



NET ZERO INDUSTRY TRANSITION: SUSTAINABLE AVIATION FUEL TAKES OFF | COP26 | VIDEO TRANSCRIPT

RACHEL BARTON: Good afternoon, ladies and gentlemen, and a very warm welcome to today's session. I'm Rachel Barton. I look after Accenture Strategy business across Europe and I will be your moderator today. Firstly, I would like to thank everyone here for joining this panel discussion where we will explore net zero industry transition, sustainable aviation fuel takes off. This is a highly relevant topic because if more planes were powered by sustainable aviation fuel, I and some of our panelists would certainly have made it to Glasgow in person, rather than spending many hours at Houston Station yesterday watching train after train get canceled. A huge thanks to the agile response of the event organizers for making sure that we can still digitally connect through this hybrid event.

Now, COP26 represents an historic opportunity for business to tackle climate change, biodiversity loss, equality and human rights, helping us build a sustainable future. Responsibility rests with each and every country, company and person because as we tackle these topics, the world will succeed or fail as one. This, of course, is true as we think about new innovation and how to work together to change the carbon footprint of travel, in today's case, within the aviation sector.

Sustainable aviation fuel, or SAF, as it's commonly known, is a sustainable alternative to fossil-based jet fuel, and it can reduce carbon



emissions by up to 80%. SAF in practice is a liquid, SAF types or so-called soft pathways are made from a combination of precision technology and feedstock, such as waste oils and fats, green and municipal waste and non-food crops. SAF cannot be made from feedstock, the diverse land use from food crops destroys forests or consumes too much fresh water that is not sustainable. SAF can also be produced with a process that captures carbon from the air and SAF made through this process and technology can be considered entirely carbon neutral.

Now, by the end of the session, we hope to have increased your awareness on what SAF is, the benefits of it and what issues currently hinder its adoption so that we can tackle these together. And with that, I am looking forward to hearing from our panelists today. There will be an opportunity to take questions from our virtual and live audiences. So if you are online post these through the platform and you can do so throughout today's discussion. Once we have taken the virtual questions, we will have a roving microphone to capture any questions in the room too.

And with that, let me now introduce today's panelist. Firstly, we have Lauren Uppink Calderwood, Head of Aviation, Travel and Tourism at the World Economic Forum. Lauren drives thought leadership, industry strategy and action on sustainability and climate change, travel security, pandemic recovery and the impact of technology on the sector through her role with the WEF. In 2021, Lauren also joined the UN high level Climate Champions team in an advisory role as co-lead of the aviation sector for COP26.



Next, we have Peter Lacy, Chief Responsibility Officer and Global Sustainability Services Lead at Accenture. Peter oversees the integration of sustainability in all client work, ensuring our own responsible business agenda across Accenture services and internal operations. Peter is a member of Accenture's Global Management Committee, as well as a globally recognized thought leader and author on all topics sustainability.

Next, we have Anna Mascolo, President of Shell Aviation. Anna is responsible for Shell's global sales of fuels and lubricants to the aviation industry, with one of the most extensive refueling networks in the world supplying fuel and lubricants and a range of technical, digital and sustainable solutions worldwide. Shell's aviation customers range from private pilots to the world's largest airlines.

Next, we have Diana Birkett Rakow, VP of Public Affairs and Sustainability at Alaska Airlines. Diana leads Alaska's Government Affairs, ESG and sustainable mobility communications and community engagement with teams in Seattle, San Francisco, Alaska, Hawaii and Washington, DC. Together, they work to grow air group's business, employee engagement and legacy of responsibility and corporate citizenship. She also chairs the board for the Alaska Airlines Foundation.

And finally, we have Si-Yeon Kim, Chief Risk and Compliance Officer and Executive Chair of ESG at American Express Global Travel. Si-Yeon oversees risk management, regulatory compliance, the environmental, social and governance program. And in this role, Si-Yeon leads Amex in their journey to reduce their own carbon footprint and also strategizes across the enterprise to



create sustainable travel solutions to support their corporate customers to meet their carbon emissions targets.

Welcome to all our panelists today. We're going to now hear from each of our panelists on a topic that I hope stimulates the discussion and the questions that you've got for them. So I really want to start Lauren with you. We think about SAF and the decade ahead. Sustainable aviation fuel and its potential is not new. In fact, it's been known about for some time now. But what is required to scale up both the supply and demand for SAF, so that it has real impact in carbon emissions reduction in aviation? Would you like to share your thoughts with us?

LAUREN UPPINK CALDERWOOD: Sure. Thank you, Rachel, and delighted to be with you today. And so, let me start with answering why we don't have SAF being deployed globally at the scale that we need it already today. As you said, it has been around for some time and the technologies have been certified or some of them have, but essentially because they're only produced at such small quantities today, they remain very expensive. They can be anything from three to eight times the price of conventional jet fuel, which prohibits airlines, in particular, from procuring them, given that they are not available and airlines have such slim profit margins that it becomes too competitive to be able to invest in procuring SAF.

