BTA | BUSINESS TRAVEL ASSOCIATION

Sustainable Aviation Fuel

A Journey Towards Innovation

Contents

ACRONYMS

TMC (Travel Management Company)
SAF (Sustainable Aviation Fuel)
GHG (Greenhouse Gas)
ESG (Environmental, Social and Governance)
SDG (Sustainable Development Goals)
LEDC (Less Economically Developed Country)
EU (European Union)

01
Introduction

Dear Reader,

In the last 10 years, the environmental landscape has completely changed, with increased pressure on businesses to react. Today, the topic of global warming and investing in sustainable fuels, offsetting practices and renewable energy is discussed in boardrooms across the world.

Business travel is vital to economic growth through the transportation of experts and skilled workers. However, the aviation industry is a large contributor to global CO2 emissions. So how do we efficiently overcome the environmental ramifications of travel whilst ensuring that vital business travel continues?

Since the launch of our inaugural Environmental, Social and Governance (ESG) benchmarking report, the Business Travel Association (BTA) is building on its ESG research to tackle the industry's environmental concerns around decarbonisation. Following our exploration into carbon offsetting, I am thrilled to introduce the third ESG report produced by the BTA - a detailed investigation into sustainable aviation fuel (SAF).

This report will assess the pros and cons of SAF, including its sourcing, production, distribution, and use, explore environmental alternatives for the aviation industry and unpick its impact on the UN's Sustainable Development Goals (SDGs).

Vitally, our research finds that the successful delivery and integration of SAF worldwide is dependent on multi-industry communication and co-operation. Climate change is a worldwide issue, and we must treat it as such, ensuring that the solution is globally available.

More must be done by governments to guarantee sector and nationwide collaboration to make the production and distribution of SAF more efficient and reliable. We are asking to work together with you to make this happen.

This report tackles the key environmental concerns that the BTA and our partners aim to challenge that continue to impact the aviation industry and the business travel sector. Our research is drawn from interviews with SAF providers Travel Management Companies (TMCs), distributors and airlines. I sincerely thank all the individuals involved for contributing their knowledge, time and enthusiasm to this report, to ensure that we can secure a greener future for business travel and the planet.

Our previous report on carbon offsetting outlined that we must focus on reducing the industry's carbon output, and the future of SAF is a hopeful alternative. This task is one built on sector-wide collaboration, and we hope this report will stimulate exactly that.

I am encouraged by the success of our carbon offsetting report, the BTA's Planet Plan meetings and the enthusiasm of our friends and partners across the industry to tackle global warming. We have the power to make impactful and positive changes to our planet and we can make it a reality, together. I welcome all feedback and knowledge on the topics addressed in this report.

Best wishes,

Clive Wratten
CEO of the Business Travel Association (BTA)
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02
Executive Summary

"The scale of where we need to get to in terms of sustainable fuels is such that unless we collaborate as an industry, then it won't happen."

Rolls-Royce

KEY LEARNINGS:

One thing is clear: the future of green aviation depends on SAF.

Our research finds that the travel industry sees SAF as a strong solution to stifle the aviation industry's environmental issues. Many have noted that SAF will do the 'heavy lifting' and pave the way for future sustainable alternatives such as hydrogen and electric aviation. Yet it is understood that we must drastically act as climate change continues to threaten to overtake SAF's development pathway.

Interviewees highlighted that the price of SAF holds the industry back from implementing it worldwide. Our research finds that more must be done by governments to ease the price burden of SAF and other sustainable alternatives to escalate its global distribution and operation.

The BTA calls on the UK government to draft a watertight SAF mandate, provide grants for developers to boost production and offer subsidies to those purchasing and using SAF in greater quantities. It is of paramount importance that the business travel industry and governments worldwide work together to ensure SAF becomes the first choice over fossil fuels. There is a risk that the price and use of SAF will increase ticket prices for travellers and we must work together to avoid this as much as possible while focusing on boosting SAF quantities.

"We must start accepting that combating climate change comes at a cost. Yet the question should not be 'what does SAF cost?' but rather 'what will the cost be if we don't use SAF?"

Neste

Those we interviewed were candid about their SAF activity, disclosing their investment in SAF for future delivery where, in many cases, the SAF refining, and production plants do not yet exist. In doing this, these organisations are providing SAF vendors with up-front capital to boost research, testing and building of technology for future SAF production that will ensure this alternative fuel is readily available.

It is critical that we continue to champion sustainable alternatives, even if this may mean uncomfortable conversations with suppliers. We must hold each other to account and as a part of this, there is a need for buyers and travellers to understand their own outputs at the point of sale.

As the rate of flying increases more rapidly than developments in SAF, it is fundamental that we learn, share and collaborate, to drive the innovation and developments necessary to deliver the future of green aviation.

"The investment decisions that are made in these next 2 to 3 years are pivotal in terms of determining whether this [SAF] market accelerates in the timescale needed to achieve net zero."

AMEXGBT

"Collaboration needs to be stronger."

Lufthansa

03
SAF Backgrounder

Aviation supports leisure and business travel, hospitality, trade, investment, and employment.

