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Distributing power in a volatile energy market, with Niklas Persson EVP, Head of Grid Integration at Hitachi Energy

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[Guest] **Niklas Persson**

[00:00] So, the whole political landscape on who gets the revenue first when the wind is blowing, you are connecting to four countries and when it's not blowing full speed, only 50%. Who gets that energy and at what price?

[music]

[Host] **Caroline Segerstéen Runervik**

[00:17] Welcome to Capgemini's podcast Keys to Intelligent Industry. Good morning, Fredrik.

[Host] **Fredrik Gunnarsson**

Good morning, Caroline. Good morning.

[Host] **Caroline Segerstéen Runervik**

So again, we have the opportunity to zoom out of our daily operations and speak about what we love the most; intelligent industry and really, truly have the privilege to talk to exciting leaders. You know, I was thinking one of the themes during this spring is the whole energy transition, right? So, we had the opportunity to talk to Ole Jacob Siljan at Yara about the fact that they are really in need all more energy sources to really also scale up their production. We talked to Annika Ramsköld at Vattenfall, about the fact that the competitiveness is really the key in terms of the energy transition.

[Host] **Fredrik Gunnarsson**

The energy transition is really close to our hearts, and but it's also, as you say, truly linked and with the overall industry transformation and industry development. So very exciting, yes.

[Host] **Caroline Segerstéen Runervik**

And today we have a leader who is truly passionate about sustainability, and you could say in the middle of it and has the, you could say the tools and the power to actually make an impact for the energy transition itself. So welcome Niklas Persson EVP, Head of Grid Integration at Hitachi Energy. Welcome.

[Guest] **Niklas Persson**

Thank you. I'm very happy to be today.

[Host] **Caroline Segerstéen Runervik**

We are of course curious about you and your journey. Maybe you want to start a little bit about your own journey so far.

[Guest] **Niklas Persson**

[01:52] You know, I'm a long timer in this industry, so I had one job before I ended up in Hitachi Energy or the former ABB actually. So, I'm a mechanical engineer, so it's a bit strange that I'm actually in this industry in transformation and electrification, but I'm a mechanical engineer from a degree with some financial studies as well. On top of that. But so, I have always been passionate and really curious how you generate electricity. So of course, then being a mechanical engineer, we had that on our agenda as well during university times. So, then I actually got a job in Ludvika in Dalarna, quite exciting. And my former girlfriend, now my wife, actually was also studying up in Dalarna , so that that was a perfect fit. And so, I ended up in Dalarna and started there. And as an engineer, of course I thought that I would be doing a research and development and maybe protection engineering and so on. But they put me in sales immediately...

[Host] **Caroline Segerstéen Runervik**

I could see that sales and marketing you started off with.

[Guest] **Niklas Persson**

Yes, I did that. And normally in the past you should have at least 10 years before you start with the business to business sales at that time. But I? I said OK, let's try and then moved on to substations or yeah, substations moved to Switzerland and in sales again, Middle East and Africa. And then I continued in marketing and sales for 10-12 years. And then I was off to say, OK, do you want to do something else? So, then I ended up in, in general management 2008. And then I took a global role, 2010, and I continued this journey in Hitachi Energy. And now I'm here after almost 28 years.

[Host] **Caroline Segerstéen Runervik**

So, looking at Hitachi Energy, maybe you want to elaborate a bit about what is Hitachi Energy doing?

[Guest] **Niklas Persson**

[03:42] As Hitachi Energy, we're a new company or a new brand you can say. You can say where the legacy is ABB. It's a carve out from an ABB group and the power grids business. And when Hitachi bought about 80% of our business, we were asked to be a freestanding company that can manage all processes by ourself. What we do actually is we supply products and solutions for the transmission and distribution grid, and we are active in more than 100 countries doing so.