So we established the Clean Skies for Tomorrow Coalition because we were speaking with CEOs from aviation, from energy, etc., recognizing that this cannot be done unless we all move in concert, we move together and we all share the risk and share, at this point, the cost of investing in those fuels. And so,



we brought together these stakeholders to look at a number of different levers that need to be undertaken at the same time. Maybe three years ago would have said, well, we just need policy. But then the policymakers will say, well, we need to know that the fuel providers are ready to produce.

And so, this sort of chicken and egg and circle just wasn't going anywhere. And so, in order for us to get to the scale that we need for SAF, we do need to act now. We need to invest and we need to address policy levers. We need to address unlocking new types of financing mechanisms to do that. We need to distribute the cost. So we need organizations like Accenture and other major buyers of travel to be willing to share that price premium. And all of those things need to happen now for us to start to bring down the cost and, therefore, scale use. And so, the climate champions, as you mentioned earlier, have adopted a breakthrough outcome, which is 10% sustainable aviation fuels by 2030.

That was understood to be a milestone on a curve that will allow us to get to the scale that we need by 2050, where sustainable aviation fuel could account for almost 75% of energy needed for aviation demand at the time. But that 10% is a breakthrough outcome, and we've managed to secure over 60 organizations across the globe, that's airlines, major airlines, major fuel producers, alternative fuel producers, corporations like yourselves and others that are required to act together. And they've all committed to meeting this 10% targets by 2050.

And so, I'm sure you'll hear from the rest of the panelists about what the nuances are about what they need to do. But as the World Economic Forum, we believe in our role to bring all these stakeholders together to make sure that



everyone's willing to take leadership and take risks at the same time to get us to where we need to be for 2050.

RACHEL BARTON: Thank you. Thank you, Lauren, and of course, Peter, you've just completed a global study that spoken to over 1,200 CEOs across the world with the United Nations Global Compact. Can you share some highlights about what they're saying and also what SAF means in the context of Accenture's own sustainability goals?

PETER LACY: Thank you very much, Rachel, and thank you very much to all our partners and to everybody joining today. This opening panel for me really is quite exciting and for three reasons. One, we said from the outset that we want it to be the digital bridge to COP. I think we hope that a few more of you would be able to make it here, but had a few train problems last night. But we definitely have always set out to be that digital bridge. So thank you for that and it's great to see everybody online.

The second thing is, I think it's wonderful to open with such a strong group of female leaders, who are changing the industry, rather than the models that you often see in other events, so I'm glad to see that as well. And then finally, the reason I think this is a great way to open is, wow, what a tough issue to start with in our very first panel, sustainable aviation. That isn't going with the low hanging fruit, that's going right into real challenges that we all need to step up and solve.

Let me take your second question first. So, Rachel, we as you know, my role was created around 12 months ago. We have an incredibly ambitious CEO,



Julie Sweet, who really wanted to put sustainability at the heart of Accenture's business, not at the margins, not in corporate responsibility, but at the heart of our 2025 strategy with what we call the Accenture Sustainability Value Promise. Now what she and I, I will be very honest with you, had quite an interesting debate before I took the role was whether or not I really wanted to take the internal role and oversee all of the things that we do in our own supply chain, our own procurement, our own operations. She won that battle and I'm proud to say that as part of the announcement of my role, we immediately committed to be our own best credential. And for us, that meant signing up to a science-based target, which we're the largest professional services firm so far to sign up to a 1.5 degree science based target by 2025. And that's full scope one to three. What that means in relation to SAF is that we must start, first of all, by reducing our own emissions. So we also signed up at the same time to Renewable Energy 100, which we will achieve 100% of electricity use from renewable energy by 2023.

But let's be clear, in the professional services and technology services industry, one of the sacred cows is that you are supposed to be able to look your client in the eye all the time, and travel is embedded in the way that our industry has worked now for decades. So it really does mean decoupling our growth and our value creation from travel, which is a tough thing to do, but we've committed to do that. So we will reduce travel overall, but even that is not enough. We realize, as companies, we need to step up.



Now, the World Economic Forum has talked a lot. Klaus Schwab, the founder, about the Fourth Industrial Revolution and the Fourth Industrial Revolution blending physical, digital and biological innovations that truly allow us to run our global economy in different ways and decouple carbon from the value to consumers, customers and citizens. And I think the Clean Skies for Tomorrow initiative and the SAF play an initiative here. It's essential that some of us, as some of the biggest users of aviation, a part of that solution, part of the coalition, part of the investment, but let's be honest at this stage, is, as has been said, more expensive than other choices we might have. But it's important for us to set that example again to make sure that we are at the heart of being our own best credential. Now the final thing I'll say very briefly, so we keep it open for dialog is that that is a message that has also come through loud and clear from CEOs. I literally, just as I arrived in Glasgow this morning, posted the results from that study, and the very clear message to negotiators at COP is that we tackle those very tough things like marine and aviation, travel and transport. So that's very clear from CEOs, both that own the technology solutions, but also that are responsible for the demand. So I think we're going to hear some very, very clear messages for governments to step up and to support some of these investments in Glasgow this week.

