**Transcript – Pensions for Purpose Podcast**
**Series 2 Episode 6 – The role of private markets in decarbonisation**

**Laasya Shekaran:** Hello everyone, and welcome back to the Pensions for Purpose Podcast. I'm your host, Laasya Shekaran, and today I'm joined by Lindee Wong, Director of Climate & Biodiversity at Tikehau Capital, welcome to the podcast Lindee, it's so great to have you here.

**Lindee Wong:** Hi Laasya, it's great to be here.

**Laasya Shekaran:** My Pensions for Purpose co-host for today's episode is Monique Stephens, it's great to have you here.

**Monique Stephens:** Good morning, Laasya. I'm delighted to be here, I'm very much looking forward to this, it's a fascinating subject.

**Laasya Shekaran:** Today, we're going to be talking all about the role of private markets and decarbonisation. We're hearing a lot about private market investing at the moment in the pensions landscape, with a particular focus on how UK pension schemes can invest in UK private companies and how they can do this in a way that contributes to positive economic, environmental and social outcomes.

We'll be getting into all of this and talking more about how we can support decarbonisation via investments in private markets. Let's take a bit of a step back and start with a more general question for Lindee, how does investing in decarbonisation look across different asset classes?

Lindee Wong: That's a great question, and I think it's really important to take that step back and first think about what we should be investing in more broadly before we talk about the asset classes. In terms of what are we trying to do, we're trying to very simply reduce greenhouse gas emissions, and because we're not doing that fast enough, we also need to be removing greenhouse gas emissions, which have already been emitted in the atmosphere, such as carbon dioxide.

It means that investors can address decarbonisation in two ways. Firstly, they can invest in climate solutions, these are the technologies that reduce or remove greenhouse gas emissions. We need to be investing in the companies enabling these solutions to scale up. The second priority is for investors to support financing of assets in transition, these are the companies or real assets, which are emitting greenhouse gas emissions. Today, they need to be reducing their greenhouse gas emissions by using these climate solutions, so there are two places where investors can be.

For us, the priority is really in the energy transition space, because 80% of greenhouse gas emissions comes from burning fossil fuels, and because we need to be reducing greenhouse gas emissions rapidly today, we need to be prioritising the deployment of proven technologies that are already commercially available, and what we're trying to do is completely transform the energy sector in the sense that we need to change the way we're sourcing energy and change the way that we're using energy.

In terms of the energy sources, the cleanest source of energy, and this is the first lever in the energy transition is the energy that we're not actually using, and that's energy efficiency. Our energy system today is extremely inefficient and wasteful. It's quite surprising to know that two thirds of all the energy in our system will never actually be used, that's all wasted, so what we need to be doing across all of the sectors, is reducing energy wastage. For example, in the

building sector, it's a matter of using more efficient appliances, more efficient lighting, but also renovating buildings, insulating walls, insulating ceilings, installing double glazed windows, so that the building itself is more efficient.

The second lever for the energy transition is electrification. Today we have 20% of our energy consumption from electricity. It sounds fairly small, because electricity is everywhere, but under a net-zero scenario, what we'll be aiming to do is double or more than double the electrification of our energy consumption to 50%. That means using heat pumps, it means electrifying transport, for example, electric vehicles. The advantage of this is also in terms of energy efficiency, because heat pumps are three to four times more efficient than a natural gas boiler, electric vehicles are two to three times more efficient than internal combustion engines.

Finally, the third lever for the energy transition is electrification. This is replacing fossil fuels by low carbon energy sources, such as solar PV, such as wind and nuclear. These energy sources generate electricity, and this is why the electrification lever is so important. These are the three levers which we have at hand to scale up the energy transition and decarbonise, and because of the huge scale of this transition, it really touches every sector of the economy. We think that there are opportunities for most types of investors to invest in decarbonisation within their investment mandates, considering their targeted asset allocations and their targeted returns. For example, infrastructure, clearly these types of investors are investing directly in climate solutions, but we can also invest in the companies producing these solutions through debt or equity investments for example.

