EUROPEAN
BUSINESS AVIATION

SAF SUMMIT

ONLINE EVENT

FAQ

from the Virtual European Business Aviation SAF Summit

Thank you!

Dear participants,

Thank you for being part of the first-ever European Business Aviation Association.
We hope that the summit has provided you with more knowledge about the Sustainable Aviation Fuel Initiative.

As promised, we have collected all the questions that have been asked during the Summit.
Our EBAA Colleague, Bruce Parry, Environment Senior Manager, took the time to answer all of them.
We have organised all the question as a FAQ

We do remind you that a lot of information related to the SAF can be found in the SAF Guide "*Fueling The Future*" that you can downloaded here: https://www.futureofsustainablefuel.com/guide

Do not hesitate to contact us should you have any additional information: events@ebaa.org

#sustainability #SAFNOW

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Question 1

What type of sustainability claims, besides GHG reduction, does business aviation and your customers look for in a SAF? Do you need more information about the role sustainability certifications like RSB play in ensuring SAF sustainability claims?

To be able to claim credit towards regulatory based market-based measures (CORSIA, EU ETS, etc), SAF has to comply with the sustainability criteria as laid out in RED II and CORSIA Eligible fuels requirements.

Question 2

What is the most challenging factor in terms of certification when introducing different fuel types?

AF blending agents must have the same qualities and characteristics as conventional jet fuel in order to substitute and be blended with conventional jet fuel. This is important to ensure that manufacturers do not have to redesign or recertify engines or aircraft, and that fuel suppliers and airports do not have to modify or build new jet fuel supply chain infrastructure and support systems.

Question 3

What should be the role of the governments of Member States to make sure supply is available?

We would like to see some mechanisms in place to incentivise the entire value chain. Although there hasn't been confirmation of this by DG MOVE, it is expected that mandates will become part of the package that will be revealed through the ReFuelEU Aviation initiative, which if used correctly, we believe will incentivise and stimulate the use of SAF.

Question 4

Are there any plans of certification for the production of SAF, to make sure that sustainability is also met during the production of SAF e.g. don't use crop based SAF to avoid competition between SAF and forestry.

The processes and feedstocks used to manufacture SAF today are what's known as second generation, in that they don't use food crops and involve deforestation. Different SAFs also have different sustainability or carbon index scores

depending on the type of feedstock used, the conversion technology and the logistics of the supply chain. I refer you to page 21 of the Business Aviation SAF Guide for further information.

Question 5

How can an FBO be assured from a national /EASA regulatory standpoint that SAF is safe to offer to all aircraft / engine combinations. What are the regulatory references?

I refer you to the FAQ section of the Business Aviation SAF Guide on page 19 to answer this question in its entirety.

Question 6

Would the mandate also fall on foreign aircraft operators and airlines? Are there political implications for this?

In looking at the scope of the (ReFuelEU Aviation) initiative, DG MOVE doesn't think it should be limited to internal flights but should include all flights from European airports.

Question 7

Some EU countries have already brought in or are intending to bring in different SAF blending mandates. Can the Commission ensure the new regulation is applied equally across all EU countries? Otherwise, there is a problem with the level playing field and tankering.

DG Move pointed out that there are six or seven Member States that have mandates already in place but were ready to support and replace their mandates with a single one that would be introduced by the Commission, which would create the "level playing field" that everyone wants to see.

Question 8

With blends being offered between 10 and 50% how can we ensure the customer has evidence when they estimate their off-setting benefits by using SAF ?

Operators will need to refer to their fuel supplier to obtain evidence of SAF use to pass on to the regulating authorities.

Question 9

When is envisaged that the cost of SAF will be the same as JetA1?

That's a very difficult question to answer today, but with increased production planned and (some financial) policy measures, it would economically be expected to come down as supply and demand goes up.

Question 10

Panellists are using many different classifications: synthetic fuel, E-kerosine, e-fuel, and it is confusing. Is all this SAF?

