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Carbon Frontiers 2024 | Episode 2
Charlie Pool, Head of Carbon Insurance, Howden Group Holdings

We continue Carbon Frontiers 2024 this week with Charlie Pool, Head of Carbon Insurance at Howden. SmarterMarkets™ host David Greely sits down with Charlie to discuss insurance and risk management at the intersection of finance, carbon, and technology.

Charlie Pool (00s):
One of the exciting things about the energy transition, we're in this moment where everybody is aware that it's gonna take trillions of dollars of investments over the next few decades. And within that, there's gonna be an investment in new technology and anything new is inherently risky in the eyes of investors. And if we can use insurance as a financial instrument that can enable that investment to happen, then that's only a good thing. It's gonna be an enormously powerful toolkit in the investor handbook.

Announcer (37s):
Welcome to SmarterMarkets, a weekly podcast featuring the icons and entrepreneurs of technology, commodities, and finance ranting on the inadequacies of our systems and riffing on ideas for how to solve them. Together we examine the questions: are we facing a crisis of information or a crisis of trust, and will building Smarter Markets be the antidote?
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David Greely (01m 17s):
Welcome back to Carbon Frontiers, 2024 on SmarterMarkets. I'm Dave Greely, Chief Economist at Abaxx Technologies. Our guest today is Charlie Pool, Head of Carbon Insurance at Howden. We'll be discussing insurance and risk management at the intersection of finance, carbon, and technology. Hello Charlie. Welcome to SmarterMarkets.

Charlie Pool (01m 39s):
Hi there. Thank you for having me.

David Greely (01m 41s):
Yeah, well very glad to have you here today. I think we share a similar passion working at the intersection of finance, carbon and technology, and a similar conviction that getting that intersection right is essential to making carbon markets successful. I know you currently work as the head of carbon insurance at Howden, an area that I think, you know, insurance has a, a role in the carbon markets that many people don't think enough about and I was hoping you could start us off today by telling us first what is carbon insurance and how does it work?

Charlie Pool (02m 15s):
Yeah, sure. Well, I came at this having worked before in project finance and my background there taught me a lot about all the different types of risks that are faced by investors in the carbon markets. And one of the things that I noticed, and I think lots of people in the carbon markets also notice is that it's very hard. It's very complex. There's lots of different types of risks and there's lots of not only opportunities for investments to go wrong, but also deals to go wrong. If you are gonna be presenting an investment opportunity to an investment committee, it's likely that they're gonna be overwhelmed by the sheer variety of different types of risks in, in this space. And as many of your listeners will well know, it's very easy for an investment committee to say no to something. So if there is a way of identifying risks, but also transferring those risks, which is exactly what insurance does, then we can open up the investment opportunity to a much wider universe of investors and also help accelerate the way that deals can be done.

Charlie Pool (03m 38s):
Because if there's a checklist that need to be gone through and you are presenting to the investment committee, you'll have a bunch of risks which you can say, yes, I'm okay with, yes, I'm okay with no, that doesn't work for me. And that could be the deal breaker, but if you can transfer that away, you can just move on. And so the way that we think about it at Howden is that insurance is, is kind of a force

for good. It's an enabler. It allows you to open up investment opportunities to a wider audience and also allows them to do deals faster and the combination of those two things can only increase the size of the carbon market.

David Greely (04m 23s):
And I think a lot of people don't pay enough attention to the fact that how much you need to de-risk a project before a committee or an investor will get comfortable with it. And I'm curious, are there certain types of risk that are kind of high on the list for investment committees high on the list of risks they're not comfortable with? What are the ones that tend to disrupt the deals?

