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The Cloud and the energy
transition with Rob Easton, AWS



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[00:00:00] People call me actually, he just called me Rob this episode to make it easy.

Welcome to Cloud Realities, a conversation show exploring the practical and exciting alternate realities that can be unleashed through cloud driven transformation. I'm David Chapman. I'm Sjoukje Zaal, and I'm Rob Kernahan.

And this week we're going to look at the energy transition, one of the big subjects of our time. We're going to frame that in a way that looks at three dimensions of it, how it's made, how it's moved and how it's used. And we're also going to talk about how the cloud fits into this and how large organizations like Amazon are preparing themselves, but [00:01:00] also providing tools and techniques to allow us to all contribute towards a more sustainable future.

But before that, um, Rob was sitting at his keyboard the other day as I, as I walked into the office and he was looking disconcerted. In fact, he was looking annoyed. Now, I haven't really seen Rob look annoyed that often. It was only in one meeting last year. I saw Rob get very animated about something. Um, but this, this time it didn't look quite that bad, but he did look tortured and I walked up to him and I said, Rob, what's wrong?

And he goes, Dave, I'm looking at my Spotify unwrapped from last year, and I thought that I'd listened to Jump by Van Halen, which was, you know, just FYI, that was his number one, more times than this. And when I look at it, there's only 800 million listens of it in total. And I thought I'd, I'd at least that.

And I was like, well, nevermind Rob. What's confusing you this week? [00:02:00] Well, thank you for exposing my music taste, but it's true. Cracking song makes you feel good, that song. It's the fact that you do listen to it so much, it literally amazes me. You must be, joking aside, you must be one of the people in the world that's listened to Jump Back by Van Halen the most.

Must be. I'm probably up there, it is a popular song in my catalogue of 80s rock. There you go. Um, I was thinking apart, aside from that, David, I was actually slightly confused this week about my something else. It was, there was something else. It was about my dotage and how it's going to be managed as we get old.

And I was reading up on, um, Japan has been running a healthcare trial for. like a long time on using robots, uh, to care for the elderly because they've got a massive population issue, haven't they? So the number of young people being able to take care of the old, the older outnumbering the young. You've got to put something in the system that isn't human [00:03:00] based to try and take care of it.

But. Guess what? Not always gone down well, difficult to operate, uh, repetitive, not really holding the relationship to cheer up the, the elderly, et cetera, et cetera, et cetera. And I thought, Oh, imagine the future where it's just robots taking care of us. And I thought, well, what is our future? Because the population is going in the wrong direction.

But then I had some hope to think, well, with large language models and things getting personalities and such like, maybe they will become more entertaining. And then I suddenly thought about what will happen to me if I ever get there. And is it. robot that is going to care for me as I am rocking in my chair in my elderly years.

And I started to get a little bit confused about what our future might be as old people. So anyway, there you go. I hope that that robot can play Spotify then for you. Oh yeah. Jump by Van Halen. And tell me cheese jokes. As long as it can tell me cheese jokes and play Jump by Van Halen, I'll be fine. I think with such a low bar.



I think you are. You're going to be okay. [00:04:00] My big, my big worry about that beyond the personality of them is, you know, that seems like an easy way in for the robots to take over to me. Yeah, no, but there was that video as well recently where China already has a population issue with the amount of people they have to care.

Healthcare and there's that video famously of the woman attacking the robot because the robot didn't give her what she needed at the time and she basically beats it to a pulp in the middle of this. Um, Uh hospital reception, right and there is some comedy value there But also not because she's become extremely frustrated can't get access to the thing that she needs because computer literally said no Uh, and and you wonder what the world of healthcare and future of elderly is and i'm thinking oh blimey Well, I mean, I think the interesting thing about that really is it's it would it's such a sophisticated exploit for something like a robot right to look to look after a frail human being in that way it's if it feels like that's a jump of 10 steps where at the moment we may be [00:05:00] jumping one or two steps that being said.

I did see a robot playing badminton the other day and it was really good at it. Was it? Like really, like, I mean, absolutely destroyed three badminton players that were on the other side of the net, almost like just strolling about, like making no effort whatsoever and absolutely destroyed. So the, the sort of finesse of it was incredible.