However, the sector continues to have an increasingly negative impact on the climate, more than the broader corporate landscape in Europe, with 2.5% of global carbon emissions coming from the aviation industry.

As business travel steadily increases after the Covid-19 pandemic, it is vital that the aviation industry rapidly mitigates the carbon outputs generated by each flight.

As this report will find, a clear solution to this issue is the continued incorporation of SAF.

SAF is produced from sustainable feedstocks such as non-recyclable household waste and is most similar in chemistry to traditional fossil jet fuels.

To make a substantial difference, the European Union (EU) proposes that fuel suppliers to airports should use a blend of at least 2% SAF as a standard, with the aim of gradually increasing this percentage to 63% by 2050. The types of biomass feedstocks that produce SAF are derived from either dedicated crops or waste and residues.

Dedicated crops originate from natural materials known as conventional, first-generation biofuels. These include:

- **sugar crops**
- **starch crops**
- **oil crops**
- **lignocellulosic crops**
  which are biofuels produced from non-edible biomass such as agricultural and forest residues, which are cheap, abundant, and renewable

Waste and residue feedstocks, regarded as advanced second and third-generation biofuels, also include lignocellulosic residues as well as:

- **oil-based residues**
- **organic residues**
- **waste gases**

At present, only 2% of biofuel production is covered by these advanced biofuels. To make significant progress, we will need to increase the use of advanced biofuels.

Once collected, these feedstocks undergo the following process to be converted into sustainable fuel for airport and airline use:

1. **The feedstock is collected as waste from households**
2. **This waste is processed, organised, and transported to a refinery**
3. **The refinery converts the waste into sustainable aviation biofuel**
4. **Finally, the biofuel is transported to airports where it is blended with traditional jet fuel, ready for aircraft use**

The biggest influence on the distribution and use of SAF is the role of governments worldwide. Relevant government departments need to work together alongside industries like the Department of Transport, and the Department of Agriculture to ensure a unified approach to support SAF. Government backing would assist a move to mature technology to eventually lower this cost.

This partnership will also ensure that SAF is a worldwide solution, distributed and available to airports and airlines across the globe.

The business travel industry must ensure that customers are informed to make the most sustainable choice when travelling. It is our responsibility to educate buyers and promote the most environmentally friendly option. To do this, we call on the industry to implement booking platforms that clarify SAF quantities across flights at the point of sale, to drive home the importance and impact of SAF and work towards its implementation worldwide.

This report will explore and outline the production, distribution, and wider concerns of SAF including its impact on global warming. SAF not only benefits the environment, but it also has positive socio-economic outcomes with minimal impact on biodiversity and conservation.

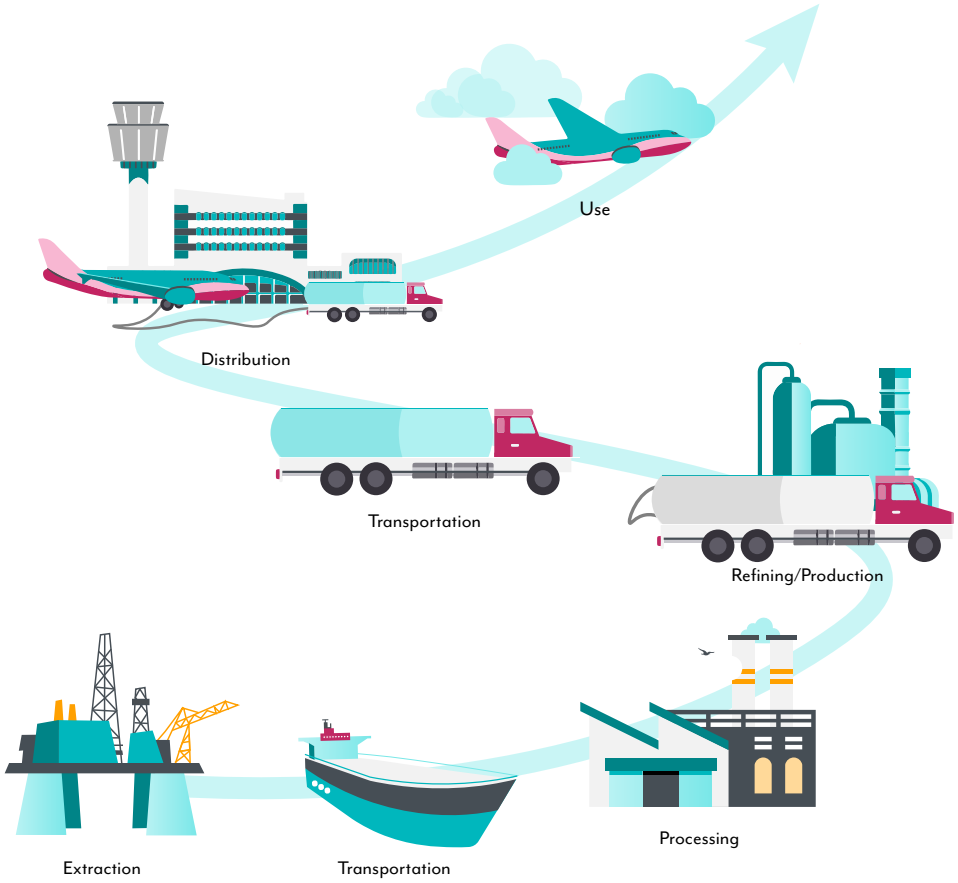
"According to all of the leading experts, sustainable aviation fuel is the primary mechanism for the decarbonisation of aviation."

