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Changes to the Renewable Energy Directive: Impacts on Palm Biofuel

Info Briefing #4

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UK Sustainable Palm Oil Initiative – Info Briefing #4

This Info Briefing is part of a series designed for the stakeholders of the UK Roundtable on Sourcing Sustainable Palm Oil, to provide relevant information and updates on issues surrounding the sourcing of certified sustainable palm oil. It is designed to complement our series of webinars on palm oil, which contain practical information on evaluating oils and fats, sourcing CSPO, and wider developments related to palm oil. This Info Briefing does not provide a full view of the palm biodiesel industry; rather it explores some of the potential issues related to demand after the implementation of RED 2.

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The P4F programme aims to catalyse investments in which the private sector, public sector and communities can achieve shared value from sustainable forests and sustainable land use. P4F works in producing countries, but also funds demand-side measures such as the UK RT, strengthening demand for sustainable commodities and helping to support the right enabling conditions for sustainable investment.

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Glossary of definitions

- **'Biofuel'** is commonly used to describe any solid, liquid or gaseous fuel made from biomass materials. However, technically, in the EU, biofuel is specifically the word for liquid transport fuels made from biological organic materials. (A bioliquid is a liquid fuel used in the heat or power sector.)
- **'First generation biofuel'** refers to biofuels that are produced by relatively simple methods of converting the sugars or oils from crops into bioethanol or biodiesel.
- **'Second generation biofuel'** tends to refer to waste derived biofuels, particularly the creation of biodiesel from tallow (animal fats) or used cooking oil. Because these do not have direct land use associations, they tend to have lower emission impacts, particularly where the waste or residue had no other use (or a low value use).
- **'Advanced biofuel'** tends to refer to newer technologies that are more technically advanced that make use of wastes and residues to create biofuels.
- **'Bioethanol'** is ethanol (a hydrocarbon) produced from biomass materials and is mixed in all petrol forecourts in the UK and EU. Typically blends are less than 5% in keeping with the RTFO obligation, though there is pressure from some quarters to raise this to 10% ("E10").
- **'Biodiesel'** tends to be made up of a number of different hydrocarbons, more similar to diesel. It can be burned directly in engines if necessary, but UK forecourts include blends of less than 5% in keeping with the RTFO obligation. Fuel pumps are labelled with the proportion of biofuel they contain.
- '**ILUC**,' the indirect land use change impacts of biofuels, relates to the unintended consequence of releasing more carbon emissions due to land-use changes around the world induced by the expansion of croplands for ethanol or biodiesel production in response to the increased global demand for biofuels.

1. Introduction

Over the last two years, the EU renegotiated the Renewable Energy Directive (RED) as part of the EU's wider Clean Energy Package. The recast Renewable Energy Directive (also referred to as "RED2" or "REDII") amends the renewable transport biofuel sustainability requirements, and aims to move away from first generation biofuels, particularly the "high ILUC risk" biodiesels derived from palm oil. This short paper is intended to provide clarity on the RED2 requirements, as well as provide a future outlook for the demand of palm oil biofuel in Europe and the UK.

2. Summary of the EU policy on first generation biofuels

The growth of biofuel production across the world has been driven by worldwide Governmental policies. Because fossil fuels continue to be cheaper that biofuels, it has taken Government subsidization and mandates to create a market for transport biofuels, to incentivize investment in the infrastructure necessary to produce crop and waste derived fuels. This is the case in the UK, where the Renewable Transport Fuel Obligation (RTFO) was introduced in 2007, in the EU, where the 2009 Renewable Energy Directive (RED) put in place a target of 10% of transport energy to be renewable, and in the United States, where the Renewable Fuel Standard (RFS2) introduced biofuel and advanced biofuel mandates.[1] In these markets mandatory sustainability criteria and verification processes were introduced to ensure only sustainable biofuel production was incentivized.

However, since 2012 the EU has had limited success in addressing environmental and social concerns associated with the production of first generation (crop derived) biofuels, particularly indirect land use change and concerns over food price impacts caused by biofuel industry competition for food crops.[2] Following a lack of progress in addressing these issues during the negotiation of a 2015 amendment to the RED, the recast RED (also known as "RED2" or "REDII") presented an opportunity to revisit and solve these issues.