Charlie Pool (04m 48s):
Well, first of all, every investor's gonna have a different risk appetite and some things will suit some investors more than others. And it'll be a, a mix for everyone. But what the way we looked at this at, at Howden was we looked across the entire project lifecycle and identified the risks and they change over time. So in the early stage, you have the sort of methodology or technology risks associated with the design stage. And then once it's built, there's the construction risk and then it's up and running and it could be damaged, there could be problems with the monitoring, the reporting, the verification. Then you get in towards the later stage, you're into issuance and there's trading risks and counterparty type risks. And when we look at all of those things, there's a whole range of different things. And what we find is they kind of get lumped into the project financing type risks and then the sort of carbon specific type risks, particularly when it comes to getting through the process to issuance.

Charlie Pool (05m 58s):
And then also environmental, social, political type risks of which particularly with the latter there's many because they tend to be, by the, I mean the carbon projects, they tend to be in emerging markets, they're very long term and so political risk is very much a thing there and then towards the end we get into the more trading type risks around market counterparty fraud and negligence reputational. So there's these big different distinct areas. But I've, if I was gonna pick the areas where we get the most phone calls from, it would be around technology performance guarantees, particularly around high end engineered type carbon removal credits, and then natural catastrophe things that affect nature-based projects, things like drought, flooding, wildfire, this sort of thing. And then this sort of broader negligence invalidation type risk when you've bought some credits. And it turns out that there's some negative media that reduces the value of those credits, shall we say, and those insurance policies to protect against that.

David Greely (07m 15s):
The last one sounds very interesting, but first I want to come back to, you know, I think a lot of us, we hear a lot of stories on the nature based side of, well, if you're planting a forest or preserving a forest, what if it burns down? 'cause We hear more and more about wildfires. How do you structure an insurance product for that? And I'm curious, like, is the payoff in cash or kind of in kind, do you get credits from somewhere else that you can use to fulfill any off take agreements you have?

Charlie Pool (07m 42s):
Okay, great question. So with nature-based projects, what we tend to use is a type of insurance called parametric insurance. This is unlike a traditional insurance, like an indemnity type insurance where traditionally an event occurs, damage is reported, then a loss adjuster comes and assesses the damage. Probably gonna have a bit of an argument about what actually got damaged. This could go back and forth and it could be months before the payout's actually sent to the insured. With parametric, the payout is linked to an event, and the word parametric comes from the word parameters. So you set the parameters and link the payout to an index. The index can be a natural catastrophe event with say a wildfire or lack of rainfall or too much rainfall or too much wind. All of those are events that can be verified using some third party source, typically satellite data. In the case of wildfires, the way that you would do that is by having a satellite monitor an area and it can go down to extraordinary minute detail in terms of the geographical space that's covered and you would have a payment based on the amount of area of land that got burnt down and that payment would be triggered automatically. It's verified by the satellite and the payouts can be received by the insured within 24 hours. It's very, very different from a traditional indemnity policy.

David Greely (09m 30s):
It's interesting, and often when I think about insurance policies, I think of like the insurance pool, like the idea that in the case of a, a wildfire, you know, you have a rough sense of how many acres could be lost to wildfire in a year. You don't know who's gonna be affected. So people can pool their risk together, but some of these others sounds like there's a big aggregate risk, which brings into the question like, who's taking the other side of this risk transfer. Is it a pooling of risk amongst participants or are there, are there other ways to off lay that risk on other investors, other sectors?

Charlie Pool (10m 06s):
So there'll be a lead underwriter who will price the risk and they will carry that risk, but will likely reinsure themselves. So it then becomes pooled and I realized saying that, that I didn't fully answer your previous question because you asked about the payments in cash or payments in kind, then depending on who the underwriter is, depends on whether you would get paid out in cash or paid out in carbon credits. There are a couple of underwriters now who are paying out in carbon credits. Cash is probably a little bit simpler to get your head around except for the only thing to note that with the insurance market is that insurers don't take market risk. And so the amount or the price paid for those carbon credits, the price that's gonna be paid out is set at the beginning of the policy and the market might have moved in that time, but if you want to be paid in credits, that is becoming possible. There is a company called Keita who has just launched that and there is a company in Switzerland called Carbon Pool who are launching next year who are also gonna be doing that. These are both underwriters who we work with, but the, the big issue there is fungibility getting paid out in the type of credits that you are satisfied meets the same sort of criteria, whether they're quality criteria or other is the big question that they need to answer.