AMEXGBT

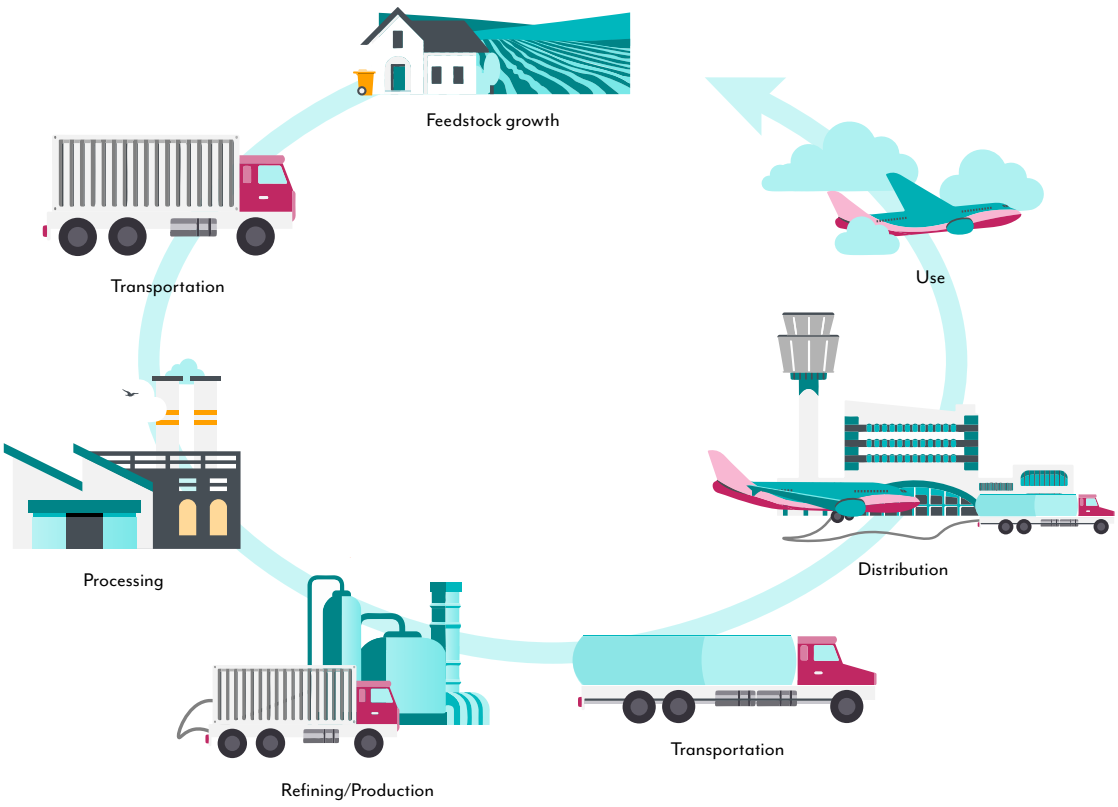
"SAF is a today solution for reducing GHG emissions from air travel and is widely acknowledged as a key element in helping aviation achieve its net zero carbon emissions by 2050 goals."

Neste

Fossil Fuel Lifecycle



Sustainable Aviation Fuel Lifecycle



04

SAF Benefits

"A lot of [the SAF] technologies have not yet been proven out on a larger scale."

Virgin Atlantic

SAF has many advantages that go beyond the immediate benefits associated with its use; reaping economic, environmental, and social advantages that further encourage its production, development, and distribution:

Benefits

Social
Supports jobs in sustainability
Provides jobs in transportation for the carriers of SAF
Provides the opportunity to export skills and expertise
Economic
Can be blended with conventional fuel
Can use existing fuel infrastructure and aircraft
Could help extend the lifespan of older aircraft
Reasonable feedstock supplies are available to make biofuels in the US
Encourages economic growth
Environmental
Meets sustainability standards with respect to land, water, and energy use
Emits a minimum of 75% less emissions than jet fuel
Does not displace or compete with food crops
Has minimal impact on biodiversity and conservation
Marginal areas of land are theoretically available for energy crops
Energy crops grown on marginal land do not compete directly with food crops for land or cause indirect land use change (United Nations SDG 15)
A wide range of biomass sources can be used for biofuel (not exploiting one resource more than another to create an imbalance)

Our research shows that the economic and social benefits of SAF are entwined, as SAF provides an increase in job opportunities, resulting in more fuel for the economy, and a stronger economy means more support for job sectors. The use of SAF allows a greater export of expertise and skills, increasing the potential for countries to fuel each other's economies by deploying their skilled workers around the globe in a manner that exhumes 75% less greenhouse gases into the atmosphere.

