



CleanLaw 71

Corporate Net Zero Commitments: GE's Roger Martella speaks with Lowry Yankwich– September 15, 2022

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Hannah Perls: Welcome to Clean Law, from the Environmental and Energy Law Program at Harvard Law School. In this episode, Lowry Yankwich, a recent HLS graduate, speaks with Roger Martella, Chief Sustainability Officer for GE. They discuss GE's recent sustainability commitments and how the company is tackling its operational and downstream emissions across the aviation, public health, and power sectors.

One note for our listeners – this episode was recorded before Congress passed of the Inflation Reduction Act.

We hope you enjoy this podcast!

Lowry Yankwich: Roger, I'm so looking forward to talking to you today. We're going to be talking about corporate sustainability goals and net zero emissions targets in particular. Just to say a little bit about Roger, my interviewee, he's the chief sustainability officer at GE, which is one of the nation's most storied companies, first founded by Thomas Edison and J.P. Morgan. Times have changed a lot since the invention of the light bulb, and now GE focuses its businesses on three main global industries, aviation, healthcare, and energy. Roger is leading the company, as it develops its approach to sustainability, as it relates to environmental, social and governance considerations, or ESG. Roger is an expert in the field having written multiple books on the intersection of ESG, climate change law, international environmental law and human rights, and having worked both in government and in private practice as an environmental lawyer. Roger, so nice to have you here. Thank you so much for making the time to speak with me.

Roger Martella: Lowry, thank you for inviting me. To you and Carrie and the Harvard Environmental & Energy Law program for all the outstanding work you're doing here, it's a real honor to have a little role to be part of that, so thank you for the opportunity.

Lowry: Great. Well, I'll just jump right in. As a starting point, I thought it would be interesting to talk a little bit about your role at GE. You've approached environmental questions throughout your career from a variety of angles from being at the U.S. EPA to the Department of Justice's Natural Resources Division, and then in private practice. I'm interested, can you describe your role at GE now and what responsibilities you have within the organization and who you're mostly working with there?



Roger:

It's interesting, because I see my role as a bit of a conductor. I'm here to coordinate and align the work of many people and a large team across the company to help achieve our sustainability goals. I think part of what I do is very similar to other people at other companies in my position, and then I think part of what I do is unique to GE, which I really value and appreciate the opportunity. I think the first part, which I think is probably akin to other chief sustainability officers and other folks with similar responsibilities is to focus on ESG, environmental, social and governance. What I think of when I think of that is, how are we improving our impacts as we do our business? How are we improving our impacts to our people, to our communities and to the planet?

How are we running our businesses so that we're being good stewards of safety, of human rights, of environmental stewardship, giving back to our communities? How do we help make sure we're running that like a business, that we're setting metrics and targets and we're operationalizing that so we can make commitments to improve our impacts to our people, to our communities and to the planet? Then, we're operationalizing that across the company to achieve those goals and setting good goals and things like that. So that's part of my job, the ESG part of it. I think you'll see that today at a lot of companies is it's incredibly important and it's a positive development that both where companies are sharing a lot of information and they're holding themselves accountable to their stakeholders for this.

The other part of my job, which I think is a little more unique to GE and something I feel really fortunate of is, as you pointed out, we're in three businesses that are lined up to help solve three of the world's most pressing sustainability challenges: climate change and the energy transition, access to healthcare, and more sustainable aviation. So given how closely our business goals align with our sustainability goals, I have this unique honor of being involved in some of our strategic decisions and how we align those issues, how we can align the business goals to achieve sustainability goals. So I appreciate the opportunity I have to be part of our senior leadership team, to work with our companies' senior leaders, to work with our board, to integrate sustainability truly into how we are defining the future of our businesses.

Lowry:

Thanks, Roger. I just want to pick up on one thing you were just talking about, which is, it seems as though many of the aspects of the business itself now feed right into sustainability with developing different sustainable jet engines or fuel, or this access to healthcare and making it more efficient. I'm curious if the idea of sustainability at GE is a relatively new concept, or how long you would say it's been around as an idea within the business strategy at GE?

