



BRIEFING - DECEMBER 2024

Used Cooking Oil: The Certified Unknown

An in-depth look at biofuel certification and UCO fraud

Summary

Used cooking oil (UCO) biofuels now account for over one third of European biofuel consumption. With Europe heavily dependent on imports to meet this demand, the concern of UCO biofuels being made from fraudulently mislabeled virgin oils has grown larger than ever. In a global supply chain ripe for fraud, we take a look at the certification system responsible for verifying these biofuel products.

What is UCO fraud?

UCO fraud is when biofuels made from unsustainable feedstocks, such as palm oil, are fraudulently reported as being made from UCO. It is very difficult to determine whether a biofuel has been produced from UCO or from uncooked virgin oil **due to their similar chemical and physical composition**. Laboratory analysis is limited in practice, and verification typically relies on auditing paperwork and records along the supply chain, rather than actually testing the biofuel product.

The inherent problems of Voluntary Schemes

EU-endorsed “voluntary schemes” are responsible for overseeing these audits. The largest scheme responsible for certifying UCO biofuels is the International Sustainability & Carbon Certification (ISCC), with over 1,275 valid UCO certificates currently in their database. Voluntary schemes have long been criticised as industry-governed, market-based mechanisms that certify companies as “sustainable” to grant them greater accessibility to the market, rather than out of genuine environmental concern.

Importantly, the certification of a biofuel product **does not mean that it has been physically tested or verified**. It means paper-based audits have been conducted on operators that handle the UCO along the supply chain. However, even if on-site audits include an inspection of facilities to corroborate records, they still only cover that particular moment in time and can be prepared for and manipulated by bad actors committing fraud.

Voluntary schemes incorporate a **“mass-balance” approach**, where the physical segregation of “sustainable” and non-sustainable products is not required. Instead, accounting documents are responsible for tracking the details of each passing through the supply chain, which are then audited. The mass-balance approach is highly susceptible to fraud, as these documents can be falsified and open to the illegal practice of “multiple claiming”.

Guaranteed traceability? Not quite...

Voluntary schemes supposedly allow full traceability of sustainable material throughout the supply chain. However, this is a misleading statement when it comes to fighting fraud. Being able to fully trace a biofuels product cannot guarantee that product has not been illegally adulterated somewhere along the supply chain. This is compounded by the fact that the actual sources of the UCO, known as points of origin (PoO), such as restaurants, **do not need to be individually audited or visited in person to be certified**.

An audit for a PoO is only required if that PoO is supplying over 5 tonnes of UCO per month - a near impossible figure for any restaurant to reach. As UCO has such a high susceptibility to fraud, such audits should also be conducted on site.

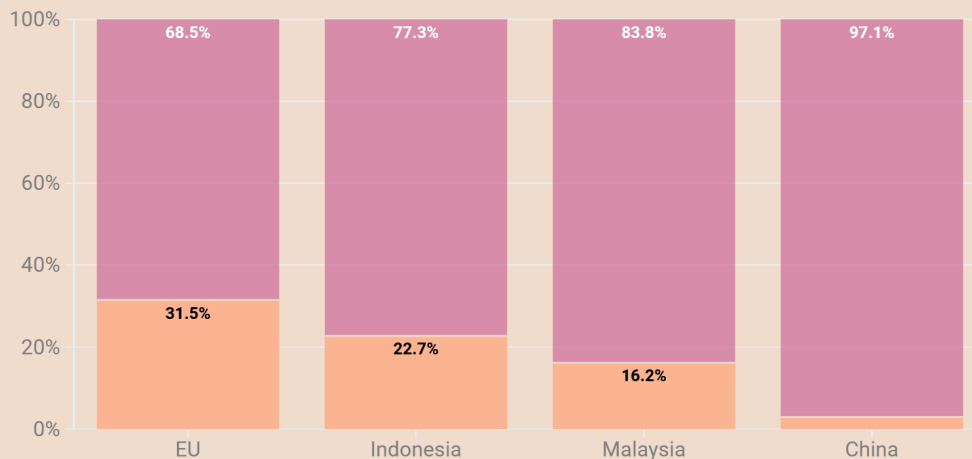
For a restaurant providing UCO to be audited, it would need to cook more than 50 thousand tonnes of fries per month - equivalent to the average monthly production of 18 fast food restaurants.