Sustainable aviation fuels have the potential to remarkably reduce the carbon footprint of the aviation industry. However, the market is underdeveloped, and SAF is currently produced in small volumes at a higher cost, meaning that SAF is not yet commercially competitive.Fortunately if airlines and airports continue to partner with SAF providers, and governments comply with added support, SAF's worldwide implementation will be viable.

05

SAF Drawbacks

"SAF is nowhere near close to commodity status - it's first-of-a-kind technology that creates industrial opportunity but does carry large investment risk, execution risk and obviously has a high cost of production."

Virgin Atlantic

Despite its many benefits, there are drawbacks to the procurement, distribution, and use of SAF that hinders its global use:

Drawbacks

Social
SAF is not always compatible with all aircraft and so may only be effective for specific flights
There are significant barriers to the growth and distribution of SAF as not all airports and aircraft may have the facilities to store it, which limits global distribution
Generally, there is a limit to providers' capacity to deliver SAF to airports
As SAF is a relatively new industry, there are concerns about the safety of the aircraft that arise with new SAF practices and requirements which still need to be tested.
Economic
Currently more costly than traditional jet fuel, SAF costs two to eight times as much as conventional jet fuel. Decreasing the price of SAF will depend on technology maturing to make it cheaper to purchase for airlines, ensuring there is not a knock-on cost for passengers too. At the current rate, a SAF-fuelled plane will have varying price increases per ticket which could either encourage travellers to purchase with airlines that do not use SAF or discourage passengers from travelling altogether
As the scale of SAF production is not yet at the same level as conventional jet fuel, the production of SAF takes longer and requires more resources. Therefore, the time constraints and infrastructural issues associated with SAF could be alleviated with increased investment
It is difficult to get SAF on a global scale as less economically developed countries lack the financial resources to produce, hold or distribute SAF. Therefore, global government aid is a necessity to make SAF a feasible solution worldwide
Environmental
Although SAF is environmentally friendly in its composition, it still must incorporate conventional jet fuel in the final product hindering their sustainable impact
Not all feedstocks used in the production of SAF are sustainable, such as crude oil

The drawbacks of SAF impact economic, infrastructural, and environmental issues. Together, these weaknesses present an overarching picture of how the production and use of SAF are not as promising as it initially seems.

Some SAF producers also produce kerosene, which provides a potential conflict of interest. While SAF infrastructure and worldwide implementation are dependent on investment, a caveat to this conflict of interest surrounds the need to produce kerosene to fund SAF as the industry grows. As populations recognise the need for SAF, boosting its demand, we hope to observe a switch in this investment cycle.

The production of SAF uses a lot of land and resources, creating issues surrounding food security, deforestation, water, and land use. This may result in competition for land used for other needs like food and housing.

Furthermore, despite the positive impact SAF has on the environment, the production and harvest of these feedstocks threatens other industries. For example, cooking oils are often used for livestock feed, or the paper industry which relies heavily on forestry waste.

Competition for the latter threatens overexploitation, threatening the natural environment. Taking crop wastes off the land solely to produce SAF means lower organic matter being returned into the soil, therefore reducing the fertility and structure of the soil, which then limits the use of that land after its harvest.

Feedstocks are also used to make diesel for road vehicles and electricity, creating further conflict between industries, and increasing the demand and therefore price of these feedstocks. As net zero is the travel industry's common goal, it is important to consider the other contributors to carbon footprints such as road vehicles. It is therefore important that the harvest of these feedstocks can be distributed equitably across the industry with a minimal strain on the environment and other markets and industries that rely on these feedstocks.

Despite these issues, advances in refining and distribution technology will drive SAF's global distribution and secure it as a viable, sustainable solution to fossil fuels, meaning the benefits of SAF will outweigh the drawbacks.

Government policy and co-operation are vital to effectively address the drawbacks and expand the distribution of SAF. Co-operation between industries to boost the growth of SAF requires three key actions:

- **Communication and transparency:** sharing information and key findings across industries
- **Aviation sector inclusivity:** ensuring all research and development efforts reflect the critical needs of commercial, business, and military aviation
- **Efficiency:** develop the best practices to ensure the success of SAF supply for commercial, business, and military aviation sectors

Airlines are taking initial steps to reduce the cost of SAF by purchasing it many years in advance of production to encourage the development of facilities that will eventually supply the fuel. Governments across the world are also starting to act in support of SAF. For example, the UK Government has established a Sustainable Aviation Fund from 2023 to 2050, to develop technology that will meet SAF demands including driving the decarbonisation of airports and boosting investment in biofuels, innovative aircraft technologies and research for new appliances.

"The biggest challenge is ramping up the additional production capacity of SAF so it will be available in much larger volumes."

Neste

06

Alternatives

SAF is not aviation's only route to sustainability. There are alternatives including electric and hydrogen power as well as carbon offsetting to help the industry reach net zero.

