



**Testimony of Ben Lieberman, Senior Fellow at the Competitive Enterprise Institute
Before the Senate Committee on Commerce, Science, and Transportation
Hearing on “Advancing Next Generation Aviation Technologies”
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Chair Cantwell, Ranking Member Cruz, and members of this Committee, thank you for the opportunity to testify today. My name is Ben Lieberman and I am a Senior Fellow at the Competitive Enterprise Institute, a non-profit, non-partisan public policy organization that concentrates on regulatory issues from a free market perspective. Before that, I was a staff member on the House Committee on Energy and Commerce from 2011 to 2018 and prior to my time on the Hill, I was following these issues at the Heritage Foundation. While at the Committee, I covered the Renewable Fuel Standard (RFS) and related measures designed to encourage the use of biofuels in cars and trucks. I would like to draw upon those experiences at this hearing.

I had a front row seat watching the RFS and biofuels agenda play out, and I saw quite a few things that did not turn out as well as predicted. Unfortunately, I see a number of those mistakes being repeated in the context of the sustainable aviation fuel provisions in the Inflation Reduction Act.

In particular, there are many parallels between the measures to support sustainable aviation fuels today and the measures to support cellulosic biofuels back then. Cellulosic was a separate category of cutting-edge biofuels – not corn ethanol or conventional biodiesel but next-generation technology made from qualifying non-food feedstocks and required to have a 60 percent lower greenhouse gas contribution than gasoline. Going back to the early to mid-2000s, it's hard to understate the exuberance that Washington had over the potential for liquid cellulosic biofuels, not unlike the enthusiasm some have for sustainable aviation fuels today. All the usual arguments – good for the environment, good for national security, good for American job creation and global competitiveness, an investment in the future – were there in full force, and led to host of measures in the 2005 and 2007 energy bills.

The federal government went all out to tilt the playing field in favor of cellulosic biofuels. There was a very generous \$1.00 per gallon tax credit, and there were also plenty of subsidies for cellulosic research and development and incentives for the construction of cellulosic production capacity. And cellulosic biofuel was added to the RFS mandate in the 2007 energy bill – even though nobody was making it in commercial quantities at that point – which meant that producers of it would also get to sell the valuable tradeable credits under the program known as RINs. Overall, the cellulosic industry enjoyed a redundancy of generous provisions.

And 15 years later, we can say with certainty that it was all a failure.

Cellulosic biofuels and other so-called next generation biofuels, whether it was the ethanol from switch grass that President Bush mentioned in a State of the Union address, or the algae fuels that President Obama thought were the answer, never materialized. Nobody was able to produce commercially viable quantities, and in fact nobody came close. And most of the facilities built to make it have been idled or have been converted to other purposes. And of course, taxpayers were stuck with most of the bill.

Today, most of the promoters and supporters of cellulosic biofuels don't want to talk about it; they would prefer to sweep it under the rug and forget about it. But that's not how you learn from mistakes, and that's not how you avoid repeating mistakes. And I think there are lessons to be learned that are relevant to the discussion about sustainable aviation fuels and the provisions in the Inflation Reduction Act.

The first lesson is one of humility – we inside-the-beltway experts are not nearly as good as we think we are at identifying the next big thing. Members and staff were wrong about the technological and commercial potential of cellulosic biofuels, as were Environmental Protection Agency and Department of Energy bureaucrats, and of course the countless lobbyists that kept telling us that it was just around the corner. The truth is we can't know where the technology is headed and what the next breakthrough is and thus how resources should best be allocated. That is a process best left to the free market rather than central planning.

We also learned that throwing a lot of federal money at something does not ensure success. It certainly can't fix any inherent limitations in a particular technology. And in fact, it may well be the case that federal involvement harms rather than helps the process of innovation. Twenty years ago, biofuels were almost entirely corn ethanol and soybean and waste fat biodiesel, and they still are today. It's remarkable how little progress was made on next generation biofuels despite all the efforts on the part of the federal government. I recall one venture capitalist saying that when the feds start picking winners and losers and throwing money around, it sucks all the oxygen out of the room. In other words, federal involvement makes it harder on those emerging technologies and companies that aren't the ones favored by Washington. We can't subsidize every idea, and it is important to remember that many of the greatest technological breakthroughs were ones few saw coming. In this regard, it might be useful to compare the taxpayer resources wasted on developing and subsidizing cellulosic biofuels with the private efforts and investments that created the shale oil and gas revolution at about the same time.

The other lesson with cellulosic is of course that the American people got a bad deal. We can debate how much the RFS raises the price of gasoline and what fraction of that could be attributable to the cellulosic provisions, but it certainly had and continues to have some impact.

But the public didn't just pay at the pump; they also paid as taxpayers who were made to subsidize all of this through the tax credits and other provisions. Added up, the experiment in cellulosic very likely cost the American people at least a billion dollars. I think we may again see that double-whammy here, with Americans seeing their tax dollars going towards sustainable

aviation fuel – with each qualifying gallon getting at least \$1.25 and up to \$1.75, depending on the calculated greenhouse gas emission reduction – while quite possibly also seeing higher airline ticket prices. And we could be talking about a lot of money if the President’s goal of 3 billion gallons of subsidized aviation fuel annually is even partially reached.

So, given my experiences seeing the RFS and in particular the cellulosic provisions play out over seven years, you can see why I am leery of the similar provisions for sustainable aviation fuels in the Inflation Reduction Act. I think less government involvement rather than more would best serve the cause of aviation industry innovation and the best interests of taxpayers and the flying public.

Thank you again for inviting me to testify. I look forward to your questions.