

Moving ahead

The world without food-based biofuels

Why do we have biofuels?

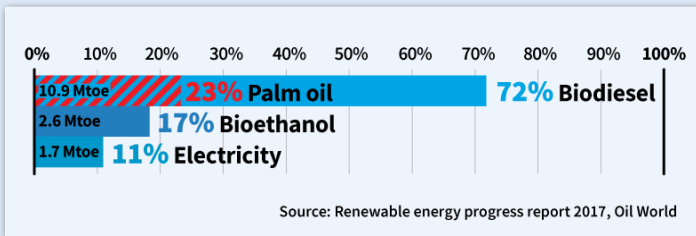


Support for biofuels at EU level was introduced in 2009 when EU legislators set a 10% target for renewable fuels in transport for 2020 in the Renewable Energy Directive (RED) and a requirement in the Fuel Quality Directive (FQD) to decrease by 6% the GHG footprint of fuels. The intention was to reduce GHG emissions by moving away from fossil fuels – biofuels were initially seen as a tool to achieve that goal. In 2015 the amount of renewables in the transport sector had reached 6%.¹

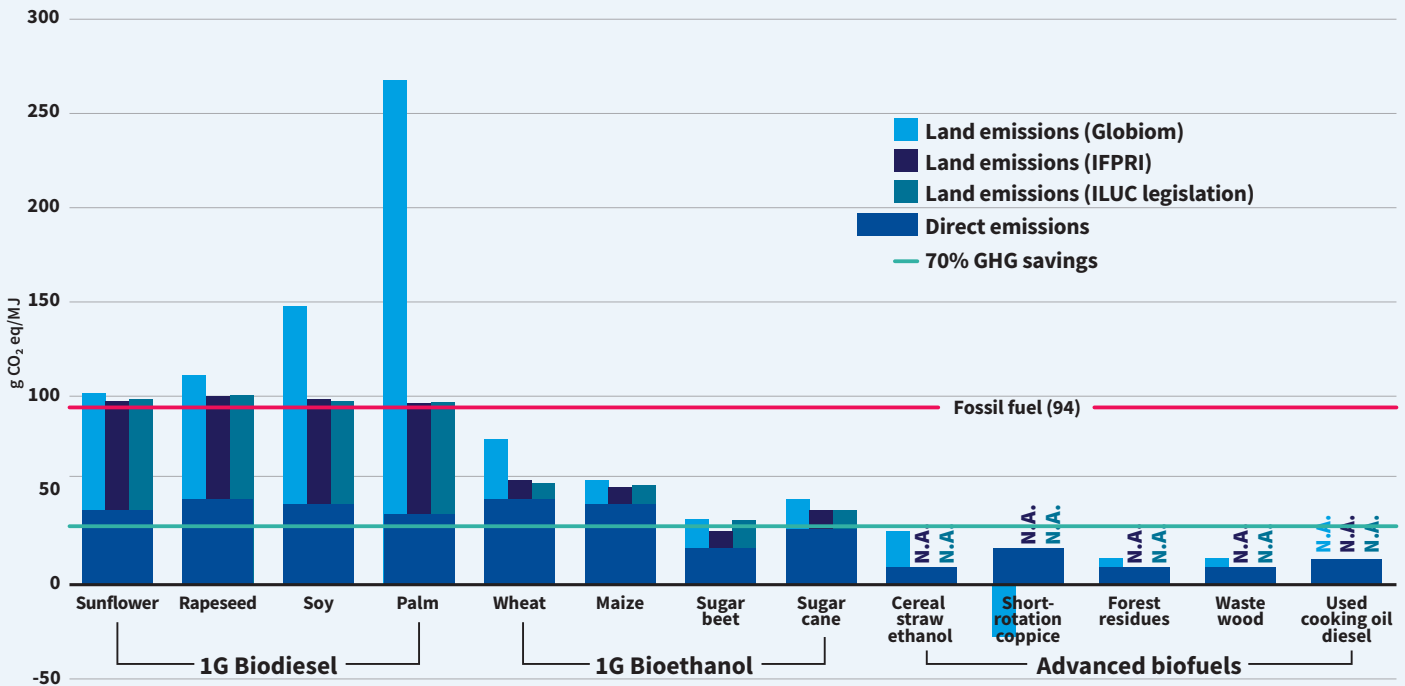
What is the problem?



