Will biofuels have a role in EU transport decarbonisation?

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Contrary to countries outside Europe, such as Brazil and India, who are scaling up the production of biofuels to decarbonise transport, the European Commission has decided to gradually phase out biofuels, citing environmental concerns.

The biofuel industry, for its part, insists that European renewable ethanol saves today, on average, 77% GHG emissions compared to fossil fuel and could be a viable solution to the decarbonisation of EU road transport.

The industry also stresses that ethanol could help Europe boost its food security and independence as a domestic source of protein for animal feed, which EU biofuel production provides.

On the other hand, several NGOs say this leads to food price hikes and also question biofuels' carbon footprint.

In this EU Special Report, EURACTIV examines the different aspects of biofuel production and to what extent it could play a role in the ongoing debate over banning fossil fuel cars after 2035.

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Biofuels industry criticises ‘inconsistent’ transport decarbonisation policy

By Sean Goulding Carroll | Euractiv.com

Languages: Français | Deutsch | Polski | Spanish

New EU rules to green the maritime and aviation sectors prohibit the use of crop-based biofuels on sustainability grounds, though the same fuels play a major role in decarbonising the bloc’s vehicle fleet. This differing approach to the green credentials of first-generation biofuels across EU legislation has drawn criticism from industry.

A European Commission report analysing the achievement of the 2020 renewable energy goals found that the consumption of biodiesel and bioethanol has increased since 2016, with bioenergy the primary means to decarbonise the EU transport sector at present.

“Consumption of food and feed crop-based biofuels continues to represent a large share of renewable energy consumption in transport while the consumption of advanced biofuels was lower but increased significantly in recent years,” the report said.

The high contribution of biodiesel and bioethanol to cutting road emissions “has led to a growth in biofuel consumption,” it added.

However, despite EU legislation sanctioning the use of first-generation biofuels to replace petrol and diesel for road vehicles, both bioethanol and biodiesel are considered similar to fossil fuels in legislation governing aviation and maritime fuels.

Craig Winneker, director of communications with biofuels trade association ePURE, called for an EU approach under ReFuelEU Aviation and FuelEU Maritime – two flagship regulations to boost the quantity of green fuels in planes and ships.

Despite a strong NGO campaign, the breadth of permitted crop-based biofuel feedstocks also remains unaltered. At present, only palm oil is set to be phased out as a fuel feedstock by 2030.

In the run-up to the Renewable Energy Directive revision, NGOs mounted a campaign for soy to be added to the list of restricted feedstocks, arguing that it contributes to the clearing of land in Latin America.

However, the threshold at which a feedstock is considered to overtake deforestation abroad (known as indirect land use change, or ILUC) was not brought down, meaning soy remains below the level that would require the biofuels industry to phase it out.

This EU sanctioning of the use of crop-based biofuels under the Renewable Energy Directive is at odds with the Commission’s approach under ReFuelEU Aviation and FuelEU Maritime – two flagship regulations to boost the quantity of green fuels in planes and ships.

Renewable Energy Directive cap remains

Under the recent revision of the primary law governing green energy in the EU, the Renewable Energy Directive, the biofuel cap remains unchanged.

As in the previous version of the law, the contribution of crop-based biofuels to road and rail transport renewable energy targets is capped at 7% of the total. Countries may also not go beyond a 1% increase compared to 2020 levels.

The biofuels industry has pointed to policymakers’ unwillingness to revise down the 7% cap as confirmation of “the sustainability and importance” of crop-based biofuels.

The FuelEU Maritime regulation repeats the same arguments as its aviation counterpart in justifying the decision to exclude crop-based biofuels, adding that competition with road transport is also a concern.

“The non-eligibility of food- and feed crop-based fuels for contributing to the objectives of this Regulation also minimises any risk to the slowing down of decarbonisation of the transport sector, which could otherwise result from a shift of crop-based biofuels from road transport to maritime transport,” the text states.

Winneker questioned why different pieces of legislation “do not treat biofuels consistently”.

“Since some biofuels are simply discriminated against even where they could provide a big boost to decarbonisation,” he said and contrasted the more restrictive European stance to a more open approach in other parts of the world.