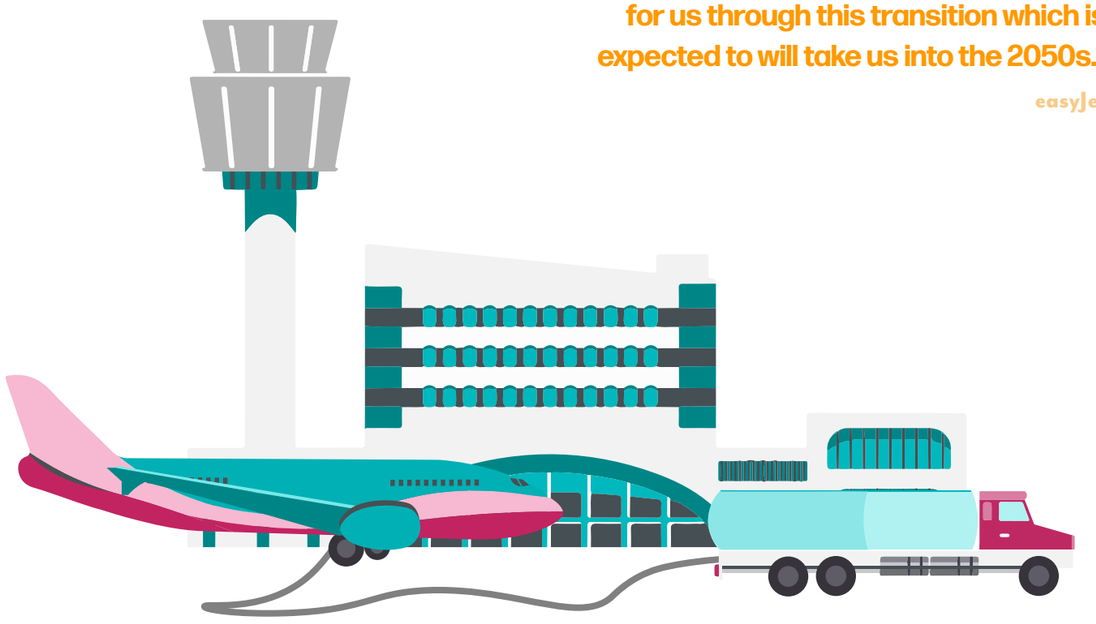
However, more innovation is needed to develop these options into viable sustainable contenders to achieve the objectives laid out in the UK Government's Jet Zero strategy. Currently, there is no certain period for when these alternatives such as battery/electric and hydrogen will enter the commercial market, although the earliest predictions estimate 2028. Today, the methods that offer the greatest emissions relief also present the most complicated challenges, therefore, these alternatives must be developed further to achieve net zero by 2050.

"SAF is available now and plays a crucial role in achieving the net zero goals. But we definitely need other solutions like electric and hydrogen powered flight, and operational efficiency improvements, too."

Neste

"easyJet's goal is to transition our fleet to zero carbon emissions aircraft. However, we don't have these aircraft yet and the full fleet transition will take time. Therefore, SAF will be a critical element for us through this transition which is expected to will take us into the 2050s."

easyJet



"It is already possible to use only 100% SAF in an engine for an aeroplane. It's absolutely not a problem. We had run some test flights, but for regular flights, it's still not allowed by the government. What we need to do is increase awareness - SAF is absolutely a safe technology as a fuel."

Lufthansa

ELECTRIC PLANES

Electric planes rely on battery-generated electricity for power as opposed to fossil fuels. Electric planes are an exciting alternative to traditional fuels, with the major benefit of large reductions in carbon emissions.

There are over 170 electric plane projects in progress worldwide, with organisations such as Amazon and the US Air Force both supporting the initiative. However, there is industry debate surrounding the viability of battery-powered aviation and the timeline in which electric aviation will be commercially introduced.

Benefits

Sustainable
Battery-powered operations remove the need to use fossil fuels. Although there will be carbon generated through the model and batteries' lifecycles, this will be far less than the total carbon generated across the lifecycle of a traditional plane

Quiet flight experience
Without the need for an internal combust engine, electric planes are far quieter than traditional planes

Vertical lift
Electric planes do not need the runway to take off, saving space at airports and permitting an increased capacity for fleet sizes

Drawbacks

Innovation development
Innovation is needed to decrease the weight of batteries installed and increase battery life and flight times

Space
With the largest electric plane in development expected to seat 186 passengers, the first 50–70-seater aircraft are only expected to appear in 2028

Expense
As electric planes are in the early stages of development,they are currently commercially expensive and not large enough to serve greater quantities of passengers. This must change if electric planes are to become mainstream

"As an airline, our ultimate focus is on zero carbon emissions aircraft powered by hydrogen as it offers the most effective option to eliminate aviation's carbon emissions."

easyJet

"While SAF is the primary driver/ mechanism, we cannot say that SAF is the only solution because we're actually going to need all of the solutions available to achieve net zero by 2050."

