

This CAAFI Quarterly newsletter describes the CAAFI activities that occurred October through December 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*

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## A Note from the Executive Director

**Celebrating Chris Tindal:** It is with mixed emotions that we highlight that Chris Tindal, our good friend and colleague, has retired from his role as CAAFI's Assistant Director, effective at the end of 2023. Chris worked for CAAFI for nearly 6 years following his retirement from a 40 year career in the Navy. In his last role with the Navy, Chris was the Director for Operational Energy underneath the Deputy Assistant Secretary of Navy for Energy, where he facilitated setting energy policy and direction for the Department of the Navy and promoting the adoption of alternative fuels and renewable energy resources. He also had a lead role in execution of the Great Green Fleet deployment in 2016. Chris will continue to be engaged in various SAF development activities in the U.S. and abroad, and will continue to liaise with CAAFI via our Steering Group and State Initiative efforts. We wish him the best as he recalibrates to a retirement-appropriate work-life balance that includes plenty of sailing. Thanks Chris.

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## Quick Links

- ⇒ [CAAFI is looking to hire!](#)
  - ⇒ 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.
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## Upcoming

- ⇒ CAAFI Webinars:
  - [SAF Repository at Paine Field, Jan 30, from 1-2p EST.](#)
- ⇒ Greater MSP SAF Hub [webinar](#), in conjunction with UT and ASCENT, Jan 31.
- ⇒ CAAFI / Airline Industry engagements at:
  - [RSB Innovations Meeting](#), Feb 07, Cincinnati, OH.
  - [USDA Annual Agricultural Outlook Forum](#), Feb 15-16, Arlington, VA and Virtual.
  - [International Biomass Conference & Expo](#), Mar 04-06, Richmond, VA.
  - [CFAA Clean Fuels Conference](#), Mar 05-08, Fort Worth, TX.
  - [CFAA 2024 Sustainability Workshop](#), Mar 11-13, Kansas City, MO.
  - [ABLC](#), Mar 13-15, Washington, D.C.
  - [NREL Sustainable Aviation Conference](#), Apr 01-03, Dallas, TX.
- ⇒ Be prepared for two announcements of significance related to R&D funding opportunities for feedstock development;

- USDA NIFA AFRI SAS RFA is expected to be released in the next month. It will likely be very similar to [last year's RFA](#) (likely 10 five-year projects at \$10M each), with perhaps some language tweaks that reinforce projects targeting SAF. Both CAAFI and USDA staff are available to discuss opportunities and project ideas – please reach out if you're interested in connecting on this topic.
- Replying to this [DOE NOI](#) to get on the [Teaming Partner List](#) for the pending FOA.

### CAAFI is looking to hire new personnel!

Further to the previous announcement about Chris Tindal's retirement, and as we pre-announced in 2Q of 2023, we are now in the process of adding CAAFI resources to help address the expanding scope of SAF development. We're seeking thought leaders who will further foster the development and commercialization of SAF, and ultimately help the entire U.S. aviation industry, government, and public meet the goals of the SAF Grand Challenge. On 22 Jan, 2024, everyone receiving this newsletter also received an email announcement of the job postings for one CAAFI Assistant Director (AD), and up to two Project Directors (PD). The role on which we are most focused at present is the AD role. The PD roles have similar knowledge requirements but will be more focused on specific project/task management and execution, and thus have less stringent expectations for industry experience.

If you have interest in positioning yourself with us as we work to finalize our specific experience requirements, qualifications, and responsibilities, please reach out to [info@caafi.org](mailto:info@caafi.org) with your interest and resume. Your inquiries will be treated confidentially.

### What's New?

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

[Azure Announces Plans for SAF Facility in Kansas](#)

[U.S. DOE Announced Intent to Fund R&D for Low Carbon, Purpose Grown Energy Crops](#)

[British Columbia Enacts First SAF Mandate in North America](#)

[GE Completes SAF Testing on 10<sup>th</sup> Aircraft Engine Model](#)

[U.S. Department of Treasury and IRS Released Guidance on the SAF Credit Established in the IRA](#)

[UK's First Ever DAC to SAF Facility Operational](#)

[Infinium Receives Investment Commitment for PtL eFuels Facility](#)

[American Airlines Paying to Sequester Carbon](#)

[ICAO Members Agree to 5% CO2 Emissions Reduction](#)

[Gulfstream Completed Trans-Atlantic Flight on 100% SAF](#)

[Virgin Atlantic Flies First Commercial Trans-Atlantic Flight on SAF](#)

[Neste Aims to Ramp Up SAF Production Capacity](#)

[ICCT Study Examines Feasibility of SAF Grand Challenge Targets](#)

[PETRONAS and Idemitsu Sign MOU to Accelerate SAF Development](#)

[Indonesia's Pertamina Developing SAF](#)

[Garuda Indonesia Completes Test Flight with SAF Derived from Palm Oil](#)

[World Energy and Microsoft Announced Long-term Agreement for the Purchase of SAF Certificates](#)

[Emirates Signs SAF Deal with Shell](#)

[Air Company Demonstration Facility Under Construction](#)

*The above are just some of the activities that took place in Q3, but many more can be found (e.g. [SAF Magazine](#), [Biofuels Digest](#), [Biofuels International](#), [GreenAir Online](#), etc.).*

### Ask CAAFI

**Question:** What are CAAFI's priorities in 2024?

**Answer:** At the end of each year, the CAAFI Leadership team prioritizes CAAFI activities for the coming year.

We base this on feedback from the CAAFI Steering Group and membership, informal feedback from industry and partners, and on our own observations about challenges and needs in the marketplace. Based on this input, at a high level, CAAFI's goals and priorities regarding sustainable aviation fuels (SAF) remain similar to previous years, more details of which can be found [here](#). They are:

- **Reinforcement of the Value Proposition of SAF**
- **Enhancement of the SAF Fuel Qualification Approach**
- **Alignment of Efforts to Enable Commercial SAF Deployment**
- **Implementing and Sharing Best Practices**
- **Supporting the Implementation of the SAF Grand Challenge Roadmap**

The [Sustainable Aviation Fuel \(SAF\) Grand Challenge Roadmap](#), released by multiple agencies of the U.S. Government, lays out the current state and future research, analysis, commercial, and policy needs to reach the SAF Grand Challenge Goals of three billion gallons of SAF per year by 2030 and full replacement of petroleum-based jet by 2050. In light of this effort, CAAFI will continue to undertake activities supporting these targets in 2024.

### SAF Grand Challenge (SAFGC) Update

In addition to the aforementioned DOE RFI, and the FAA NOFO, the agencies participating in the SAFGC are currently involved in multiple activities, e.g.:

- ⇒ The work on Inventory and gaps analysis of existing funded programs and how such efforts can be folded into SAFGC efforts or form the basis for execution of SAF GC tasks, is completed. This work will be summarized in a SAF Roadmap Implementation Framework Report targeted for publication in early 2024, as will a Biomass Supply Chain plan, and the awaited update of the Billion Ton study.
- ⇒ SAFGC progress report summarizing the progress under the 6 action areas in development and anticipated to be published in early 2024
- ⇒ SAFGC metrics tracking plan in development

- ⇒ SAFGC Roadmap Communication and Engagement Strategy in development
- ⇒ LCA IWG continuing to support deliberations on LCA methodology. This work led, in part, to the IRS release on [GREET modelling updates](#) issued 15Dec'23, with the modified GREET model intended for release in Mar'24.
- ⇒ Some SAFGC implementation measures have also provided updates to various industry events over the last several months.
- ⇒ Integration of Executive Order EO 14081 (Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy) with the work of the SAFGC

### CAAFI Webinars

⇒ Biofuels Induced Land Use Changes: Theory, Modeling Practices, and Historical Observations – Dr. Farzad Taheripour – Purdue University, Oct 19, 2023

⇒ [SAF Repository at Paine Field, Jan 30, from 1-2p EST](#) – Dr. Josh Heyne – Washington State University

⇒ Potential Webinar Topics:

Hydrogen Hubs

Billion Ton Update

U.S Perspective on PtL

ASTM Update

If you have other ideas for webinar topics, please let us know: [info@caafi.org](mailto:info@caafi.org)

### Other CAAFI Team Highlights

#### Business —

New producers, new suppliers, new customers, and many adjacent participants continue to contact us for guidance and assistance (continuing on a weekly basis) or asking for introductions to others who can assist with their commercialization efforts. 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](#). We are very pleased to see this continued level of engagement as we are now at more than 190

companies exploring SAF commercialization. Further, our latest roll up of intended U.S. SAF production capacity (with identified offtake partners) exceeds 2.0B gpy by YE 2028, with others working quietly in the background on additional capacity.

### 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 winter meeting of the ASTM Aviation Fuels subcommittee was held in New Orleans from 4-7 December.

- ASTM D7566-23b including a new Annex 8 for ATJ-SKA and iso-butene as an additional allowed feedstock for Annex 5 for ATJ-SPK, is now available.
- Shell announced that they are putting their technical efforts in advance of their IH<sup>2</sup> technology based Cyclo-paraffinic Kerosene (CPK-0) on hold until a commercial partner is identified.

Various qualification activities are in progress:

- ⇒ The Methanol-to-Jet (MtJ) ASTM task group working with the US Clearinghouse is in the process of collecting property data from fuel technologies advanced by Exxon-Mobil, Honeywell, and Topsoe.
- ⇒ Hydrodeoxygenation Synthetic Aromatic Kerosene (HDO-SAK) championed by Virent is working to address few remaining requests from the OEMs and expects to ballot a new D7566 annex in 2024.
- ⇒ Plastics-to-Jet Synthetic Kerosene with Aromatics (PTJ-SKA) promoted by OMV, working with the US Clearinghouse, is in the process of completing property data collection in support of their qualification via the Fast Track process for up to 10% blending.
- ⇒ Hydroprocessed Esters and Fatty Acids Synthetic Kerosene with Aromatics (HEFA-SKA) advanced by

Council of Scientific and Industrial Research The Indian Institute of Petroleum (CSIR-IIP) is completing initial reviews of their research report and proposed new Annex by the US Clearinghouse and J06 Chair before starting the OEM review.

In parallel, fully-formulated and paraffinic-only 100% Synthetic Aviation Turbine Fuel Task Groups are working to progress their efforts towards fully synthetic fuels.

Additionally, the interest in co-processing approaches continues and the related work is in progress. Task groups are working on pyrolysis oil co-processing and waste-plastics co-processing. Another effort is aiming to increase the lipids co-processing limit from a maximum of 5% to 30%.

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.

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. You can also reach you to us at [info@caafi.org](mailto:info@caafi.org) for more information on getting involved.

### 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.

Previously outlined supply chain building efforts continue in FL, VA, CT, MN, SC and GA. 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. Tune in to CAAFI's next webinar to hear an example of such.

*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.*

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

*Email [peter.herzig@dot.gov](mailto:peter.herzig@dot.gov) with any ideas for CAAFI Quarterly items of interest, caafi.org news suggestions, or inquiries about subscription to the CAAFI Membership group.*