“The EU’s approach has been more to play favourites and hope for the best, undermining all other available alternative solutions to decarbonisation,” he said.

“The consequences are serious, as the EU is only making it more difficult to achieve ambitious GHG-reduction goals.”
Commission sees crop biofuels’ clean transport value, but outside EU

By Sarantis Michalopoulos | Euractiv.com

Languages: Français | Deutsch | Polski | Czech | Spanish

The European Commission has recognised the role of crop-based biofuels in decarbonising transport, despite pushing through legislation for their phase-out outside the EU.

At a G7 meeting in Hiroshima last month, the world’s richest countries adopted a document, also signed by the EU, in which the value of biofuels – among other options – in decarbonising road transport was acknowledged.

“We highlight the various actions that each of us is taking to decarbonise our vehicle fleet, including [...] to promote sustainable carbon-neutral fuels including sustainable bio- and synthetic fuels,” the document reads.

But at EU level, the Commission is pushing to limit the use of crop-based biofuels such as bioethanol or biodiesel, to ensure that “the pressure on land use is limited”, a Commission spokesperson told EURACTIV.

Instead, the EU executive promotes electric cars and so-called advanced biofuels such as biomass waste and agricultural and forest residues.

For its part, the biofuel industry admits that electrification is the future for road transport, but it will take many years as well as major investments in advanced biofuels to fully replace oil.

Instead, the biofuel industry says crop-based biofuels, such as ethanol, should be part of the energy mix, otherwise road transport will switch back to oil because of lack of alternatives.

The industry also claims that the average GHG reduction of EU ethanol is 77%, but some refineries are approaching 100% by using CO2 capture.

But unlike the rest of the world, the Commission insists that crop-based biofuels are not an option for Europe.

“Their use should be minimised”, the EU spokesperson said.

Asked to explain why the EU sees the value of crop-based biofuels abroad but not domestically, a source close to the matter commented that the text was diplomatically written suggesting that the goal among G7 signatories is “common but the means are varied”.

Under EU rules, the contribution of first generation biofuels to renewable energy targets for road transport is capped at 7%.

The role of crop-based biofuels has proven divisive in Europe, with supporters portraying them as a cost-effective means to remove fossil fuels from the transport sector, while critics have questioned their climate credentials.

European green campaigners have argued that the land used to grow energy crops would make a greater climate contribution by being rewilded to capture carbon.

World invests in ethanol

Unlike the EU, key economies worldwide have invested in bioethanol to decarbonise transport.

According to the latest International Energy Agency (IEA) report, Asian countries, the US, and Brazil will form a big part of biofuel production globally.

In Washington, the White House is currently reviewing a proposal made by the US Environmental Protection Agency requiring oil refiners to add 20.82 billion gallons of biofuels to their fuel in 2023, 21.87 billion gallons in 2024, and 22.68 billion gallons in 2025.

Of these, corn-based ethanol and other biofuels represent more than 15 billion gallons annually, while the rest is advanced fuels, according to Reuters.

Similarly Japan, also a G7 member, recently published its new biofuel policy, which heavily relies on ethanol, allowing the US to capture “up to 100% of Japan’s on-road ethanol market”.

Bharadwaj Kummamuru, the director of World Bioenergy Association, recently told EURACTIV that countries like India have already exceeded the E10 target and now aim for E20 by 2025.

E10 and E20 refer to petrol containing up to 10% and 20% ethanol respectively.

E10 gaining ground in Europe

The Commission spokesperson insisted that the executive supports member states in using possibilities “to reduce the blending proportion of biofuels which could lead to a reduction of EU agricultural land used for production of biofuel feedstocks”.

But in Europe, E10 is increasingly gaining ground in member states who struggle to meet their clean transport targets.

To date, 18 EU countries together with Norway and the UK have rolled out E10 in petrol stations.

The latest was Poland, where in late May the parliament unanimously backed new legislation promoting E10 in Polish gas stations.

