

Transcript: CRA Energy Chats, Volume IV

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Laura Sochat

Hello and welcome to the fourth volume of CRA Energy Chats. My name is Laura Sochat. I'm an associate principal in the Energy Practice at CRA. Today I'm joined by my colleague Francesco Nobili, an analyst in the Energy Practice here at CRA and Simone Accornero, CEO of Flexidao, a leading clean tech startup providing blockchain solutions to help energy market participants reach their net-zero carbon goals, but also helping those participants ensure that their reporting is as accurate as possible.

And so, I'm going to turn to you now, Simone. Thanks for joining us today. Do you want to introduce yourself and give us a bit of an introduction to what Flexidao does?

Simone Accornero

Yeah, thanks a lot, Laura, for the introduction and for inviting me and us as a company to the podcast. I'm Simone, I'm an energy engineer. As background, I focus on power markets, smart grids, and power grids. I graduated from a mixture of European universities in Italy, Spain, and Belgium, and then I started working in energy management consulting for larger cities.

It was essentially an energy service company in scope while I was collaborating with the research center at the Polytechnic University in Barcelona in Catalonia. And that's where together with our current CTO, we started working on what is today our platform. While I will go into that a bit later, but essentially we founded a company around five years ago now and with funds from the European Institute of Technology, specifically on the energy vertical, and then from there we started growing and we are today almost 43 people. The latest headcount is spread all over Europe with some first employees in the US, and we are now also entering the US market. That's a that's a bit of my background shortly.

Francesco Nobili

Great. Thank you very much, Simone. And it's great news to hear how Flexidao is growing. What do you guys do precisely? We know we all know you work on green certificates, but what is your proposal to the market?

Simone Accornero

Yes, and that's a great question. So very briefly in the easiest way possible, we have a platform that helps companies calculate their CO2 emissions related to electricity consumption. So, Scope 2 emission according to the Greenhouse Gas protocol. We do that for essentially every company

out there, but more specifically, we do that for the companies that are interested in increasing accuracy and credibility of their reporting.

So today in the market, we are at Scope 2, but generally decarbonization and especially the risk and threat of greenwashing is becoming more and more top of mind for executives. So, companies want to rely more and more on data for their reporting compared to what it was happening just a few years ago. So also, Scope 2 is becoming more complex in terms of inventory management. Today, companies have VPAS, have received certifications from multiple parties across potentially all the globe. And they want to make sure that what they do or what they claim is actually accurate. And they also want to rely on data to make further decisions on what they should procure next, what the target should be next. So essentially, we see the industry migrating from a spreadsheet-based kind of reporting to a platform/software-based reporting that actually relies on data.

And very often getting their hands on this data is actually harder than it sounds and should be, as we all have smart meters and also guarantees of origin or certificates in general, not as easy to get your hands on as a buyer, very often. So essentially you can see ourselves as a platform that puts together the different datasets, metering data certificates, and a great mix of the of the power grid where it operates, where we run analytics and we give you advice, we run forecasts. So, we essentially help companies manage their Scope 2 inventory from a renewable. You can almost see us as an ERP for your renewable energy contracts in assets.

And then there's a second part of what we do, as you mentioned, related to certificates. We work very closely with issuing bodies of guarantees of origin recs all over the world because we are one of the front runners for a proposal that they were proposing that recs in general should evolve in terms of granularity and in terms of the attributes that they can disclose and or have disclosed the beneficiary or the buyer of these certificates. That's why we've been involved with the energy tax standard for the last three years in the House. We were one of the co-founders of this initiative. It's a nonprofit initiative that aims at making and creating a standard for timestamping hourly certificates over the globe and in hand with the current with the existing issuing bodies.

So in that front, today we have issuing bodies issue certificates in the countries where we are allowed. And more importantly, we think that in the years to come as Scope 2 evolves, there would be these hourly certificates with a new standard of the market and this would create a whole different market compared to today where certificates are monthly but are traded on a yearly basis.

