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Inside SAF ambitionâ??reality gap: Aetherâ??s Alyssa Norris on tech, feedstocks and capital needed for real scale

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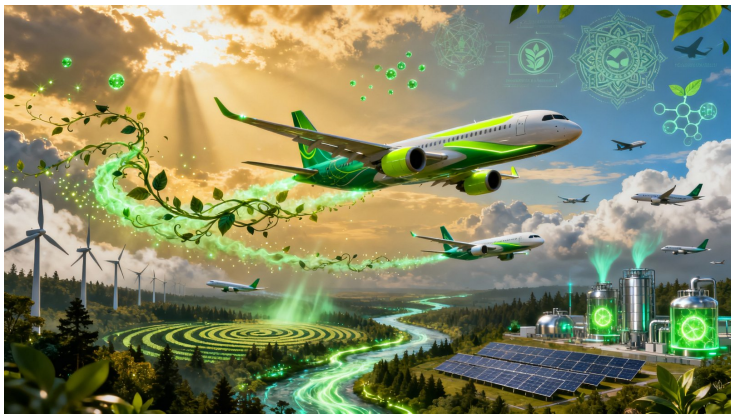
In this exclusive AgroSpectrum interview, Alyssa Norris, Director of Sustainability at Aether Fuels, dissects the widening ambitionâ??reality gap in the U.S. SAF Grand Challenge, noting that next-generation pathways beyond HEFA â?? including Aetherâ??s own Aurora technology â?? will determine whether the 2030 target can still be met. She argues that the real feedstock battleground is shifting toward waste-carbon streams and electrofuels, where sustainability hinges on rigorous chain-of-custody systems that avoid land-use conflict entirely.



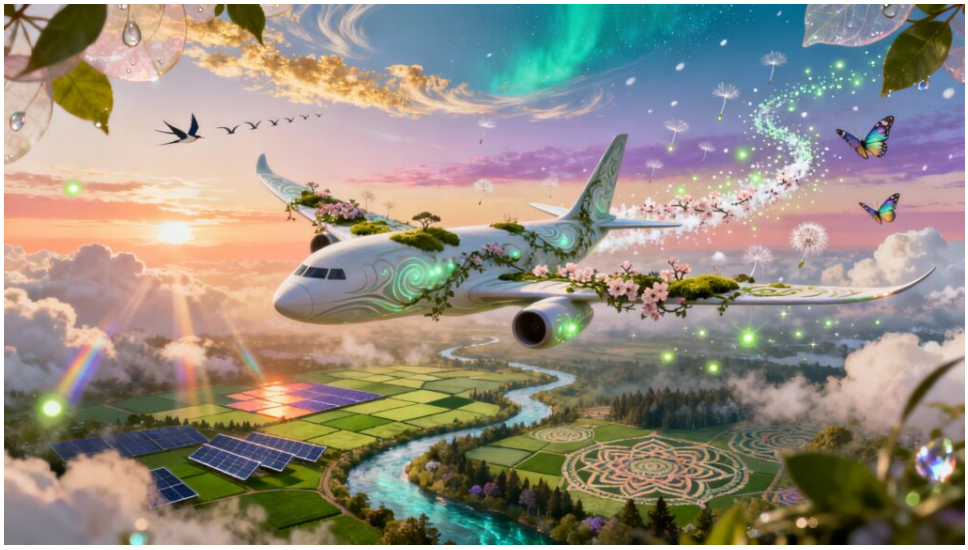
In this exclusive AgroSpectrum interview, Alyssa Norris, Director of Sustainability at Aether Fuels, dissects the widening ambitionâ??reality gap in the U.S. SAF Grand Challenge, noting that next-generation pathways beyond HEFA â?? including Aetherâ??s own Aurora technology â?? will determine whether the 2030 target can still be met. She argues that the real feedstock battleground is shifting toward waste-carbon streams and electrofuels, where sustainability hinges on rigorous chain-of-custody systems that avoid land-use conflict entirely.