In real estate, there is a really big opportunity for real estate in the value-add space, because what we're trying to do is really renovate all of our existing building stock to make them aligned with net zero. Then finally given that the whole economy needs to decarbonise, almost every company could be in scope of investment strategies focused on financing those companies in transition, those companies setting their targets to decarbonise.

Laasya Shekaran: There’s a lot to unpack there. I think the stat that I'm still reeling from is this idea that two thirds of energy is wasted, firstly, that just sounds incredibly, if there was any other industry where you were wasting that much of your resources, you'd be thinking what on earth is going on, but it's also this point you make about opportunities. If we improve those efficiencies, we probably have a great opportunity to improve our financial outcomes as well, and it really strikes me how those efficiencies are things we can look at across all different sectors, areas of the energy chain. It's not just about the solar panels, there's lots of different areas we can focus on here, but yeah, two thirds wasted. My gosh, that is a bit of a scary stat isn't it?!

Monique Stephens: I agree, that's a horrendous number to think about. Lindee, you referred to the fact that decarbonisation is a huge shift and it's going to touch many parts of the economy, and from that we understand that decarbonisation doesn't and it cannot happen in isolation. Perhaps you could help us understand, how will the broader ecosystem need to change, to support decarbonisation?

Lindee Wong: That's a great question, Monique. I think when you look at a lot of the scientific studies, they're very theoretical, and they don't actually anticipate roadblocks. Today, when we're looking at the energy transition and how it's playing out, we would say it's a somewhat disorderly transition, because we're seeing things like the electricity grid being a bottleneck.

So, according to the IEA, at least 1,500 gigawatts of renewable power projects at advanced stages are actually waiting in a queue to be connected to the grid. What does 1,500 gigawatts

mean in comparison. In 2023 we had 600 gigawatts of renewable energy capacity, it is a lot of capacity that is basically being held up, because the existing grid infrastructure today is not designed to handle such a big increase in renewable energy projects often in places where we didn't have electricity generation before.

In terms of the scale of this bottleneck, the IEA is estimating that 80 million kilometres, which is a huge distance of grids, will need to be added or refurbished by 2040 to meet the country's national climate and energy goals. Another challenge we're seeing emerging as a roadblock to accelerating scale up is human capital. We're seeing a significant skills shortage not only in white-collar workers but also in blue-collar workers. It's not only engineers, but we're also talking about welders, technicians, and construction workers. In the UK, for example, to meet the heat pump installation targets, we will need at least 27,000 heat pump engineers by 2028, compared to wait for it, 3,000 today so the skills shortage is huge. It's not only heat pumps, of course, offshore wind and nuclear power, they need to be tripling their workforce by 2030 in order to achieve the sector targets.

As investors, our role is really to make sure that we're not only financing the end solution, such as a solar panel manufacturer, but we also need to be investing in the broader ecosystem to make sure that we're supporting the companies that enable decarbonisation to actually happen. This means engineering, this means installing the equipment and maintaining it and I think probably when we take a step back and we look at, how did we get to this place, probably it's one of the limitations of the frameworks, which we've seen emerge on the market, such as the EU Taxonomy green bond principles, and these are really pushing investors towards the end solution and financing these technologies like solar PV manufacturing without really being able to capture the full value chain. So of course, these frameworks, there is a value in helping investors understand what is green helps investors avoid greenwashing, but I think it's also important to recognise the limitations of these sorts of frameworks in that they're never going to be fully comprehensive enough to capture all of the different dimensions of the energy transition which is really economy wide.

Laasya Shekaran: Yeah, it feels like we should use these frameworks as they are helpful, but they really shouldn't be stopping us from doing things that we know are important, like investing across the whole ecosystem. I'm curious as well, there's a lot that investors can do because capital is needed, but this is a huge existential issue really decarbonising the economy. What about the role of policymakers, individuals, consumers, companies, how does that all fit in around the investor angle?

