



Europe's Jet Fuel Supply Outlook

Impact of sanctions on Russian oil

Introduction

Europe is undergoing an energy transition, phasing out fossil-based energy sources and promoting alternatives such as bioenergy and renewable energy. European states have adopted a range of policy tools to achieve ambitious decarbonization goals aligned with global climate commitments. In response, the decades-old traditional energy industry is navigating this shift by selling unprofitable assets, suspending operations, or transforming into low-carbon energy producers.

Yet, the journey toward decarbonization is far from straightforward. Refinery closures, for example, displace a significant amount of supply that must be replaced through imports, a task that is becoming increasingly complex due to infrastructure limitations and rising logistical challenges. Among transport sectors, aviation is particularly vulnerable due to its heavy reliance on fossil-based jet fuel and the absence of scalable alternatives in the near term. Escalated geopolitical tensions have further magnified these challenges for airlines.

More challenges are anticipated in the immediate months ahead following the tighter sanctions recently introduced by the EU, UK, and US on Russian oil. Although Western nations are steadily reducing their dependence on Russian energy, Russia remains a major player in global oil markets due to its significant export volumes. Understanding the region's structural vulnerabilities is essential to ensuring its supply security and supporting the air transport industry's transition in the years ahead.

Waning jet fuel supply reliability in Europe

Europe's jet fuel supply is increasingly vulnerable due to structural changes in its refining landscape. Declining demand for traditional fuels, competition from new and more efficient large-scale refineries, and stringent environmental regulations have rendered many older refineries economically unviable¹. In 2025 alone, four European refineries ceased crude oil processing, removing approximately 400,000 barrels per day (bpd) of capacity from the market. According to S&P Global Commodity Insights, total refining capacity in Europe could decline by over 5 million bpd by 2050, nearly half of the region's 2024 capacity of 13 million bpd.

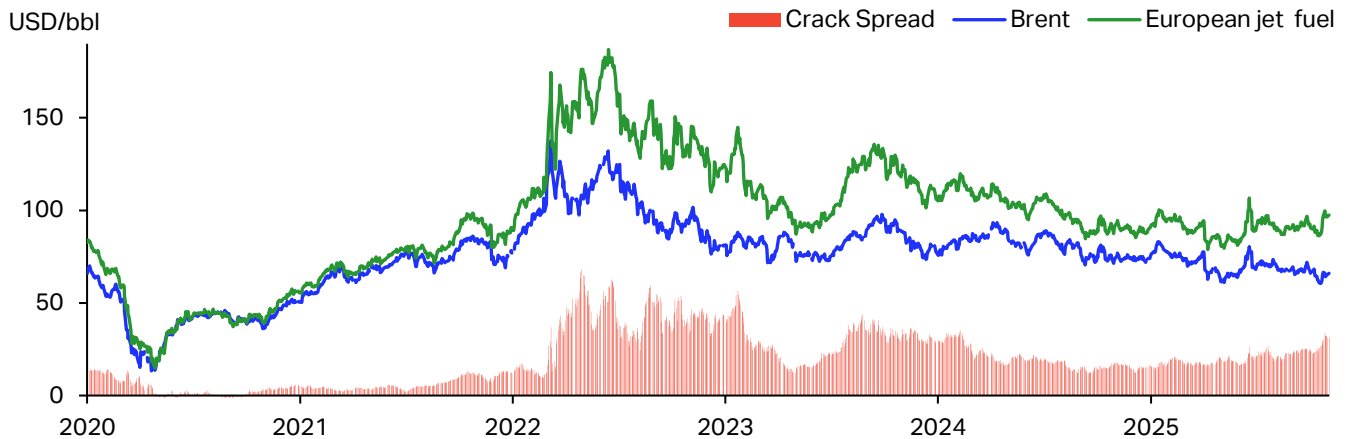
This trend is particularly concerning for airlines, as jet fuel remains one of the few refined products with projected demand growth over the coming decade. Replacing lost domestic supply is not straightforward: jet fuel supply chains are complex, involving multiple modes of transport, diverse stakeholders, and intricate commercial arrangements across borders. As refining capacity shrinks, Europe becomes increasingly reliant on imports, and the recent intensification of sanctions on Russian oil further amplifies this vulnerability. These sanctions disrupt traditional supply routes and limit access to affordable feedstock, compounding the challenge of maintaining a stable and secure jet fuel supply across the continent.

