



FINANCING THE ROAD TO NET ZERO: AVIATION

Host: Mhairi Main Garcia

Hello and welcome to Watson Farley and Williams' 'Countdown to COP: Financing and Fuelling the Future' podcast series.

I'm Mhairi Main Garcia, your host. In this chapter, we're going to be talking about the aviation sector and the drive towards net zero.

I'm delighted to introduce our guest, Jim Bell. Jim is Global Aviation Sector Co-Head and a Partner in the firm's Finance Group based in London.

He has extensive experience in advising financiers, lessors and operators on structured and asset finance, with the majority of his practice focussed on the aviation industry.

He has advised on some of the most innovative, complex and high-profile structured and asset finance transactions, including many deal of the year award-winning transactions.

Jim is also principal advisor to the AWG, the Aviation Working Group, in respect of all ESG and sustainability matters.

Welcome Jim and thank you for joining us today.

Guest: Jim Bell

Thank you.

Host: Mhairi Main Garcia

Jim, let's start our discussion with where the aviation sector is in the drive towards net zero. Where does the aviation sector stand and where are the efforts focussed?

Guest: Jim Bell

So, it's broadly accepted that aviation is currently responsible for around 2% of global CO₂ emissions. There is obviously huge focus from governments and quasi governments and industry bodies in order to try to drive towards net zero by 2050. All of these focusses tend to steer towards four key areas where aviation might get close or potentially hit net zero by 2050. The four areas are: better aircraft and engine technology; a focus on sustainable aviation fuel; improved air traffic management and aircraft operations; and the last being economic measures. I'll come on to explain a bit more about each of those.

Better aircraft and engine technology. The first thing I'd say is that aviation is a hugely capital-intensive industry, aircraft are not cheap and so when they are purchased they tend to last for a significant period of time so most large commercial aircraft are targeted to be in operation for sort of 20 to 35 years. There is and has always been for the last 50 to 60 years, a focus on better fuel efficiency for

aircraft. The principal reasoning for that is because fuel is the second biggest cost to most airlines and so, from a pure business perspective, it's been incredibly focussed on fuel efficiency and therefore, by extrapolation, carbon emissions. The biggest issue that we have is the physics of flights. Unlike other sectors, it's not possible to immediately swap out existing fuel for new fuel by say, for example, including batteries. The physics of flight requires comfort on thrust and weight of aircraft and so you need to be very comfortable with the fuel type and the technology simply isn't there for larger aircraft to be powered by electricity at this time. But there's plenty of other things that can still be done. The other problem, of course, is there is rigorous and lengthy safety testing for all aircraft developments and so that takes time. So even if the technology is there, there'll be a window for which safety is tested rigorously which will then delay the introduction of that technology advancement.

Where we are right now is for very small aircraft there's something called eVTOLs (electric vertical take-off and landing aircraft). These are small aircraft around six passenger size. They will be in operation relatively soon so, in the next sort of three to five years. That's the first true step into electric aviation. For larger and sort of more commercial aircraft of the type that we'd expect to fly on – so the smallest of those being regional aircraft – there is a focus on modifications to enable use of partially electric fuel or the alternative being green hydrogen. There's a big focus on that. I think there's possibility for partial new fuels being in operation by the 2030 range. For the sort of more usual aircraft that we see on a global basis, so narrowbodies and widebodies, it's a lot further out.

So green hydrogen is currently being pencilled in for being included in new aircraft models by 2035, 2040 for narrowbodies. And then for widebodies, so the really big aircraft, those are unlikely to have alternative fuels in place by even 2050. Now, aircraft are usually produced on the basis that they will last 25 to 35 years and so if new technology using new zero emission fuels are not coming into play until 2030 then it means that older technology will still be in operation up to 2070 plus. And so that means we need to think about the alternative if we can't get there on pure tech advancement. So that's where sustainable aviation fuels kick in.

Host: Mhairi Main Garcia

So, you've mentioned that green hydrogen has it a long lead time: 2035 or even 2050 for a widebodied aircraft. What is it that you mean by sustainable aviation fuels if it's not green hydrogen?

Guest: Jim Bell

So sustainable aviation fuel is fuel produced using plant and animal matter. It's reliant on the circular economy and therefore it still emits carbon in broadly the same rate, but it's not locked up carbon, and so it's carbon that already exists on the Earth's surface. That's a huge opportunity for aviation because it helps not introduce more carbon into the system, but it requires acceptance from industry participants and governments that that's the best that aviation can do in that context.