RACHEL BARTON: Thank you so much, Peter. And, Anna, that leads me on very nicely to you because when we think about the contribution that SAF can make in decarbonizing aviation, you are setting up a center of that in the role that



you play at Shell. So how can Shell really help accelerate this agenda because 2050 does seem like a long way off?

ANNA MASCOLO: Yes, so let me say a few things and basic facts maybe. The first one is we really are in a SAF sector for a reason, so aviation is just more difficult, the same as shipping, and they have a few things in common. They are difficult to electrify the energy systems of the future are unknown or difficult from a technology pathway. In some cases, the solution is there, but in some other cases it is still to be found. Aviation, luckily, has a clear pathway towards net zero. We move into implementation in a second. Also, they have high capex investment and the need for clear policies. And for example, in Shell, we've been part of the Clean Skies for Tomorrow Coalition from the very first moment because we realized that was a really important piece to do.

Now the sector will have multiple levers to use in the next 30 to 40 years. So one of the messages that is not a silver bullet, we are looking at operational efficiencies, so just using less fuel, which is fine or flying responsibly. But also, we are looking at hydrogen electric play, hydrogen planes or a hybrid electric planes for the short haul flights.

Now, when it comes to medium to long haul flights, there is just the physics are that the only fuel to be uses is sustainable aviation fuels because you are either running out of the - you have too much weight or you're running out of space from an aerodynamics perspective and SAF can be produced from a number of technologies, and I'm happy to look into that, maybe in a subsequent question.



So within the sector, this is the solution, the main solution towards net zero. And the other thing I would say and is all of us have a role to play here. I mean you can, in the short term, also use high quality of setting to signal that the industry values the sustainability.

Now what Shell has done. We feel we have an enormous role to play here because we are at the intersection of the old energy systems and the energy systems of the future. So it is a company like Shell, they need to play a big role in decarbonization like from Shell aviation we are stepping up to the challenge. We have announced recently our ambition to produce 2 million tonnes of SAF by 2025. That is 10 times more what is produced in 2012 - was produced in 2020 by all producers globally. It's a step up. Clearly, this is still...there is more to go.

We also have announced that at least 10% of our sales by 2030 would be SAF and to back all this up, we have a number of projects where we have invested in new technologies. There is an announcement that is happening in September about a biofuel plant in the Netherlands. It's going to be one of the largest facilities in Europe. We also have invested in a broad range of technology because sustainable aviation fuels starts from used cooking oil, to move to woodchips, to waste, to power, to liquids, alkali, to jet. So all of them will play a very different role along the way because what is critical is to scale up.

And then lastly, we have been working very actively with the industry to collaborate, to make sure we have the new business models of the future. We have the policy that make these sustainable longer term, so that all parties can and need to play a role along the value chain. So from producers to end users.



RACHEL BARTON: And, Anna, you talked there about just the physics of flight and the space, the wait. There are many obstacles to sustainability and maybe we spend a bit more time, Diana, thinking about these in our next question because in addition to some of the challenges that Anna described, what else do we need to consider as we think about achieving 10% by 2030? And, in fact, is this even enough?

DIANA BIRKETT RAKOW: Thanks for the question, Rachel, and thank you for hosting this really important conversation, and I'm really honored to be included. These are the kinds of challenges that many of us focus on day in and day out, but having such a concentrated time to talk about them is really important. So first of all, for those of you that don't know Alaska Airlines, we're the fifth largest airline in the United States based in Seattle, Washington. So it's quite early and dark my time. But we are the largest airline on the U.S. West Coast, and we're part of the One World Alliance linking around the globe. And pre-COVID, we burn 750 million gallons of fuel a year, getting people where they need to go and connecting families and business. And so, we developed a five-part path to get to net zero by 2040, which is our objective at this time. And I'll sort of play SAF in that and the challenges. But the five-part path is, first of all, as Anna mentioned, first and foremost, operational efficiency. If we do not have to burn the fuel, we should not burn the fuel. So let's start there.

Second is fleet evolution, so bringing more efficient airplanes into our fleet, which also saves fuel. Third is SAF. The fourth is novel propulsion or electric hydrogen electric aircraft which, as Anna said, we believe are viable in the



regional space over the course of our kind of goal trajectory. And then only where needed to close the gap, credible carbon offsets, but abatement and replacement should be the first priority.

