

Fixing Europe's clean fuels policy

T&E policy recommendations on the new RED proposal

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Summary

The EU's 2009 renewable energy directive (RED I) was designed to increase the share of "renewable" fuels in transport. To achieve this the EU imposed a target of 10% renewable energy in transport on EU member states. EU policy 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. On average biodiesel's greenhouse gas impact is 80% worse than the fossil diesel it replaces. As a result, the EU's cleaner transport fuels policy has increased rather than reduced transport emissions. It also has significant and very negative social and environmental impacts, such as deforestation and loss of biodiversity in other countries.

The European Commission has now proposed to overhaul its renewable (transport) energy policy for 2021-2030. In November 2016 it published a new Renewable Energy Directive (RED II). The main elements of the proposal are:

1. A reduction of the limit on first-generation biofuels (food or feed-based) to 3.8% by 2030, down from the 2020 cap of 7%.
2. A blending mandate on fuel suppliers to increase the supply of advanced fuels to 6.8% of transport fuels in 2030. 3.6% of this must come from advanced biofuels (mostly waste and residues based).

The Commission proposal is a valuable attempt to shift EU support from crop-based biofuels towards better renewable transport fuels such as advanced biofuels and renewable electricity. However, the proposal still has serious shortcomings. This briefing summarises T&E's recommendations to fix EU clean fuels policy once and for all. Our key recommendations are:

1. **Completely phase out land-based biodiesel by 2025.** 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.**

1. Context

1.1. Current EU biofuels policy – the 2020 RED and FQD

The current Renewable Energy Directive (RED) for the period 2010 to 2020 requires EU member states to have 10% of renewable energy in transport by 2020. In parallel, the Fuel Quality Directive (FQD) requires fuel suppliers to decrease the climate footprint of EU transport fuels by 6% by 2020 compared to 2010. The RED regulates the amount of renewable energy in transport (quantity), while the FQD sets a decarbonisation trajectory for the fuels (quality).

The current legislation allows these two targets to be met by using a variety of fuels including crop biofuels, advanced biofuels, biomethane or renewable electricity. In 2015, the total share of renewables in transport reached 6% – of which 88% was biofuels.¹ Concerns on the sustainability of crop biofuels had emerged even before the adoption of the RED and FQD in 2008/2009. But this was not addressed in the first set of legislation. Instead, the Commission was asked to address the issue of biofuels sustainability – and (indirect) land-use change in particular – at a later stage.

Indirect land-use change

When existing agricultural land is used for biofuel production, agriculture has to expand elsewhere to meet the existing (and growing) demand for crops for food and feed. This additional conversion of land tends to happen at the expense of forests, grasslands, peatlands, wetlands, and other carbon-rich ecosystems. This process results in substantial increases in greenhouse gas (GHG) emissions, known as indirect land-use change (ILUC) emissions. If ILUC emissions are taken into account, some food-based biofuels have on average more GHG emissions than the fossil fuels they are supposed to replace. Current biofuel policy accounts only for direct emissions, but not for ILUC.

In October 2012, the European Commission released a legislative proposal to tackle the issue of indirect land-use change. It proposed to limit the amount of food-based biofuels that could be counted towards the target for renewables in transport at 5% but it didn't require full accounting for the ILUC emissions of biofuels². In 2015, after three years of discussions, the EU institutions agreed on a [final compromise](#):

- Crop-based biofuels (food and energy crops) can be counted towards a maximum of 7% of transport fuel under the renewables target;
- ILUC emissions are recognised, but only used for reporting purposes;
- A national target has to be set to incentivise the use of advanced biofuels (as defined in part A of Annex IX in the ILUC directive³), with an indicative level of 0.5%.

The recognition of the ILUC effects and limit on crop-based biofuels was a small step towards remedying the flaws of the original RED and FQD. But the 2015 agreement failed to make EU renewable transport fuels policy sustainable.

1.2. The impacts of the current EU biofuels policy

1. The EU's focus on quantity over quality has led to a situation where currently, around 80% of the EU biofuels market is biodiesel mainly produced from crops⁴. Crop-based biodiesel is on average [80% worse for the climate than fossil diesel](#).⁵ The share of palm oil imports going to transport has increased

¹ Renewable Energy Progress Report, Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2017.

² Commission proposal [2012/0288](#), October 17th 2012.

³ Directive 2015/1513, <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L1513&from=EN>.