And then of course we had. The, um, you know, attack from Sony on the bonus episode we put out at the beginning of the year talking about the Ophelia car having personalities and, you know, might be grumpy when you get in and when it's cold and, you know, and you'd have a conversation with. the car. So, you know, you can see the threads of it.

I can see it happening. I can see robots having to take care of us, but maybe it'll be all right because they will have a proper personality and they will hold a conversation. And you know what old people like, they like to talk about the same thing over and over and over again. So that fits very well with machines.

Exactly. On that note, on [00:06:00] that note, uh, that was a big one today, Rob. That was a big one. I'm delighted to say that on our main subject of the, of the energy transition, I'm delighted to say that we have joining us an old friend and colleague of mine, Rob Easton, from AWS. Rob is the senior sales manager for the energy business unit in EMEA.

Rob, great to see you, man. How are you? Great to see you, Dave. Doing well. Thank you. How are you? I am very good. Thanks. Just want to introduce yourself to the listeners and say a quick hello. Yes. Excellent. So I'm delighted to be here. I run the sales operations in the energy business unit across parts of Europe.

Um, 15 major accounts and have been at AWS eight years before that. A bit of Google, a bit of VMware, a bit of HP. So Rob, we're going to talk today, I think, about energy transition generally. Yep. What's going on with it? It's clearly, it's central to one of the largest issues that we're dealing with on the planet at the moment.

[00:07:00] I mean, it couldn't be more significant. AWS is an organization, I think, are leaning into this. So today we're going to cover, I think, your perspective on energy transition and then, uh, And then into what AWS are doing. So let's start with that. Maybe let's start with the energy transition. Most generally, it's, it's a term that's used a lot and it's got probably as many definitions as there are people that have heard that term spoken out loud.

So frame it up for us when, when, when we say energy transition, what do you think about it? I think about three things, mainly how it's made, how energy is made, how it's moved. And



then how it's used so made moved and used and there's lots to that and as you know, we've got to produce some stats twice as much energy by 2050 as we use today and yet reduce emissions by about 40%.

In the next 1520 [00:08:00] years. So there are Paris goals that we've heard in the countries have signed up to hitting. And, um, it's so it's just so real right now, isn't it? We heard that last year, the hottest year on record and July came out and it was like the hottest month we ever seen. And then August, you know, that then outdid July.

And so it's all about energy companies. It's all about how we change our Patterns of usage and how we address and effectively produce more energy, but with fewer emissions. That doubling is an astounding. Number, what's driving it? It can't be population, or is it the people who don't have access to good electricity are getting more and they're becoming richer?

So it's the more densely populated and rising, or is it something that other countries are driving? Just what's behind that doubling just quickly? Because it's an amazing statistic. Yeah, yeah, it is. And so, so it's, it's [00:09:00] becoming so as. The world in general gets more electricity and people will use more electricity in their daily lives and that is third world countries becoming more and more connected and through to first world countries and it's the general population of the world as well requiring more and more energy going forward increase access to technology to those who don't have it today leveling up with what we know and like in the western world.

Yeah, and you'll see it at home, isn't it? Every time you buy something new, you have to plug it in. You know, trainers are now tracking how many steps you make. Your watch is training that everything is going into the wall and we're charging more and more. And in the conversations you're having with energy companies, I think in your role, you.

Privileged enough to speak to a lot of them across a number of different number of different countries. What are the trends and themes that you're spotting in terms of how energy companies are leaning into the problem? Yeah, I think [00:10:00] if you look at investments across the energy industry, investments into new generation, 80 percent is going into renewables.

So yes, energy companies have all signed up. And if you look at cop 28 that came out recently, um, you know, there were 120 countries that signed up to a new pledge to triple renewable energy production. By twenty thirty so that is not far away so there's another another couple of nice stats that i've seen so across the european commission we have about six hundred and fifty thousand people in renewable energy today six hundred fifty thousand and it's expected.