So that said, when we modeled out that path to net zero, SAF is the most variable segment. It could be small if we don't galvanize around all of these actions, or it could be large if we do. And I think Lauren really landed it well with the need for collective action. It is no one fix that's going to solve this problem. So the two main problems are price and scale, and I don't know which of them comes first. We could sort of debate, but it is a bit of a chicken and egg problem. And there's four areas that I think we need to focus.

One is feedstock availability and technology alignment. So we need to make progress with the feedstocks available now. The HEFA process. SAF from fats, oils and greases, other things that are scalable and available now, while we rapidly deploy new technology and ultimately seek more carbon removal oriented options for sustainable fuels.

The second one is production. We need to de-risk and facilitate the building of refineries, the retrofit of refineries, the facilities to create these fuels at scale and in places where they are locally accessible to major airports, so that you don't have to add an additional step of trucking or train or some other transport into the mix. And that includes making sure that the infrastructure is available to support the fueling operations. The third is demand generation, and the effort that Lauren is working on is really important in that regard. The effort that Accenture is working on is really important in that regard. So this includes



carbon accounting and making sure that we've got repeatable, reliable methods to account for the use of SAF, so that they reduce a company's Scope 3 emissions and a company Scope 1 emissions, and create incentives for both partners to pull together and invest in sustainable fuels.

And the fourth one is direct price reduction. We do need public policy to provide tax incentives and other ways to produce the sort of sticker price at the pump, so to speak, so that operators can more aggressively offtake SAF and really kickstart the market.

So just briefly, in terms of how this plays out at Alaska, we've been flying with sustainable fuels for 10 years. We piloted the forest residuals SAF, but there's never been this kind of energy and alignment to actually solve the problem. So I am very hopeful about the future. We do offtake SAF at San Francisco International Airport. We also are part of a MOU as Sky Energy Americas to actually build up production here in the Pacific Northwest, so that we're not shipping it around the world exclusively. And we do have a corporate partnership with Microsoft to use SAF to offset their business travel on the West Coast.

We are we are grateful to participate with Lauren in the Coalition developing the SAF credentials so that we can have those kinds of corporate deals. And we are actively advocating for policy and very grateful to the U.S. government for setting a bold goal of creating three billion gallons of SAF and actively debating right now a SAF blenders tax credit and on the West Coast of the United States, Washington, Oregon and California all have a tax incentive in



the works, either currently implemented or in development for sustainable fuels. So the building blocks are starting to come together. They are all needed to mitigate the challenge, and I'm really excited to have a panel like this one working together to solve the problem.

RACHEL BARTON: Thank you, Diana, and you talked about some of the corporate partners there. And Si-Yeon, you're representing American Express today and Amex, obviously, plays a very big role in the travel sector. What is your organization doing to overcome some of the challenges that Diana mentioned there, particularly in relation to consumer demand?

SI-YEON KIM: Thanks so much and thank you so much for having me. It's a delight. And we, at American Express Global Business Travel, we do what we do best and our role is to aggregate demand from our corporate customers and channel that purchasing power and deliver it to our suppliers who deliver the best value back to our customers. So we have the power to aggregate this demand, create demand signals and investment in the industry, so that we can accelerate not just, you know, create, produce, but accelerate the timeline to invest it and produce and develop SAF and make it available to everyone, not just the few corporate customers and the few airlines today.

By signaling the appetite for more sustainable travel solutions that our corporate customers are doing, the corporate customers can help others in the supply chain with the certainty of the demand that is needed to accelerate this development. And this at the end of the day, you know, I have the benefit of going last, so I can pick up from my co-panelists conversations. Aviation, we call



it a hard-to-abate sector, but also, it's very interesting because it's a very concentrated sector. So I recently read a study that about, I think it's the top 200 corporate clients, corporate customers of ours. Well, not necessarily ours, but 200 corporations in the world constitute 80% of all business travel. So if you can think about the energy that we can harness through this group, the impact that we can create is actually tremendous. So if you flip the script on what is a hard-to-abate sector, actually, it's a sector that we can create and harness tremendous amount of energy to try to propel some of our agendas forward.

And when I talk about our role within the travel ecosystem, it is exactly about that. On the one hand, sitting between the large corporate customers of ours who have all set very, very ambitious net zero science-based target goals, like you guys at Accenture and the travel suppliers and being in-between in the middle of this travel ecosystem to try to drive change.

And the other area that I'm recently thinking about a lot more is around the role that we have in education. So we recently had a couple of weeks ago, a client conference in Miami. You can only imagine this was the first in-person conference that we had in a very long time. So there is a lot of energy there, and sustainability was top on the agenda. We put it there based on customer demand, but the amount of passion, as well as questions that just came about during the sessions and the breakouts and the cocktails and dinner and people coming up to me was just tremendous because everyone is getting the question and there are a spectrum of customers that we have. We have some large, very sophisticated ones that have set net zero goals or science-based target goals or



even accelerated ones. I happen to know, Peter, that you guys have a very accelerated target, which is not – you know, much earlier than 2050 to reach net zero. So you have customers like that, but you also have small customers that are learning from each other as they hear about different goals that other companies have.

