

## ESG Now Podcast

# “A Turbulent Plan for Green Aviation”

Transcript, 31 July, 2023

Bentley Kaplan: Hello, and welcome to the weekly edition of ESG Now, the show that explores how the environment, our society, and corporate governance affects and are affected by our economy. I'm Bentley Kaplan, your host for this episode. And on today's show, we get to flip the mic around and put my co-host, Mike Disabato, into the hot seat. You'll find out from Mike all about the aviation industry's efforts to reduce its carbon emissions and why these might be a little bit complicated. Thanks for sticking around. Let's do this.

We have to go all the way back to December, 1903 to trace the very beginning of the story, when Orville Wright took history's very first powered flight. But happily, we can skip from that prologue through the next few decades. By 1934, commercial airline passengers numbered around half a million, and by 2020, it was up to more than four and a half billion. And airplanes, of course, have become so popular, because they compress the time we need to cover great distances. We can hop across continents in hours, instead of weeks, or just pop around to an exotic location and be back in time for work on Monday. For frequent travelers, some of the sheer ingenuity of air travel might've lost some of its shine, to the extent that these aeronautical engineering marvels seem more like oversized buses with safety briefings. And becoming part of the travel furniture has a lot to do with the prices of modern airline tickets, which until very recently, have been getting more and more affordable.

But for all their financial affordability, airline tickets come with a pretty heavy climate price. The airline industry currently accounts for between two and 4% of global emissions, a number that could continue to rise in the coming years. And the industry may start drawing more and more scrutiny from investors and regulators and climate activists, because its emissions are "hard to abate." This label is used for economic activities that don't yet have a technologically or economically feasible route to decarbonization. And it puts airlines alongside industries like steel and cement and petrochemicals. And this is also a problem that has created anxiety for some passengers about their personal carbon footprints when they fly, which has given rise to a movement called flight shaming, which is trying to nudge travelers away from air travel. And in response to the combination of passenger hand wringing and concerns from investors and regulators, airlines have started laying out ambitious plans to lower their carbon footprints by 2030 and as an industry, to hit net zero emissions by 2050.

We'll come back to these targets a little bit later on, because what really piqued my interest were the offers that airlines were making to passengers, offers to, say, offset the emissions of your slightly cramped, non-reclining seat on your dream trip to Costa Rica or Bora Bora, or even Kill Devil Hills, North Carolina, to pay a visit to the Wright Brothers National Memorial. And to do that, airlines offered their customers some climate goodies to drop in their virtual cart when they bought tickets. So at checkout, you can add on a carbon credit, that is supposed to lower your personal emissions for the flight. You could also fork out 150 US dollars to support the use of sustainable aviation fuels or biofuels, which I suppose would technically be reducing your emissions in the long term. And when you're already adding on baggage costs, taxes, priority boarding privileges, [inaudible 00:03:36], and any other extras, this voluntary carbon charge can make one's wallet feel a little lighter, but it might be worth it, right, if you're helping the climate.

But are you really doing that? Are these genuine programs that will measurably reduce the emissions of your ticket and airlines more broadly? Or in a hard to abate industry, is there more to the story? Is there any risk that the reliability of these programs will come back to create headaches for airlines as the world wises up to things like greenwashing or the many caveats around carbon offsets? Well, I don't know, and I don't have to. That's what Mike's here for. So I put all these questions and more to my very reliable co-host, and it turned out, well, things are complicated.

Mike Disabato: I think this is a tricky thing right now airlines, specifically because of the way they advertised these climate options. Because they say point blank, "If you buy this carbon credit, you will lower your emissions for the flight you're purchasing a ticket for by this exact amount or close estimation of this exact amount of the tonnage of greenhouse gas emissions." They have the number of that on the screen. You're going to reduce your flight by this amount of greenhouse gas emissions.