Agreed in 2018, the RED2, extends and updates RED's original provisions. It increases the 10% transport sub-target to 14%, and significantly updates the biofuel sustainability requirements. Although RED2 does not contain a complete ban on palm oil (as many reporters have declared), it does disincentivise the use of first generation palm/soya biofuel by introducing new GHG savings requirements. Palm oil biofuel will struggle unless producers can create emission savings by demonstrating low-ILUC impact (proving additionality of biofuel plantations). Because new provisions for low-ILUC have been introduced in 2019, it is still unclear how these will impact first generation production. At this time no palm oil is certified as low ILUC yet.

In future, Member States are not permitted to expand their demand for first generation biofuels above 7% and must gradually phase them out completely by the end of 2030. The Commission

1 http://www.fao.org/3/a-BQ103e.pdf

2 During the late 2000s there were a number of food price spikes which were most keenly felt in poorer developing countries. Many analysts believe that inflexible biofuel mandates exacerbated the effects by creating competition for food crops.

was also given the power to review the approach to ILUC risk biofuels and to amend RED2 to improve the biofuel requirements in future. The finalised RED2 biofuel requirements are summarized in **Annex 1** and the RED2 text can be found at the footnote[3] (see Article 25, page 107 onwards).

3. UK use of palm oil biofuel

The UK was one of the first EU member states to introduce a biofuels mandate and sustainability criteria, in 2007, ahead of RED1's mandatory approach. The UK's Department for Transport (DfT) introduced the Renewable Transport Fuel Obligation[4] (RTFO),[5] which incentivizes the production of road biofuels through an obligation and certification scheme.

Between 2010 and 2017, the UK demand for biofuel derived from palm oil was essentially zero. A small quantity (<2%) came from palm oil effluent derived biofuel, which is a waste product, eligible for double certificate counting. (This feedstock is also recognised in the RED as one of the advanced biofuel feedstocks eligible for double counting). Glycerine (a product of the biodiesel production process) was also a small input. UK demand for Indonesian supply had not yet completely recovered from the anti-dumping tariffs applied in 2013-2017 by the UK Government, to counter Indonesian palm subsidies artificially suppressing export prices. Malaysian palm-derived biofuel imports to the UK increased as a result of from these duties placed on Indonesian palm-derived biofuel. However, in 2018, palm oil was used as a feedstock in both biodiesel and biopropane, sourced from Malaysia, Indonesia and Honduras. Palm oil was used in 3.1% of biodiesel, 27.2 million litres, whilst palm oil usage in biopropane was the main source, 61%, contributing 12.4 million litres. This still represents a very small amount of feedstock for biofuels in the UK; overall biofuel usage in 2018 was 1.505 million litres, with palm oil in biopropane and biodiesel contributing 2.6%.[6]

The UK does generate a large proportion of its biofuels from used cooking oils, which may include an unknown proportion of palm oil (the type of used vegetable oil is not tracked so is impossible to determine how much palm is included). Therefore, creating advanced and waste derived biofuels represents an opportunity for palm oil biodiesel in the UK (and the EU).

The UK government and UK biofuel/oil companies have generally been less supportive of high ILUC risk biofuels (palm oil/soya bean oil), particularly since the ILUC negotiation of RED in 2012-2015. The UK government was a leading Member State seeking to address ILUC and the social impacts of biofuels. Lobbying campaigns from environmental NGO's against first generation biofuels also labelled palm oil as a dirty biofuel, significantly impacting its reputation.

[3] http://data.consilium.europa.eu/doc/document/ST-10308-2018-INIT/en/pdf
[4] https://www.gov.uk/guidance/renewable-transport-fuels-obligation
[5] The Renewable Transport Fuel Obligation (RTFO) places an obligation on road transport fuel companies (those over 450,000 litres/year) to purchase a minimum amount of Renewable Transport Fuel Certificates (RTFCs) per year – the amount of RTFCs is a proportion of their total fuel production in a year. RTFCs are issued to companies that produce biofuels. So an obligated fuel company can either earn RTFCs themselves by producing biofuels, or they can purchase RTFCs from biofuel producing countries (usually by purchasing their biofuels).
[6] https://www.gov.uk/government/statistics/renewable-fuel-statistics-2018-april-to-december-fourth-provisional-report

It is currently unclear whether the UK will be forced to comply with RED2 after Brexit, or whether it will have to alter the policy the UK has already set out to 2032.[7] In any event, the UK's policy to 2032[8] would suggest there will be little use for first generation biofuels like palm oil biofuel, unless in waste/advanced biofuel form.