And also, you know, we realize that we have a lot of travel managers and corporate customers who have been handed down and allocated a carbon emissions reduction target from their C-suite or their chief sustainability officer, chief responsibility officer as yourself, but they don't know how to get there. And they're looking to figure out solutions on how to execute. And SAF is a great solution because the technology is available now, it is ready to scale. We just need to harness that investment power that we talking about. And it's not sci-fi, it's something that you know is available today already. And some of our customers actually did not know about SAF. So it's a great education opportunity. It's also a great solution for them because one other thing that you mentioned, Peter, was you talked about the sacred cow, which is how business travel leads to revenue and profit.

Over 80% of our customers that we surveyed have said that business travel directly leads to higher revenue and profit, and also over 80% again of the customers that we surveyed have said that business travel directly supports their professional development. So looking at all of this, you know, some of the goals that our customers have is to reduce their carbon footprint, but without necessarily reducing business travel. So in that sense, SAF is a solution that is



available now, and we are working very hard and we have a partnership also with Shell Aviation to try to harness that purchasing power to drive more investment into sustainable aviation fuel.

RACHEL BARTON: Thank you very much, Si-Yeon. You talked there about corporate and the B2B travel space, but maybe, Diana, I could ask you a follow-on question in terms of the consumer. You know, the folk going on holiday, the folk traveling to meet friends and families, how can we raise the profile of SAF amongst those consumers and what can airlines like Alaska be doing to promote SAF individual travelers?

DIANA BIRKETT RAKOW: It's a great question. Certainly, our corporate partners and Amex and others are at the forefront of this and, frankly, have the benefit of having people that can spend time on this. Whereas, the average traveler is these days first, just excited to get away on holiday, I think. But also, SAF is it has the benefit of simply being a drop in fuel, so you don't have to go through any additional operational hurdles. You just put it into the fuel farm and it goes into the tank. So that actually makes it a lot easier to use, but you don't notice a difference.

So, whereas, when we also have waste and water goals and when we replace things on board like removing straws and going to sustainable alternatives a couple of years ago, that the consumer sees and that they latch on to. So part of what we're trying to do is actually use those onboard shifts, moving to more compostable products, eliminating straws and stir sticks as an excuse to talk about SAF and the breadth of the opportunities to get to net zero. I think



there's more opportunities in the future for us to engage the guests through the purchase path and thinking about SAF as a carbon offset alternative, but part of it is education.

And so, one place that we are currently focused is actually where it should start, which is with our employees, making sure that our employees understand what SAF is, how SAF is used. That pilots sort of recognize it doesn't feel any different to fly a plane that has SAF in it versus not and kind of facilitating those conversations. But I think on an ongoing basis, educating the consumer and asking the consumer to demand it of all of us is certainly one place that we can all work together.

RACHEL BARTON: Thank you, Diana. And, Lauren, maybe I could ask you a question just related to the economic shift that we've seen, particularly over the past couple of years with the global pandemic. That's clearly impacted some sectors more than others, and aviation has certainly seen a downturn. How will that impact the scaling of SAF?

LAUREN UPPINK CALDERWOOD: You know, it's interesting you ask, because we assumed that with the pandemic, obviously all efforts and focus for leaders in the aviation sector would go to recovery. And, in fact, we saw even where teams had to go on furlough, etc., in organizations that there was still a doubling down of effort on unsustainability. And I think that's because of two things. One, the pandemic showed us just how easily the industry could be majorly disrupted. And I think they recognize that the pandemic's one of many things we may have to face. And climate change is our biggest threat yet to the



industry and to the globe, of course. And so, I think there was recognition that we better start doing something about this now if we wish to mitigate that.

And the second is that traveler's incentives or behavior is changing. And so, coming out of the recovery, I think, one, people may be more hesitant to fly or they they're thinking more carefully about why they will fly and if they do fly, are they doing it in a responsible manner? And so, I think while, yes, it makes a difference for the economics without the scale of traditional or leisure flights, we may see less opportunity there. But because of this behavior change, also corporations who do recognize they need to address their Scope 3 emissions, there should be more budget set aside to accommodate those higher costs. So yes, we don't have the same levels of demand, although we do anticipate we'll be using the same amount of jet fuel by 2030 as we did in 2019. But you know, it's more about a behavior change and a shift in priorities that has made this even more important to address now.

RACHEL BARTON: Thank you. And it's great to hear some of your thoughts, Lauren. I go back to some of the comments that Anna made earlier actually and the different types of sustainable aviation fuel that exist because this is not a one size fits all approach and there are many different sources, whether that is the synthetically produced aviation fuel or whether that comes from waste doors and flaps and the synthetically produced fuel though is completed by a process that captures carbon from the air and that processing technology can be entirely carbon neutral. Do you have thoughts, Anna, on how Shell can play a



role in the production of different types of sustainable aviation fuel and the ones that you really want to push into that broader ecosystem?

