

Advanced fuels target (no crops) VS renewable transport target (with crops) in the RED

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Summary

One of the key areas of debate in the REDII proposal is whether to introduce a national transport target in addition to one for advanced fuels. This briefing shows that the effect of a national transport target is to continue the support for food-based biofuels through the backdoor, going against their phase-out. This will also water down the greenhouse gas savings provided by the advanced fuels. Depending on the target levels and electricity multipliers, the contribution of food-based biofuels could grow, leading to further agricultural land expansion and direct and indirect land use change.

Why a national transport target is unnecessary and counterproductive

The REDII proposal already includes a transport target for renewable advanced fuels that drives decarbonisation of transport energy in Member States. It is an EU target on fuel suppliers to deliver 6.8% of advanced fuels in transport. The target covers a category of “advanced fuels”, which includes advanced biofuels, renewable electricity and other advanced renewable fuels and excludes crop-based biofuels. This target on fuel suppliers will drive the supply of advanced fuels including electrification as companies that supply renewable electricity to transport will have the opportunity to qualify for clean fuel credits which they can sell to fossil fuel suppliers. The role of the member states is to ensure and check the fuel suppliers comply with the target set at EU level.

With a national renewable transport target, any type of renewable energy in transport will be counted towards compliance, including crop biofuels. The target would be set on Member States, not on fuel suppliers and to achieve the current 10% renewable transport target, Member States have mainly used crop biofuels, with negative climate and environmental impacts. A new overall renewables target in transport, with crop based biofuels, would bring similar results and would prevent the necessary move towards better alternatives than land using biofuels.

Impacts of a renewable transport target with crop biofuels

A national renewable transport target will have 3 important negative effects:

1. Crop based biofuels will be used to meet targets in the cheapest, not the best way

The transport renewables target in the [Renewable Energy directive](#) has [driven the](#) use of the cheapest renewable alternatives. The existing production has remained stable and growth driven by the target has been mainly originated from palm oil that now accounts for around a [third of biodiesel](#). The inclusion of crop based biofuels in a target would retain the cheapest, but environmentally harmful biofuels in the

energy mix, rather than driving innovation. With crop based biofuels contributing to a target other better alternatives will be unlikely to develop.

2. A negative climate impact, due to ILUC

The phase-out of crop biofuels has a positive impact on reducing ILUC emissions. With a business as usual level of biofuels¹ an ILUC impact of 330 Mt CO₂e is estimated in 2021-2030². With a phase-down to 3.8% of transport energy the ILUC impact drops to 140 Mt CO₂e. The ILUC impact is dependent on the level of crop biofuels, with higher amounts, higher ILUC emissions are observed. The ILUC emissions will [outweigh](#) the savings of the direct emissions leading to the policy increasing emissions rather than decreasing them, if the phase-out is not strong enough.

3. Negative impacts on food prices

Different policy options now being considered under the REDII have different impacts on food prices. Maintaining the food-based biofuel demand at 7% of transport energy to 2030 could result in global vegetable oil prices 8% higher and cereal prices 0.6% higher than they would be in the case of a full phase out of food-based biofuel demand³. These higher prices would result in \$19 billion of additional costs to other consumers of cereals and vegetable oils in 2030. Reducing the cap to 3.8% would approximately halve the price impact from the policy, and correspondingly halve the cost to other consumers. Depending on the scenario, EU consumers could be paying 49% to 67% of the total increase in food prices.

A reality check on possible fuel contributions

T&E has estimated the likely contribution of different fuels towards a national renewable energy target. It estimates that renewable electricity from cars is likely to amount to 2% and rail will contribute about 0.9%. Advanced biofuels could sustainably deliver 2.3% and other waste based biofuels (Annex IX part B) 1.5%. Renewable electricity in freight and RFNBO (PtX) could optimistically contribute 0.5% together. Cumulatively this amounts to around 10% from all advanced fuels, when using a 2.5 multiplier for electricity. A target higher than this would force Member States to encourage the supply of crop-based biofuels.

Depending on the target trajectories and starting point, the contribution of crop biofuels may be larger in the early 2020's as electricity and other advanced fuels will see higher deployment only later in the 2020's. More details in Annex.