“After more than a decade of discussion on E10 gasoline, we are finally catching up with the rest of Europe, giving a much-anticipated new economic boost to Polish agricultural distilleries and spirits plants, and with them to farmers,” Łukasz Kornowski, President of the Board of the Association of Polish Distilleries (ZGP), commented.
French study boosts ethanol in road transport decarbonisation debate

By Sarantis Michalopoulos | Euractiv.com

A new French study found that hybrid vehicles running with up to 85% renewable ethanol (E85) are just as climate-friendly as electric vehicles if the “full-life-cycle” argument is taken into account.

According to the ethanol industry, the findings are key in addressing the ongoing deadlock in the EU debate on banning internal combustion engine cars from 2035.

The study, conducted by IFPEN – a French public institute dealing with energy and environment – measured and compared the greenhouse-gas emissions of vehicles powered solely by petrol, plug-in flex-fuel hybrids running on E85, and all-electric cars, based on a full life cycle analysis.

The E85 means a vehicle runs on 85% renewable ethanol and 15% fossil petrol.

The life cycle analysis, according to the study, accounts for all greenhouse gas (GHG) emissions connected with the vehicle and its battery (from manufacture to recycling), as well as in the energy used (production, refinery, transport, distribution and combustion).

The findings were then applied to French and European electric power mixes.

“This comparison, applying to 2022 with projections for 2040, shows that plug-in flex-fuel hybrids running on E85 operating 40% of distance travelled as an electric vehicle are at least as climate-friendly as full electric vehicles, with the French electric power mix, which is already low-carbon, and even more with the average European mix, which has a higher carbon footprint,” the study reads.

The study also notes that plug-in hybrids running on E85 has advantages compared to full electric cars. It says when charging points are all occupied, drivers can travel for long distances without having to recharge their battery simply by filling up on E85, the study says.

Moreover, the study stresses that their batteries are smaller and thus use “fewer mineral resources produced outside the EU and less power during manufacturing”.

Contrary to worldwide trends, Europe has decided to gradually phase out crop-based biofuels such as ethanol.

Transport is responsible for 27% of total greenhouse gas emissions in the EU, and several pieces of legislation have so far failed to bring about major changes.

Environmental NGOs have long argued that relying on crop-based biofuels leads to a hike in food prices, considering that crops are being used to fill cars’ tanks rather than feed people.

The industry says crop-based biofuels such as ethanol are crucial in decarbonising transport, considering that the roll-out of electric cars will take many years due to high costs and relatively poor infrastructure.

A third revision of the Renewable Energy Directive is underway, and EU policymakers insist on a decreased role of conventional biofuels after 2030.

For its part, the industry has urged EU policymakers to come up with a “reality check”, considering that the EU executive has admitted that by 2030, all will still drive Europe’s cars, despite the decarbonisation drive.

A ‘realistic’ approach

Referring to the ongoing debate over the ban on fossil fuel cars and potential alternative fuels, the European Renewable Ethanol Association (ePURE) commented: “It’s clear EU member states are now looking for a more realistic approach to transport decarbonisation that doesn’t rely on just one technology”.

ePURE insisted that even beyond 2035, renewable liquid fuels should have a role and stressed that the European renewable ethanol saves today “on average 77% GHG emissions compared to fossil fuel”.

The ethanol association emphasised that renewable fuels can help to preserve the affordability of mobility – a major concern, given the higher cost of electric vehicles – while rapidly cutting emissions.

French and European electric power mixes.

The industry says that by 2030, renewable liquid fuels should not be entirely charged and driven electrically, especially company cars.

They pointed out there is no guarantee that the plug-in hybrid electric vehicles will be driven 40% electrically, as “many PHEVs in Europe are rarely, if ever, charged and driven electrically, especially company cars”.

Despite repeated requests by EURACTIV, the European Commission was not available to comment on why the executive does not consider the lifecycle argument in CO2 road transport calculation.

Contacted by EURACTIV, the NGO Transport and Environment (T&E) described the study’s findings as “absurd”.