That that will double in the, you know, by 2030. So, and in the U S they're going to put, create another 1 million jobs over the [00:11:00] next decade in renewable energy. So yeah, we've. We've done, we've done well across Europe. We produce about 16 gigawatts of energy across, across Europe. But to hit these goals, we need to be producing 30 gigawatts a year.

So we've taken all this time to create 16. And so I think there's a real. You know, the energy and companies sometimes get seen as the problem, but they really are at the heart of solving this. Um, and I think that is that that's exciting as we go forward, but we all need to change our behaviors and also how companies use energy as well, not just individuals to be able to hit some of these goals.

Indeed, and we'll dig into that in a second, particularly the role that the tech can play in this.



But before we go on to that, I wonder if you seeing any disruption in the sector [00:12:00] so you know like a lot of sectors today that you know what what comes to mind quickly stuff like the transportation sector with uber disrupting it and various other things where there's been something that's coming from the side generally some sort of tech led or tech thinking involved in it that then disrupts.

What's going on? I always wondered whether there's space for that in in energy creation. Are you seeing anything like that happening? Yeah, definitely. So if we just look at solar panels at home, right? You know, actually, one of our good customers, Octopus Energy and also Iberdrola right now have created a smart assistance for your home.

So your solar panel on your roof can create energy, you can then store it in a battery and then sell it back to the grid. So these innovations are absolutely coming to light right now. And also I've seen things like, if you're a Tesla car or whichever energy, VV vehicle you have, you can be charging that battery that then works on the You [00:13:00] know the hob, the electric hob that you have and that you are using the car as a static battery to power your home, not just your car and being able to sell that back to the grid.

So we have definitely seen that with. And it's certainly here in Spain, we've seen a very, you know, a lot more solar panels deployed onto customers houses, and then they can sell it back to the grid and the energy companies then need to have a much more flexible grid that we dial down. You know, carbon, you know, traditional fossil fuel production of energy at that time and being able to real time change supply depending on demand that is happening today and all along the value chain.

There are little innovations that are happening with different companies that are coming in to help with that type of thing. And if you think about that, the relationship. We have with electricity in the grid is it all is [00:14:00] consumption from the consumer it comes in. We pay and now we've got this little micro grids and batteries pushing in and out for electricity distribution network operator.

That's a big shift. Yeah, you've had years and decades of this one way traffic and then suddenly this is all these little interactions going on. That must be an absolute nightmare of a shift from just managing the grid because it has to be quite carefully managed to make sure the frequency stays right and powers there at the right time, etc.

That must have been a tricky. Transition and there's more coming. Does it? It feels like maybe they've got a good grip, but just get your perception on the ability to operate the grid in this new mode. It must be quite challenging. Huge challenge. Yeah. And with the data centers that have been created in Ireland recently consuming A very high percentage of the overall power that is available in Ireland.

No more building of data centers is possible in Dublin right now. And so, [00:15:00] yeah. And so we're very interested in offshore wind to create more and more energy from offshore to be able to provide that to the grid. But you are right, Rob, the way that it needs to flex based on all these different things. And.

And not just that much, like, let's talk about storing the energy. It's great when it's sunny, but And it will create good solar power energy, but ultimately you need it in the winter. So what we've, what we actually are interested in is people having these hydro pumps. Normally, when the water is high, it comes down.

Hydro then creates the pumps, creates energy. Can we now put in new pumps into these dams, so that during the winter, you can collect the energy and then pump. The water back



up the dam to the top, and then you can you when you need to use the energy, it then [00:16:00] comes back down the other way. So it's not just physical network of moving electrons, but also how you store it is a big, big chain.

And let's then move on to tech. Mm-Hmm. And, and, and what tech can do. 'cause one of the things I, you know, on a personal level struggle with, and I think organizations are still getting their heads around is the problem seems so huge. It's so kind of almost incalculably big. Whether it comes from the, you know, the technology that's, you know, actually generating it, whether that's solar panels on a house, or whether that's wind turbines all the way through to how it then gets distributed correctly and how it gets stored.

It's such a macro. Problem that yeah, I've always had trouble visualizing what my role in it would be. So maybe let's start with the individual and then and then work into the into the organization. So is it purely about behavior change? You think on an individual level and what does that look like for you?

