RESEARCH NOTE

TALLOW AND ANIMAL FAT MARKETS

From rendering byproduct to strategic biofuel feedstock

April 2026

Executive Summary

European tallow markets face a structural supply-demand mismatch in 2026, with waste-based feedstock demand strengthening under RED III mandates whilst domestic supply declines amid lower slaughter volumes. Category 1 and 2 mixed animal fats, trading at €845–892/tonne in 2025, remain the marginal feedstock for HVO production but are increasingly constrained by rendering capacity limits and the 50% tariff on Brazilian imports, creating a potentially disruptive supply gap in the second and third quarters of 2026.

Market Context: Tallow's Evolving Role in Biofuels

Tallow—rendered beef fat—has transformed from a commodity of marginal commercial interest into a strategic feedstock for the European renewable fuels complex. This shift, crystallised over the past five years, reflects two converging forces: the structural collapse in traditional tallow end-uses (soap manufacture, animal feed) and the regulatory determination by EU policymakers to render waste-based lipids the primary supply source for hydrotreated vegetable oil (HVO) and biodiesel production.

The European Union processed approximately 18 million tonnes of animal material annually through rendering operations as of 2025, producing an aggregate of rendered animal fats (Categories 1, 2, and 3) for distribution across oleochemical, food, pharmaceutical, and energy sectors. Of these volumes, the biofuels sector consumed a material fraction—approximately one-third of Category 3 animal fat production in 2025—with proportions trending upward under successive Renewable Energy Directive iterations.

Regulatory architecture now reinforces this trajectory. The **RED III framework** classification of tallow as an eligible advanced biofuel feedstock, combined with fresh SAF (sustainable aviation fuel) production obligations entering their second year in 2026, creates structural demand growth that domestic rendering capacity appears inadequate to satisfy.

Supply-Side Dynamics: The EU Rendering Industry

The European rendering sector operates within tight biological constraints. Tallow supply follows slaughter cycles; total volumes remain hostage to livestock production patterns, herd health dynamics, and trade flows. In 2025, the EU rendering industry faced headwinds on both fronts. Monthly pig slaughter declined 8% against the five-year average in the January-October period, whilst poultry and beef slaughter remained under seasonal and cyclical pressure. These reductions directly translated to lower Category 1, 2, and 3 fat recovery.

The market tightened accordingly. During 2025, Category 1 and 2 mixed animal fat prices climbed to €892/tonne (December) after opening at depressed levels, with an intra-year trading range of €122/tonne (13.7% volatility). Low raw material availability at abattoirs and rendering facilities persisted through summer seasonality—ordinarily a period of ample supply—indicating structural undersupply rather than cyclical tightness. This persistence signals that the EU is approaching the economic carrying capacity of its livestock slaughter base for waste fat recovery.

Trade dynamics compound the constraint. Brazil, the world's largest exporter of tallow and animal fats, faced a 50% ad valorem tariff on US-destined shipments beginning August 2025, and elevated duties have partially redirected Brazilian flows to Europe. Tallow imports into the EU from Brazil increased approximately 40% on a year-to-date basis through July 2025. However, this relief is temporary. The tariff regime creates uncertainty over sustainable supply paths, whilst alternative destinations (Singapore, Southeast Asia) are now competing for Brazilian volumes.

Category Classification and Regulatory Eligibility

EU and UK regulations classify animal fats into three categories, each with distinct end-use eligibility and processing requirements. Understanding this framework is central to feedstock sourcing and regulatory compliance.

Category 1 animal fats derive from diseased livestock or specified risk material (SRM) and are ineligible for human food and animal feed. Under RTFO and RED III frameworks, they are eligible for biofuel production and oleochemical conversion with minimal additional processing verification. Category 1 is the most stringently regulated but commands the strongest policy incentives.

Category 2 animal fats are rendered from abattoir carcasses and offal not meeting Category 3 standards. These are eligible for technical applications, specialty chemicals, and—critically for biofuel markets—HVO and biodiesel production under RED III. Category 2 has become the backbone of EU waste-fat feedstock supply.

Category 3 animal fats are rendered from meat production byproducts fit for human consumption and hence eligible for food, pharmaceutical, and cosmetic end-uses. Category 3 is explicitly excluded from biofuel production eligibility under RED III, restricting its use to non-energy applications despite its technical suitability for HVO synthesis. This restriction creates the effective supply pool for the biofuels sector: Category 1 and 2 only.

In 2025, Category 3 bone fat prices in Northwest Europe ranged from €970/tonne (December) to €1,100/tonne (March), whilst Category 1 and 2 mixed fats traded in a narrower band (€845–892/tonne). This premium reflects consumer and regulatory demand for food-grade fat, not technical superiority.

Demand-Side Drivers: HVO, Biodiesel, and Oleochemical Competition

Tallow demand in 2026 is driven by three primary sectors: renewable diesel (HVO), biodiesel, and oleochemical conversion. Each sector competes for limited feedstock supply, creating a complex demand curve.

