SM241 | 7.26.2025
Summer Playlist 2025 | Episode 5

Theresa Kammel (Originator) & Pierre Buisson (Senior Structurer), Weather & Agro Zurich, Munich Re

Our *Summer Playlist* rolls on this week with Theresa Kammel and Pierre Buisson, Originator and Senior Structurer of Weather & Agro Zurich at Munich Re. David Greely sits down with them to discuss the role of weather derivatives in managing weather-related risks — and how the market for these derivatives is growing and becoming more sophisticated with the energy transition to renewables like wind and solar.

Pierre Buisson (00s):
We are trying to stay ahead in terms of innovations in the weather and derivative business and there are many things that can be done and what I love with the business is that it's really a sandbox. We can work with different industries, we can work with different types of needs. One day we work on temperature, then wind, then solar, then precipitation, so we can really customize the things, different granularities, et cetera.

Announcer (22s):
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 11s):
Welcome back to Summer Playlist 2025 on SmarterMarkets. I am Dave Greely, Chief Economist at Abaxx Technologies. Our guests today are Theresa Kammel and Pierre Buisson, Originator and Senior Structurer, Weather & Commodities at Munich Re. We will be discussing the role of weather derivatives and managing weather related risks as climate change and the energy transition to renewables like wind and solar are increasing the level of weather related risks and the nature of the risks to be managed. Hello Theresa and Pierre, welcome to SmarterMarkets.

Theresa Kammel (01m 47s):
Hi David, thanks so much for having us. Very excited to be here today.

Pierre Buisson (01m 51s):
Hi Dave, very happy to be here and thanks all for the invitation.

David Greely (01m 55s):
Yeah, very happy to have you both here with us today and I am glad you are able to both join us because you both work closely together at Munich Re, which of course is the well-known German insurance company and the leading global reinsurer and you work together to help clients manage their weather related risks and of course with climate change there is a lot more weather related risks than there used to be and I thought we could start off, Theresa, maybe you can just help us for those who aren't familiar, what are the weather related risks that clients come to you to help manage and how if at all, has the nature of those risks been changing?

Theresa Kammel (02m 37s):
Well the weather related risks that our clients are concerned with are the ones that you and I probably are also worried about. Sometimes that can be deviations in temperature, whether it's raining or not raining when you want it and if the wind is blowing and not blowing. So what are clients more specifically? So the range of the client base can be very broad. Very broad. We have clients from the energy sector, the agricultural sector, mining, retail, construction, logistics because in the end everybody is impacted by weather. If we take energy, that's where both Pierre and I are serving our clients with. I think the main three perils are temperature risk,

precipitation risk and wind risk. Let's get a little bit more specific on these. When I speak of temperature risk, a typical counterparty would be like a energy utility that have a client base like individuals that heat their homes and their biggest worry is when they sell gas or power to these clients, what happens if the winter is colder or warmer than anticipated and the amounts of power that they have pre-purchased is not matching of what the actual demand from the end client is.

Theresa Kammel (03m 53s):
So the weather there creates volume risk and similarly the same can happen on the precip side. If you think of a big asset owner that owns the hydro dam, if there is a lot of water and snowfall in the months before, then they can generate a lot of power on the other side. If there is a lack of precip they have, they struggle to generate the power that they maybe even have free oil in the market. And to come to the third example on the wind side, wind can actually vary a lot year over year and somebody who owns a wind farm has to manage these missing volumes if the wind is not blowing. So these are broadly the three buckets of like perils that our clients are concerned with and that would approach us to help them with.

David Greely (04m 44s):
And I think this is something that many people who aren't as involved as you are would find unexpected, right? I think a lot of people are accustomed to thinking of weather related risks in terms of property damage, property damage from severe weather events like hurricanes, tornadoes and floods. But as weather risk grows to encompass more things, as you've described like shortfalls in wind power generation, new tools like weather derivatives are becoming much more important and I think people need to become much more familiar with them. So Theresa, could you help us by just kind of explaining what weather derivatives are and how you are using them to help clients ensure against and manage these weather related risks?

Theresa Kammel (05m 29s):
Sure, David, that's a great question actually. So whether derivatives are a financial instrument that pay out based on an underlying index, so in our case that would be the weather peril for example, temperatures and so the way our clients would use them is that they would look for such a structure that pays out whenever for example the winter is colder than expected so that they get a compensation for every degree that it's colder than what the normal interest scenario would be.