Lindee Wong: Yeah, policy had a really critical role in getting this transition started, we wouldn't be where we are today without the policy drive in terms of the financial mechanisms and also in terms of the long-term targets which have been set. I think today, given where we are, we see renewable energy technologies, a lot of them are already cost-competitive compared to the fossil fuel incumbents, and part of that has been because we're now pricing carbon.

I think policy has had a really important role to get it started today, some of these companies, they can actually manage a loan, because the externalities are being priced in the correct way, and for policymakers, where does it leave them. Obviously, when technologies such as solar PV are already cheaper than fossil fuels, there is no more a need to subsidise these, but it's more about looking at the broader ecosystem for policymakers. Where do we need to scale up the skills, scale up the resources in terms of critical minerals, for example, to actually enable a more coordinated transition and economy-wide transition. I think for people, it's an interesting question, but for people, I think it's important to recognise that we can't expect people to pay

more for low carbon. I think this is really the challenge of the energy transition, that a lot of people are seeing that as an additional cost.

So ultimately one of the big roles of policymaking, is to make sure that the innovation is taking place fast enough, so that the low carbon choice is actually cheaper, because we cannot expect, especially in developing countries, for people to be paying more for green cement, green steel, when they can barely pay to build roads, this is the equality just transition angle. I think the role of the consumer obviously, is to afford what they can, but ultimately their decision making shouldn't be dependent on costs, and it's the role for the policymakers to make sure that the costs, the right decisions can be made based on the cost levels and pricing externalities, negative externalities in the right way.

Laasya Shekaran: Yeah, it's absolutely fascinating thinking about that ecosystem, because there are obviously a lot of different players, but it's key what a big role investors do have to play. Let's talk a little bit more about private market allocations, because there is a lot of discussion on this. What can private market allocations do for decarbonisation and for investors that is unique?

Lindee Wong: I think for private markets, there are probably two defining factors which make them a really interesting place to be when we're talking about investments in decarbonisation. Firstly, the opportunity set. So, I did some research, and there are roughly 160,000 companies around the world for revenue over 100 million dollars. Of that, only 20,000 or 12% are listed, the remaining 88% are private. So really, in terms of the opportunity set, the number of companies that we can invest in, it is firstly, much bigger than publicly listed companies then investments and climate solutions.

As I said earlier, the transition what we're talking about is having boots on the ground it's talking about the energy transition, it's engineering, it's installing, it’s maintaining equipment. The companies doing this, they're typically national regional players, companies with a few 1,000 people, a few 100 million in turnover, while the size of the opportunity is huge, two trillion is invested per year in low carbon energy, which is double that of fossil fuels. Most of the players in the market are usually not listed companies because of their maturity, they're usually regional national mid cap players and not listed companies.

Now, when you look at the publicly listed companies, which are active in the energy transition, you will see, according to studies, there are only 917 listed companies active in the energy transition. Many of these are oil and gas companies, electric utilities, car companies, so when you strip these away and you look for the pure players, you only see around 300 publicly listed companies in that universe. For us, we think that private markets are a place to be in terms of the opportunity set. The number of companies in the investment universe is much larger. If you want to be in this market, private equity, private debt is a place to be with a local team, because that sourcing is very local, because it's really the national players that we're targeting, and then on top of the scale of the opportunity. Why are private markets effective, we have much stronger engagement mechanisms to work with companies on their decarbonisation pathway on their business transformation journey.

In private equity, we have the advantage here compared to the public side, because we're able to work with the management teams and the portfolio companies on sustainable value creation, transforming those business models to capture these opportunities from the low-carbon transition. Then, of course, we can also incentivise these three management packages.

