping, custodial systems and admin all set up so that when you're going to do that ringfencing, you're comfortable. By definition, the things you're going to do in this space are somewhat off benchmark.

"One of the reasons why people are under invested is that they can get anxious about significant allocations because they cannot see how they can explain it from a governance perspective if it all goes wrong"

Leandros Kalisperas,
West Yorkshire Pension Fund



Of course, you're going to have to have a benchmark for them. You're going to create concepts, but you know that they're going to be somewhat riskier. Therefore, you need the rest of your portfolio to be transparent and clear, so that you can have confidence. One of the reasons why people are under invested is that they can get anxious about significant allocations because they cannot see how they can explain it from a governance perspective if it all goes wrong.

Bola Tobun: For London CIV, for the pool and most London funds, we see fund managers advertising or marketing renewable energy, more than any other subset in that area. But we need them to be more proactive and bring it to life.

For example, the energy efficiency funds might not even be profitable. I don't know the reason why we don't hear more about it. No one wants to put 20% in renewable energy, it's more like five to 10% maximum for most London funds. Marketing it boldly would help. All we hear about is renewable energy, but 'm sure there are many other types of energy efficiency funds that we can go into. More training for us to be able to identify all these funds and be able to tap into them might help.

Mona Dohle: London CIV has its own infrastructure funds, including a Renewable Infrastructure Fund. Are you looking at placing these investments through the pool or are you also looking externally?

Bola Tobun: If what the pool is offering is not what you want, you go out. You collaborate with other funds, and you go out and get what you want. There is nothing stopping you from doing that.

Mona Dohle: Perhaps one of the complications with the theme of the energy transition is that it could cover a huge array of potential asset classes. Mark, Border to Coast has got around £12bn invested in private markets. What are some of the asset classes your partner funds are looking at and how big of a role does the energy transition play here?

Mark Lyon: Yes, we launched the programme back in 2019. We had the traditional asset classes in there: private equity, infrastructure and private credit. Within infrastructure, about a third of our commitments have been invested in renewables and they're typically operational – wind and solar, for example.

There's obviously a constraint to that. There was a desire both within Border to Coast but also from our partner funds that they wanted something that had greater additionality. That is why we created the Climate Opportunities offering in April 2022. This was to invest in opportunities that can support the energy transition. It was deliberately wide, and it's across asset classes, with infrastructure, venture capital and growth in there. There are also real assets in there such as forestry, potentially. What we're really looking for is that additionality, how we can we get money to work and contribute to that low carbon transition.

When we were first doing the planning, we were unsure how big the market was. So we did cap the strategy. We raised £1.4bn, and we were looking to deploy that over three years. Around the time that we launched, quite a lot of the traditional asset managers started marketing transition funds. This means that those capacity constraints are no longer the issue that we thought they might be. We still want to be careful because we want to have a broad exposure and have some of the more niche strategies from less established managers. There will always be that constraint there. We think it will now deploy in two years, rather than the three we first thought. We'll be looking to launch our second vehicle next April.

The demands from the partner funds are that they're switching their asset allocations more towards private markets and away from equities, and that was always happening in the background. Pooling has enabled those funds that didn't have exposure to private markets to start that programme. Then some of our funds made net zero commitments, and they are now looking for us to try and assist with that and implement that strategy. We are seeing further growth coming from that.

George Graham: We committed in our latest strategy review to put 5% of our fund into [Border to Coast's] Climate Opportunities. So Mark has got some more capital coming his way to support the next iteration of Climate Opportunities.

But the important thing is what Hamish said: this is about the transition in its broadest sense. It's not just about renewable generation. If we can find places to invest in lots of the bits that make the network work, that's going to help us find return in different places.

"The actuaries and investment consultants keep telling me: 'Oh, it's more of a more difficult to find return'. But if that's the case, then we need to look for return in different places"

George Graham, South Yorkshire Pension Fund

The actuaries and investment consultants keep telling me it's more difficult to find return, but if that's the case then we need to look for return in different places.

I have some sympathy with what Leandros was saying about the natural prudence about some of these things. But if you think of it a bit like a surfer on a wave, we don't want to be here and then drop off at the end, we want to be just behind that front edge, riding the wave to the shore.

We've also made a specific commitment to renewables, to put 5% of the fund into renewables. That's currently outsourced to people we have already got but we're talking to Mark about how we can do that within the structures of the pool. Clearly, we don't now have resources that allow us to do lots of due diligence. We have a relationship with an existing manager and that might work, but you can't rely on the managers to come forward with a new fund every year.

