

Powering the Future: Renewable2 Energy Supply Chain Logistics (Part 1)

Intro:

I'm Chris Riback. This is Logistics Live: Conversations & Insights on the Global Supply Chain.

Energy, of course, powers the world. And harnessing that energy is an extraordinarily challenging task, involving massive equipment and sensitive parts that must travel to and from the furthest reaches of the globe. From oil rigs in the North Sea to wind farms off the U.S. coast, securing historical and renewable forms of energy requires precise, reliable, and innovative global supply chain logistics.

So what, exactly is required? How does it work?

Arno Veldkamp and Graham Hunter are the people to ask. Arno is Head of Client Relationship Management Automotive & Energy at Quick Logistics; Graham is Global Key Account Manager – Project Logistics at Kuehne+Nagel.

In our two-part conversation, they explained the context, growth, challenges, and next generation opportunities around the supply chain logistics required to access energy around the globe.

Chris Riback:

Arno, Graham, thank you both so much for joining me. I've been looking forward to the conversation.

Arno Veldkamp:

Thank you. Likewise.

Graham Hunter:

Thank you.

Chris Riback:

Before we jump into the substance of the conversation, I thought it'd be useful to hear just a little bit about each of you. How did you get here in a quick bio? Arno, let's start with you.

Arno Veldkamp:

Yes, thanks for that opportunity. I've been working for Quick now for two years as a head of client relationship management, automotive and energy. Basically focusing on those two verticals within the emergency and time critical logistics. I have been in time critical logistics for a long time now, but I'm still learning every day – although I've been 25 years plus in the industry, so can't say I'm a newbie anymore, based in the Netherlands.

Chris Riback:

Graham, how did you get here?

Graham Hunter:

I'm from a city in Scotland called Aberdeen, which is quite famous in Europe for being almost the center of the oil and gas industry. So I came from there, been in this industry for 21 years, really started at the bottom working in a warehouse, moving pallets to Brazil. And since then I've moved around the world and lived in different parts, lived in the Middle East, lived in different parts of Europe, so 21 years in this business and I am now a global account manager within the energy sector for Kuehne + Nagel.

Chris Riback:

Fascinating, really having worked your way up from the ground floor, you've seen, I'm sure, virtually every aspect of this industry. I guess when you talk to someone and they say that something is impossible, you have the ability to say, oh no, it's not. I physically made that move 15, 20 years ago.

Graham Hunter:

Absolutely correct. We tend not to focus on what's impossible. We focus on what is possible.

Arno Veldkamp:

And if it's not possible, we make it possible.

Chris Riback:

That is what I have heard. That gives me the opportunity to ask you to just start at the highest level and Arno will, let's start with you on this. What do you mean when you use the phrase "powering the future"?

Arno Veldkamp:

Well, if you look at the energy market or the energy supply chain, it's changing every day, day by day. So we need to prepare ourselves to grow with that industry by offering our support and be able to adapt. And that's what I mean with powering the future. We are there to support and help actually power the future or into the future.

Chris Riback:

Graham, how active is that transition where Arno just indicated and it's true, I feel like we have been talking about renewable energy for many decades now, and yet at the same time it simultaneously feels like there is continual innovation every day. As an outsider to the industry, I feel like I'm reading something new. So where would you characterize, where are we on that value chain? I know we'll talk about supply chains, but the value chain of transition and innovation around renewables and energy.

Graham Hunter:

Yes, I think you can say we're on a journey with renewables and we can sort of pinpoint where we are, but I think what is constant is change at this point in time, whether that's supply chain disruption or it's the energy transition into renewable and clean tech. Where are we today? I would say that we are far advanced now with wind. Solar has come back with a bang and there's also a whole lot of new tech coming on stream, which is also a new constant change. The change isn't constant everywhere, but you can certainly pinpoint wind and renewables as having an exponential tech increase since the early 2000s, which has now largely replaced coal as cost for energy.