David Greely (11m 42s):
And I want to go back to the third type of insurance you were talking about, which sounded a little bit like a methodology insurance, like if you are getting credits under a certain methodology, and somehow that falls into disrepute. Correct me if I, if I heard you wrong, but given, you know, what's happened in the carbon markets in 2023, I'm curious about how are you being approached to offer that sort of product and what sort of product can you offer?

Charlie Pool (12m 09s):
Yeah, now we can get a little bit more nuanced about this because there is both a methodology product, which is the change in a methodology which would lead to previous vintages losing value because maybe the technology has moved on, which would make those credits that were issued at some point in the past, not as strong or deemed as high quality as the ones produced today under the new methodology. So you can ensure against that. But the product that I think you were referring to is our invalidation insurance. And so what this means is really around a fraudulent or negligent event occurred by, typically by the, the project developer. So this is a type of insurance taken up by the buyer against the seller. But if it turns out that the, the seller, as I said, typically a project developer had done something incorrect, and how that's defined is getting even more nuanced. But it basically means that they hadn't followed the PDD as stipulated if it was found out that they'd, I don't know, overstated the number of credits or hadn't followed a particular process the correct way, and that resulted in more credits being issued, then perhaps should have been done. There was a policy that can kick in and protect the buyer from the loss of value of those credits that have been invalidated and, and could potentially be worthless now that this event has been brought to light.

David Greely (13m 59s):
Yeah, it's pretty fascinating. I wanted to ask you often when thinking about different instruments, insurance, financial products that transfer risk from one party to another, there's one that transferring risk helps people slip better at night. So that has a good of on its own, but in terms of really, you know, moving the needle, it's about one you're insured, once you have laid off some of the risk, you change the way you run your business, you change your behavior. You brought up one example of that, you know, if the project's de-risked, the investment committee may vote for it to go forward and then these projects happen, you're unlocking capital, you're unlocking investment. I'm curious, do you see these insurance products changing how people manage risk in the carbon markets and how they choose whether or not to invest?

Charlie Pool (14m 48s):
Yeah, absolutely. I think this is the real power of insurance. Something I didn't really appreciate until I joined this world and I only joined six months ago and having never worked in insurance before, never thought I'd work in insurance to be honest about it. But what I've quickly learned is that the power of insurance is that it enables other things to happen. It allows, as I said, you know, in that case about bringing in more investors or widening the universe, it attracts capital and by de-risking or enabling people to transfer some of those risks it allows things to happen that wouldn't have happened otherwise and I think this is one of the, the exciting things about the energy transition. We're in this moment where everybody is aware that it's gonna take trillions of dollars of investments over the next few decades to move towards net zero or decarbonize or whatever it is that term that we're, we're using to, to get to this future state that we need to go towards, it's gonna require the mobilization of enormous amounts of capital. And within that there's gonna be an investment in new technology and anything new is inherently risky in the eyes of investors. And if we can use insurance as a

financial instrument that can enable that investment to happen, then that's only a good thing. It's gonna be an enormously powerful toolkit in the investor handbook.

David Greely (16m 29s):
And, and you've talked about many of the different types of insurance products that you're developing in the carbon markets, and I was curious, a lot of them sound very innovative. How many of them do you see as kind of taking insurance products that were developed in other markets and other use cases and bringing them into the carbon markets and are there ones that you see as unique and needing to be developed kind of from Greenfield for carbon?

