Richardson Lawrie Associates Ltd
a Wade Maritime Group Company

Special topic Gas Carrier Market

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Special Topic

From Regional Conflict to Global Supply Shock: Global LPG Crisis Unfolding from Middle East Disruptions

What began as a regional disruption in the Middle East has quickly evolved into a broader global energy and logistics crisis, with freight markets reacting first. Shipping rates surged as market participants rushed to secure alternative supplies, but it is becoming clear that replacing Middle Eastern volumes is not simply a matter of rerouting trade.

The disruption of flows through the Strait of Hormuz, where vessel traffic has dropped sharply from typical levels of 125–150 transits/day to near zero, has led to ships being stranded or idling, creating bottlenecks and trapping cargo within the region.

While freight rates initially spiked due to panic-driven demand, deeper structural issues are now emerging. There is growing concern that alternative supply sources may be insufficient to fully replace Middle Eastern exports.

At the same time, weakening refining margins in Asia, rising bunker fuel costs, and uncertainty around return voyages are making shipowners increasingly cautious about sending vessels eastbound. This combination of supply constraints and logistical hesitation is reinforcing market tightness and amplifying global trade disruptions.

The Middle East continues to serve as the cornerstone of global LPG supply, channeling substantial volumes into international markets. In 2025, approximately 46.2 million tonnes of global seaborne LPG trade passed through the Strait of Hormuz, underscoring the importance of Hormuz as it accounts for nearly 30% of worldwide seaborne LPG flows. This critical corridor handles more LPG than the Panama Canal, which sees just over 30 million tonnes annually, highlighting the strategic significance of Hormuz within the global energy infrastructure.

The implication is structural rather than temporary. Global LPG trade is not only highly concentrated in terms of supply, but also heavily dependent on a limited number of key transit routes, making the system particularly vulnerable to disruption.

This single corridor handles more LPG than the Panama Canal, where flows are estimated at just over 30 million tonnes annually. The implication is structural: global LPG is not only supply-concentrated but also route-dependent, making the system acutely vulnerable to disruption.

While much of the global focus has been on crude oil, the broader impact is far more complex. The Middle East operates as a highly export-oriented energy system, with minimal reliance on local consumption.

Crude oil exports approx. 75-80%from the region flow to Asia, where they are refined into fuels and petrochemical feedstocks. This export dependency extends across the value chain: around 55-60% of naphtha exports, 80-85% of LNG and LPG volumes, and 70-80% of petrochemical outputs are directed toward Asian markets.

Fig 1 Middle East Share of Global supply (%)

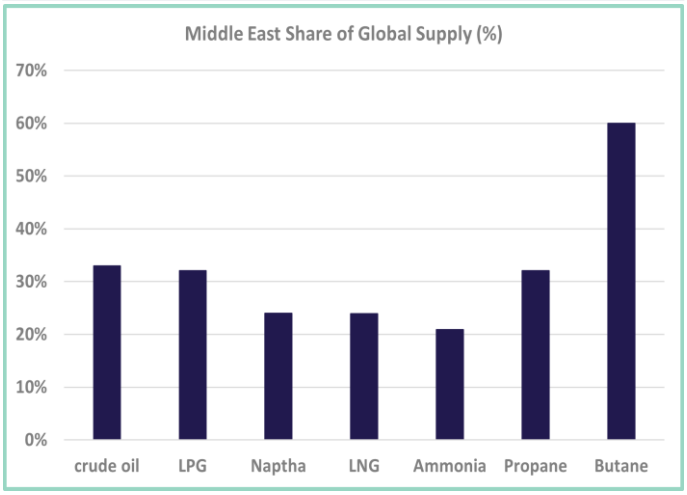
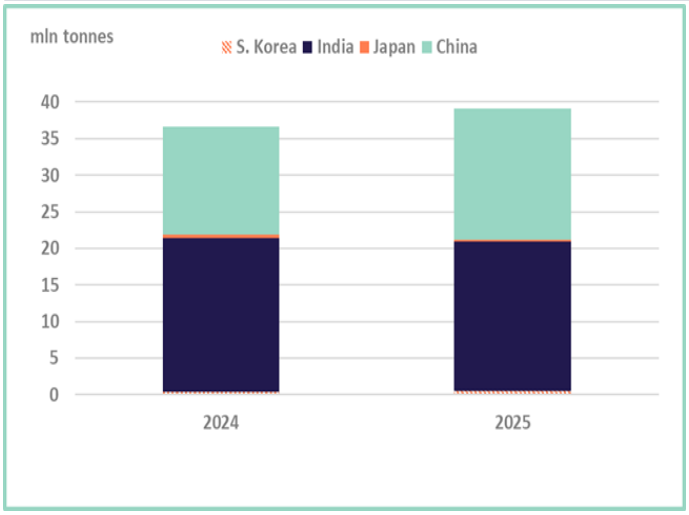