Once you have hourly certificates, you need to trade on an hourly basis. Even if after this would create different price signals every hour, we actually provide supply and demand of certificates and supply and demand of the of renewable energy beyond what the power market already does; kind of stacking up a business model on top of the power market.

So that's a bit what our vision goals and granular hourly based, geographic-based Scope 2 with underlying environmental commodities for it and enabling the trading and transaction and the management with these certificates today, we have companies with Scope 2 and data gathering.

Francesco Nobili

So, you mentioned that you guys at Flexidao are trying to improve the granularity of certificates of origin. But for our listeners, how is the current system working and which issues and criticalities did you identify in the system as it is today that Flexidao is trying to address? And how are you guys addressing that?

Simone Accornero

Yeah, it's a great question. So, first of all, I think that it's very important to say that overall the system as it works today, it brought great benefits to the market. In general, it's better to do something than not to do anything. So, we always want to be very clear that we want to improve what is today here and available for the market, we don't want to disrupt it. So, this for us is very important. We are extremely supportive of market-based methods because we will enter into that, but we know that they're being criticized quite heavily by some market partners and some academics. We believe the guarantees of origin should stay and they're here to stay. At the same time, they were an instrument that were designed more than 20 years ago. And as the market evolves, they should evolve with it. The energy sector went from deploying anything anywhere as quickly as possible in terms of renewable. Now we start to see congestions, we start to see interconnection problems, we start to see where and when and what type of technology you deploy actually matters a lot. And as the market matures, the tools mature with it. And we think that overall, the counting standards and certification systems should evolve with it.

We believe that there are two main critical issues today that can lead to a much more impactful Scope 2 and certificate market in general. One is location. Today the companies are allowed to procure guarantees of origin and recs in general from anywhere, essentially. The usual acceptance boundary is the same continent. However, this creates a lot of inaccuracies, let's say, but also a lot of market distortions where some countries think that they are completely green already, so there's no incentive for them in that country to buy guarantees of origin and to become a huge exporter. And so, driving down the price very heavily.

So, this is one, we think there should be much more clear and strict geographical boundaries that reflect the physical reality of the power grid. And the second one is the granularity. Today, companies are allowed to report on a yearly basis. So, they sum up everything they consume in a year and they buy the same volume of guarantees of origin through whatever supply instrument, being a PPA and bundle certificates or retail type.

We think that again, this was great, a great start. Today we have the means and the data to go more granular and going more granular will actually identify where the gaps really are. Again, it's not the same to be green in the middle of the day than be at night and these should not be on the transparent and available back to whoever is linked to the wholesale market, but also to the all the other participants. It's essentially adding up like price signals to the market on top of what is today. And in general, again, on average there's a lot of difference between the lowest carbon intensity of the grid and the highest carbon intensity of the grid. So just doing an average in

today's market doesn't work anymore because the penetration of renewable has increased so much that the difference is too great.

Laura Sochat

That's really interesting. And I'm actually quite interested to hear a bit more about the data collection point. So before maybe we go into a bit more detail in terms of who your clients might be and how you're helping them, because I know sort of looking through what you do on your website, you mentioned sort of the way things work and the collecting and the monitoring and the and the reporting and on the collecting side, and you're talking about this data that you now have. I'm quite interested to know, do you see differences perhaps in geographies as to how this data might be different quality?

Simone Accornero

Yes, we see a lot of differences, it's actually a very good point. The clearest answer possible would be, first of all, to split by data type. So, starting with metering data today, especially in Europe, which is, I would say by all means the most advanced country when it comes to smart meter rollouts and availability of data.

