



Halt deforestation-driving soy biofuels before it is too late

The European Commission has a new opportunity to phase out soy based biofuels

December 2023

Summary

Between 2015 and 2022 the consumption of soy biofuels grew fivefold in the European Union and they are the second cheapest biofuel on the market. At the same time, soy as a commodity is classified in the EU Deforestation-Free Regulation as one of the biggest drivers of deforestation in the world and **palm and soy biofuels represent one third of volumes but two thirds of biodiesel CO₂ emissions in the EU in 2022.**

Nonetheless, soy biofuels are currently promoted in the Renewable Energy Directive (RED) as a sustainable alternative to decarbonise the transport sector. Instead, the EU must phase them out immediately together with palm oil, because of their negative impacts on climate change, biodiversity and human rights. **At the national level, four Member States (France, Denmark, the Netherlands and Belgium) have decided to go a step further** to tackle soy biofuels, but some of the major producers and consumers of soy biofuels such as Spain and Germany still seem reluctant to do so.

Trade interests seem to be the biggest obstacle to phasing out soy biofuels from the Renewable Energy Directive as Europe is importing almost 90% of its soy for biodiesel production from the US, Argentina and Brazil. Trade deals such as the Mercosur agreement or initiatives such as the Global Biofuels Alliance, as well as US plans to uptake the production of soy renewable diesel - are all going in the opposite direction of classifying soy as a high ILUC risk feedstock. The US has been lobbying against such a decision since 2018 when Trump and Juncker agreed to increase trade in several areas and notably soybeans. Although **the lobbying happens mostly behind closed doors**, some of these efforts have been made public, as for example with Argentinian representatives that expressed concern over soy phase out threatening the Mercosur deal.

The European Commission is currently updating the report on high ILUC risk feedstocks, based on which it will revise the corresponding Delegated Act. The Commission has been very late with producing this report, which was due in June 2021, and the **deadline for the revision of the**

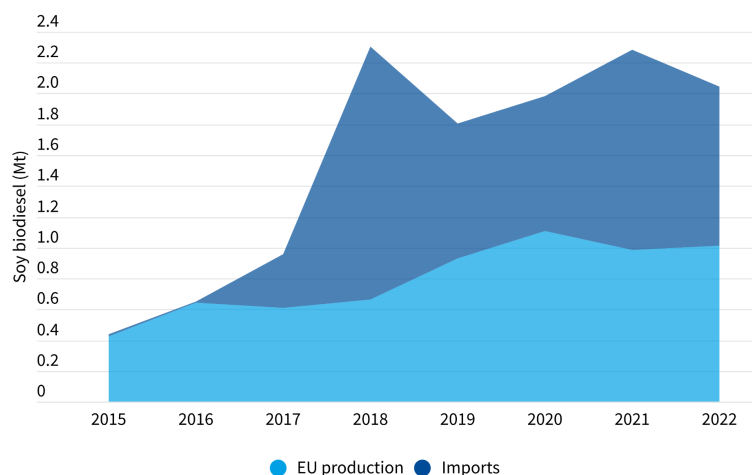
Delegated Act itself expired in September 2023. Both processes should not be further delayed as the EU has another chance now to stop incentivizing soy biofuels before it gets too late and the deforestation rates go to a point of no return. **T&E strongly recommends to:**

- **Include soy oil as a high ILUC risk biofuel in the Renewable Energy Directive**
- **Phase out soy and palm biofuels immediately, not in 2030**

1. Soy among most demanded biofuels on the market

1.1. Continuous increase of soy biofuels in the EU and in the world

Between 2015 and 2022 the consumption of **soy biodiesel grew fivefold in the European Union, from 0.4 to more than 2 million tonnes over the period¹**. As shown in Figure 1, this increase can be attributed to both a surge in soy biodiesel produced in the EU and a rise of soy biodiesel imports from other regions.



Source: Transport & Environment, based on data from OilWorld and Comext (2023)

Figure 1: Soy biodiesel in the EU²

While soy biodiesel consumption in the EU slightly decreased in 2022, possibly because of poor weather conditions in Brazil and Argentina^{3,4}, **expanded soy harvest areas and increased yields show an increase of soybeans exports from Brazil in the first nine months of 2023⁵**. Global production could

¹ Based on data from Oil World and EU Comext trade data.

