SUSTAINABLE AVIATION FUEL (SAF)

Gevo's SAF is a renewable drop-in jet fuel produced from a broad range of non-petroleum biomass sources using the alcohol to jet (ATJ) conversion processes. ASTM has qualified this alternative jet fuel production pathway to produce fuels that are comparable with conventional jet fuel in terms of materials, safety, and composition. A drop-in fuel does not require adaptation of the fuel distribution network or the engine fuel systems. The specifications for alternative jet fuels are defined in ASTM Standard D7566, and specific annexes to the Standard apply to individual processes for producing alternative jet fuels.

Carbon Savings

Reducing or eliminating fossil fuel use in the airline industry is a difficult, global challenge. Gevo, a global leader in the production of SAF, has a credible solution. Gevo can produce renewable jet fuel from many sustainable sources, such as: GHG neutral (or negative) corn, molasses, wood waste, and agricultural by-products. Gevo's SAF can provide significant carbon savings when utilizing these feedstocks. Under the European Renewable Energy Directive or EU RED methodology, Gevo's renewable jet fuel achieves upwards of 75% GHG reduction over traditional petro-jet fuel. This means, for every 1,000,000 USG of renewable jet fuel consumed the greenhouse gas emissions savings would be:[1]

22,500,000 miles from average passenger vehicle

1,100,000 gallons of gasoline consumed

10,000,000 pounds of coal burned

3,000 Tons of waste recycled

Certified Requirements - A Higher Standard of SAF

Gevo believes fuels claiming sustainability, renewable or other environmentally beneficial claims should certify their process. Gevo has begun this work by obtaining both ISCC and RSB certification for feedstock supplied to Gevo today. In the future, Gevo plans to expand the scope of these certifications to include every hydrocarbon produced, including sustainable aviation fuel.

Agriculture Improvements - Practical and Achievable

Agricultural practice improvements, like reduced tilling and no-till, can sequester carbon when applied in the correct manner in the right systems.

Agricultural practice improvements, like precision agriculture, frequently lead to higher yield and more protein content in the feedstocks. These practices also lead to lower agricultural emissions due to cultivation.

Potential SAF Policy to Help Build Infrastructure, Production and the Market

Today policy around SAF is in its infancy. There are specific carbon markets that allow SAF to "opt-in" such as California LCFS or EU RED. In order to increase the production and use of SAF, sound SAF policy must be developed at State, Federal and International levels.

U.S. and Australia policymakers should lead in SAF policy development. When developing SAF policies, policymakers can look to the work done in the space to date. For example, ICAO's CORSIA policy defines specific sustainability criteria that must be met by SAF. The U.S. and Australia should set practical, and attainable sustainability criteria in return for new policies to very quickly expand production and the market for this vitally important climate change mitigation tool.

SAF policy today should focus on strengthening "market pull" as well as defraying capital costs for sustainable fuels, along with feedstock neutrality. SAF producers should also have the opportunity to earn value for (1) lower carbon scores, (2) renewable energy use in processes and supply chains, and (3) fostering more sustainable farming practices.

[1] Energy Emissions savings calculated based on 50% reduction of petroleum jet A per gallon and placed in to the US EPA greenhouse equivalencies calculation (https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator)

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SAF manufacturers grant program. Create an SAF (temporary) grant program that is feedstock neutral via DOE/USDA to fund SAF companies during the economic crisis while they work to stay in operation and scale up to meet future demand. Such a program would allow grants ($1m+) for legitimate needs, including salaries, rent, maintaining or improving pilot, demo facilities, and would keep requirements to a minimum or support will be unnecessarily delayed.

SAF facility grant program. Create an SAF (temporary) DOE/USDA grant program to build SAF plants, with feedstock neutrality as a core principle, and a "user-friendly" private sector sustainability standard, e.g., as referenced above. Requirements should look at specific business systems, not a "one size fits all" carbon savings approach which often ignore best practices. The grants should be up to 30% of the equity value that's required for the plants with a cap of $150 million dollars per facility (and no double dipping). Plants can cost $100s of millions to build and/or retrofit so a large cost-sharing grant would have a major impact on expediting infrastructure development. The grants would create 100s, potentially 1000s of good paying jobs, quickly, and for decades to come. The new SAF plants would dramatically bolster the local economies of hard hit rural areas and support farmers as well.

SAF low-interest loans. Create a direct low-interest loan authority/program at USDA targeted to SAF producers (and others in the advanced biofuels sector for new sustainable fuels). USDA's programs are excellent; however there is no direct low-interest loan program that fits the bill. REAP's direct loan authority was removed in 2008. The same happened previously in the Biorefinery Assistance Program. These low-interest loans would help cover cash flow and related issues during this economic crisis and likely recession. REAP may make the most sense, as long as additional funds are provided for this re-instated authority, without impacting the grants or loan guarantee portions of the program negatively.

Create a long-term SAF tax credit. Expand and extend the existing tax credit for aviation fuel under the biodiesel and renewable diesel tax credit into a long-term comprehensive SAF credit.

Create a Federal Procurement SAF requirement for Federal aircraft. The Federal government has numerous Executive Orders and statutes to "go green." They should be reviewed to ensure that SAF is included, and if not, a SAF usage requirement or commitment, where practicable, should be established for aircraft owned, operated, leased, or otherwise controlled by the Federal government.

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