Improvements from air traffic management and aircraft operations, there is some limited improvement there but it's going to be relatively marginal because there's already been continued focus on trying to reduce excess fuel burn purely for cost reasons.

Economic measures is the really difficult one because economic measures is ultimately a code for offsetting through other sectors. Now, I know that offsetting has been perceived as a dirty word in the context of 2050, particularly as you get nearer to 2050. But there's not really too much that aviation can do in order to deal with this given the technology issues that I've pointed to and if that is problematic, and given the highly capital-intensive nature of aviation, if there is betterment that can more easily be done in other sectors, then that has to be done in order to offset perceived limitations in the aviation sector.

Host: Mhairi Main Garcia

Thank you, Jim. So, it does appear that there are a number of challenges and in particular, as you said, technology issues and the issue around the physics of flight simply meaning that there are limitations around what can be done in practice.

How does the development of global standards assist the aviation sector and what kind of standards and regulations are needed in order to drive forward net zero or the contribution of the sector towards net zero?

Guest: Jim Bell

I think one of the hardest things for aviation to deal with is aviation by definition is a global market and so you have players in the market competing from different geographies and so one of the core things that I think needs to happen is for there to be a global acceptance as to what is and isn't green. This is hugely problematic in the context of things like the EU taxonomy where there's an EU-focussed position which isn't then followed through in the US or followed through in Asia and so when you have European carriers competing with US carriers competing with Asian carriers and there's a different standard as to what is perceived as green and therefore a different standard of investment criteria, then that creates complications and, ultimately, if there is a higher standard in Europe, that therefore puts European carriers at a perceived disadvantage.

Another area which I think would be hugely beneficial in trying to deal with is in the context of sustainable aviation fuel ("SAF"). The sort of definition as to what is sustainable aviation fuel is different. We currently have three principal standards in operation. Recently the EU released its updated version of ReFuelEU and its standards for what SAF is. The US have their renewable fuel standard and then the industry, through CORSIA which is the carbon offsetting and reduction scheme for international aviation, has its own standard as to what is SAF. And so, with three competing standards it's problematic for sustainable aviation fuel and its development.

There are a few other areas which there's been continued focus. One of the things that we have been doing is supporting the aviation industry and various aviation bodies – including the Aviation Working Group and IATA – in the negotiation with the EU in relation to the forms of technical screening criteria for aviation. It's really important, in the context of the EU taxonomy, that it is a position that is workable on a global basis, and I think this is focussed on perhaps more in aviation than maybe other sectors where there isn't that global competition in quite the same way. It is problematic if the EU taxonomy takes a position that simply won't be accepted on a more global basis as to what is and isn't green. We had a very good chance, and I think the EU taxonomy perhaps in all sectors had a very good chance, of creating what might be de facto at global standard. But I think there have been problems in the development of those standards that have caused the output to maybe not be something that could be accepted on a global basis and so that creates a problem.

Other things that we have been doing, we've been supporting again the Aviation Working Group on standards for reporting, in particular defining Scope 3 emissions in the context of the different participants in aviation. We have also supported bank groups in relation to their self-set investment criteria in the context of aviation. We're currently supporting two different groups, one in relation to commercial aviation and one in relation to business aviation, to produce principles for investment that are somewhat akin to the Poseidon Principles in maritime.

Host: Mhairi Main Garcia

It's fascinating to actually hear the work that we're doing with the sector, in particular the work with the Aviation Working Group and IATA. But it does still appear that global standards are not there yet and it is a work in progress. And so, I suppose my question then is how do those differing standards impact funding? If we could move on to talk about financing, is funding available to the aviation sector for reducing emissions and what is the impact of these differing standards around the globe?

Guest: Jim Bell

Probably the principal concern in relation to aviation is acceptance of transitional technologies as being green. For the reasons I explained earlier, there's no quick fix in aviation and so transitional technology that has betterment but isn't using zero emission fuels must continue to attract investment because otherwise you are missing opportunities to reduce carbon emissions. And, given where aviation is, it can't afford to have that option removed. And, as explained earlier, aviation is an incredibly capital-intensive industry and so it relies on investment in order to purchase assets. And so, if we want to exit out poorer performing assets from a carbon emissions perspective and replace them with newer technology that is better performing, then we absolutely have to attract investment and that means making it abundantly clear that those assets, that betterment, is considered green because if we don't do that and aviation is just considered a brown industry, then there won't be that encouragement of investment to get that better technology and instead older technology will continue in operation and that's not going to be helpful to anyone.