Is it like we should all assume trainers you can [00:17:00] recharge or what does it look like? What's the what's the dialogue around that look like? Yeah. And I think that customers, individuals can make a very small difference, but in as corporates, large corporates, you can make a big difference, right? And buying renewable energy, for instance.

Increasing the length of time that you commit to a renewable energy source. So when you're signing a power PPA, how long can you commit to that at a certain price? So Amazon look very carefully into signing long term partnerships with customers, and we signed it. Okay. Then with a number of energy companies and we have actually with the largest buyer of corporate corporate buyer of renewable energy and that does come from individuals you know individuals within amazon make those decisions we have more than twenty gigawatts of projects five hundred.

Wind and solar projects globally. [00:18:00] And, um, of those 500, 100 of those got signed last year. So those are people that we have hired and we've built out that team to make those purchases. And I think that many companies need to think about that. And, and I think it does change in, in a lot of tenders we've seen recently, but suppliers are now being told and asked about their sustainability credentials.

And as an individual, you can make a decision. How much rating do I give to that? If they're providing it to me in a sustainable way, shifted very much from one of those corporate social responsibility. Nice to have into into being much more quantified. I think much more central in a lot of in a lot of organizations decision making.

Yeah. And I think what I love about it is there's accuracy starting to kick in now. It's still a very complicated thing to calculate, but we're starting to see more accurate numbers that can be measured and we can [00:19:00] track that trending up, trending down. Are we improving? Whereas before it was kind of more nebulous in the thing, but the accuracy is kicking in.

That's giving us better understanding. We can be more descriptive about how we deal with it. We understand where to tackle. And I think that that's starting to grow and gain pace and momentum to the point where it's almost. Becoming a backing to how we think about things, which is great because then it's, it's, it's always at the forefront of our mind when we have to deal with things.

Yeah, yeah. And coming back to your question, Dave, you know, as individuals can do, companies can do things, but then countries can also improve things. And, you know, I've got one good example where wind, so wind Europe, we partner with them. They approached us



to talk about one of the big challenges is permitting.

So where do you build a wind farm and, you know, everyone wants renewable energy. I'm sure you do at your home, Dave, but you don't want a turbine right outside the front door of your house. So there are lots of mayors of [00:20:00] small principalities. They own, they actually, unless they're told by the European commission or the government, you've got to have it built there.

They're going to say no, and it holds up. And so we're actually getting permits through. And getting permission to build a turbine normally takes between five and ten years. Wow. And so, yeah, five or ten years. Well, you think about, um, when you apply to extend your house at the government, it takes, you know, what, five months, six months, and you don't know where the application is.

Well, in this, they're thousands of pages long. I want to build a wind farm here, here, or here. And to just get the permit to build can take between five to 10 years. I mean, it is, it is a hilariously parochial issue that isn't it? Where you, you know, you'll, you'll have, you know, many committees debating these things for decades, as you say, I mean, almost literally while the world burns.

Yeah, I mean, it's exactly the very definition of missing the point. And this is a, this [00:21:00] is a macro thing that you talk about, Dave, you know, just thinking about building a wind farm off the North Sea, which is now becoming one of the world's biggest areas for, for wind energy. Um, you know, actually the, um.

The, the, the army are at these conferences and I'm like, why is an army general at the conference? Because all our radar systems off the coast of the UK, they then get disrupted by these new turbines. So talk about a macro problem. You've got permission to build an offshore wind farm right there, but the UK, um, uh, British army won't allow you to do it because of their New sonar stuff.

So it's, it's all connected and yet, and the cost goes up and up and up. And yet. We need to be using more renewable energy. It's a big macro thing and be faster, much faster, much, much faster. I think that's a similar problem to star links causing where it's putting up so many little micro satellites, people can't see out [00:22:00] from the earth.

