Siemens Grid Software Podcast <de>coding the future of energy – Episode 4: Accelerat<ing> speed with Julian Nebreda and Sabine Erlinghagen

Speaker 1 [00:00:03] Hi, Lenny.

Speaker 2 [00:00:04] Hey, Anne, so great to see you back in Germany again after such a long time.

Speaker 1 [00:00:10] I know, right. And so great to see you. It's been more than two years. And looking around, it seems like everything's changed since my last visit.

Speaker 2 [00:00:19] Like what?

Speaker 1 [00:00:21] Well, those wind turbines over there. When did they go up?

Speaker 2 [00:00:25] Oh, right. Hmm. They were installed and went into operation last summer.

Speaker 1 [00:00:30] How cool. I didn't even know your town was getting a new wind park.

Speaker 2 [00:00:33] Well, I didn't actually know they were coming either until they started construction. My friend told me that planning began about a year and a half ago and the approval process went really fast. Then construction only took three months in total.

Speaker 1 [00:00:49] What? I thought getting something like this approved and built here in Germany normally takes years or even a decade.

Speaker 2 [00:00:58] Yeah, it did used to be like that, but in recent years they introduced interactive citizen participation.

Speaker 1 [00:01:05] Oh, is that like voter or citizen initiatives in the States?

Speaker 2 [00:01:09] It's a bit similar. This was actually a pilot project by our state government. The way it works is that they create an app and website where people can have a say in whether a project like the wind farm should be approved or not.

Speaker 1 [00:01:23] So it's like a referendum.

Speaker 2 [00:01:25] Kind of, but that's not all. You don't just vote, so to speak, for a project. Locals can also sign up for regular updates and can even add information and data, too.

Speaker 1 [00:01:37] Okay. So it works a little bit like a city council where everyone has their say on local government initiatives. How does the process work over here?

Speaker 2 [00:01:46] Exactly. Everyone can let their voice be heard and there's a consultation phase, but eventually there's a deadline of two months for a final input and then a final vote. Everyone involved agrees to accept the result of the vote. They also waive the individual right to pursue legal action in the case they don't like the outcome.

Speaker 1 [00:02:06] So since the wind turbines were finally built, then it sounds like an overall majority of local residents were in favor of the project.

Speaker 2 [00:02:14] At first there was a lot of opposition. But what finally shifted opinion was a proposal to give the town a direct stake in the wind farm. Local residents understood the benefit. Right now, these new wind turbines are generating enough electricity to cover most of our town's energy needs. It's only when they produce a surplus that it gets fed back into the grid.

Speaker 1 [00:02:36] That sounds like a win-win solution for everyone. Would you say that the short deadline for a vote on this wind farm also played a role in getting people on board?

Speaker 2 [00:02:46] Yes, I think the local residents understood that by working together within a short time frame, they'd be able to have a real say about terms and conditions.

Speaker 1 [00:02:56] Well, for me, Lenny, this sounds like this government pilot project found a great way to get people involved in community decisions.

Speaker 2 [00:03:04] For me, it's a bit like being in a restaurant, right? You can read the menu up and down, but if you only have half an hour for lunch, then you have to make a decision faster. Otherwise, the waiter, or in this case, the opportunity to make your town's energy supply more sustainable, simply disappears.

Gerard [00:03:25] What you've listened to is our utopia. The best case scenario, so to say, a potential future world of true collaboration within the energy sector. In all of our podcast episodes, we will kick off with a short introduction to set the scene and what a bright future could look like. And then we dive into a discussion on how to get there.

Welcome to Decoding the Future of Energy, a Siemens Accelerator podcast. My name is Gerard Reid. I work in the finance industry with a focus on both the energy transition and the digital energy revolution. As your podcast host, I want to explore a range of facets and how we can develop a more or even fully sustainable energy world. Today's episode is all about speed. For this topic, we have two amazing guests Sabine Erlinghagen, who is the CEO of Siemens Grid Software, and Julian Nebreda, who is the CEO of FLUENCE, which is one of the world's leading energy storage solution providers. Julian, Sabine, can I kick this off by just sort of giving you sort of my perspective on what's going on in the energy market, which is that things are speeding up and accelerating beyond sort of what, you know, most people on the streets, let alone in the industry, sees or thinks. I mean, do you see it the same?