On the debt side, we're seeing effective mechanisms being put in place to drive the transformation through sustainability linked loans. These are quite effective, because essentially what we're doing is we're adjusting the cost of financing up or down, depending on whether ESG KPIs are met. We're giving a carrot and a stick to incentivise the delivery of ESG targets, whether it be decarbonisation objectives, whether it be other types of impact goals, and overall private markets the opportunity is there, and then the way that we can influence change, is really much stronger than in public markets.

Monique Stephens: So, Lindee, you've highlighted there that private markets definitely have a place in decarbonisation for a number of factors, risk appetites, levels of control. They're very distinct investment models, but perhaps you could outline some of the differences in the opportunities that you're seeing between these two asset classes, between private equity and private debt.

Lindee Wong: Yeah, for private equity, what we're doing at Tikehau is that we're really targeting growth capital. We're looking at the established companies with proven business models, and why we're doing this well given the urgency of reducing greenhouse gas emissions, this is really exactly where we need to be. We know from the scientific studies, from the IPCC, from the IEA, that we actually have all of the know-how we need in terms of reducing greenhouse gas emissions by 2030.

The solutions for this. They're not the climate tech investments in VC, such as direct air capture or nuclear fusion, it's mostly a matter of scaling up the technologies that we already have today, and so the role of growth capital here is really critical, because what we're trying to do is essentially scale up companies that already are doing this, and capturing those opportunities that are coming both from the financial lens and also the impact lens.

Our investment universe in particular, what we're doing, we're looking at the three levers I mentioned before: energy efficiency, electrification, and low carbon energy. In particular, what we're focusing on are companies enabling the deployment of these levers through the three types of activities which really are key to enabling the low-carbon transition: manufacturing, engineering, and business services. What we mean by business services, for example, are companies installing electricity grids. In addition to that, we also see opportunities for investment in climate change adaptation, given the increasing physical impact of climate change that we're seeing today.

Now, on the debt side, we can invest in these types of companies through impact lending strategies. At Tikehau, we're seeing more and more of this appear on the market and in the shape of mandates from LPs who are interested in investing in impact through private debt, but more broadly in private debt, of course, there is also a significant opportunity to invest in companies in transition.

I mentioned before, unlike climate solutions, basically transition investing is the whole economy, because essentially the whole economy needs to decarbonise, so for us, what we see is the opportunity to engage with companies on their ESG strategy, identify material issues, in particular decarbonisation, and incentivise companies to decarbonise through sustainability linked loans. For example, we're doing this in our direct lending, our latest, direct lending flagship strategy. We're aiming to halve the carbon intensity by having at least half the portfolio with sustainability-linked loans linked to decarbonisation. We're doing that on the one hand to meet LP demand. This includes demand from UK pension funds, for example, which have strategies aligned for net-zero, but also, we're doing this because we think ultimately

sustainability linked loans are a way to price material ESG risks, and this leads to improved risk-adjusted returns in the long term.

Laasya Shekaran: It just makes financial sense then I guess when you put it like that. Just to bring this to life a little bit. What kind of companies are you actually investing into? Can you give us some case studies, I wonder if maybe you could give us one on the private equity side, and one on the private debt side?

Lindee Wong: Yeah, so on the private equity side, the most recent investment was in a company called TTSP HWP. I know that's a bit of a mouthful.

Laasya Shekaran: So catchy.

Lindee Wong: It is one of the German leaders, well, it is the German leader in data centre technical advisory, it provides engineering services, design, and project management services to develop efficient and low carbon data centres. So, with the rapid expansion of AI, as many of the listeners are aware, the number of data centres is growing exponentially and with it, its environmental footprint.

A lot of electricity is needed to run and mostly to cool data centres, and in countries where there is already a high concentration of data centres, such as in Ireland, they had 21% of electricity consumption from data centres in 2023. So that's a huge burden on the electricity network.