⁴ Renewable Energy Progress Report, 2017.

⁵ Ecofys, IIASA and E4tech, [The land use change impact of biofuels consumed in the EU Quantification of area and greenhouse gas impacts](#), Globiom report, 2015.

dramatically over the last years, making [EU drivers the top consumers of palm oil](#) in the EU in 2014 and 2015⁶. Palm oil is on average three times worse for the climate than fossil diesel. Based on the estimated biofuel mix of Globiom – the Commission’s report that calculates land-use change emissions resulting from additional demand for biofuels – overall transport emissions will likely increase by 1.4% in 2020, once ILUC emissions are taken into account.⁷ The share of biofuels from waste and residues has increased in recent years,⁸ but food crops are still dominating the biofuels market.

2. EU biofuels policy has significant land-use change impacts. Current policy – taking the 7% cap into account – is estimated to lead to the conversion of 6.7 million hectares of land globally⁹, about the size of Ireland. The credibility and “the relevance of the EU sustainability certification system is undermined without this [ILUC] information,” according to [a report from the European Court of Auditors](#) (ECA), the independent EU body in charge of scrutinising Europe’s public spending.

3. There is a lack of transparency on the types of biofuels supplied at EU level and on different national markets. Some countries like the Netherlands and the UK are disclosing information on the GHG profile of fuels supplied per fuel supplier. But others have no publicly available data whether it is on the type of fuels, their origin or their climate impacts. In addition, publicly available information at EU level on the type of raw materials used for EU biofuels is lacking.

The European Commission recognises these impacts and has stated multiple times since 2014 that food-based biofuels have a limited role to play in decarbonising the transport sector¹⁰. It also stated the necessity to stop public support for food-based biofuels after 2020 and to support better alternatives, such as biofuels from waste and residues and the use of renewable electricity in transport. In July 2016, in its European Strategy for Low-Emission Mobility, the Commission restated its intention for food-based biofuels and said it would phase them out.¹¹

2. The Commission proposal for a new Renewable Energy Directive

Late in 2016 the Commission presented its “Clean Energy For All Europeans” package. It includes a new Renewable Energy Directive for the period 2021-2030 (RED II) which sets an overall EU target of at least 27% renewables, binding at EU level but not at national level. The governance regulation¹², which sets a number of reporting requirements for member states, will be the basis to monitor the achievement of the overall 27% target.

For transport the new RED proposes an obligation on fuel suppliers – not member states as in the old RED – to provide or “blend” 6.8% advanced biofuels, renewable electricity and other advanced fuels. There will no longer be a target for crop-based biofuels and the cap on how much crop-based biofuels can be counted towards the renewable energy targets is reduced from 7 to 3.8%.

The Commission proposal is a valuable attempt to move away from EU support for crop-based biofuels towards better renewable transport fuels such as advanced biofuels and renewable electricity. However, the proposal still has serious shortcomings.

1. The proposal does not completely phase-out food-based biofuels. In other words, biofuels with high ILUC impacts can still be counted towards the EU’s renewable energy target. They are also still treated as zero-emission fuels under the national climate targets fixed in the Effort Sharing Regulation, which creates an additional incentive.

2. The proposal still focuses on quantity (blending obligation) rather than quality (GHG target). It also risks repeating old mistakes with regards to advanced biofuels. Indeed, the

⁶ [Europe keeps burning more palm oil in its diesel cars and trucks](#), T&E, 2016.

⁷ T&E briefing - [Globiom, the basis for biofuels policy post 2020](#), April 2016.

⁸ 23% (without double counting) in 2015, Renewable energy Progress Report, 2017.

⁹ Ibid, Globiom report.

¹⁰ Commission Communication, [A policy framework for climate and energy in the period from 2020 to 2030](#), 2014.

¹¹ European Commission, [A European Strategy for Low-Emission Mobility](#), July 2016.

¹² European Commission, [Proposal on the Governance of the Energy Union](#), November 2016.