David Greely (06m 04s):
Let me bring you into the conversation Pierre, because it sounds like you started your career on the trading floor of a large utility. So you sound like you were more in the seat of one of the clients that Theresa would be talking about, but I wanted to ask you how did that lead you to the weather derivatives market?

Pierre Buisson (06m 22s):
Many thanks Dave. I mean for introducing me here and yeah, it's a bit of a journey and indeed I mean it's been now a solid 15 years. I am in the energy sector so quite some years starting kind of counting and actually I didn't come directly to energy trading flow. I actually spent the first few years as advisor for government and large corporates in energy and climate negotiation. So I really started working on supply side risk in big international meetings. Also working during COP 15 and COP 16 with governments on energy transitions, carbon markets, all these type of elements really mostly carbon policies and energy transition. And this is why I started to seeing that that market, the energy segment in general is massively changing. There are tremendous changes. It's about new regulations, it's about new technologies, it's about really kind of market designs et cetera.

Pierre Buisson (07m 15s):
So we know the push in renewables, new technologies, there's battery nowadays, hydrogen being discussed, changes from fossil fuel to green technologies. So really a big push there. So after a few years I say now I really want to get a bit, put skin in the game a bit and see how it's kind of, that transition is being managed directly going let's say under the fire of a trading floor. So that's how I moved to energy trading was very exciting. So to be on the trading floor when I saw those things from it's CO2 market at that time being a few euros per ton of CO2 to 50, 60, 70 euros per tonne. So really kind of massive changes. And when I was working as on a trading floor in a large power utility in Europe, I was always been very surprised to which extent kind of the volume was a risk was underestimated and maybe for the audience who with slightly less familiar to mostly electricity trading, I mean how it works is that you know, there is one big market being that their head market, so every day people start bidding for the next day.

Pierre Buisson (08m 20s):
So really everyday people start with already kind of engage their power brands or they buy and sell energy for the following day and then that market is usually going to go of a paid as it's a pay as clear market. So the price on the market will be the price of the most expensive power plants starting to meet the demand. So marginal cost market as many other markets in the world. But then we are facing a huge energy transition and basically we are going progressively towards a zero marginal cost society or at least a zero marginal cost energy system with renewables with actually cannot demand side management. So all those things. So I was always wondering kind of okay that type of energy market, how will they work tomorrow or the day after tomorrow when we will be kind of fully engaged or much more engaged kind of in such zero margin or low marginal cost energy system.

Pierre Buisson (09m 12s):
And I realized that okay, what at the end will make the price is viscosity of the weather or at least the weather availability to maybe kind of take a very concrete and recent example. I mean we hold, I mean a few days or weeks ago kind of in the US there was a heat wave in around Texas. Nowadays when we are talking kind of we are facing a heat wave in Europe and kind of there's also a IT wave in Japan we see it's affecting demand energy prices are getting high on the very near term because of that kind of context. If at the same time you have let's say low wind speed or low solar radiation, we all know that that we will have a pipe because there will be high demand driven by weather and scarcity of the supply driven by weather, how this is kind of managed and tomorrow this should be more and more important. And this is why I thought that to some extent kind of weather derivative is one part of the equation. It's one thing that is trying to put a price on the weather availability and this is what actually brought me to the world of weather derivative. Trying to kind of say okay, that's where I believe that kind of we can bring financial stability, we can reach energy knowledge and at the end still helping people to deliver energy from a supply side to a demand side. That was really what motivated me.

David Greely (10m 28s):
And I am really interested in the switch from the demand side to the supply side because it feels like it's so important now if I go back in my own career, 20 plus years, the first time I heard of weather derivatives it was very much around heating degree days, cooling degree days, what's it going to cost managing that risk of the price of heating and cooling. Now as you said with the energy transition with much more of the grid reliant on solar, reliant on wind reliance on hydro, there is much more trying to manage the risk on the supply side of the market and it sounds like the weather derivatives there's a lot more nuance, right? Like you care about how much wind blows in a certain area rather than just the temperature. Is that what you are seeing and how has that changed the nature of the weather derivatives market?

