



A Note from the Executive Director

This CAAFI Quarterly newsletter describes the CAAFI activities that occurred January through March 2023. In this issue, we share industry updates and CAAFI team accomplishments.

We appreciate questions, comments, and suggestions at any time. Enjoy!

Steve Csonka and the CAAFI Team

Quick Links

- ⇒ Check out “[What’s New](#)” for a brief review of noteworthy SAF news from the last quarter, including funding opportunities.
- ⇒ Go to “[Ask CAAFI](#)”, a segment that highlights and explains relevant topics that impact the SAF industry.
- ⇒ Get updates regarding the “[SAF Grand Challenge](#)”.
- ⇒ Go to “[CAAFI Webinars](#)”, a segment that highlights and links to webinars that occurred during this period.
- ⇒ See “[CAAFI Team Highlights](#)” for a snapshot of CAAFI work teams’ projects and progress last quarter.
- ⇒ Jump to “[SAF State and Regional Efforts](#)” for a summary of select deployment projects around the United States.

Upcoming

- ⇒ [aireg Biennial International SAF Conference](#), May 4-5, Berlin, Germany
- ⇒ FAA ASCENT Project 93 (Collaborative Research Network for Global SAF Supply Chain Development) activities, targeting 8 countries in Africa, SE Asia and LAC:
 - Engagement with National Biofuels Federation of Colombia (Fedebiocombustibles) at their IV International Biofuels Conference to be held on April 26-28, Cali, **Colombia**.
 - USTDA and FAA SAF Workshop, May 22-25, Bangkok, **Thailand**.
- ⇒ CAAFI Webinars:
 - USDA ARS SAF-related Feedstock Work, May 10
 - Bioenergy Research Centers update, Jun tbd

- ⇒ [National SAF Conference & Expo](#), Aug 29-30, Minneapolis – now accepting abstracts.
- ⇒ [CAAFI SAF-focused Virtual Event, June 15-16](#). Please save the date for June 15 and 16, 10 am – 2:30 pm U.S. Eastern time, during which we’ll be discussing the path to achieving the SAF Grand Challenge goals in 2030 and 2050.
- ⇒ The next round of [NIFA/AFRI SAS](#) CAPS are now open for application, with letters of intent due April 13, 2023. See the SAF Grand Challenge Section below for additional announcements.

What’s New?

We continue to see significant offtake and commercialization announcements, as well as engagement from new producers.

[UK Clearing House to launch at University of Sheffield](#), adding to the coordinated evaluation of new synthetic aviation turbine fuels for aviation industry qualification.

[Air bp Began Producing SAF in Spain](#)

[Finnair Purchased SAF for Flights Out of Helsinki Airport](#)

[NREL Releases Report on Regional Analysis of Airports to Develop Tailored SAF Strategies](#)

[Montana Renewables to Begin SAF Production in April 2023](#)

[GAO Recommended Federal Agencies Track Progress Toward SAF Goals](#)

[DOE Renews Funding for Existing Bioenergy Research Centers](#)

[American Airlines Sign MOU with Yield10 to Support Development of SAF Feedstocks](#)

[U.S. Air Force Invests in Air Company to Develop Technology to Produce SAF](#)

[United Teams with Sesame Street to Explain SAF](#)

[United Announces More Than \\$100M SAF Investment Fund](#)

[DHL Launches Service Using SAF to Transport Goods](#)

[Diamond Green Diesel Port Arthur Plant Approves SAF Project](#)

[Gevo Partners with Summit Carbon Solutions Pipeline Project](#)

[United's Joint Venture Expected to Produce SAF to Fuel 50,000 Flights a Year](#)

[U.S. DOE Funds Accelerating Domestic Biofuel Production Including SAF](#)

[Raven SR to Supply Japan Airlines with SAF](#)

The above are some of the activities that took place in Q1, but many more can be found (e.g. [Biofuels Digest](#), [Biofuels International](#), [GreenAir Online](#), [SAF Magazine](#), etc.).

One final news item to report is that as of Mar 24, 2023, Jim Hileman, previous Chief Scientific and Technical Advisor at the FAA's Office of Environment and Energy, has left his role at FAA, deciding to take on some new challenges in the private sector. We should be hearing more from him over the coming weeks as he will continue to be engaged in the world of SAF. Jim has been involved in the work of PARTNER/ASCENT since 2006, and was in the Chief S&TA role since 2011. His leadership, depth of knowledge, and personality will be sorely missed, and we wish him well in his new activities. FAA is working on finding a replacement. Jim's role as Co-Rapporteur of the Fuels Task Group at ICAO will be filled by FAA AEE's Anna Oldani. Fabio Grandi is providing interim support for the work of ASCENT.

Ask CAAFI

Question: What does CAAFI and industry engagement look like going forward?