Based on our analysis of ISCC-certified UCO collectors in China, Malaysia and Indonesia - the three biggest exporting countries of UCO to Europe - only 9% of all ISCC-certified UCO collecting points in these countries had a sample of their points of origin verified via an audit. For the remaining 91%, a **simple phone call, email or online search**, to verify the existence of a fraction of the points of origin on a collecting point's records, was sufficient for all of that collecting point's points of origin to be recognised as verified, certified sources of UCO.

Majority of Asian ISCC UCO collecting points certified with no points of origin verified via an audit

Sampling No sampling

Share of UCO CP certificates (%)



Source: Transport & Environment analysis, based on ISCC UCO summary audit reports accessed in October 2024

If not certification, then what?

The EU must stop relying on inadequate certification schemes and recognise the limited role they can play in authenticating biofuel imports, whether it is from crops, waste or residues. While the recently introduced **Union Database for Biofuels** has been touted as a means to fight fraud by improving traceability, it is still reliant on certification - an ineffective means of verification. It has also been heavily criticised by industry stakeholders and Member States alike, who claim it is not fit for purpose and have called for its mandatory use to be postponed.

Other potential measures, such as third country cooperation frameworks and formal grievance procedures or an ombudsman, offer limited benefits. The most effective way to prevent fraudulent imports from entering the European market is to disincentivise the use of biofuels that originate in third countries through effective policy reform. This means no longer allowing biofuels, such as

those made from UCO, from third countries to count towards EU and national renewable energy targets.

The EU should **suspend its recognition of imported biofuels certified by voluntary schemes**. It should recalibrate its biofuel policies to exclude hard to certify, non-domestic biofuel feedstocks from its green energy targets. The same fraud concerns outlined in this briefing also apply in the case of other imported biofuel feedstocks that rely on voluntary certification schemes, such as animal fats, intermediate crops and crops grown on severely degraded land.

This is also logical from a climate and energy perspective, as third countries need those waste feedstocks to **decarbonise their own economies**.

1. UCO fraud explained

Used cooking oil (UCO) is the leftover oil from cooking food, typically sourced from restaurants, cafeterias, food processing plants and households. Biofuels made from UCO are incentivised in the EU's¹, the UK's² and the USA's³ renewable energy policies due to its categorisation as 'waste' biofuels and low carbon intensity score, meaning market prices tend to be higher than biofuels made from virgin oil.⁴

Therefore, there is a strong appeal for non-incentivised virgin oils to be fraudulently mislabelled as UCO.⁵ Because of this, imports of UCO biofuels can consequently act as a backdoor for unsustainable feedstocks, such as deforestation-driving palm oil, to continue entering the EU and UK markets, despite regulation in place to phase out their usage⁶.

Verification of UCO and other biofuels relies on the auditing of businesses' records along the supply chain, rather than actually testing the product. These audits are overseen by so-called "voluntary schemes"⁷, the largest of which for UCO biofuels is the International Sustainability & Carbon Certification (ISCC), with over 1,275 valid UCO certificates currently in their database.⁸

1.1 Differentiating between UCO and virgin oils

Chemical testing can be done to differentiate between UCO and virgin oils and can determine whether virgin oil has been mixed with UCO to bulk up its volume.⁹ However, practical factors such as laboratory costs and the sheer volume of material needed to be tested makes it very difficult to implement this on

¹ European Commission. (2023). Renewable Energy Directive ([LINK](#))

² UK Dept. of Transport. (2024). Renewable Transport Fuel Obligation: Compliance Guidance ([LINK](#))