Pierre Buisson (11m 23s):
Indeed the, the weather derivative market actually started now a couple of decades ago with indeed products really focusing on temperature for the demand side. So really you will think about the retail business, you are selling gas or electricity, your consumer will consume more or less energy depending on the temperature. So that's how was the derivative appear to the market? Was it too early compared to maybe kind of all the supply side risk and things, maybe we can just discuss around that. But I find it very interesting that kind of nowadays maybe this is when we actually really need those derivatives because as you said, there's almost much more uncertainty on the supply side than on the demand side. If you think about maybe Europe, which is kind of in terms of renewable development maybe a bit ahead of the other regions in the globe clearly and you work in a, in an energy utility or particularly a power utility focusing on electricity, you would have much more risk on the supply side and the demand side. It's relatively easy to know or at least it's kind of, you have a lot of experts internally who can actually forecast but will be the energy demand tomorrow or next week or maybe next year while actually telling enough exactly how much wind you will have in three months, six months, one year. That's a very difficult job.

David Greely (12m 42s):
And speaking of jobs, when I introduced you, your current role is a structure and for people who may not be familiar, what does that mean? What exactly do you do for your clients?

Pierre Buisson (12m 52s):
We can see and weather derivative can be exchanged and traded under very different format but most of the time you can resume them as financial products. So it's financial weather derivative. So a structure in the weather derivative business would be very similar to a structure around financial derivative that as you can see like an option trader or this type of person working on structured product. So maybe to help you a bit kind of in just understanding what your structure is doing, I can give you a typical business day for a structure. So usually was a weather structure. What we will do kind of we arrive in the morning in the office like a Tuesday morning for

example. First the as any kind of I would say energy analyst or something, we will kind of look at the market. So we are trying to log into all the market platforms that we have following the news, looking at the prices, where are things opening or where they close of course yesterday night if there is any new thing.

Pierre Buisson (13m 46s):
So really to get a bit of feeling how the market is perceiving the different type of risk. Then during the day I would say we will split all time as a structure as kind of working on modeling the risk but really trying to kind of put a distribution around the risk. So if we think about let's say a wind output, we will try to look at is there any trend kind of what could be a good approximation of the uncertainty around the wind output at a certain period of time because we'll actually use that for putting a price on a financial product that we will sell to a client or a client request. We have received a bit earlier thanks to also Teresa and the people who actually will act and work as structures, they have actually very different backgrounds. Some will be kind of more energy analyst, we have methodologists, we have actually very quant people but let's say kind of it will be usually people with some kind of data skills and mathematical skills somehow to actually kind of put numbers behind kind of those phenomenas.

Pierre Buisson (14m 44s):
So that would be an important part of the job. There is another part which is a bit more my role here would be a bit trying to be an advisor for the client. So really once we know the request of the client we will try to enter in more detailed discussions with the all counterparty and trying to understand their request. Why are they actually asking for these type of weather derivative because maybe we can actually bring or experience what we are seeing on the market. Also the fact that I have been on the other side of the fence in the previous life, I can maybe bring suggestions. What is your risk? How is your portfolio looking at the moment, where are you exposed on which market are you active? Did you think about kind of trading this type of product versus this type of product and hedging it with this type of wizard derivative.

Pierre Buisson (15m 29s):
So there is a bit of advisory role also in the life of a structure for weather derivative because at the end we do OTC contract with the clients so we try to build a bit of a relationship with them to also sometimes because we have the nos in our numbers to suggest some small adjustment to the structure, we could make sense and make actually the hedges that they are buying from us much more efficient. So the idea really is trying to leverage the map and the numbers to best serve the client in kind of getting them somehow hedge against adverse weather conditions.

David Greely (16m 02s):
And let me come back to you Theresa. Now I think climate change has made all of us aware of the increase in weather related risks, the volatility of the weather, but I think most people are unaware of the increasingly sophisticated ways they can manage that risk. Listening to Pierre, it's a lot of tools that have been brought over from the other financial markets, a lot of data that can be brought to bear. And I wanted to ask you, as you work with clients, how aware are they of the level of sophistication with which they can manage weather related risk now and how do you help educate clients about these tools that are available to them?

Theresa Kammel (16m 43s):
Yes David. So I think it's absolutely true that the general awareness of like weather and climate related risks has increased over the past years in the general public. If we look specifically at our client base, I think you can like divide them up into almost two camps. On the one side we have like really sophisticated clients and on the other side we have very like big players but they're not fully aware yet of what their weather risks are. But let's look first at the sophisticated clients you can think of like big utilities or big hedge funds hedge, they have dedicated weather teams or at least weather traders and with a specific mandate to always be on top of these risks, how the weather is evolving, how they might have to adjust your positions. And with those clients they know exactly what they want with them.