² Imports of biodiesel from South America are assumed to be soy based.

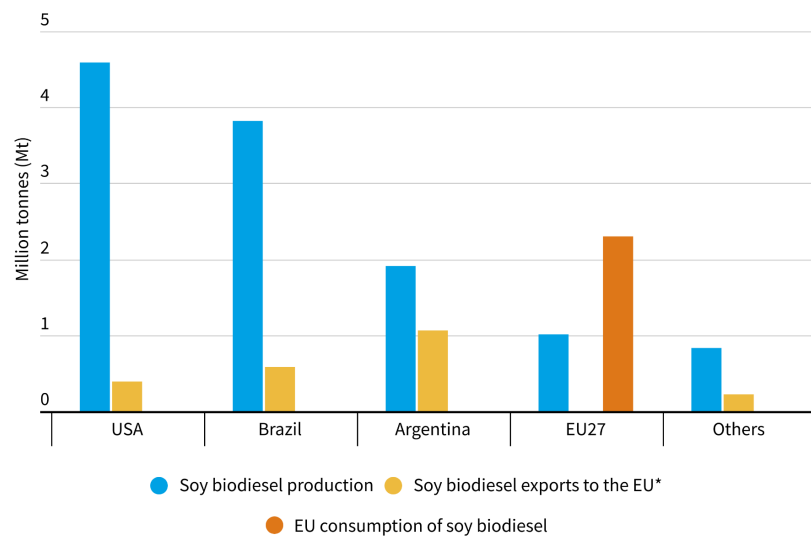
³ Biofuels International. (Dec 2022). *Soybean imports into EU highlighted*. ([Link](#)).

⁴ Argus (Sep 2023). *Brazil's 2022-23 crop hits record 323 Mt*. ([Link](#)).

⁵ From 78.8 Mt of Brazilian soybean exports in 2022 to 87.2 Mt in the first nine months of 2023. Source: Brazilian Association of Vegetable Oil Industries. (Sep 2023). *Relatório de Exportações – Complexo Soja e Milho*. ([Link](#)).

then reach record highs in 2023 and 2024 and thus increase even more the consumption of soy biodiesel in the EU⁶. EU based biofuel producers are also announcing soy processing expansion plans⁷.

Trade data show a **significant increase in imported soy biodiesel volumes**, which were multiplied by more than 50 since 2015 and represented half of all soy biodiesel consumed in the EU in 2022. In addition to already refined biodiesel, the EU also imports soybeans and soybean oil as raw materials that can be further processed into biodiesel⁸. Taking into account these indirect imports, **the EU is heavily reliant on soy imports from Argentina, Brazil and the United States, which represent the world's largest producers of both soybeans and soy biodiesel** (Figure 2). Combined these countries accounted for 88% of the EU soy biodiesel imports in 2022⁹.



*Soy biodiesel imports refer to both direct imports of already refined biodiesel and indirect imports of soybeans or soybean oil imported to the EU and processed as biodiesel in the EU.

Source: Transport & Environment, based on data from UN Comtrade (2023)

Figure 2: Largest soy biodiesel producers and European imports

In particular, **the US production of soy biodiesel increased by 23% between 2019 and 2022¹⁰** and this feedstock represented around half of all biodiesel and renewable diesel¹¹ volumes consumed in the country in 2022¹². Argus' market forecasts expect a further expansion of soybean production in the US with an additional 18% soy crush capacity foreseen by 2026 and a doubling of the country's renewable diesel production capacity by 2024¹³.

⁶ Argus. (May 2023). *Record global 2023-24 soy production: USDA*. ([Link](#)).

⁷ ADM. (Jul 2022). *ADM Announces Growth Investment in Non-GMO Soy Processing in Mainz, Germany*. ([Link](#)).

⁸ On average, 100 kg of soybeans can be processed into 18 kg of soybean oil according to USSEC, 100 kg of soybean oil to 96 kg of soy biodiesel according to Biograce. In 2022, 44% of soybean oil was used for biodiesel production in the EU, while it was only 25% in 2015, according to OilWorld.

⁹ Argentina: 46%, Brazil: 25% and the US: 17%. Imports refer to both direct and indirect imports.

¹⁰ Based on data from OilWorld.