[Host] **Caroline Segerstéen Runervik**

I've also understood when I look at how much you've grown, but also on the expectation of growth, it's really high. And do you then been able to grow so fast because you don't have the same legacy as other companies would have?

[Guest] **Niklas Persson**

[04:24] Yeah, I think that's not maybe the legacy thing. I think here we have a new ownership here and I must be honest and say that ABB before we became Hitachi Energy the last years was not really interesting in investing in power grids because it's a slow moving, high CapEx intensive business. And with Hitachi we have a long term vision, and we have an owner structure now that is really helping us to invest. But why we have grown is because we have. We have seen the energy transition coming slowly but surely. So, we have been able to invest in the R&D to have the right product at the right time. And we have also taken one strategic decision is that as its Hitachi energy we said that of course you can always cherry picking in a growing market and try to drive your profitability the highest level possible. But we all and I try to be humble, we are market leader and technology leader in this industry and if we step out of this energy transition and don't invest in it, of course the whole energy transition will go slower because there is not enough capacity to step in in front of us. If we would just focus on profit. So, we have taking a strategic decision to keep or increase the market share in a very fast growing market and I think that trust we have got from our new ownership structure to develop and nurture.

[Host] **Caroline Segerstéen Runervik**

So, you got investment, you got someone who really wanted to make this happen. What were the key things that made you still sort of elevate and grow?

[Guest] **Niklas Persson**

Yeah, I think what is clear that we actually saw the market, we had the products, and we really elaborated the strategy of the opportunity and seeing that the opportunity we have communicated that the company will grow with three times. So basically, from a $10 billion revenue company to a $30 billion revenue company. And with that comes of course a lot of bottlenecks and we have identified the key bottlenecks within the company being products capacity and factories being people and we are hiring 15,000 new people in this business...

[Host] **Caroline Segerstéen Runervik**

That's impressive.

[Guest] **Niklas Persson**

And we are going to invest $9 billion into CapEx in footprint in products, in R&D, but also onboarding people and trained people.

[Host] **Caroline Segerstéen Runervik**

And coming back to this energy transition, then that you're so passionate about, why is it so important that we really take some bold steps and investment right now?

[Guest] **Niklas Persson**

[06:46] It started us actually as the need for the world on the sustainability and we have to keep the 1.5° so close to it. Otherwise, you see the extreme weather events. How many billions is cost? Not just in monetary terms, but also in from a people perspective, how people suffer when you have these kind of events. So, it starts with the sustainability. I think all the countries actually came together in Glasgow Cop 26, where it really kicked off where all the pledges came from key countries, India, China was in, the US was in at the time, whole Europe and it was not just commitment to the degrees, it was also commitment to what energy we need to have and the shape and form of energy being renewable and sustainable. And that's where it started. And of course, we see this as a very key necessity. Today it has transformed a little bit. So, it's about the sustainability, but it's also about security of supply. So, the geopolitical tensions we have today is also fueling our market in a way that countries want to have their own energy sources and the fastest way to build new energy sources today. One to seven-year is actually renewables, solar, onshore, and offshore wind. And it's actually the cheapest form of new energy as well. So, security of supply is important. But then comes the third leg. Of course, we need to bring this energy in an affordable way as an industry and that that is where we also focus today.

[Host] **Caroline Segerstéen Runervik**

And it's clearly so we look at any topic today, we need to be self funding, right? I mean we need to have enough of energy ourselves. We cannot be dependent on Asia, US, here in Europe here, in, here in Nordics, we need to find our own energy sources, right?

[Guest] **Niklas Persson**

[08:28] Correct. What we have had, if we haven't had an energy system where we you rely on coal, oil, and gas, some nuclear and hydro as well they are all energy sources that you transport around the world. Some countries do have like Middle East, they have their own gas and so on. But many countries have to import. If you take China, 60% of their energy is imported, India, they import a tremendous amount of coal and Europe as well. We here in Europe, we import a lot of gas. Not anymore from Russia, but still there is a lot of gas imported and of course the energy source we have in Europe is renewable and solar renewable as well, but solar and wind, which is the fastest and the cheapest to integrate and then you can become energy independent.

