October 15, 2021

Senior International Trade Specialist Devin Horne
International Trade Administration
U.S. Department of Commerce
1401 Constitution Ave., Room 28018
Washington, D.C. 20230

Via: Federal e-Rulemaking Portal

Re: ITA-2021-0005; Request for Comments on U.S. Clean Technologies Export Competitiveness Strategy

Dear Mr. Horne,

The Renewable Fuels Association (RFA) appreciates the opportunity to submit comments in response to the request for the U.S. Clean Technologies Export Competitiveness Strategy. RFA also submitted additional comments with the U.S. Grains Council submission.

The RFA is the leading national trade association representing U.S. ethanol producers. Its mission is to advance the development, production, and use of low-carbon ethanol by strengthening America's ethanol industry and raising awareness about the benefits of renewable fuels. Founded in 1981, RFA serves as the premier forum for industry leaders and supporters to discuss ethanol policy, regulation, and technical issues.

Given the urgency of the global climate crisis and the need to reasonably decarbonize fuels and chemical manufacturing, the producer members of the RFA have committed to President Biden the pursuit of the following carbon performance goals:

- By 2030, ensure that ethanol reduces GHG emissions by at least 70 percent, on average, when compared directly to gasoline.
- By 2050, ensure that ethanol achieves net zero lifecycle GHG emissions, on average.

U.S. ethanol can achieve net carbon neutrality, on average, by mid-century or even sooner.

Scope

1. Is there an established methodology for designating particular technologies as clean technologies or additional factors that the Government should consider for purposes of scoping this strategy?

Lifecycle Assessment (LCA) has become increasingly popular to quantify the environmental impacts of a product, process, or system across its entire value chain. We must coordinate best efforts and use sound science and a level playing field when determining CI values for

sustainable products. As additional countries consider their own clean standards, it is important to have a standardized methodology for determining CI scores with continued development and refinement of models with best data available.

2. What clean technologies offer the most significant immediate opportunities for U.S. exports of associated goods and services?

U.S. ethanol can play a critical role towards global decarbonization goals. Many countries are now developing or revising their renewable energy policies and typically require renewable fuel substitutes for gasoline to reduce greenhouse gas (GHG) emissions. While the ethanol industry has experienced significant volume expansion, it has also reduced the carbon intensity (CI) dramatically utilizing technology adoption and improved efficiencies.

Ethanol is the lowest-cost, highest-octane fuel additive available. Low-carbon ethanol blends like E10, E15 for light duty vehicles and E85 flex fuels for flex fuel vehicles help meet carbon reduction goals today.

3. What clean technologies do not currently offer significant immediate opportunities for U.S. exports of associated goods and services but may offer such opportunities within the next five to ten years?

Heavy-duty, long-haul trucking and other off-road applications which are also contributors to GHG, particulate matter and NOx emissions, can be converted to using cleaner energy at a faster pace if low-carbon liquid fuels are used. Substantial gains are possible for both GHG and criteria emissions – with the speed of implementation being the largest driver of near-term carbon displacement. An abundant liquid fueling infrastructure already exists. Not waiting for the required infrastructure associated with electrification and/or hydrogen-based alternatives will speed the adoption and resulting mitigation effects.

The U.S. produces large quantities of low-carbon ethanol. Alcohol fuels, using newly developed combustion technology, can now be used at 100% levels in both large displacement compression-ignition (diesel) engines[1] as well as more moderate displacement spark-ignited engines – thus eliminating petroleum fuel and its attendant emissions. The internal combustion engine (ICE) is far from dead – the fuel just needs to be changed. Compression-ignition engine technology is now commercially available at 50% efficiency. This rivals hydrogen fuel cell efficiency, and can enable range-extended, small-battery, electrified vehicles that are much more cost effective and less dependent on infrastructure buildouts. Using and focusing on liquid fuels reduces the cost, volume, and weight challenges of on-board pressure vessel storage, which must be used with gaseous fuels.