So, it's like many times the topic today, especially for reporting which is kind of ex-post, so you do it after it takes place. You don't need like second granularity real-time data to do that. I mean it's of course helpful for the few companies that are able to do demand response based on market signals. But generally for the market, something that happens ex-post, there the issue rather than quality is actually the availability and the how you access it. Today Europe has these local data spaces, common data spaces that are for vertical and energy is one of the verticals. So technically the owner of the data when it comes to load data is the actual consumer. And the consumer can claim that and must have access to that data, and very often it's very tricky. And also, it must be able to appoint a third party to have access to that data in exchange for a service. So, this third-party access, although should be legally feasible in every European country, in reality and in practice is still not happening to the extent it should, as you should expect in a digital society like ours in 2023.

So, I think that overall data is more and more available with higher and higher granularity and greater quality. The issue we need to tackle today, if we really want also to foster innovation, foster services, thinking also about Scope 2 and an economy that more and more we treat a ton of CO2 as a currency. So, we really need to have reliable data underneath it. We really need to have, not only focus on the quality of books and the availability and exchanges. So, on the end that Europe again is a front runner. In the US, the Green Button Alliance is the nonprofit standard that is working on these fronts. There's a really good step forward and other geographies I think will follow, but today you still very much need to go directly to the utility or the originator to get the data.

When it comes to CO2 today it's in the hands of private parties. We have a great partnership with Electricity Maps that I also think offer a great app that everybody should at least go and look into.

But more and more we see that DSOs', ISOs' market party start publishing data – Denmark, Spain, Germany, I mean, all of these DSOs – make available through by API or interfaces CO2 data, which I think is also very interesting for companies to look into.

And then certificates. Out of the three datasets, certificates are the ones that lag behind considerably. It's very hard to find a certificate registry that offer an API in general which makes any inventory management very hard. So, I think that's where the biggest review and update is needed in the in the short term. And actually, they're the Venus Foundation Energy together with Energy Tag and some leading registry like Emirates, Iraq, etc., are working on API standards because they already offer them, and they want to standardize and make it available to every registry around the world, because as the complexity grows, it's very important to be able to work with software that can interface with registries, not just download the spreadsheets, upload spreadsheets, because it would be really unmanageable and create a lot of risk.

So, in terms of that access, again, these are the three streams: metering data, good quality, good availability, great smart meter rollout; we need to focus on accessibility and availability of CO2 data in the hands of private companies – I think that more and more will become public and should become public and these private companies can then build their business models and forecast, etc.. The third one is certificates, but we really need the most amount of work today to streamline how these are traded transacted, how providers like us can connect to these in order to ease in the end the operations of our clients working with this, which in the end will drive up liquidity usage, etc. So I think it's a win-win for everyone.

Francesco Nobili

Interesting. So, it seems clear that data are the key of your business model. So how do you actually combine these three streams of data to offer a more precise and blockchain-based certificate tracking system to large energy consumers, for instance? And how do you make sure to avoid issues such as double counting, for instance?

Simone Accornero

These are great questions. The very first value that we offer is not related to blockchain. It's all which is really the ease of mind and time saving for our clients. So now they have to send emails to the suppliers, get the data that are usually in their ERP – which is SAP or Oracle or whatever – and they need to extract that, they need to get monthly invoices. We take all of the things out of their hands. We just may Scope 2 reporting easy for them so that their auditor now just needs to access our platform and see their what is there and it moves to being a process auditing right and then an actual data auditing which makes it much cheaper for them.

Blockchain and all of this comes because we kind of snapshot whatever we create for them and all the processes and all the data so that then the auditor can audit the process, audit the link that we do, and then it's there and there's kind of a hash that proves that we keep doing the way we said we're doing it. That's on one side.