“Suggesting that plug-in hybrids running on a combination of fossil fuel and biofuel are as good for the climate as electric vehicles is absurd. This is a shameless attempt of the oil industry to keep selling fossil fuels at the expense of the climate and through colossal environmental damage from growing biofuels,” said Anna Krajinska, vehicle emissions and air quality manager at T&E.

She added that setting CO2 targets based on tailpipe emissions is the only way to ensure Europe’s car fleet goes pollution free.

“Policymakers must honour the agreed 2035 engine phase-out date. Anything else risks derailing Europe’s climate targets and leaving the door wide open to fossil fuels,” Krajinska noted.

In its response, T&E also stressed that the study did not take into account improvements in the carbon footprint of battery production in Europe and that it also “overstated” the carbon intensity of the electricity grid in France and the EU.

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The EU's energy taxation directive (ETD), a proposal to bring energy tax rules in line with the bloc's green goals, remains at a standstill more than two years after it was first proposed.

Unlike other rules put forward by the European Commission, tax matters are dealt with by unanimity decision at the Council of the EU, meaning each member state has a right of veto and can block the law from progressing.

Other institutions, such as the European Parliament, are relegated to providing opinions, in which they advise national governments on how to proceed.

A revision of the ETD, last updated twenty years ago, was a significant element of the European Commission's so-called "Fit for 55" package, a series of legislative proposals unveiled in July 2021 aimed at slashing Europe's carbon emissions in line with its Green Deal ambitions.

However, while the bulk of the package has passed into law, the Energy Taxation Directive remains conspicuously absent.

Instead, disagreements over the phasing out of tax exemptions for aviation and maritime fuels have brought negotiations to a halt.

According to a diplomatic source, who spoke to Euractiv on condition of anonymity, there has been little progress on the file, with the same divisions remaining.

The energy crisis brought on by Russia's invasion of Ukraine has added to national governments' hesitancy to push the file forward, as capitals become increasingly wary of raising the tax burden on top of already high energy costs.

Within the Council, there has been "no shift in positions or anything else that would make a breakthrough more likely" the diplomatic source confirmed.

A letter signed by prominent oil and biofuel trade associations was sent to national negotiators dealing with the file, calling for progress on the revision. Finalising the ETD will provide the necessary price incentives to boost the production of green fuels, they argued.

The industry was concerned that member states were not aware of their support for the directive's revision, so sought to make their position clear.

The missive was sent in advance of a Wednesday (8 November) working party organised by the Spanish Presidency of the Council, in which countries exchanged views on the dormant file.

"Currently, we fear that the lack of progress on the ETD recast negotiations will result in a withdrawal of the proposal, and we call for the continuation of the negotiations, both on technical and political level," the letter states.

Signatories also want to see the tax rate take into account the level of sustainable fuels present in fossil fuel blends – if 10% of a petrol mix is ethanol, that percentage should be taxed at a different rate, as defined by the ETD, they argue.

Under the current regime, taxation is based on the fuel product, so a biofuels and gasoline blend is taxed as 100% fossil fuels.

The industry has long been "concerned about the unfair discrimination among different renewable fuels," said David Carpintero, director general of the bioethanol trade association ePURE.

"It simply goes against common sense to treat crop-based biofuels with proven sustainability and greenhouse gas-reduction performance as if they were fossil fuels," he told Euractiv. "The goal should be simple: The EU's energy taxation policy should be aligned with its climate ambitions, not work against them."

While urging progress, the companies behind the letter are not necessarily expecting white smoke before the end of the year.

They are looking to next year, when Belgium holds the rotating presidency of the Council, for progress – hopeful that the law will be concluded prior to the shakeup of the EU Commission following the mid-year European elections.
The EU will be able to reach its energy goals and reduce CO2 emissions as long as policymakers take a “more pragmatic” and science-based approach when it comes to biofuels, Valérie Corre, from the European Renewable Ethanol Association (ePURE), told Euractiv in an interview.

“I believe we need to have much more pragmatism in our decision-making process, looking at facts and science, and not let dogmatism in the way. Because when you take a dogmatic approach, you are missing the point […] you are killing opportunities that are really at our disposal to act today as we speak,” she said.