Julian [00:04:50] I mean, personally, sometimes I look back what I was thinking three months ago, I'm surprised that, you know, how fast this is going. So I agree with you. You are right to a certain extent. I don't think necessarily everybody understands the urgency we have in front of us and the need for speed, because this comes from, you know, technological evolution, but also from a need on the market that we need to, you know, really transform the electricity and the power sectors very, very fast to really, you know, address, you know, climate change. We have the main role in addressing climate change, and we need to work even faster than what we're doing right now.

Sabine [00:05:33] I couldn't agree more. I mean, I feel like we are updating our forecast and the speed upwards every three months now. And if you see the urgency in the discussions that we have on network conditions, on connection requests for renewables, I

mean, somebody called it an avalanche that we're seeing and nobody was prepared for the speed.

Gerard [00:05:58] Sabine, so what do you mean by that avalanche? And maybe you could just give an example so that people can really understand.

Sabine [00:06:05] So when I talk to especially grid operators on the ... that connect renewables, they tell me in the last 12 months the requests for connecting renewables – so that is a PV on your rooftop, that's an electrical vehicle charging place – have gone up four times just in the last 12 months. Or in other words, a DSO in Eastern Europe just said they have 100 to 200 requests that they need to process every day. And I asked them like, how much was it a year ago? And they said almost none.

Julian [00:06:44] The same. I mean ... our planning process internally, we're always catching up. You know, it's a matter of working very, very hard to be able to put in all the, you know, the supply chains, the engineer capabilities, a pro development that, you know, to be able to keep up with what the market is requesting. But the interesting thing, when you think about it Gerard, is that as far as we're going, we're nowhere near where we need to go to really be able to get to net zero by 2050. We're nowhere near, we need to double this, you know, so we need to get used to this speed because this is the way we will have to work for the next you know, 20 years, you know, in order for this to work out.

Gerard [00:07:26] Can I ask on that point there? I think the speed of change is accelerating. So I'm actually not negative that we're going to get there. I think actually we will get there because what we've got is incredible technologies that are coming to market and we've got push and pull factors that we didn't have before. Sabine talked about the market pull, and then we've got the push of, you know, regulators saying we need to change the way things are being done. Right?

Julian [00:07:52] Yeah, no, clearly I work in this industry because I believe I'm an optimist. I believe we're going to do it and we're going to make it happen. And that's you know, I wake up every morning with that in my mind, but, you know, it is a lot of work and we're nowhere where we need to be. You know, I do agree with you. We're going to get there because if you look at the speed with which we've got here, we should be able to get there. But it will require a lot of work, you know, and so that's essentially my point, it’s a matter of speed ... is going to be the essence of what the way we want to be working for the next ten, you know, 15, 20 years. No?

Sabine [00:08:27] I mean, I tend to share the optimism. I mean, there's a lot of recently very good news of banning electrical vehicle sales from the EU at 2035 I think. And good regulation coming out, faster pace of regulation in the same direction going out, but I think it’s still annoying that we waste so much energy and time on discussions like let's enter into fracking ... newly or something like that ... if you know that fossil fuels by and large can't be there anymore. So I think there's still a lot of confusion and discussions going into the wrong direction. And if we manage to channel those energies in those discussions also towards a really speedy transition, then I'm even more optimistic that we’ll make it.

Julian [00:09:20] And yeah, I think one challenge, you know, is that you're right, we have the technology. Not all the technology we have is commercially ready. You know, the basic technology is there. When you looked at it and I say, ‘hey, how’s 2050 gonna look like?’ Yeah technologies ... carbon capture exists, you know hydrogen exists, you know battery storage, you know exists, you know, so clearly, renewables. But some of these

technologies are very early on. They still have a lot more to do in terms of their efficiency and commercial processes. So there is a lot of work we'll need to do, not only on the business side, on the technology side, on the commercial and the regulatory side, to be able to continue in this way. You know?

Sabine [00:10:04] Let me maybe challenge that a little bit. I think we are by far not leveraging the technology that exists fast enough and to the full extent. And if ... so, there's no lack of acceleration or reduced speed because the technology is still not there. I think we just need to use it. And there is one really good example where, I mean, we were for ages discussing how we could connect Ukraine to the European grid. And it was, I think, discussed for seven or eight years in theory. And then when the war started, it was done in three weeks. So I think by and large, this is the mindset change that needs to happen and to get the speed just to do it and just to not think about what could theoretically go wrong, but just take action and then figure out what you need to course-correct in the course of taking action. And you see that in a lot of cases, if the urgency is there, we are capable of doing quite amazing things in a really short time.