The other side today, as I mentioned, we are working on a standard that kind of tries to help between bodies to move and transition towards hourly granularity in their certificates. However, this is not the case today. There are a few that are starting to get there. Iraq is starting to get there, Emirates is starting to get there, PJM in the US has announced that also this month in March they will start issuing hourly certificates. However, globally it is not available. So essentially, what we do is that connect to the registry, of course, upon approval and knowledge of the issuing body. Again, we don't want to displace or disrupt anyone. We take what is there, the monthly geo, we lay your production date on top, and essentially what we do is we break the geo in pieces. And as long as the volumes in the broken geos and the monthly geo is the same, you can ensure the link. So essentially, we create these pieces of hourly geo on the blockchain. So, you have the extra transparency that whoever wants to check, we can provide at all means to prove the link to this immutable database of how we broke this guarantee of origin and that the beneficiary and the status of the guarantee of origin that is underlying these broken pieces, is the same.

So, if it's the same volume issued, it must be the same volume issued of hourly guarantees of origin. The same value cancel for a beneficiary must be the same value cancel of our guarantees of origin. So, it essentially becomes there's a compliance mechanism that is almost hidden to the eyes of the client, until you get to the auditor. We don't sell blockchain, we sell the ability of issuing hourly certificates in compliance with what's out there today and that really just becomes a compliance tool that we put there, which I think actually says good things about the technology because it's evolving to actually become something usable, not just that's done just as smoke. But it's more in general, how we work, and related to what I said at the beginning of the podcast, how we have two business lines. One is more short-term – peace of mind and time savings, data, Scope 2 inventory, you have access to software as a service there. And then the longer-term vision that we have as the market evolves, the certificates evolve. We help create them, and in the future, and all the knowledge and technology that we develop today by creating them, will help us transacting them and trading them and creating essentially a market for hourly certificates.

Laura Sochat

That's really interesting. I'm thinking about some of our experience dealing with some of the data coming from SAPs with our clients. It's a lot of data and it's very fun, but indeed very time consuming, sort of going through that. And so, I'm sure you save them a lot of time. Looking at everybody that you dealt with, where is the incentive for them to use your solution? Because it's quite clear from what you say, the way it works technically and the time saving and the reporting, which we all know is very important. But we're already seeing a lot of claims out there, about 100% renewable energy. So, what's their incentive to move to maybe a more accurate way of making sure that that is indeed true if it's coming from you and not necessarily as an obligation?

Simone Accornero

That's a great question. This is what all my investors asked me now. And so, I think that the incentive for the short-term business proposal and value that we offer is for those companies that have a big complexity. So, we work with companies that have 10,000, 15,000 sites in each country – telcos, retail stores – and accessing and managing and having control of all that data

can get quite tricky very soon. So, we call it the Legacy Scope 2. I have a lot of sites, I want to report many cases also, again, registries are not always very efficient. The cancellation statements and disclosure statements that suppliers share with their clients are not always that transparent. So, we've had cases where we found that for the client that they were getting biomass certificates and they had no idea, for example, and they really were not happy about that. And that created a contract where they were specifically requesting wind and solar. And so, then we were doing the checking for them that we're getting only wind and solar. So, this is more on the on the legacy part.

And then, there's the new approach, right? So, when we started five years ago pitching the concept of 24/7, everybody was pretty much looking at us like we were crazy. Today, the United Nations are also supporting it and there are several governments around the world – cities, companies – so it is today, widely accepted that Scope 2 needs revision. World Resources Institute (WRI), this voice was so loud and was heard by WRI which indeed started a revision process. The consultation is now open, actually closes tomorrow, April 13. And so, if somebody didn't know it, I'm sorry, but it was now too late, but it would be one year and half, two years process and it would be added chances to contribute, definitely. And everything is pretty much on the table now. As I said at the beginning of the podcast, marketplace is being criticized. We completely disagree with it, but we do think that it needs revision according to what I said before.

So now going back to your question, what motivates our clients, is they see that this is coming. So, either you can anticipate what is coming or you can wait and just be hit by it.

So, there are options of how Scope 2 will change. I think it's very interesting for any chief sustainability officer to understand how the current procurement strategies they have could be impacted by these changes.