4. EU use of palm oil biofuel

It has been difficult to source official disaggregated EU biofuel data broken down by feedstock type, fuel type, or by member state. The biennial renewable energy progress reports[9] provides macro data on member state renewables including total biofuel use. Eurostat[10] provides comparisons by member state broken down by biodiesel, bioethanol, biogas. The US Department of Agriculture's[11] (USDA) 2018 annual EU biofuels report provides a summary of EU biofuels policy and production statistics. The following key points outline EU use of palm oil biofuel.

- Palm remains in the top three EU biofuel feedstocks: Rapeseed (45%), Used Cooking Oil (21%), Palm Oil (18%). Palm oil biodiesel use peaked in 2017. [12]
- For 2018, palm oil use is forecast to decrease by 7%, yet increase its share in the feedstock mix to 19%.[13]
- The European Parliament[14] estimates that 45% of the EU's imports of palm oil goes to biodiesel for transport, with a further 15% to producing heat and power.
- Currently palm oil biofuel is mainly used in Spain, Italy, France, and the Netherlands, and to a much lesser extent in Germany, Finland, and Portugal. Very small amounts are being used in Greece, Romania, Poland and the UK. [15]
- Palm oil usage in the EU has increased mainly because of its use as an input for hydrogenated vegetable oil (HVO) production (particularly in Italy) and its competitive price (particularly for biodiesel production in Spain).
- The FAO expects the EU to be both the biggest producer and user of biofuel overall, producing 28% of global biofuel (composed of rapeseed oil, and over two thirds waste oils and tallow in the 2020s).[16]

5. Following RED2, what is the future for palm oil biofuels?

The RED2 puts in place a clear policy to move away from first generation biofuels, despite the current usage by some Member States. From 2021 (when RED2 comes into force) those Member States will be required to alter their biofuel policies to reduce incentives for first

7 In 2017 the Government set out RTFO strategy to 2032 to support the 4th and 5th Carbon Budgets: https://www.gov.uk/government/publications/renewable-transport-fuel-obligations-order-government-response
8 https://www.gov.uk/government/publications/renewable-transport-fuel-obligations-order-government-response
9 https://ec.europa.eu/energy/en/topics/renewable-energy/progress-reports
10 http://appsso.eurostat.ec.europa.eu
11 https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Biofuels%20Annual_The%20Hague_EU-28_7-3-2018.pdf
12 https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Biofuels%20Annual_The%20Hague_EU-28_7-3-2018.pdf
13 https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Biofuels%20Annual_The%20Hague_EU-28_7-3-2018.pdf
14 http://www.europarl.europa.eu/RegData/etudes/ATAG/2018/614706/EPRS_ATA(2018)614706_EN.pdf
15 https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Biofuels%20Annual_The%20Hague_EU-28_7-3-2018.pdf
16 http://www.fao.org/3/a-BO103e.pdf

generation (crop derived) biofuels (including from sugar, maize, rapeseed oil, palm oil, soya etc), and to incentivize the development and production of advanced and waste derived biofuels. This will likely be the remaining opportunity for palm oil producers.

The intention of RED2 appears to be that reducing demand for crop derived biofuels (including palm oil derived biofuel), will reduce the incentive to convert further land for biofuel feedstocks (particularly deforestation caused by new palm oil plantations, which results in a particularly high carbon impact), as well as avoid the food crop competition created by biofuel mandates like RED.

Since it is the same kind of palm oil that produces biofuel as produces food/oleochemical products, in theory gradually removing EU biofuel demand should provide a signal to reduce the production and supply of palm-derived biofuel. At that point, the palm oil could be re-directed out of biofuel back into the food, feed and other markets such as oleochemicals.