³ The White House. (2023). BUILDING A CLEAN ENERGY ECONOMY: A GUIDEBOOK TO THE INFLATION REDUCTION ACT'S INVESTMENTS IN CLEAN ENERGY AND CLIMATE ACTION ([LINK](#))

⁴ European Commission. (2022). Assessment of the potential for new feedstocks for the production of advanced biofuels, p.g. 224 ([LINK](#))

⁵ *Ibid.* p.g. 255

⁶ European Commission. (2019). COMMISSION DELEGATED REGULATION (EU) 2019/807 ([LINK](#))

⁷ European Commission. (2024). List of voluntary schemes ([LINK](#))

⁸ ISCC. (2024). Certificate Database as of October 2024. ([LINK](#))

⁹ CE Delft. (2020). Used Cooking Oil (UCO) as biofuel feedstock in the EU ([LINK](#))

an industry-wide scale.¹⁰ It is also unclear how accurate such testing procedures are for finished biofuel products.¹¹

Mixing virgin oil with UCO does not completely eliminate the physical distinctions between the oils, except at very high volumes. Therefore, the appeal for altering non-incentivised virgin oil feedstocks, such as palm oil, to appear as UCO through dilution or mislabelling remains strong.¹²

1.2 Possible fraud scenarios

Operators along the supply chain could commit UCO fraud in a number of ways:

1. Mixing virgin oil with UCO (known as adulteration)
2. Mislabelling virgin oil as UCO
3. Issuing fake proofs of sustainability to claim benefits affiliated to UCO, such as carbon credits at higher market prices.

There are two key points along the supply chain that are particularly vulnerable to fraud scenarios: the collecting point and the biofuel production facility.¹³

According to certification guidelines, the collecting point is the first operator along the supply chain that must be individually certified. Points of origin (PoO) that come before the collecting point, such as the restaurants where UCO actually originates, **do not need to be individually certified or audited** if they supply less than 5 tonnes of oil a month - a near impossible figure for any restaurant. Instead they just need to provide a self-declaration stating their compliance with a certificate scheme's sustainability criteria to their relevant collection point.¹⁴

In this scenario, the list of PoOs supplying a collecting point could contain fictitious restaurants and/or untrue self-declarations to inflate the supposed volumes of UCO being collected and conceal the deliberate mixing or mislabelling of UCO and virgin oils.

Biofuel production facilities are where UCO is turned into biofuel. They are often also certified as a collecting point, making them susceptible to the same fraud scenario as above. Production facilities are commonly certified for handling virgin oils, such as palm oil, as well as UCO.

It could be possible for bad actors to mislabel outgoing palm oil biofuels as UCO biofuels by concealing unaccounted palm oil deliveries using false or inflated PoO self-declarations or by certifying the excess "UCO" biofuel multiple times through different certification schemes or bodies. This is a practice known as "multiple claiming".¹⁵

2. Voluntary Schemes

To count towards EU and UK renewable energy targets, biofuel consignments must carry a "proof of sustainability", which are issued by operators certified by a voluntary scheme. At EU level, these

¹⁰ European Commission. (2022). Assessment of the potential for new feedstocks for the production of advanced biofuels ([LINK](#))

¹¹ CE Delft. (2020). Used Cooking Oil (UCO) as biofuel feedstock in the EU. p.g. 7 ([LINK](#))

¹² *Ibid.* p.g. 7

¹³ Stratras Advisors. (2024). UCO Imports: Unfair Competition with EU UCO Industry? P.g. 21 ([LINK](#))

¹⁴ ISCC. (2024). ISCC EU 203 TRACEABILITY AND CHAIN OF CUSTODY ([LINK](#))

¹⁵ Stratras Advisors. (2024). UCO Imports: Unfair Competition with EU UCO Industry?. P.g. 21 ([LINK](#))

voluntary schemes need to be officially approved by the European Commission.¹⁶ Of the three largest UCO exporter countries to Europe (China, Malaysia and Indonesia), ISCC is the most widely used certification scheme, with at least 426 valid UCO certificates from those countries currently in their database¹⁷. Voluntary schemes do not carry out initial audits themselves, but instead engage third party “certification bodies” (CBs) to conduct on-site and/or desk-based audits to verify the compliance of businesses, known as “economic operators”, along the supply chain with the scheme requirements.