Mona Dohle: You would like to take some of the risks out of the early stages of funding, and it sounds like this relates to what Matthew touched upon in his introduction?

George Graham: Yes, what we're always after is not having a J curve which would be the ideal situation for any investor. Mark and his team managed to deploy capital with very little J curve in the alternatives programme. But the other thing that we need to get to, and this is perhaps a challenge for the investment managers, is how to make the returns from these assets less lumpy.

We invest in private markets and we tend to invest in closed end funds, so we're getting big lots of distributions, which is great. But it's all lumpy.

The attraction of infrastructure, broadly as an asset class, is that it should deliver steady long-term inflation linked returns. That's not what we're seeing.

It's great that I get cash but then I've got to do something with it. In terms of managing my pension fund and the cash flows, structuring something so we get those returns smoothed out in some sort of way would be better. Maybe that's how we bring some of the development assets, the operational assets in and structure them in a way where we're not getting those lumpy returns just because the assets are sold on all the time.

Mona Dohle: Adil, is that a problem that you at Merseyside are recognising?

Adil Manzoor: Yes, for us at Merseyside Pension Fund, the energy transition has always been

important. The issue is that we also need to keep an eye on the other side of the equation, which is our liabilities and that dictates how we invest in renewables, for example.

Renewables are now mainstream and if we look at our liabilities, we have now shifted more towards core assets. Last year we were getting more opportunities to invest in opportunistic assets. It's important that our liabilities are inflation linked, and some of the strategies within renewables are.

Some of the strategies within the energy transition theme, such as EV charging, grid, and carbon capture, are slightly behind. At the moment, I don't think battery storage has institutional quality. We have some investments in it but at the moment it is more of an opportunistic play. For us, it is important to always keep an eye on our ability to pay our pensions. But we are committed to delivering net zero by 2050 and within that, the energy transition and renewables will play an important role.

The next logical step for a mature pension fund like ours is to go into these sub-classes. We want to see investable opportunities but at the moment they are very fragmented. We are not looking for double digit opportunities because we are fully funded. What is important for us is to take some risk off the table and I believe a lot of LGPS pension funds are in a similar situation.

Mona Dohle: We have talked a lot about returns so far. But one challenge with private markets is the quality of data in reporting on climate impacts. How do you make sure that your investments have a beneficial impact?

George Graham: Some data would be nice, preferably data that conforms to TCFD reporting requirements.

Mona Dohle: That will be mandatory for the LGPS next year?

George Graham: Yes, so private managers should be providing that data but they don't seem able to. If I have 30% of my portfolio in private markets, I need to know its impact and the industry needs to get its act together. You could argue that the government is trying to use pension funds as a supply/demand lever, but it isn't working so, ultimately, it must be regulated. So my advice to managers is to get on with it and get it done, because if you don't do it now, you'll get it done to you.

Hamish Mackenzie: Part of the challenge we are facing is that there isn't a framework, so we spend a huge amount of our time not just on climate but also ESG reporting because there is

no uniformity. One of the interesting things we are seeing is the development of technology solutions where we can plug all of the data we have and that then becomes much easier to transmit as bespoke reporting.

Mark Lyon: We're members of the ESG Data Convergence initiative which is essentially a group of GPs trying to get to a standardised approach because we appreciate that GPs can't respond to every single investor's request for data. A smaller set of agreed upon data is going to be better than receiving multiple requests for information.

Mona Dohle: Another theme you mentioned George is the question of 'just transition' and the impact that the closures of coal pits had on some of the members of your scheme in South Yorkshire. What are the lessons to be learnt here?

George Graham: When we think about the LGPS, local authorities are stewards of place, so for our scheme members and for our councillors as the effective trustees, just transition is very important. The places where we work now and where Mark used to work in East Riding were all massively negatively affected by the transition away from coal in the 80s and you still see the scars of that in our area. So doing this properly so that the generational impacts don't happen in other places is important for us. This is the very much undervalued 'S' in ESG.

Matthew Hubbard: When we look at windfarms in Scotland, that is where the resource is but that's not necessarily where the demand for power is. That means some of the power has to be shipped away from there and it's important that those host communities are really getting something out of it. At the minimum, that should entail some community benefit programmes, which need to be well-governed and funded and provide skills and training. But there is also scope for local ownership. We have one windfarm in Scotland where the community holds a stake and that makes a big difference in how they feel about it and what they get out of it locally.