Theresa Kammel (17m 37s):
It's more sort of a collaboration where we work over various months on like complex structures as Pierre pointed out and that's where he usually comes in. He's the go-to structure for these kind of deals. Like we work very closely on these structures to come up with a customized solution that actually like perfectly fits the client's exposure. And that's also so where whether derivatives is this great tool to be really creative because you can structure them in very creative ways. If you look more into the second category like the unaware but established players, there is a different game there. You have to find the right people to even start a discussion and usually it's not done with just a single discussion or a single call but it goes over various months because it's many stakeholders involved into these decisions and you have to educate them and bring them all on the same page about what these risks are that they might have in their

portfolio and about how they could possibly hatch them. So we try and go and understand what are these risks, what tools are available and then try and work until we maybe come to a deal and that often would take like a year or two years. It's not a very fast process and it's certainly not a one-off conversation.

David Greely (19m 04s):
Oh and thinking about these clients, you know I guess it's easy to understand now like a large power utility that's got a lot of wind generation needing to manage that risk. When you look across your clients, what sectors do they tend to be drawn from outside of the power generation? What other types of risks are they increasingly interested in managing?

Theresa Kammel (19m 28s):
So in the energy space, I think as Pierre I had already hinted at, you can broadly categorize our client base into three buckets from you have the utilities on the one side that have a lot of retail exposure on the demand side, then you have the asset owners companies that own wind farms, that own solar farms and that have to manage the supply side. And then you have the third category, it's like investment funds in trading houses and they might sell forward some power position in the market and then would be looking to have the corresponding weather hedge in order to support that position.

Pierre Buisson (20m 07s):
I find your question very interesting and actually trigger a thought here because you said kind of that obviously a power utility of involving a power generation from renewable assets kind of I mean should be fully aware of that risk and should be active in that segment. I find it a very interesting comment and of course I mean it sounds, it may sounds obvious to everybody listening to that podcast that okay, I mean that's you aware of that risk but actually what we are seeing is kind of there are some players very active there and very aware of that. Some others they thought it's part of their DNA to have to warehouse that risk. It's almost like enough I am building a wind farm for example. There will be years or month with less win, more win and think and it's the natural uncertainty of the business and I have to deal with it.

Pierre Buisson (20m 55s):
And actually it's not true. They do not have to necessarily kind of fully carry the burden by themself. They can actually share it, they can find a way of actually mitigating it but it's also the energy segments and energy generation is also a relatively old industry and it's known for people that they are those type of risk and those instruments they appeared a bit later and I still that find it very funny that when you discuss sometime with even very large utilities you have those who are extremely aware and some other people that say I have to take that risk, it's in my natural obligation, I am active in that segment therefore I have to carry that risk. No it's not true. You can actually hedge it as you would hedge your, as you are hedging yourself against commodity prices and being against ethics rate against other type of risk that and you doing that every day, why do you think it's not the case for the weather? And when you ask that questions very often people say I don't know it's just that I thought it was in my mindset. So I found it very interesting because kind of yeah maybe kind of some people in your audience who actually going to think about that kind of right now say indeed my business is weather dependent and I never thought about trying to address that risk because I just thought okay, it's the nature of my business.

David Greely (22m 07s):
Right? It's the old thing, right? Everybody talks about the weather and no one does anything about it. Maybe to the two of you like how big are these weather related risks if you put a dollar or euro or Swiss Franc number to it, like how big financially are the risks that many of your clients are facing?

Theresa Kammel (22m 26s):
So I can't give you obviously like specifics on a portfolio but to give you like some feel our traits that we would be executing can range from like a million dollar deal size up into a hundred million and more just for a single deal with like a typical deal being around 20 million.

David Greely (22m 47s):
So those are big numbers on someone's cash flows and balance sheet and I wanted to get back to a point you raised Pierre, with more and more investment in renewables and putting assets in place that are gonna be in place for a long period of time, how important are or could be, you know if people realize that they can use them are weather derivatives to being able to de-risk these big projects and make them more bankable, make them more financeable.