Answer: While the SAF Grand Challenge (GC) is targeted at how the federal agencies can create the foundation for success in achieving SAF production goals, the actual execution resides with industry. However, success is likely predicated on this public-private partnership

working in collaboration and harmony. CAAFI is in the process of working with the agencies and the industry to define and execute such an integrated execution approach:

- methods for robust stakeholder engagement
- an integrated set of annual meetings, likely aligned with the 6 Action Areas of the SAF GC, in collaboration with commercial media and conference entities
- SAF GC Action Areas teams, replacing/augmenting CAAFI's previous work-team structure
- SAF projections, tracking and reporting mechanisms

Stay tuned for more details. This is a significant task and will likely take a while for us to find the right balance.

SAF Grand Challenge

Congratulations to the Sustainable Aviation Fuel Grand Challenge team! On January 24, 2023, the SAF GC team, composed of federal employees from several government agencies, contractors, and national laboratory employees, was honored to receive the U.S. Department of Energy (DOE) 2022 Secretary of Energy Achievement Award!

The agencies participating in the SAF GC are currently involved in multiple roll-out activities, e.g.:

- ⇒ Inventory analysis of existing funded programs and how such efforts can be folded into SAF GC efforts or form the basis for execution of SAF GC tasks. Various of the action areas will likely be executed by Interagency Working Groups.

The [SAF Grand Challenge website](#) has been launched.

SAF GC funding will likely be allocated to a broad group of activities that contribute to the roadmap execution, as demonstrated by the following examples already in execution:

- ⇒ DOE Award: [\\$118 Million to Accelerate Domestic Biofuel Production](#)
- ⇒ DOE Award: [\\$590M to its four existing Bioenergy Research Centers](#). The BRC's all have elements of SAF R&DDD, as well as a mandate to collaborate with one another on such work.

- ⇒ DOE RFA: The 2023 [Waste-to-Energy Technical Assistance](#) applications are being accepted through April 14, 2023.
- ⇒ DOE [Agile BioFoundry NOFO](#): Feasibility submissions are due April 21, 2023
- ⇒ DOE [2023 Conversion Research and Development \(R&D\) funding opportunity announcement](#) FOA: Concept papers due April 21, 2023

CAAFI Webinars

- ⇒ [Sustainable Aviation Fuels \(SAF\) Grand Challenge Roadmap: Progress Update - Webinar Recording](#)
- ⇒ [Regional Projects: Accelerating SAF Project and Supply Chain Development through Rural Business Development Grants and Bioeconomy Development Opportunity Zones - Webinar Recording](#)
- ⇒ [SAF R&D at Sandia National Laboratories - Webinar Recording](#)
- ⇒ [Overview and Update of ASCENT's SAF Research](#)
- ⇒ [Enabling Renewable Energy Through Synthetic Biology - Webinar Recording](#)

CAAFI Team Highlights

Business —

New producers, new suppliers, new customers, and many adjacent participants continue to contact us for guidance and assistance (now on a weekly basis) or asking for introductions to others who can assist with their commercialization efforts. We are very pleased to see this continued level of engagement from the previous quarter, and to help many! We would like to remind any producer of this available resource document: [Guidance for Selling Alternative Fuels to Airlines](#). Additional tools can be found [here](#).

Certification/Qualification —

The work of the Cert/Qual team is aligned with the activities of ASTM's aviation fuel subcommittee, the [Aviation Technical Committee of the Coordinating Research Council \(CRC\)](#), and the now completed National Jet Fuel Combustion Program. It is also supported by periodic OEM meetings in the US and UK and various ASCENT projects. The qualification process is described in a recently issued paper "[Qualification of Alternative Jet Fuels](#)". This paper may be found at the

Frontiers in Energy Research Sustainable Aviation Fuels "Research Topic."

The summer meeting of the ASTM Aviation Fuels subcommittee will be held in Denver from 26-29 June. There is expected to be a lot of activity with the closing of ballots to add Swedish Biofuels ATJ-SKA and Global BioEnergies isobutene-derived ATJ-SPK to D7566, and due to other initiatives relating to co-processing and new, emerging pathways such as Methanol to Jet.

ASTM D4054 updates include:

- ⇒ Swedish Biofuels submitted their subcommittee ballot to add their ATJ-SKA pathway as a new annex to D7566. The ballot just closed on April 5 and Swedish Biofuels is now addressing the negative votes and comments they received.
- ⇒ Global BioEnergies submitted their subcommittee ballot to add their ATJ-SPK isobutene-derived pathway to Annex A5 of D7566. The ballot just closed on April 5 and Global BioEnergies is now addressing the negative votes and comments they received.
- ⇒ The concurrent committee/subcommittee ballot for co-processing of hydroprocessed biomass closed on April 5. ExxonMobil is now in process of addressing the negative votes in an effort to advance this ballot to issuance.
- ⇒ The Methanol to Jet ASTM task force has been established and held their first virtual meeting on February 23 to coordinate production of test samples for testing at the D4054 Clearinghouse. The task force is also planning to meet in person at the ASTM meeting in Denver on Tuesday, June 27.
- ⇒ The recent interest in unblended, or 100% SAF has reenergized the Virent SAK D4054 effort. Virent SAK is a pure aromatic stream that when blended with other SPKs such as FT or HEFA will result in a fully formulated fuel. Virent is nearing completion of a final round of testing and expects to ballot a new D7566 annex later this year.
- ⇒ OMV Downstream GmbH has formed an ASTM task group to coordinate the development of a D7566 annex and D4054 Fast Track testing of fuel samples from their plastics to jet pathway. Testing is currently in process with the FAA/ASCENT Clearinghouse.

