



Biofuels Certification: Chances and Challenges in North America

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Biofuels Certification

- US production capacity of ethanol and renewable diesel, and biodiesel exceeds renewable volume obligations under the Renewable Fuel Standard (RFS).
- Protein demand and continual yield increase for corn and soy will leave starch and oil co-products looking for non-edible markets.
- Ethanol, renewable diesel and biodiesel feedstocks will continue to look for additional market outlets. These may include ISCC EU, PLUS and CORSIA.

Which Biofuels may seek certification?

- Anything waste-based, raw materials like:
 - Used cooking oil
 - Animal fats
 - Food waste
 - Processing residues
 - Municipal Solid Waste
 - Manure

What about agricultural commodities?

- Corn
- Sorghum
- Soybean & soybean oil
- Forestry Residue

Advantages of Waste

- Lower GHG score
 - No ILUC under CORSIA
- Double counting under EU REDII
- Point of Origin can be audited on a sample basis

Challenges for agricultural commodities?

- 50% GHG threshold under EU
- CORSIA threshold is only 10%, but also includes ILUC
- Lengthy farm audit checklist
- Direct business relationship between farmer and the final certified biofuel.

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- Ethanol can be certified, because they buy corn direct from farmers.
 - Corn farmers are also soybean farmers
- Interests exists in SAF and renewable diesel from soybean oil
 - Soybean crush plants and soy aggregators must get certified
 - ISCC markets are still a small portion of the outlet for soy
 - 50% of soy get exported as whole beans
 - Bean that do get crushed domestically, produce 20% oil
 - 70% of that oil goes to edible markets.
 - That leaves 3% of the soybean crop going to biofuels or industrial uses.
 - Canola industry has invested in ISCC.

Potential large demand for certified oils

- Vegetable oils are easily converted into renewable diesel and Sustainable Aviation Fuel.
- Vegetable oils are also prime ingredients for biobased materials under PLUS.

U.S. SAF Tax Credit adds incentive for CORSIA

- U.S. SAF tax credit: \$1.25/gal for GHG reduction of 50%, and up to \$1.75. 1 cent for each percent GHG reduction beyond 50%.
 - Tax credit not limited to international flights
 - CORSIA certification is one avenue available to verify the GHG score
 - The IRS has yet to develop their own GHG verification tools. USEPA may be stepping in to help.
 - Industry is advocating for a GREET alternative, because they disagree with the ILUC value in CORSIA
 - EPA is most likely to retain ILUC penalty.

Which Biofuels may seek certification?

- Anything waste-based, raw materials like:
 - Used cooking oil
 - Animal fats
 - Food waste
 - Processing residues
 - Landfill gas
 - manure
- These may be exported as:
- Feedstocks for EU biodiesel production
- US Ethanol
- Biomethanol or LGN via Biomethane
- SAF based on any of the above

Biomethane

- Lots of interest in Biomethane produced from
 - landfills, manure, food waste, etc.
- They all rely on mass balance across the pipeline grid
- Lots of question on calculating GHG:
 - Default values
 - Transport issues
 - Must account for methane leakage

Other GHG Questions

- Allocation of process emissions to co-products
- Determination of Waste & Residue versus co-products
 - When the material is a raw material under ISCC, the “conservative” position is to declare a material a co-product.
 - Because waste get preferential treatment, including double counting.
 - When the material leaves the ISCC system, the “conservative” position is to declare it a processing residue.
 - Because processing emission can be allocated to co-products therefor lowering the GHGs for primary ISCC material.

Other GHG Questions

- Emission factors
 - We see a number of emission factors that are not up-to-date or properly referenced.
 - We have rejected USEPA's eGRID model, because it is GHG Inventory model, not a lifecycle model. It only included emission of the electricity sector and not the upstream emission of extracting and transporting fuel.

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