And what that has meant is customers expect those emissions to be knocked off their flight, especially if they're paying upwards of a 100 dollars US for the additional options. And that's even if some of the technologies the airlines are promoting aren't at market scale yet, which is the case for sustainable aviation fuels or SAF, or if some of the options that the airlines are promoting are based on a burgeoning product, that depends on a verification scheme, that has been times to be found to be faulty, which is the case of carbon credits. Regardless, airlines have really leaned into SAF and carbon credits as a way to tell customers not to worry, "We are working to lower our emissions."

But now, customers are saying, "Working toward a goal is not good enough, if you're saying that you are actually lowering our emissions right now for the flight that we are purchasing." And what customers are doing is taking legal action against these airlines. Delta Airlines, for example, is being sued in California, because the customer's saying, "Look, I bought Delta's tickets, because I thought my emissions would be lower than other airlines for the same route. And so, I went with Delta." And that's because Delta said it used carbon credits to lower the route's emissions for the ticket that the customer bought. But some of Delta's carbon credits were found to have no impact on the climate whatsoever. And so, basically, the lawsuit alleges Delta overpromised to the customer, to everyone else, by saying a route's emissions were lower. And not only that, Delta has been saying it is carbon neutral since 2020, which the lawsuit alleges is impossible and false.

Now, Delta disputes these claims, but they are now out there. The claims are out there, and they're being litigated on as we speak. And it's not just Delta. In Europe, 17 airlines have been pulled into a European consumer organization's complaint that was filed to the European Commission and the Network of Consumer Protection Authorities. And it denounced misleading climate related claims by the 17 European airlines, saying such claims breached the EU rules tackling unfair commercial practices. And they include those same options, those same climate goodies that Delta made available to customers as well. So what does this mean? Without getting into whether these complaints and lawsuits are viable and just getting into the spirit of them, I think the airline industry might've found itself having overpromised what their laudable climate intentions are capable of today in 2023. I think the aviation industry is dealing with the problem of technological availability and a desire to promote all the efforts they're making to lower their emissions over the long term.

Because in the short term, what airlines have available to them right now to lower their emissions are newer planes like the Boeing MAX and the Airbus 320neo series, and they have more efficient flying, things like better route planning, less time on the runway, and all that stuff. Carbon credits and sustainable aviation fuel, those seem like long-term tools to meet. Carbon credits are likely sooner to be widely available and accurate before SAF is. But even with carbon credits already in use, the verification process to ensure the emissions they say they're abating are actually being abated is

still nascent. It seems to need to be more mature before a company can say, "We are already carbon neutral, because of the carbon credits we bought. So you should go with us, because we're a greener airline than our competitors."

**Bentley Kaplan:** Right, so the aviation industry is working hard to make carbon credits part of the day-to-day operations for airlines. And the use of these carbon credits is supported by the UN's International Civil Aviation Organization or the ICAO, which is made up of 193 national governments and supports the governance, cooperation, and standard setting for global air transport. And the ICAO established the Carbon Offsetting and Reduction Scheme for International Aviation or CORSIA, because by now, you know that I love a good acronym. And CORSIA is basically a market-based mechanism to address emissions from international aviation. It requires that airlines not only monitor and report their emissions, but also purchase carbon credits to compensate for any growth in emissions above a 2019 baseline. And CORSIA is supported by the airline industry's trade body, the International Air Transport Association. So that basically gives the backing of two key airline industry groups to this idea of carbon credits, specifically through CORSIA, which naturally made me want to find out much more about CORSIA and why the aviation industry seems set on using carbon credits as a key component of their long-term climate targets. Here's Mike.

