

*Alternative agrifeedcrop plantations & feedstocks with a focus on South America*

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## EU RED III revision of Annex 9, is overdue (Expected shortly). The industry awaits more clarity on Cover Crops classification and hence their eligibility under the Refuel EU

## USA The 40(B) SAF Provision under the Inflation Reduction Act and some states such as Illinois, Montana provide tax incentives based on carbon intensity (CI) of SAF

Clarification is needed regarding the LCA / carbon intensity calculation methods for the different SAF Feedstocks

### ANNEX

Annex IX to Directive (EU) 2018/2001 is amended as follows:

(1) in Part A, the following feedstocks are added:

- “
- (r) Alcoholic distillery residues and wastes (fusel oils) not fit for use in the food or feed chain;
- (s) Raw methanol from kraft pulping stemming from the production of wood pulp;
- (t) Non-food crops grown on severely degraded land, not suitable for food and feed crops.”

(2) in Part B, the following feedstocks are added:

- “
- (c) Bakery and confectionary residues and waste not fit for use in the food and feed chain;
- (d) Drink production residues and waste not fit for use in the food and feed chain;
- (e) Fruit and vegetable residues and waste not fit for use in the food and feed chain, excluding tails, leaves, stalks and husks;
- (f) Starchy effluents with less than 20% starch content not fit for use in the food and feed chain;
- (g) Brewers' Spent Grain not fit for use in the food and feed chain;
- (h) Liquid whey permeate;
- (i) Deoiled olive pomace;
- (j) Damaged crops that are not fit for use in the food or feed chain, excluding substances that have been intentionally modified or contaminated in order to meet this definition;
- (k) Municipal wastewater and derivatives other than sewage sludge;
- (l) Brown grease;
- (m) Cyanobacteria;
- (n) Vinsasse excluding thin stillage and sugarbeet vinsasse;
- (o) Dextrose ultrafiltration retentate from sugar refining;
- (p) Intermediate crops, such as catch crops and cover crops that are grown in areas where due to a short vegetation period the production of food and feed crops is limited to one harvest and provided their use does not trigger demand for additional land and provided the soil organic matter content is maintained.”

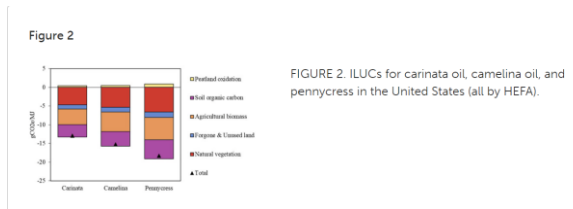
## Advantages

- Short cycle crops (for example: Camelina Sativa → 120 days)
- Uses and protects fallow land between main crops (e.g. in Argentina 20 million HA is fallow)
- Fixes carbon on fallow land and reduces agrochemical use given resilience to various climates, contributing to a more sustainable agricultural system
- High oil content (i.e. Camelina ranging between 30-40%)
- Helps control soil erosion: contributes to soil health improvement, water quality improvement
- As per LCA, crops have potential high GHGS – 80-100% (higher if ESCO can be counted)

◆ Camelina-based renewable diesel has an estimated CI score of ~24 (without meal credit) and an estimated CI score of ~7 (with meal credit).



- Socio-economic: Integrates income for farmers providing high quality vegetable oils compatible with biofuel production needs
- Can help achieve Aviation’s decarbonization targets (800 mln mt co2 in 2022, IEA), adding to the industry’s feedstock slate (HEFA pathway) while minimizing ILUC risks



### Challenges

- Breeding programmes for different climatic environments and for yield improvement (R&D)
- Increase yields while eliminating agrochemical and fertiliser inputs (yield improvement very important for GHGS)
- Impact of different oil qualities on convertibility to SAF (production yield, severity of hydrotreating reaction, rate of H<sub>2</sub> consumption, etc)
- Harvesting and processing techniques for seeds that are different to traditional oilseeds (e.g. most cover crop seeds are very small and light versus main stream crops)
- In startup phase difficulties to scale up vs logistics, storage and processing costs to bring these materials to market (typically marginal / fallow lands is far from key infrastructure)
- Uses of bi-products e.g. meal fraction needs be approved by relevant authorities (i.e. FDA in the US) to enhance farmers' revenue and reduce pressure on land use from livestock industry
- Right incentives to farmers to boost / expand acreage, to market operators to develop seeds processing capacity, and to SAF producers to invest in capacity that can optimally process these oils

## Future

- In the US and Argentina for example we have now many cases of projects starting to get to industrial scale (Camelina Sativa, Brassica Carinata)
- Cover crops will be a relevant part in future feedstock supplies for renewable diesel and SAF production (potentially a few million mt per year)
- ABCDs of agribusiness & some Oil majors teaming up to scale up cover crops
- Increasing Acreage allocated to Cover crops in S. America, USA, EU, Africa in 2024 (example potential: 100 million opportunity acres for Camelina worldwide)

Camelina: Grown worldwide  
Adaptable. Tolerant. Pest resistant.  
Over 100 million camelina opportunity acres in targeted regions in North America, South America, and Europe.



- Regulatory drivers are key to trigger the necessary developments in the supply chains, investment in infrastructure, logistics etc
- Clarity on LCA methodology needed in key jurisdictions

