

Intermediate crops in the Renewable Energy Directive

POLICY BACKGROUND

The Renewable Energy Directive (REDII) is a cornerstone to achieving the European Union's decarbonization goals. The REDII includes a target for renewable energy that incentivizes the use of biofuels, e-fuels, hydrogen, and renewable electricity in transport. The European Commission has proposed converting it into a more ambitious 13% greenhouse gas (GHG) intensity reduction target as part of the "Fit for 55" package.

Biofuels produced from food and feed crops are associated with higher food prices and significant GHG emissions from expanding cropland globally. To mitigate these effects, and to more strongly incentivize the commercialization of advanced technologies such as cellulosic biofuels, the REDII limits the contribution of food- and feed-based biofuels towards the renewable energy in transport target to the lower of 7% or 2020 consumption levels in each Member State plus up to 1%.

The REDII does not apply this limit to biofuels produced from food and feed crops grown as intermediate crops, which are crops other than the main crop, "provided that the use of such intermediate crops does not trigger demand for additional land." There is no further guidance in the REDII or any European Commission documents about how Member States should interpret and implement the condition on triggering "demand for additional land" when counting intermediate crops outside the food- and feed-based biofuel cap. This fact sheet summarizes the findings on intermediate crops from a recent modeling study to inform how the proposed REDII transport target could be modified to ensure increased GHG savings.

KEY FINDINGS

Intermediate crops in the EU are usually grown for environmental reasons such as increasing soil carbon and reducing nutrient leaching, but in the rest of the world they are generally grown as cash crops in climate zones that allow for multiple harvests in the same year. Globally, intermediate crops likely represent hundreds of millions of tons of material currently used in food and feed. Diverting intermediate crops from their existing uses can be expected to have the same market impacts as food and feed crops grown as a main crop—the same materials that are covered by the cap in the REDII.

This means that the use of globally produced intermediate crops for biofuel will very likely result in land use change GHG emissions the same magnitude as for regular food- and feed-based biofuels. For some types of biofuels, land use change GHG

emissions are large enough to more than offset any GHG savings gained by displacing fossil fuels.

The proposed new transport target would result in **6 billion liters of intermediate crop biofuel, accounting for 14% of the total amount of renewable energy used to meet the proposed transport target**. Because intermediate crops are as inexpensive as any food and feed crops, we expect that they will be readily available to meet the proposed REDII target. The higher the target level, the more intermediate crop biofuel is used. Our modeling finds that 95% of this would be soy biofuel, including hydrotreated vegetable oil (HVO) because there is no blend limit for HVO. Soy is associated with deforestation and very high land use change GHG emissions. For this reason, our modeling shows that the higher the REDII transport target, the more intermediate crop biofuel is used, and the lower the GHG savings from the REDII overall.

However, three policy changes could be made to the REDII that would change the role of cover crops and, as a result, increase GHG savings:

- » **Including intermediate crops under the food- and feed-based biofuel cap** by deleting their exclusion from the food- and feed-based biofuel definition in Article 2 **would double the GHG savings of the REDII transport target from 29 million tonnes to 58 million tonnes of CO₂e in 2030**. It would also **reduce the average cost of GHG abatement by 47%**.
- » Simply **reducing the transport target level from 13% to 11%** fuel GHG intensity reduction would **increase the GHG savings from the policy by 28%** because of the reduction in intermediate crop soy biofuel, while **reducing the average cost of GHG abatement by 33%**.
- » **Excluding all food- and feed-based biofuel, as well as intermediate crops**, from the REDII transport target **results in the highest GHG savings of 66 million tonnes of CO₂e in 2030** and an **average GHG abatement cost reduction of 64%**.

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Author: Adam Christensen

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Contact: Stephanie Searle, stephanie@theicct.org

www.theicct.org

communications@theicct.org

[twitter @theicct](https://twitter.com/theicct)