Ethanol is a versatile chemical and can be utilized in fuel cells as a hydrogen source, a feedstock to greener chemicals processing and can also be used to generate electric power replacing the current fossil petroleum-based feedstocks.

Natural gas-based power provides swing capacity when wind and solar generation dip. In some cases, it might be possible to generate supplementary power solely from ethanol, creating a fully renewable electricity supply. Natural gas turbine power plants have traditionally used

[1] https://www.clearflameengines.com/

diesel as a backup fuel, but ethanol can be used instead. In addition to lowering GHG emissions, the use of ethanol would improve air quality and reduce water consumption. Capital expenditures and fuel costs would be comparable to or lower than diesel. The potential export market as a backup fuel would be beneficial to countries that have difficulty with water access.

The ability to use ethanol for power generation has already been proven. A Brazilian facility equipped with General Electric gas turbines has been operating on ethanol since 2010.[2] Tests conducted at that time indicated that nitrogen oxide (NOx) emissions were reduced by 30%. Another facility that uses ethanol began operations in 2019 on Reunion Island.[3]

Challenges

7. What issues related to intellectual property, standards, or measurement science pose a challenge to U.S. clean technologies export competitiveness?

As mentioned in the prior answer to question number 1, the measurement of carbon intensity value. An example is the emerging global market for Sustainable Aviation Fuel. The commercial aviation industry must significantly reduce its GHG impacts to continue to grow and support global mobility and commerce.

Through the International Civil Aviation Organization (ICAO), the industry has established Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which sets the voluntary carbon-reduction standards. Although U.S. ethanol could produce, and export already approved alcohol (ethanol) to jet (ETJ) the ICAO methodology is using data and assumptions that are outdated and produced CI default values for U.S. ethanol that are not following our industry's dramatically reduced CI scores utilizing technology adoption and improved efficiencies.

For assessing lifecycle GHG emissions for ETJ fuel made from corn grain ethanol, ICAO based results on just two sources of information, both of which are badly outdated: 1) a 2014 MIT study that used a 2012 version of the DOE GREET.Net model and other data dating back to 2007. Thus, ICAO's total lifecycle emissions estimate for U.S. ETJ is 90.8 g/MJ, which is 71% higher (nearly 40 g/MJ) than the total emissions estimate of 53.2 g/MJ from the most recent DOE GREET modeling framework.

8. When pursuing opportunities in foreign markets, what are the main risks or barriers (*i.e.,* economic, financial, regulatory, technical, trade policy, etc.) facing U.S. businesses seeking to export clean technologies goods and services, whether generally or in specific foreign markets?

Primary risks are tariff trade barriers that are one-sided. Also, non-tariff trade barriers like the prohibition of exporting U.S. ethanol for use as a fuel to India are also limiting export possibilities.

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[2] Power Technology. (n.d.). *Ethanol power plant, Minas Gerais*. Retrieved April 27, 2021. https://www.power-technology.com/projects/ethanol-power-plant/.

[3] Albioma. (n.d.). *Saint-Pierre power plant*. Retrieved April 27, 2021. https://www.albioma.com/en/site/reunion-island/saint-pierre/.

Solutions

10. How can existing tools or resources offered by the Government to reduce or remove challenges, risks, and barriers be improved to increase their effectiveness or make them more accessible to U.S. clean technologies companies?

Interagency collaboration under the Memorandum of Understanding between the International Trade Administration and the Foreign Agricultural Service can help facilitate challenges that arise in ethanol trade by establishing a Working Group on bioenergy trade issues.

Also, offering interaction with international delegates at events (in-person or virtual) such as the International Buyers Programs are effective tools for accessibility to potential trade partners.

Other

16. Are there additional relevant issues impacting U.S. clean technologies export competitiveness not addressed by these questions, and what are the most impactful actions the Government could take to address these issues?

Education of DOC foreign service agents about the low-carbon benefits of U.S. ethanol so we can promote solutions to countries looking to reduce GHG emissions.

Thank you for the opportunity to comment. Feel free to contact us if you have any questions.

Sincerely,

Kelly Davis
VP of Regulatory Affairs