¹¹ Hydrotreated vegetable oil or HVO.

¹² Based on data from Stratas Advisors.

¹³ Argus. (Sep 2023). *Renewable feedstocks: Surging demand with new renewable diesel capacity*. ([Link](#)).

1.2. Soy biodiesel second cheapest on the market

In the recent years and despite an increase in biofuel prices¹⁴, **soy biodiesel remains the second cheapest feedstock on the market after palm oil**. According to Stratass Advisors, in 2022 soy biodiesel prices were in average 16% lower than rapeseed biodiesel and only 7% more expensive than palm oil biodiesel¹⁵. Moreover, soy biodiesel prices vary a lot depending on their region of origin: **Argentinian soy biodiesel was as cheap as palm oil biodiesel in the EU in 2022**¹⁶.

The future Mercosur agreement with the EU is likely to influence soy prices even further down. The agreement contains a clause regarding the end of 'retenciones', export taxes that are collected by the government and are particularly important for the Argentinian economy. These have high rates notably on soy (33% since March 2022)¹⁷. There is no doubt that this measure will intensify soy cultivation expansion on new areas in Argentina even more, including the highly biodiverse Chaco area.

2. Soy a driver of deforestation

2.1. Indirect land use change

EU law requires biofuel feedstocks to be certified as grown in areas that have not been deforested since 2008. However, **indirect deforestation effects of feedstock expansion are not prevented by EU rules**. Crop biofuels, and palm and soy particularly, have been associated with Indirect Land Use Change (ILUC), a fancy term for indirect deforestation. ILUC happens when a part of land is cleared to produce cereals for food or feed for instance, because the land previously used is now dedicated to biofuels production.

The land use impact has been officially recognized in the RED¹⁸ framework and several models have been developed to estimate ILUC emissions, the latest EU model being the Globiom quantification study¹⁹. This study combines direct emissions from biofuels production with estimates for indirect impacts and shows that **all crop biodiesel appears to be worse for the climate than fossil diesel**. However, palm and soy prove to be particularly concerning, **palm oil emitting three times more than fossil diesel and soy oil two times more**.

2.2. Palm and soy biggest sources of biodiesel emissions

While more recent data indicate a lower deforestation rate, **1.2 million hectares of forests were still chopped down in the Legal Amazon state in 2022**²⁰ Recent data indicate that together **palm and soy oil represent one third of volumes but two thirds of biodiesel emissions** in the EU, as shown in Figure 3.

¹⁴ Transport & Environment. (Jun 2022). *Biofuels twice as expensive as petrol and diesel in most cases*. ([Link](#)).

¹⁵ FOB prices in the ARA region.

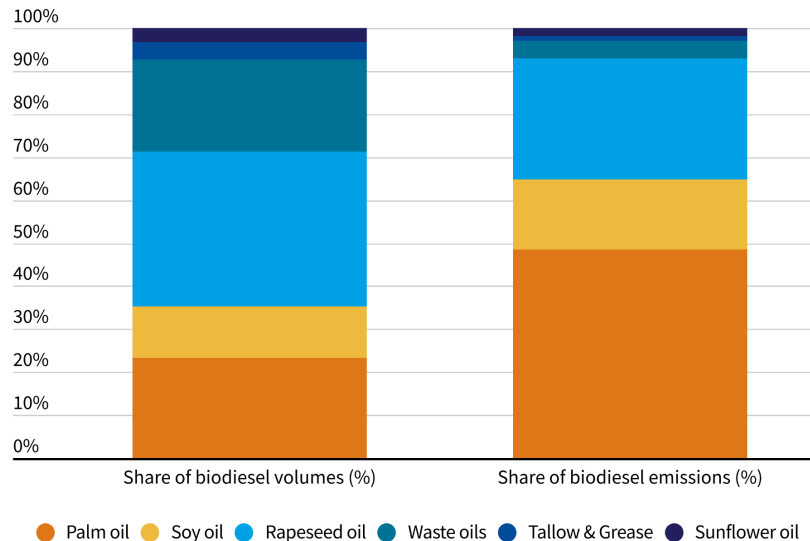
¹⁶ 1553 USD/t vs 1548 USD/t according to data from Stratass Advisors.

