**Inside Octopus Energy Episode 9 Transcript**

Thanks for downloading Inside Octopus, where in this episode, we are introducing the team behind octopus energy generation who joined the Octopus Energy Group back in March, 2021, formally named Octopus Renewables, the company entered the renewables market in 2010 and has grown to become the largest investor of solar power in Europe and a leading investor in onshore wind.

My name is Russell Goldsmith. I'm joined online by Octopus energy generation CEO Zoisa North-Bond, their Co-head Matt Setchell, Paul Loran, head of innovation, and then finally, chief of staff, Ashleigh Gray. So thank you all for taking the time out to chat to me today. Zoisa, let's come to you first. I've set the scene very briefly there in the introduction, but why don't we start by just explaining what we mean by renewable energy and then perhaps you can give a bit more background to your parts of the octopus energy group?

Zoisa: Yes, of course. See what we mean by renewable energy is actually energy that comes from inexhaustible supply. So it can be places like the wind, the sun, and even the sea. So because of that, it means that it's cheaper and actually easier to use. So rather than taking things from finite sources like fossil fuel energy does, it means that we can use it with abundance within our homes. With octopus energy generation we have been set up to accelerate the mission to making renewable energy the cheapest electron that could be used in homes and in businesses, here in the UK and around the world.

In terms of the way that we work, we're on a kind of mission at the moment to disrupt the renewable energy space in favour of consumers - so looking at ways to drive down the cost of producing electricity and then working with the end consumer to help identify the times of day when energy is cheaper and they can use that within their homes.

Just one of the models that we've been working on this last year that fits in that mould is something called the Fan Club, which some listeners may already know a bit about. In its very simplest form, this is where customers can receive as much as 50% of their energy bill when they use energy at times when the wind is blowing or the sun is shining, which is super exciting.

So on the one hand, we are developing these kinds of new models that are ripe for investments, and then on the other, we also have a fund management team that works within the generation business and it is managing about £3.5bn Pounds worth of renewables on behalf of investors. So, when I say renewables, these are predominantly wind and solar farms.

Actually what we see coming into the market now is that in order to accelerate this move to net-zero - I think it was last calculated, certainly going into COP - that there was about 136 trillion that's going to come into this economy that will be targeted at accelerating our move to making the whole of the space better and lowering carbon, and this team is really expert in capturing that investment.

And then on the other hand, we will be creating models, more models, like a fan club where we can put that investment. And actually these two things together, along with our expertise in supplying customers will mean that we can accelerate this move much more quickly than anybody else could.

Russell: And that funds that you mentioned - that 3.5 billion - how many projects does that invest in? And also are you able to go into whereabouts that is? Is it specific territories at all?

Zoisa: It amounts to about 350 projects, of which about 35 are wind farms here in the UK, but it's across seven different markets. So we're in other markets like France, Spain and some of the Nordic countries like Finland and Sweden, but we are obviously on the path now and have ambitions to enter many more spaces in the renewables world; very similar to the places where we are actually retailing energy at the moment. So also places like the US for example - Australia, and New Zealand as well.

Russell: Matt, how has the market developed over the last 10 years to get to where we are?

Matt: Yeah, well, I mean, I've been really lucky. I've been involved in and participating in this market for the last 12 years and I've seen this sort of incredible transformation across loads of different parts of the sector. So, you know, in 2010, when we all started and we saw the urgency and we saw this sort of opportunity to accelerate this mass rollout of renewable energy generation, which, I mean, now it seems really obvious, but actually at the time, it didn't feel like that at all.

So in the UK and elsewhere, onshore wind, solar, wind more generally was seen kind of at the periphery of the energy mix required. So you had people saying you'll always need gas, lots of countries were still burning lots and lots of coal, and the need for nuclear as well.

Alongside that it was also incredibly difficult to get funding, so Octopus was a pretty niche investor into renewables at that time. We couldn't get the pension funds, particularly excited or focusing on renewable energy projects and with the banks it was more challenging getting the terms in for bank debt. Move forward 10 years and that sort of completely changed around very few people are now questioning that wind and solar are going to be absolutely central to providing energy for the future - but not just the future, for today.