Gerard [00:11:11] And by the way, I think that's a beautiful example, Sabine. And actually I'm really excited about the future because what we've got is we really have because of the Ukrainian situation, climate change has moved from the Environment Ministry to the president's office,right? It's really now of national security and whether that's in China,the US or Europe, I see like a huge regulatory push in and around this transition, right?

Sabine [00:11:39] Absolutely. And I mean, if you go to places like Finland, for example. I mean, again, it's a geopolitical issue. You want to get more independent and then you realize it actually is a strategic advantage because you have a lot of space. You can put a lot of windmills without a lot of protesters like in other countries, and you attract industry. So I just learned that Finland has 16 gigawatt peak at the moment and they've connection requests of 200 gigawatt for new wind. And the reason why they put it at that scale is because they want to attract all the new industry, too. And it's in your backyard. It's they want to attract the battery manufacturers. They want to attract the data centers and so forth. And they do that by having clean power. And that is what gives me hope. Or take the Ukraine again. I mean, they want to build back in a way that they become the green energy supplier for Europe. That's the pieces where there's really hope and good reason for optimism that people see it as a way to be more competitive, to be a place with 100% renewables.

Gerard [00:12:52] Julian, what's your thoughts on that?

Julian [00:12:55] No, I cannot agree more with Sabine, I mean, the other issue to bring another aspect to it, we're talking technology and regulators and ... is the customers, you know I think the support from the customers, the actual the people who consume electricity ... because at the end of the day, the clean energy ... not only because of the clean aspect, but because this is energy that can be provided at more ... at lower prices, that can be provided more efficiently, that they can be consumed in a way, they can be priced in a way, that works better. I think that has been a major, major, you know, a tailwind that's helping the industry and supporting it. So, you know, I think that that is something that for our business at least makes a big difference, you know the fact that customers are now asking for it because they see it as a much better product, even independently of the sustainability type of aspect of it, no?.

Sabine [00:13:51] You're touching a very important point. I think there are two aspects to this. The first one is that everybody wants to help and to contribute to being independent, right, and to be renewable. So there's this big push from, a willingness to help both in consumption shifts, in saving energy and producing energy and so forth. And the second thing is, if you look at how fast distributed energy resources can be built out, the beauty of that is that it's a lot of independent decisions by millions of people to build a small thing, which doesn't require long infrastructure projects with permissions and whatnot. It's basically the solar panel on my balcony, which ... there's no infrastructure invest at all, and I start to contribute. So those millions of independent decisions will add up quite significantly and I think we're still underestimating the magnitude and the speed of that.

Gerard [00:14:52] I'd like to actually add to that as well. Actually, if you look what's going on in the market, what you're seeing is record installations of solar, wind, and batteries. And by the way, that what that means is for both of your businesses, you've got a booming opportunity going forward. So my question to both of you really is how do you speed up your organizations to move with the opportunity?

Julian [00:15:16] I mean, for us this is ... from a management point of view, the most difficult part. I'll tell you ... maybe if I can tell you very quickly where I come from.So I come from the utility world, you know, a power exec. I work in their utility business. I work in the development business, developing renewables. But these things were, you know, ... grow at a linear pace. Now I'm working in an industry that's, you know, growing at a much higher pace than the what software used to do a few years back, but with a lot more complexity because we are a combination of digital and technology. And, in my case digital and our world don't have pollution or it requires a level of coordination and work internally that, you know, you cannot read this in the business books, it's something that we are building ourselves. You know, you need to be ahead of the curve because if you don't have the people power, the people that you need, you don't have the technology capability ... if you don't have them ahead of time, you won't be able to make it. So it requires ... it’s a little bit of a different approach, at least for our industry, that we need to be ahead ... from a technology point of view, from a people point of view, or human resources point of view from a ... you know, that capability from our understanding of where we're heading and you know, it's exciting is what I can tell you, it’s exciting and it's a great industry to work on. I always tell people this story. If you could pick between working in this industry when Edison and Tesla were fighting in New York to see how the industry was going to work, andnd today ...our big today ... you know, it’s a lot more fun, this is a lot better! This is a great you know, if you could pick the two, you know, tell you you’re gonna work in that ... remember ... downtown New York, figuring out how the how the power industry is going to work, or today in this world ... this is a much better time to work, because it's so exciting. You know, every thing you're gonna do, it requires a rethinking and you are building how this is going to look. You know like Sabine was saying the other day when we were talking, you’re building the way this is going to look later on, decisions we are making are going to have an implication for maybe many, many, many years, no?.