Pierre Buisson (23m 16s):
These of course a key challenge and we see more and more people being worried about actually making projects bankable, at least in operational and doing operations to actually make sure that kind of the revenues are in line with the budget that the plan. So, and also capital management is kind of something which is a concern for ma more and more actors maybe just to actually answer that question and gonna link it also to the previous one. In Europe we faced over Q1 in 2025 a massive, so the first quarter of 2025 a massive wind drought. So if we look at the different countries and different markets, wind was between 20 and 30% lower than average. It had a massive impact and I look at for example, Germany and Germany was 20ish percent below the, let's say an average wind performance for the assets.

Pierre Buisson (24m 08s):
And then if you take that number and you multiply with current forward prices on the market that basically those 20% of missed opportunity in terms of production that represents 750 million euro in terms of missed opportunity. So you are not very far from the 1 billion and we are talking about Germany in one quarter. So indeed we are talking at if you just do that on all the geographies and if you do that for the different markets we solar hydro, the temperature on the demands and I things we are talking big numbers here. So the biggest player in the weather derivative world, we are kind of let's say a go-to shop kind of people at least kind of going to us. But clearly when I try to compute the total risk, I still believe kind of, I mean we are not necessarily kind of addressing, you know we are far from addressing kind of all the risk here we are very, very far from that. But then coming back to your questions, I mean it's also maybe a question for, let's say the audience here kind of they can think about are they really many businesses where actually in kind of a from one quarter to another or someone year to another you can easily kind of have a volatility in revenue revenues going from let's say 20 30% or would you not try to do something against that and that this is what we see coming.

Theresa Kammel (25m 23s):
And maybe I can just add a very interesting example from the client side to it where we recently spoke to a big fashion retailer that notice like a big correlation between weather patterns and the footfall in their highest trade stores, you know, and also with the timing of when they like launched a summer collection and then it was a two week phase of grain. So they start really to notice the financial impact and start to put numbers on it compared to the energy industry, they're like a bit behind but I think the direction is there.

David Greely (25m 58s):
And I love those examples because I think one thing that people miss out on is it's not just about the dollars and cents but once you're able to insure against these risks, you're also able to invest more. And we've talked a lot on this podcast about the need to invest in new sources of energy, cleaner energy and if you don't have the old mindset of well this is our industry, we have to wear all this risk ourselves, part of wearing all that risk yourself is you will do less of it. But if you are able to spread that risk through the market, then you will be willing to make more of the investment that we need to see. And so I love these examples and I would love to get back to that respecting the need for, for confidentiality. Has there been a project that you have worked on together that you would say kind of captures the opportunities and challenges for a company managing weather related risks today?

Pierre Buisson (26m 57s):
We are trying to stay ahead in terms of innovations and the weather derivative business and kind of, there are many things that can be done and what I love with that business is that it's really a sandbox. We can work with different industries, we can work with different type of needs one day we work on temperature, then wind, then solar, then precipitation so we can really customize the things different granularities etcetera. Of course we cannot give names of a client and things for confidentiality reason, but what I can say here is that we will have a very large power utility over the last 18 months I would say kind of. And the explainer is kind of at some point in for the retail business on one very specific market in Europe that the other, the key challenge they had of course a volume risk on that retail activity because the amount of energy that they were selling is directly impacted by temperature, perceived temperature in that case and they really said okay, you know, we really need to address that risk but at the same time we are living in a world where we see more and more so kind of volatility on the market and geopolitical tensions.

Pierre Buisson (28m 01s):
I mean we saw that in kind of very recently with the conflict between Iran and Israel when actually gas prices suddenly went to the roof and things like that. So they said we can actually kind of, we want to get protection against weather deviations impacting our volumes, but it's very difficult for us to actually kind of properly assess that we want to be very dynamic and we have a lot of flexibility to be able to really kind of adjust basically kind of the way we hedge ourselves against the weather versus kind of the current dynamic, the current needs internally the current mandate from a management, the current development on the market. So really trying to be able

to somehow aggregate self-reflect about the strategy and the tactics that we want to apply knowing that kind of let's say the strategies to hedge the weather but how we, what's the tactic to do that on a more near term And we work with them on a kind of a relatively complex and advanced solutions to actually meet their need and also kind of the needs on our side because then having more and more flexibility means also for us being able to kind of manage the capital that we deploy for the client in a very, let's say smart way and stuff.