Roger:

It's a really great question, because you could argue it both ways in terms of how we explicitly talk about it versus how we implicitly run our businesses. Let me start with the latter, and I'll go back to your introduction of Thomas Edison. We're a 130-year-old company, starting with the light bulb and other things, but if you look at what's been the unifying theme of our company, it's always been



how we innovate technology to lift up the quality of life for people around the world in 175 countries. I don't think Thomas Edison, my prediction would be, because I've been to his desk and things like that, that he thought about sustainability using those words, and probably a lot of his people who followed him maybe didn't talk about sustainability, but what they were doing is the core of how we think about sustainability, looking to lift up quality of life for people all around the world, and that really resonates today.

So even if we haven't used the right language and acronyms, I think it's been core to how we run our businesses, this notion of working globally to find ways to help people prosper. I think that's core to sustainability. It's been core to our businesses. Now, your point is fair. I think how much we've been vocalizing and aligning our business goals publicly to the sustainability missions, that has ebbed and flowed over the years. Obviously, it's more front and center today. We have looked to these opportunities, I think, to take what we've been doing internally to understand how closely this aligns to some of the goals in the world people really care about and to communicate that and be more transparent with our stakeholders in aligning some of the language and the way we talk about these things.

Lowry:

That's great. I'm also just going to follow one thread and then I'll get back to learning a little more about you, which I'd like to do upfront. It's interesting to me the way you talk about sustainability as impact, and this idea of lifting up the quality of life, because the word sustainability could imply more just enabling things to continuously move, to continue, to sustain things. So I'm curious how you arrive at your idea of sustainability as impact as opposed to just this idea of maybe circularity that comes up in other discussions of it.

Roger:

I think that's a great question, and I think it goes to probably what is the theme of the current right now is we're going to use a lot of words: sustainability, ESG, net zero, carbon neutrality, circular economy, product stewardship. The question is, who defines these and what are you talking about? Because I think among my peers and I, and our stakeholders who are giving us feedback, there's a lot of confusion in this area and it's well-justified. So there's some things, as we get into the conversation where there are some definitions out there, there's some standard setting organizations, but this is a big area where I think you have to be crystal clear when you use certain words, exactly what you're talking about.

If someone wants to debate me and say, "Well, I would define that differently," I welcome that debate and I would respect that. But what I care about is credibility and making sure if I'm communicating something that people know exactly what I'm talking about. I'd rather debate them on whether they think I'm right or wrong versus overstating something. So my own view on sustainability, and people could debate this is, sustainability really comes down to, at its core equity. It comes down to making sure everybody in the world has the same opportunities to prosper.



That may mean protection from climate change, protection and access to water, economic opportunities, access to healthcare, but at the core, it's the notion of equity, that we're working towards finding the same opportunities for everybody to prosper for their children, for vulnerable populations. I think that aligns pretty well to what I look to the most, the United Nations. The United Nations maybe becomes the closest to defining these terms with the sustainable development goals. There's 17 of them, and they very much, I think, focus on this more holistic theme of, it's important to be protected from climate change. It's important to have access to clean water, but it's also important to have access to healthcare and to education, gender equality, and things like that. It's all centered around about how do we help people prosper to live prosperous lives and have the same opportunities? That's my view of sustainability, and I think a lot of things fall within that, including the impacts.

Lowry:

That's a very ambitious definition, and so we'll talk a little bit about the goals that GE is setting as an organization towards sustainability and how we evaluate progress towards those goals over time. Before we get there, though, I did want to zoom back out a little bit, or maybe it's zooming in to you, and ask, given that you've had these different roles in government and private practice, I'm really interested in your own motivations for joining a company like GE. As an environmental lawyer by training, what were the factors that made you want to join GE?

Roger:

I think there were two primarily, and one goes back to my roles in the government, in the Justice Department and EPA. I always felt passionate about public service. It was the only reason I went to law school is I wanted to work for the government. That was my dream, and so I felt this real passion for public service and the ability to make positive impacts, hopefully, along the way. I thought that several years ago as I worked with clients in the private sector, I was seeing a lot of good getting done by companies. I had a sense that maybe companies were being under-recognized in their potential to be part of the solution that in my career as an environmental lawyer, we tend to think of companies being part of the problem, enforcement actions and pollution.