[Host] **Caroline Segerstéen Runervik**

Hmm.

[Guest] **Niklas Persson**

But that means it's an intermittent power source. That means that you need to work really with your technical solutions, and I don't believe in countries going by themselves because that's going to be extremely expensive and...

[Host] **Caroline Segerstéen Runervik**

So, we need the ecosystem.

[Guest] **Niklas Persson**

Yes, you need an ecosystem with countries that you actually trust and politically can work with, which we have in Europe. We have a fantastic foundation for that. If you can interconnect grids, you can actually build out an affordable energy system faster and reliable.

[Host] **Caroline Segerstéen Runervik**

Based on what's happening exactly right now, this will only accelerate this interconnection, which is good, but I wanted to go back a bit to the energy sources topic because here in Sweden right now, it's a lot about nuclear. And I think every one of us know that it will be there and we need it. But I did understand also from the discussion with you, maybe we are a bit too one sided in this discussion, right?

[Guest] **Niklas Persson**

Yeah. So, Hitachi Energy. We are agnostic here. And also, Hitachi has a nuclear business as well. So, we are we are not against nuclear in any shape or form. We believe that's a source especially in Sweden that that is needed. If you look to Sweden, if you take that as an example, 80-90% is nuclear and hydro, which is not intermittent energy sources and that's a fantastic system to build on if you want to add new energy, mix into it because you can run a country 60-70% of. Intermittent energy sources and still keep it stable and reliable. So of course, Sweden has a fantastic opportunity to add a lot of intermittent energy and still manage the grid, which is sometimes the concern for many countries. Denmark has many days in a year more than 100% renewable, so they export as well. But they are of course interconnected, and you have to decide as a country if you think that that is a secure energy supply within European Union or if you want to go as your own way in one country and not connect to others. And that's of course a strategy that the Swedish Government has to put in the foundation on how we move forward.

[Host] **Caroline Segerstéen Runervik**

So finally on this topic, what should we do to really accelerate the energy transition and what would you if you also then could talk to the government, which I'm sure you're doing indirectly, what is it that we really need to do to accelerate this energy transition and also get all the energy sources to be used as much as possible?

[Guest] **Niklas Persson**

A couple of things. I think the nuclear agenda is, is there is there and it needs to be there, but and the on the renewable side, the regulatory framework that Sweden had together where developer had now to pay for the transmission and the platform and then make that feasible on a spot market. So, the regulatory framework in Sweden is problem not viable actually to build new projects. So, I think you can benchmark UK for example. And I think other countries like Netherlands and maybe even Germany goes into this cap and floor regime that gives you certainty on the lowest price. When you have a cap on the highest profit that you can actually make, I think that's needed actually because then you get speed and if you look at the energy sources, the one that is the fastest and the cheapest to build, steel is renewable energy and if you have the right framework around it, we can actually be quite fast.

[music]

[Host] **Fredrik Gunnarsson**

So, for Hitachi Energy, given this transition and this development across the countries, your customers and more specifically what are you delivering?

[Guest] **Niklas Persson**

Our customers are, I would say today 80% utilities and 20% industry. Industry that want to electrify. They buy grid connections; they buy also devices to make sure that they don't pollute the grid. If you take a steel industry when they use energy and they actually put heat into an into their processes, they actually pollute the grid as we say with a lot of harmonics and so on. So they need also to make sure that the pollution of the grid is minimal according to the grid code and then we have solutions that we help industries to make sure that they can connect to the grid and keep the grid stable and then we have the utilities or the project developers that also become kind of utilities. Which is 80% of our business and there everything from grid connections to power quality solutions in the grid

and then of course our largest business, the high voltage DC Business Today, which we provide solutions to interconnect countries, interconnect grids and transport the vast amount of energy over long distances with low losses. So that's what we do.

