



## HVO and SAF Coproprocessing:

# why is the potential not maximized?

May 2026

HVO prices in the European Union are increasing and the premium over gasoil almost x2 in one year from around 700 €/m<sup>3</sup> to almost now 1400€/m<sup>3</sup>. On top of this, we are going to observe close to €600/m<sup>3</sup> margin from serious HVO players at the end of this quarter while the feedstock cost has not moved at all showing this price increase mainly comes from a supply issue.

This is also because a lot of projects are late in the European Union and at the same time, we are seeing duties from exporting regions like China literally putting that capacity almost out of the market. This means the European Union needs to increase HVO capacity to reduce pressure on price. As there is no alternative to HVO, coprocessing players should rush to increase production. But this is not what we are seeing? Why?

**The coprocessing market in the European Union** - In the European Union, there is around 600-million-ton crude oil refining capacity. It is largely admitted that 5% of this capacity could be used for coprocessing. That means around 30 million ton and of course should be more than enough to serve the European market whose size is 5 million in 2025. We are only seeing around 1.5 million of the capacity used at the moment and projection only shows 2 million ton in the next five years in the European Union. That corresponds to only 0.3%. Adding the fact that only a third of the refineries in the EU do coprocessing we could say that refineries that do coprocessing are only at 1% coprocessing share far from 5%.

**The challenge here is both technical and logistical:**

**Risk adverse problem** - Refineries in general still see coprocessing as a risk that could trigger a shut down of an entire refinery unit. These pushes particularly stakeholders (refineries directors) to give impossible-to-meet constraints to bio feedstocks teams resulting either in super-premium quality feedstock which hardly exist on the market or where economics do not make sense. We are for instance talking on quality requirement where metals, phosphorous, chloride, and sulfur sometimes need to be below 5 ppm, which is not something doable at scale with current market offers. This pushes even some refineries to directly use biodiesel (FAME) in the different feeds.

**Hydrogen is the bottleneck** - as not all refineries are equipped to handle bio feedstock, coprocessing in general involves a bit of retrofit and more hydrogen per ton refined. The surplus of h<sub>2</sub> could also be considerable if going from 1% to 5% bio feed share.

- **Unresolved questions regarding pre-treatment.** Lack of pre-treated feedstock capacity triggering a lot of questions to be raised. Should pre-treatment be outsourced to become an OPEX or should the refinery build it as a long-term-belonging investment. Moreover, the specifications pushed by engineers in charge of co-processing do not fully reflect market realities. They are likely to drive investments in pre-treatment units that could prove economically inefficient and out of line with market standards, while also significantly impacting overall production yields.
- **Sustainability compliance** which is a bottle neck with C14 analysis although this is being worked out at the EU level via delegated acts simplifying as well as via ISCC.
- **Logistics and Trading capabilities of bio feedstock** - Not all petroleum companies have teams that are specialized in handling bio feedstocks and in certain places bio feedstock handling could be a logistical problem particularly in Central Europe. That explains for instance why coprocessing units are close from export-import regions (Spain, ARA, Italy)
- **Administrative and safety considerations:** bringing waste, residues, or animal fats onto a petroleum site may introduce additional requirements in terms of regulatory compliance, safety standards, and risk management.

#### **The coprocessing market could grow in two different ways:**

1. % of oil refinery accepting coprocessing and
2. % bio feedstock in refineries doing coprocessing

**The easy part for the oil refineries that do NOTHING at the moment** - It is actually just a question of willingness – it should always be possible to formally do coprocessing at very low (e.g 0.5%-1%) levels without significantly jeopardizing the oil refining activity, the issue is to increase significantly to 5% or more. That being said: the market could continue to grow by converting all refineries In order to do so:

- It is more a matter of education and knowledge of the market than pre-treatment capacity even if low scale pre-treatment will be important ensuring compliant quality. These players need to accustom themselves with the feedstock market, understand what quality exist, run some tests with their lab, and manage logistics and compliance perhaps to reach 0.5%-1% of input which in some cases could represent 50 kt to 100kt biocapacity.

Given their long-term perspective, refineries may also choose to wait for future regulatory developments

regarding feedstocks.

In particular, they may anticipate that locally sourced feedstocks such as rapeseed and sunflower oil — especially when associated with low carbon emissions — could be reconsidered under RED regulations. This would be in the interest of refineries, given the high quality of these feedstocks. Why risk the asset if legislation could shift in 5–10 years?

#### **The HARD part – Increasing the share of bio feedstock handled inside an oil refinery from 1% to 5%**

It is most of the time a question of being able to scale during a long period of time to avoid one-off situations where in some months the refinery can run on bio at full scale and some months nothing happens. In general, the refinery will be able to process several hundreds of ton of feedstocks such as an HVO factory size. That means:

- Increase drastically feedstock sourcing (global teams, offtakes, acquisitions)
- Internalize pre-treatment or build solid partnership for pre-treated feedstocks with players having pre-treatment capacity such as certain biodiesel players that could be found in the ARA region, Italy and particularly Spain (the hub of pre-treatment in the EU) + massive retrofit or revamping for H2 input increase
- Potentially accepting to use also 1G feedstock to balance quality and feedstock quality which today is not the case

Whether in Europe or globally, co-processing remains undervalued despite its strong potential. It could play a key role in easing price pressures, reducing emissions from existing refining assets, and mitigating the risk of long-term overcapacity in HVO production. In Europe, while the HVO100 market is developing rapidly, co-processing units have limited applicability for road fuels because HVO is rarely produced as a 100% pure molecule. In contrast, in the aviation sector, co-processing is particularly relevant: bio-kerosene cannot be used as a pure molecule, meaning co-processing routes will continue to play an essential role in the production of sustainable aviation fuels (SAF).

In the short term, where capacity constraints exist, existing assets can leverage coprocessing to increase refining margins. In the long term, it is also an asset to enable fossil-fuel based assets to continue their life.

Finally, as there are a lot of uncertainties around feedstock availability when building a new capacity of HVO, the question is more how to ensure steady supply of pre-treated feedstock. The supply is less of a concern in the coprocessing environment as the asset still has the possibility to go back to fossil-based feedstocks.

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