The reason for this is really simple, actually it's basically because wind and solar are the cheapest source of power generation in almost all markets. It really is the fact that the cheapest electron is the cleanest greenest electron. And if only we had more wind and solar installed, we wouldn’t be facing all these issues we've got today where we're beholden to the cost of gas in the system. And this all happened because the cost of building renewable energy assets has reduced by a staggering amount over the last 10 to 12 years. To put that into perspective a little bit, when we did our first deal - a solar plant in the UK in 2011, that solar plant cost about 3 million pounds per megawatt, which is pretty meaningless for anyone that doesn't talk in terms of megawatts, outside of the investment management industry, but put it in perspective that's about £10,000 to power someone's home. We're just about to close on a deal where the cost has gone down a staggering amount to about £2000 to power someone's home. That's an incredible 80% reduction in the cost of powering people's homes through renewable energy. To my mind, that's an amazing lesson to learn because you get loads of naysayers out there saying things like the rollout of heat pumps never, never worked because the cost is too high, but we've seen this trajectory that new technologies can accelerate much faster than anyone can imagine.

The second part of this big transformation is on the funding side. So from being a niche investor, renewables have gone mainstream. There's a huge wall of capital out there looking to not just invest in renewable energy assets for the attractiveness of that investment, but also because the underlying savers really want to make more of an impact where they’re saving. So we're seeing money coming in from pension funds and other savers into renewable energy assets.

So broadly speaking, we're in a good place, and frankly we need to be to roll out cheaper, renewable energy projects. I think the biggest challenge at the moment is how do we accelerate that? How do we make the rollout of this even more quick than we're doing today? And that's exactly what octopus energy is doing. We're at the forefront of using technology with our renewable energy generation assets and our customers to accelerate this transition.

Russell: Paul, that brings us nicely up to date then. So what, what does the current picture of renewables look like?

Paul: I guess just building on what Matt and Zoisa just said there, we’re seeing a real changing picture in how energy is being generated across the UK. And I think it was back in 2020 renewables outpaced fossil fuel generation for the first time in the UK, which obviously shows a direction in which we're looking to travel in terms of how we create energy and then obviously supply it onto our customer base.

Even more recently, over the weekend, you saw that up to half of the UK’s energy requirements over this period were supplied by wind, which is something that just wouldn't have been the case a few years ago. So a single real change, and I think one of the really interesting aspects of that is the change that's being demanded by customers and by people. Octopus is, you know, a very customer centric business and we're at the forefront of engaging with our customers on the supply side, but also across the business as well. And we're seeing a real demand for renewables and sort of people-led renewables.

My background is in sort of the more traditional development of renewables. I spent the early parts of my career working with communities on more traditional style wind projects up in Scotland and speaking to those communities, trying to engage them about the benefits of renewables. I think we've seen a real change over the last few years as the climate issues become more and more a sort of a focal point of people's lives - around the types of energy they want to be consuming themselves. And also we're seeing this mix from the sort of nimbyism sort of approach to renewables, particularly wind in the UK - to people actually saying, ‘look, we really see the value in them.’

And yeah, for the reasons Matt was just mentioning around the cost of generating that fuel - it's the lowest form of electricity costs at the moment. So I think we are seeing a real change as time goes on. And I think there's going to be a big mix in terms of what that generation sort of portfolio looks like. There's going to be a big influx, I think, of offshore wind, and I think particularly innovations in floating offshore wind is going to be something that's really exciting. We can harness higher wind speeds the further out we go. And I think we're also going to then see on the other side, more sort of decentralised generation. So, citing some of these projects in the communities where people are wanting to then consume that electricity and it being a sort of real people focused initiative.

Russell: Zoisa, you mentioned COP 26 earlier. One of the goals of that conference was to secure global net zero by mid-century. And just listening to what Paul was just saying there, I mean, how important is the contribution of renewables to achieving that?

Zoisa: The contribution of renewables to achieving that is vital. Because when we look at greenhouse gas emissions globally, the highest emitting sector is electricity and heating and it accounts for about 31% of all emissions. That is ahead of things like agriculture and also transport.

When we then look at the global energy mix, renewables only make up about 11%. So we have got to make huge strides to be able to get to a world that is net zero by 2050, we are seeing governments making big commitments. So for instance, the UK has said already that by 2035 it will be fossil free in its energy.

And we are also seeing that Germany, for instance, when it is looking now at using public sources of funding, will not be backing fossil fuel generators anymore. And that's from this year. So there is this tremendous opportunity for businesses like ours, that is on a mission to accelerate the use of renewable energy. The scene is set. The stage is set and we have, as Matt was describing on the one hand, all this expertise and capturing the imagination and investment appetite needed - and then as Paul is explaining, all of that expertise also, and understanding people and what they want to live with in their communities and building an abundance of these models where we can put this money into the future. So those two things together and this dire need now to move as quickly as we possibly can to a net zero world, means that we're perfectly placed to be able to deliver this mission.

Russell: Paul let's come back to you then. Can you just talk us through the whole process of how wind and solar energy is created and then how those clean electrons actually reached the customer.