[Host] **Fredrik Gunnarsson**

And we see in the press new contracts being signed, we have multibillion euro deals with utility companies around the world. How does that type of project actually look like?

[Guest] **Niklas Persson**

[14:07] If we go five years back. And say, OK, how did the project like this look like in the past? So, we had a request for quotation, took us minimum two years to actually do the tender and get to a conclusion. These customers, they are pretty complex, the large projects or the multibillion deals, they are very complex both contractually but also technically and then you go into execution. Which is can be between four to seven years. Today, depending on the complexity and the size and the also the loading in our factories. The two year of tending we cannot do anymore. We have a market share, and you have a hit rate of course and if you spend your key engineering resources to do a two year of tendering, you lose a lot of capacity. So, we start today with working with the business model with customers. So how do we engage? So, we propose today we do mini tenders so they can get their kind of a competitive benchmark on who we who is capable of doing the project. And then we asked them to select very fast. So, within three months they preferred supplier and then we start techno commercial discussion with the likelihood to close that project, which takes them 90% likelihood that you close that project to together. So you take away 60% of tendering capacity that was wasted in the past and then we talk to customers say let's not do a bespoke solution for every project that look in standardization, modularization, design one and build many and that has created a lot of synergies for us. So, we don't have to do as much engineering in the past. And then of course, we standardize and modernize our interfaces where we save a lot of time as well. And with that, we can increase the capacity from having approximately ten projects in parallel and now we go up to. More than 50-60-70 projects in parallel.

[Host] **Caroline Segerstéen Runervik**

Would you say that you have set an industry standard in a way because you really changed the business model you changed and also enabled for your clients that this shift will happen much quicker?

[Guest] **Niklas Persson**

I would say we changed the industry standard on how to deal with this project. With many of our customers, I would say also that not everyone is 100% convinced in this new process, but all our key customers have actually bought in, and we are then developing the new way of working together

[Host] **Fredrik Gunnarsson**

So, it also means a massive change on the way you work with the projects, right? Moving from engineering to order to configure to order reusability, modularization. Can you elaborate on what that means for internal way of working organization processes?

[Guest] **Niklas Persson**

[16:39] Yeah, I think I used to say to my team at least that we talk a lot about digitalization and everyone wants to offer digital solutions and so on. We are very digital in our operational technology. So, we have had a digital control system since the 1980s. So, I'm very happy what we offer to customers. Today we are not lacking, offering in terms of digitalization. What we have been lacking is our internal process in terms of digitalization and how we work and how we actually take the benefit of other processes. So, we have spent the last years now to develop new tools together with partners in order to do this complex engineering in a much more simple way. We also onboard a lot of new people that of course. And have the experience to deal with the engineering process that we had in the past and therefore we need to build intelligence into our tools and processes in order

to make new employees being productive and effective. As fast as possible, so we have worked a lot on our internal processes, which includes modularization, standardization and defining interface points. Where do we have engineering critical points with our partners, so we know them and master them

[Host] **Fredrik Gunnarsson**

We see many companies going through this journey or trying to get modernization, usability and standardization to achieve exactly what you said you know the more efficiency in the flow, but it's proving to be hard. It is difficult to go through such change. I mean, when you see that change happening, well, what's the difficult part or is it difficult?

[Guest] **Niklas Persson**

It's very difficult. I would say there are many, many layers to this. I mean, first it starts with customers. You have to agree also that you change your process with customers. So, we, we work with beam engineering tools and I'm sure you're aware about that as well. It's a very efficient way you're working. So, it starts with the customers to get them on board, on working in new ways. Then it's of course their own culture that we have to change the way you're working and that's also very difficult. So, I think it depends on the strategy and the vision. We have in the in the large project business, we have actually increased the output by four times now

[Host] **Caroline Segerstéen Runervik**

So how do you get the organization with you on that and how do you pick up the ideas from the organization to really do that 1% or more cost efficient or you know one hour more efficient, how do you get that to happen in the organization?