That's all true and fair, but I was starting to think that there was an opportunity to see the public good that companies were doing and to maybe mimic some of the things that were good about the government and good about companies and try to think about how companies could focus more on the public good side of things, so that was really an interest to me years ago. Then I thought about, "Well, which company actually could fit that mold?" In my view, for the reasons we've talked about that GE is unique, there's lots of companies who do lots of public good and lots of ways, but the things I cared about in the energy transition and climate change, even understanding more the importance of access to healthcare and the global presence, the global reach of GE and it's focus on innovation, to me, it was like incomparable in terms of where there could be a platform for seeing how a company could do public good.



So it's been nice to see why I took a little bit of ... it was a little bit speculative at the time, leaving the law firm environment. I think these trends as a result of COVID have really become mainstream where people saw with COVID that companies were doing more than just good for their shareholders, they were doing that, but they were also stepping up to do public good and stepping outside their bounds to bring benefit to their communities and supply chains like that. Now, I think post-COVID, we see cemented the focus on companies doing this public good corporate social responsibility. Again, I think GE is just so well-positioned with this global footprint, that commitment to innovation and technology to help be one of the leaders. I'm not just suggesting we're the only one, but to help be among those cadre of companies doing really good for our shareholders, that's goal number one, but also balancing that with how we can do some public good along the way.

Lowry:

I wanted to just ask one other question that's kind of about you, kind of about sustainability. I'm curious how legal your role is. Obviously, you have a background as an environmental lawyer and legal training, but when you hear the title a sustainability officer, is that a role that is governed by many different statutes or laws, or is this more a role that's comes down to internal business goal setting? I guess I'm interested in the extent to which legal training and external guidelines really inform the work that you do.

Roger:

Well, thank you for that. It's a question I get a lot, and I would say you would not have to be a lawyer to do this type of work, and some people might debate whether it's a positive or negative. I think the skills I bring from my legal career to this job are just communication skills and maybe a sense of judgment you develop as a lawyer, but I tend to say that, as I said I think earlier, we need to run our sustainability programs with the same accountability as our business operations. You have to be working as a business person. You have to be working on someone who can operationalize programs. if you look at where the SEC is going, you're seeing this merger of ESG performance and financial performance. We're seeing that in EU, so I think it's a bit of a more operational mindset than necessarily a legal one.

Now, I'd like to believe, I'd like to believe my colleagues agree that lawyers can bring really strong skills to this type of role like I've talked about. Having the environmental background, having a background in sustainability and all those types of things has been helpful here, but there is a role for lawyers, I want to be very clear. We work very closely with the legal function when it comes to the intersection of these issues and the law, particularly on compliance issues on growing reporting issues. There's a lot of issues emerging around governance and how you interact with shareholders and things like that, that where the lawyers have a very strong role to play, so there's plenty of opportunities here for lawyers. As we get into the conversation, we can discuss some of those along the way.



Lowry:

That's, I think, helpful context and maybe a call to future sustainability lawyers, which is great. Let's talk a little bit about these actual terms of net zero, carbon neutrality, corporate sustainability pledges. These are terms that I think we hear a lot, but they're not necessarily well-defined or they're not always defined the same. So I'm curious if you could describe what people are talking about in general when they refer to net zero or carbon neutrality and companies making these net zero pledges.

Roger:

Thank you. I agree with your premise that they're not well-defined, they're defined in different ways, and so I want to start with what sounds like a lawyerly caveat, but what I want to do is share how we think about it. I think there's a certain common ground to these definitions, and then there's some areas of departure. As I say, this is a hot topic among me and my peers in terms of it would be good if we had more uniformity around this. The way we have chosen to approach these terms is credibility is our North Star. Anything we do in the sustainability space, credibility is always the answer. Even if it's a close call, we're always going to err towards credibility. So what that means is if we're using terms like net zero, carbon neutrality, we're going to very specifically tell you what we mean. It may sound boring. There may be a lot of words in there, but we think it's more important to be credible and transparent so that when my 15-year-old daughter is reading this, she knows exactly what I'm talking about and exactly what I'm not talking about.

She may come back and criticize me and say, "Dad, I disagree. You should have included that," fair, but at least you know what I'm including and what I'm not. To break it down, when we use the term "carbon neutrality," we are talking about the emissions that come from our operations; so the emissions that come out of our factories and our office buildings all around the world and also the power that we purchase to run our factories and office buildings. These are frequently referred to as Scope 1 and Scope 2 emissions. So when we say we're going to be carbon-neutral, it means that we want to reduce our emissions as aggressively as we can, I'd like to come back and talk about that, how we're approaching it, to lower our greenhouse gas emissions from our operations. And if at the end of the day after we've really exhausted everything we can, we would look on how to offset those emissions so that our operations at the end of the day are neutral means we're offsetting everything that we're emitting.