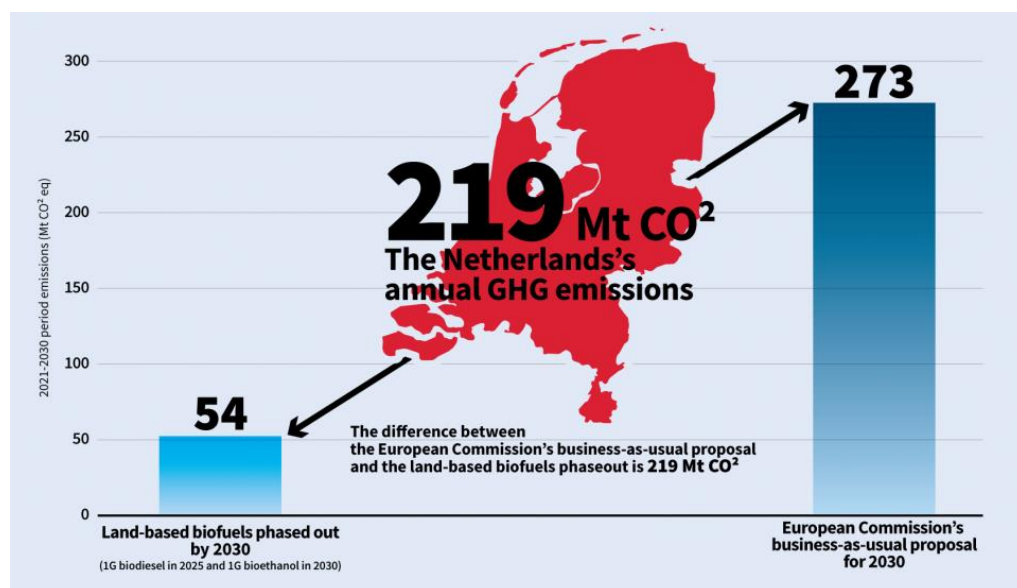
Commission has not proposed a robust sustainability framework for advanced biofuels and new fuels technologies.

Below we make recommendations to put EU fuels policy on a better, cleaner track.

2.1. Towards a full phase out of land-based biofuels, starting with biodiesel

The Commission proposal is to reduce the amount of food and feed crops that can be counted towards the overall EU-wide renewables target, decreasing the limit from 7% of energy in road and rail transport in 2021 to 3.8% in 2030. This limit doesn't apply to energy crops¹³. Member states have an option to adopt a lower limit and they can also impose a lower limit on biofuels made from vegetable oils – i.e. crop biodiesel, due to its higher ILUC emissions. The Commission does not propose to include ILUC emissions when accounting GHG savings and uses the cap on food and feed crops as a tool to tackle ILUC.

Land-use change impacts of biofuels are not tackled in the Commission proposal as it doesn't take into account ILUC emissions. If all GHG emissions of biofuels were accounted for, a majority of current EU biofuels would not comply with the greenhouse gas emissions savings thresholds established in the RED¹⁴. Proper sustainability criteria for biofuels with ILUC emissions accounted for, coupled with a decreasing crop cap to 0% in 2030 would exclude high risk biofuels from being eligible under the RED, before the total phaseout in 2030. The current Commission proposal results in a mere 1.1 percentage point reduction from the 4.9% biofuels share in transport achieved already in 2014¹⁵, and is not as ambitious as the Commission's own Strategy for Low Emission Mobility that indicated the intention for the ['phase-out of food-based biofuels'](#) in July 2016. The proposed approach on crop-based biofuels [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, when compared to a phase out of crop biodiesel by 2025 and of bioethanol by 2030¹⁶.



¹³ Energy crops grown on agricultural land should be included under the cap. Use of energy crops for bioenergy could be allowed in exceptional circumstances where strong evidence is provided by the economic operator that the crops are being grown on unused land and that its use for energy does not cause direct or indirect land use change (ILUC), displacement of other material uses of biomass and does not lead to significant loss of biodiversity, soil degradation or water pollution.

¹⁴ At least 60% GHG savings for biofuels in installations starting operation after 5 October 2015. For installations that were in operation before that date, a GHG savings threshold of 35% is applied until 31 December 2017 and 50% from 1st January 2018.

¹⁵ Eurobarometer, [Biofuels Barometer 2016](#). According to the Renewable Energy Progress Report published on 1.2.2017, the share of biofuels was 5.3% in 2015.

¹⁶ T&E calculations are based on a scenario with a full phase-out of crop-based biodiesel in 2025, and crop ethanol in 2030. It doesn't assess the potential savings from advanced biofuels.

What needs to be done?