Chris Riback:

Given that, I'm wondering if you could give us a bit of an explanatory overview, and Arno please feel free to jump in at any time and augment of course, but what is the renewables energy supply chain? Describe the business to me. It's solar, it's wind, what else is it? What are the materials and the equipment?

Graham Hunter:

I think, yes, it's a good question because I think it is renewables different really to the rest of the energy sector in terms of logistics is a good question, right Arno? And I think it becomes now a complicated topic because there's so many different cleantech possibilities today. So it's not just renewables, it's not just wind farms, it's not just solar power. You also now have battery storage, biomass, you have carbon capture, hydrogen and hydro power. There's another five or six subsectors as this cleantech develops. Each of them is vying for investment capital, that's vying for positioning within this clean energy sector.

Arno Veldkamp:

And sometimes it's even driven by other verticals, right? Like automotive, if they do some innovation on their engines, which in a way will drive this industry to make those same innovations and start with mining for batteries instead of drilling oil.

Chris Riback:

Graham, to your point at the core on the philosophy around the building of a supply chain for historical energy sources versus renewables: Is there a philosophical difference in how you start to think about the supply chain or is it all around just the literal logistics of each capability?

Graham Hunter:

I think you really have to dive a little bit into exactly what they're doing in each subdivision of cleantech. So some of it is almost identical to traditional energy and that's obviously something the market is much more comfortable with in terms of processes, philosophy, challenges, due diligence in terms of the execution of those logistics. But there are some which are actually completely new. So what you start to see philosophically is a complete crossover and mix like Arno just mentioned around automotive. Suddenly you're having automotive gigafactories being built in completely remote areas, which is traditionally our sort of playground within the oil and gas sector. So suddenly you're finding quite traditional, almost traditional factory builds, automotive construction work happening in super remote areas that has weather problems, has transportation flow problems, no cargo goes there typically. So you start to see a real blend of philosophies actually coming in to the renewable cleantech sector,

Arno Veldkamp:

But in the end we're just moving parts from A to B, so that doesn't change. It's still basic logistics, it's just, well the challenges around it, again, you need to adapt and we happen to be pretty good at it.

Chris Riback:

Yes, it sounds like it's that the customization, if you will, focuses on the different types of equipment that are required for the different types of energy sources as well as, you mentioned, the incredible range of locations. I look forward to hearing a little bit about that from both of you and I can only imagine what the passport stamps look like in both of your passports. Tell me, Graham, you mentioned just a moment ago the market: where is the market growth? We're talking about so many different sources of energy. Give me a sense of the market and where you see the market growth.

Graham Hunter:

I think it's that the same growth doesn't happen in each part of the world. There's a different trajectory in different parts of the world into the growth. So I also think it's difficult if you look at the media, if you look at the news headlines, what you will find is a huge proliferation of wind projects. But are they happening? Do they have the investment? Have they reached financial investment decision? Yes or no? What you do see is a little bit of a regional approach. So Europe is very busy with all renewable tech, everything is moving there, almost every sector, but other parts of the world are lagging behind perhaps. China's obviously very strong in wind and solar, but a lot of other parts of the world are not quite there yet.

Chris Riback:

And Arno, how would you say the various regions of market growth and sectors of market growth does that show up in? What are the challenges that come about because of the evolution of the market?

Arno Veldkamp:

Mainly new regions. So Europe is pretty established. We have plenty of resources moving stuff into and from Europe, so there are no big challenges there. But for instance, Senegal is tomorrow the new development country within the renewable energy sector. There we find the real challenges because if you don't have a local presence or if you don't have a proper local setup, you need to build it from scratch. So that's sometimes difficult to adapt to, especially in unknown areas.

Graham Hunter:

I think what we've seen on the market in terms of development is definitely new customers, new operators, new contractors. What we're seeing is new technologies, new supplier origins, and, in some cases, some completely different types of cargo if you like. So there is that change and what you are seeing I think as Arno was discussing around certain parts of the world is a new focus on remote parts of the world where there is no inherent supply chain, everything is being built from scratch. And that's something that's always historically been a challenge with typical EPC contracts where you're going in making a construction, a refinery or something and then you're only really staffing up, you're only really engaging for the duration of 18 months or two years for a project. What you're seeing this on a bigger scale now with renewables.