Because SAF is a relatively recently adopted term, some who have been working in this field for a while may also use the terms bio-jet, renewable jet, bio-kerosene, alternative jet, non-conventional jet fuel, etc., or specifically by the several names for the conversion pathways outlined in ASTM D7566 (e.g., HEFA-SPK, or Synthetic Paraffinic Kerosene produced from the Hydro processing of Esters and Fatty Acids). Any SAF compliant with the requirements of ASTM D7566 is recognized as meeting the characteristics of traditional petroleum-based conventional jet fuel approved under ASTM D1655

Question 11

If the feedstock is widely available to meet the demand for SAF, then is the challenge around scaling up production, infrastructure, and policy support despite the fact that manufacturers are saying they are ready and operators are saying they, and their customers, are ready to accept SAFs?

Yes, this is what the Business Aviation SAF Coalition has been working on since it began its activities in 2018 and the purpose of this SAF Summit was to bring together stakeholders from all areas of the value chain to drive this forward. We also anticipate policy assistance from the EU through the ReFuelEU Aviation initiative, which is due to be published in the coming months.

Question 12

How realistic is it to make jet fuels with ethanol with the existing infrastructure? If the suitable infrastructure doesn't exist yet, how long could it take when we will be able to make jet fuels from ethanol on a large scale?

Ethanol is approved as a feedstock for aviation fuel and is certified under ASTM D7566 Annex A5. There is further information explained in the attached Business Aviation SAF Guide on page 24.

Question 13

You are all very active actors in the SAF awareness and development at a European level. Considering the growth of the aviation sector in Asia and other parts of the world, is the enthusiasm for SAF similar everywhere or are there differences? In case of differences, what is currently being done to get everybody on board (besides CORSIA)?

There are plans to manufacture SAF in Singapore and Neste have committed to expand their production facility in Singapore in 2022/23. The SAF Coalition represents business aviation around the world and promote the use of SAF across the globe in.

Question 14

At the moment, mainly CO2 emissions are taken into account in policies, etc. As the emissions will be different with SAF and new/optimised flight paths, are non-CO2 emissions considered in SESAR?

Non-CO2 emissions are being considered more widely in all aspects of aviation. Recently, Eurocontrol held a webinar on the subject and what should be expected in the future. If you didn't see it originally, you can see the webinar here: https://www.eurocontrol.int/event/eurocontrol-stakeholder-forum-aviations-impact-non-co2-emissions

Question 15

Considering the amount of fuel used in aviation, how can the refineries (or any other producers) supply the amount e.g. 20% blend? With the usable land (that is not used for feeding the population) is that even possible?

It is considered that there is enough "feedstock" to satisfy the overall requirements of aviation taking into account the current blending limits, which are currently up to a maximum of 50%.

Question 16

@Filip Cornelis, Happy to hear about the mandate, when and how can we expect it to be implemented? Furthermore, considering the importance of international aviation on GHG emissions, will this mandate cover international flights as well? Finally, how is the new decision of the EC on gas having an important role to guarantee the reliability of electricity supply aligned with the SAF sustainability criteria?

Although Mr Cornelis indicated that there would be a mandate as part of the ReFuelEU Aviation Initiative, he didn't indicate whether this would be applied to international flights. We will have to wait until the outcomes of the initiative are published to understand if they are included.

I'm going to assume that you refer to Power to Liquid (PtL) for this part of your question - it is critical that renewable energy be available and used to enable the full benefits of this type of SAF when it is produced and becomes available..

Question 17

What are the main types of SAF? Are "synthetic" fuels different?

Because SAF is a relatively recently adopted term, some who have been working in this field for a while may also use the terms bio-jet, renewable jet, bio-kerosene, alternative jet, non-conventional jet fuel, etc., or specifically by the several names for the conversion pathways outlined in ASTM D7566 (e.g., HEFA-SPK, or Synthetic Paraffinic Kerosene produced from the Hydro processing of Esters and Fatty Acids).
Any SAF compliant with the requirements of ASTM D7566 is recognized as meeting the characteristics of traditional petroleum-based conventional jet fuel approved under ASTM D1655

Question 18

Are there any benefits of using SAF in terms of fuel efficiency? Or is there no difference between traditional jet fuel and SAF in this case?