[Guest] **Niklas Persson**

We work a lot with the clear vision to show and discuss internally where do we go, want to go and why. And as I mentioned before, we have decided that we want to be you know, contribute to the energy transition. And that means that we have a huge volume to take care of if we are successful in doing so. And of course, people get scared because the first reaction is, wow, we have now to work much harder. So, when you go from ten projects in parallel up to, you know, several 10s of projects in, in, in parallel, of course, people get a bit scared and it's not just to hire new people. and think everything will work perfect, but then comes you know the willingness when they say, OK, this is not just 10%. More to work a little bit more, harder and work overtime. We have to do it differently and then comes the innovation spirit and fortunately we have a lot of engineers, and you know engineers needs they like to innovate, and we got them on board I must say and.

[Host] **Caroline Segerstéen Runervik**

A very strong purpose, of course.

[Guest] **Niklas Persson**

Yes, and the purpose is there. Of course I have everyone understand why we want to do more. It's for us. It's for our kids and the families in the future.

[music]

[Host] **Fredrik Gunnarsson**

You mentioned the utilization and we understand there's a lot of going on in that area and something which is always mentioned is the data and AI generative AI. What is that supposed to contribute in this kind of process and what what's your view and strategy there?

[Guest] **Niklas Persson**

[20:34] We are exploring AI. We try to understand exactly where we can contribute it. We see it quite efficient in our engineering processes. How we can generate layouts and the various types of layouts to get the most optimum one engineered in a very fast time. We see a huge opportunity there

before you had to do it with the manual work and manual engineering and maybe you did two or three proposals and now you can generate many, many more proposals in the in a very short period of time and then evaluate what is the most effective solution for the customer and for us to execute. So, we see a lot of potential there. Software, of course. I think everyone knows that software using AI and our tools and processes that we have, we see a huge opportunity there also to verify the code that we use in our solutions. So there of course, yeah. And then you have all the texts related topics you have reading contracts, managing requirements specifications from customers, etcetera in an effort way we see opportunities there. So, there are many, many areas where we think that we can benefit from using the future tools.

[Host] **Fredrik Gunnarsson**

You mentioned the sourcing supply chain aspect that you are obviously working very active with both your own partners to get products into your stations, but also your own factories. Given the overall tension in the market, the regulations, what's your strategy when it comes to supply chain and production?

[Guest] **Niklas Persson**

[22:06] We don't make a new strategy because of a few geopolitical events. Of course, if they are sustained, then we have to maybe change certain things. We are active with production in 60 countries. So we are somehow, I would say, resilient to some of the geopolitical tensions as we have a very global footprint and that's a benefit for us and then to increase our capacity the fastest way for us is actually to do it on our sites you have their management capacity, you have competence, you have also sourcing and with that we can build a new factory in two years. So, if you take a transformer factory that if you do it, Greenfield can take up to seven years, a large power transformer factory and we don't have that time. So, our strategy there is to actually build out our brownfield. In the global footprint we have...

[Host] **Caroline Segerstéen Runervik**

And of course it is interesting. I do some reflections between Hitachi Energy and Capgemini; we have clients that are completely global. We work with clients across the globe, but we also have very strong locally and. And then we talked about the first, you are scaling up, you are recruiting engineers across the world, you've been able actually to attract engineers to come to Ludvika and I heard you said you have 100 nationalities as of today in your operations. So how have you been able to really attract the people to Hitachi energy and how do you make sure that they get on board?