So it's becoming harder to observe the solar system and, and, and beyond. And it's like this unintended or maybe unintended consequences, probably right about the, we're starting to get a blanket round us where we can't see. And it's like, Um, it's that how do we balance these requirements because obviously Defense is important, but also having a breathable atmosphere for the future is also quite important, so it's a, yeah, it's a whole mesh of things that are decided and also actually, you know, we have a project Kuiper, which is Amazon's version of putting 3000 satellites up into the orbit to create connectivity to those offshore wind turbines, which then allows us to have Renewable energy.

So it's a whole matrix of things, but I just wanted to come back to the easy permitting solution that AWS have been building with with wind Europe. And this is the idea is that people put all the data into a [00:23:00] common platform. You can then know where you're bid is going and what progress it's doing. But then you can collaborate on this platform, all the different elements of to make that decision faster to reduce the permitting time term to two years.

So that is a thing that's happening at a macro level, Dave, that the technology can make a real difference to building new wind farms. I mean, brilliant. And let's talk about Amazon



specifically. I think I think Amazon have committed to be running fully off renewables by 2025. Yeah, correct. Is that right? I mean, an ambitious goal, an ambitious goal, particularly given that the business that, uh, Amazon are in both in terms of the data centers, but also things like supply chain and logistics.

Give us an insight, Rob, into into the scale of change that's going on to meet a target like that. Yeah, yeah. And so, so, yeah, we're well on the way. We're over 90, 90 percent there, which is amazing. And I sort of talk about the [00:24:00] projects that we've got sort of 500 wind and solar projects around the world in 27 different countries.

So that takes a huge amount. And actually, we those projects that we have would power 7 million homes. Um, so that's a lot of energy to buy. So using renewable energy is a big thing for us. But I think also then you talk about, um, being more sustainable and getting to net zero by 2040 as in created this climate pledge and we put 2 billion of our money, Amazon money into that to create new innovations and new projects, new companies around getting. To net zero by 2040 and I'll just share you with sort of hydrogen, hydrogen energy for trucks is becoming more viable. It's not really for cars these days, but for long haul trucks and also for. hydrogen for forklift trucks. We've got, say, 15, [00:25:00] 000 forklift trucks today around the world in our distribution centers, again, reducing the carbon footprint that's needed.

And hydrogen's a good one because, again, you can produce it when it's windy. You can create that hydrogen and then you can store it and you can transport it. Transporting energy. Is very, very difficult. And so hydrogen fits the bill that it's still an expensive way to do it for just you and I driving a car.

But certainly that's a very interesting area that might happen. But across all of Amazon globally, everything from packaging, we're going to reduce our packaging. We're trying to get to a position where you have no packaging. But you probably receive, um, you know, an Amazon package just with a label on it.

Uh, and, and we're in, and we're trying to reduce our single use plastic as well, uh, right down. So yeah, there's lots of elements to what Amazon's doing globally. And the cloud itself then. So in your mind, but both in terms of, you know, [00:26:00] Amazon and AWS, but also in terms of customer organizations, how can the cloud fit in?

So one of the things that seems. Quite obvious to get cracking with is when you take your on premise estate and move that to the cloud, you're presumably moving that into the renewably powered data center, like right from the outset. Yeah, you can consolidate your estate going in. So you've got higher utilization of fewer instances, those sorts of things.

What goes on beyond that? Rob? Yeah. Yeah. So we think about it in three ways on the cloud. You're rightfully said in the cloud. And then through the cloud. So what does the cloud enable? So on the cloud? Yeah, 82 percent more efficient running on AWS than if you are on prem. And we've seen that Pfizer was a good example.

They've closed three data centers in the space of two years, and they save 4000 metric tons of CO2 emissions, you know, and it really does make a difference. We [00:27:00] see that across the board. So on the cloud, yeah. In the cloud. So once you're in the cloud, how do you optimize? How do you optimize that instance?

And we released that Graviton processes based on arm. They consume 40 percent less energy than a traditional EC two instance from AWS. So again, Can you be a frugal architect to architect towards that, that type of a better, more, more economical solution and also



code more efficiently. So we release code whisperer, which is our generated AI tool that can sit right there with the developer and say how you can code more effectively.