Although this would need to be confirmed, there is evidence that SAF has a slightly higher calorific value than kerosene, so could contribute to slightly better fuel economy.

Question 19

In strictly commercial point of view using SAF mainly benefits in lower emission charges? or there is any other, besides environmental causes, incentive for jet fuel users?

There are incentives within the regulatory schemes (CORSIA, EU ETS, etc) for credits against the obligations of the scheme's charges.

Question 20

What are the prospects for the development of biofuel propulsion in aircraft universally? What does the certification look like? What criteria must be met in order to be able to refuel your aircraft fleet with only biofuel??

This is the reason that business aviation formed the SAF Coalition, to educate and encourage the use of SAF universally. Information on certification criteria can be found in the SAF Coalition Guide from page 19. It isn't currently possible to have you entire fuel supply as SAF, as there are currently blending limits up to a maximum of 50%.

Question 21

Could the panellists please offer an honest comparison of the current prices of "ordinary" Jet Fuel and "Sustainable Jet Fuel" (being sure to indicate the % blend)?

It isn't currently possible to do this accurately given the differing levels of feedstock, availability and blending level. If you are a potential purchaser, we would recommend that you speak directly to your fuel supplier.

Question 22

My understanding is that the GHG Protocol does not currently account for SAF as a reduction. Is it that CORSIA is allowing SAF in reporting already at this time?

CORSIA does allow credit against its offset obligations, but SAF users applying for credit will need certification of the overall GHG reductions from the blend and type of feedstock used in the SAF. When reporting corporate GHG outputs, there is reason why the use of SAF can't be included in reporting as an overall reduction mechanism for corporate emissions.

Question 23

In your opinion will it be possible to harmonize the EU-RED sustainability criteria and certification schemes for renewable aviation fuels with the ICAO-CORSIA's ones? And the same for list of eligible materials for SAFs?

The ideal situation would be that the differing criteria be joined together and less burdensome to deal with, given that they are attached to two different schemes from two different regulatory regimes.

Question 24

How do we see targeted investment mechanisms supporting SAF and who would the key players be ?

We would need to seek advice from the financial sector on where they think those key players would come from, progressive innovation funding and so on.

Question 25

Is there one SAF pathway that the panellists are in favour of?

The two main feedstocks that seem to be the most popular are the municipal waste and waste cooking oil.

Question 26

The statement that SAF produces up to 80% less CO2 over its lifecycle, compared to jet fuel is vague. What more can be done to educate business aviation aircraft owners and customers on the benefits of replacing Jet A1 with SAF?

Thank you for this viewpoint. The business aviation SAF Coalition has produced its SAF Guide to help wider understanding on SAF and its use. The 80% refers to "neat" SAF, prior to its blending and I refer you to page 6 of the attached SAF Guide to specifically clarify where the CO2 savings are made.

Question 27

For Airbus is it possible to argue airlines to get supplied with SAF powered engine during new ordering?

Both Gulfstream and Bombardier deliver all their aircraft with a blend of SAF.

Question 28

Would airlines and regulators consider sourcing sustainable biofuel on a book and claim basis? compliance units could be surrendered from the road transport fuel market from our database www.bioledger.io which tracks used cooking oil and other feedstocks from point of origin along the road transport fuel supply chain

This is something that the industry is considering and working on. Members of the SAF Coalition are engaged with CoSAFA - the Council on Sustainable Aviation Fuel Accounting, which recently published a press release on its activities, which I have attached for your information. We believe that B&C is critical to the expansion of use, particularly in business aviation, where the airport network used is wider than that of commercial aviation.