Chris Riback:

Graham, how do you partner with clients in a situation like that? If you're going into a new location like a Senegal, you're obviously going in there because you have a client there. How do you balance the partnership around the research, the capability identification, the execution that falls on your shoulders, but in partnership with the client's requirements and any regional knowledge and expertise that they might have?

Graham Hunter:

Well, how you partner with clients is a really good question because the traditional model within the traditional energy sector would be that there's a limited number of key players who are actually investing in these kind of operations. So you can pick your traditional international oil companies or your national oil companies who would be doing that. Now they typically will have a partnership agreement with their contractor base that's formalized with contracts, that's formalized through culture over many years of dealing together. What you have now is, like I said, new operators and new players coming in who perhaps don't have that 20, 30, 50 year stretch of contract relationship in order to do something like this. So I would also then just add that when a lot of new customers come into play and they want to establish that kind of remote region expertise, they rely perhaps more heavily than usual on a contractor like Kuehne+Nagel.

Arno Veldkamp:

What I also still see happening is that the whole logistics aspect is basically somewhere down the line where everything is already settled. We're going to build the plant there, everything around it, and then, oh wait a minute, we need to get our stuff down there as well. Let's drag in some expertise from the logistics industry.

Graham Hunter:

And I think if you want to speak to any of our customers and their logistics themes, they will verify that the logistics tends to be the final piece of the puzzle that comes last after procurement, after manufacturing. And that's something we see time and time again with the sizes of cargo being moved, which is another topic.

Arno Veldkamp:

Same story. Yes, because when they design a parks, when you talk about the engineering department of those companies, they often don't think, oh wait a minute, this might be too big to fly or too big to even put on a ship. Or if we cut those pipes in half, then logistics wise it's much more manageable.

Chris Riback:

What are the complexities around the renewables energy supply chain and what makes this sector particularly challenging?

Arno Veldkamp:

It's not this sector only, I mean those logistics complexities, every company has them in a way, but in this case, I mean it's in order to simplify the complexity, it's basically to use our combined experience and talent to take away that burden from the customer.

Graham Hunter:

Yes, I think there can be as much complexity in moving a one liter bottle of chemical as there can be a moving a 3000 ton module. How you manage that complexity is really down to people and systems. That's how we do it. In each opportunity, each shipment is different. So it's kind of hard simply to categorize complexity in a simple way. There can be a lot of complexity in the smallest item. And the challenge really is for us to engage early, is to perform due diligence on those complexities and work through mitigation strategies. And that's generally what we do every day with a whole team of talented people across different disciplines.

Chris Riback:

How do you advise your clients? I mean, you're talking about a situation and I can just feel the balance and the internal tension that you face, which is on the one hand you are client service driven. The client might think of you as you indicated last, like, oh wait a second, maybe we actually have to figure out how to get this, whatever you said, 3000 ton piece of equipment from point A to point B, and you're always going to respond to that client of course at whatever time it occurs. At the same time you want to be in as early as possible. Given that and given that tension, how do you advise your clients?

Graham Hunter:

A lot of this is relationship driven. So we have longstanding multi-year relationship with many of our clients, so they know us, so how do we advise them as such? It really is pushing this engagement early. So new customers I will really push to engage early to make sure that the complexity is understood. And that's a challenge with the renewable industry. A lot of it is moving so fast and so quick. The technology advances every week, every month that we need to make sure that the parameters are set in a way and that engagement is done.