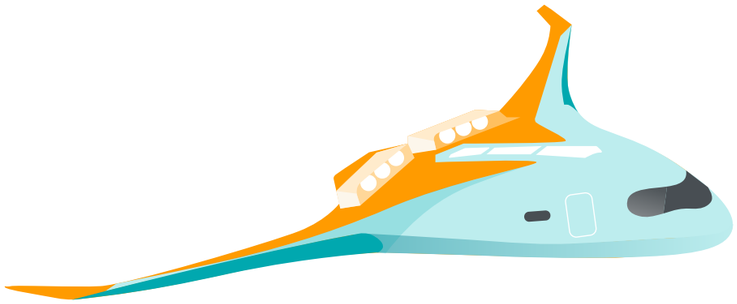
AMEXGBT

HYDROGEN AVIATION

Hydrogen aviation offers a strong alternative to kerosene and fossil fuels.

Although most hydrogen is generated from the restructuring of methane from natural gases, there are plans to generate hydrogen by converting water through a renewable electric current.

Our research suggests that hydrogen planes are an incredibly strong alternative to fossil fuels, yet it needs more investment and innovation to secure its position as a viable solution. Although SAF is already implemented in limited quantities, it is necessary that the blend of SAF is increased to compete with hydrogen once employed at scale.



Benefits

Sustainable
Unlike fossil fuels and SAFs, hydrogen entirely removes carbon dioxide emissions, emitting only water into the atmosphere

Longer lasting
In comparison to battery-electric aviation, hydrogen has a superior energy density, permitting longer distances of travel

Logistics
Unlike battery-electric aviation', hydrogen-powered flights have the potential to be just as fast, carry more than 100 passengers per flight and cover thousands of kilometers

Drawbacks

Hydrogen transportation and storage
Hydrogen is incredibly flammable, therefore new methods of hydrogen transportation and storage must be developed to ensure the safe refuelling of planes across airports and deliveries to sites. Airport infrastructure will also need to be altered to accommodate hydrogen

Plane design
The planes using hydrogen will need to be redesigned, from propulsion to interiors and storage to integrate the systems and tubing necessary

Cost
Like electric operation, more investment is needed to enable hydrogen and its generation to compete with kerosene

CARBON OFFSETTING

Carbon offsetting is an environmentally friendly alternative to achieving net zero emissions in cases where companies are unable to completely reduce their carbon outputs.

However, it is vital that companies only implement carbon offsetting as a last resort once they have reduced their carbon footprint as much as possible.

There is an array of carbon offsetting methods available to organisations, including tree planting, rewilding, carbon capture, investments in renewable energy projects and community work.

Issues such as space can impact local communities and the time for the chosen methods to start retracting carbon from the atmosphere. This will impact the total sum of carbon expected to be reduced from the atmosphere through offsetting.

Benefits

Prevent greenhouse gas build-up
Tree planting, carbon capture, peat restoration and rewilding all work to reduce retrospective carbon outputs in the atmosphere

Improve the livelihoods of local communities
Community projects such as the delivery of cookstoves, tree planting and work against deforestation have a wide impact on personal health, safety and security

Protect biodiversity
Projects such as rewilding, peat restoration and community work against deforestation protect and rebalance natural habitats against climate change

Drawbacks

Offsetting reliance
Companies can become reliant on the offsetting method without reducing first

Accurate carbon measurement
Due to uncertainties surrounding carbon calculation and a lack of government standardis
ation of offsetting targets and limits, companies may be at risk of inaccurate carbon offsetting credits

The legitimacy of offsetting vendors
Again, as there are no government restrictions on or qualifications needed by offsetting vendors, there are concerns surrounding whether your offsetting activity is being accurately

07

Airport Infrastructure

ABOUT

SAF alternatives such as electric hybrid systems, full electric propulsion systems, hydrogen fuels and solar power have the potential to eliminate the need for fossil fuels. However, these are not likely to reach commercial production within 10 to 20 years and if this is achieved, these flights will most likely be short-haul and regional. SAF, however, has the flexibility to be incorporated into a large amount of airport infrastructure without the need for additional equipment.

Our report finds that airlines are making large commitments to buy SAF in the long term. With many in the short-term committing to using 10% SAF by 2030. On reflection, this 10% seems incredibly small in consideration of the progress needed to reach net zero by 2050. Yet Virgin Atlantic noted that the 10% "unlocks the innovation, technology and investor confidence needed to scale [SAF production] beyond the twenty to thirty-year period".

Time is running out and innovation is not progressing in line with climate change. The BTA is calling on the industry to implement richer blends of SAF and drive investor confidence to scale its development and use. As a part of this, more sophisticated processing technologies are needed for the manufacturing of aviation fuels to widen the number of available feedstock types. However, the development of processing technologies is dependent on cross-industry collaboration and requires government action.

Our research finds that industry players believe that with greater government support and collaboration, SAF could be distributed more widely. Yet, those interviewed noted a lack of government understanding, with its limited implementation and inflated cost having a knock-on impact of this.

The cost of SAF is a primary issue here. As a relatively modern technology, financing its development is causing issues across the globe, particularly as less economically developed countries (LEDCs) do not have the means to produce or store SAF. All interviewees acknowledged that SAF commands a premium over conventional fuel, ranging from three to five times the price, depending on the production method.