But right now we're focused on how do we most aggressively reduce emissions? And that's our approach to carbon neutrality. When we think about net zero, we think about it a bit broadly. First of all, it's not just carbon, it's the full suite of greenhouse gases. We think longer term about the products we sell, and we can talk about this in more detail, but what we're aiming for is that longer term the products we sell, including our energy products, which include gas turbines and our jet engines for commercial use that ultimately they get to the same point where we've decarbonized their emissions to the fullest extent. Then, to the extent there's something left that we can't decarbonize, we're



offsetting that with direct air capture or some other approach. That's at least how we define it. We define them very specifically. We can probably come and chat about that even at a higher level of detail. I think that's roughly akin to most folks, but there may be different interpretations of how someone says net zero. They may say full abatement of emissions and so on.

Lowry: Then just to plug in one other term that we hear, which is Scope 1, Scope 2, Scope 3 emissions, so my impression is that when you say carbon neutrality and you were saying that applies to operations, that's really the idea of Scope 1 and 2 emissions. Is that correct?

Roger: That's correct. We have a commitment to be carbon-neutral in our Scope 1 and Scope 2 emissions by 2030, so those are our operational emissions, those that we emit directly and those from the power that we purchase.

Lowry: Okay. Then, can you describe what the difference is with Scope 3? I know it's a different kettle of fish entirely.

Roger: It is a different kettle of fish. I like that. Scope 3 is fundamentally different. It's basically everything that's not your operational emissions, it's everything upstream of your operations and everything downstream of your emissions. I think there's 14 or 15 different categories of Scope 3 emissions going to the supply chain and transportation and the products that you sell and things like that. For many companies, including GE Scope 3 emissions would be the largest part of emissions. For GE it's the vast majority of our emissions, and it's one of the specific categories. It's the category of sold products, the products we sell, because we sell gas turbines and we sell jet engines and these are two of the world's most intensive greenhouse gas-emitting pieces of technology.

They're critical technologies to keeping the lights on to keeping people connected, but they do emit an intense amount of greenhouse gases. So keeping with my earlier theme, when we talk about Scope 3, we never say Scope 3, and this is an area where I think there's a lot of confusion. I say something quite boring. I say, "We are focused on an ambition to be net zero for our Scope 3 emissions from our sole products from aviation and energy," and that's all very specific, because we don't want to be misleading.

We don't want to suggest that we have made an ambition today to be net zero on everything we do. Maybe we'll get there, but we're focusing on where we have the most impacts and the vast majority of our emissions come from jet engines and come from our gas turbines. So if we can focus our attention on those, we'll be able to not only address the majority of our emissions, but we'll help our customers as well, because our Scope 3 emissions are our customers Scope 1 emissions, if that makes sense. So if we can decarbonize our Scope 3 emissions, our customers are going to decarbonize their Scope 1 emissions, so we're very specific on what we're focused on today. We've had a lot of support for that. We may consider other things down the road, but we're one of a small



handful of companies that really is in a place to decarbonize these technologies, and so that's where our attention is.

Lowry:

Yeah. I really want to talk about how you actually go about doing this decarbonization and then emissions reduction. Maybe we could start with the operational emissions, because that seems like it's a little bit more within your control. It's something where you have an explicit target for 2030. I'd be curious, first of all, how you as a company arrived at the particular timing of your goal of setting 2030 as this time when you're going for neutrality in terms of operational emissions, and then also what the plan looks like to get to that goal? You had mentioned emissions reduction being a really important part of that, so I'm really curious what that actually looks like as applied.

Roger:

Great. Great. In 2019, we did announce an ambition to be carbon-neutral in our Scope 1 and Scope 2 emissions by 2030. So as you said, these are our operational emissions from our factories, from our offices, from the energy we purchase, and we're a big industrial company. We still make, in our factories, lots of energy-intensive products and ship them all around the world. So as an industrial company, this is a big challenge to be able to achieve that goal, but we feel very strongly about it. The good news is we're about 18 months, getting closer to two years and we're already achieving 21% reduction compared to our baseline, so that's a positive, but it gets harder as you go along. Each of our businesses has set plans for the decade on how they're going to pursue this goal. Each business is tailored a little bit differently based on the type of work they do, where they are in the world, the opportunities that present, but it comes around three themes.