2.1 Inherent problems with Voluntary Schemes

Voluntary schemes’ reliance on auditing documentation, rather than rigorous testing and verification, tends to undermine the credibility of their sustainability claims. As well as this, the existence of multiple CBs conducting audits on their behalf creates market competition between them, which can in turn drive down standards in what is known as a “race to the bottom”. For example, ISCC currently has at least 46 different CBs conducting audits for UCO certificates on their behalf, creating significant market competition between them as economic operators can choose a CB that best suits their needs.¹⁸

The governance of voluntary schemes has also been criticised for being predominantly industry led¹⁹. Despite ISCC’s claims of multi-stakeholder governance, four of the organisation’s seven executive board members are representatives from the biofuels industry, while the remaining three are from the field of innovative science and research.²⁰ ISCC’s multi-stakeholder governance also prides itself on the inclusion of NGOs in its members association. However, of the association’s 296 members, there are very few registered NGOs who do not function on behalf of industry interests.²¹

2.2 Certification ≠ testing

An ISCC certified biofuels consignment, or that of any other certification scheme, does not mean that that specific product has been tested and authenticated by an expert. Certification simply means that each operator who has come into contact with the biofuel product has had their operational paperwork and figures audited sometime in the last year, determining what products and how much is coming in and out of their business and how much greenhouse gas emissions can be calculated by using these fuels instead of fossil fuels.

Many fuel suppliers, such as Eni, Neste, Repsol and Shell, may claim that their products can be trusted as they are certified, however, it is crucial to understand that this does not mean that those products are immune to fraud committed by nefarious actors.

2.3 Gaming the “mass-balance” approach and traceability

Despite the aforementioned difficulties in differentiating between UCO and virgin oils, the certification system implements what is known as a “mass-balance” approach, whereby physical segregation of eligible feedstocks (like UCO) and non-eligible feedstocks (like palm oil products) is not required.

¹⁶ European Commission. (2024). List of voluntary schemes ([LINK](#))

¹⁷ Based on the ISCC database, accessed in October 2024 by T&E. This does not take into account certificates with no explicit feedstocks mentioned in the database, which could cover some UCO.

¹⁸ Based on the ISCC database, accessed in October 2024 by T&E. This does not take into account certificates with no explicit feedstocks mentioned in the database, which could cover some UCO.

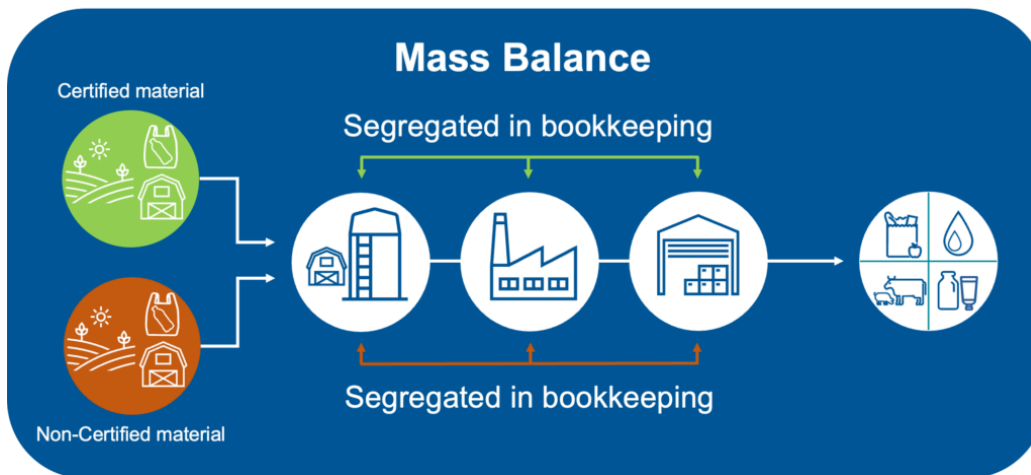
¹⁹ Greenpeace. (2021). Destruction: Certified ([LINK](#))