Alyssa highlights how airlines are experimenting with new financial instruments, venture funds, and consumer-facing incentives to shoulder SAFâ??s green premium and expand demand in non-mandated markets. On infrastructure, she warns

that storage and blending constraintsâ??more than chemistryâ??are the immediate choke points, making regional clustering only a partial solution to highly localized bottlenecks. Looking ahead to 2040, Alyssa says SAFâ??s share of U.S. jet fuel will depend on breakthroughs in feedstock flexibility, robust policy support, and private-sector capital flows that can accelerate scale and close the current ambitionâ??reality divide.

I. Scene-Setting: Industry Momentum vs Reality

Alyssa, the U.S. SAF Grand Challenge targets 3 billion gallons by 2030. From Aetherâ??s vantage point, does the current pipeline of projects support that scale â?? or is there a widening ambitionâ??reality gap?



Itâ??s an ambitious goal at this point â?? 2030 is coming up quickly, and thereâ??s still a gap we need to address.

Projects moving beyond HEFA are what will make scale possible. HEFA simply isnâ??t a realistic process for scaling SAF to the volumes we need. As new technologies, like Aether Aurora, come online and the first commercial plants prove the technology is efficient, we can expect a catch-up that will happen very swiftly.

The deadline is tight, but with the next generation of projects for production, we have a chance to still meet the 3 billion gallons target and close the gap quickly.

II. Feedstock Futures: Who Wins the Supply War

Lipids dominate SAF today, but availability caps are unavoidable. Where do you see the most scalable alternatives emerging â?? ethanol, woody biomass, MSW, algae, or COâ??-derived fuels?

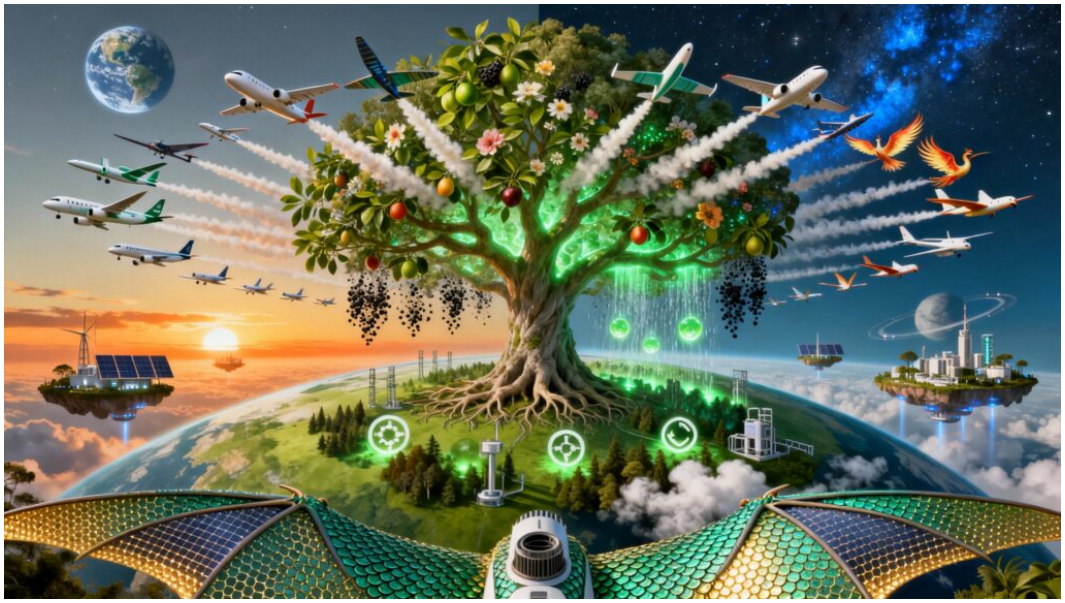
Yes, lipids dominate SAF today, but there is a lot of potential in waste carbon as feedstock - industrial waste gas, biogas, and in the near future biomass waste with gasification, like agriculture residue, biomass or MSW.