First is, operational improvements. We run our businesses through a lean system where we're always looking to drive more efficiency in your operations. So the more efficient we can become in our operations, that's good for business, it's good for our shareholders and it's good for carbon neutrality and reducing our emissions. So the first approach is operational improvements pursuant to lean systems. The second approach is similar to that, eliminating waste, make sure that we're being more efficient and in how we use energy, that we're recycling energy capturing it, and just finding ways to reduce that waste, upgrading, becoming more energy efficient and so on.

Then the third is, how do we purchase energy? Even though we're an energy company, we provide one-third of the world's energy, we have to buy a lot of energy like everybody else. So like other companies we're focused on clean energy purchases and over time, the more clean energy we can purchase that will help our Scope 2 emissions. So far, we've gone into a 21% reduction. We know it's going to get harder with every year, but we have a 10-year plan for each, and our goal is to reduce at least 50% of our emissions directly. Some of our businesses are focused even on higher goals than that, and then we will look at offsets down the road, but at the moment, we're challenging ourselves



very aggressively to reduce the emissions directly before we turn to relying on offsets a little bit later this decade.

Lowry:

Thank you. I just want to follow up on one of the things you were saying. It struck me when you were talking about energy recycling that I'm curious, how much does the plan to reduce emissions in the next 10 years rely on technology change that hasn't happened yet? I'm just curious from your vantage point right now, do you have all the tools you need in theory to make the change to reduce emissions 50% like you were saying, or is there some degree to which you are expecting and planning to develop new technologies that increase efficiency or increase your recycling of waste products? I'm just curious, are you working with existing tools exclusively or relying partially on tools that still need to be developed?

Roger:

It's a really great question, and I think it's a different answer for Scope 1, 2 and 3. I think for our Scope 1 and 2, we have probably a line of sight to what this decade looks like. It's probably existing tools and the question is investments, the timing of those investments and how that all lines up. That's not to say something could come along that could make us even more ambitious. I think we revisit this every year and if new technology is innovated, that could make us be more aggressive or if we can get more renewable energy out there, then we would look to adopt that. But right now we're, I think, setting our Scope 1 and Scope 2 targets based on our line of sight to existing technology and when those investments can arise. Scope 3 is fundamentally different than that. Again, if we go back to what we're trying to do with Scope 3, which is decarbonize aviation and energy, that is going to rely on technologies that are not currently being implemented or at commercial scale today.

We've been very clear in documenting this, that while we want to provide the best technology today to make progress, the technology we have today is not enough. We're very clear on that. We have to innovate the next generation of breakthrough technologies. So we've outlined in our reports what we think the future looks like for those breakthrough technologies, what we're doing today to innovate them and where our partnerships come into play with the government and with our customers and with other parties to make sure we have the technology for the future that we think we're going to need, because we know today's technology is not enough.

Lowry:

That's a good transition, I think, to talking a little bit more about the Scope 3 or emissions associated with the product use, just to put it in context, you have sustainability reports, which is great. You released one really recently and it's noticeable in reading the report that the emissions associated with use of, for instance, the aviation products are over 15 times greater than all the operational emissions. So it's obviously a much larger task to address these Scope 3 or emissions associated with the use of your product. I'm curious if you could say a little more about how you can approach this much larger task, and you were just saying the technology in that instance is not there and you



have to think about the innovation that you're going to attempt over the next decades; but if you could say a little more about how you start going about decarbonization in your actual products that you're making and putting into the market.

Roger:

Yeah, no thank you for that. It is so fundamentally different. It's almost like I wish it was like Scope 1 and 2 and then Scope X or something because it's hard to draw comparison between the two. If we talk about Scope 1 and 2, it's purchasing more renewable energy, it's being more efficient. I think a lot of businesses have a line of sight to that. We'll take your example of focusing on aviation. I think it's a good example to focus on. The goal there with Scope 3 is to decarbonize jet engines, and so let's talk about the differences in those challenges. The goal of a jet engine is to provide propulsion, to get something from point A to point B in a way that prioritizes safety over everything else. What I've come to appreciate is we can talk about Scope 3 and things like that, but when you really get on the ground and talk to the engineers and go into to the buildings and the labs, Scope 3 is really physics.