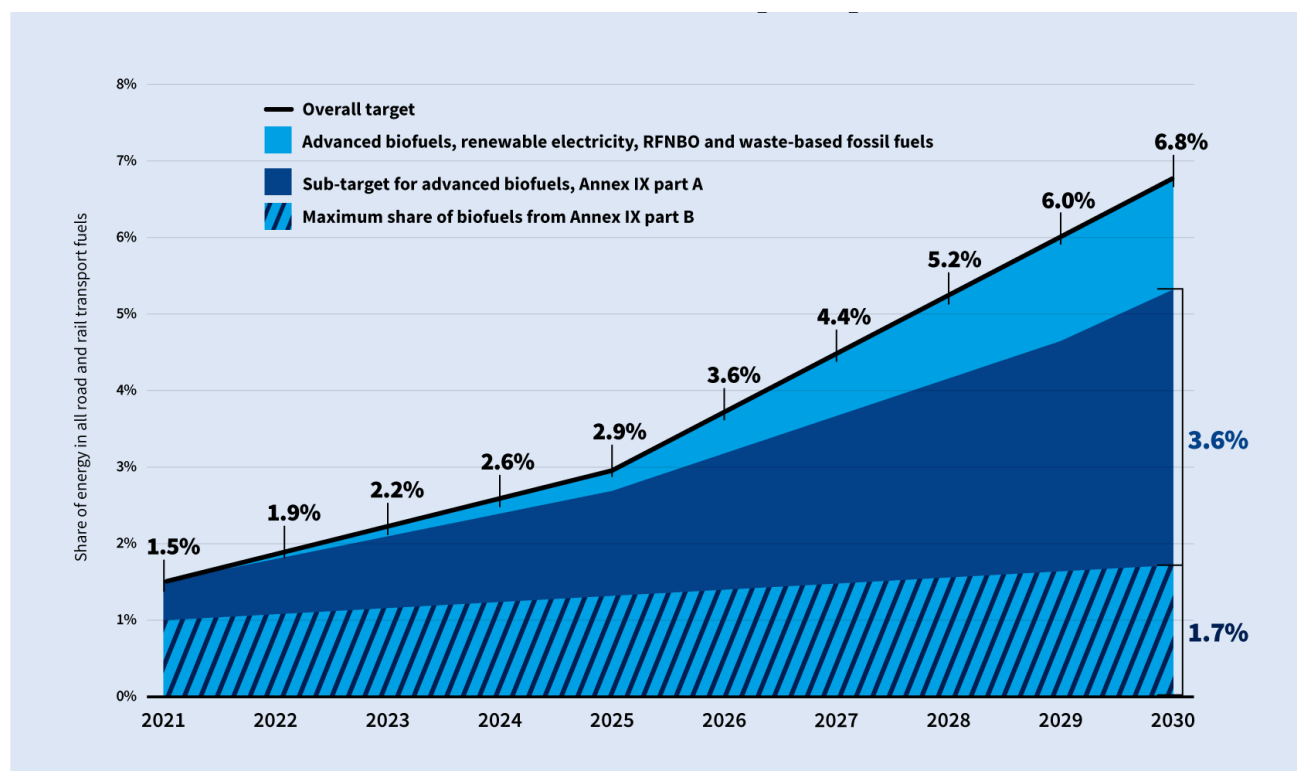
In the absence of proper accounting of ILUC emissions in the life-cycle analysis of EU biofuels – which the biofuels industry has always opposed – there needs to be a quicker phase-out of the biofuels that have the highest ILUC impacts according to the latest available science¹⁷: crop-based biodiesel. A phase-out of crop-based biodiesel, the highest GHG emitting biofuels, and yet the one with the highest share of the EU market, is essential for decarbonisation. The phase-out of crop biodiesel needs to happen as soon as possible, for example by 2025 and needs to be followed by a phase-out of all land-based biofuels by 2030.

2.2. Better quality safeguards for advanced biofuels and other advanced fuels

The Commission proposal wishes to incentivise the use of ‘advanced alternative fuels’ such as biofuels from waste and residues, renewable fuels from non-biological origin (e-fuels such as hydrogen, power to liquid/gas), waste-based fossil fuels¹⁸ and renewable electricity. It proposes imposing a binding annual “advanced alternative fuel target” on EU fuel suppliers starting at 1.5% in 2021 rising to 6.8% in 2030.

For advanced biofuels there is a specific sub-mandate of 3.6%. Biofuels feedstocks listed in part A of Annex IX of the proposed RED are eligible towards this 3.6% sub-mandate. Biofuels feedstocks listed in part B are eligible towards the 6.8% target but are limited at a maximum of 1.7% in 2030. Other fuels (such as renewable electricity) can count towards the overall 6.8% target but are neither subject to a cap or to a specific mandate.