¹⁷ The Greens / EFA. (May 2023). *The EU-Mercosur Free Trade Agreement, its impacts on Agriculture*. p22. ([Link](#)).

¹⁸ Annex VIII, RED.

¹⁹ Transport & Environment. (Apr 2016). *Globiom: the basis for biofuel policy post-2020*. ([Link](#)).

²⁰ Instituto Nacional de Pesquisas Espaciais. (2022). PRODES. ([Link](#)).



Source: Transport & Environment, based on data from OilWorld (2023) and Globiom (2016)

Figure 3: EU biodiesel feedstocks and their associated emissions in 2022

Previous reports from Transport & Environment showed a **clear link between deforestation and soy expansion**, while there has been a 15 year deforestation high in Brazil in 2021²¹. Forecasts expect an increase in Brazil’s soy harvest area in the 2023/2024 cycle, reaching nearly 46 million hectares - equivalent to around 60% of the country’s crop area²². In parallel, soy expansion is also driving deforestation in other South American countries, with Bolivia having the highest deforestation rate related to soy production in 2021²³.

In terms of future projections, it is to be expected that the Mercosur agreement will further drive deforestation in South America, notably in Argentina as mentioned above. The recent EU Regulation on “imported deforestation” (EU Deforestation-Free Regulation) doesn’t resolve the issue as it only prevents imports from very recently deforested areas (since 2021), and only refers to Amazonia (not to savannahs such as the Cerrado or Chaco, despite being very rich in biodiversity). **In parallel, the Cerrado, which is the second largest biome in Brazil, is seeing its highest deforestation figure since 2018** and satellite data show that 3,281 hectares of land per day have been cleared by August this year, monocultures (such as soy) being one of the top reasons for these dramatic rates of deforestation in this highly biodiverse area²⁴.

In addition to this, in Mercosur countries, the increase in soy cropping areas has also resulted in a drastic increase of pesticide use (for example in Argentina the amount of pesticides on soy plantations has doubled between 2009 and 2018)²⁵.

²¹ Transport & Environment. (Nov 2022). *Fueling our crises*. ([Link](#)).

²² Argus. (May 2023). *Record global 2023-24 soy production: USDA*. ([Link](#)).

²³ Trase. (Aug 2023). *Soy expansion driving deforestation in Bolivia*. ([Link](#)).

²⁴ Mongabay. (Aug 2023). *A tale of two biomes as deforestation surges in Cerrado but wanes in Amazon*. ([Link](#)).

²⁵ The Greens / EFA. (May 2023). *The EU-Mercosur Free Trade Agreement, its impacts on Agriculture*. p29. ([Link](#)).

3. The RED is lagging behind on phasing out soy biofuels

3.1. Delays on the high ILUC report

The figure below shows the timeline of the legislative developments in relation to the high ILUC Delegated Act and the phasing out of soy. **The European Commission was required to review data on feedstock expansion by 30 June 2021 and review the Delegated Act by 1 September 2023** but to this day it still hasn't published the reviewed data. So far the only data published was the first phase of the update that shows the expansion of soy into high carbon stock areas until 2019, amounting to 9.5%, hence very close to the 10% threshold. We are waiting however for the results of the second phase of the review that is to take into account data between 2019 and 2022²⁶.