¹ Key issues are addressed in the IATA Sustainability and Economics publication "[Conventional Aviation Fuel and the Energy Transition](#)".

Intensifying sanctions on Russian oil

The onset of the war in Ukraine in 2022 triggered a wave of international sanctions targeting Russia's energy sector. As Russian oil was removed from traditional markets, global refining margins surged—particularly for middle distillates. Jet fuel crack spreads in Europe reached 60 USD per barrel (USD/bbl), averaging 53 USD/bbl in June 2022, a historic high, driven by post-pandemic air transport demand recovery and the scramble to secure additional supplies (Chart 1).

Chart 1: Brent crude, European jet fuel prices, and crack spread, USD per barrel (USD/bbl)



Source: S&P Global Commodity Insights

The US, UK, EU, and allied partners have implemented a series of coordinated sanctions aimed at curbing Russia's oil revenues, which are a critical source of funding for its war efforts. These measures include price caps on Russian crude and refined products, transaction bans, asset freezes on Russian energy firms, and restrictions on shipping and insurance for Russia-linked cargoes.

Despite these measures, Russian oil continues to flow into global markets through a fleet of "shadow tankers," which are oil transport vessels with secretive operations deliberately designed to avoid sanctions, and via countries that benefit from discounted Russian crude. As supply routes adapt, refining margins have slowly stabilized, reflecting a new market equilibrium.

However, since mid-2025, middle distillate margins have widened again. Seasonal travel demand has played a role, but more significantly, Ukrainian drone attacks on Russian oil infrastructure and the EU's 18th sanctions package have reignited supply concerns. These developments come amid declining refining capacity in Europe, underscoring the persistent influence of Russian oil on global markets.

The latest sanctions go beyond targeting Russian producers. They also aim to restrict refiners in China, India, and Turkey that process Russian crude and export refined products to Europe. This move aims to close loopholes and further isolate Russian-origin oil from the global supply chain. While market participants may find ways to circumvent these restrictions, a short-term impact is unavoidable given the scale of Russian exports.

For Europe, where jet fuel supply is already fragile, these sanctions present a significant challenge. Refiners and traders must now compete for non-Russian feedstock, increasing demand for alternative sources of crude and refined products. This shift disrupts established supply chains, raises procurement costs, and exposes European refiners—and, by extension, airlines—to heightened risks regarding supply, pricing, and operational stability.

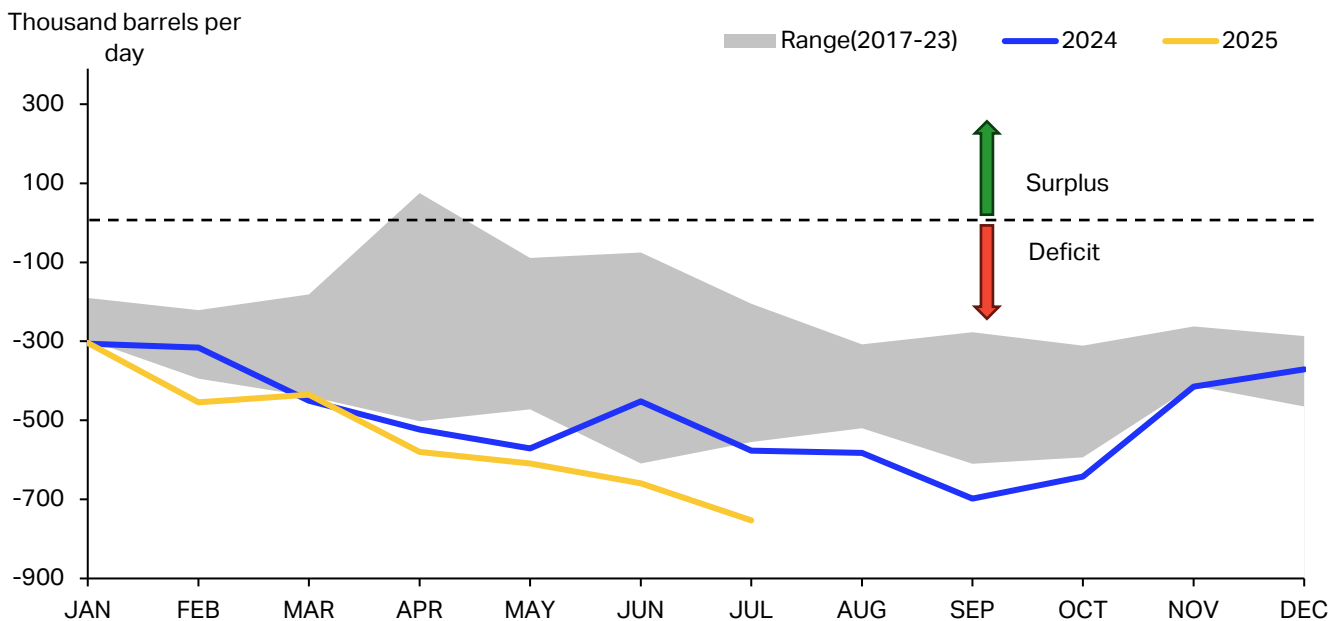
The impact also extends to diesel. Since diesel and jet fuel are part of the middle distillate range produced during crude oil refining, refiners often shift production between the two products in response to market conditions. In tight markets, diesel yields are typically prioritized due to wider margins and broader distribution channels. As a result, jet fuel production could be constrained further, exacerbating supply tightness and price volatility across Europe.