¹ 13.9 mtoe (5.5% of 2030 transport energy, or 4.8% of 2020 transport energy)

² Valin (2016) The Land Use Change Impact of Biofuels Consumed in the EU - Quantification of area and greenhouse gas impacts. Complementary scenarios by 2030. https://ec.europa.eu/energy/sites/ener/files/documents/globiom_complimentary_2016_published.pdf

³ Malins, C. (2017). Thought for food - A review of the interaction between biofuel consumption and food markets. Cerulogy, London. <https://www.transportenvironment.org/publications/biofuels-policies-do-increase-food-prices>

Uncertainty about the final political outcome - different positions of different institutions

Institution	State of play	Advanced fuels target	Renewable transport target	Crop cap in 2030 RED
EC	Released	Yes, at 6.8%	No	3.8%
ENVI	Voted	Yes, at 9%	No	0% but exempts some biofuels
ITRE	On-going discussions	Yes. Several AMs from 5 to 12%	Several AMs from 10 to 15%	No competence
Council	On-going discussions	No	Yes, with a sub-target for advanced biofuels	7%

The position of the [ITRE rapporteur](#) is for two targets, an advanced fuels target on fuel supplier at 9% and a national transport target at 12%. The two targets are on two different entities – the country and the fuel suppliers, and nothing ensures the national transport target to include the advanced fuels target. So there is a risk that a country could support a high level of crop based biofuels, which will be dependent on the level and the design of the crop cap.

Conclusion

The difference between a national renewable transport target compared to an advanced fuels target on fuel suppliers is the ability to retain an EU level driver for all crop-based biofuels. The remaining support of crop-based biofuels goes against their phase-out. The inclusion of crop biofuels in the target will undermine GHG savings of the policy due to a majority of current EU crop biofuels increasing emissions compared to fossil fuels, not reducing them. If decision-makers want to encourage only clean renewables in transport, crop based biofuels should be kept out of a target.

Further information

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Annex - Estimation methods

NOTE: For the estimation of the EU potential for fuels we considered only their EU availability, based on the concept of ecological footprint⁴, as resource use needs to be in line with EU's sustainable potential. In other words, we should 'live within our means'. Imports will naturally occur, but are excluded from this analysis.

Electricity

Electricity is often seen as a gap filler to meet the advanced fuels target. There has been little publicly available assessments of how much renewable electricity can contribute to the target, as the contribution is dependent on the uptake of electric vehicles. We assessed the contribution of renewable electricity in 2030 with the T&E in house transport model. We assume electric vehicle sales of 2% in 2020, 10% in 2025 and 25% in 2030, with a 49%⁵ renewable electricity share in 2030. The result is a 2% of 2030 road and rail energy consumption without any multiplier. Assuming the current rail energy consumption and share of electrification remains stable, the contribution of rail would be 0.9%.

The assumptions taken are considered realistic, but the realisation of these will be heavily dependent on the clean vehicles directive and the level of CO2 targets and a zero-emission vehicle mandate and their enforcement⁶. Also a serious concern is how electricity consumption in transport is measured. We considered only light duty vehicles and electricity in rail as their policy support is most stable. The contribution from trucks and vans is expected to remain very low in the time period to 2030.

Advanced biofuels

Sustainable advanced biofuels can provide significant savings of greenhouse gas emissions compared to fossil fuels, without using productive agricultural land. However a reality check is also needed on how much they can contribute, when setting a target level. T&E proposes a conservative target of [2.3%](#) to ensure that the target is set at a level which takes into account the development of the bioeconomy and complies with the principles of waste hierarchy and cascading use. The commission proposed a target of 3.6%. Based on an [Öko institute study](#) if the 3.6% advanced biofuels is met with forests only, it would consume 12% of EU annual forest growth.

Other waste based biofuels (Annex IX B - UCO and Animal fats)

The publicly available data is limited, and the current EU potential of around 4 million tonnes of used cooking oil and animal fats⁷ was used to evaluate the potential contribution for 2030. The contribution is around 1.5% of 2030 transport energy demand. This is in line with other estimations of the EU potential for instance [by E4Tech](#). This analysis doesn't include molasses as an eligible feedstocks, although it is listed in Annex IX.

RFNBO (or PtX)

Renewable fuels of non-biological origin (often called Power-to-X or electrofuels) are unlikely to play a significant role up to 2030. The technology exists, but at current electricity prices, it remains an expensive option, and hence an unlikely one to contribute in a significant scale. It is hence not included in this analysis as the uncertainty in the development of these fuels is currently very high.

Waste-based fossil fuels

The contribution of waste-based fossil fuels (or recycled carbon fuels as they are renamed in EP ENVI committee and in the Council latest drafts) is difficult to estimate. Their potential contribution will probably

⁴ An ecological footprint is a measure of human impact on Earth's ecosystems, so the amount of land and sea needed to sustain one's lifestyle

⁵ Based on the EUCO30 scenario in the [REDII impact assessment](#).

⁶ The EC published its [proposal](#) on 8.11.2017.

⁷ Based on data from EWABA (European Waste-to-Advanced Biofuels Association) and EFPPA (European Fat processors and Renderers Association).

remain at less than 1%. In any case, these fuels are not part this analysis as they are not fully renewable and hence do not fit into the Renewable Energy Directive. Some degree of support for waste based fossil fuels could be considered in the future, but outside of the RED. Any potential policy support should be conditional to a proper assessment of their life-cycle GHG emissions, environmental impacts, potential overlaps with existing EU policies and necessary safeguards to address other potential perverse impacts.