- ⇒ Shell IH2: Shell has finalized their D4054 Tier 3 & 4 test plan with the OEMs and is now working with the OEMs to identify test facilities. Shell is also working on scaling up production to supply the necessary quantities of test fuel to conduct the testing.
- ⇒ CSIR – Indian Institute of Petroleum has completed an initial round of testing at the FAA/ASCENT D4054 Clearinghouse but more testing will be required. A new fuel sample has been submitted for additional Tier 1 and 2 fuel property testing.
- ⇒ Topsoe is working to enable the aviation/ASTM D02.J0 community to evaluate the modest level of aromatic content in their HEFA-SPK conversion technology suite that exceeds the current levels allowed in D7566 Annex A2.

An ASTM task force is continuing its work to develop specification criteria for an unblended (or 100%) alternative jet fuel. A research report providing supporting technical data is being developed by GE and that report along with the proposed revisions to D7566 will be submitted to the OEM team and the ASTM task group members for review. It is expected that the review and continued editing will take some time before the draft D7566 specification revisions are ready for balloting to the ASTM aviation fuel subcommittee.

We continued to see increased engagement from petroleum refiners and suppliers who are interested in increasing the types and maximum blend levels for SAF co-processing at existing refinery installations. Task forces have been established to develop specification criteria for **co-processing of pyrolysis oil derived from discarded tires**, and to increase the current approved 5% limit on **co-processing of lipids feedstock to 30%**. Note that these specification provisions will be incorporated into the ASTM D1655 conventional jet fuel specification upon approval.

If you have interest in seeing new pathway approval, or simply getting more engaged in the qualification efforts, consider joining ASTM D02 and participating in its activities. The next meeting will be held in Denver, CO on 26-29 June'23.

Sustainability —

Most of the effort and focus of the Sustainability team continued to support deliberations of ICAO and its work on CORSIA.

- ⇒ Continued participation in the LCA, sustainability and alternative fuels tracking work in the ICAO CAEP Fuels Task Group (FTG), Working Group 4 (CORSIA), and Sustainability Certification Scheme Evaluation Group (SCSEG).

- ⇒ ICAO's most recent [set of sustainability criteria](#) covers the pilot and voluntary phases, and includes carbon capture and sequestration and to address fossil-based lower carbon aviation fuels (LCAF) as well as SAF.

R&D —

- ⇒ The R&D team continues to support the execution of CAAFI's webinar series and coordinates with the CAAFI leadership and certification/qualification teams regarding emerging companies and fuel qualification.

- ⇒ Reach out to [Josh Heyne](#) on CAAFI's R&D team if you have interest in new SAF candidate [pre-screening efforts](#).

State and Regional Projects

CAAFI principals continue to participate in and foster regional development activity, on feedstocks, supply chain analysis & establishment, and with various entities. Stay tuned for an update from ASCENT (likely Q4 CAAFI Webinar) on ways that they can work with customers to provide keys insights and analysis.

Previously outlined supply chain building efforts continue in FL and VA.

Multiple activities are ongoing in WA state, reflecting the continued building of momentum on SAF that comes from collaboration between exploratory working groups, interested policy makers, academia and industry. Stay tuned for further updates.

The Mid-Atlantic Sustainable Biomass (MASBio) project held their quarterly All Hands meeting to discuss the current status of their various projects. Additionally, there was a discussion about their annual meeting which will be held on September 11-13 in State College, PA. MASBio is a USDA NIFA AFRI Coordinated Agricultural Project (CAP) grant project.

Discussions are starting soon with the Palmetto Clean Fuels Coalition, CAAFI, and Green Energy Biofuel of South Carolina to develop a plan of action for attracting more advanced biofuel activities (including SAF) to

South Carolina. The Palmetto Clean Fuels Coalition (PCF) is part of the U.S. Department of Energy's Clean Cities program and is the designated coalition for South Carolina. Clean Cities is a grassroots, locally based, voluntary public/private partnership coordinated by the US Department of Energy that expands the use of alternatives to gasoline and diesel fuel. The goal of the Clean Cities program is to promote energy use in the transportation sector that is clean, safe, less dependent upon foreign sources, and sustainable.

If you are aware of other scenarios that could be appropriate for a regional development effort, please let us know. For more information, see CAAFI's [State Initiatives](#) page.

Please check the [CAAFI website](#) on a regular basis for more detail on pending activities.

Email peter.herziq@dot.gov with any ideas for CAAFI Quarterly items of interest, caafi.org news suggestions, or inquiries about subscription to the CAAFI Membership group.