

SUSTAINABLE (NON-FOSSIL) AVIATION FUELS (SAF)®

by Dan Pemble, Kissimmee, Florida – November 24, 2021

As a matter of satisfying my curiosity about the above subject, I have found the following facts on an Air bp (British Petroleum) web site and perhaps these will be of interest to you.

Why SAF?

Quote: It's produced from sustainable feedstocks and is very similar in its chemistry to traditional fossil jet fuel. Using SAF results in a reduction in carbon emissions compared to the traditional jet fuel it replaces.

Some typical feedstocks used to produce SAF are cooking oil and other non-palm waste oils from animals or plants; solid waste from homes and businesses, such as packaging, paper, textiles, and food scraps that would otherwise go to landfill or incineration. Other potential sources include forestry waste, such as waste wood, and energy crops, including fast growing plants and algae. Air bp's SAF is currently made from used cooking oil and animal waste fat.

In 2016 Air bp created a strategic partnership with Fulcrum BioEnergy with an initial investment of \$30 million. The Californian company is building its first plant in Reno, Nevada, which will produce sustainable transport fuel made from household waste. Fulcrum intends to construct additional facilities and ultimately plans to supply us with over 50 million US gallons of SAF per year. Unquote.

My comments: Obviously, producing enough SAF to replace the currently-used -fossil-derived aviation fuel (high-grade kerosene) will be an expensive and monumental endeavor that will take many years to accomplish! The whole point in producing and using SAF is to reduce atmospheric pollution caused by jet engine exhaust. Jet engine exhaust typically contains 99% CO₂ and 1% nitrous oxides, both known as "green-house gasses" (GHGs). However, interestingly, jet engine emissions account for only about 1/5th of all transportation-related GHGs. It is also important to note that each successive new generation of fossil-fueled jet engines is becoming more fuel efficient, meaning lesser and lesser harmful exhaust emissions.