CO2-derived fuels and ethanol are both progressing quickly â?? LanzaJet is now producing from ethanol, which is driving momentum, and the technology is there for CO2-derived fuels, however hydrogen and renewable energy costs will need to come down in order to be cost-effective. Algae may have potential, but it needs more development before it can be a truly viable and scalable alternative.

Aether is focused on electrofuels and carbon-recycled pathways. How do you ensure feedstock sustainability and avoid land-use conflicts?

Our feedstocks come from waste-carbon only, so they donâ??t compete with food or feed in any way. We avoid land-use conflicts by only using the waste products â?? not anything that would have any competition with food, feed, or other commercial uses, and following a robust feedstock chain of custody review.

III. Airlines + Corporates: Who Pays for SAFâ??s Green Premium



Airlines currently pay 2â??4x the cost of conventional jet fuel. How are they hedging that exposure today â?? and what innovative financing instruments (book-and-claim, SAF certificates, ESG-linked offtakes) are emerging?

Some airlines are investing in SAF in creative ways. JetBlue, one of Aetherâ??s investors, has its own fund for SAF investment, now known as Sky VC , and several other airlines have similar funds to invest in SAF in different ways.

Airlines are also working very hard to partner with commercial clients who are driving SAF adoption in non-mandated markets. Much of this happens through book-and-claim systems or SAF certificates, which can help spread the cost and create more flexible financing.

Airlines are also investing money and time into education to teach their consumers about SAF and encourage support.

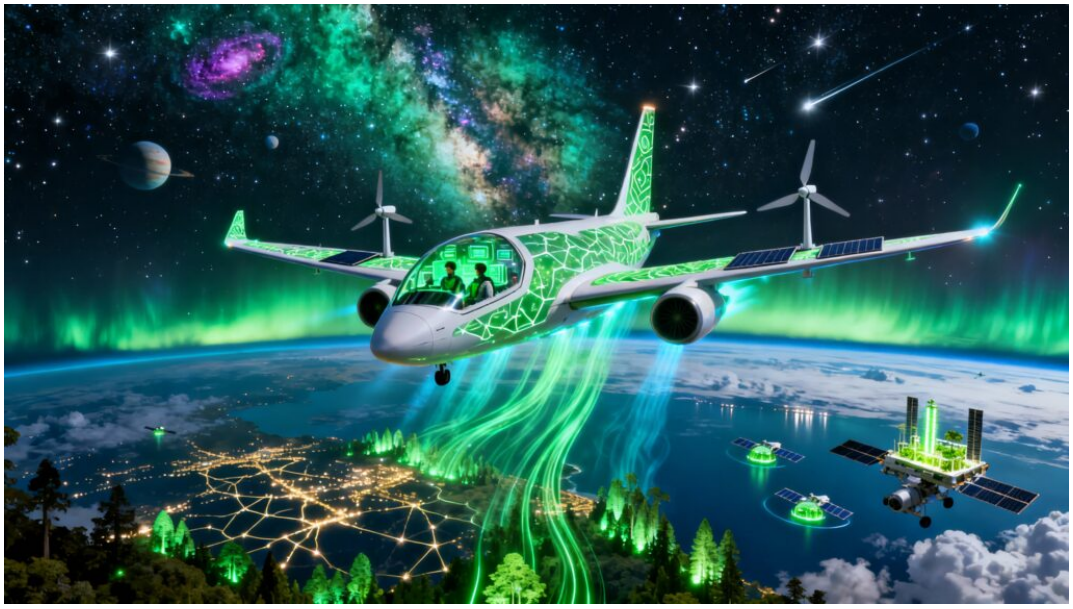
Could differentiated branding â?? â??climate neutral class,â? for instance â?? unlock a consumer-led SAF market?