Therefore, the SAF market and its price remain at a stage of development where the fuels are produced in small volumes with high costs. Consequently, SAF is not commercially viable in LEDCs.

If the goal is to make SAF the global solution, there is an urgent need for government and industry collaboration focusing on the needs of LEDCs and aiding them in their SAF journey.

"SAF is the biggest lever for long-haul aviation to decarbonise over the next few decades."

Virgin Atlantic

"Most airlines have a 2030 goal to replace 10% of jet fuel with SAF."

American Airlines

"Collaboration has to come from each piece of the supply chain for SAF to work cost effectively going forward."

easyJet

Moreover, the airports with the capacity to hold SAF must conduct infrastructure assessments to determine if current fuel assets, such as storage, blending tanks and pipelines, are sufficient to accommodate the level of SAF that airlines require. By the end of 2023, Neste acknowledged that it would have an annual SAF production capacity of roughly 1.5 million tonnes, enough for nearly 22,500 flights from Amsterdam to San Francisco - with this increasing to 2.2 million tonnes by 2026.

This shows that the sustainable technology is there, it just needs to be scaled worldwide. Collaboration not only affects the advancement of SAF technology, but also the airport and airline capacity to hold and use SAF. For instance, EU policy includes a blending mandate on aviation fuel suppliers – all aviation fuel supplied to aircraft operators at EU airports must contain a minimum share of SAF and synthetic fuel. This means that airports and airlines are restricted in the amount of SAF that they can physically use.

"Governments play a pivotal role in leading the support, production and commercialisation of SAF."

Virgin Atlantic

"[increasing the production capacity of SAF requires] cooperation across the value chain, governmental support to create the demand certainty necessary to attract additional investments, and businesses and individual travellers taking the responsibility to reduce the carbon footprint of their air travel."

Neste

"How do you create the funding, or the investment opportunities required to make that technological transfer between developed countries and developing countries?"

Virgin Atlantic

08

Impact on Sustainable Developement Goals

"Across Europe, each country has its own ambition of a mandated year and you're slowly but surely seeing it coming into effect. I think one EU mandate across the board and more Government support is needed to drive the production of SAF to meet mandates in the 2020s and 2030s."

easyjet

SAF IMPACT ON SDGs

In 2015, the United Nations unveiled the 17 Sustainable Development Goals (SDGs), intended as universal guidelines to ensure the protection of the planet and to beat poverty, while promoting peace and prosperity, with an agenda for 2030.

The UN acknowledges that creativity, knowledge, technology, and financial resources are needed from across the world to achieve each of these goals in every context.

The aviation industry and the worldwide development, distribution, and implementation of SAF affect each of the 17 goals, with some goals more impacted than others. Our research suggests that the primary goals interlinked with SAF are SDG 7: Affordable and Clean Energy, SDG 9: Industry, Innovation and Infrastructure, SDG 12: Responsible Consumption and Production, SDG 13: Climate Action and SDG 17: Partnerships for the Goals. The achievement of other goals such as SDG 8: Decent Work and Economic Growth and SDG 15: Life on Land are also affected by SAF production, distribution, and use.

Overall, these goals interlink. For example, there cannot be affordable and clean energy without innovation, or responsible consumption and production without affordable and clean energy. The goals' achievement has a widespread impact on the worldwide delivery of SAF and it is paramount that all goals are addressed in the context of one another to effectively drive towards net zero across the travel industry.

SDG 8: Decent Work and Economic Growth and SDG 15: Life on Land

The production of SAF benefits communities with large areas of land that are unsuitable to grow food crops, allowing these areas to be instead dedicated to SAF crops. The ability to grow the feedstocks needed across a variety of geographical locations diversifies SAF supply as it does not have the same limitations faced by fossil fuels. This diversification also permits a level of feedstock security for airlines, while economically benefitting local communities.

"An obstacle surrounds farmers getting more money for palm oil, so we need the buy-in from farmers with regulations to produce SAF with wheat but not palm oil."

Lufthansa

No Poverty
End poverty in all its forms everywhere

Zero Hunger
End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Good Health and Well-Being
Ensure healthy lives and promote well-being for all at all ages

Quality Education
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Gender Equality
Achieve gender equality and empower all women and girls

Clean Water and Sanitation
Ensure availability and sustainable management of water and sanitation for all

Affordable and Clean Energy
Ensure access to affordable, reliable, sustainable and modern energy for all

Decent Work and Economic Growth
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Industry, Innovation and Infrastructure
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Reduced Inequalities
Reduce inequality within and among countries

Sustainable Cities and Communities
Make cities and human settlements inclusive, safe, resilient and sustainable

Responsible Consumption and Production
Ensure sustainable consumption and production patterns

Climate Action
Take urgent action to combat climate change and its impacts

Life Below Water
Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Life on Land
Protect, restore and promote sustainable use of terrestrial

Peace, Justice and Strong Institutions
Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Partnerships for the Goals
Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

It has been previously suggested by coalitions such as Sustainable Aviation that the UK SAF industry could deliver nearly £3 billion gross value, secure over 20,000 jobs and save 3.6 million tonnes of CO2 annually by 2038. Backing British SAF industry would benefit workers, businesses and communities across the UK, bringing new opportunities for investment, technology export and job creation. In turn, this would greatly impact the wider infrastructure and development of SAF across the UK, with a knock-on effect on other cities worldwide.