Despite the EU creating incentives to develop and produce more advanced fuels, the significant majority of global biofuels produced outside the EU are currently expected to be derived from agricultural feedstock in the next decade[17] – with consequences for land use, emissions and food pricing or food availability. The FAO[18] reports that current weak global energy prices have prevented investment in R&D for more advanced biofuels, such as those produced from waste or non-food feedstock.

In the medium term it is likely that the entrenched biofuel industry, which also produces co-products such as glycerine, will continue to seek other international markets for their biofuel (including the United States, Argentina, Brazil and China) as well as boost domestic demand for biofuel. The US, Argentina, Brazil, Indonesia and many other countries have actually extended their biofuel mandates to drive value for their agricultural sectors and reduce their reliance on imported fuels.

We will have to wait to see whether the EU's clear statement of intent reduces worldwide demand for palm oil derived biodiesel, and whether this does ease the pressure to convert further land for palm oil plantation. Because low-ILUC provisions were introduced in 2019, there is no palm oil certified as low-ILUC yet, and it remains unclear how the provisions will affect supply to the EU.

17 https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Biofuels%20Annual_The%20Hague_EU-28_7-3-2018.pdf
18 http://www.fao.org/3/a-BO103e.pdf

Annex 1 – Summary of Biofuel Requirements in RED2

The text itself can be found here, article 25 refers to the transport biofuel requirements (REDII covers issues across renewable power, heat and transport energy). The EU summarises REDII, biofuels requirements and the high ILUC requirements here. Below we have drawn out the key biofuel requirements.

- **The RED II sets a 14% renewable energy target for the transport sector.**
- **Use of first generation biofuels capped** (i.e. derived from food and feed). Member States may not expand their use more than 1% above their 2020 consumption levels (up to a maximum of 7% for each MS), which includes palm oil and soya oil.
- **Further incentive to reduce the use of convention biofuels**: If a country reduces its first generation biofuel contribution below 7%, it may reduce its 14% target by the corresponding amount – which represents a further incentive to reduce first generation biofuels. The UK will likely set a 2-3% conventional biofuel target, so it can set an overall target of 4-5% below 14%, to say 9%-10%. (The UK has already set out its biofuel strategy out to 2032, here.) Member States can continue to use crop derived biofuels beyond this limit, though it will not count towards their targets. Given that biofuels need to be subsidized, it is unlikely Member States will support additional crop derived biofuels, but it certainly is not illegal to use more than the target.
- **Advanced biofuel feedstock trajectory to increase** from 0.2% in 2022, 1% in 2025 at least 3.5% by 2030 (these feedstocks are defined in 'Part A or Annex IX'). Palm oil mill effluent is one of the recognised feedstocks. There are no waste soya feedstocks on the list.
- **Double counting wastes:** Certain waste-derived and advanced feedstocks may be double counted towards the target (part B annex IX feedstocks, UCO, tallow). However, their contribution to total transport energy is to be capped at max 1.7% (includes used cooking oil not capped (much will be from used palm cooking oil), nor from other waste products (including palm oil mill effluent).
- **All biofuels must continue to meet the sustainability criteria**. This criteria is made up of a sustainable sourcing criteria and slightly tightened greenhouse gas criteria (biofuels must increase their GHG savings from 50% to 60%, which may be problematic for biodiesels derived from palm oil (especially open pond effluent) and soya – see their emissions are detailed in annex V parts A and D.
- **Reduction of the use of high ILUC risk conventional biofuels down to 0%.** Member States may not increase their use of these kinds of biofuels beyond the level used in 2019, and from 2023 to 2030 must decrease high ILUC risk biofuels down to zero. The Commission's recent delegated act set out (2019/807) sets out which fuels are defined as high ILUC risk (just palm oil currently), and sets out an exception for palm oil which can be certified as low ILUC risk. At this time no palm oil is yet certified as low ILUC as the concept is under development, but this may be an area that palm oil producers wish to pursue to avoid the reduction in demand for palm oil biofuel in the EU.
- **Advanced alternative fuels used for aviation and maritime incentivised** (can be counted 1.2 times toward the blending obligation).