EU policies have generated a greater demand for biofuels from agricultural crops. This, in turn, has resulted in an increase in the overall global demand for agricultural land. By using food crops to produce fuels, the need for fertile agricultural land increases, as (growing) demand for food and feed still needs to be met. To meet this growing land demand, carbon-rich lands such as forests, peatlands, grasslands and fragile ecosystems are converted. This change of land use results in a loss of biodiversity and a substantial increase in GHG emissions, a phenomenon known as indirect land-use change (ILUC). In 2015, a reform of EU biofuels policies to tackle ILUC stated that crop-based biofuels can contribute a maximum of 7% of transport fuel under the renewables target. The problem is the reform still does not take into account the ILUC emissions when assessing the GHG performance of fuels.



Direct emissions plus land emissions



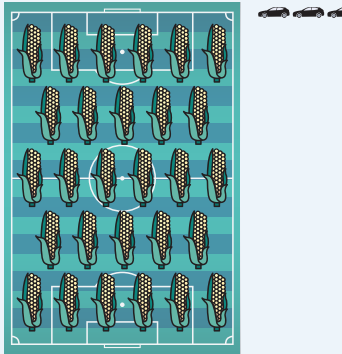
Land use

The European Commission commissioned a study to assess total land-use change impacts of the current biofuels policy. It concluded that 6.7 million ha of new agricultural land would change in order to meet

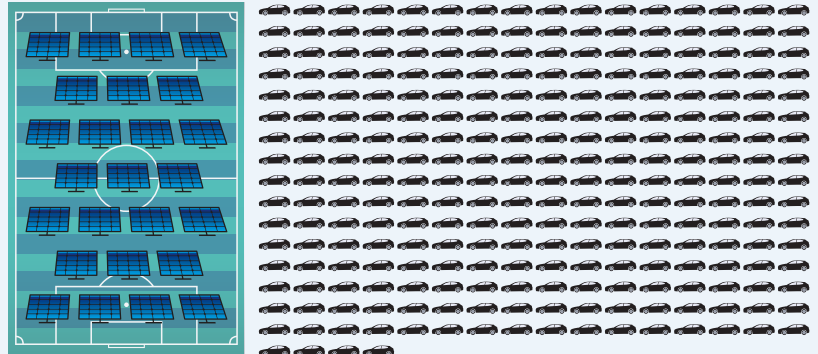
the EU biofuels needs in 2020 – a land area about the size of Ireland.² Out of this land-use change, about 66%, is outside the EU. Already in 2015 0.9 million ha³ of palm oil plantations were used to quench the EU's biodiesel thirst.

Power a car with biofuels or renewable electricity?

2.4 fueled by 1 football pitch cars of food crops



260 fueled by 1 football pitch cars of photovoltaic solar panels



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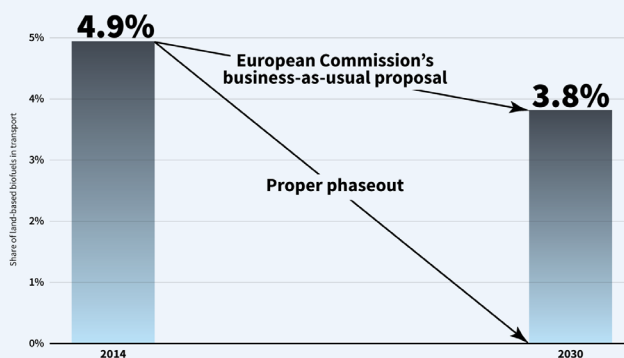
Source: T&E calculations with following assumptions: 15000km/a, PV producing 1000 MWh/ha/a, an EV consuming 0.18kWh/km, Maize producing 3030 l/ha/a ethanol (Globiom) and 6l/100km fuel consumption.

The proposed phase-out

In July 2016, the European Commission's Strategy for Low Emission Mobility⁴ committed to a 'phaseout of food-based biofuels'. However, this commitment of a phase-out is hardly reflected in the new Renewable Energy Directive (RED) proposal. The Commission's intention is to keep crop-based biofuels at 3.8% of transport fuel in 2030. The proposed approach of crop-based biofuels to 3.8% in 2030 will result in higher greenhouse gas (GHG)

emissions from European transport over the period 2021-2030 by an amount equivalent to the emissions from the Netherlands in 2014. This is compared to a scenario with a full phase-out of crop biodiesel in 2025 and crop ethanol in 2030 which leaves plenty of time for the industry to recover its investment. Already by end of 2017, 95% of investment costs of biodiesel installations should be paid back.⁵

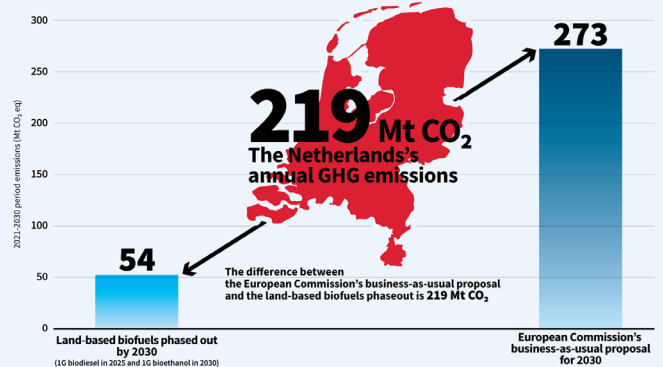
Land-based biofuels in Europe: business as usual or phaseout?