Yes, there is a real possibility here. For example, some airlines are discussing and testing consumer incentives such as if you pay for a flight fueled by SAF, you can get upgraded to a different boarding class.

If consumers feel like they are getting direct value from sustainable options, they will choose them.

IV. Infrastructure & Deployment

We talk a lot about feedstocks and chemistry, but infrastructure may be the real bottleneck. What elements of the U.S. fuel system require the fastest upgrades â?? blending hubs, pipelines, storage, certification? Is regional clustering â?? such as Gulf Coast and Pacific Northwest hub models â?? a viable pathway to early scale?



Depending on which airport youâ??re sending SAF to, there are different challenges. Storage is one of the most challenging element right now, as some airports are really tight on storage space and have nowhere to store the fuel.

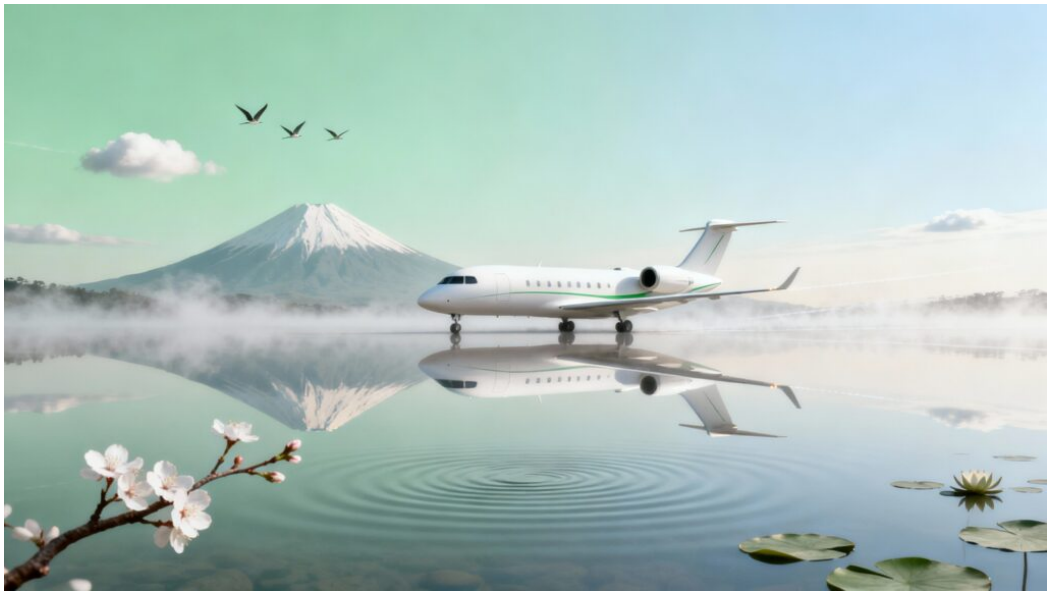
Blending is also a challenge, but as SAF becomes more of a reality, the industry is actively working on addressing these issues.

Regional clustering can be helpful, but most situations and challenges need to be addressed on a local level, depending on each region's specific constraints.

V. Strategic Outlook

Looking out to 2040, what percentage of U.S. jet fuel demand do you believe SAF can realistically meet â?? and what breakthroughs are non-negotiable to get there?

Itâ??s hard to say a specific percentage at this time. However, we will need breakthroughs in feedstock flexibility or to further unlock readily abundant feedstock. In order to scale production, we also need the proper infrastructure to scale.



If you had one policy lever and one private-sector lever to pull in 2025, what would they be to close the ambitionâ??reality gap?

On the policy side, I would love to see continued support at both the local, regional and federal levels for sustainable fuels, and a stronger focus on energy dependence â?? which should include fuels like SAF.

For Aether, private-sector investment is crucial, so I hope for continued investment in emerging and scaling technologies from the private-sector. We also need more education for corporations on the benefits of sustainability transparency.

--- Suchetana Choudhury (suchetana.choudhuri@agrospectrumindia.com)