RACHEL BARTON: Thanks, Rachel. I think I hinted a little bit before that we are basically looking at all levers here, and some of these technologies are available today. So we are transforming our own manufacturing assets to redeploy these assets towards lower carbon fuels. The first one that has been announced is our manufacturing facility in the Netherlands that will use the currently available a technology called HVO or HEFA. So using tail oil, vegetable oils, use cooking oils and then moving towards more advanced feedstocks. So we are investing in that and will continue to invest in that and it requires to do this at scale. At some point, however, because you're getting into a point where you're running out of feedstock of this type of feedstocks. So you need to make sure that you are not creating other issues on sustainability by competing with land or with food. So we know already that HEFA technology will go as far as a certain point, so we need to be ready for the next to come. So we have, for example, invested in another technology in LanzaJet. They convert ethanol into jet and we are working with them extensively on a number of projects. Again, there is not infinite amount of ethanol. So we are also looking at the next one, which is, for example, municipal waste into jet.

So we have our own technology for Shell that we are piloting in Bangalore College Square. We have also invested in the Enertech technology, which is another technology that is looking at ways to jet. And then last but not least, we have also tested in a large scale, power to liquids, so is basically putting



hydrogen, renewable powers and then either recycled carbon or carbon use by taking it directly from the air while you were hinting before. So we have tested it with 500 liters of SAF on a KLM flight from Amsterdam to Madrid. Now the technology is possible in a large scale, but it needs to be deployed in large scale, and all of these technologies, by the way, have very different cost curves. We will need all of them, so at Shell, we are investing in all of them. And as I say, they will come in at different stages and also, we are looking at policies to be technology agnostic. So making sure that all technologies can come in and play a role along the way.

I hope this helps without having given everybody a PhD on sustainable aviation fuel technology. I tried to keep it simple.

RACHEL BARTON: I think it helps massively, Anna, because it also demonstrates the complexity that is involved and the innovation and the technology that is required to make this a reality and make it accessible by airlines and, ultimately, consumers. I mean I think, Peter, about the commitments that you shared earlier. And, you know, we are fortunate to have a very ambitious CEO who cares passionately about this topic and a leader in yourself who has taken charge of Accenture's mission. And what are some of the lessons learned that has allowed Accenture to state such ambitious objectives that perhaps some other organizations globally could adopt?

PETER LACY: That's a great question, Rachel. I mean let me start with a couple of responses and then come exactly to that. I mean I think the first, I've read a brilliant quote at the weekend, which is that the pessimist really sees the



difficulty in every opportunity and the optimist sees the opportunity in every difficulty. And that individual was Winston Churchill. And COP26 is the most important diplomatic event that's taking place on British soil since World War II. It really is that important. And some of our panelists, I think, have emphasized how important that is. And the reason I give that quote is because this conversation would have been almost unthinkable 5, 10 years ago.

I've been working in this field now for 24 years, and I think this idea of sustainable aviation fuel and I think tour de force that we've heard today, of all of the different elements that need to be put in place, I think is optimistic, gives me reason to be optimistic that we can do this.

MIT's Professor John Sterman, who I respect very much on these topics, talks about the idea of there being no silver bullet, but there is silver buckshot. And I think what we heard from Diana, from Anna, from everyone here is that actually we need to fire the gun with all of that buckshot when we're trying to tackle an issue like sustainable aviation. This is not something that there is just a one and done solution for, and we all need to step up and be part of that.

I think the real heart of the matter for me, two final points. One is that I think it was you, Diana, that made the point that we need to - and I think the same thing with Amex Travel, we need to find ways to rethink and rewire the way in which we measure and understand performance around travel and the relationship with business. And for me, that I think is a fundamental part of being driven by the science, the data and the economics. We need better standards, better accounting, and we need a lot of the accounting bodies to step up on



things like sustainable aviation fuel and to bring consistency, as well as the standards body, so we can measure with much more precision, much more transparency, much more confidence, as well as, I think, providing the digital platforms for businesses and suppliers and even individuals to be able to properly interact. So I think there is a real role here for physical and digital technologies to combine and to bring together different players that drive forward the demand that we need. Then my final points on what works, what doesn't work, why at Accenture? I think the honest answer at this stage of where we are is that in part, this is about value. So it is about shareholder value. It is about new markets, new products, new services that we're helping our clients on their journey. But it is also about our values. And I think that matters increasingly to our clients, to our partners, to our people, to the communities where we do business. And it is more expensive, in some cases, to invest up front in some of these plays. But if your corporate values are to be part of the solution and stepping up, then that's what as a global management committee or as a CEO, like Julie, or in my case, owning this part of the business in the organization. That's what we need to do and take a long term view of what competitiveness means and what success means for organizations, rather than a quarter-to-quarter view of what it might look like to maybe investors that aren't in it for the long haul.