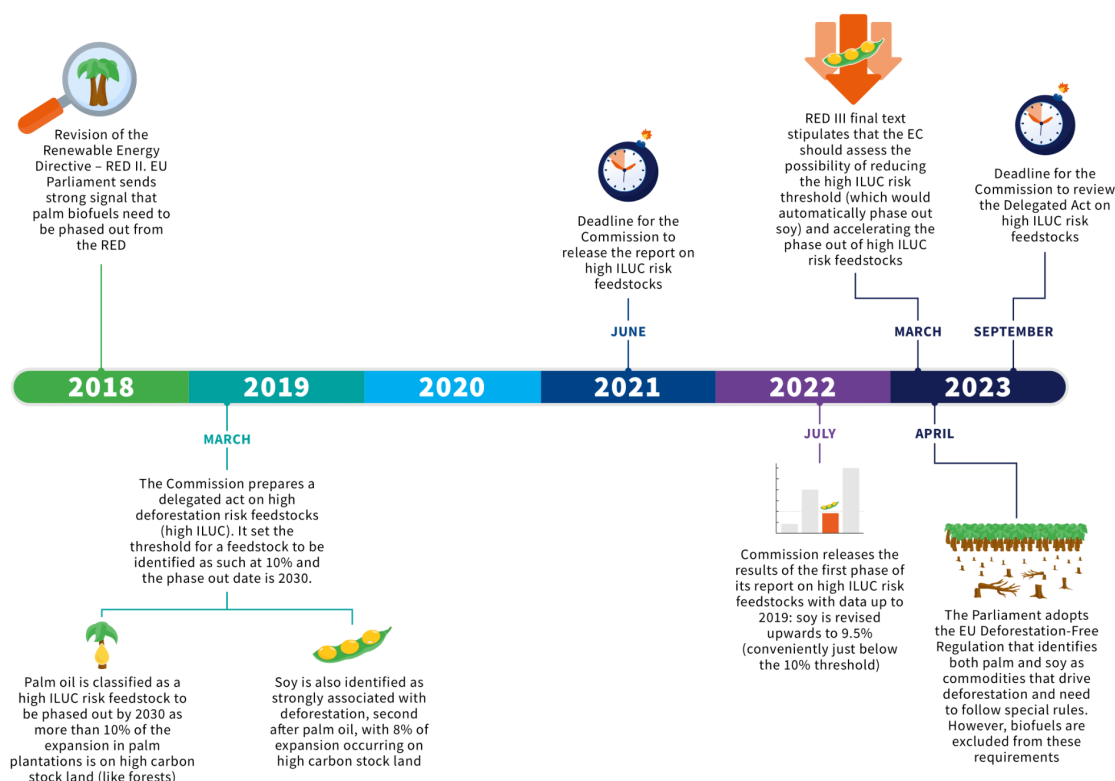


Figure 4: Timeline of the high ILUC DA revision and the status of soy²⁷

As flagged in the 2020 study commissioned by T&E to Cerulygy²⁸, with soy being relatively close to the threshold, it remains possible that the threshold will change if the deforestation rates increase before the feedstock expansion data has been reviewed, or that rules will change if new evidence shows that deforestation rates were previously underestimated. The assessment done by the Commission for the Delegated Act in 2019 **considers only the direct impact on high carbon stock land of each feedstock.**

²⁶ Guidehouse. (Jul 2022). *High ILUC Webinar phase 1 results*. ([Link](#)).

²⁷ Source: Transport & Environment.

²⁸ Cerulygy. (Nov 2020). *Soy, land use change and ILUC-risk*. ([Link](#)).

The Cerulygy analysis in 2020 took into account new evidence of soy expansion in Cerrado and associated it with deforestation. This resulted in **a soy expansion of 10.5% into high carbon stock areas**, which would be above the current threshold of 10% and would automatically phase out soy from the RED. In addition to this, the report suggested that the Commission revises the definition of high carbon stock areas to cover some highly biodiverse areas that are currently not included in the revision.

3.2. Soy already recognised as a driver of deforestation by the EUDR

On April 19th 2023, the Parliament adopted the **EU Deforestation-Free Regulation (EUDR)**²⁹, a law that obliges companies to ensure products sold in the EU have not led to deforestation and forest degradation. Six commodities have been identified as considerable drivers of deforestation and forest degradation on a global scale and among them: cattle, cocoa, coffee, palm, soya and wood. It is estimated that without appropriate regulatory intervention, the Union's consumption and production of these six commodities alone would rise to approximately 248 000 hectares of deforestation annually by 2030. Human rights and the rights of indigenous people are added as additional requirements that need to be respected in order for these products to be sold to the EU. **Biofuels, however, are excluded from these rules** as it is considered that they are to be tackled under the Renewable Energy Directive. The RED however is lagging behind as it still hasn't recognised the issue of deforestation in connection to biofuels production made from soy or the horrendous human rights violations that accompany it.

The risks of soy not being immediately phased out of the Renewable Energy Directive together with palm oil are significant as there has been a constant increase of soy oil imports to the EU for biofuels production in recent years as palm oil is being progressively phased out. According to T&E calculations³⁰, **an immediate palm and soy phase out would bring about six times more emission savings than phasing out palm alone in 2023**. In addition to this, the new RED targets are dramatically higher than before³¹ and will create a major loophole for crop based biofuels that are not tackled under the food and feed cap³², i.e. intermediate crops grown as cash crops in regions with multiple harvesting periods³³.