²⁰ ISCC. (2024). Board Members of the ISCC Association ([LINK](#))

²¹ ISCC. (2024). Membership List. ([LINK](#))

Instead, accounting documents are required to track the quantity of each commodity passing through the supply chain. These documents are then inspected during an audit.²²

This system can be manipulated by nefarious actors through fraud scenarios like those outlined above. Instead of a mass balance system, physical segregation, whereby eligible and non-eligible feedstocks are kept separate for the entirety of the supply chain, must be implemented for biofuels.



23

Guaranteed traceability? Not quite...

Voluntary schemes supposedly allow full traceability of sustainable material throughout the supply chain. However, this is misleading when it comes to fighting fraud. Being able to fully trace a biofuels product cannot guarantee that product has not been illegally adulterated along the supply chain.

According to ISCC guidelines, points of origin for UCO only need to be audited if they supply over 5 tonnes of UCO per month - a near impossible figure for any restaurant to produce. As UCO has such a high susceptibility to fraud, such audits should also be conducted on site.²⁴

However, for a restaurant providing UCO to be audited, it would need to cook more than 50 tonnes of fries per month - equivalent to the average production of 18 fast food restaurants.²⁵

Based on our analysis of ISCC-certified UCO collectors in China, Malaysia and Indonesia - the three biggest exporting countries of UCO to Europe - only 9% of all ISCC-certified UCO collecting points in these countries had a sample of their points of origin verified via an audit. For the remaining 91%, **a simple phone call, email or online search**, to verify the existence of a fraction of the points of origin

²² ISCC. (2024). The Mass Balance Approach. ([LINK](#))

²³ ISCC. (2024). The Mass Balance Approach. ([LINK](#))

²⁴ ISCC. (2024). ISCC EU 203 TRACEABILITY AND CHAIN OF CUSTODY, p. 42 ([LINK](#))

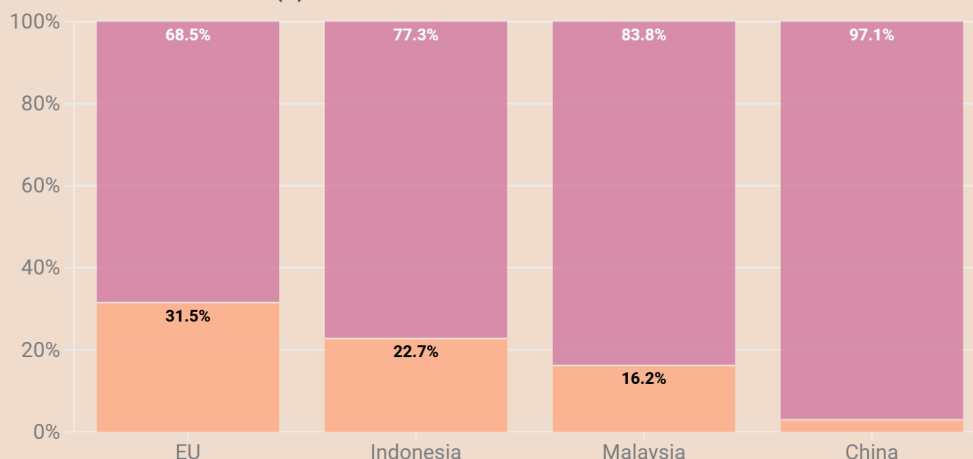
²⁵ Assuming 0.09 kg of UCO produced per kg of fries, and knowing that McDonald produces close to 4 kt of fries every day across its nearly 40,000 restaurants worldwide. Based on McDonald. (2021). *French Fries facts on French Fries Day*. ([LINK](#)).