Gerard [00:17:26] Sabine, you work for a business that came out of the Thomas Edison era called Siemens. Right? So how do you look at it?

Sabine [00:17:34] I run a business called Grid Software in Siemens. So from a growth and speed perspective, the beauty of software remains that at least you don't have a supply chain to manage, which, Julian, I think is one of your biggest challenges, I guess. So that is a lower complexity. Of course, you have a big recruiting challenge to find the right people because you want people that both know software, state of the art software, and

who know the power industry. So who have genes of Edison. Still, we call ourselves grid nerds, grid nerds in the software world. But I mean, one thing that really matters for us is to be faster in innovation and faster to scale. And there are two aspects in the grid software world to that – A) I mean, this industry had a history of everybody being special and everybody doing it their own way. So everybody had their own flavor of a software tool and recreated the world, I don't know, not 20, but 100 times across different utilities. And we tried to change that paradigm together with our customers because we as an industry, so as vendors and as grid operators, I think all recognize that this wasn't a really productive way of going about it and certainly it's not a speedy way of going about it. So that's number one. And number two is that the industry, since it's so critical, it's critical infrastructure to keep the lights on. If you have a control room to stabilize the grid, if you make grid planning, if you run metering infrastructure, then there is quite a conservative nature to it, which is a good thing because then the grid stays stable. The bad thing about conservative nature is that you might not want to adopt innovation as a first adopter or you don't want to be the first one. So if as a vendor, you release innovation, you build it three years, you wait for a year to find the first one. After the first one, the industry waits for another two years to see whether it works and then adopt it. So you have a five year old innovation until it starts to scale, and that's something we fundamentally need to change. And we are actually changing it by collaborating in new ways and by making our customers, or our partners, the utilities part of the innovation journey so that the speed of adapting is is actually happening right away. And we can bring innovation to the market much, much faster and scale it better.

Gerard [00:20:16] Sabine, on that point, I perfectly understand what you're saying in terms of getting to market, but you actually have a brand name Siemens. You've been around for 100 years, so it's difficult for you. I'd love to hear what Julian thinks because at the end of the day, FLUENCE is a business that's only been around a few years. So how do you bring your battery technologies and solutions to market?

Julian [00:20:36] I tell you this and this is, you know, as you know, we are a joint venture between Siemens and AES, and we're a publicly listed company. But we do a lot of work into new technology solutions where you know exactly what Sabine was communicating, in order for the regulator or for the off-taker to take the bet on our technology solution, requires strong branding you know, and knowledge. And I think the fact that we're working a lot of time with Siemens makes a difference, you know, that that provides the security in the hands of our off-takers, of our customers, that this is going to work as we, you know, what we are telling them is going to happen. It is going to happen. So it’s a great value. And, you know, I hope that someday we'll have the same brand, you know, strong brand that we can, you know, because it‘s very it makes a difference and it really accelerates the process. You know, we were negotiating a deal for transmission in Germany and we were with Siemens and we needed the transmission companies to really understand that what we were telling them was going to happen is going to happen. And I think working with Siemens, who has been, you know, been providing them equipment and services and software for years, made a difference. And we would probably, would have never been able to do it without them.

Sabine [00:21:55] I mean, it's actually a pretty intentional approach that we are taking there as well. I mean, leveraging the brand of Siemens, of course, for our business is worth gold because you have the reliability and the track record and the knowledge in-house. But we also open up for partners and partner with smaller companies with not so well-known brands and try to leverage the brand of Siemens and that partnership for those partners and in the end jointly provide better value and also accelerate that trust then to

take on an innovation that even exceeds what Siemens only can deliver, because we alone won't change this industry fast enough. So it's it's very important to work with FLUENCE, to work with others, and have an even more compelling proposition.

Gerard [00:22:43] Can I ask you a little bit about sort of the role of regulations in all of this? Do regulations hinder or help us actually speed up this transition.