²⁹ European Parliament and the Council (May 2023). *The EU Deforestation-Free Regulation (EUDR)* ([Link](#))

³⁰ Transport & Environment in-house modeling, 2023.

³¹ Transport & Environment. (Sep 2023). *2023 REDI biofuels factsheet*. ([Link](#)).

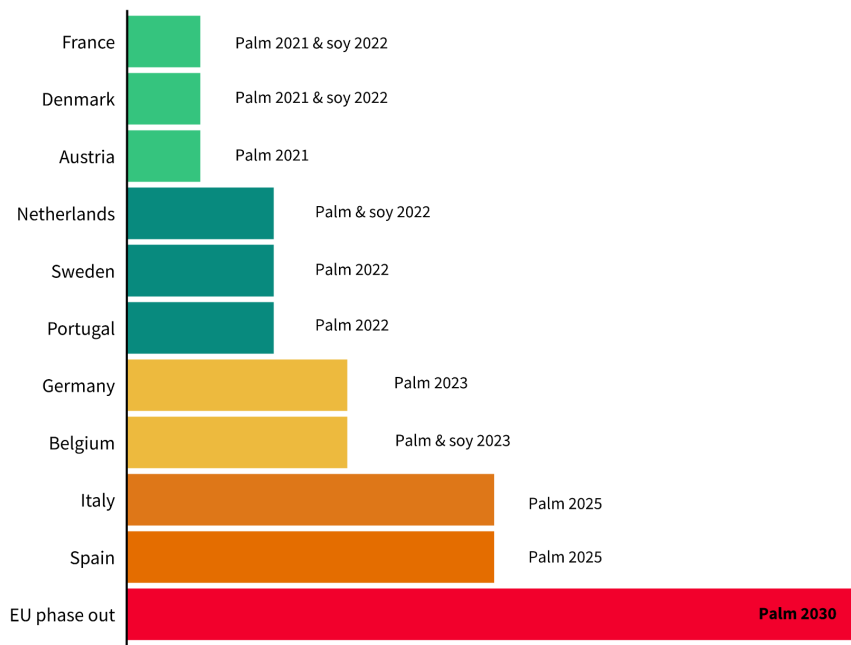
³² The share of food and feed based biofuels as defined in the [Renewable Energy Directive](#), can be up to 1% higher than the 2020 Member State share, with a maximum of 7% in energy terms .

³³ According to the International Council for Clean Transportation (ICCT), these can lead to land-use change and the associated greenhouse gas impacts in the same way that business-as-usual food-based biofuels do. ICCT modeling in 2021 showed that 95% of the intermediate crops used to reach the RED targets will be soy biofuel, including for renewable diesel production because there is no blend limit for it. In 2021 the modelings were based on the overall RED target proposed by the Commission (13% carbon intensity reduction) which is even lower than what was adopted in the end (14.5% carbon intensity reduction). For more information please see ICCT. (Jun 2021). *Cover crops: a cover story for business-as-usual biofuels*. ([Link](#)) and ICCT. (Oct 2021). *Intermediate crops in the Renewable Energy Directive*. ([Link](#)).

4. Varying national ambitions and trade contexts

In the meantime, **several Member States have already shown a higher ambition than the EU institutions to phase out soy and palm biofuels** and have started phasing them out as of 2021.