Hamish Mackenzie: The energy transition is really exciting and probably the dominant macro theme in terms of our diversified infrastructure opportunities. Looking at the risk/return balance, there are opportunities not just around energy generation but the whole ecosystem that surrounds it. These opportunities can play different roles within the portfolio, from beta type long-term returns to additionality within the energy transition space.

THE SECOND PHASE OF THE ENERGY TRANSITION OFFERS DIVERSIFICATION POTENTIAL

Richard Marshall, head of infrastructure research at DWS, looks at the diversification benefits which the second stage of the energy transition has to offer.

Energy transition will remain a stalwart of the infrastructure opportunities on offer to investors. The combination of the 2022 energy crisis and the growing realisation of the scale of the decarbonisation challenge means that the pace and scale of the transition have been amplified significantly.

The first phase of the transition focused on de-risking and scaling up core renewables technologies like solar and wind. As we enter the second phase, investors will start to expand the scope of their interest into a much wider array of sectors and investment ticket sizes. As an asset class already attributed with providing diversification benefits, this broader opportunity set of energy investments will give infrastructure investors the potential for further diversification within the energy transition story – an important opportunity for those with a limited geographic focus which may be heavily concentrated in sectors such as solar or wind.

Merchant exposure in the renewables sector has been a benefit to investors during the period of high-electricity prices in 2022, but this exposure is a risk in the volatile power market. Changing weather patterns can also have a detrimental impact on key solar- and wind-producing regions. A greater diversification within the energy sectors can help limit this exposure while still tapping into the booming trends of decarbonization and electrification.

While this is a global trend, the recent policy developments in Europe makes it a key market for investors. The opportunity set in Europe is significant, building on a long track record of bringing the private sector into infrastructure. A more mature regulatory environment has been critical in this, with the European Union having acted as a centralised body to provide capital but also set standards in areas such a regulations and procurement, leading to huge investment in infrastructure. Crucially, much of the EU's fiscal support is provided to assist in de-risking assets to allow private investors to invest.

In this context, policy formation for energy over 2022 will generate significant further opportunity; the existing large-scale policy support in the form of funding from the Next Generation EU post-Covid recovery package, the Fit for 55 package and the subsequent revision of the Renewable Energy Directive (RED II) was given a significant boost by the REPowerEU Plan. Drawn up as a direct response to the invasion of Ukraine and the subsequent requirement to transition away from Russian gas, Europe's decarbonisation ambitions have been scaled up and accelerated. Key measures of REPowerEU include:

- New European renewables target for 2030 from 40% to 45% penetration.
- Boosting industrial decarbonisation with €3 billion of frontloaded projects under the Innovation Fund
- New legislation and recommendations for faster permitting of renewables especially in dedicated 'go–to areas' with low environmental risk
- Increased ambition on energy savings by raising the EU-wide target on efficiency for 2030 from 9% to 13%

Crucially, the combined financial facilities, energy targets and regulatory frameworks on offer in Europe mean that a broad range of energy technologies across power generation, transportation, energy storage and electrification are enjoying levels of support similar to those offered to solar and wind at the beginning of the renewables growth story. This is precisely the type of governmental support investors need to assist in de-risking crucial but less proven technologies and business models that would prevent traditional core infrastructure investors in taking stakes in such businesses. Key examples of this include EV charging, biomethane facilities and green hydrogen, which has moved from the energy fringe to one of the focus energy topics of the last two years; this has at least in part been driven by government grants and the development of detailed frameworks such as the European Hydrogen Strategy and is now on most infrastructure investor's agenda in some form.

Alongside the continued requirement for investment in more traditional areas of renewables to continue to transition the power sector, there will be a growing focus on what have traditionally been seen as periphery energy investments but now are a crucial component of the energy transition strategies. Businesses which can help enable a broader energy transition, those which can be complementary to volatile renewables energy production or help decarbonize industry, will come to the front and centre of investor attention. In particular, energy efficiency, grid management, alternative fuels and electric vehicle charging, small scale and localised renewables deployment and energy storage will be some of the key sectors for transactions, just as data centres and fibre have been in the wake of the pandemic. While investors will need to be willing to buy and build these businesses – which are often classified as value-add or merchant – into core plus infrastructure investments, this is exactly the capital these companies need to bring their technologies and services to scale to have a significant impact.

