

A Note from the Executive Director

This [CAAFI Quarterly](#) newsletter describes the CAAFI activities and events that occurred October through December 2019.

In this issue, we share industry updates, CAAFI team accomplishments, and potential jet fuel production from U.S. waste streams.

I also want to make sure you are aware of the following upcoming items:

- [ABLC2020](#), March 25-27, Washington, DC
- [GARDN Presents SAF Talk](#), May 12-13 Montreal, QC
- [BIO International Convention](#), June 8-11, San Diego, CA

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/SAJF industry.

⇒ See "[CAAFI Team Highlights](#)" for a snapshot of CAAFI work teams' projects and progress last quarter.

⇒ Jump to "[SAF Deployment Projects](#)" for a summary of select deployment projects around the United States.

What's New?

[Air France announced their collaboration with World Energy and Shell to fuel flights from SFO using SAF starting June 1, 2020](#)

[Bombardier received their first shipment of Gevo-produced SAF from Avfuel at their facilities in Montreal](#)

[The Green Aviation Research and Development Network \(GARDN\), SkyNRG, the Waterfall Group, and Vancouver Airport Authority announced the launch of an industry-led initiative, BioPortYVR, to increase SAF supply in Canada](#)

[EasyJet announced in November 2019 that it would become the first major airline worldwide to operate net zero carbon flights](#)

[Boeing delivered a new 777-300 ER from Washington to Japan using SAF to All Nippon Airways \(ANA\)](#)

[The Qantas airline group pledged to cut its net carbon emissions to zero by 2050](#)

[U.S. DOE announced at ABLCNext2019 a \\$14 million investment in LanzaTech's demonstration-scale integrated biorefinery in Soperton, GA](#)

[Germany expected to raise its aviation tax on all departing flights starting in April 2020](#)

[British Airways announced it will offset carbon emissions on all of their domestic flights within the UK starting in January 2020](#)

[Neste opened a new office outside of Amsterdam in the Netherlands that serves as the global hub for their SAF business](#)

[Neste supplied Lufthansa with SAF for flights departing Frankfurt, Germany](#)

[Avfuel supplied Gevo-produced SAF to business jets traveling to the 2019 National Business Aviation Association \(NBAA\) Business Aviation Convention and Exhibition \(BACE\) in Las Vegas from Salina Regional Airport \(SLN\) in Kansas](#)

[SkyNRG launched their Board Now sustainability initiative that allows companies to reduce their air travel emissions while contributing to the development of a new SAF production facility](#)

[U.S. DOE selected 35 bioenergy research and development projects for a total of \\$73 million in funding with a goal of helping to reduce the cost of drop-in biofuels](#)

[IATA's Director for Aviation Environment, Michael Gill, addressed attempts to discredit CORSIA and SAF](#)

[Air France announced its commitment to offset 100% of CO2 emissions from domestic flights starting in January 2020](#)

[Policy brief pointed to alternative fuels as vital to meetings the United Kingdom's Net-Zero Ambition](#)

[Expander Energy announced its plans to build Canada's first commercial demonstration biomass/gas to liquids facility](#)

[SpiceJet announced that it would fly 100 million passengers on flights fueled by SAF by 2030](#)

Additional information on these news items and additional funding opportunities can be found at [caaфи.org](#).

Ask CAAFI

Question: What are CAAFI's Goals and Priorities in 2020?

Answer: CAAFI's leadership will continue to work in the following four major areas of activity (as we did in 2018 and 2019), for additional information please see CAAFI's [2020 Goals and Priorities](#) document:

1. Communicate the Value Proposition of SAF
2. Enhance the Fuel Qualification Approach
3. Develop the U.S. SAF Supply by Aligning Efforts to Enable Commercial Deployment
4. Implement Frameworks and Share Best Practices

We are looking forward to another year filled with accomplishments moving SAF commercialization forward!