**Mike Disabato:** Well, let me just set the stage here. First, let's define a carbon credit. A carbon credit usually equals one ton of greenhouse gas reduced, sequestered, or avoided. And when a credit is used to reduce, sequester, or avoid an emission, it becomes an offset, and it is no longer tradable, which is great in theory. But what needs to happen is the project that is going to reduce, sequester, or avoid a ton of emissions, that project needs to be verified, and that verification part can go wrong at times. There can either be a fraud at the verification company itself, which is the case for a major verification company called Vera, and/or the verification promise can just overpromise and the amount of carbon actually abated based on the carbon credit can be overstated or the science is disputed or something along those lines. On the other hand, for hard to abate sectors like aviation, the use of carbon credits as a last part of its climate plan, the part after everything has been tried and done to actually reduce emissions, they can be very useful.

Carbon credits can, if done well. And I think that is why the industry has decided to set up the Carbon Offsetting and Reduction Scheme for International Aviation or CORSIA. And so, what is CORSIA? CORSIA is the massive market-based initiative that helps participating governments, which there are around 193 of them, to set up an interconnected carbon offset market for airline companies that conduct international flights. There's a lot of detail in how that is going to be set up, but we ain't got time for all that today. But basically, it's in three stages. The pilot stage is happening right now. Then there's going to be the first stage which is voluntary, and that's going to happen between 2024 and 2026. And then, you have the mandatory stage, that goes on from 2027 to 2035. Now, least developed countries, small island developing states, landlocked developing countries are exempt from the mandatory stage, unless they volunteer to participate.

So what this means is that, eventually, basically every airline that we cover is going to be using carbon credits in their climate plans. Now, right now, only seven airlines in our coverage explicitly say that carbon credits are in their climate targets, but that will likely change. And let me just note, the industry is saying, with CORSIA, that they are doing this because they know it will take a while to reduce emissions to get to their eventual goal of net zero by 2050. And even though direct emission cuts are preferable, when possible, they think carbon credits are going to be important as a bridging mechanism, let's say. So that is CORSIA, and that is why CORSIA is around. And that is also why I think airlines have felt comfortable telling passengers that they can buy carbon credits and directly reduce their emissions. They're backed by industries and by governments.

Bentley Kaplan: So to echo what Mike just pointed out, the industry isn't only relying on carbon credits to cut their emissions. The aviation industry actually broke down where carbon credits fit in their overall net zero strategy, and they mention four pillars. So 17% of the planned reductions in emissions are expected to come from approved carbon credits. 13% is expected to come from new aircraft technology, like say, electric planes or even components that are a little less ambitious. They're expecting to shave 3% off by improving infrastructure and boosting operational efficiency. And then, a whopping 65% of planned emission reductions is supposed to be coming from sustainable aviation fuel or SAF. So SAF, even more so than carbon credits, is going to be key for the industry to lower its emissions.

Mike Disabato: So SAF is really important for the aviation industry, and there are a bunch of types of SAF out there, some greener than others, but I'm just going to call them all renewable jet fuels right now for this podcast. Because during this section, FAS isn't really easy to remember. And I want to go through the details here, because it's so important. So renewable jet fuels are predicted to lower emissions for a flight by around 80 to 90%, but the aviation industry uses around like 400 billion liters of conventional jet fuel a year.

And a group called the IEA Bioenergy group that studies and reports on renewable jet fuel said, this year, we will probably produce around 1 billion liters of the renewable fuel. So we're missing 399 billion liters of jet fuel. Now, the good thing is about that though is the IEA says this lack of production is not because of a lack of technology, but commercialization has been slow and current policies don't incentivize the production of renewable jet fuel. Commercialization needs policy too, because the price, minimum selling price, that is, for jet fuel is significantly higher than that of fossil fuel derived jet fuel, conventional jet fuel.

Conventional jet fuel was around 50 cents a liter, while renewable jet fuel was around 1.10 cents per liter at the end of 2022, according to the IEA. Now, that might not sound like a lot, but it's double what the airlines are paying for conventional jet fuel. So airlines would have to double their costs right now to use the renewable stuff, even though the production isn't there right now. But still, the doubling of cost is not viable for the industry. There would need to be something that lowers the price of renewable jet fuels to similar rates as conventional jet fuel. And that is, again, in part, why airlines say they're offering customers a renewable jet fuel option to purchase as an addition to the price of their ticket. Customers can then help airlines promote the use of renewable jet fuels by voluntarily paying more.