on a collecting point's records, was sufficient for all of that collecting point's points of origin to be recognised as verified, certified sources of UCO.²⁶

Majority of Asian ISCC UCO collecting points certified with no points of origin verified via an audit

Sampling No sampling

Share of UCO CP certificates (%)



Source: Transport & Environment analysis, based on ISCC UCO summary audit reports accessed in October 2024

3. T&E Policy Recommendations

3.1 Restrict biofuels imports

Former European Commissioner for Energy Kadri Simson has publicly acknowledged the difficulties behind tracing and verifying biofuel supply chains in third countries where the EU has no mandate.²⁷ This issue stands true for other governments, such as the UK. While the Union Database for Biofuels has been put forward by the Commission as the key solution to fighting fraud, it has been heavily criticised by industry stakeholders and Member States alike, who claim it is not fit for purpose and have called for its mandatory use to be postponed.²⁸ Meanwhile, a working group to overcome the issue of fraud, but progress has been slow at the time of writing.

Instead of promoting ineffective, slow-moving measures to fight fraud such as these, the EU and Europe's national governments must acknowledge the near-impossibility of truly verifying biofuels from third countries, and no longer incentivise them as part of their renewable energy targets, thus eliminating a key incentive for their demand. As well as this, national governments should impose more stringent caps on fraud-prone biofuels, like UCO and Palm Oil Mill Effluent (POME).

²⁶ ISCC. (2024). ISCC EU 203 TRACEABILITY AND CHAIN OF CUSTODY ([LINK](#))

²⁷ Council of the European Union. (2024). Transport, Telecommunications and Energy Council ([LINK](#))

²⁸ Quantum Commodity Intelligence. (2024). Governments, oil majors join industry call for delay to EU biofuel trade database ([LINK](#))

UCO does have a limited role to play in decarbonising our transport, such as for making sustainable aviation fuels, but it should be sourced from more reliable, domestic sources which fall within the remit of European authorities. Restricting imports of UCO would not only ensure that Europe focuses on what it can produce at home, but would also encourage governments of countries such as Indonesia, Malaysia and China to use these fuels locally to decarbonise their own economy.

These recommendations should be complemented with support for cleaner alternatives. Direct electrification must be the preferred option for road transport. For sectors that are harder to electrify, such as aviation and shipping, renewable hydrogen-based fuels should play the key role.

3.2 Certification is not enough

A complete review of the certification system needs to be carried out, moving away from independent, industry-led voluntary schemes in favour of more stringent EU and national regulation. This is not only important for biofuels but also for future certification systems applicable to fuels like e-fuels produced from green hydrogen. The following recommendations should be considered:

- At the EU and UK level, a dedicated fraud investigation unit should be established to investigate fraud cases.
- A formal and effective grievance procedure, such as a dedicated EU RED ombudsman, should also be established to complement this. This would ensure industry whistleblowers, suspicious transactions or suspected market distortions likely caused by fraud can trigger an investigation.
- Schemes should have mandatory multi-stakeholder governance, which gives an equal voice to industry, communities, workers and civil society;
- Audit reports should be made available in an accessible, transparent manner, and with detail, not just a summary;
- The European Commission should conduct their own broader analysis on top of audit reports and certifications. This should include results of consultation with industry, workers and civil society organisations. This recommendation is aligned with a recent OECD study²⁹ that shows that companies' responsible conduct cannot be guaranteed even by most rigorous initiatives, and must be considered as one piece within a broader set of risk-based indicators.
- A supervision procedure for national governments to better oversee the work of voluntary schemes should be established, including cooperation frameworks with third countries to supervise in their territories.

Further information

Cian Delaney

Campaign Coordinator

Transport & Environment

cian.delaney@transportenvironment.org

²⁹ OECD.(2022). The role of sustainability initiatives in mandatory due diligence: Background note on Regulatory Developments concerning Due Diligence for Responsible Business Conduct ([LINK](#))