It's the laws of physics and Scope 3 is all about, how do you solve for the laws of physics? We can take a jet engine, maybe find a way to take apart so it gets 1% more efficiency, but then the laws of physics come in, and what are the ramifications of that? How does it impact lifespan? How does it impact safety, how does it impact balance? That's what we're solving for. If you were to go into our labs today, you would find engineers in there working on parts of future jet engines and testing them today that we're not going to use this decade. Hopefully, we'll use 12, 13, 14 years from now, but the life cycle of these technologies are so long we have to be making those investments today. If we're not doing it, we will not be ready.

So when we think about our Scope 3 ambition for our sold products to be net zero, people generally think about emissions and that's fair, but I think about it differently. To me, what it signifies is we're making those investments today to innovate the technology that the world's going to need. Our Scope 3 ambition means we have people working in our labs today who are trying to figure out what technologies we're going to use in 2032. From an aviation standpoint, it means sustainable aviation fuel. Our engines already run on sustainable aviation fuel, but we want to get them certified to run on 100% sustainable aviation fuel; that's one goal. It involves hybrid electric engines. It involves hydrogen engines and open fan designs and things like this.

I think what that means is when you go into an airport today, you know one thing: you know you're going to get on a plane that's going to probably have two engines on it, two jet engines. You may not know the size of the plane or the size of the engines, but you feel pretty confident you're going to be on a plane with a wing and two, maybe four jet engines. In the future, that may look a little bit differently. You may have a plane with two engines. You may have a plane that's a hybrid-electric. You may have a plane with an open fan. You may have



a plane running on hydrogen. That's going to depend on how far you're flying, the number of people on your plane, is this a regional flight, a long haul flight? Is it how much sustainable aviation fuel is being used? So these are the types of issues that we're dealing with today to chart things out over the decades, to come to fulfill that Scope 3 ambition for aviation.

Lowry:

Very helpful example. And just as a technology nerd, I think it's pretty cool hearing about these different things that are in the works. One thing I'm curious about just following our conversation a little bit is we've been treating these goals as internally motivated, like the idea of GE coming up with these goals, thinking carefully about what they should be and separating the Scope 1 and 2 from the Scope 3 and treating them differently as appropriate. I'm curious what the external drivers of these goals are? Is there demand in the world for setting these goals that you feel? Does it come from shareholders? Does it come from customers? Like in the case of aviation, do you feel pressure from airline companies to develop sustainable engines? I'm just curious of what beyond the either business strategy of GE or conscience of leadership at GE motivates the creation of these carbon neutrality goals?

Roger:

No, it's a really important question because I think as the defining characteristic of the sustainability era or the corporate social responsibility era, which is all of this is being done in partnership. This is no longer just companies working as companies, but working closely with our stakeholders along the way and our most important stakeholders, top of mind, are our employees. Our employees feel a united purpose, a sense of purpose in these issues, and they hold us as accountable as anybody for our goals, our targets and our performance, and it's a huge source of retention and it's a huge source of recruitment. So we start with our employees as the stakeholders that we hear the most from and that we're working the most closely with, and they are also sometimes our closest assessors of how we're doing and not shy in sharing information. We appreciate that.

But to your other point, our partnership with stakeholders is really key to this. We have our customers and our customers have made their own ambitions and commitments and they're under their various stakeholder pressures. They have to count on us to innovate the technology they need, so we work very closely with our customers. Our investors in the area of sustainable finance, one of the things I really enjoyed about this role is over the last 18 months, I have developed relationships with all of our major banks and investors so that we can stay closely coordinated on how our innovation is tracking their own goals for the investments they're making and the types of customers they're investing in. And this growth of sustainable finance has been a huge driver in this space. If we talk about government, they're another important stakeholder.