The overall target functions as presented in the graph below:



¹⁷ IFPRI, [Global trade and Environmental Impact Study of the EU biofuels mandate](#) and [Globiom](#) report.

¹⁸ Waste based fossil fuels are by defined in the proposal as “as liquid and gaseous fuels produced from waste stream of non-renewable origin, including waste processing gases and exhaust gases”.

EU policy needs to reward quality of quantity. This is a key lesson from the previous EU biofuels debate. The use of a blending obligation is a policy tool that focuses on volumes – 6.8% in this case¹⁹. Advanced (bio)fuels have a real potential to contribute to reducing transport greenhouse gas emissions. For example, waste or residue-based biofuels can deliver significant greenhouse gas savings compared to fossil fuels.²⁰ But in order to ensure these savings are effectively delivered – in the real world, not just on paper – a number of conditions need to be met. Below we summarise our recommendations to improve the Commission proposal.

What needs to be done?

2.2.1. Tighten eligibility rules for waste and residues

Biofuels from waste and residues are eligible towards the blending obligation if the raw materials are listed in Annex IX of the proposed directive. Biofuels from feedstocks listed in part A of Annex IX are eligible towards the 3.6% sub-mandate and biofuels feedstocks listed in part B are only eligible towards the 6.8% target but are subject to a limit (1.7% in 2030). This list²¹ is a relic of the ILUC directive and has never been subject to a proper impact assessment.

Only “[real](#)” [waste and residues](#) should be considered eligible towards the target. This is why we recommend a review of the list of feedstocks in Annex IX to exclude feedstocks that are products or by-products (e.g. molasses, pulp wood) and not waste or residues. In addition, the principle of waste hierarchy and cascading principle should be applied in order to decide if a feedstock is eligible or not. Finally, the Commission should be allowed to remove raw materials from the list if it finds these are unsustainable.

Waste hierarchy

It is crucial that waste incentivised in the RED II comply with the waste hierarchy. Applying the principle of waste hierarchy would require prevention, preparation for re-use and recycling before recovery for energy purposes. It ensures that there is no distortion on the markets and that the system incentivises only the use of “real” waste. It also takes into account the climate and environmental performance of the product/residue on a life-cycle basis, which gives an understanding of what’s the best secondary use for them – based on the cascading principle. More information available in a briefing [here](#).

2.2.2. Include appropriate biomass sustainability criteria

Sustainability criteria for agriculture and forest biomass use in all sectors, not only transport, are included in the new proposal. On agriculture, the proposal backtracks from the previous RED, as it takes away a requirement to comply with rules related to soil carbon and other environmental requirements in the Common Agricultural Policy. On forest biomass, the proposed criteria are too weak to ensure that forest biomass – residues in the case of advanced biofuels – will be collected in a sustainable way, and would provide a GHG benefit also in the short term.

Without appropriate and strong sustainability safeguards for agriculture and forestry residues, there is a risk of negative environmental impacts. If rates of removals for agriculture and forestry residues are not

¹⁹ A GHG target for fuels, similar to the one in the Fuel Quality Directive, would have incentivized the best performing biofuels, as decreasing GHG emissions should be the key goal of the EU fuels policy. But unfortunately the European Commission preferred a blending obligation over a GHG target.

²⁰ [Biofrontiers final report](#), October 2016.

²¹ Annex IX of the [ILUC Directive](#) lists all eligible feedstocks.

sustainable, land-use change emissions associated with those advanced biofuels can be significant²². In addition, this would lead to negative environmental impacts, especially on soil carbon and biodiversity. This is why stronger sustainability criteria are needed for advanced biofuels feedstocks. This should also go hand in hand with robust systems of monitoring and verification.

New biofuels plants starting after 2021 will have to demonstrate a 70% GHG savings compared to fossil fuels, but this doesn't constitute a sufficient safeguard in the absence of proper sustainability criteria, including ILUC factors. For consistency reasons, the 70% requirement should be also extended to all current biofuels installations.