So that's in the cloud and then through the cloud. What does the cloud enable? Larger data sets, you know, we're seeing sometimes, you know, very interesting projects around pie data sets that don't scale very well. Globally, they're very, you know, a little siloed. So can you create a common data lake on AWS?

[00:28:00] And then you can access that data from anywhere in the world. You can collaborate on it and you can become more efficient to make real time decisions. And if you are making real time decisions, you can make better, better decisions globally based on how. All of those metrics that you talked about, Rob, of peaks and troughs across a grid.

So through the cloud, all those new innovations that we've spoken about. And you said a very good phrase there, which is better decisions. And if you think about a standard application life cycle, where we think about what payload are you putting onto what chipset. So, uh, that decision if taken right at the beginning means that very little effort is required to optimize when you get there.

But still, there's a lot of focus on optimizing after arrival. I think getting better decision making further up the chain. When things are happening and moving and getting that mindset right makes dramatic differences in how it operates right to there's a new thing about [00:29:00] describing infrastructure in code so we know infrastructure as code but now we're saying describe it in code and then you can do huge optimization at the point the line of code is.

Getting written and that's making a massive difference as well. I think that Redistat 60 percent more efficient when described as you're authoring the code. So you couple that with the things like the processor sets that you've been discussing and all the other Yeah, um factors and you can actually get massive optimization from a power consumption and it also saves you cash as well.

Yeah, so it's cheaper and better for the environment. So it's a win win win type thing. Yeah, yeah. And we have the well architected reviews and well architected frameworks. When you come on to AWS, we then give you a rating. And one of those pillars is actually based on sustainability. So you will get a rating.

How sustainable is that instance or is that application running on to AWS? Just promise don't go back and review my architecture of days gone by, please. I think it might be slightly embarrassing. It's funny though, I think [00:30:00] about these things now because it goes back to the forefront of the mind, but 20 years ago, or maybe a bit longer, we just didn't think in that way, did we?

We had huge resources that went on underutilized when you were setting up your highly available clusters. Rob, were you like no more than 15 percent utilization on any core cluster? Keep wheeling in the CPUs. Yeah. Yeah, exactly. Uh, those are the days. Exactly. The day more belching out of the top of the top of the data center chimney.

Yeah, that's right. It's like the, you know, the loafers, uh, the rolled up sleeves in your jackets, like the eighties type thing when we didn't know any better. That's what I thought when you, when you're going over your level four architecture meetings. I always imagined you in sort of, you know, kind of, you know, linen white, white jackets and your sleeves rolled up and that.

It's just a Miami Vice show. That's what it is. We just sit around and watch old episodes. That's



all we do. We don't actually do any architecture work. We just watch Miami Vice. [00:31:00] Sounds about right. But, um, you touched on it, Rob, when you were talking earlier about some of the things the individual can do when making architectural decisions.

And you talked about something Werner Vogel said, I think it reinvent last year, which is about the frugal architect. Maybe because I think this is, I liked where he went with this because it really spoke to what you can do as an individual. And I agree with you like when you look at organ at organization level organizations can look at the footprint that they've got what their supply their supply chain functions where they buy their energy, but actually the decision making of a series of individuals within that company is also absolutely mission critical because there are stuff that might just get missed and.

Architecture on the cloud. I think is particularly great example of that. So I thought it was worth dwelling on frugal architect. You just want to give us a little bit of an insight into what Werner was talking about how we can all respond to that? Yes. And just to reflect on that, I thought there was a great buzz in the app in the [00:32:00] room when he mentioned that and actually linked in.

There were so many. I think post by people that just agreed with what verna was saying and actually i think it comes to some individuals but leadership as well so that leadership recognize when someone is being a frugal architect because it's all well and good you doing it off your own back for yourself but.

And, and, and that's up to the individual, but, you know, to be recognized as a company that is really powerful. And I think that that resonated with so many people that listened to that keynote and yeah, that comes back to how well can you design the architecture that you have, how you use limited resources or just enough resources, but then As you said earlier, you wouldn't do that in the past because you couldn't scale, whereas today, now you can scale and, you know, applications can scale better, databases can scale better, [00:33:00] things can all move quicker and with less Red tape because you haven't got all that clustering software that's possibly been at the application.