Host: Mhairi Main Garcia

And I suppose going back again to technology, as you said it does seem to be central to the challenges that the industry is facing.

What do you see as the most important steps during the next five years to facilitate the aviation sector in the drive towards net zero?

Guest: Jim Bell

There's a number of things. I think perhaps acceptance generally of the challenges in aviation and ultimately not only acceptance, but encouragement and support in aviation's efforts to try to do the best that it can do given those limitations. I think particularly on sustainable aviation fuels, that seems to be the principal hope in betterment in aviation for now and so there needs to be significant investment into the production of sustainable aviation fuels and, perhaps, better coordination into how those fuels are being produced. Currently there's a lot of focus on particular carriers entering into arrangements with producers to produce specific fuels only for them, whereas maybe with more coordination across the industry there might be better opportunities there. Again, that piece on having a single global standard for what is considered sustainable aviation fuel would be incredibly helpful. Again, the point about having a global standard as to what is considered green on a global basis because we see transactions in different geographies having different threshold standards and that's problematic for a global industry where participants are competing even from different geographies.

The other point that I've flagged, and I think is important to note again, is we must have acceptance that betterment in aviation constitutes green. There must be encouragement to have greener assets rather than an absolute focus on zero emission fuels because that's not going to be possible in the short term and so, if you want to get as close as you possibly can to net zero by 2050, then that means continued focus on the best possible right now and that means encouraging and attracting investment and therefore classification of those transitional technologies as green.

The only other thing I'd note is the point that I've made previously is acceptance that, given the challenges that aviation has, it will continue to be reliant on offsetting and that's sort of offsetting through CORSIA that I touched on earlier, but also through the various emissions trading schemes and other voluntary offsetting. Given the challenges in aviation and maybe the betterment that can be done further in other sectors, that will come at a lower cost than the capital outlay that would be absolutely required in the aviation sector for only marginal gains and also given the limitations of what is immediately possible given current scientific development.

Host: Mhairi Main Garcia

Thanks, Jim. It indeed sounds like there's a lot to do and thank you for such an interesting discussion and a very informed discussion.

If I could sum up some of the key points that you have talked about today. While there is a massive focus indeed towards achieving net zero in the aviation sector by 2050, this is particularly challenging for this sector. And one of the main reasons for that is simply the challenge of the physics of flight and the limitations that come with that. There are also challenges around the timing that's required for safety and testing before new technologies can take effect. And even around fuel, it's not just a question of talking about green fuels such as green hydrogen, but the focus should also look towards sustainable aviation fuels.

But sustainable aviation fuels themselves also have their own challenges, not least because there is no global standard as to what is a sustainable aviation fuel. And indeed, global standards are lacking in terms of facilitating the drive towards greener assets, not necessarily fully sustainable assets, but greener assets in the sector. And so, one of the key challenges is the need for a global acceptance of what isn't green and what is green and the need to promote a level playing field in relation to investment criteria.

And when it comes to investment it's key to encourage investment in the sector and the drive towards net zero and recognise the steps that the industry is actually taking. So be positive as to the steps the industry is taking and look at the best possible solutions right now and accept that there are challenges in the sector towards achieving sustainable solutions, towards achieving greener assets.

And lastly, you mentioned the need to look at offsetting in other sectors, these economic measures which can be achieved at a lower cost and perhaps, from a technology perspective, more easily than in the aviation sector.

I hope that's summed up some of the key points that you've talked about today.

Guest: Jim Bell

That's perfect, thank you Mhairi.

Host: Mhairi Main Garcia

Thank you, Jim. And thanks for being our guest today. And thank you for joining us. Please do get in touch with your feedback or if you have any questions about the subjects we have discussed.

To listen or view the transcripts of all of the episodes of this COP28 series, please visit wfw.com. We look forward to welcoming you to our next episode of Watson Farley and Williams' 'Countdown to COP: Financing and Fuelling the Future' podcast series.

Thank you for listening.

All references to 'Watson Farley & Williams' and 'the firm' in this document mean Watson Farley & Williams LLP and/or its affiliated undertakings. Any reference to a 'partner' means a member of Watson Farley & Williams LLP, or a member or partner in an affiliated undertaking, or an employee or consultant with equivalent standing and qualification.