Fig 2 Middle East LPG Exports to Asia



As a result, disruptions in the Strait do not just affect upstream supply, but cascade through refining, petrochemicals, and downstream consumption, particularly in Asia, which is structurally dependent on Middle Eastern energy flows.

In the LPG market specifically, Middle Eastern exports are deeply embedded in Asian demand centers. The Indian subcontinent absorbs approximately 22.4 million tonnes, with India accounting for around 21.5 million tonnes. Meanwhile, China imported over 17 million tonnes in 2025, while more than 7 million tonnes were delivered to other Far East markets, including Japan and South Korea. These flows are not easily redirected, as they are supported by established logistics, pricing mechanisms, and long-term contractual frameworks.

A key question is whether the United States can offset this disruption. The U.S. has emerged as a major LPG exporter, supported by abundant shale production and competitively priced propane at hubs such as Mont Belvieu.

However, substitution is inherently limited by structural differences. U.S. exports are predominantly propane, whereas Middle Eastern LPG typically offers a more balanced propane–butane mix, serving a wider spectrum of demand, including residential, commercial, and blending applications.

This distinction becomes critical when examining end-use markets. In China, propane is widely used as a feedstock for propane dehydrogenation (PDH) units, making U.S. propane a natural fit for petrochemical demand.

However, in markets such as India and Southeast Asia, LPG demand is more closely tied to residential consumption and blending requirements, where butane plays a significant role. As a result, while U.S. propane can partially substitute for Middle Eastern supply, it cannot fully replicate the functional composition required across all markets.