It's all replicated at the infrastructure and you can start to remove some of that red tape that allows you to then be that frugal architect. And I think that we've seen. Good examples of people doing that. I just wanted to highlight a thing around digital twins. So as you could start simulating winter blind, simulating solar, simulating what's happening on the network, you know, we've a company food grow that does a lot of work on a W.

S. But food grow roams. It's a particular solution that creates digital twin twins, and it enables companies to look at power lines And overhead power line assets to support the decisions for around safety and modernization of the grid. So as they have gone about doing their [00:34:00] architecting of their applications, they've designed it in a very frugal way that means that they can then scale this or reduce it as and when they want to.

But I think that frugal architect just hit. Hit home with many, many people listening, I think what resonated so deeply and I know things like why things like that do for me is because it's like, oh, okay, that's how I can directly contribute and that, you know, it feels good because there's so many things that.

that feel out of your control a lot of the time that actually, there are decisions that you're now kind of empowered to take that can, that can help, you know, um, I wanted to maybe, you know, bring today's conversation to a bit of a conclusion just by talking about another big theme that's going on in this space.



One of green ops. And, you know, situations where, you know, maybe things haven't been designed so well in the past. And maybe there is a bit of sprawl going on for whatever, what reason or another. It seems to me [00:35:00] that like fin ops and green ops have got a real role to play in in this in terms of continuing to tighten the environment.

Have you got a perspective on that? And are you seeing in some of the organizations you're working with? Are you seeing a growth in that conversation? At least? Yeah, yeah, definitely. And I think it comes what Rob says about measures. It really comes into its own when you can measure where you are today and where you can be in the future.

If you can't measure where you are today with regards to how green your operations are, um, so that would be the first advice is to, you know, put the measures in place to determine where you are today as to where you can be in the future. And then as you look at all of your operations, then build in that muscle that will review that.

On a regular basis and what activities are we doing? And I think that um, so we are we're seeing that across the board Um, [00:36:00] and I think that if it becomes part of the cio's reporting back to the board Actually it can create A lot of change for the industry, for the, for the business. And I think that that will then put more emphasis on green ops going forward as well.

Sjoukje, what have you been looking at this week? So each week I do some research on related ideas and transformation and tech. And this week I thought we should take a look at accelerating clean energy transformation with AI. So like we already mentioned, there is a lot of urgency to transition to clean, sustainable sources of power.

However, designing, developing, optimizing and integrating these green energy sources into existing power infrastructure comes with a lot of challenges, and we also covered that in this conversation as well. So [00:37:00] there is a huge potential of AI in accelerating the clean energy transition. And some examples are that AI can improve forecasting of renewable energy availability and power demand.

It can optimize the project design and energy storage, assist in developing smart grids, and enable predictive maintenance for renewable energy assets. But there are also some challenges like, um, the expertise gap and the importance of accurate data. But despite these challenges, the integration of AI and renewable energy will promise a brighter, cleaner future for power generation.

So a question. So how can leaders effectively integrate AI into their renewable energy projects and what steps should be taken to ensure success on this? I mean, just before we, uh, we leap into that. Subject. I just want to make a marker that we nearly got through an entire show without talking about AI then.

I'm happy with that. It's AI bingo, isn't it? At the [00:38:00] moment. I read the other day, apparently now you can buy a pillow that's AI enabled. And I'm like, why the hell would you want an AI enabled pillow? But apparently people are buying it. Why? I don't know, because it's got AI on it. Does it give you a massage?

It's just like Is there also an AI enabled toaster already? There will be. I get the perfect browning just right, or something like that. There's got to be some angle on it. I will buy it. Yeah. So Rob, what do you think? AI in this space? Yeah. I mean, we were laughing there, but I mean, it seems like a normal Huge, huge, great point.

Predictive maintenance, you know, on a G 10, 000 sensors connected to AWS IOT. And they've created a thousand machine learning modules on that. And it's reducing their operations and



through predictive maintenance by about a million dollars a year. So it's. And not [00:39:00] only that, then you think about cameras that have, that are keeping an eye on assets, keeping an eye on, you know, these power lines that we talked about there.