Paul: Yeah, sure. And sort of caveat it slightly, I'm not a chemical engineer or a mechanical engineer, so I'll try my best. I’ll take solar to begin with - solar PV. It’s probably helpful to know what the PV stands for and it's photo-voltaic. In essence, you have sunlight that creates an electrical current through the energising of a semiconductor, which is typically Silicon in the sort of panels you might see on a household or on a business.

And when they're hit by photons from the light, that then creates an electrical current. Um, and then that currently is known as DC, which is a direct current, but unfortunately we can't use direct current in the UK. So your sort of three pin plugs and businesses and households, or run off AC, which is called alternate current. So they go through an inverter, which transfers that to alternate current, and then that can be fed into the national grid and directly into our homes and businesses, depending on where the solar is located.

And I guess with wind, it's probably slightly simpler. And if you think about wind it’s been around for many, many years. If you think back to traditional windmills, when they would use and harness the wind's power to break down corn and make flour, it’s a very similar concept but instead of making flour, we're making electricity. And the wind doesn't have to be particularly strong, it could be when it's only moving at a couple of metres a second, the wind turns the blades of the wind turbine, which turns the rotor inside the cell - the big bit at the top of the turbine and that's spins a generator and then that makes electricity. And that is then passed down to a transformer on the site of the wind farm or the wind turbine, which increases the voltage so that then can be connected into the transmission network of, of the national.

Russell: Thanks for that. Matt let's come back to some of these, these projects that octopus energy generation has invested in. Can you just talk through some of the work that you're doing and also why you think your offering to investors is different from other fund managers?

Matt: Zoisa’s touched on a little bit, but if I step back a little bit, we invest across lots of different countries, we invest across different stages of the projects being developed, from development through to construction, through to operation. We also invest in alternative technologies. Where we have done most of our investment, as Zoisa mentioned, is in onshore wind and solar, and we're a leading investor in that field, but we've also invested further afield such as in biomass and other than technology, there's a complimentary to onshore wind and solar.

These are typically these really large solar farms that you might see on the edge of the motorway. So they range in size enormously. The ones around the UK, you might've seen, are probably around the size of 20 to 30 acres, which is roughly the size of 15 football pitches, but more recently we're looking to agree terms on building a massive solar farm in Southern Spain, which will be about a thousand acres or 570 football pitches.

For perspective, it would cover most of central London, from the west end to the city. Similarly for onshore wind, we look at the larger projects. We've just got one of the larger turbines we've built, has gone up and that's in Sweden. The height from the ground to the tip is 200 metres, it’s pretty hard to grasp what that really feels like when you're standing underneath it, but it's about two Big Bens stacked on top of each other.

But equally, not all of our products are large. So we talked about bringing generation closer to the end customer, and we do have a lot of smaller solar assets that are either put on people's households or on industrial commercial buildings like warehouses. And there’s outside wind and solar in terms of other countries, so we've got a lot of large portfolio in the UK, but we've increasingly growing our international team and we add at least one new market every year. More recently we've added investments in Poland, we're about to go into Germany. I think Zoisa mentioned that we’re France, Ireland, Spain, Sweden, and Finland. We're building up a pipeline in the US and Asia as well.

I think the second part of the question is around how we're different as a team. There’s two main aspects of this, but first of all, we are a specialist investor and we've been a specialist investor in renewables since 2010. We've trained a really large team with about 85 people and we’ve got a really excellent track record. What's really interesting about that is that, you know, because we're a specialist, we don't sort of see ourselves as a pure financial investor, but most of the people we recruit are actually outside of the financial services industry. So these are people that come from energy companies, whether that's the utilities, other developers, whether those are the people who do the operations and the maintenance on the sites - people that know about the commercial challenges around negotiating and managing these solar and wind farms.

I also think that we're different in terms of where we invest. We don't just invest into operational  wind and solar, but we've got a team of people that understand how to develop these things. And this is really critical to what I touched on earlier, which is actually the real challenge is to accelerate the deployment into new assets and therefore getting in at the earliest stage is going to be critically important to that. And we have, again, specialists who have come outside of financial services that come in and really know how to develop wind and solar assets.

I guess the second part is the really exciting part around this, which is actually we as a fund management team sitting within a broader energy company and not just any old energy company, Octopus energy is at the forefront of technology and customer engagement and that's where the magic really happens. That's where we can bring to our investors completely different products. We can bring completely different engagement with the end customers and with our investors. We can use that technology within Octopus that's called Kraken to manage some of the challenges that are inherent in the mass rollout of renewable energy assets by managing the flexibility of these assets, depending on whether it's windy or sunny.