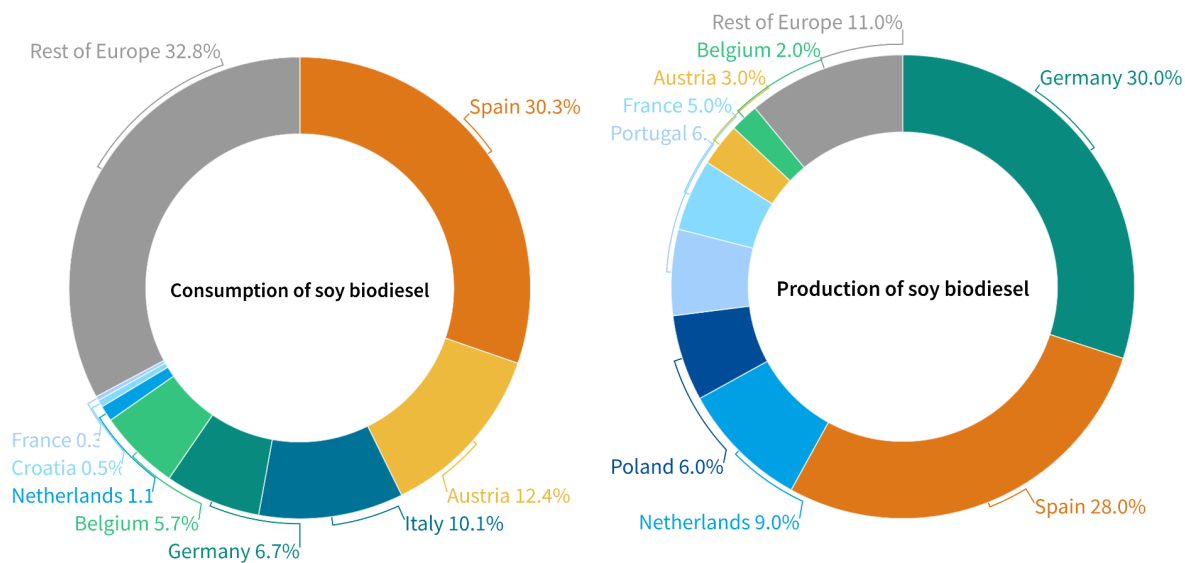
While all the countries in Figure 5 phased out palm oil, four of them phased out soy oil as well: Belgium, Denmark, France and the Netherlands. Having this overview of Member State phase outs of palm and soy biofuels in mind, it is interesting to compare it with the statistics on the consumption and production of soy biodiesel in 2022 at the national level in Europe.



Source: Transport & Environment, based on Member States announcements

Figure 5: Member States consumption phase-outs of palm and soy biofuels

As shown in Figure 6, in 2022, Spain was the biggest consumer of soy biodiesel (30.3% of total consumption), followed by Austria (12.4%) and Italy (10.1%). More than half of the soy biodiesel production was located in Germany and Spain, with 30% and 28% respective production shares. They are particularly important in the decision making process around the high ILUC DA at the EU level considering their size and also political role, Spain currently holding the presidency of the Council of the EU.



Source: Transport & Environment, based on data from Stratas Advisors and OilWorld (2023)

Figure 6: Soy biodiesel consumption and production in 2022 in the EU

5. Trade interests obstructing the phase out of soy

5.1. WTO ruling still pending

The question around why soy still hasn't been phased out in the Renewable Energy Directive has to be explored in the **wider context of trade interests**. These are very relevant to the topic of biofuels as Europe is reliant on imports to a large extent, notably of raw materials to produce soy biodiesel, as seen in the first section of this document.

The European Commission flagged³⁴ that the classification of palm oil as a high ILUC risk feedstock in 2019 has resulted in Indonesia and Malaysia challenging these measures with the **World Trade Organisation**³⁵ and they are still waiting for the final ruling from the WTO. They claim that phasing out soy would not help their case with the WTO. However, there is a valid concern that some other factors might be playing a role in the Commission's reluctance to do the right thing and end deforestation related to soy biofuels.

5.2. Major economies in the way of a soy phase out

Countries such as Brazil, Argentina and the US have very clear interests in keeping the soy biofuels production strong. A soy phase-out from the RED would mean less incentives to produce and consume

³⁴ Based on exchanges with European Commission's officials

³⁵ Indonesia and Malaysia accused the European Commission within the framework of the WTO dispute settlement mechanism of discriminating against palm oil compared to other vegetable oils used for biofuels and causing unjustified and disproportionate barriers to trade. Please see more info about the dispute [here](#)

soy biofuels in Europe, which would certainly influence the exports of these countries to Europe. As mentioned in the sections above, **the Mercosur deal plays a role** as the government of Argentina for example will lose a part of its profit with the abolition of ‘retenciones’³⁶ and wants to ensure this is compensated by bigger exports in Europe of their commodities, including soy. Argentina’s Minister of Foreign Affairs Santiago Cafiero discussed exports in the context of the Mercosur deal during his meetings with high level officials of the EU institutions at the beginning of the year. **He indicated that the discussions in the RED negotiations around revising the threshold for high ILUC risk feedstocks to include soy are harming exports from Mercosur countries.** Cafiero pointed out that it would affect the Argentine exports of soy biodiesel, which in 2022 represented sales of more than US 1.8 billion dollars, around 20% of the total exported to the European Union³⁷.