Depending on how Scope 2 will evolve, certain RE100 commitments or certain commitments might not lead to the same results in a couple of years from now than they lead today. So, I think that today what our clients see is that they want to manage that risk, and on top of that they want to show leadership. I think as long as voluntary carbon markets are indeed voluntary, it will all be about leadership and marketing. My personal opinion is, it needs to change, but that is for another question. But it's about leadership. So, it's about showing that you have impact that how much good renewable energy you deploy and as now BPAs become more and more, let's say the norm, you need new ways to be a leader, right? And to actually show a commitment. So being more granular, buying, local, buying additional, buying a shape of production that actually meets entirely the shape of your consumption, which in the end is 24/7, or showing that you avoid more emissions than what you actually cause are all new ways that companies are finding to be leaders and to be to be the next strong brand on this growing space.

More or less, again, if I had to summarize, is complex Scope 2 operations today, they value our software because again, spreadsheets are getting to be too complicated to reason for them. Companies see that regulation is changing and they want to be ahead of it instead of being behind it. And companies want to be leaders, especially the ones that can afford to do so. And we help them do that.

Francesco Nobili

Extremely interesting. And it's in fact, interesting to see also how very big energy consumers such as tech companies, data centers, I believe you received the investment from Google and Microsoft who are betting on this more granular approach. Taking a more energy system-wide perspective, the introduction of more precise localization data to certificates and certificates of origin will have potentially an impact on the energy system locally or nationally. How do you see that impacting, for instance, investments in renewables, in additional renewable capacity nationally and in the energy system more broadly?

Simone Accornero

So, first of all, I think just to be clear and because I think it's fair to what is today here, like certificates, they have the granular location information in it. It's how in their usage that does not mandate the request that companies care. So, you always know where occurrences of origin come from because you know the sites. It's just that then Scope 2 doesn't request you to care essentially because it can come from anywhere. So, the information is there, but standards don't request to disclose it essentially. Well, not to disclose it, but to put limitations on where it comes from. Time that doesn't have. That's that absolutely true. But then again, if it only has time but then is not requested by the standard it's like what do they know with the location? You have an information that you don't use. The same with CO2, the same with the age of the plant, etc., etc., etc.. So, I think it's always important to make a distinction between what is already there, but more importantly, what it's used for and what is requested. And indeed, if the standards and being green they would request that you buy electricity only in grids that are connected to use or interconnection, neighboring countries, then you would have to enter into a case by case by market, you would have an immediate price impact on the availability. There's a shortage in supply, like I would say, Poland would most likely have a shortage in supply of guarantees of origin. Then the price would go up because there is demand for something that is short supply, which would make more incentives for renewable energy producers in Poland or for companies to build in Poland, because already nowadays the price of grains of origin went up a lot compared to a couple of years ago. This would just increase it whenever there is low supply and most likely decrease it where there's high supply, which in the end is more or less aligned with what we want to do, which is decarbonizing, where it would have the most impact.

And also, I think this is extremely clear by Amsoil, the organization of DSOs, they published a paper about this. So, I think that we should all trust the source when it comes down to implementing the best designs of keeping the lights on. And they say that the guarantees of origin would be an incredibly important tool for the liquidation to happen in the most cost-efficient way. So I think it's a great paper that can literally give a very – a bit high level – but a good view to whoever is the newcomer to this space of why this is really important and what potentially could unlock.

Laura Sochat

That's a great, I think, a great place to end the conversation because I think talking about this price signal and what that demand-supply balance might lead to in terms of prices. We've been seeing that obviously over the past year, really just looking at the price of gas and the

conversation about the energy transition and decarbonizing has been at the forefront of every discussion. But I think the point that you're talking about when it's looking at Scope 2 and how you can really ensure that there is time and location signals can be sent through using an existing mechanism, right?. As you're saying, just changing but using an existing mechanism which we can use for that purpose is amazing. I think it's great what you're doing. So thanks for coming here to talk to us about it.

