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Introductory Jingle

Innovate UK KTN connecting for positive change.

Nikoleta

Welcome everyone to this new episode of the Battery Caffè focusing on the UK battery investment landscape. I'm Nikoleta Piperidou from the Clean Energy and Infrastructure team at Innovate UK KTN. Great to be here together with my colleague, Jordan. Hi, Jordan.

Jordan

Hi Nikoleta. Hi everyone. I'm Jordan Fletcher from the Investment team at Innovate UK KTN. I focus my work, working across the Net Zero domain working with companies and investors to connect and share knowledge and insight to help scale up the UK Net Zero ambitions.

Nikoleta

Thank you, Jordan, and just a brief introduction to the Battery Caffè. It is an initiative of the Cross Sector Battery Systems Innovation Network community funded by Innovate UK KTN and the Faraday Battery Challenge. The Innovation Network aims to open new markets for the battery industry, promote innovation in batteries, and help decarbonise a wide range of end users. So if you haven't already, please go check out our online platform at ukbatteriesnetwork.org. You'll find lots of useful material and all the previous episodes of this podcast series.

Jordan

Super thanks, Nikoleta. So for today's podcast, our focus is on batteries and investment in batteries, and specifically just discussing the trends, themes, opportunities and challenges within the UK battery ecosystem. Over the last couple of months, the Faraday Battery Challenge team has been working closely with Dealroom to deliver the UK Electric Vehicle Battery Technology Investment Report. There'll be a link in the description of the show notes which you'll be able to access and the report is here to provide up to date data and trends and analysis on the UK battery market. There's also a platform element which if you wish to engage with the companies and browse some of the innovative organisations within the UK battery sector. To help us navigate this. We're delighted to welcome two guests to join us today. Firstly, we're joined by Dr. Jim Totty. Jim has over 30 years experience in sustainable investment and technology. Twenty one of those in private equity, following early advisory roles and academic work. Jim has a PhD and MSc in Physics from Imperial College London, holds an MA in Physics from the University of Cambridge and is a chartered financial analyst. Jim, thank you very much for coming. Great to have you with us on the podcast.

Jim

Thank you, Jordan.

Nikoleta

Thank you. And we're also joined today by Ian Whiting, Commercial Director of the UK Battery Industrialisation Centre. Based in Coventry, UKBIC is a pioneering concept in the race to develop battery technology for the transition to a greener future. The unique facility provides the missing link between battery technology, which has proved promising at the lab or in prototype scale, but it's just missing its next step to successful mass production. Ian has spent his career in the battery industry with roles at AGM and Ricardo. Ian, welcome. Great to have you with us.

Ian

Thank you very much for inviting me. Good to be here.

Nikoleta

Thank you. So make yourselves a coffee and join us.

Jordan

So the 2022 State of Battery Investment report is now live. I know both Ian and Jim, you've managed to have a good sneak peek at it and get an early opportunity to flick through some of the analysis and have a look at some of the opportunities and successes across industry. My reflections are that despite some notable challenges that we've seen over the last couple of months, there has been a standout in the total value of the industry. And we've seen a lot of UK private companies go on to grow and raise further capital and build a solid foundation for a new pipeline of innovative battery companies coming through. I'd welcome your initial reflections. What were your initial views and your initial takeaways from some of the analysis? Jim, do you want to go first?

Jim

Yeah, thanks, Jordan. Look, this is a great report. So I would thoroughly recommend it to everyone in the UK battery ecosystem. It's a really good read and really packed with helpful information. I think I had four sort of high level takeaways just to run through. It describes a vast, interconnected ecosystem in the UK battery industry. And I think the point to emphasise there, is the capital markets are also very much part of that interconnected ecosystem. You know, the investment, everything from £100,000 venture rounds, through to £100 million plus larger buyout private equity or infrastructure investments in manufacturing plants or in late stage. And I think that interconnection is something we'll probably touch on several points, but it's a key point to take out of the report. I think the second thing on my list would be, yeah, we've seen a lot of tech hype valuations very high. And of course, 2022 was the year prices started to come down a bit and we see that in some of the data in the report off a very strong market, but arguably a bubble market in 2021. But one very interesting point was that corporate venture capital in the UK battery sector seems to have returned. It's increased from a low level in 2020, with increases year on year in both 2021 and 2022. And that's incredibly important, because that's not true everywhere. Corporate venture capital

has had a tough two or three years. And I think it's really encouraging that we're seeing that coming back in the UK battery ecosystem. Equally, I guess my final takeaway, of course, is how strong the Nordics are at the moment, particularly Sweden, but I guess, Norway, Denmark, Finland, as well. And I think there are probably some lessons that we can learn here in the UK, in terms of the Nordic experience, the entrepreneurship there and how they attract capital. I think both markets can learn from each other.

