



CF Tech demonstrates first-of-its-kind supercritical fluid biodiesel pilot in Wareham, MA



Members of the CF Tech team complete their first 50-hr consecutive campaign, producing 50 liters of biodiesel on October 4, 2024

Promising Marine Fuel Product Test Results

FLASH POINT 103°C

POUR POINT -6°C

DENSITY 889 KG/M³

VISCOSITY 6 CST

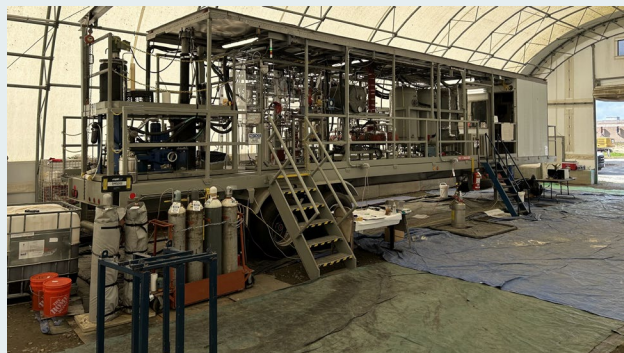
WATER 0.16%

CARBON RES 0.48%

February 5, 2025 - Hyde Park, Boston, MA:

CF Technologies, Inc. hits critical milestones en-route to delivering commercial biofuel to local communities. In October, 2024, CF Tech's research team spent the warm days and cool nights operating and overseeing the first-of-its-kind integrated pilot scale demonstration of supercritical fluid extraction (SFE) and supercritical fluid solid catalyst (SCC) reaction of brown grease to produce biofuel. The milestone, one of a dozen as part of the Massachusetts Clean Energy Center's InnovateMass' program, was successfully completed. This marks the first ever biofuel production from brown grease using supercritical carbon dioxide at a scale of 1 gallon per hour.

Trap grease is the material collected at restaurants and food processing sites from underground grease traps. Collection is regulated to minimize grease flowing into and clogging sewer systems. Regionally, this waste is collected by grease haulers and transported to be processed locally prior to disposal. At this location, the Wareham Pollution Control Facility in Wareham, Massachusetts, grease haulers drain the trap grease into the Greasezilla™ equipment, where it is dewatered and filtered, becoming brown grease. The brown grease is then fed into the CF Tech mobile demonstration system, where the brown grease is converted into a biofuel. The produced biofuel sample is sent to an independent third-party laboratory for analysis. Early results are promising - nearly passing qualification as a marine bunker fuel in the first batches tested. Something not previously done with brown grease!



50 liters of biofuel was collected during inaugural campaign; lab analysis was promising, resulting in a high conversion rate to biodiesel and low levels of contaminants. 50 gallons have now been produced and collected at this initial demonstration site (upper); CF Tech's mobile demonstration facility at the Wareham Pollution Control Facility, Wareham, MA (lower)

Biofuels are stringently tested prior to use as marine bunker fuel, sustainable aviation fuel, on-road vehicle fuel, home heating oil fuel, and even in heavy equipment engines and off-road equipment (farming equipment, ATV, landscaping, etc.). Traditionally, dewatered trap grease and brown grease are incinerated or landfilled having no economic value with previous technologies. It has only recently been considered as a potential second generation, renewable biofuel precursor. CF Technologies is making this possible. Increased usage of our renewable fuels reduces greenhouse gas emissions, as compared to petroleum diesel, by up to 86% throughout the life cycle. When simulated through the 2023 GREET model, our expected commercial system greenhouse gas emissions are 9 g CO emission per megajoule (MJ) of fuel with only 0.2 MJ of energy used per MJ produced whereas petroleum diesel requires around 1.2 MJ of energy per 1 MJ produced.

Company President, John Moses, and Senior Engineer, John Markiewicz are pleased with the startup of the integrated system and with how well the 50-hr cycle performed and are satisfied by the initial test

results with ongoing production and optimization. "The biofuel that we produce, whether the final product ends up in on-road diesel engines or as a direct marine fuel substitute will have a tremendous effect on carbon reduction and recycling a waste into fuel. Another benefit is its ability to be implemented worldwide with waste FOG (fats, oils and greases) up to 100% free fatty acids, and the ability to produce a standardized and approved biofuel for transportation. All of this waste grease, literally billions of pounds is collected each year and dumped into landfills, incinerated or drained into sewer systems. We have a better use for it - let us show you how useful trap grease can be."

Following the sentiment and objectives of the Massachusetts Clean Energy Center, Jessica Sweeney, Vice President of CF Tech added,

"We must curb consumption; We must find innovative, economically feasible, reuses for waste - We must slow climate change. Local biofuel is how we are helping to do our part. Development of new technologies is just the beginning, it's getting others to buy-in, accept and promote biofuel usage. Biofuels are a right-now, drop-in solution."

CF Tech's mobile demonstration system is available for testing grease supplies, contact us to setup a demonstration of your grease at the existing facility or to plan an upcoming demonstration at your facility. The modular commercial design targets grease consolidation sites with greater than 1 million gallons annual dewatered and filtered brown grease collection and with a 1:1 conversion rate, commercial systems can be expected to provide 1 million gallons of biofuel per location matching the feedstock supply with a less than two-year return on investment. CF Tech has over 30 years of technical expertise in supercritical fluid process technologies and has been funded by the US Department of Energy, MassVentures and Massachusetts Clean Energy Center to pursue and develop this promising commercial technology.

CF Technologies, Inc. is a supercritical fluid manufacturing, research and technology development firm in Boston, Massachusetts. Additional information, including sales and media relations contact can be made directly to Jessica Sweeney, jessica@cftechnologies.com or 617-364-2500.