Charlie Pool (16m 56s):
Yeah, so day one joining at Howden, my first thing to do was to map out all the different types of risks associated with the carbon project, all those things we just talked about earlier and then meeting with other heads of departments like people from the head of m and a from head of real estate and saying, look these are the sort of risks that are associated with carbon. I'm here now setting up this new carbon related business, but I'm new to insurance. Can you tell me if there's anything here that looks familiar to you and guess what pretty much every one of those risks already comparables out there. So all we were doing is really taking existing insurance products and tweaking them slightly for the carbon market. Real estate being a classic one. There's plenty of knowledge and expertise there around construction risks and property damage.

Charlie Pool (17m 51s):
And the natural catastrophe team were the ones who sort of pioneered this parametric product I was talking about for the drought and flooding, wildfires storm damage, the m and a team with the warranties and, and indemnities the fraud and negligence product that I mentioned for invalidation insurance that also came out from the m and a team and so really what we were able to do from the moment I joined just six months ago to now was not reinvent the wheel. We already had these products, we just had to tweak them and we already had the underwriters. So we have now got about 12 different products, insurance products for the carbon market, which is kind of incredible really because we're getting to that stage in a very short period of time where we can get to the, the vision of having that, that shopping list, the baskets of options available for investors to be able to, to tick off all those risks.

Charlie Pool (18m 52s):
And I think the fact that there are so many different markets out there, the underwriters who are willing and enthusiastic about getting into this market is really, really positive. Where it can be slightly different a great example is in political risk. So we had conversations with clients through the summer who said that they were a little bit worried about countries or governments intervening and doing something like Zimbabwe did at one end of the spectrum where they effectively are putting or said they will put a tax on revenues generated far from carbon credits and then at the other end you've got countries like Indonesia that paused the sale of carbon credits for a period of time. Clients were worried about what type of political risk they could be covering and we have a whole political risk team of 50 odd people around the world at Howden.

Charlie Pool (19m 54s):
And I spoke to them and they said, well, in the first instance, they didn't really need to worry about the carbon aspect of it, which kind of blew my mind. They said, well, you tell us that Zimbabwe has interfered, we can tell you there's, there's a track record there. It's almost predictable but then as we started to go deeper into that, we looked at all the different government interventions and we spoke to lots of clients and this is kind of the way that you build a new insurance product. You speak to the clients on one side and you speak to the underwriters on the other and you've kind of got to meet somewhere in the middle. It turned out that actually the, the, the risk that we kept on hearing over and over again was around the revocation of letters of approval and the corresponding adjustments that those LOAs might lead to.

Charlie Pool (20m 51s):
And that's very much a carbon thing that's quite different and so we had to go to the political risk team and explain exactly what a corresponding adjustment is, what a letter of approval is, how a host country goes through the process of writing a letter of approval and the infrastructure behind that, the government infrastructure, the legislation, call it Article 6 preparedness if you will, that sort of level of understanding is something that's completely new to the political risk markets but in many ways we're getting there much quicker than I ever imagined we would because this again, isn't that unique. Okay, sure the carbon angle is fairly unique, but the angle of setting up the apparatus of government and legislation and all those sorts of things and assessing whether a piece of paper is worth the ink on it these are sort of things that the political risk team does day in day out.

David Greely (21m 58s):
And I imagine in the past they've looked at the nationalization of resources that happen sometimes in oil or mining and maybe there's some precedence there that can help them calibrate their approach.

Charlie Pool (22m 10s):
That's exactly right and there's a whole legal framework of language behind that.

David Greely (22m 14s):
Yeah and I wanted to come back to this idea. You, you had brought up that there's a lot of enthusiasm, I believe you said, amongst underwriters and of course that's so important because you have to get the balance between the demand from the clients and, and the supply in a sense from the underwriters and if there's not enough underwriters who want to participate I assume that means you can end up with very expensive insurance products. So I wanted to ask you, where do you see the, the enthusiasm among the underwriters coming from what's driving it?