So that's where it's really exciting. I don't think we've even scratched the surface on using that technology within the business. So that's where we're going to bring something completely unique to our investor base.

Russell: In terms of the topic of investment, as you're saying, how do you balance that conundrum of what the investors want with what the customer wants?

I get asked this question quite a lot because on the face of it, our end customers, they want cheaper, greener electricity with excellent customer service, which is exactly what they're getting from Octopus energy and our investors in the projects, they want to get the best price for electricity, and how do we reconcile the two?

But actually I think I don't see this as a problem at all. I see this as a massive opportunity and it's as I sort of touched on it, it's one of the most exciting things about being a fund management business within a wide energy company. If I go back to what I said earlier, renewables are the cheapest way to generate electricity. The only reason we have this energy crisis at the moment is because we're still using too much gas in the energy system. So in a massively oversimplified way, if we can roll out more renewable energy projects, we will have cheaper electrons to our end customers.

And that's what's really exciting about Octopus Energy. We've got Kraken, that technology I touched on, to manage the issues that many of the naysayers talk about with renewable energy projects. So, you know, what, if it's not windy or whatever, it's not sunny, you've got this technology. That's going to help balance this all out within the same business.

And combining that technology with a mass roll-out of renewable energy generation and an increasingly fast growing and engaged customer based on the retail side, I think we can deliver this triple win - so we can deliver cheaper greener electrons to our end customers, better returns for our investors, and clearly we can start removing any fossil fuels from the system, which is necessary to help the planet.

Zoisa: Can I just come in on the back of this one, I think specifically on your question around reconciling what investors want with what customers need. And certainly from what Matt is talking about, I think fundamentally those two things in the future will be exactly the same - because one of the biggest limiting factors to actually developing renewables, is whether customers want them. The speed that we now need to move at and the volume of projects that we need to deploy to bring ourselves up from that kind of 12% of renewables that I was talking about earlier - it depends on if people want them. So, it's going to be about getting more people on board, working more closely with communities, getting these projects - not these enormous industrial scale things that we used to have decades and decades ago that sat on the top of grid networks up in Scotland and electrons were travelling down for one end of the country to the other - it's going to be about making them smaller, bringing them closer to people's homes, making them more secure, giving people the opportunity to use them when there is an abundance of wind on the grid, because the wind is blowing and sending them these directions and signals to be able to do that. And then being able to kind of store those in their own homes or businesses, and then use them at times when there isn't an abundance of wind or solar.

I think that traditional view of the two things being entirely separate. If we are going to get to the place that we need to get to, we need to kind of erase that because we have to have the worlds of investments, and what customers are using and needing, colliding. And these two things have to come together. If we are truly going to become a net-zero world by 2050.

Matt: And that's exactly where the real interest is here. You asked ‘what’s different about Octopus Energy Generation’: there's no other investor out there that can combine the two, they just don't have the capabilities and indeed they don’t have the thinking around this, which makes it a super exciting place to be.

Russell: Well, actually that leads nicely onto the next question, which I wanted to bring Ashleigh in on, who's been sitting there very patiently for over 20 minutes. So let's bring you into the conversation actually. Well, what I wanted to ask you about is something that we've touched on in Inside Octopus quite a bit is the culture of the organisation, and I was just wondering as chief of staff, how important is the culture of what you guys are doing - your team and Matt's also mentioned new people coming in into the team as well - how important is that in achieving the aims that you've set yourself in terms of, you know, disrupting this whole.

Ashleigh: I mean, it's so important. I think to disrupt any space, it's key to think completely differently about challenges and move quickly to test potential solutions. And for that, you need a culture of empowerment and one that values independence and initiative, and that approach is so ingrained in the Octopus Energy DNA.

Everyone here at Octopus is encouraged to come up with new ideas, to question established wisdom and consider how things can be improved because things can always be improved. And then when you have an idea, you're given the freedom to pursue that. So small teams who are excited about the projects actually work together to test solutions, with each of them operating as a sort of startup within a startup. And obviously if they fail. That's fine because what's important is to fail fast and then be open with the rest of the team as to why that happens so that we can also learn from that and hopefully apply it in future efforts. I'd also think if you're not, if you're not failing every so often, you're probably not trying hard enough.

But when it comes to our specific team, though, I'd say it's really interesting because to reach the scale that Zoisa and Matt have been speaking about, you have to bring an innovative mindset to a very traditional industry. And one of the things I love most about our team is that we combine people with years of experience in energy investments and fund management with people who come from altogether different backgrounds, but with skills that translate well into that space. I for one was a corporate lawyer, so completely different to what I do now. So each person and the team brings that completely different perspective and that creates a very dynamic environment and a certain magic when it comes to coming up with new ideas that maybe the established players in the market haven't ever thought about.