Hydrotreated vegetable oil (HVO) production in Europe has expanded from niche volumes five years ago to mainstream feedstock utilisation. HVO specifications require hydrogenation of triglycerides over noble metal catalysts to produce paraffinic hydrocarbons matching petroleum diesel cetane and stability requirements. Tallow—with its high saturated fatty acid content (palmitic and stearic acids dominate beef fat composition)—produces exceptionally high cetane HVO, and several major refineries have optimised conversion infrastructure specifically for tallow feedstock.

Across the EU, HVO refining capacity has expanded to approximately 4.5 million tonnes per annum by late 2025, with at least 60% of installed capacity fed by waste lipids (tallow, UCO, animal fats). The margin spread between HVO product prices and low-carbon feedstock costs has remained positive throughout 2025, incentivising aggressive procurement. Some EU refiners have secured long-term supply contracts for tallow at premium prices to secure feedstock availability.

Biodiesel production—FAME (fatty acid methyl ester) technology—remains substantial but faces margin pressure. FAME production consumes 15–20% of EU animal fat supplies, often competing with HVO for the same raw material pool at lower conversion premia. Biodiesel has also faced oversupply in certain markets in 2025 as SAF production scaled, cannibalising marginal FAME demand.

Oleochemical conversion of tallow to fatty acids and derivatives (soaps, detergents, cosmetic ingredients, lubricants) remains a steady offtake, typically accounting for 30–35% of total animal fat utilisation. Oleochemical plants run at stable utilisation rates and compete less aggressively on price, accepting multi-year contracts at formulaic pricing. This sector provides a floor for tallow demand but does not drive the margin expansion observed in 2025.

The net effect: HVO refiners, facing regulatory mandates (FuelEU Maritime, ReFuelEU Aviation) and customer demand for carbon-neutral fuels, are bidding aggressively for tallow supply, creating a marginal buyer with substantial elasticity of demand at prices below USD 1,400/tonne.

Price Dynamics and Competitive Positioning

Tallow pricing reflects a three-way competition with used cooking oil (UCO) and vegetable oils in the biofuel feedstock hierarchy. Each feedstock occupies a distinct sustainability tier and economic position.

Feedstock	Q3 2025 Price (USD/MT)	2025 Range (USD/MT)	Carbon Premium vs Fossil Diesel
Tallow (Cat 1&2, EU)	**1,411**	**845-892 EUR (~920-970 USD)**	+65-75%
Used Cooking Oil (UCO)	**1,200**	**1,070-1,420 USD**	+70-80%
Soybean Oil (spot, EU)	**950**	**800-1,100 USD**	+30-40%
Rapeseed Oil (spot, EU)	**925**	**750-1,050 USD**	+20-30%

Figure 1: Comparative biofuel feedstock pricing and carbon policy incentives, Q3 2025

During 2025, tallow and UCO traded in a narrow band relative to vegetable oils, reflecting their shared status as waste-based feedstocks under RED III eligibility structures. UCO commanded a modest premium—typically €100–150/tonne—owing to its perceived lower contamination risk and higher free fatty acid variability tolerance in FAME synthesis. However, UCO supply globally has faced collection challenges (aging restaurant base, consolidation of food service), and some analysts expect collection volumes to plateau in 2026.

Tallow, in contrast, benefits from biological supply fundamentals. Slaughter is continuous and politically difficult to restrict; hence, tallow supply has a degree of regulatory protection that UCO lacks. Where UCO faces structural collection constraints, tallow faces only the economic question of whether rendering economics justify fat extraction and processing. This distinction made tallow the marginal feedstock of choice for HVO refiners seeking volume certainty in 2025 and is likely to persist into 2026.

Vegetable oils (rapeseed, soybean, sunflower) have been de facto excluded from new biofuel blending in several EU jurisdictions effective 2025, placing them at a systematic disadvantage. Rapeseed oil, the dominant EU-grown vegetable oil, faced ceiling prices of €1,050/tonne in 2025 and was increasingly confined to non-biofuel oleochemical and food applications.

> *Tallow's feedstock economics have decoupled from commodity bulk oil prices. The divergence reflects policy preference for waste materials and the closure of non-renewable end-markets (soap, gelatin). In the current marginal buyer construct, tallow is effectively the swing producer for HVO refined biofuel.*

Regulatory Framework: RED III and Waste Classification Dynamics

The Renewable Energy Directive (RED III), effective from January 2025 across the EU, codified tallow as an advanced biofuel feedstock in the waste and residue category. This classification delivers two material benefits to tallow-based HVO and biodiesel producers: (i) simplified sustainability accounting (waste materials are deemed to have zero opportunity-cost land-use change emissions); and (ii) enhanced compliance credit accumulation under FuelEU Maritime and ReFuelEU Aviation mandates.

RED III defines eligible feedstocks through a negative enumeration: materials are waste-based unless explicitly listed as virgin crops. Category 1 and 2 animal fats fall cleanly into this definition. Category 3, owing to its human-food eligibility, occupies a regulatory gray zone but is conservatively treated as non-waste under most competent authority interpretations, hence ineligible for advanced biofuel carbon credits.

