

Fuel, Food & Kansas Winds



The aviation industry has committed to carbon-neutral growth, and sustainability is fast becoming a buzzword of post-pandemic reset. But how is sustainability really achieved?

The drum of sustainability has sounded unashamedly throughout this edition of *EVA*, most often carrying the message for sustainable alternative fuel (SAF) and carbon offset. In business and VIP aviation, as in every industry, there is more to sustainability than fuel alone, but the importance of producing fossil fuel alternatives is the single most important factor in the equation.

Fuelling the Future

The aviation industry, including business aviation, has committed to carbon neutral growth from 2020 and halving total carbon emissions by 2050, relative to 2005 levels. Popular media reports might have us believe a new generation of electric airliner is just around the corner, but the reality is that for now, all-electric power is only for lightplanes and even then with the important caveat that the electricity used to charge their

batteries ought to be produced by sustainable means.

Realistically, we are decades away from realising an electrically-powered aircraft that might replace a 737 or A320. The same is true of a machine that could equal the performance of a business jet, so the immediate route to sustainable flight, at least from the fuelling perspective, is through SAF and carbon offset. But the process is taking time, despite the best efforts of proactive fuel companies, among them Air bp, which has so far supplied SAF at 16 locations in six countries across three continents.

Tom Parsons, Commercial Development Manager Low Carbon at Air bp, explains: “The higher cost of SAF compared to regular fuel is preventing wider uptake, limiting production. The increased cost is down to a combination of the current

availability of sustainable feedstocks and the continuing development of new production technologies. As the technology matures it will become more efficient and so the expectation is that SAF will become less costly for customers. Air bp is working on helping create more demand in the short-term, which will lead to more production and, hopefully, lower costs. We expect significant growth in demand and have recently agreed a deal with SAF producers Neste that will enable us to offer a five-fold increase in volume of SAF to our customers in Europe in 2020 and 2021, compared with 2019.”

Thankfully, Air bp is not alone in the quest for widescale SAF availability. Encouraging news emerged from the US on 12 August, when Phillips 66 announced plans to reconfigure its San Francisco Refinery in Rodeo, California, to produce



Solar-powered S4GA lighting supporting PC-12 operations in the Ivory Coast. S4GA

renewable fuels. Rather than crude oil, the expectation is that the facility will refine used cooking oil, fats, greases and soybean oils. A company spokesperson confirmed that pollutants, including sulphur oxides and other greenhouse gas emissions, will be reduced by more than 50%.

Known as Rodeo Renewed, the project aims to produce 680 million US gallons of renewable diesel and gasoline, and sustainable jet fuel, annually. Combined with the production of renewable fuels from another project in development, the plant would produce more than 800 million US gallons of renewable fuel per year, making it the world's largest facility of its kind.

Nonetheless, over its lifecycle – including the full process from collection of used feedstock through to combustion on the aircraft – SAF releases up to 80%

less carbon than the traditional jet fuel it replaces. Currently, up to 50% SAF is blended into traditional jet fuel to achieve certification, however. Taking these two elements into account, even if an aircraft were using as much SAF as it could on every flight, there would still be residual carbon emissions, a fact recognised by Air bp's Target Neutral offsetting programme and similar schemes.

The company's Tom Parsons notes: "Even when the carbon emissions associated with flying are reduced by using SAF and through the benefits of other initiatives, including more efficient aircraft and engine designs, there is still a residual carbon footprint. Voluntary offsetting programmes, like those offered through bp Target Neutral, can offset those emissions."

It's also essential to think beyond flying and the emissions associated with the

aviation fuel supply chain. Parsons says Air bp understands the role it can play. "In February, Bernard Looney, bp's new CEO, delivered a landmark speech outlining a new ambition for the whole organisation to become a net zero company by 2050 or sooner, and to help the world get to net zero. In 2016, Air bp became the first aviation fuel provider to become carbon neutral globally, across our 250 operated sites, and achieved independent PAS 2060 certification.

"We created a reduction plan to tackle direct and indirect emissions, which includes introducing fuel efficient and electric vehicles, as well as innovative stop-start technology on aviation fuel hydrant dispensers. Residual carbon emissions are offset through Target Neutral."

Beyond Electric Dreams

All-electric airliners may still be the stuff of technologist's dreams, but the clever, careful use of alternatively-generated electricity and solar systems is already reaping benefits at airports. Poland's S4GA produces a range of innovative solar-powered airfield lighting solutions and while Marketing Manager Olga Ziniuk admits the sun is a little too shy in northern Europe to make solar power a practical year-round solution, she emphasises that S4GA supplies complete airfield lighting solutions for all types and sizes of airport, from small domestic airstrips to international hubs.

The company's solar units are designed as an alternative to diesel generators for airports where laying electric cables is impossible or undesirable, or where local electricity supplies are unreliable, but have obvious potential for reducing emissions. Ziniuk cites Dhaalu Airport, a regional airfield on Dhaalu Atoll in the Maldives, as a prime user of S4GA solar airfield lighting. "The airport was unable to install conventional wired lighting, leaving them to choose between diesel generators and solar power. They chose our equipment, which requires neither an electrical grid nor back-up power source."