Charlie Pool (22m 44s):
There's several parts to that. I think there's the market opportunity, we can't deny that. There's obviously if you believe in climate change, which most people do nowadays, then you are gonna believe that this is possibly one of the biggest events that is gonna happen to all mankind over the course of your lifetime and what industry is better positioned to play a role in that transition than insurance, which is in the business of risk management and I think most underwriters accept that because the industry is in the business of risk management there is definitely a business opportunity there. What that opportunity looks like is yet to be become clear, is yet to be defined. But I think there's definitely the sense that there's a business opportunity there. The second bit is that it's becoming more and more of a requirement from like an ESG perspective.

Charlie Pool (23m 59s):
There is much more enthusiasm from management level from top down for looking at things from an ESG lens and potentially they may take more risk for less reward at this stage just to understand exactly where they, how the market's gonna play out, but also because it's part of deception is doing good and I think the third bit is more on a personal note, I think everybody wants to know how can they do their part and I think, you know, I definitely believe this when I've got three young children when they ask me about climate change, I know that one day there could be like a conversation, a bit like how we had with our grandparents when they were in the war and what did they do, our children and grandchildren and are gonna ask like, what did we do in the fight against climate change and I think the enthusiasm from people I speak to just generally, not just not just within insurance, but you know, my network is fairly biased towards anything to do with climate. Everybody is, is wanting to help to do one's best is motivated and I think you know, that that part of it's very exciting.

David Greely (25m 21s):
Absolutely. So you have the enthusiasm. I just wanted to ask you a quick question on the challenges. I imagine where, as you've said, a lot of these products have existed in other forms and other places. So like there are approaches that can be transferable into carbon. I imagine the assessing the probabilities the distribution of loss that underwriters would have to think about in terms of these products that would seem like that could be a challenge. Is that one of the bigger challenges underwriters face or where do you see the challenges facing underwriters?

Charlie Pool (25m 53s):
I think for sure that's gonna be a big, big challenge for them. That's not so much the part that we as brokers get involved with, so I'm not sure I would really want to comment on exactly what's, how they feel about that. But you know, that's clearly the business model and so that, that's gonna be a big piece of the puzzle. I think from our side it's really around structuring the right policy for the, for the clients and I think the challenge over the next year or two as we build out this, this nascent market is to really understand the client's needs to listen to them, work out where they perceive the risks, work with them to make sure that those really are the right risks to be concerned about, and then work with them and the underwriters to create the best type of product to cover those risks and what best means is slightly subjective, but it's gonna be a combination of the right level of protection for the right price and I think if we can do that and find the right protection at the right price, we will achieve our goal of de-risking things for the investors and widening the market and opening it up for everyone.

David Greely (27m 16s):
And as you said you're building out this nascent business in carbon insurance, you know, you're drawing on your experience and your, your network in climate and in carbon and I know before Howden you were at Tucan and I was curious, you know, what do you see as the role of technology in the carbon markets and is there something you learned at Tuan that you believe is important to the work that you're doing now?

Charlie Pool (27m 40s):
I mean, I am a Web3 maximalist in a sense that I still believe although it got off to a fairly far east start with Toucan and Klima do and the whole sort of explosion onto the scene a couple of years ago, this time two years ago, we were really sort of in the thick of it. I maybe jumped the gun a little bit, but I do 100% believe that eventually technology will play a huge, huge role in anything to do with the carbon markets. I think the underlying premise and the vision of 2 CAM Protocol was just absolutely mind blowing. The idea of digitizing a carbon credits, putting it on a Blockchain and having all the data associated with an underlying project, all the monitoring, reporting, verification information, all the geospatial data, all those sort of things is one part of it.