Question 29

Where we can get the green hydrogen as SAF pathways will demand, at scale and within budget, so supply chain can build for the future?

I take it that you are talking about the development of "power to liquid (PtL)" as a future feedstock for SAF? It is critical that hydrogen is derived using renewable energy to enable the full benefit of emissions reductions. We are hoping that the ReFuelEU Aviation Initiative addresses this issue so that it can be introduced and scaled at a meaningful rate.

Question 30

Avinor and the Norwegian civil aviation administration have set out objectives including the initial operation of domestic scheduled services using electric aircraft by 2030, and the complete transition to electric aircraft on such routes by 2040. Why does European Business Aviation, which can replace a significant number of smaller craft, a fleet of which could be used for shorter haul flights, not step in with bolder goals, especially in areas where GA could be the leader in decarbonization of aviation?

As you may be aware, the business aviation sector has its own commitment on climate change, which is currently under review and will consider the introduction of smaller aircraft that are powered by battery and will therefore be part of its overall commitment going forward.

Question 31

What is the definition of "life cycle" when calculating the percentage of CO2 emission reduction?

I refer you to page 6 of the attached Business Aviation SAF guide to answer your question.

Question 32

Where can we find a table with the percentages of the blended mandates in order to have a clear vision of what we are talking about ?

These have not been published yet by the EU yet but expected in the coming months as a result of the publication of the ReFuelEU Aviation Initiative.

Question 33

Have we inquired from flight crews— pilots and technicians (opinions/views) whether SAF impacts engines operation and flight performance? I understand manufacturer have conducted separate research...etc. Has flight crew weighted in?

Extensive trials were conducted by the manufacturers of airframes and engines as part of the certification of SAF for use in aviation. Although this would need to be confirmed, there is evidence from flight departments that SAF has a slightly higher calorific value than kerosene, so could contribute to slightly better fuel economy.

Question 34

Are there any standards available on SAF fuel properties? if yes which they are?

I refer you to the Business Aviation SAF guide (starting on page 20), which details the technical specifications and certification requirements for the use of SAF.

Question 35

How will SAF be considered regarding CO2 taxes? Several E.U. countries are drafting regulations imposing taxes on business aviation based on distance flown, would you be exempt if using SAF?

SAF is only considered against the EU ETS and its obligations, where operators can apply emissions reductions that SAF delivers to the scheme. SAF is not considered against taxes unfortunately.

Question 36

What are the results of biocide growth in wing fuel tanks using SAF compared to traditional jet fuel?

There is no evidence that SAF blends exacerbate microbial growth in fuel tanks. The front end of the SAF refining process is adapted for the feedstock (to access the hydrocarbons via deconstruction and conversion), while the rest of the process produces physical fuel molecules that are pure hydrocarbons. I refer you to page 20 of the Business Aviation SAF Guide for further information.

Question 37

By using of SAF we speak of a reduction of the Co2 output. So if we burn SAF, which equals to JetA1 by somewhat of 99.9% from chemical perspective, why can we speak of a Co2 reduction of 80% ? How can this be achieved ? Thanks for enlightening me as I did not get this point.

The CO2 reductions that SAF are able to achieve are captured during the refining, feedstock use, distribution and processing prior to blending. I refer you to page 20 of the Business Aviation SAF Guide for further information.

Question 38

Can we address also the EU's upcoming ReFuel EU proposal, aimed at cutting emissions in the aviation sector.

This was discussed during the second panel of the SAF Summit, which you can revisit here: https://www.youtube.com/watch?v=cg_nUkp2aIE

Question 39

How did we get from a 30/70 blend of SAF /Jet A with an 18% reduction on emissions a year ago during initial discussions on SAF to a current potential of 50/50 blend with an 80% reduction on CO2 emissions?

The blend can range from zero to 50%, which is the maximum allowed under certification rules and the blend comes from the blend of SAF and its feedstock made available by the fueller. I refer you to page 24 of the Business Aviation SAF Guide (Attached) for any further information.

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