Growing import reliance

Europe has long been a net importer of jet fuel, with imports accounting for roughly 30% of regional demand. Established infrastructure, such as the Amsterdam-Rotterdam-Antwerp (ARA) hub and NATO’s Central European Pipeline System (CEPS), supports large-scale flows and distribution across major airports. These systems provide resilience for core markets, enabling Europe to accommodate significant import volumes efficiently.

However, as European refining capacity declines and import dependence deepens (Chart 2), vulnerabilities emerge in areas that are lacking robust infrastructure. Areas without CEPS connectivity or competitive import terminals are vulnerable to supply disruptions. In these markets, replacing lost local refinery output is challenging, as alternative supply chains require complex logistics and higher costs. This growing reliance on imports, combined with uneven infrastructure development, underscores the risk of localized shortages and price volatility, particularly if geopolitical shocks or sanctions constrain global jet fuel availability further.

Chart 2: Europe’s jet fuel production minus demand, thousand barrels per day



Source: Kpler

Regional supply bottlenecks

As supply chains lengthen and competition for alternative sources grow, Europe’s jet fuel resilience becomes increasingly fragile. Some regions in Europe that were once self-sufficient now compete for imports, creating bottlenecks and exposing structural weaknesses. Any supply network that lacks diversification options would be highly vulnerable to external shocks, whether geopolitical, logistical, or operational.