Charlie Pool (28m 42s):
But then the idea of it being programmable is, is the bit that I found mind blowing. The fact that now if you want to by carbon credits, it's not an easy thing to do for an average person unless you want to get ripped off and buy them through, like just buy a couple of tons to offset your Christmas or something through a retail broker. That's kind of different but if you want to directly invest in an underlying project, and I specifically from one project, that is not a particularly easy thing to do. Setting up different accounts, particularly the registry accounts and usually involves a great amount of time and a great amount of money and multiple different third parties and intermediaries but with the digitization and the programmability, you can literally write an if this then that type statement that if I switch my lights off, buy a carbon credit and link an event in code to the purchase of a carbon credit.

Charlie Pool (29m 46s):
Now that might sound a little bit out there, but we had a trucking company that was fitting this like device at the, on the exhaust pipes to their trucks that was monitoring the carbon emissions in real time from their fleet, sending that data back to its HQ at the factory and purchasing carbon credits at the same time. So there was a stream of data going one way and a stream of payments going the other and I think taking out any human interaction like that is just like an incredible use of the technology and I think this is where it links into where we are at Howden. I was amazed on my first day there to overhear someone on the desk behind me talking to a company called Decimate, which I knew from Tuan and I just assumed was just a, a Web3, a company just operating in the Web3 space.

Charlie Pool (30m 38s):
So only serving other Web3 companies. I didn't realize they'd be talking to a company like Howden, but actually this company, DCL was providing the data for underwriters as its climate data for underwriters to link policies to. And all this data is kept on a Blockchain and that which when I think about it is actually, you know, that's an obvious home for that sort of data and so maybe it's not that surprising that how to would be using that data, but I think the ability for self-executing smart contracts, which is really what is so phenomenal around Web3, I see that playing a big role in insurance and we, we are speaking to a lot of the same companies that I spoke to at two can and you know, when I mentioned earlier the parametric insurance, we have an example of a mangrove project in India where the payouts linked to the severity of a storm. That storm is verified by satellite data coming from NASA and east of the European Space Agency and if the winds reach a certain speed, it hits a certain categorization of storm and triggers a certain type of payment and I think the ability to have to write these contracts in code so that there, there are no human interactions and the payments just occur, I think that's the future. I can see that happening in the not too distant future.

David Greely (32m 16s):
And thinking about the future, you know, I think it's worth our audience knowing that you've been deeply involved in carbon in the past, even before two can, you're one of the veterans from carbon markets 1.0 in the two thousands when you helped found the carbon desk at JP Morgan and I'm curious, clearly there are more tools that are available now than were available then and more tools being developed, the Web3 tools in particular that you discussed. I'm curious though, like are there lessons that you learned then that you think are important now, or is it that we have technology that wasn't available then. What are you carrying forward from that period in your career to try to make carbon markets work better this time?

Charlie Pool (32m 58s):
Yeah, I think in many ways things were a lot simpler than we were operating in the compliance markets. The beauty of the CDM for all its flaws was that carbon was commoditized and so a carbon credit was a carbon credit, which made things a lot easier. You could have a whole derivatives market based on that the fungibility allowed a futures market and things were just easier to do and you didn't have these problems around the quality of a type of carbon credit and I, of course there was different varying degrees of quality underlying it, but that wasn't at the credit level but you didn't have these issues around integrity and quality that you have today in the voluntary carbon markets and I think the one thing that surprised me that the carbon markets almost went on pause from for a decade, from 2010 to 20 and sort of suddenly reappeared and, and blown up in no part by 2 CAM my old company.

Charlie Pool (34m 03s):
But what I was surprised to see is that we're having a lot of the same conversations over and over again and these conversations have dragged on for years decades now and we're running out of time and I am a massive believer in the power of market-based mechanisms. I mean, carbon trading is a market-based mechanism in its sense, but in its own right as opposed to say a carbon tax. But it's because we're running out of time the impetus is now on the markets to try and drive change quicker and I think this is also why I am I jumped the ship across to the world of insurance is because I see how insurance could play a role of raising the bar and increasing quality if you make it a market-based mechanism that by putting the impetus on investors to demand certain criteria out of project developers and have those criteria stipulated in actual legal contracts, then you can raise the bar on quality in a market driven way rather than just asking people to adhere to principles.