There are other issues, of course, with this. Firstly, for a data centre, clearly, electricity is a significant OpEx cost. Secondly, most electricity grids are not decarbonised. This electricity consumption is generating greenhouse gas emissions, and that is in conflict with the targets of many of the big tech companies like Google, like Microsoft, which have ambitious net-zero targets. What are the solutions to this? Well, one of the key levers to acting on this type of environmental impact is energy efficiency, and the role of engineers here is really vital, because the most influence you can have on energy efficiency is actually upstream when you can design the system, to make sure that you have the most efficient cooling system, you can design the data centre to have a waste heat recovery system and you can also make sure that you're using the most energy efficient computing equipment, and so this company TTSP HWP, it's playing really an essential role in decarbonising data centres, not by operating the data centre, but really by engineering it. So, it's the most efficient data centre possible. Our aim here is really to support the company, to grow from being the German leader to a pan-European leader.

Then on private debt, one of the companies that we've invested in is a company called Lebrance Allage. It is a French company that produces alloys, it's a company that is highly energy intensive. Here one of the materials ESG issues was climate change, and what we did here was we negotiated a sustainability linked loan with the company, and so the company has already set a science-based target. It needs to meet its science-based targets, decarbonisation trajectory. If it achieves its target year on year, we will give a discount in terms of its interest rate margin, if it doesn't achieve it, it will actually be penalised, and it will pay more for its interest. So this is the mechanism that we try to implement across and is an illustration of how we can use financing mechanisms to incentivise companies to act on the material ESG issues. It's a way for us to price in that ESG risk, which is basically high energy consumption, high CO2 emissions, and we have a fairly strong mechanism to ensure that the result is actually achieved by pricing it correctly.

Monique Stephens: Lindee, are you seeing more opportunities in private equity or private debt around decarbonisation? If one is out of balance with the other, why do you think that is?

Lindee Wong: I think it depends on the lens. I think, from the impact point of view, clearly, private equity has the advantage, because people are more familiar with working with management companies on that sustainable value creation process. I think today in private debt, we're seeing more and more interest from LPs, resulting in more and more impact funds, looking for these opportunities from the debt angle and we're also seeing sustainability linked loans becoming more widespread across the markets, meaning that this is also being used to drive impact, and not only ESG. I think from both angles you have the opportunities, it's more a matter of how proactive you are to go out and originate those deals.

Monique Stephens: Something that you said earlier Lindee was, if I may quote you, is ‘transition is the whole economy, we all need to decarbonise’. You've mentioned human capital, and you've mentioned the skills shortage, so this all points to the fact that we were looking here beyond just the fact of cutting carbon emissions. We're looking to a more holistic approach to decarbonisation. How does the just transition and biodiversity fit into this puzzle?

Lindee Wong: Yes, I think in terms of putting these pieces in the puzzle, yes, the EU regulations are very complex, but the introduction of the concept of doing significant harm by the EU is really an important one when we're trying to consider investing in decarbonisation or other sustainability themes, because what we're trying to do very broadly is avoid creating new problems while tackling the problem that we're trying to address such as climate change. Ultimately this means as an investor, we need to take a step back to consider all of the stakeholders, whether it be people, companies, or the planet. Look at the broader problems affecting an activity, and whether a solution can address more than one of these problems, and where could the negative impacts of the solutions also be in relation to these stakeholders.

This sounds a bit theoretical, I know. So, to give you an example of this, we can take agriculture, and how we'll try to address that via our regenerative agriculture strategy. I know we've spoken today mostly about decarbonisation linked to the energy transition, but I think if you want to look more holistically at this, we need to look at the land sector and in particular, agriculture. Why? On the one hand, agriculture, forestry, and land use, they account for 20% of greenhouse gas emissions, so, they're part of the problem, but on the other hand, land in particular, agriculture and forestry, it's the second largest carbon sink after oceans, in other words, it's a place for us to store carbon outside of the atmosphere. So land, t's part of the problem, but it's also a key part of the solution, so that means that in addressing decarbonisation we really shouldn't be forgetting the land sector, and in terms of investment opportunities at Tikehau, what we're looking at is really agriculture as a subset of land, because agriculture is essential not only for food, but also for fashion, for cotton and also for fuels in some countries, so really, this is a systemic change that needs to take place.