CAAFI Team Highlights

Business —

CAAFI Leadership continues to evaluate how to re-institute a specific business team and remit, and continues discussions with airlines about the best approach to use. In the meantime, specific members of the CAAFI Leadership team continue to:

- ⇒ Facilitate opportunities for airline and other end user engagement, identifying supply logistics needs and informing contract processes.
- ⇒ Work with Michael Baer on his continued development of "SAF Now" initiative targeting a consortium approach to SAF acquisition.
- ⇒ Engage with several firms approaching commercialization.
- ⇒ Foster expanded engagement with the several USDA NIFA-AFRI CAPS with whom CAAFI has strategic engagement:
 - Southeast Partnership for Advanced Renewables from Carinata ([SPARC](#))
 - Sustainable Bioeconomy for Arid Regions ([SBAR](#)) focused on the production of guayule bagasse as a feedstock for SAF production
 - Integrated Pennycress Research Enabling Farm & Energy Resilience ([IPREFER](#)).

Certification/Qualification —

The detailed work of the Cert/Qual team typically happens at the two annual meetings of [ASTM D02](#), the spring meeting of the [Aviation Committee of the Coordinating Research Council](#), various OEM meetings in the US and UK, and adjacent to the activities of ASCENT, and at venues like the National Jet Fuel Combustion Program.

D4054 updates include:

- ⇒ RA CHJ: The two negative votes received for the concurrent ballot were withdrawn after review of additional data. This resulted in the successful passage of the ballot and approval of the new

version of D7566 with the new annex on December 15, 2019. Annex A6 for ARA CHJ fuel has been incorporated into D7566-19b and should be available from ASTM in January.

- ⇒ IHI is the first fuel producer to seek ASTM approval via the D4054 Fast Track qualification provision. The initial subcommittee ballot was submitted in mid-October. The ballot received three negatives, and a decision was made to add some additional data, revise the proposed annex and resubmit as a concurrent ballot in mid-February. IHI is targeting approval by the spring to support fuel usage in flights supporting the 2020 Tokyo Olympics.

Sustainability —

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

- ⇒ Continued to participate in the LCA, sustainability and alternative fuels tracking work in the ICAO CAEP Fuels Task Group (FTG) and Working Group 4 (CORSIA).

R&D —

- ⇒ Hosted three [CAAFI Webinars](#) that featured the following presentations:
 - [Low-Cost, Low-Volume Prescreening of Novel SAF](#) by Joshua Heyne (UDRI and CAAFI R&D Team co-chair)
 - [Forest System Health: Evaluating trade-offs for water, fire, biofuels, and fish](#) by Mark Wigmosta (PNNL)
 - [CoverCress Inc.: Adding Farmer Revenue by Providing the 1st Low Carbon Intensity Cash Cover Crop on Unused Land Over Winter](#) by Cris Handel (CoverCress Inc.)
 - [IPREFER: New Cash Crop for Aviation Fuel](#) by Winthrop Phippen (IPREFER)

- ⇒ Continued discussing engaging companies with emerging alternative jet fuel pathways.

- ⇒ Updated team's mission statement to explicitly include prescreening activities.

SAF Deployment Projects

◊ Connecticut

The conversion of the South Hartford-based Materials Innovation and Recycling Authority (MIRA) facility to a jet fuel processing facility remains an attractive opportunity. CAAFI continues to engage with Praxair, Linde, Velocys and state government contacts.

◊ Florida-based State and Regional Efforts

CAAFI continued engagement with the Florida Coalition for Sustainable Agriculture, Water and Energy (FCSAWE). The core FCSAWE members include the Florida Department of Agriculture and Community Services (FDACS), University of South Florida (USF), University of Florida (UFL), and subject matter experts on Beets, Sorghum, Pongamia, Carinata, Elephant grass, and Eucalyptus. The group worked to establish a focused near-term set of objectives and identify state and federal funding programs for fiscal year 2020.

CAAFI participated in FDACS Energy and Climate Summit in Tampa, FL. Just following the Summit, FDACS issued its Energy and Climate Plan. The plan aims to leverage federal programs and embraces the cover crop concept to control long-term nutrient overload. The plan identifies \$10-20 million of potential annual R&D funding for these efforts.