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Source: Copa-Cogeca position paper, RED Annex X


Extra emissions when land-based biofuels are not phased out



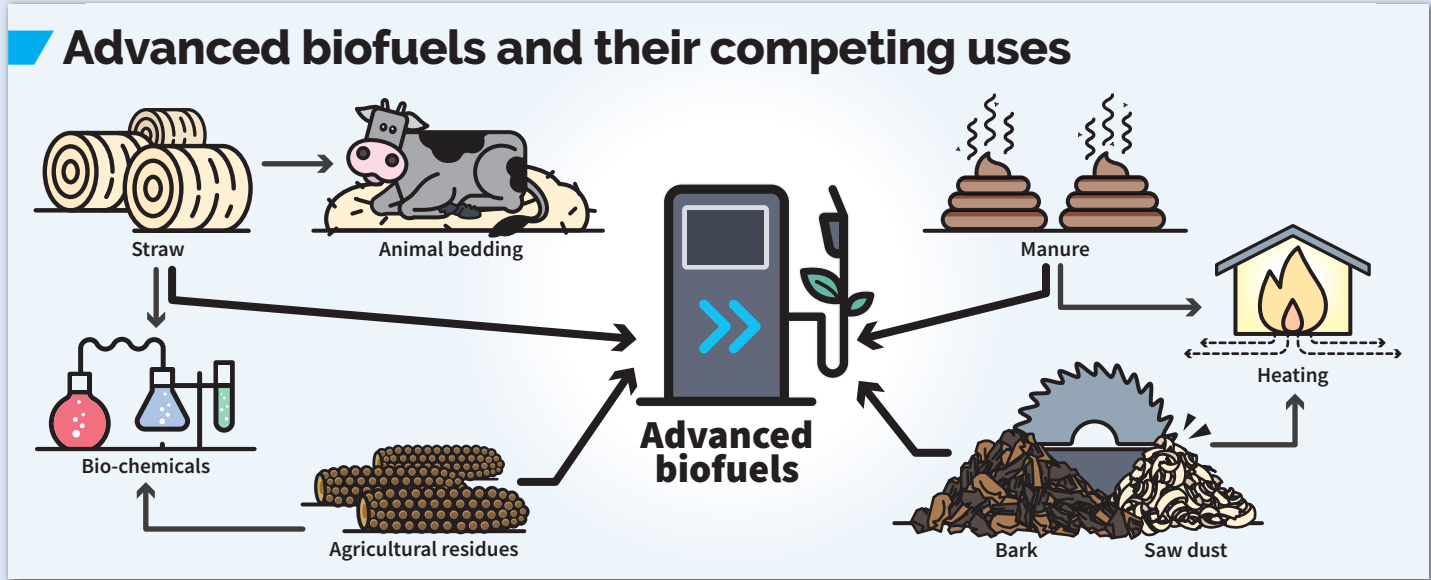
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Source: Calculations based on leaked RED Annex X, T&E analysis of Globiom model, EU Energy Reference Scenario 2016


Advanced biofuels

 Sustainable advanced biofuels produced from wastes and residues can provide significant GHG savings compared to fossil fuels, and contribute to decarbonising transport without exerting negative pressure on agricultural land. The Commission proposal defines advanced biofuels as fuels made from materials in Annex IX(A) of the proposal. This list should be reserved for wastes and residues only, however it includes feedstocks