[Guest] **Niklas Persson**

[23:36] First of all our branding team, when we became Hitachi Energy, they did a fantastic job to position us in the in the purposeful way in the job market, the purpose you know, in clean energy and sustainable future for all, I think that is very attractive for many people today and for the first time in this industry, it has been a boring industry, you know, no growth, very stable business in the past and then go into this sustainability journey where we actually make a difference for real, it's not just the slogan, it's really, we can contribute. All our produce are in one way or the other for the sustainability of this Earth actually. Then we have the advantage of being in in 100 countries, so of course we have this global mobility, and people can move, and we are able to hire engineers highly skilled with the experience and also willingness to move in many countries.

[Host] **Caroline Segerstéen Runervik**

And where do they come from? Where do you see the best sort of attraction? From which countries and where do you actually see that? We also get the engineers that we need to move the needle really be in the forefront.

[Guest] **Niklas Persson**

So, India is the is the country where we hire the most, the rest of Europe, but also a lot of people from the Middle East, well-educated from Egypt, from other areas as well. And then of in Sweden,

we actually see unfortunately some other industries struggling. And then we have been able to attract them actually to change industry which has not been always so easy. But today, actually we have been able to get people to move across sectors.

[Host] **Caroline Segerstéen Runervik**

So, there you actually do also play a role for Sweden job market and also playing a key role for the Sweden transition to happen itself, right. So, would you say that Hitachi Energy is important from a Swedish national point of view?

[Guest] **Niklas Persson**

[25:25] I think so. We have more or less doubled from 4,000 to 8,000 employees in Sweden,

[Host] **Caroline Segerstéen Runervik**

During how long time?

[Guest] **Niklas Persson**

So, oh since the last three 3 1/2 years or so...

[Host] **Caroline Segerstéen Runervik**

That's impressive, yes.

[Guest] **Niklas Persson**

So, we are, I think we are an important employer and of course we start to be an important consumer in terms of energy as well and make that in a sustainable way. So, we are working on being a good example in that way as well.

[Host] **Fredrik Gunnarsson**

You mentioned the, your solutions delivered to your customers, the sites and the digitalization and the different types of equipment and demands being put on those stations. What do you see as requirements put on you for the sites you deliver?

[Guest] **Niklas Persson**

[26:05] So, we are both offshore and onshore, but of course we have requirements a lot on cyber security. So, we need to have very advanced cyber security systems. So that's a new and I would say a new and reinforced requirement. at the end. These assets are national security class assets. So, we really need to make sure they are secure yet of course, a lot of push to technically that it should be available 98.5% availability is what maintenance. So, there is not much downtime in our assets that are allowed. And so, we have of course a very high technical demands and redundancy in our systems and so on. And then of course you need to monitor this, and you need to maintain the assets and that's where digital twin solutions comes in. And so, customers can be sure that they understand exactly when to do maintenance and if there are any triggers. That we have condition monitoring of our assets so we can easily tell customers that here you may have an issue, and we can come and help you and make sure that the up time is there. There are many, many demands that we have from our customers to make this reliable and secure, and they're working station when we build the plant, the customer, it's still our asset as long as we are not handed it over and then when we hand it over, we always have what we call long term service agreement that we try to agree with customers. So, these assets should work for 40 years, 30 to 40 years, depending on the requirements, and then of course we are there to service our assets together with the customer.

[music]

[Host] **Caroline Segerstéen Runervik**

Some are a bit curious on the R&D topic, so how do you secure that you get enough knowledge and experience from the other global markets?

[Guest] **Niklas Persson**

[27:48] So how we secure information and competence? For us, it is to be in the market. We believe that if you can't say, OK, why don't we go out of China? Because China comes with its own challenges when it comes to IP rights and so on. And we have our own unit 100% own. The business model is more product and solutions in China. So, you can say it's not so much volume. So why do we stay there? One reason why we are there is to learn and that's the only way to understand what is going on in in key countries like China, Japan, and India and so on. If you're not in the country, you, you don't learn and you don't get access to the talent from that area of the world as well. So, we have decided we stay there, we aim to be competitive, and we aim to earn money in these markets and that's how we understand what's going on as well and can tap into talent and attract them.