Pierre Buisson (29m 07s):
And we work very jointly with them going through let's say advance workshop with their teams, discussing that in details, kind of really working kind of together on the project. It was a very positive outcome and I think, you know, the client is still very happy with the product, we are very happy with the product and that's actually what maybe kind of I am the most proud of over the last two years because I agree we managed to sit with a client, say, okay, we understand your needs and maybe we, we want to understand it, we want to be almost an advisor to your weather hedging business and it's a solution which I think is pretty unique on the market. I don't want to disclose too much details here around kind of how it works, but clearly it was a second of fully customized to the need of that large client rather than having let's say more off the shelf solutions as we can see sometimes like in a very basic or the one that you described Dave, that actually comes from let's say a couple of decades ago what it was just purely temperature hedge for a season.

Pierre Buisson (30m 07s):
That's the price for a missing degree, that's it. So we try to be much more advanced and it was a very interesting journey to go through that with the client.

David Greely (30m 16s):
A thing that's come up a few times, few is few times I guess who ultimately ends up wearing the risk. So the old thinking was the client just has to wear it themselves now they have a market where they can offload some of this risk. Pierre, you mentioned obviously Munich raise insurance company so you will have certain capital you'll put so you'll take some of that risk that was from the client onto yourself. Theresa's mentioned hedge funds, other large investors who are getting involved in taking some of the risk in the space. At what stage are we in being able to share that risk through a larger ecosystem? Is it still, to use an American analogy, is this like early innings of the baseball game or, or how developed are we and what do we need to do to develop that ability to share risk more?

Theresa Kammel (31m 05s):
Already if you, as p mentioned, the weather market's been around for like over 20 years now, so it's more advanced than many people would assume at first. As you said, the reinsurance companies are the big players in warehousing that risk and I think it's also very natural for them because companies like Munich Re we have the capacity to take that risk onto our balance sheet and we have the appetite most importantly. So if you take our case, we just warehouse it all and trade a little bit but usually we just sit on the book and wait until the winter passes so to speak. Other players that don't have this background like Munich Re, they would just trade around their positions. So they take a very different approach. If you think ahead in terms of how to make it more tradable this market, I think it will help if when what we see already more and more counterparties start entering the space and bring their risk to the market. And so maybe to pick up your analogy again, we are probably in the third inning. I don't know Pierre, what do you think?

Pierre Buisson (32m 16s):
It's exactly that and there's a bit of the chicken and the head here. There are many players on the market and what we see also is that, I mean the more people we are bring risk, there is no capacity constraint I would say on our side to actually going to write more risk and warehouse more risk. We are there and I think we have a few competitors also there and they will be very happy to bring the risk, the more risk will kind of come to the market covering new geographies, covering kind of new imperial. So mixing winds, solar temperature and things that actually kind of the diversification will actually attract also I think of a lot of players and will kind of even increase the capacity for the risk ware houser kind of if we can say that to actually kind of even write more risk. So I really believe that's kind of here the market is present, there are few players, we are of course one of the largest one and we are very happy and but we are, there is no capacity constraint so people should not fear going to that market saying kind of there won't be any liquidity kind.

Pierre Buisson (33m 12s):
I mean there won't be that many players or they will say yeah but only that small size for the deal because I do not have appetite for the risk is there on the market for sure.

David Greely (33m 22s):
Each of you, how do you see this market continuing to grow in the coming years and what does it need to be able to grow and scale as you said right now capacity is not an issue in terms of the risk appetite for people who will take it off of clients yourself in particular, but like if you look around, what would you say this is what we need to really let this market and this way of ensuring against risk become more mainstream.

Theresa Kammel (33m 50s):
We already see like the expansion on the side of the perils when a deposit was very focused on temperature risks. Now we have more and more wind and precipitations risks that clients are concerned with and as we speak we are proceeding on to solar risk becoming more relevant. While you might think solar risk while the sun is shining usually all the time just because of the sheer size of the installed capacity, everywhere we see PV panels being installed, that actually is becoming a concern. And so I think there we see a big expansion going on. But then also on the geographical aspect, currently major markets are Europe and the US with Japan and South Korea moving more and more in the focus we see a big momentum picking up in South America. So think of Brazil, Chile, Colombia with hydro risks and some wind risks. So I think there is plenty of room where people with weather risks can bring those to the markets and a good indicator is always like the stage of liberation of an energy market. Like once people actually are exposed to those risks and have to manage them, then they are concerned and will look ways to manage them and catch them. And I think we also see a rise in complexity.