Jordan

Perfect Jim. Yeah, really, really interesting. We can touch on some of the CBC stuff later, as well, I've got a few points on that. Ian, any takeaways? Anything stand out for you?

Ian

Yeah, I say the same as Jim there, it's a good report. It's quite an easy read, it's well put together. So you don't need to spend, you know, many, many hours going through and getting a lot of data out of it very quickly. And I would absolutely back that up. Finance is absolutely key. And I think one of the things that we may come to later on is, how we all try to get to a point where we're all speaking the same language. And that's a really important part of this. The big standout for me was that, you know, the UK ranks fourth, for that kind of VC investment right now. At first, I found that quite surprising. But then, secondly, there's some fantastic technology coming out of the UK universities and small companies in this area. So I suppose that shouldn't really be a surprise. And what I would say is a lot of that investment, we're pretty strong. And historically, I think we've been pretty strong in bringing technologies to the table, relatively early stage research and development, and bringing that kind of early capital in and supporting those. And we've always been strong on it, you know. Some of the early, in this particular field in batteries, some of the really valuable patents came out of the UK. The original, one of the original lithium ion patterns, came out of the UK. But of course, it is, my other takeaways, all of this, a lot of this is early stage investment. And, so now what we've got to really look at is, is how do we grow this into the later stages, the scale up stages, and the real value in you know, in manufacturing, jobs, wealth creation locally, etc. So, yeah, really good read, quite encouraging. It's now where do we go next?

Jordan

Super. No, well that's teed me up really, really nicely. Thank you Ian. I mean, one of the headline takeaways for me, just in terms of kind of numbers and putting some kind of quantitative pieces to this, was that investment has grown 9.6% or 9.6 times between 2017 and 2022, totalling 393 million. So we're clearly seeing a lot of capital going into these early stages. And just to touch on a little bit of what you mentioned there Ian, and also what Jim has touched on. So it feels like we've built this really strong foundation. We feel like, you know, there's a good amount of companies coming out of university. They're getting seed financed, there's interest in the early parts of the market. But just to touch on some of that, where do we need to go next? What is that kind of next piece in terms of bringing in capital to finance some of the next stages of growth of these companies? Open questions here? Can we finance these from the UK? Do we need to look further afield? Jim, I know you're all over this sort of stuff. But yeah, be good, you know, if you could just touch on a few areas where we see some of the financing opportunities, but also some of the challenges.

Jim

Thanks, Jordan. So let me just follow up on Ian's last comment about job creation, employment. The particular stage in the funding food chain, and it is a food chain from start to finish, I think is the opportunity but also the challenge, is the 10 to 50 million pound scale up rounds. And these are where companies start to become significant employers. But it's also the stage of capital investment, which is too big for the small VCs, the retail money EIS and crowd funders. But it's still too early for the really big private equity and infrastructure funds and listed funds. And I think that's the key part of the food chain that we need to focus on, as both a threat and an opportunity. If you compare it to life science - I mean life science is just as capital intensive as climate tech. But of course, that funding food chain is really well parameterised - if you were to think of a new drug candidate, you know, a new therapeutic, everyone knows which VCs will invest to take you through phase one trials, everyone knows where the big strategics will be waiting to finish things off and do phase three and take drugs to market. That's been structured that way for decades now. And compare that now to say, digital software, which is completely capital light and new crazy and zany and wacky business models every week. But it's capital, like \$5 million, \$10 million, might be enough to get you all the way. And unfortunately, climate tech and sustainability often have the both sort of bad characteristics of both capital intensity of life science, but the new business models of digital. And we have to sort of focus on the weak points in our funding food chain, which are those kinds of scale up rounds. And I think, I mean, if I think of the sort of conferences I've been at recently, perhaps the last sort of 10, or 12 I've spoken at, two big themes in the market at the moment. And these are challenges. So a lot of VCs are not in the room, they're not turning up to events. They're kind of sticking off looking after their dry powder, looking after their existing portfolio not doing new deals. And I think the other big trend we've seen recently is a lot of plus rounds with a C plus or A plus or B plus venture round, where management teams and boards have realised they didn't raise enough in the last round, to get them through tough years in 2023 and 2024. And they're kind of reopening rounds and trying to get another few million in the bank to see them through hard times. And I think that's a challenge. So I think those are sort of probably the key themes I'm seeing in the market at the moment.