[Host] **Caroline Segerstéen Runervik**

Would you say that even China, in some perspectives are more advanced. I mean, we see how they invest in solar panels etcetera. It's very obvious that they are in the forefront.

[Guest] **Niklas Persson**

If you look at China, they are 1.3 billion or whatever, how many they are now, they have the energy source in the West, the renewable energy source in the West of the country and they have the consumption in the east. So, in order to transport the energy from the west to the east, they need very advanced systems and that's why we are there, because we have, we have helped them in the past and we will continue to help them with our advanced technology. But of course they learn very fast and for us to be there to understand exactly what are the future solution in managing these complexities, very, very important for us, so they are super advance and as I said, there's 60% of their energy is imported and they want to be self-sufficient and you only do this if you add a lot of renewables, not only renewables, but a lot of renewables. They have hydro and nuclear and also still some coal and gas that they add, but they have the energy mix in order to drive this, and they learn a lot and fast and we have to be there.

[Host] **Caroline Segerstéen Runervik**

And then building on that, how do you Niklas as a leader take the input from all these different markets and how do you then bring it back to your organization?

[Guest] **Niklas Persson**

Yeah, as a leader, I think it's about the structure. We are a large company with a lot of people. So, it's about the structure that we have. So, we have local product management in every key market. We have a global product management and that's where we consolidate the market requirements. And out of the market requirements from product management, we give that into our or in the organization and we have an annual process how we manage that that we are a team together that we actually go through all the demands that comes from the market, but also the opportunities we generate ourselves with our research and say OK, how can we combine that, what is the need from the customers and what. Do we have as innovation internally and then combine that and then we give that to the organization through R&D projects and then we then we develop functions, products, or solutions?

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[Host] **Caroline Segerstéen Runervik**

When we had Annika Ramsköld from Vattenfall, we spoke a lot about the ecosystem, and she emphasized the fact that without the ecosystem we're not going to solve the challenge we have. So maybe you want to elaborate a bit on that as well, and how you see that has really accelerated in terms of collaboration.

[Guest] **Niklas Persson**

[31:06] So, we need to partner with the customers so they understand where we are growing and how we can grow the business and deliver more to them. So that's a partnership in, in understanding each other from that from that side. Then we need to be a good partner with the ones that actually do the either the offshore platform or the civil work for the client. So we need to come with someone that the customer trusts trust us to collaborate, so collaboration, partnership towards customers and with customers, but also in the supply chain that we and we invest in our supply chains, factories in order for them to have the cash to be able to progress. So, there is a lot of collaboration.

[Host] **Caroline Segerstéen Runervik**

Absolutely. And you mentioned the northern sea initiative is that something you could explore a bit more because it's exciting and interesting for the broader community.

[Guest] **Niklas Persson**

I think if we want to add now, I think Europe is talking about, we need to add about 300 GW on new energy both to be secure but also to be and about 170-180 of that should come from the Nordic Sea with all the surrounding countries. That's a lot of energy. It's available. It's actually possible to do and technology that we have today is more or less available, but then you need to control this. You need also to have a business model, a regulatory framework around it. And this is what is not ready yet, so the whole political landscape on who gets the revenue first when the wind is blowing, you are connecting to four countries and when it's not blowing full speed, only 50%. Who gets that energy and at what price? So, all these mechanism needs to be regulated and agreed. So, from a technology perspective, I'm very optimistic and then we need the European Union and the UK to agree and the there are now agreements between UK and European Union on how to drive the energy transition together. So, I'm very hopeful actually.

[Host] **Caroline Segerstéen Runervik**

And you see the European Union enough taking this serious and taking, you know, this, this really leading position in this.