Contacts
Hamish Mackenzie, head of infrastructure, *hamish.mackenzie@dws.com*
Richard Marshall, head of infrastructure research, *richard.marshall@dws.com*
Karl Tuck, institutional coverage, *karl.tuck@dws.com*

THE NEED TO INVEST IN ENABLING TECHNOLOGIES AND BATTERIES IN THE UK

Andrés Senouf, head of distribution at Temporis Capital, analyses the crucial role of batteries in the UK's race to net zero.

Ambitious targets have been set to reduce greenhouse gas emissions and foster a low-carbon economy in the UK. Capital investment in renewable energy infrastructure – e.g. new wind and solar generation assets – is necessary but not sufficient for the UK to achieve its 2035 and 2050 energy transition goals. Batteries and enabling technologies are also essential for the energy transition, as the intermittency of most 'green electron' generation capacity creates its own new challenges. With increasing adoption of renewable energy sources, balancing electricity supply and demand becomes more complex, and the transition towards a more sustainable and low carbon economy requires creativity and investment to address the balancing challenge.

Batteries and enabling technologies are essential for storing excess renewable energy during times of high generation and releasing it during periods of low generation, ensuring a stable and reliable power supply, facilitating energy efficiency and demand response initiatives. They also allow the system to store electricity during off-peak hours – when prices are typically much lower – and consume it during peak hours, reducing strain on the grid. By enabling energy management systems and smart appliances, batteries and related technologies make real-time monitoring and control of energy consumption possible, thereby optimizing energy usage and reducing waste.

Batteries enhance grid flexibility and grid stability. Flexibility comes from batteries storing excess energy when renewable generation is overly abundant and delivering it to end users at times when demand exceeds supply. Batteries help stabilize the grid by responding quickly to fluctuations in electricity supply or demand, maintaining grid frequency, and providing backup power during outages. Enabling technologies, such as advanced control systems and smart grid infrastructure, complement battery storage by optimizing energy flows and improving overall grid efficiency.

The growth of battery and enabling technologies will support the development of a thriving energy storage market in the UK. According to the National Grid's Future Energy Scenarios report from 2022, the UK will need about 19.7GW of battery storage by 2035 and 29GW by 2050 to support the transition to a low-carbon energy system. This estimate factors in long-range forecasts around the integration of renewable energy, the electrification of transportation, and overall energy demand. The amount of energy storage already built in the UK is but a fraction of what National Grid estimates we will need. According to Solar Media Market research, as of January 2023, there is now 2.4GW/2.6GWh across 161 sites of operational energy storage in the UK.

The UK is actively promoting the electrification of transportation as part of its efforts to reduce transport sector emissions. Batteries and enabling technologies will be essential to the success of this initiative. Electric vehicles (EVs) are gaining popularity, but their widespread adoption poses challenges for the electricity grid. Batteries play a crucial role in charging infrastructure, facilitating the efficient deployment of EV charging stations and managing the increased electricity demand. Battery technologies also enable vehicle-to-grid (V2G) integration, where EVs can discharge energy back to the grid during peak demand periods, further supporting grid stability and balancing.

The UK is actively developing several interconnectors to enhance its energy infrastructure and enable greater cross-border energy trading. For example, the Viking Link, a 1.4 GW interconnector being developed between the UK and Denmark, will enable the exchange of electricity between the two countries. This project, which will support the UK's renewable energy integration and improve its energy security, is expected to be operational in 2023. Adding more interconnectors with other electricity markets near to the UK will enhance the nation's energy security, increase flexibility in electricity supply, and facilitate the sharing of renewable energy resources with neighbouring countries. Investing more into interconnector development will promote a more sustainable energy system in the UK and Europe, contributing to the UK's overall goals of decarbonization.

> *"Batteries play a crucial role in charging infrastructure, facilitating the efficient deployment of EV charging stations and managing the increased electricity demand"*
> Andrés Senouf, Temporis Capital

Finally, long duration storage plays a crucial role in supporting the integration of intermittent renewable energy sources into the power grid. Long duration storage comprises energy storage systems that are capable of storing large amounts of energy for extended periods, typically ranging from several hours to several days or even weeks. Examples of long duration storage include: pumped hydro storage, advanced (long duration storage) batteries, and power-to-hydrogen technologies.

To achieve its net zero targets, the UK requires significant investment into generation, storage and enabling assets. Batteries and enabling technologies provide potentially attractive investment opportunities to investors alongside pure green power generation opportunities. Investing in a portfolio that includes early-stage development of renewable energy projects together with batteries and enabling technologies can provide an attractive mix of diversification of technologies and risk/reward.

Contact
Andrés Senouf, head of distribution,
andres.senouf@temporiscapital.com