RACHEL BARTON: Thank you very much, Peter. And it's very timely because, Lauren, maybe I can come to you, we had some great questions



posted online. We have the ICAO's General Assembly that takes place next year.

Do you think you get commitment to get them SAF by 2030 during this session?

LAUREN UPPINK CALDERWOOD: Rachel, I think they better, but I think a commitment to a SAF target is actually an easier ask than the real losses of them setting a long term aspirational goal. The UN Secretary General called upon the leaders of ICAO and the IMO a couple of weeks back at the UN Sustainable Transport Summit, saying that we really do need net zero targets for these industries by 2050, which is a very big ask of organizations with 180 plus member states. But I think the SAF targets are actually more achievable, but we're really working with governments as well, to move towards this commitment to a long term aspirational goal. And I think one of the beauties of sustainable aviation fuel is that it actually can be produced in many different countries. It's not dependent on where oil resides, right? And so, there's economic opportunity for many states to become fuel producers, sustainable aviation fuel producers. And so, we can see a real opportunity for that to scale across the globe and take advantage of where there is renewable energy, renewable electricity and the appropriate feedstocks.

And so, that message is something I think that we really want to put in front of ICAO in terms of adopting that long term goal because this is opportunity there as well, not just a cost or limitation on aviation that is sometimes associated with these net zero targets.

RACHEL BARTON: Peter, I think you've got a build.



PETER LACY: Very briefly just to build on that. I think those points are spot on. It's not my full area of expertise, but I mean I saw I'm aligning with the panel as well, but I think that makes complete sense. I think two things I wanted to say. You know, we've committed to as one of the 200 biggest users of aviation in the world to a 10% target for SAF by 2030. But I want to make it absolutely clear we believe that is absolutely not enough. Absolutely not enough.

Now we're lucky on this panel to be working with players like Amex, like Alaska, like Shell, like the WEF, who are taking this very seriously. But I also want to sound a warning to others who are not taking it as seriously, that actually we will start to distinguish where between those companies that are trying to pull all the levers and those that are not. And I think that's very important. So I just wanted to make those two points. One, it's not enough and two, we will start to distinguish.

RACHEL BARTON: Thank you, Peter. And one of the barriers that was talked about earlier around the use of a SEF is the cost being prohibitive. I mean, Anna, maybe if I can come to you, if SAF is blended with traditional jet fuel, how do companies and organizations aim to reduce some of those implementation barriers of using SAF. And could that be a mechanism of reducing the cost at the moment, also prohibitive to scaling this?

ANNA MASCOLO: Yeah, so I think we talked about the technology aspect, so I'm going to touch upon maybe policies and business models, which are equally important to have the right mix. I often talk about having the rules of the game clear for the sector to be able to progress at pace. And so, on the



policy front, we think you need a certain number of things that need to happen to kind of move toward the hurdle of the next 5 to 10 years, where SAF starts to be scale. Mandates seem to be going in the right direction, moving towards 2% by 2025 and 5% to 10% by 2030. We are again happy for these mandates, so the obligations to be on the fuel supplier, but they give certainty to investors that know these facilities they need to be built.

We also think that as the new technologies come onboard, the same as we have done with the learnings from wind or solar, you need price supporting mechanism for a certain period of time again to scale up the industry, contracts for difference, feed in tariff, the pricing mechanism. They are all good options for the industry to go forward for pricing mechanism, as well as long term capital support, tax credits. So you need all of these elements to come together. And at Shell Aviation, we have been working actually with the policymakers, the governments, the WEF to make sure that these rules start to be in place and they are accelerated and implementable.

Then the second element that I wanted to mention is you've got to be a little bit creative, sadly, because you are in an environment as I say, the hard-to-abate sectors where the industry has also been impacted by COVID is an industry that at best of times has very thin margins. So you need to rethink your business model and bring your customers in in a way that you didn't do before by giving, for example, better education, but also looking at more resilient elements of the aviation business. The cargo and the corporate travel elements are more resilient, so they have been more resilient throughout COVID.



So, for example, during the COVID times, we sold sustainable aviation fuels to Amazon Air and DHL Express in the cargo segment. We have announced our collaboration with Amex, again trying to bring the corporate travel to the picture and trying to split the cost of SAF. And hopefully, this this is a start and many companies will follow and we create a movement and a snowballing effect.

RACHEL BARTON: And thank you, Anna. And I'm going to ask the room if they have any questions in a moment. But there's just one more, Si-Yeon, that I wouldn't mind posing to you as the room thinks of anything burning. And we've talked a lot about partnerships and collaboration models, and you are sitting right at the heart of a much broader ecosystem. And what is the role in that commercialization, getting over some of those barriers of implementation, you know that American Express can help facilitate as you deal with so many of the parties involved in making this happen?