Julian [00:22:53] I'm a little bit further away than Sabine on this because, you know, we work with top players in the market. But I'll tell you, there are major regulations that are ... huge tailwinds, inflationary upturn, new ag, you know ... and if you look all around the world, there are a lot of headwinds ... you know, saying ... this needs to be moved forward, electric vehicle subsidies, or that ... thise transformation needs to go forward. When you go to the power sector, Sabine mentioned this, is that, you know, reliability is very, very important: Lights go out, people die, you know. If lights go out, people's lives are disrupted – in a way that makes their lives a lot more difficult. And that's where the work gets ... it's more friction. You know, we need to be able to provide services that support the reliability requirements and we need to give them the trust to provide them the ability to trust our telling them it works, you know? I also don't think that our work is ever done, you know, we continually are working on, you know, we would indirectly because we usually do not see the regulator of ourselves, we do it through our customer spot, but is something that we are on top of and that we think of when we think about our approach and how what we want to do in terms of testing, in terms of ensuring their reliability, to ensure that you can convince the regulators, not only from the power sector [but] everyone that regulates our industry ... that you know, what we're telling them that it will do ... it will happen.

Sabine [00:24:26] I think regulation by and large, can play a major role, and it does start to play a major role in a positive sense because it starts to focus the attention on the target. Like what I said, with the ending of combustion engine sales for cars in the EU. So you know what scenario to plan out for. And that basically makes all players move in sync and that gives speed. And what is also a positive sign is the pace with which you see regulation being passed, especially since the crises are multiplying with Corona first and the war in Ukraine after that and the energy crisis being felt much more. I think we see a pace in regulation that is increasing and increasing in the right direction. Still, there is a lot to do. I mean, if I'm a grid operator these days, I'm paid better for copper than for software. And definitely, copper is necessary, but it won't give you the speed that you need and still a lot to do. But at least momentum in the right direction.

Gerard [00:25:37] And that's a really good point you're bringing up there, which is I mean, I think we'd all agree that digitalization is a key to this energy transition. But it's very difficult for, I think for regulators and even incumbents in the industry to get their head around it. And then even when they do get around ... their head around it, to actually accept it and go with it. Right? So how do you help them change their mindset? Because, again, if we don't do that, then it's difficult to really accelerate this transition.

Sabine [00:26:06] I mean, what we tried to do is give very tangible examples. So if you say digitalization helps, then it's pretty abstract. But if you say, by managing a grid in a smarter way, you can transport 30% more power over the same line. Then it becomes apparent that investment into a piece of software is better to get 30% more for the same line than building a new line. Or if we can say we can reduce one percentage point of technical losses across the EU if we did X, Y and Z, and this would save you the equivalent of ten medium-sized power plants, and so forth ... so we try to give very tangible examples to bring across the point that your growth of hosting capacity for

distributed energy resources at best is linearif you only rely on copper. And can be exponential if you add the capabilities of managing grid smarter. And so we try to bring that point across quite strongly into regulation and hence try to make the circumstances for grid operators to invest into smarter ways to try to increase those incentives in the right way.

Julian [00:27:24] In our case, Gerard, our technology, because ... when you think about what we offer, in stores, you know, batteries are a dumb you know, they are not they're not necessarily are an intelligence. What we bring to the table when we install equipment is the digital solution that comes with the battery, that converts a battery into something that can be used for frequency regulation. Big, you know, whatever you want to resolve ... for voltage, for whatever you're resolving or trying to address or to improving the reliability of a transmission line, or a distribution line ... so in a way, you know, our value creation comes out of the software part and is that software part convincing? Are the regulators at the software part, you know that that's where we add the value and where we have the capacity. And I think that's what's going to, you know, in a way, when we look at our equipment, we see, you know, our equipment to head off X, we believe that an X is going to multiply over time and there's going to be a lot of value created as we continue adding value digital capabilities on top of our current cells to ensure those matters continue and do what the market needs as they move... So, you know ...

Gerard [00:28:36] So we do move into a much, much more complex world going forward. So how do you deal with that complexity going in the future?

Julian [00:28:44] You know, I'm old enough that I remember when the gride were managed by people sitting in a control room making decisions, you know, and touching buttlons or moving switches. Now that there's no way, you know, there's no way of managing a grid that has human intervention in decision making in the short term. You know, the human intervention will have to be made in long term, short term will have to be led to, you know, the digital solutions, like the ones that Siemens offers, that are really going to allow networks to react on their time and manage the complexity of supplies. Before there were two, three or four, you know, power stations, three big lines and four radio, so you know, a human being could manage it effectively and efficiently, but that's completely out of the question today, in the world we're getting into, you know.