SDG 12: Responsible Consumption and Production, SDG 7: Affordable and Clean Energy and SDG 9: Industry, Innovation and Infrastructure

As aviation drives towards expanding its sustainable credentials, the industry's agenda is firmly intertwined with SDG 12: Responsible Consumption and Production, SDG 9: Industry, Innovation and Infrastructure and SDG 7: Affordable and Clean Energy. The achievement of these goals are by-products of each other and are therefore unachievable without developments towards each goal.

Currently, SAF is the only viable answer available to aviation's sustainability issue that is developed to the extent of mass deployment. SAF is a viable alternative to fossil fuels, however, our research suggests that there is an accelerated need for worldwide innovation across its lifecycle to strengthen the procurement, refining, transportation, and infrastructure processes to make it available, easily accessible, and cheaper to purchase for travellers and airlines.

Our research suggests that SAF will do the heavy lifting to reach net zero, while innovations in hydrogen and electric aviation are developed. Consequently, the entire aviation industry is reliant on innovation to make hydrogen and electric alternatives a consistent reality and to develop the surrounding infrastructure to support their global employment.

Price is a major drawback to SAF, and it is an issue that poses a challenge to the industry in achieving SDG 7: Affordable and Clean Energy and thus greatly impacts the achievement of SDG 12: Responsible Consumption and Production. As SAF is roughly two to eight times times more costly than standard kerosene, it is increasingly urgent for global governments to interject and steady sustainability's cost burden for airlines and travellers. As the cost-of-living increases, it is paramount that sustainable travel is not sacrificed to stifle rising bills.

Governments must act to protect the future of green travel and the planet, offering grants, subsidies, and rewards for those providing, and choosing to travel with, sustainable alternatives to fossil fuels.

SDG 17: Partnerships for the Goals

Our research across previous reports, as well as our findings throughout this study, suggest that partnerships are vital for the achievement of the SDGs and for the development, distribution, and use of SAF, as well as other alternatives that secure a sustainable future for aviation.

While there is a global need for SAF development and delivery, governments must act globally to streamline effective environmental practices across the aviation industry to achieve the 17 SDGs and protect the planet. There is a sense of urgency, and it is the business travel industry's responsibility to ensure our partners and buyers are informed on the most sustainable options available to them.

Overall, the development and implementation of SAF as a short, mid, and long-term substitute for fossil fuels positively impacts the expected achievement of the SDGs. This positive SDG impact of SAF, the confidence in alternatives such as hydrogen and electric aviation, as well as expected innovation across carbon offsetting practices including carbon capture can work together to secure a sustainable future for aviation.

"Travellers and the business travel community need to invest in SAF and ensure that they're contributing to the decarbonisation of aviation with respect to every flight that they take. Then, we rely on governments and non-governmental organisations creating the regulatory framework and guidance that underlies [SAF]."

AMEXGBT

"SAF is a short-, medium- and long-term sustainable solution. It's here and now and is actively assisting with aviation's decarbonisation today, albeit in small quantities."

Rolls Royce

09

Conclusion

Thank you for reading the latest instalment in the BTA's series of transparency reports that focus on troubleshooting industry issues surrounding SAF.

In March, we released our first ESG report titled "We Can't Do It Alone" and all our research since then has indicated that this is entirely true. Industry-wide cooperation is fundamental if we are going to hit the target of net zero by 2050 and limit global warming. We must cooperate to develop and implement SAF worldwide as a sustainable, long-term, end-to-end solution to aviation's environmental issues across the world.

As TMCs, it is our responsibility to initiate uncomfortable conversations surrounding green aviation and travel. We must encourage our partners and buyers to choose sustainable options, pressure providers to do the best that they can and support one another in the challenge against climate change. Buying flights through government mandated booking platforms that clarify SAF quantities will equip buyers and clients with the information needed to make the most sustainable decision at the point of sale. This will negate harmful journeys while keeping the industry moving. Unless we proactively work together, we cannot make the impact necessary to bring about meaningful change.

We must focus on innovation with urgency if we want to forge a viable path towards green aviation. It is vital that we collaborate, and I invite you to join me in calling on our government to initiate sensible, science based SAF targets and mandates, incentivisation schemes to reduce carbon outputs, and offer grants to boost innovation and implementation.

Together as an industry, we must ensure that the sustainable choice is the cheapest, easiest and first choice that travellers worldwide make. In doing this, the BTA urges airlines to implement braver SAF targets to drive for richer blends of SAF alongside kerosene.

Thank you again to all the SAF providers, airlines, TMCs and government bodies who participated in the research. It is appreciated and gives me hope for a collaborative and sustainable future ahead.

Please share your thoughts and opinions with me. I look forward to hearing from you.

Best wishes,

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10

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11

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