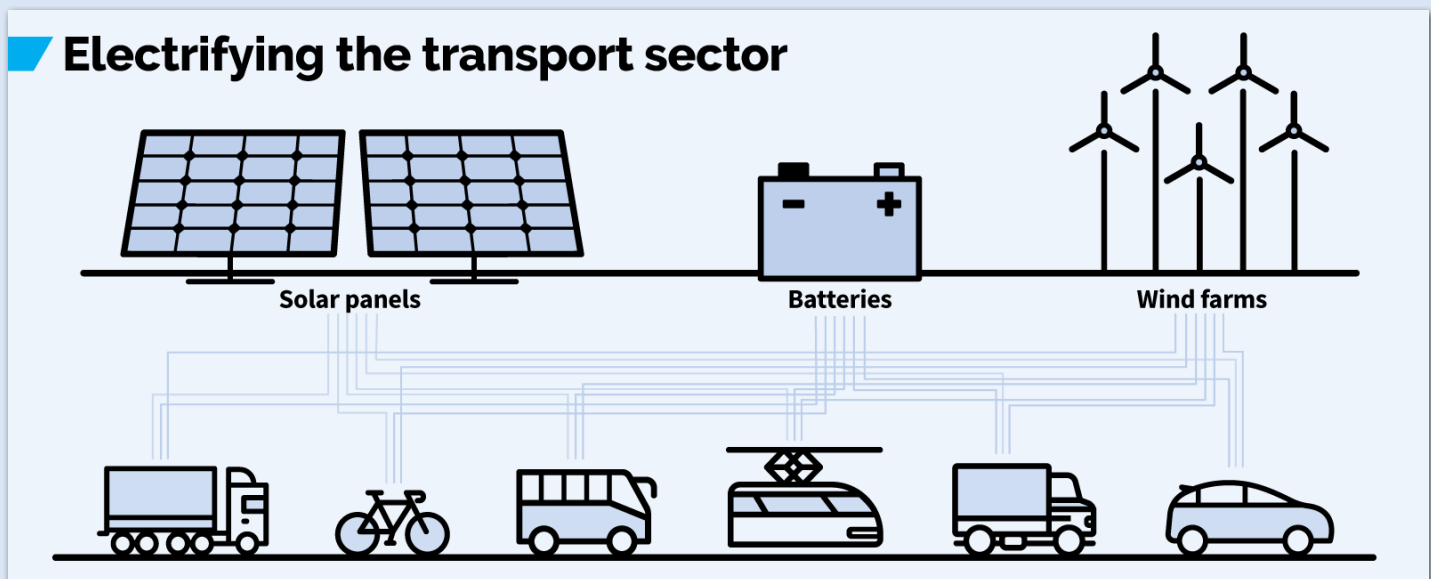
that might represent a risk. An advanced biofuel can be cellulosic ethanol, biomethane, drop-in diesel or jet fuel, for example. Advanced biofuels could play a long-term role in decarbonisation—as long as sustainability is ensured from the beginning. That said, there is a limitation on how much of these fuels can be produced sustainably. For that reason, other options for clean energy for transport should be developed and deployed in parallel.




Electrification

 At the moment, electricity is the cleanest fuel available for the transport sector.⁶ Currently, the well to wheel (WTW) battery electric vehicle emissions are 78g CO₂/km (compared to 185g

CO₂/km for fossil fuel cars).⁷ It is the only sustainably scalable solution at the moment, and its performance will improve over time as the grid becomes cleaner thanks to policies to clean up the power sector.



Policy recommendations towards cleaner transport fuels

 The EU's 2009 renewable energy directive (RED I) focused on achieving big volumes of renewable fuels but failed to adopt proper quality standards—sustainability criteria—for what kind of fuels could contribute to that target. Because of this, the EU's renewable transport fuel market is now dominated by crop biodiesel, which is increasingly sourced from palm oil. As a result, the EU's cleaner transport fuels policy has increased rather than reduced transport emissions.

The European Commission has now proposed to overhaul its renewable (transport) energy policy for 2021-2030. The main elements of the proposal are:

1. A reduction of the limit on first-generation biofuels

1. Completely phase out land-based biodiesel by 2025 at the latest. Currently EU biodiesel performs on average 80% worse than fossil diesel. It is increasingly sourced from palm oil and has huge negative climate, environmental and social impacts. It must be phased out as soon as possible.

2. Decrease the cap on all land-based biofuels to 0% in 2030. First-generation biofuels which require large amounts of land to produce energy are not a scalable or sustainable solution to decarbonise transport. Support for land-based biofuels should be completely phased out, especially given that EU policy does not take into account indirect land-use change emissions.

3. Ensure the quality of advanced (bio)fuels. Advanced (bio)fuels can make a contribution to reducing transport greenhouse gas emissions. However the 6.8% blending mandate proposed by the Commission will require additional quality safeguards to ensure advanced fuels result in real emission cuts.

4. Adopt stronger incentives for renewable electricity in transport. Just like advanced biofuels, electrification of transport needs to be incentivised. This could be done with a separate target for electrification or a multiplier. Ensuring an accurate accounting system for measuring renewable electricity in transport is essential.

Sources

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