The FuelEU Maritime obligation, requiring 2% sustainable fuel blending in maritime bunker deliveries from 2025, contributed substantially to 2025 tallow demand. ReFuelEU Aviation's SAF blending requirement—still ramping at 2% in 2025, set to climb to 6% by 2030—has created incremental HVO demand, though some refineries have substituted synthetic aromatics and synthetic alkanes for waste-lipid HVO to reduce feedstock pressure.

Tariff and trade policy have introduced new regulatory complexity in 2025. The US 50% tariff on Brazilian tallow, coupled with EU anti-dumping proceedings against certain animal fat exporters, has created a fragmented global market in 2025. EU domestic suppliers and tariff-advantaged origins (Australia, New Zealand, select Asian exporters) have gained relative pricing power. Some analysis suggests tariffs may persist through 2026, structurally elevating EU tallow costs relative to other global regions.

Forward Outlook: Q2–Q3 2026 and Full-Year Perspective

The outlook for tallow markets in 2026 is constrained by a near-term supply crisis and a medium-term structural tightness.

Q2–Q3 2026 view: The seasonal trough in tallow availability (late spring and early summer) traditionally occurs as spring slaughter cycles wind down and summer slaughter volumes, though elevated, produce lower fat recovery (lighter carcass weights, heat-stressed animals). In 2025, this trough was exaggerated; seasonal dips extended into July. Multiple market participants signal expectations of similar or worse seasonality in 2026, with some forecasting Category 1 and 2 prices reaching €950–1,000/tonne in the April–June window, before recovering modestly into Q3.

A material risk is the entry into force of further EU biofuel blending mandates and the full-year impact of ReFuelEU Aviation at 6% equivalency in certain compliance regimes. If HVO refiners respond by bidding aggressively for tallow during the Q2–Q3 trough, spot prices could breach €1,050/tonne, creating margin inversion for certain secondary biodiesel producers and rendering operations.

2026 full-year view: Assuming moderate slaughter volume stability (no major disease outbreaks or trade disruptions), EU tallow supply is expected to remain flat to slightly lower than 2025 levels, circa 6.5–6.8 million tonnes for Category 1 and 2 combined. Demand, by contrast, is forecast to grow by 8–12% versus 2025, driven by HVO volume growth (industry capacity utilisation moving from 65% to 75–80%) and incremental SAF and maritime fuel blending.

This demand-supply imbalance is likely to manifest as: (i) sustained pricing at elevated levels (€850–950/tonne as a trading range, versus a 2024 average of €680/tonne); (ii) increased reliance on imported material, particularly from Australia and South American exporters outside the US tariff regime; and (iii) growing volatility, as HVO refiners negotiate spot purchases at prices well above forward contracts, creating whipsaw dynamics in cash markets.

The outlook assumes no major trade policy shifts. However, if US tariffs on animal fats are extended or reciprocal tariffs imposed on US feedstock imports, the EU market could face acute supply shortages in H2 2026, with prices potentially exceeding €1,100/tonne and margin compression across the HVO refining sector.

Key Risks and Monitoring Priorities

Several asymmetric risks warrant active monitoring into Q3 2026. First, **disease outbreaks** (African swine fever, avian influenza, bovine spongiform encephalopathy) pose acute supply-side tail risks. A major outbreak could reduce slaughter volumes by 20–30% within weeks, creating a severe feedstock shortage. The EU herd base remains vulnerable, particularly in Eastern European production zones.

Second, **trade policy shifts** represent a structural risk. The ongoing US administration has signalled protectionist intent; further escalation against agricultural exports could disrupt imports and trigger retaliatory tariffs against US feedstock, potentially stranding Brazilian material and elevating EU spot prices durably. Conversely, a rapid de-escalation could unlock Brazilian supply, potentially depressing prices in H2 2026.

Third, **refiner operational decisions** on feedstock diversification could shift demand. Several major HVO refiners have begun pilot programmes on tallow-free synthetics and algal-derived lipids. If these prove commercially viable at scale, tallow demand growth could underperform consensus expectations, creating inventory risk for refineries and rendering operators holding long positions.

Fourth, **regulatory clawbacks** on RED III waste classifications warrant monitoring. Some EU member states have proposed amendments to narrow Category 1 and 2 eligibility or introduce traceability burdens that could increase compliance costs. Such changes would reduce the policy premium supporting tallow prices and could trigger a 5–10% price correction.

Finally, **oversupply in downstream biofuel markets** poses a demand tail risk. If HVO or biodiesel product prices collapse due to over-capacity, refiners may reduce feedstock procurement, depressing tallow bids. The refinery margin dynamics in 2026 will be material to the feedstock demand curve.

Conclusion

Tallow markets have entered a phase of structural demand growth colliding with constrained biological supply. The European rendering industry is now a core supply risk asset for the renewable fuels complex, with feedstock availability likely to determine regional HVO production rates and compliance optionality under RED III mandates. Prices are expected to remain elevated and volatile through 2026, with Q2–Q3 representing a particularly tight window. Traders and refiners should monitor slaughter trends, import flows, and refinery scheduling decisions with heightened attention. The market offers tactical opportunities in supply-constrained periods but carries material basis and timing risks for outright long positions.

Tornavia Trading Research | April 2026

TORNAVIATRADING.COM