Pierre Buisson (35m 13s):
Can add any the complexity. But one thing I would like to also mention here, and it's a bit of a sad comment unfortunately, is that kind of what's also we see and coming back to some examples that we mentioned earlier in the conversation is that when we see a relatively impacting impactful period and I can have some low wind condition and we saw in q1, then we tend to see kind of a rise in the number of demand after that. So people realize oh I can actually lose massive amount of money in those events and usually that a automatically translating kind of more requests from us and people start thinking, okay, what can I do here? We had that a few years ago in Europe, there was that drought in 2022 in most part of Europe and after that we saw an increase in actually the hydro power generation companies coming to us and say, oh can I hedge myself against kind of low precipitation and drought condition?

Pierre Buisson (36m 08s):
Yeah of course you can hedge yourself but like so yeah, because last year was terrible. Yes. Okay, so then we start seeing that type of business. So maybe that's also a bit of a, the sad answer is that kind of, I mean we need to see those things and the more we will see those things then it will actually create, it will pave the road to the future over the last few months where the few dunker flat events in Germany and in Europe, so meaning kind of load power generation levels from renewables causing very high prices, then we see the demand for let's second of people wanting to really cover themselves against kind of low renewable conditions. So and we see those things coming and that actually will drive the market for the next few years. However, what we can already see in terms of trend is that increasing complexity so people really going down to let's say, oh I want to look at some specific hours or I would like to actually kind of get a dirty hedge against kind of very low or even negative power prices because it can be caused by the weather or I would like to combine different type of geographies, different type of peril all at once because I am maybe exposed on LNG prices is driven by, so liquefy natural gas by temperature difference between Asia and Europe for example.

Pierre Buisson (37m 20s):
So maybe I want to hedge myself against the temperature spread there. All these type of, let's say more innovation is one thing that we are seeing and the other aspect is that there is also an increasing, I would say frequency in the trade. So people being a bit more in the trading mindset. So really kind of, okay, I want something for next month or I want to be able to adjust my position on a rolling basis. It's a bit, let's say different than, than what we have seen until a few years ago, which was people doing more their seasonal planning. Like I want to hedge myself for the next winter for my energy sales for eating purposes. That's a bit different now. So more frequency for sure, higher complexity in the design also because the, I would say the technology behind that should be batteries, wind, solar, you have PPA mechanisms for the renewables, it's much more complex product. So people need to have more complex solutions for that. All of that is a bit, let's say the trend that we are seeing on the market.

David Greely (38m 23s):
Well thank you both very much. Lot of thought provoking conversation. I hope you both have some time to get away from it all this summer and enjoy a little bit of a holiday. I hope the weather cooperates with wherever you choose to go. This is our summer playlist series and it's become a tradition of ours to ask each of our guests before they go what's on their personal beach reading list. What's

interesting you outside of work this summer. So before I let you go, I wanted to ask each of you, what are you reading this summer and maybe we can start with you Pierre.

Pierre Buisson (38m 58s):
Some reading as I started actually, I mean not, it's not the same book but summer. So some friends recommended me Shantaram written by Gregory David Roberts. It's a story of a guy just traveling to India and living kind of thousands life there and it was kind of really a page turner, very easy to read on the summer holidays and I really loved it and I saw like kind of a few months ago that there was a sequel to that one called Mountain and Shadow. So I am pretty sure we will put it in my luggage because yeah, very easy. And they were just kind of, yeah, discovering new country, new culture and the guy living thousand different experiences kind of on the other side of the globe. That sounds very interesting for me.

David Greely (39m 35s):
Sounds like a wonderful escape. How about you Theresa?

Theresa Kammel (39m 39s):
I think I will skip the books this summer and stick to the podcast because I have a little one at home and barely get to grab a book because these days it's just really busy. So I am looking forward to many SmarterMarkets podcasts.

David Greely (39m 55s):
Thanks again to Theresa Kammel and Pierre Buisson, Originator and Senior Structurer, Weather & Commodities at Munich Re. We hope you enjoyed the episode. We will be back next week with another episode of Summer Playlist 2025. We hope you will join us.

Announcer (40m 11s):
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