In parallel, **the US has been lobbying for years** already to ensure there is a market in the EU for their soy imports for biofuels. In 2019, the European Commission formally recognised the US scheme for the production of biofuels after concluding that US soybeans meet the technical requirements to be used in biofuels in the EU. It was a result of a Joint Statement done in 2018 between Trump and Juncker to increase trade between the two blocks, and notably of soybeans³⁸. Soy oil represents by far the largest feedstock for biodiesel and renewable diesel production in the US. In addition to this, as mentioned in the first section of this briefing, there are big investments on the way notably for soy based renewable diesel³⁹. It is not clear if part of that increased production will reach the EU market.

Last but not the least, the US, Brazil and Argentina are all part of the **emerging Global Biofuels Alliance**. It is a global initiative of 20 countries whose main goal is to triple the production of both conventional and advanced biofuels. This is supported by several international organizations, including the International Energy Agency⁴⁰.

Strong trade interests of major world economies such as the US, Brazil and Argentina could prevent the EU from making the right choice and phasing out soy once and for all. Trade interests have already slowed down several EU climate initiatives, like on tar sands⁴¹. **The European Commission has a unique opportunity to get things right this time**, like it did on palm oil, with the revision of the high ILUC Delegated Act. It is not certain that the EU will have another chance to act as the underpinning data will only be reviewed ‘in light of evolving circumstances and latest available scientific evidence’⁴².

³⁶ The Greens / EFA. (May 2023). *The EU-Mercosur Free Trade Agreement, its impacts on Agriculture*. p29. ([Link](#)).

³⁷ Sistema Económico Latinoamericano y del Caribe. (Feb. 2023). *Queremos un acuerdo revisado entre el Mercosur y la Unión Europea*. ([Link](#)).

³⁸ European Commission (Jan 2019). *The Commission recognises the U.S. soya bean - scheme as compatible with EU sustainability standards*. ([Link](#)).

³⁹ Argus. (Sep 2023). *Renewable feedstocks: Surging demand with new renewable diesel capacity*. ([Link](#)).

⁴⁰ IEA. (Jul 2023). *IEA shares recommendations for the Global Biofuel Alliance at G20 Energy Transitions Ministerial Meeting*. ([Link](#)).

⁴¹ FoEE. (July 2014). *How trade talks threaten to undermine EU climate policies and bring tar sands to Europe*. ([Link](#)).

⁴² Article 7 of the [Renewable Energy Directive](#).

6. Conclusions

Europe has an opportunity now to give a signal to major world economies that protecting the world's richest ecosystems in biodiversity should be put above trade. It is high time to stop risking our future by gambling with false renewables such as palm and soy biofuels that actually worsen climate change and seriously violate human rights in producing countries. T&E urges the European Commission to:

- Ensure the upcoming revision of the Delegated Act on high ILUC risk feedstocks **includes soy as a high ILUC risk feedstock** by making sure all scientific evidence is taken into account. The revision should be based on the update of the report on high ILUC risk feedstocks that includes **the most recent data on deforestation rates in highly biodiverse areas such as Cerrado and updates the definition of 'high carbon stock areas'** to include all relevant ecosystems. **The Commission should also ensure a progressive reduction of the threshold for high ILUC risk feedstocks** to include all feedstocks used for biofuels that are connected to deforestation in world's most highly biodiverse areas
- **Immediately phase out both palm and soy based biofuels** from the Renewable Energy Directive as this would result in saving six times more CO₂ emissions than phasing out only palm oil by 2030

There's a global significance to whether soy is included in the EU definition of 'high ILUC risk feedstocks'. As the fight against deforestation picks up, **the EU's high ILUC rule could become a global benchmark**. Also campaigns in other 'biofuel boom regions' will benefit from being able to refer to a clear and strong position in Europe, notably in the wake of an emerging Global Biofuels Alliance and trade deals such as Mercosur that will push for further soy expansion worldwide.

Further information

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