2.2.3. Target level and review

There is insufficient transparency in the Impact Assessment²³ on how the proposed target level has been determined. It is not clear which biofuels feedstocks were analysed and what assumptions had been used in terms of competing uses for the same biomass feedstocks. The current advanced biofuels target does not appear in any of the options highlighted in the official impact assessment and a more conservative target had been proposed in a leaked document.²⁴ Finally, it is clearly stated that RFNBO, waste-based fossil fuels and renewable electricity have not been modelled as part of a policy mandate in the impact assessment.

The Commission proposes to review the target of the blending obligation by 31 December 2025, which could permit it to address potential problems that may emerge (for example, availability issues). However, reviewing the target only in 2025 is likely to be too late to address potential issues linked with climate and environmental impacts of these new fuels.

Policymakers' first priority should be ensure quality, not quantity. In view of the abovementioned concerns, the advanced biofuels target is likely to be too high and should be adjusted.

Multiplier for aviation and shipping

International aviation and shipping are exempt from fuel taxes worldwide – subsidies which total well over \$100billion per annum and artificially inflate demand. In these circumstances there can be little justification for providing the aviation and shipping sectors preferential treatment when it comes to the use of advanced renewable fuels particularly when there are also no measures in place to regulate CO2 emissions from these international sectors.

So long as the this situation persists and these sectors benefit from preferential treatment compared to other transport modes, they should not receive financial incentives for the uptake of sustainable renewable fuels. This means that they should not benefit from a multiplier compared to other modes of transport and that the price impact should fall on the aviation and shipping sectors and not indirectly on users of road transport.

Finally, just like any other sectors, aviation and shipping should not drive the use of food crops and should focus on feedstocks such as waste and residues that are available at sustainable levels²⁵.

²² Ibid, Globiom report. These are not indirect land use change emissions per se, but decreases in the level of soil carbon.

²³ European Commission, [Impact Assessment](#) accompanying the proposal for a new Renewable Energy Directive.

²⁴ In a leaked document seen by T&E and others, the proposed blending obligation level was 5.5% with a 3% mandate for advanced biofuels. The official Commission impact assessment is listing different options: 1.9%, 3.8%, 4% and 6.8%.

²⁵ More information on aviation biofuels and other measures to tackle emissions from aviation is available [here](#).

3. Renewable electricity in the RED

The fact that renewable electricity supplied to electric vehicles can be counted towards the proposed 6.8% blending target to be reached by 2030 is a good news. In order to do so accurately, credits should only be awarded to renewable electricity that is additional to the current renewable electricity mix and its forecasts, excluding biomass electricity. Otherwise, claiming that 100% of electricity is renewable (for example, with systems such as guarantees of origin (GO) would result in a simple account shuffling on the electricity system level).

At the moment there is no accurate accounting mechanism available at the EU level to assess the origin, type and amount of electricity used in transport, or crediting the renewable element of it accordingly. Therefore, the co-legislators need to include a review clause in RED II to ensure that such an accounting system is developed as soon as possible.

What could such accounting system look like? At a minimum, for direct charging the proposal should request that the average national renewable electricity share is used rather than the EU share, as the percentage of renewable electricity in national grids varies widely and at the end, when a prosumer plugs in the car in the socket, the renewable electricity provided will be only as much as its share in the grid at the location of charging. If a charging station happens to have a direct connection to a renewable energy source, the electricity supplied should be accounted as 100% renewable.

The EC has stated its support for electrification of transport. That said, the RED II proposal lacks concrete measures that would incentivise this transition towards (renewable) electrification. There are multiple options for how this incentive could be realised. One of them would be simply to institute a target for renewable electricity (a target exists for advanced biofuels, for example). Electricity, just like advanced biofuels, needs a pull policy for wide-scale deployment. Another possible approach could be a multiplier for electricity, as one existed in the RED I but was removed in the new proposal. The impacts and effectiveness of these options are to be evaluated before any numbers are set.

4. Conclusions

It is time for the EU to move support towards better alternatives than land-based biofuels. The Commission's proposal is an imperfect framework for this much needed change. In order to put EU fuels policies on a cleaner track, we suggest national governments and members of the European Parliament to do the following:

1. Phase out land-based biodiesel as soon as possible, and all land-based biofuels by 2030 at the latest;
2. Ensure advanced biofuels are sustainable and contribute to significant GHG reductions: review the list of eligible feedstocks and include appropriate sustainability criteria;
3. Ensure overall target and sub-targets are set at realistic levels that can be achieved sustainably;
4. Provide clearer incentives for renewable electricity use in transport.

Further information

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