Traditionally, there's been like a command and control regulatory approach to this sphere. Back to my earlier comment, that's still true. But the relationship with governments is evolving to much more one of partnership, where they're



sharing investments with us in these technologies, research and development, sharing the risk and helping incentivize to get some of these nascent technologies off the ground. We work with NGOs. We work with investor groups. We work with all kinds of groups, but we are very closely integrated into all these stakeholders who we're talking to in real time. They can just send an email, set up a call and we're going to share this information with a lot of transparency, so that's been a defining kind of change of the sustainability era

Lowry: When you're setting a goal that's 30 years down the road related to these massive emissions associated with the use of products, how do you adjust over time, and what are the factors that keep you to those goals and work against challenges that come up as you try to meet those goals?

Roger: I think it's a really important question, because even though we're a technology company, we do not have a crystal ball or a time machine. I think as we're looking at these 30- year goals, we have to be very clear on that and we have to prioritize credibility. So we've struggled with this. We thought really hard. We know our stakeholders want to hear us think about the next 30 years, but we really want to share what we know and what we don't know at the same time to maintain this credibility. We don't want to suggest we're not being aggressive or ambitious, we are, but at the same time we want to be honest brokers, so we struggled with this. One of the things we did, which I think is a little unique is, we announced that we're going to have some principles, four principles on how we're going to approach net zero in the lens through 2050, and you'll know that whatever we are sharing or communicating is going to be heard through these four principles. So the first one we've talked about a lot, credibility. That's the most important to us.

We're always going to prioritize that. We're going to share what we know we're going to share what we don't know we're going to share where we have some doubts and reservations and the caveats and things like that. We're going to err on the side always on credibility on communicating this information. The second one, we also talked about, collaboration, that to get to that zero in 2050, even a company like GE cannot do this alone. We would not succeed on our own. We need to partner with our customers. We need to partner with the governments. We need to partner with lots of stakeholders, anybody who will partner with us that help make sure that we're working together towards this path together. The types of technologies we use are not standalone units. They work closely with other technologies and we have to be very integrated there.

The third principle is continuous learning that we are committed to constantly work on what we don't know to try to improve and as we get information that may cause us to revisit some of our assumptions, some of the technologies we're investing in, we will make those adjustments in real time. We'll continue to update everybody on what we're learning, but we will make a commitment to make sure that we're not just resting on what we decided today when we published our plan, it's not like it's locked in and we're just going to stick to it.



We're going to make continuous adjustments to it, to improve it as we go along. Then the fourth is, this commitment to innovation and technology that our approach to Scope 3 and net zero would be dependent on innovation and technology that that's where we can deliver the most good, that's where the majority of our impact is. And that's where our expertise really lies. So for now, that is our focus when it comes to Scope 3. So those are the principles and the lens by which we're going to continue to look and communicate on this going forward, knowing how much uncertainty there is for the decades to come.

Lowry:

Thank you. That's a really helpful framework, I think, for at least showing how you're thinking about the inherent unpredictability of a timeline that spans 30 years. I want to ask one last question in this area, which is, we've been talking a lot about GE specifically and the thoughtful process you've gone through in setting your goals. Looking beyond GE, though, we've seen this huge growth in net zero pledges in the last few years, just really an explosion of these pledges. I'm curious to get your take on how we should evaluate this growth in pledges. And to the extent there is a difference in quality, or the word you've been using, credibility between these pledges, how do we differentiate pledges that are made in good faith and thoughtfully from those that are not.

Roger:

I think your observation is right, and it's very fair and something we pay attention to too, because we would like to see all of our peers take similar approaches to credibility. I would say what I look for, this is just my own rule is, I look for the boring stuff. I hope I've come off a little bit boring today, because I've wanted to be very factual and not oversell something and suggest we're going to suddenly do something overnight that's going to make everybody all of a sudden better. I think sometimes you see some of these commitments and they tend to be very general and presenting a picture of a future with not the details to get you there. So you really have to look at the details and the more specificity, the more your confidence level should go up. When I talk about this, where have an ambition to be net zero by 2050 for our sold products, from our aviation and energy businesses, that's a lot, but people know exactly what I'm talking about and what I'm not talking about.

There's 14 categories of Scope 3. They know I'm not talking about 13 of the 14. I'm talking about one, the one that's most impactful. So you want to look for the footnotes. You want to look for the appendixes. My guess is a lot of times you're going to find something you're going to see a big page that says we're going to be net zero. Then there's going to be footnotes saying, "Well, this is the Scope 1 and 2, or maybe it's Scope 3 for this very specific issue and so on," and so look for that. If you don't find the footnotes, if you don't find the appendix, then I'd probably be even more scrutinizing of what the reports look like. So I think you have to pull that apart with that kind of detail to make those apples to apples comparison.