Ian

Yeah, I was going to say I would, we're on the same page with a lot of this, even though a lot of these communities do kind of speak a different language. And that point where Jim was talking about that stage, that gap, where you get to the mid stage, you know, the tens of millions of pounds funding etc. We start to see the gap emerge. The companies, in some areas, I guess they call it the valley of death and it's that part where you just can't raise the funding. You're not big enough for corporate investment, etc. And it is a big issue. And I think quite often, one of the difficulties is that, if you like the technologists that are developing, the technologist is sometimes a little frightened, to put the reality on the table and say, here's the plan, here's where we want to go. And there's a lot of pressure to do it on a very, very tight budget. And exactly, we end up in the situation that Jim was talking about there. Not raised enough the first time, difficulty, and then a bit of a loss of credibility in the eyes of the investors perhaps. And for me, that's the whole area where we need to get a better understanding of each other's needs. You know, the technologists, the investors, and of

course, at this kind of stage government as well. You know, what is, you know, where's the government going in this? What really is the bigger picture industrial strategy? How's it tied together? And, you know, how do we pull it? How do we give, I guess. Jim, for me, I'd really like to talk to you, you know, maybe outside of this meeting about how does this industry give you guys confidence in pulling together the long term plan or the long term investment? Because these investments are long term. Like you said, it's like life sciences. It's not a money back in two years. It's a much longer investment, great rewards, but obviously hurdles on the way.

Jim

I mean Ian, there's probably a few answers I could give you. But let me just give you one from my experience going back about ten years. Ten years ago, offshore wind was a pretty nascent industry - there's a few 100 megawatts here and there. But it wasn't mainstream. A lot of people were concerned about, you know, risks of being out at sea and all sorts of reasons why you might not invest in offshore wind. And you know, the UK government, back in the early part of the last decade, put together the UK Green Investment Bank, with 3 billion of government capital. And a lot of that capital went into building out early projects in the UK offshore wind industry. And it was a huge success, because actually private sector capital could see that projects had been well put together. There was a government cornerstone coming in and aligned. And within five years, I guess, by 2016/2017, offshore wind was a completely mainstream asset class, lots of our pension funds were investing into it. And then the international market picked it up and ran with it. And we're seeing fixed offshore wind projects happening all over the world and of course, floating offshore winds, which is an incredibly exciting topic for another day - it is becoming very fast growing as well. So, that's an example in a different sector, but a neighbouring sector, but batteries, yeah, absolutely. We could see that same stimulus from government money, I think would have exactly the same effect, if we could deploy capital at that kind of scale.

Nikoleta

Thank you both. Excellent insights. And just moving a little bit more again on the international landscape. Globally, the UK is ranked fourth in terms of enterprise value behind large players, including the US, China and Sweden, with a long tail of companies closed to the UK. That's a question, I guess, primarily for you, Ian. How do we continue to keep a strong position globally and build an international market of leaders attracting global investment?

Ian

Yeah, I think actually, it's what Jim and I probably got onto just a moment ago. Fundamentally, we have great technologies coming out of the UK, we do have entrepreneurship, I really do believe that. And, I mean, we're seeing where I sit in UKBIC, but we're seeing world class performance products coming through our facility that we're scaling with our clients. Whilst at the same time, it seems very difficult for them to translate what they've achieved to the investment market and move it on. So we see, you know, fledgling companies, which could be really very successful in the UK, that are really