And sort of being able to predict what is going to happen in the future there and looking at cameras and being able to then interpret video data, put that into data to be able to make good decisions. But yeah, and then also Gen AI, like thinking about historical data sets that have been created around the world.

Geo data, we talked about that as well. How to make good decisions of where to find new energy sources. Huge, huge data sets. You know, Gen AI could help you identify great areas to build new turbines, new farms. It seems to me like the obvious solution here is when the robots take over, they can use the humans as batteries, and then effectively deal with the problem all in one fell swoop.

No, [00:40:00] I think, you know what? Let's give it a try. We don't, we don't always like a dystopian future, but I still think it's the more likely outcome. So yeah, it's the, uh, but in all serious note, it's that point about better decisions earlier on based on accurate data. So you get your metrics sorted and then you get the AI to take the heavy lifting out of say what you should do.

And then you could also on the prescriptive actions, get the AI to auto optimize. what you're doing everything from supply chain and logistics efficiency through to energy generation efficiency to managing the grid itself we talked about pumping in and out in little micro grids all of that has to be managed that's intensive and you maybe think the machine would be better at it so yeah turf it over Yeah, and predictive maintenance is massive on turbines that are out at sea, and whether you have that turning around in a very gentle wind, but it's obviously having an impact on the systems and the parts, is that more viable than, you know, shutting it down, not having it on?[00:41:00]

And then starting it when the wind is coming around based on your patterns and forecasting that you've generated through AI, looking at historical data sets, et cetera. So most of the energy clients are investing in AI now? Every single one will have. Every one, yeah. Definitely. There'll be projects and projects, uh, all created all around AI.

Well. Teams of people. I mean, huge food for thought. Um, it's such a big subject that even though we had a pretty wide ranging conversation on it, it feels like we barely scratched the surface. So it's one I think we'll be, we'll be tracking in detail as we, uh, as we go through the, through the coming years.

So Rob, thank you so much for making the time today and, uh, and sharing your insights with us. It's been a pleasure. Thank you for the invite. Yeah, man. Good to see you. Now we end every episode of this show by asking our guests what they're excited about doing next. And that could be you're in Madrid.

You're heading out tonight for a nice, a nice glass of [00:42:00] sangria in the sun while the rest of us here are freezing. Or it could be something in your professional life. So Rob, what are you excited about doing next? Yeah, excited about Actually, it's getting cold and it feels like, uh, we really enjoy our skiing as a family and I really enjoy doing that, uh, with two girls and my wife just being on little trips around, uh, the French Alps.

So we're thinking about that in February. Where's the resort you're planning to go to? We're planning to go to Les Arc. Oh, fabulous. I love Les Arc. Yeah, we're driving. We're driving to keep emissions down. But, uh, yeah, that's going to be great fun with three other families



from the university. So, quite a gang.

Oh, lovely. Well, we wish you, uh, we wish you well for that. Uh, it's such a nice thing to do. Chamonix is my, uh, is my favourite up in the Alps. I absolutely, I absolutely love Chamonix. Ski Realities, let's start a new podcast. Yeah, we've talked about that a long time as well. Yeah, exactly. The Apres, that's lovely.

Like a nice fondue. [00:43:00] Yeah. That's an idea. Fondue and Apres ski. Sorted. Yeah. It's the best. I can't ski for toffee. Oh. You see climate change there, unfortunately. You do. Some of those. Oh, yeah. It really do. It's only going one way. Yeah. Seasons are getting a bit shorter and, uh, but right now it's actually a pretty good season for snow at the moment.

So a huge thanks to our guests this week. Rob, thank you so much for being on the show. Thanks to our unstoppable producer Marcel, our sound and editing wizards, Ben and Louis, and of course, to all of our listeners.

We're on LinkedIn and X, Dave Chapman, Rob Kernahan, and Sjoukje Zaal. Feel free to follow or connect with us and please get in touch if you have any comments or ideas for the show. And of course, if you haven't already done that, rate and subscribe to our podcast.

See you in another reality next week.[00:44:00]

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