CAAFI and FCSAWE are targeting the following federal and state programs:

- [DOE's Funding Opportunity Announcement \(FOA\)](#) - A call was held with DOE BETO to provide the FL team with input to assist in their proposal development following notification that the theme includes landscape design. The team has initiated a search for partners and is initially considering Argonne National Lab. The most likely feedstock will be perennial grasses.
- [USDA Rural Development Grants](#)
 - Proposals are due mid-March
 - [Value Added Producer Grants](#) – The Southeast Partnership for Advanced Renewables from Carinata (SPARC) project is discussing the Kissimmee

River or Indian River Lagoon region as a Carinata-oriented planning activity and another Indian River area project with Terviva, that would complement existing water farming efforts, is also considering submitting a proposal

- [State Energy R&D Funding](#)
 - Proposals due mid-March.
 - Funding to leverage DOE and USDA funding opportunities

Working with Volpe on Freight and Fuel Transportation Optimization Tool (FTOT) development was a strong focus of the SPARC supply chain team that is led by CAAFI Executive Director Emeritus Rich Altman. The team executed 8 scenarios for Carinata supply using the Volpe in-house model. Additionally, the SPARC Supply Chain Team has formed a Work Breakdown Structure that is committed to extending utilization of FTOT to the full supply chain community via use of the publically available version of FTOT. USF is interested in working to improve FTOT's resiliency analysis capabilities and first/ last mile economics. USF visited Volpe in October 2019 for training on deployed FTOT model.

Beyond the team's work on tool optimization, SPARC efforts continue to fuel interest in Georgia and Alabama state activities.

- CAAFI along with Auburn University, Agrisoma, and SPARC leadership completed the initial phase of their collaboration with Alabama's offices of Department of Agriculture and Industry (ADI) and Department of Economic Development and Community Affairs (ADECA). Auburn University recommended a set of next steps that will be considered during the SPARC annual meeting in February.
- CAAFI State and Regional Team "extended participation" consultant representative Michael Shoemaker is leading efforts to work with Georgia's office of Economic Development and Center of Innovation on expanding Carinata and cellulosic energy crop rotation to support producers such as Lanzatech.

◊ Vermont

The team, including GSR technologies and Todd Campbell, began communicating with PNNL about potential partnerships. PNNL's HTL technology could be used to improve the quality of biocrude coming out of the GSR process in order to bolster potential grant opportunities.

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](#).

Special Items of Interest

- [DOE announces \\$73 million for 35 projects](#) for bioenergy research and development
- The [US Economic Development Administration](#) has **made \$587 million available for eligible applicants in communities affected by disasters in 2018 and 2019**. Applicants should propose long-term, regionally-oriented, and collaborative strategies designed to generate economic growth and resilience. EDA will continue to accept applications on a rolling basis. For more information, click [here](#).
- The [US Economic Development Administration](#) has published a [Request for Information \(RFI\)](#) notice in the Federal Register **sought public input on how the federal government can better align its economic development programs and resources in order to encourage and facilitate investments in economically distressed communities, including in qualified Opportunity Zones**. EDA recognizes that while Opportunity Zone incentives are intended to leverage private capital, economically distressed communities may not be able to rely on private capital and tax incentives alone to create the necessary conditions for long-term sustainable economic growth. Many communities are also in need of public sector investment and technical assistance. EDA requests information and input from stakeholders who support economic development in Opportunity Zones, including

state, local, and tribal officials; institutions of higher education; nonprofits, philanthropic organizations and other impact investors; economic development practitioners and other experts in relevant disciplines; and affected stakeholders in the private sector. More information is available [here](#). Comments must have been submitted by October 18.

- The [US Economic Development Administration](#) is encouraging its economic development partners to find ways to highlight Opportunity Zones in their regions in order to attract investment and encourage public-private partnerships. **EDA has created an EDA Opportunity Zones Webpage for economic development stakeholders** and others to use as a resource to help them foster job creation and attract private investment. Click [here](#) to access the EDA resource page.

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

Email 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.