Now, there are a number of airlines that offer this option, but some examples are Lufthansa, SAS, Air France-KLM, and Finnair. Still, does offering the option to provide airlines with some extra cash to help promote the growth of a market, does that mean that the airline could turn around and say, "Hey, we're carbon neutral right now, we're cutting emissions right now?" That is the question that's being heavily debated at the moment. Because here's the reality at the moment, of airlines that say they use a blend of conventional jet fuel and sustainable jet fuel, they say renewable jet fuels account for only 0.5% of the aviation jet fuel used in 2021. But many airlines have a target of 10% by 2030. And that industry goal of getting to net zero emissions by 2050, that's going to rely on that CORSIA, that carbon credits plan as well, renewable jet fuel, SAF, needs to account for 65% of all the fuel used by airlines.

Bentley Kaplan: Okay, so alongside carbon credits, the industry is doing a lot to try and shift towards renewable fuels. A number of airlines are joining forces with energy companies to produce more of it. Lufthansa has partnered with German refineries to produce different types of renewable jet fuels, and United has set up its own United Airlines Ventures Sustainable Flight Fund, which has

gathered up more than a hundred million dollars in investments from companies like Air Canada, Boeing, GE Aerospace, Honeywell, and JP Morgan Chase. The fund will invest in SAF technology, essentially by funding the research and production of renewable jet fuel.

And apart from reducing emissions, the real draw of these fuels is that they can be used by current aircraft engines, otherwise known as a drop in fuel, one that can be blended with conventional fuel and eventually used exclusively, if produced in sufficient volume. It doesn't require a next generation type of technology, like say one that we would need to fly an airplane using hydrogen. But as Mike said, the IEA Bioenergy group has highlighted the difference between intention and reality. Price remains a prohibitive barrier to the wide adoption of renewable fuels in the aviation industry. Actually seeing the widespread uptake of SAF has remained elusive, and it seems there are a few pieces that still need to fall into place before this puzzle can be finished. One potential lever to catalyze this change, to see a nascent technology catch up to a dominant one, is policy, using a little less carrot and a little more stick. But as Mike told me, there is still a lot of uncertainty in the air.

Mike Disabato: And where does that uncertainty come from? Well, it comes from the fact that transportation is a unique sector in the climate equation, because it relies on a number of different industries to assist it in the transition toward a low carbon future, maybe more than any other industry. Because you need airports. Airports, for example, some of them are the suppliers of fuels to aircraft. You need refineries to make the fuels for airplanes to purchase. You need Boeing and Airbus to develop an airplane that can handle some of the more greener fuels, like green hydrogen or electric flying in general. Now, the good thing is though is those industries, the airports, the refineries, the aerospace and defense companies, they have the backing of the aviation industry.

They have the backing of their governments that want the aviation industry to get greener, so they know who is going to be buying their sustainable products and they're waiting in line for them. However, to the question of whether the aviation industry is secure today in claiming that it's already climate neutral in some cases, with the use of the tools that they have available to them, whether or not that's okay, I would say it's that the airline is definitely, or it seems to be heading, into a more long-term carbon reduction focus over the decades. But right now, there's a lot of work to be done and a lot of promises that still need to be sorted out before it can say "We're definitely green."

Bentley Kaplan: And that is it for the week. I wanted to thank Mike for his take on the news with an ESG twist. It's always fun to be able to throw questions his way, just for a change. Thanks for tuning into the show and finding time for us in your busy days. We hope you got your fix of ESG content from this episode and that you'll have a little more to ponder on your next flight somewhere exotic or not so exotic. If you have the itch, please do throw us some stars on your platform of choice. It really helps us and more importantly, helps future listeners to find our show. Thanks again, and stay safe and sane until next time.

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