Charlie Pool (35m 23s):
And I think that that change is coming and I think the, the market is, it's really reached a tough point. You know, it's not been a good time in carbon. The last 18 months or so have been very tough. The market has had some, well, plenty of negative media, but it's, you think it can't get any worse and then it does, it's got to this stage now where we need to really up our game a bit. I'm really bullish about this year. I think this is exactly the same sort of sense we had in 2009 after the financial crisis and that was by far the best year of my career. I mean, I was lucky then I was at JP Morgan probably the best place I could possibly be at the best bank. We were at the, we were kind of famously the only bank at the time who'd remained profitable through the downturn.

Charlie Pool (36m 21s):
And 2009, everybody was panicking and we went shopping and it was phenomenal. And I think we'll probably see that now if the big banks haven't really played much of a role in this latest wave of carbon markets. But they all know that this climate change thing is a thing and carbon is a thing. Carbon markets are our way, like best way really at decarbonizing. And so the banks are gonna play some role. The other sort of major players will be gearing up as well to go shopping. I think that, you know, things will be cheap right now. There'll be a period of consolidation everybody must be gearing up to, to go through some sort of m and a frenzy. Well, I'm hoping they will, you know, that could kickstart the market again and get things moving along and I, you know, I have a lot of these conversations every day we speak to, you know, serious people at serious institutions, got a network going back almost 20 years now in carbon. There's a lot of very interesting people having very interesting conversations about getting things moving. So I think I'm very bullish for 2024.

David Greely (37m 34s):
I like your optimism and I like even more that it's from experience and from a lot of conversations with people who are moving things forward. I really appreciate this conversation with you. You know, as we wrap up, I just wanted to ask you, you know, one more question because you've spent so much time at that intersection of technology financing carbon and I think like us and our audience, you're very interested in figuring out ways to make these markets work. That market solutions are gonna be among the solutions we need if we're gonna deal with climate change effectively and so I'm curious, obviously you voted with your feet and your career by working in insurance at Howden, but when you kind of look at this intersection of technology, finance, carbon in addition to insurance, are there other things that excite you about what we'll be able to do next and hopefully help that push that you see coming in 2024?

Charlie Pool (38m 28s):
Yeah, I think the exciting thing about the technology is the, just the pace of change and how things are coming in so quickly. I mentioned already around MRV with the monitoring reporting verification, using different data sources like satellites IOT sensors on the ground. The way that that's being used is incredibly important because it's raising the bar on integrity of the carbon credits because it's been proven to be used by the technology. It's, you can see and use data to know that an event occurred and that links into another really exciting aspect of it, which is the, the digitization of the methodologies themselves. I think it's very cool what some

companies are doing so that if an event occurs it can move the process along the methodology towards issuance. So you no longer has to rely on so many human interactions at the standards, which are quite frankly becoming bottlenecks, not through any fault of their own, just that they can't simply scale quickly enough.

Charlie Pool (39m 41s):
So if you can take a load of work away from the standard and give it to a technology that, or a process that's been digitized, I think that aspect of it will be really, really exciting. I think the final part of that is, again, I'm gonna link this to, to insurance is that who knows what other products could be spun out of that based on new technology in the insurance world. We look to different data sources to create indexes or to have better insights to create pricing models, these sort of things. We just don't know what's coming up next, but we know from history that every time there's more information available to people, innovation can occur and new products will be built and be launched. Some might work, some might not, but that's how we move forward. And I think the u ubiquity of technology and the way it interweaves with the carbon market will be something to really watch in the future.

David Greely (40m 54s):
Thanks again to Charlie Pool, Head of Carbon Insurance at Howden. We hope you enjoyed the episode. Join us next week as we continue our series, Carbon Frontiers 2024. We hope you'll join us.

Announcer (41m 07s):
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Announcer (41m 41s):
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