SI-YEON KIM: That's a good question. I think one thing that we need to remember is that SAF may be expensive today, but our goal is to make SAF the same cost as fossil fuel in the future. And that's really what we're trying to do by harnessing this purchasing power that I talked about before and driving investment into SAF and the production of SAF. And, Lauren, I love the point that you made that SAF can be produced anywhere. It's not just something that in oil rich countries can do. It's something that emerging markets, developing countries can also invest in. So we need to create an abundance of SAF and accelerate the development and production of SAF to bring down the cost of SAF eventually



to be the same as fossil fuels. So that is really our goal. And that's something that I think is really important for us to remember as we lean on folks like Accenture and others to really take that leadership role during the time today when SAF is actually expensive to share in that green premium.

RACHEL BARTON: I know that we've got a roving mic in the room, so if there are questions, we're happy to take one of those now. Looks like we have a question.

PETER LACY: You know, if Accenture people are asking questions, it's going to be difficult. So we should probably exclude them, but go on, Riccio.

RICCIO: I'll try to go easy, Peter. And I love the theme that's emerging about this is about decarbonizing the value chain. And we've touched upon it a little bit. But I'd love to hear some examples from the panel what's really working in terms of collaborating and what maybe is needed to further collaborate, advance that collaboration?

RACHEL BARTON: Great. So is that a question, Riccio for Peter?

PETER LACY: I think maybe that's for some of the folks who are really shaping the partnerships. I mean from our side, I think I mean, I'll give an answer, but maybe Alaska and Shell and Amex are well-placed. I would say we are very grateful to WEF and to the partnership that they've put together as a simple platform, with a simple goal that has been put together at speed that allows us to come together with the different actors that need to think end-to-end. And with the Clean Skies for Tomorrow initiative, I think that's been a really galvanizing force for us. It's helped us get to much quicker. I mean, Lauren, you would not



believe the speed at which we signed off on this versus some of the other sort of risk management processes that we take genuinely. So I would say that in itself has been very important.

I would just add one more point, which is I had the good fortune to listen in to some of the World Economic Forum's International Business Council over the summer. And one of the things that was discussed was whether or not we are seeing globalization unravel. And I know this is sort of taking a step back, but I do believe aviation, as a whole, travel connection of people with different cultures across businesses, global trade are unbelievably important in terms of not just climate change, but also the economic development that we've seen over the last 40 or 50 years. And although we may well be splitting it into a model of globalization that has both regional and global dynamics, I believe that if there is any usage in the carbon pool that we have available to us, I would rather see us tackle things like efficiency in buildings, in transports, ground transport, electric vehicles, in manufacturing and other areas because I do think that interconnected world of globalization and the role aviation does play in that is incredibly important to preserve. That doesn't give it a pass, and I don't think that's what anyone here has said. It doesn't give it a pass at all. But I do think we shouldn't underestimate how important it is.

RACHEL BARTON: And, Diana, maybe you want to build on that just as one of the main airlines?

DIANA BIRKETT RAKOW: Sure. I think what we've heard today just underscores that the technology that is available to decarbonize aviation, it is



there, it is safe, it is developed and increasingly available. The question is how do we scale it? And I think there's two things that are working that we can build on. One, just to underscore Peter's point about the work that Clean Skies for Tomorrow Coalition did, opens up the opportunity to have those corporate partnerships really continue to work to leverage and execute not just demand signals, but use of SAF and kind of kickstart the market, which is a theme I keep coming back to.

The second one is there is increasingly public policy action to de-risk development and to provide tax incentives to reduce price. I think we need more of those and we need global alignment on those, and hopefully, that's something that will get talked about over the next couple of weeks there in Glasgow. And I wish you all on the ground all the best.

RACHEL BARTON: Thank you so much. So thank you to all of our panelists today and again for the event organizers for a very last minute switching this to a hybrid event just due to the travel chaos over the weekend. I certainly have some audio challenges during that, so I hope that it was understandable for those of you online and in the room. But there are some takeaways, I think, for us all to reflect on. Diana, you close with the tech is there. I mean it is absolutely there. Anna, you talked about the different fuel types and the innovation that is taking place to constantly develop new forms of sustainable aviation fuel, along with hybrid, hydrogen powered short haul flights, of course. Lauren, we talked about how we need to stimulate demand and reduce some of those barriers of entry and the role of ecosystems, Si-Yeon. And also, Peter, the



role that corporates can truly play in building awareness, but also role modeling this. And I think what struck me the most is something that you mentioned, Lauren, around the economic footprint. You know, this really can change the game economically because this is a new market for that innovation to really help stimulate economic growth for developing countries and those that may not have sources of fossil fuels. So huge food for thought.

I hope that has increased the awareness and also built up the movement to now embrace sustainable aviation fuel. So thank you to everyone for attending today. Those online, those in the room, all of our panelists, it's been an absolute pleasure to talk to you all this afternoon. Thank you.

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