Russell: So just listening to what you're saying there, did the culture change in any way after the team became part of the wider octopus energy group?

Ashleigh: Well, I mean, I think you'd be speaking there about it in terms of our fund management team, joining us on the octopus energy side. I'll let Matt probably answer that as the person who's experienced it most directly, my guess would be that the self-serve environment has meant that they've been empowered to, for example, solve their own tech issues and think altogether differently about what they can do themselves and where they need support across the team. But I imagine it's perfectly obvious the internal slides at least have more gifs on them, but Matt, but I'll let you talk about that.

Matt: Yeah. I agree. Actually received lots of compliments on my use of gifs these days, too, which is a step change from the old business. I was incredibly lucky because as a renewables fund management team, we've got an amazing team - not only incredibly motivated but, you know, unsurprisingly, much smarter than me, and also like the nicest bunch of people you could work with. And that's because where we came from, the sort of the culture of the team was already sort of really central to what doing business is all about.

But the shift to OE is really that track change in ambition and motivation. So there's two parts to it. You know, we're trying to build this global energy business and generation is going to be a key part of that, and that's changing people's mindset. And the entrepreneurial nature within Octopus energy - it just takes it as a step up. Then all the stuff that actually talked about how the sort of the operational model within Octopus energy is different to where we've come from and probably different to all other fund managers, there's this empowerment that is really liberating actually for the team.

And I know they've really settled into this and they can see opportunities and take them on board and to use Ashleigh's point - fail fast if needed. But we're just seeing this sort of compounding, day in, day out.

Russell: Anything else then that you could add that would sum up why your team is different that's going to enable you to achieve those goals that you've set.

Ashleigh: I think we've covered a lot of it, but the one thing that I think sort of hasn't been mentioned yet, maybe because it's so obvious to all of us, but less so for people who are listening is that no matter what function you're looking at or what background you're recruiting from, absolutely nobody is here by accident. Everybody is so uniformly motivated by the mission and by accelerating the transition to a net zero world. So one of the things I find quite remarkable is you never get that sense that someone might respond ‘oh that's not my job’ when you're asking for help. There is absolutely no culture of, ‘that's not my job.’

People are excited to get involved in any number of different projects and even if it's not something they've ever done before, because if they've never done it before then so much the better - it means they'll learn something altogether new.

And so that is such an inspiring environment to work in. And I think that also is clear when we speak to our customers and when we speak to investors - that people are here for all, for the right reasons, which makes a huge difference.

Russell: Zoisa let's come back to you then to finish off, we're recording this episode at the end of January, 2022. So what's the plan for the rest of the year, but also what can our customers do to help support the creation of more renewable energy?

I would say front and centre of what we will be doing this year is actually helping our customers understand what part they can play in this. It is absolutely essential for all the reasons that I was mentioning earlier around the way that the world will now work, which is we will be building these projects around people because we’re building them for people.

It isn't about bringing in investors to make certain returns any longer. We're actually building projects because the output is essential for the world that we need to become in the future, which is something that is net zero in its energy use. So we'll be doing many, many more things like a Fan Club model which we mentioned earlier in the podcast - to the point where at the moment we have two projects where we can offer this discounted electricity when the wind is blowing and we can text price signals to our customers and they can receive as much as 50% off their bill. We have two, at the moment, we'll be building at least five immediately. There will be at least 30 more in the next couple of years, with up to 2000 of them actually by the end of the decade. So we will be doing many, many more things to help customers really appreciate the part that they can play in this energy transition.

In terms of where we really see customers playing a part - and we've been blown away just from our test examples with our two turbines - is that customers not only sign up to use the energy, but they're also telling us where they want us to come and build these. So on the back of the sellout of these two tariffs that come from Fan Club, we now have something like a thousand communities that have come to us and have said, ‘can you build a project like this near us?’ So it will be working more with these types of people and these types of communities. We also have businesses there as well, and we'll be marrying up investments with pipelines like that.

Russell: Just that topic of fan clubs - we'd love to get you guys back onto the podcast in a short while to talk a little bit more about that, if that's okay. Because that sounds like it's going to make a great discussion. But listen, for now. Zoisa North-Bond, Ashleigh Gray, Matt Setchell - thank you all so much for joining us and talking to Inside octopus. That is actually it for this episode. As always. If you've got any comments on anything we've discussed today, please do get in touch via the website at octopus energy or via the usual social channels.

But for now from me, Russell. Thanks for listening and goodbye.