Lowry:

That's great. In that case, I want to conclude this interview with a couple of questions that are a little more broad in scope and looking at this from a more



systemic level. So one thing that might be on a lot of listeners' mind as they're listening to this episode is that the Supreme Court recently handed down a decision in *West Virginia v. EPA*, and they focused on the power sector GHG regulations and relied on this idea of the major questions doctrine in stating that there may be constrained regulatory authority of the federal government to address climate change. I'm curious to get your take on if we do think the government is constrained in how it can address climate change, does that shift the focus on what companies can or should do? In your opinion, what role would you like to see major companies like GE take in the future toward protecting the environment and addressing climate change?

Roger:

In 2007, the Supreme Court issued its decision in *Massachusetts v. EPA* that for the first time opened the door for EPA to regulate greenhouse gases and climate change. So I was the general counsel of EPA at the time, and I was one of the people tasked with coming up with all the ways we could use EPA's authority to address climate change. I've seen this probably as closely as anybody, what I call the *Massachusetts v. EPA* cinematic universe of proposing regulations. The Supreme Court affirming some of it, the Supreme Court taking some of it away, but this has now gone on since 2007. Prior to *West Virginia v. EPA*, I, given my attention to this issue, had concluded that the right laws would be helpful to advance things, but given this had gone on for decades like a ping-pong match and all the challenges with rule making that we cannot wait or fully rely on the law to provide the solutions here. So I have long been a proponent of the companies need to show leadership in this space.

I would probably argue, and I have argued, frankly, that we are at a pivotal time where companies going forward for the decades to come are going to lead these issues globally. We will work in partnership with all of our stakeholders we talked about, but if you look at the accountability to our stakeholders, the types of commitments companies are making on a global level, the investments they're making in technology that I think we have to understand that it is up to the companies to work towards leadership on these issues. While laws can frequently help accelerate things, while they can compliment things, as someone who's been very closely working on these issues from day one, I don't want to count or rely on wait on them. I don't want to suggest that laws are important and regulations are important, that's not what I'm saying, but I think we're seeing increasing opportunity for companies to use action to move forward and act with the sense of urgency that's probably warranted here.

Lowry:

Final question, do you think there is will for that to be the role that companies play? You could speak just from the perspective of GE or your sense of private industry more broadly.

Roger:

So there's something called the Edelman Trust Barometer, and it surveys 18,000 people all around the world in many countries in terms of how they view institutions. In this year, the Edelman Trust Barometer, it said that



companies are the only trusted institutions to solve some of these challenges. It's not like we got an A+ score, it was all relative, but companies were the only ones that came out above the threshold of being trusted. So I think it reinforces the theme that the stakeholders, our employees, our customers, our investors, that they are expecting companies to show more leadership here, and I think COVID was a big factor of that. I think in the post-COVID world, there was the example set of corporate social responsibility. I actually published an article on this not too long ago with a colleague, Irma Russell, where we actually traced back the purpose of the company to its earliest days, I think back to the 19th century and found that corporate entity was actually formed to do public good.

We've seen corporate social responsibility evolve, now ESG. I think the answer is for a variety of reasons that companies are increasingly understanding and to some extent, embracing this opportunity to be part of the solution. Let's be clear, I've tried to say this a few times when I talk about a public good, it's not just companies are here to do charitable purposes, that's a big part. Philanthropy is a big part of what companies do, but there's a growing recognition that what's good for shareholders, and we have an obligation to shareholders, can also be good for more broad addressing these issues, more broad sustainability. Part of what I think we're seeing right now is this closer alignment to running businesses that are good for shareholders, but also achieve this public good addressing climate change and so on along the way.

Lowry:

Roger, thank you so much for taking the time to speak with me today and sharing your thoughts. This has been really fascinating conversation and I appreciate your thoughtfulness and willingness to talk, so thank you again.

Roger:

Thanks for the great questions. I really enjoyed it. Again, I appreciate everything you, Carrie and others are doing at Harvard to advance the thought leadership on these issues at this critical time. It's critically important and I appreciated the honor of being included in your efforts.

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