struggling to get over that next point. And I think, you know, without repeating the same thing, it is very much investors have said to me exactly just a week ago, another bunch of investors said exactly what Jim just said to me now. Without a really clear steer from the government to some extent, it's very difficult for them to see how to, it's almost a punt, if they're not careful. It's probably not a word you'd like to hear me say, Jim, but it's how... So for me to make as a global player in this fundamentally, I mean, our part of this, we're part of the Faraday Battery Challenge. And that fundamentally, as you all know, Nikoleta, was set up all around the automotive industry and ensuring we had a healthy and growing automotive industry down the line. To do that, we absolutely need a local battery industry for lots of reasons. For legislative reasons, for practical reasons, and financial reasons. So kind of, it is absolutely obvious, we've got to do it. But it's how we get that over the line quickly, because the world is moving on very quickly. And I think, for instance, the Faraday Battery Challenge, which put all of the pieces together in this jigsaw was a brilliant attempt, and actually was a great forum for people coming from all around the world and seeing it and actually going away and copying the process. But actually, there's so much funding going in other European countries, now in the US, in Asia, that now we've got to, for me, we've got to do the whole thing on a much bigger scale. And we've got to make the investment community aware, the government has to make the investment community aware of how super critical this is right now.

Jordan

I'll just follow up, then, Jim. Any reflections on that type of piece? We've seen kind of, you know, there's a lot of big players taking up a lot of that enterprise value in Sweden. How do we kind of see the UK ecosystem evolving? Do we need more capital? Do we need a lot of the big stuff? Can we survive with some of these smaller innovative companies? Any reflections on some of that?

Jim

So I think I think the key thing is to be really frank and honest about what your strengths are and what your weaknesses are. And the UK has two enormous strengths, which other countries, many other countries don't have. One is our early stage innovation, academic research, corporate research, and entrepreneurship. The UK is phenomenal in this area. And the number of new technologies, new startups that we see is testament to that. The other thing that the UK is phenomenally good at is the large scale capital markets. In terms of banking, fund management, asset management, the UK is absolutely world leading in that area. So you've got two enormous strengths that many other markets would give their back teeth for. Unfortunately, the dots are not quite joined up. Because there is this middle ground, which Ian and I've just been talking about. The kind of scale up piece, which is bigger than the early stage guys would typically look for, but it's still too small for the big capital markets. So that's our weakness. And that's the bit we really need to focus on. If we can bridge that gap and be strong right across the funding food chain, the ecosystem, we will be world leading. We've just got to focus on that middle ground and recognise that one weakness, and then we can play to our strengths across the board.

Jordan

Super, super, super, super. Nikoleta, anything else from your side on any of those points?

Nikoleta

No, not really. I mean, perhaps it's just to continue the discussion. So how does this compare to other industries, things we've seen in the past? How does the battery sector compare to other industries? Some thoughts on that?

Jordan

Yeah, I think there's a point here, touching on the CVC side of things and reflecting perhaps on that kind of value, that we've seen in the battery industry. Well, we know from the data from the Bureau report, there has been a lot of corporate developments and loss of CVC Capital coming into this. How does that kind of fix them? How should companies, you know, if we're gonna give a bit of advice to companies, how should they be thinking about the composition of their rounds as they begin to scale? I know, it's nuanced by where you are, what you're building, but if you're building a kind of large climate tech company, what are some of the roots and compositions of rounds as you scale to think about?

Jim

Okay, so I think there's one sort of thing to be careful about, and then one thing to be very positive about. So I think the thing to be careful about, especially in the current market, is to choose a group of investors who you know can follow on at subsequent rounds and have deep pockets, and don't change their minds. And some groups of investors in corporations are a good example. They have deep pockets, but sometimes corporate venture capital programmes get put on hold or people change. And teams get changed out to other roles in the corporate. And you want to look for those CVCs, who actually have long term commitments in place and keep the teams in place long term. So be very, if you're doing a funding round today, that you should actually be thinking about the funding round in two years and five years time as well. You need to think ahead and choose investors who will be with you for that full journey. Because guys who leave you high and dry at the next round, are going to leave you with a problem. You know, new investors will always ask the existing investors to do some of the rounds. And if those existing investors are not at the table, you've got a problem. So choose investors who are going to be with you in the long term. But let's just flip to positivity. So, solar PV twenty years ago, people were scratching their heads about how we're ever going to get it to market at a low cost. Energy efficiency ten years ago, people just didn't understand how it was going to become mainstream and how we were going to get cheap asset finance, project finance into that sector. And both of those got crunched through. PV involved subsidies, and tariffs, and so on, which probably we'll never quite see the likes of again. Energy efficiency was just sold by people going out and doing some early projects. And again, the Green Investment bank was very helpful in that respect here in the UK. So other sectors have been through challenges and have become huge global sectors, huge asset classes. You know, LED lighting, if I go back to the start of my career back in the 90s, it was just a sort of twinkle in the physics professor's eye. Now you can hardly walk into any room in the world that doesn't have an LED light lighting it. You know, we've got some big successes to celebrate, and there's no reason batteries can't go the same way.