[Guest] **Niklas Persson**

I must say it's a pity that the European Union and the work on how they drive this is not so visible actually to people. They do a lot, and they really understand what needs to be to happen to, you know, first of all, the sustainability, but also the security of energy. They do a lot too in order to harmonize and write policy and so on. And then, of course, it's up to the countries to implement as it is in EU, EU doesn't tell anyone what to do and how to implement, but they put the policies and frameworks in place and ambition there and it's up to them to countries to make sure that we do it and they do a lot.

[Host] **Caroline Segerstéen Runervik**

And again, policies is not always negative, right? But talking then about the future and in this podcast, we always want to look ahead. We talk about what is intelligent industry for us in 5-10 years. So maybe looking at this important project, looking at Hitachi Energy and the fact that you will need to well, the ambition is to be three times bigger soon. So where will we be then in five to ten years from now?

[Guest] **Niklas Persson**

[34:17] Our backlog is on till 2032 now. So, we know what we need to do. We know what we have in front of us. For us it's 2035 to 2040 and that's where we believe the electrification of industries would really have advanced and then comes sector coupling. So, if you take an industry to go maybe to a heat pump solution instead of using molecules to run their processes, you will have some heat extra heat from that process. First, what do you do with that heat? You just leave it for waste, or do you take care of it and actually provide a solution that you can turn that into electricity and give it to the grid? So I believe that the within our business, 2035 plus the sector coupling and the abilities to

companies to come with holistic solutions and we work already now with some companies here in Sweden because we have a very good ecosystem again in Sweden and one example could be Volvo. We have been in Volvo and Skanska; we have an MU with them. How they make green construction come true where we electrify the dumpers from Volvo, and then Skanska can actually build and construct using green solutions real green solutions. So, I think that by 2035 you will see much more of this and people that have found solutions round it in the sector coupling will be successful.

[Host] **Caroline Segerstéen Runervik**

Very interesting, but I still then want to ask a bit more short term because when we have the opportunity to talk to you, we just had the power outage actually in Portugal and Spain. So, and you know, we know it was devastating for sure. And then you sort of said you know there are solutions to actually prevent this to happen today. So, is there something that we actually should do, and we when we look at what happened there more short term to prevent this kind of scenario and what is that?

[Guest] **Niklas Persson**

[36:14] Yeah. So, it's not 100% clear the root cause yet in Spain and that we are a bit cautious to make a clear statement on exactly what happened until we have the report, and the report will be public. However, Spain is the least interconnected country in Europe. If you're interconnected and you have events like this frequency stability or voltage instability that can actually trip generators and so on. You have a problem to meet that. But if you have an interconnection, the other country can actually support. Because then it becomes a redid grid from the interconnector. Then you had here grid following setup we call it Grid following. So, if you have a problem in the grid, the grid protect itself just by the water. The frequency going down or there is a voltage disturbance. You start to disconnect assets, and this is when you have inverters like solar. You actually disconnect it to protect it, but then the grid collapses. So, what we have as a solution in the Hitachi energy? This is what we call grid forming, so instead you can help to form the frequency and making the voltage stable using power semiconductor technologies or power electronic as we call it. And when you integrate more and more renewables, you have to add these solutions as well to make it stable. And here Germany is a fantastic example. They integrate more and more wind, and they are building what we call Estat comps. They are adding HVDC capacity inside the country and thereby they ensure to keep the resiliency of the grid.

[Host] **Caroline Segerstéen Runervik**

[37:51] Niklas, it's been interesting because we talked about interconnection of grids we talked about the collaboration with partners and other industry player there's we talked about actually the interconnection across countries and people, engineers coming here to Sweden supporting the growth of Hitachi Energy. So, it's all about ecosystem about being interacting and maybe that will be one of the key solutions also for the challenges we're facing today. So, it's been a very interesting discussion. Thanks for sharing and best of luck with this continued acceleration.

[Guest] **Niklas Persson**

Thank you very much. Happy to be here and really enjoy the conversation. Thank you.

[Host] **Fredrik Gunnarsson**

Thank you.

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