When you think about agriculture, the problem is not only climate change, but agriculture is also almost always dependent on soil, but at the same time 40% of soils are degraded, meaning that soil is no longer providing the essential functions, such as being a carbon sink storing carbon. It's also not, for example, filtering water to regulate floods. There's also an issue for biodiversity, because 25% of biodiversity is below our feet and it's an essential habitat for earthworms to bacteria. To address this challenge, what we're doing at Tikehau, is we've launched a regenerative agriculture strategy as part of private equity, and what we're trying to do here with our partners, Unilever and AXA Investment Managers, is invest in scaling up regenerative agriculture. What does that mean? Essentially, it's a system of agricultural principles, practices that aim to improve soil health, and at the same time it's aiming to improve

or regenerate the resources that agriculture uses, whether that be soil, whether that be water or biodiversity. So what we're doing here, is really addressing multiple challenges in the agriculture sector using the same solution, so this is an example of how you can think more holistically about challenges facing a sector.

Then, maybe turning to just transition, I think today, given some of the political wavering about climate change that we're seeing, I think it's important to keep the people aspect in mind, because ultimately, when we think about the Paris agreement and the goal of decarbonisation, it's not really a goal to save the planet for the planet's sake, as much as some politicians like to put it that way. It's actually a goal to provide the right environmental conditions for society to prosper, so clearly these social outcomes, they should not be forgotten. They really shouldn't be positioned as a sacrifice to environmental ones. Ultimately there are many positive social outcomes of decarbonisation, which I think today don't receive enough credit. For example, energy efficiency as I said, this is really a key lever, because it's the cheapest source of energy, and today, in the high cost of living environment, it's important that we are able to deploy this to reduce energy costs for households, but also to improve comfort inside homes. Of course, the barrier to this is the upfront costs of renovating a home, so financing schemes like the Green Deal in the UK, they're really important to help households cover these costs upfront, so that in the long term they can save money on their energy.

Another aspect of the just transition often talked about is jobs. Often, we hear about job losses, and yes, there will be significant job losses that arise if we are going to fully decarbonise, for example, there are eight million workers in the coal industry. At the same time, it's important to note that more jobs will be created from the green transition. For example, the IEA, they say that today already there are 33 million workers in the clean-energy sector, much more than in fossil fuels. It is more a matter of policy and also company strategy being able to retrain workers to capture these opportunities, and we're seeing there's oil and gas companies shifting in this direction, car companies shifting in this direction, so it's a broader lens that I think is important to take into account. It's not just about job losses, it's also about retraining and making sure that the policy environment is right, so that job losses are turned into job transformation transition opportunities.

Laasya Shekaran: Lindee, this has just been such a fascinating discussion. What I really take away from this is how broad this topic of decarbonisation is, not just in terms of how many different players and stakeholders are needed to be involved with it, not just in the kind of aspect across the value chain that we need to think about, but also about how big the opportunity set is for investors, because of how much change is needed for decarbonisation. So, if there was one thing you wanted listeners to take away from this discussion, what would it be?

Lindee Wong: One thing is a big challenge. It's really a significant opportunity, in particular for private markets, as I said before, the opportunity really is in the private market space, because we're talking about local national regional companies that are actually needed to deploy the transition at scale.

Even though we're talking about relatively small companies compared to the listed universe, the size of the opportunity is huge. Two trillion dollars is invested already per year in the clean energy market. This needs to double to four trillion by 2030, and clearly the energy transition is well underway, and private markets are one of the best ways to capture the opportunities from the investment and impact angle.

Laasya Shekaran: Brilliant, thank you so much for joining us today, Lindee.

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