Nikoleta

Thank you, Jim. Ian, any thoughts and comments on that?

Ian

I had the first comment that Jim was making. I'd already made a note along the same lines. That corporate investors that tend to have a longer term view are really important in this field, because it's not an overnight success. That is really important. And I think the other part that links to that is, again, bringing the communities together. So you know, maybe education around how the investment, how the different parts of the investment community work, because quite often you've got technologists bringing companies forward. They don't necessarily understand how the relative parts of the investment community work and probably put pitches together that are very much aimed at VC rather than corporate etc, etc. And that's something where we could do an awful lot to assist and help those kinds of organisations. But again, yeah, I do believe it's a fantastic opportunity. You know, it's a chance to make a real difference, with the world electrifying. It is happening, it's happening everywhere. When you look at the predictions, you know, from people like the National Grid about the amount of electrification, the amount of renewables, you know, those next steps, we, you know, we've concentrated ourselves a lot on automotive, but static energy storage is coming at a real pace now. And we need to be thinking about the bigger picture, not just the installing systems, but developing systems. Because a lot of that IP actually does sit in UK universities and small companies already.

Nikoleta

Thank you. And thank you very much, both. And just, let's say to end on a strong note, perhaps a question on what excites you both about the opportunities over the next few years in batteries, and any advice to our listeners to capture this? So Jim, would you like to go first?

Jim

Look, I'm gonna build on what Ian just said. Electrification is coming in so many sectors, and it's not a quick journey. But you can see the UK with tens of gigawatts of floating offshore wind in twenty years time for instance. You know, EVs 10 million, 20 million EVs, and of course, all of those both generation and off takers require storage to stabilise the grid on a stationary level, and of course, the EVs require batteries for the drivetrain. So, electrification is coming. The renewable power is only going to increase. It will be a twenty year journey. I mean that tens of gigawatts of offshore wind vision is not going to happen overnight. But it's coming, and we can build a huge industry around it and electrify so much of what at the moment is still in the old combustion engine or fossil fuel world.

Nikoleta

Thank you, Jim. Ian, any thoughts?

Ian

Yeah, I'll just add to that. I look at some of the figures about how well the UK is actually already done on the road to net zero. You know, we've got pretty good results already. There's a long way to go. But we've got everything we need in the UK to make it happen. And I do think, you know people call it an electrification revolution. It really is. And I think maybe there's not a public perception of that yet. Maybe we need to seriously publicise what's going on in the world and get people generally a bit more excited about what's going on, because, you know, people can probably even influence their pension funds etc etc. Who knows, it's a really exciting time. It's an exciting time for the world. We got a chance seriously to make a difference to climate change. We got a chance to grow businesses. You know, it's a great time all around. We've really got to exploit it quickly.

Nikoleta

Thank you, and to build on all this excitement. Jordan, I know that at Innovate UK KTN, we have some exciting programmes coming ahead. Would you like to tell us a little bit about this?

Jordan

Yeah, I'm happy to do so. I mean, first thing to the listeners, read the report, engage with it. It'll be in the notes of the show. But building on what we've been developing over the last, over the last two years, really, there's a couple of key programmes coming out in 2023. So firstly, we'll be running the third edition of our investment readiness programme. Some of the companies you're seeing in the report have been through that programme, so it is delivering results. And they're helping people raise capital. Very much for early stage innovators looking to raise their kind of first or second round. We will be opening applications for that soon. So stay peeled and subscribe to Nikoleta's newsletter at the Cross Sector Battery Systems, so you can access that. And secondly, the Innovate UK Investor Partnerships Programme for the future economy. There is an allocation there for the Faraday Battery challenge. And we're actively looking for both investors and companies who are looking to align grant funding with equity investment to help them reach their next stage of development. So we're here if you need us. And you're more than welcome to get in touch with us and we can discuss those opportunities with you.

Nikoleta

Thank you, Jordan. And thank you again to our brilliant guests. And thank you all for listening. We hope you enjoyed this discussion as much as we did. Don't forget to visit our online hub on ukbatteriesnetwork.org and register to receive our news and updates and participate in the networking hub. See you in the next episode of the Battery Caffè. Bye for now.

Outro Jingle

Innovate UK KTN connecting for positive change.