

Advanced Biofuels USA, a nonprofit educational organization, advocates for the adoption of advanced biofuels as an energy security, economic development, military flexibility and climate change solution.



March 2023

Advanced Biofuels USA Ideas on Agricultural Policy

As Congress begins work on the upcoming Farm Bill, Advanced Biofuels USA is well aware of the fiscal restraints that might not allow for increased funding levels for renewable energy or crop development R&D at Land Grant Schools, USDA Agricultural Research Service (ARS) laboratories, or small R&D businesses unless innovative programming approaches are developed.

These constraints come at an unfortunate time as there are significant technical hurdles that need to be overcome to meet the CO₂ reduction goals established by the 2021 Government-Wide Sustainable Aviation Fuels Grand Challenge and provisions of the Inflation Reduction Act (P.L.117-169). These goals include producing 3 billion gallons/year by 2030 and 35 billion gallons/year by 2050 of Sustainable Aviation Fuels (SAF).

We hope these goals can be met by **refocusing available Farm Bill funds** on **the early stages of development** of innovative low-cost, low-carbon emitting SAF and related fuels. These initiatives should include:

- Developing improved biomass conversion systems, enzymes, and fermentation organisms,
- Developing and improving cost-efficient biomass and dual use crops,
- Assisting start-up businesses and innovative projects through the “Funding Valley of Death” to the prototype stage.

All of these **initiatives are relatively low-budget**, especially in comparison to the late-stage funding of commercial projects that, if decent economics are shown, have other private/public funding options.

We would like to recommend several project approaches that are relatively inexpensive but offer good “bang for the buck” opportunities to meet these goals.

1. Increase ARS Biomass Hydrolysis and Fermentation Bacterial Research

At present, very good USDA/ARS alcohol fermentation bacteria such as **FBR4 are over twenty years old**. But, because of funding deficiencies, ARS Bioenergy researchers have not been able to address commercial deficiencies or develop more efficient genes and microorganisms that would lower biofuel production costs. New multi-year ARS projects should be instituted at current ARS Bioenergy laboratories. These projects should include co-operative initiatives with Land Grant institutions and small businesses.

2. Develop New Low-Cost Biofuel/Bioproduct Crops and Pathways at 1890 Land Grant/HBCU Institutions

The 1890 Land-Grant HBCU institutions have a unique connection to rural communities and ecosystems. The great George Washington Carver did his research at one such institution. They could be the start of new sustainable agriculture revolution based on environmentally sound crops that have unique cell wall structures that favor bioconversion and additional value-added uses.

3. Re-Imagine the SBIR/STTR Program as a 1st Stage Venture Capital Program

Phase I SBIRs should be thought of as a very cost-effective way to test new ideas. As venture entrepreneurs will tell you, learning from failures is as important as achieving success at this stage of R&D. Stopping investments at \$170,000 (current Phase I funding level) is considerably less expensive than using the concurrent R&D and production approach (often used by DOD and DOE) where millions are spent to evaluate approaches which turn out to be bad ideas. To double the number of SBIR ideas being tested would not be a major expenditure. For example, the FY 2023 USDA-NIFA-SBIR budget was \$13 million. An additional \$23 million, to double the number of grants and cover inflation (see #4), is insignificant in comparison to overall Farm Bill appropriations.

4. Index USDA Grant Programs to Inflation Rates

Simply put, USDA research grants do not pay for the level of research and accomplishment that was envisioned when the ***budget levels were first set, often two decades ago***. USDA Research Grant awards should be increased to reflect cost increases since those levels were set. From that baseline, awards should be periodically increased to reflect inflation rates of equipment, supplies, and personnel costs. A recent article in the respected journal Nature (1/19/2023) compared 2023 prices with those in 2018 finding 30% to 90% increases for common laboratory supplies and equipment. Personnel costs have been rising at a similar rate as

universities have been raising student compensation to acceptable economic levels.

In addition to these programming suggestions, we have identified two policy issues whose revision could significantly improve the rural agricultural economy.

1. Hemp Should be Removed from the Schedule 1 Controlled Substance List

Inclusion of hemp positive provisions in the 2018 Farm Bill led to the rebirth of a national hemp industry. As a result, recent research has found hemp biomass to be uniquely suited to biofuel production. With THC ***legalization now having bi-partisan support and the number of states legalizing it increasing***, removal of hemp from the Federal Schedule 1 Controlled Substance List would be a great benefit to all in the agricultural industry. First, it would remove the confusion that exists at the state enforcement level, especially for growers focusing on low THC content. Second, it would be beneficial for innovative growers and processors attempting to ***fund non-THC hemp biomass for sustainable, low CO₂ producing biofuels and bioproducts***.

2. “Near Shore” Sustainable Feedstock and Technology Transfer Agreements Should be Negotiated with Central and South American Governments

Increasing efforts by China to build relations with countries outside of Asia have led to increased economic assistance and trade agreements by that country in South America that could be to our disadvantage. Increased costs and disruptions during the Covid pandemic have also showed that current long-distance supply-chains in many cases are not cost effective or efficient.

“Near Shore” (*Nearshoring and Renewable Energy*, Wilson Center, October 2022) agriculture technology and supply ***agreements with our friends and allies throughout South and Central America*** could reduce renewable energy supply-chain costs and ***strengthen the bonds between the US and those countries***. Under these agreements, agriculture technologies could be shared with Central and South American countries. Mutual economic benefits would be produced, similar to those achieved by Canadian, Mexican, and US automotive industries under NAFTA.

On behalf of Advance Biofuels USA and growers and processors in the biofuel/bioproduct industry we look forward to working with members of Congress on agricultural policies.

Advanced Biofuels USA

www.AdvancedBiofuelsUSA

info@advancedbiofuelsusa.org

301-644-1395