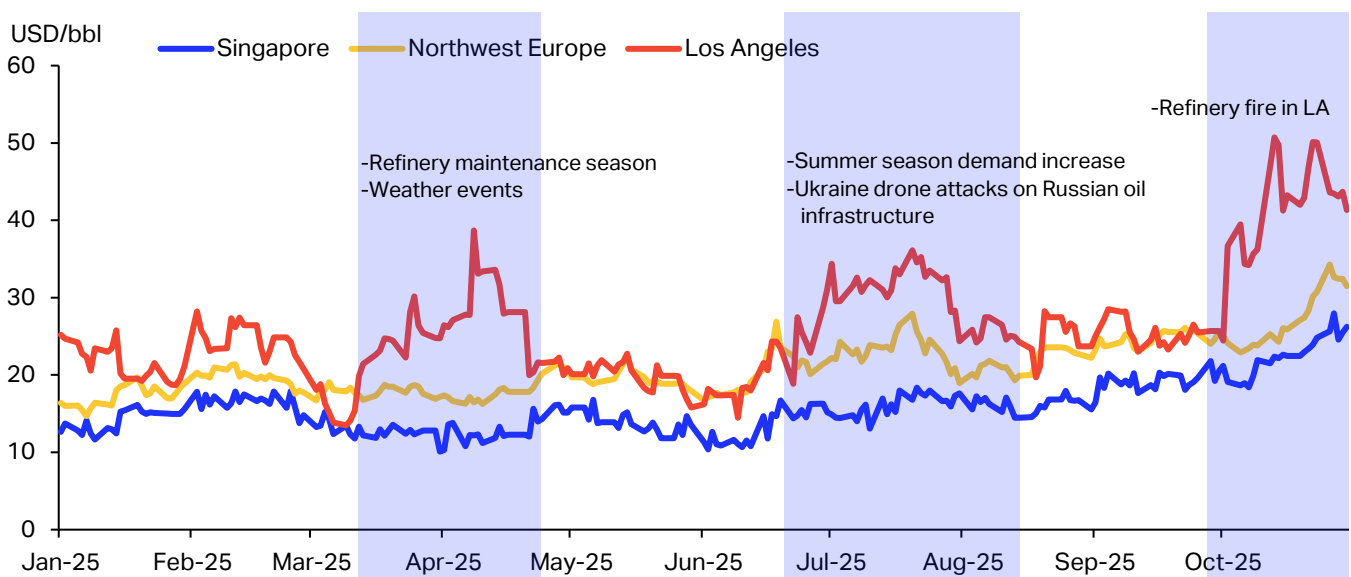
Recent signs of strain have emerged. Several airlines have reported supply constraints at Milan Malpensa Airport, a hub that has been served by two local refineries via dedicated pipelines. Such a setup ensured self-sufficiency without reliance on imports. However, as jet fuel demand returned to pre-pandemic levels, local supplies have become increasingly tight. Refineries would prioritize diesel production over jet fuel due to higher margins when the diesel market is tight. With alternative supply routes still underdeveloped, new entrants that can offer competition and relieve the tight supply face significant barriers to entering the market, leaving the airport exposed to potential shortages and price volatility.

Landlocked markets have similar risks. Faced with more complex logistical challenges, these regions are disproportionately affected by the decline in refining capacity. The intensification of sanctions on Russian oil compounds these vulnerabilities, disrupting traditional supply routes and making alternative sourcing both costlier and more complex.

Price volatility and risk premiums

Across the Atlantic, the US West Coast offers a striking example of how import dependence can amplify jet fuel price volatility. With local refining capacity in decline, the region relies heavily on imports, primarily from Asia, including South Korea. This dependency makes prices highly sensitive to external factors such as refinery outage or sudden demand spikes, resulting in sharp and frequent price swings (Chart 3).

Chart 3: Jet fuel crack spread over crude oil (Brent), USD per barrel



Source: S&P Global Commodity Insights

Europe, as a whole, has not experienced the same level of volatility. However, as its reliance on imports grows and domestic refining capacity continues to shrink, similar dynamics could emerge. Longer supply chains, heightened competition for alternative sources, and geopolitical risks will likely increase price variability over time.

For airlines, these trends translate into higher costs and greater uncertainty. Beyond the base market price, logistics expenses and supplier premiums add layers of cost. Premiums tend to rise when supply constraints persist. While product prices fluctuate according to global market movements, these premiums tend to increase steadily during periods of tight supply. A notable example is Milan Malpensa Airport, where the additions to the base product prices have tripled compared to pre-pandemic levels, driven by limited local refinery supply and the lack of viable alternatives.

Conclusion

The conventional energy industry will remain deeply interconnected and indispensable to the global economy until decarbonization goals are fully realized. While no single sector can manage this structural transition in isolation, air transport is significantly more exposed to supply chain vulnerabilities. Effective mitigation measures must be coordinated across industries and governments to prevent chronic supply disruptions and maintain market stability.

While diversification of supply sources can be costly, it is essential for reducing price volatility and limiting the influence of dominant suppliers. Europe must act strategically by expanding supply options, building regional storage capacity, and accelerating the adoption of alternative energy sources², such as Sustainable Aviation Fuels (SAF), to safeguard jet fuel supply security. These measures not only help manage short-term risks but also lay the foundation for a resilient aviation sector as Europe advances toward its long-term energy transition objectives.

² As mentioned in the [Draghi report](#) and reiterated in the [Sustainable Transport Investment Plan \(STIP\)](#)