So to give you a very brief example, I had one customer who I've known for 20 years called me up and invited me to an engineering meeting within his engineers, and he just introduced me as, oh, here's Graham, here's a logistics guy. Hey Graham, have a look at this. What do you think? And I think I spit coffee across the room and laughed on a Teams call. He said, what? And then of course, what is wrong with you? And I said, there's not a ship in the world big enough to fit that piece of cargo you've just shown me. At which point my 20 year relationship customer just shrugged his shoulders, mic dropped and walked out of the room, right? Because that's what he's been telling them, but internally they wouldn't listen. So there's lots of examples, but I think relationships are really the key.

Arno Veldkamp:

And my position is slightly different because customers come to me or not only me, it's to our team when there's a real emergency.

Chris Riback:

Tell me about that. How do you think about what you do and how does that balance work between the planning stage that Graham was just talking about and Arno, the crisis stage that you were just talking about.

Arno Veldkamp:

It's a difficult one because I mean every situation is different and certain things you literally can't plan ahead of. I mean, nobody would plan this stupid oil tanker in the middle of this Suez Canal, doing a U-turn and blocking everything with all the things,

Chris Riback:

All the knock on effects from...

Arno Veldkamp:

That, all the knock on effects. So there's only a little you can plan ahead. It's more about reassuring the customers that they're in good hands because we have the full skillset and even if their planning fails as a contingency.

Graham Hunter:

I would answer that perhaps in a slightly different way. I would say that in terms of major crisis like Suez Canal, Red Sea, we're extremely well organized in terms of data management, in terms of rerouting, in terms of customer communication. That's one part. And I think where we work extremely well with Arno and his team is actually what we would say in our project business is almost planned crisis. We know, and the customer knows that there will be those moments you can move, let's just pick this mythical 3000 ton module. We know that we can move that. That can be a six months planning, it can be three months movement, and in the end they plug it in and oops, we forgot a small unit of a hundred kilos at two in the morning, you get the call and yes, that's what Arno comes in. So it's almost planned crisis, right? It's immediate service, white glove service on the spot at any time, day or night. And that's what we offer to our customers.

Chris Riback:

And I'd like to ask you now really take me through the supply chain itself, but as we're doing that Graham and Arno, both of you, the specific examples, the stories, the realities, particularly given the fact that you guys are operating in literally every corner of the world. In many of these conversations, I've heard about the challenges around finding flights at all hours of the night to all kinds of remote destinations, but what happens when the location you need to reach is in the middle of the sea? How does that work, Arno?

Arno Veldkamp:

I mean, I came across this Latin saying “Inveniam viam, et, si adsit, unam faciam” – “I will find a way, and if there isn't one, I will create one.” And that's my philosophy. That's what we try to live up to. So if it's in the middle of the sea, I'm more of an air freight guy myself. If we can charter a ship, there will be a ship. But in practice, it's often if a customer is building something or moving something in the middle of the ocean, there's a whole planning beforehand. So they will have their ways to get it to that point. So then you have to connect to that point where they're flying in and out to connect to it. So you try to find your synergies with the customer to get it where it needs to be.

Graham Hunter:

And I would say that actually we've done that several times. A random point of the sea, a random point of the sea is not actually unusual from a, well, it is perhaps unusual, but it's not uncommon with the chartering world.

Graham Hunter:

Let's pick a straightforward example. So wind turbines, picking them up from fabrication, I would say in China and dropping them in the North Sea, which is off the coast of the UK. So you can do that. It's completely inefficient, but you can do that and you can make it to a point in the sea. You can make that charter. My first question to this is not actually the boat or the ship. How are you going to lift? How are we going to lift this off? Because however you take anything off, ports are nice and sheltered, but in the middle of the sea is not. So how exactly are you going to discharge the cargo and what are you discharging it to is actually your challenge there? So the wind turbines, but that's kind of inefficient. So you can then cause time delays. If the sea is too rough, you can't transfer, then you have to pay for the vessel waiting. It's actually quite inefficient to do that. So that's why it tends to be main port to main port and then a transit on a barge or something like this. But there are examples where we moved off the coast of Russia barges and made landing craft with transformers really in the middle of nowhere. There's many examples like that in our business,

Arno Veldkamp:

And it's not only with ships. To give you an example, at a project for a customer where we had to move four 40 foot high cube containers from the US to the Shetland Islands, and the most top island of the Shetlands, I didn't even know there were three islands of the Shetland Islands until I started this project, but it's like a puzzle. So you just break it down. The island was literally too small to fly that cargo into. So what's the closest and then what? So then I had to organize trucks which were capable of lifting the container itself without having a crane on site. But then I end up, okay, now I have four trucks, but there's only a very small ferry traveling in between those islands in the Shetland. So then you need to figure out do they, how many will fit? So all those things, if you run into a project like that, you just break down all the little steps and see how you can make it work.

Chris Riback:

Arno, I loved the Latin phrase that you explained earlier, and I do plan to make T-shirts for all of us and maybe not accept any excuses. I'm curious about engineering as we talk about the global supply chain, what role does engineering play and do you guys get involved there? Graham, tell me about the engineering side.

Graham Hunter:

So we actually have a team of engineers across the world in the regions. They cover everything from CAD design, swept path analysis, which is when a truck is, you're trying to figure out if the truck will fit in the roof. We also have naval architects, lifting specialists, you name it. Because each part of every movement or cargo, whether it's the lifting part, the driving part, the ship transfer, needs to have engineering assurance around it. So we have those experts in house who work in, I'm not an engineer, I can speak roughly to it, but I'm not qualified engineer. But that's the kind of services we do and we have for our customers. It's very important, especially with renewable cargo, which is bigger, tends to be bigger, tends to be more unusual. We tend to have more focus on, so if you're moving to a port in Chaplin as Arno likes to do, then you need a lot more assurance around the wave conditions, the port of discharge, the specific weight that the port can take, this kind of thing, which is perhaps a bit Saudi Arabia for example. Everyone knows Saudi Arabia. There's more project cargo gone in there over the years than most other parts of the world. Everyone, we know the capabilities there, but all these new places, it needs to be done from the beginning.

Chris Riback:

Graham, what about smaller parts or hazmat materials are coming to my mind? How do you advise customers on those parts?

Graham Hunter:

On hazardous materials, I think it's slightly different. There is a very thorough dangerous goods process that we go through. There is a lot of assurance around this. Typically coming from a country legislation where we have everywhere in the world trained DG specialists that would look at that. That tends to go a little bit more main cargo base, sort of a typical cargo airline, stroke, commercial airliner. It's rare. I've not seen, Arno, any urgent chemical moves as such. Rarely but for small, rarely, right? But for some small parts, there's an example I did several years ago from France, something required in Algeria and that's where you can find something like a small Cessna caravan at extremely short notice. It's a long flight time, but you can move things. But just having extreme knowledge of all the cargo operators, which aircraft specs they have, what's available, and that's what Arno and his team are particularly good at.

Arno Veldkamp:

Yes, which can be sometimes frustrating if you have to move like a fire extinguisher, which is a relatively common object, but if you want to transport it officially, it comes with all these regulations and paperwork and stuff where those items are even installed in an aircraft. So sometimes that's challenging, especially to explain that to customers who are not used to those regulations. Then it becomes more complicated. But with dangerous goods, sometimes it can be, I hate to say impossible because it's not in my vocabulary, but sometimes it just is. If you have to move certain explosives, it can be very, very challenging

Graham Hunter:

I would say. And there's also radioactive sources which are commonly used in the oil and gas industry, but what you find the speed of movement of those and also like explosives or flares is more defined by the regulation for the importing country that can take a bit longer, that needs to go through the necessary approval process. So certain items like that aren't often moved quickly. Even if there are, it does take some assurance and time.

Outro:

That was Part 1 of my conversation with Arno Veldkamp and Graham Hunter on Energy Supply Chain Logistics. In Part 2, they outline best practices and describe how they navigate various emerging geopolitical issues and overcome inevitable roadblocks. For more information on supply chain logistics, go to [QuickSTAT.com](https://www.quickstat.com).