Sabine [00:29:36] I mean, we always make the comparison analogy with cars. I mean, in the past you had cars where you did everything yourself. Now you have a braking assistant, you have a lane-keeping assistant, you have an alert for the distance, you have a parking assistant and you have assisted driving. And then at some point at least semi-autonomous, if not autonomous driving. And the same thing will happen to grids. And so this will go towards a foresight driven approach. So far we are analyzing hindsight and that foresight driven approach will be mostly autonomous in how you run those grids. Of course you have human intervention to approve things much like you have in your car. When you touch your legs, start not to touch your wheel anymore and so forth, but that's where we're heading. Otherwise, it's complete cognitive overload. If you tried to manage a medium or even low-voltage grid with the same means, then you were managing a transmission grid before.

Gerard [00:30:36] Can I say that, you know, a few things get me really excited about the future and I have a view that things are going to accelerate. And one is that we've just never had so many brilliant minds across the world competing with each other, first and foremost, and secondly, cooperating with each other. And I do think that's an important

point because you both sort of mentioned that you need to cooperate, where before we lived in a world where you never ever would cooperate with someone that you compete with. But somehow you do this today, which is very, very interesting. Right?

Julian [00:31:10] We are a pro corporation between a developer and a technology provider, you know, so it's our DNA. And we looked at the, you know, our work with our partners ... is constantly, our partners in general ... is constantly looking ... and you're right, I think very, very good insight that I have not you know ... these are very different world to the world twhere I started working ... where, you know, you feel that you are the king of the world and you know, hey, if you are not the king or the queen of the world, do you know or that you are not the queen of the world? If you are not the right, you are not on the right.

Sabine [00:31:45] I mean, there are two things. I think, first of all, I mean, the pressure on this whole thing is so enormous that it's, you know, there's no solution other than cooperation. And the second thing is the cake is getting bigger so fast that everybody is not anxious about not having his or her piece. So that's why in this industry and even I see the pace of this will to collaborate also going up, so there's speed in here as well ... of people approaching us to say can we partner, can we do something together? We believe we can be faster. And that is part of the exciting thing, to work in this industry these days.

Gerard [00:32:28] Yeah. Can I ask you both just to take a quick look in the future and talk a little bit about it, how you see it?

Julian [00:32:35] You know what makes me work every day like I work and they know ... is a view that we are gonna have the electricity, the power sector ..It's going to be a sector with no emissions. That is going to be a major contributor to resolving the climate change crisis ... as a generation we are confronted. You know that's my dream. And when we're talking about speed, supply chains, digital ... you know all of that, those are, you know, great, huge, difficult challenges,but, you know, their price is so, so big at the end. Their ability to contribute and make a difference in people's lives. That makes that makes it exciting and makes it, you know, not no better. I cannot think of a better industry to work. I cannot think of a better time to be in an industry. And I cannot think of a something that is more fulfilling, you know, in terms of a personal mission in life ... so ...

Gerard [00:33:30] Sabine?

Sabine [00:33:32] I can only agree to what you said and maybe I would add it's fun to increase the speed. It's fun to accelerate. It's fun to collaborate and get things done. It's fun to show what's possible. And that is what gets me up in the morning and why I believe the best brains, to come back to what you said ...the best minds in the world are getting on top of this problem, and it's fun to work together with the best minds to really change paradigms, change them together, change markets, change dynamics, and show the world that we are capable of combating climate change and capable of achieving a 1.5 degree target. And I'm convinced if we all do this together, there's a chance that we can do it.

Gerard [00:34:26] Well, I've got a great smile on my face and I can only thank you both and wish you really all the luck in the future in cooperating, in competing, and accelerating change.

Julian [00:34:39] Thank you.

Sabine [00:34:41] Thank you.

Gerard [00:34:45] One thing is for sure we need to speed up the energy transition in order to tackle climate change, as well as reduce geopolitical tensions in relation to the import of fossil fuels. There are lots of ways to do this. One of which is closer collaboration, which is what you have between Siemens and FLUENCE. Such collaboration leads to faster and more agile ways of working and allows innovative technology solutions to get quicker to market.

If you would like to learn more about everything we've talked about today, I can recommend a visit to the Siemens Grid Software website at siemens.com/grid-software as well as the Siemens Smart Infrastructure, LinkedIn, and Twitter channels. You'll find all the links in the podcast description, and if you have any questions concerning the topics discussed in today's episode, please feel free to email us at grid.software.si@siemens.com.