Simone Accornero

Thank you, CRA for giving me the opportunity.

Francesco Nobili

It was really a pleasure and an insightful conversation. Thank you again, Simone, for taking the time. This is interesting innovation our listeners will be interested by.

So as a last point, we and our listeners, would be very interested to know a bit more about the topic. So, what's currently on your bookshelf or what would you suggest to take a read of to get to know more?

Simone Accornero

Yeah, it's a good question. So, whenever I don't work, I try to not to read about work. So, except for that I think that there are definitely a bunch of papers and a bunch of very interesting articles and blogs that I that I can recommend without going into my reading. But I can also do that, there are novels or like things like Homo Deus and these kind of historical analysis books. But more relating to this topic, I think there are a bunch of very interesting papers on general carbon. So there's a paper that I like quite a lot, it's called "Demystifying carbon equivalencies." We all always hear that a ton of CO₂ is a ton of CO₂, and this actually ignores climate justice. And I think that this paper is very insightful as an entry point into this conversation because indeed, then we should also stop to think that a ton of CO₂ is a ton of CO₂.

So again, this can be a temporal, can be geographical, but it's also the quality. You don't offset an extraction of oil, of burning oil with planting a tree. Which does not mean that planting a tree, per se, wrong if you account for it in the right way. And this also then has an impact on a lot that is going on with the review proposed by WRI in Scope 2 and Scope 3. I think that if you type survey response WRI greenhouse gas protocol, there are a lot of also links and things related to the greenhouse gas protocol. I think this is really top of mind for the industry. Again, there are many papers around the topic. Now you have Princeton studies, Berlin studies that explain and model the impact of 24/7 in the grids for hydrogen, for heavy loads. I think that everything that relates around here. Again, you have these several studies from Princeton, from Harvard on the concept of environmental liabilities, which is essentially a proposal on how to link the carbon market to the financial market where carbon really sits in your balance sheet. If you put that together with carbon equivalencies and put it together with the reduce Scope 2 Scope 3, upcoming and alleged new legislation from the SEC on mandatory disclosing of carbon and what is happening in Europe.

So, these are not necessarily sitting on my bookshelf, but I think they all link to articles and academic papers that I think are very interesting in informing market participants on what different methodologies, different outcomes of Scope 2, Scope 3, Scope 1 reviews market-based yes or no would have in the future design of the electricity system.

So again, just a few names, Tom Brown, I think is the professor that has been doing a lot of studies at Princeton, also has several studies. And this paper that I mentioned on carbon equivalences, the environmental liabilities paper from Harvard is I think is Robert Kaplan and then definitely the Amsoil paper on the impact of the grid.

But if you start digging into it, there will be many more that I'm forgetting right now. And yeah, this is more or less related to this topic. What is really top of mind together with a bunch of the upcoming legislations policies that are coming today. I think it's, it's really a great, great time of change where there's a lot of opportunity to make your voice heard and it's good to read before some papers to be more informed.

Laura Sochat

We're definitely not at a shortage of things to read and I'm still very interested to hear what it is therefore that you're reading at the moment, not on the topic, when you stop working.

Simone Accornero

Yeah, right now I'm reading a book from it's a collective, it's an Italian group of author called Wu Ming. I'm reading a book from them, "54" I think it's called, that is about the Second World War. And I'm reading a Spanish crime novel, and Homo Deus which is a book from Harari, depending on the mood. If I'm not tired, I read Harari. If I'm tired, I read the Spanish crime novel. But that's more or less what I have right now.

Laura Sochat

Amazing. We'll definitely be putting those down on our list.

Simone Accornero

Yeah. One is in Italian, so I don't know if it's translated. Maybe Francesco knows them.

Francesco Nobili

No problem. But thank you very much, Simone, really, for coming on the show. It was a great conversation and looking forward to following you guys in your next steps.

Simone Accornero

Yeah, same with your podcast. I will be a listener definitely.