Fig 3 Indian Imports by Region, 2025

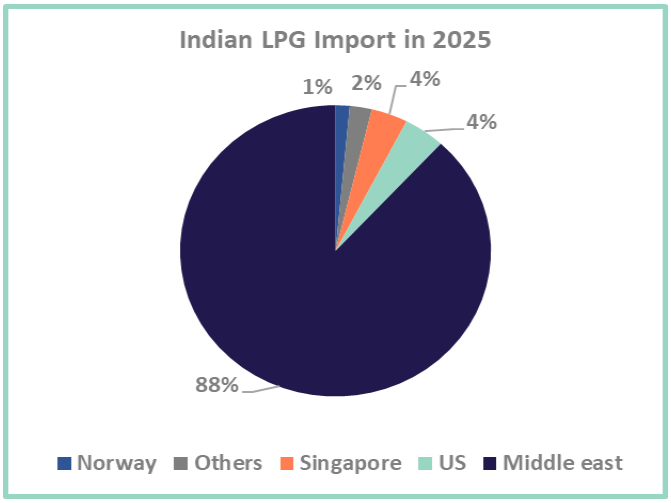


Fig 4 China Imports by Region, 2025

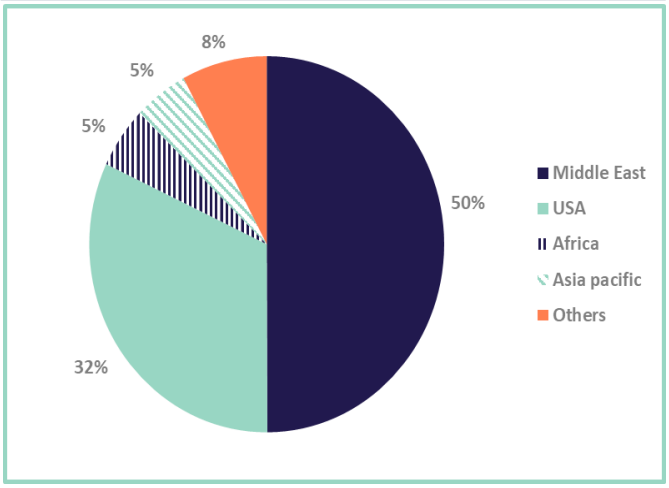
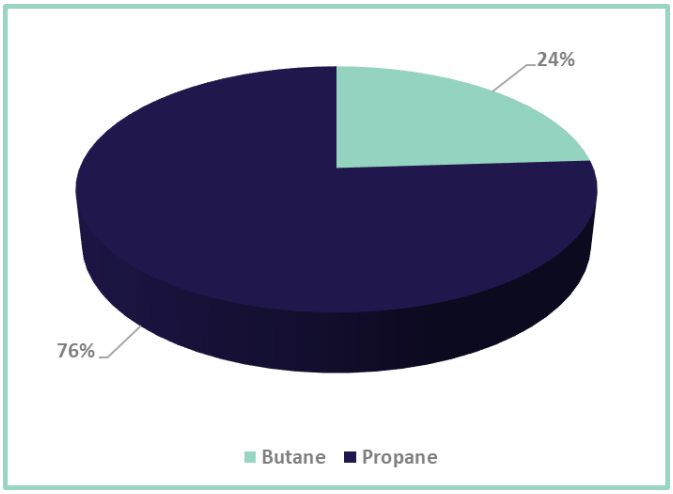


Fig 5 China Imports by Type, 2025



Feedstock competition further tightens the system. Propane competes directly with naphtha in petrochemical applications, and during periods of LPG price escalation, demand often shifts toward naphtha. However, this shift is not frictionless. Increased demand for naphtha drives naphtha prices higher, creating a parallel tightening across feedstock markets. Additionally, not all petrochemical facilities are fully flexible. While some steam crackers can switch between LPG and naphtha, many are constrained by design limitations, reducing the effectiveness of substitution.

Ethane introduces another structural divergence. The United States benefits from abundant, low-cost ethane, enabling a large base of ethane-fed crackers with competitive cost structures. However, these facilities lack flexibility and cannot easily switch to LPG or naphtha. In contrast, many Asian petrochemical systems rely on LPG and naphtha due to limited access to ethane infrastructure. This creates a bifurcated global system, where feedstock flexibility varies significantly by region, further constraining substitution.

Infrastructure and logistics impose additional limits. U.S. export capacity, particularly along the Gulf Coast, is constrained by terminal throughput, storage, and vessel loading capabilities. Even in a high-price environment, these physical limitations cap the speed at which additional supply can enter the market. At the same time, freight markets are under significant stress. Shipping rates have surged as market participants scramble to secure alternative supply routes, while rising bunker costs and insurance premiums are further increasing transportation expenses.

Vessel owners are increasingly reluctant to send ships into high-risk regions, leading to a reallocation of fleet capacity toward the Atlantic Basin and raising concerns about oversupply in those markets.

The cumulative effect is a system under strain. Estimates suggest that over 60 million tonnes of energy and commodity flows may already be displaced from global markets due to the disruption, with the potential to exceed 100 million tonnes within a month if conditions persist. This scale of disruption cannot be fully offset by alternative suppliers.

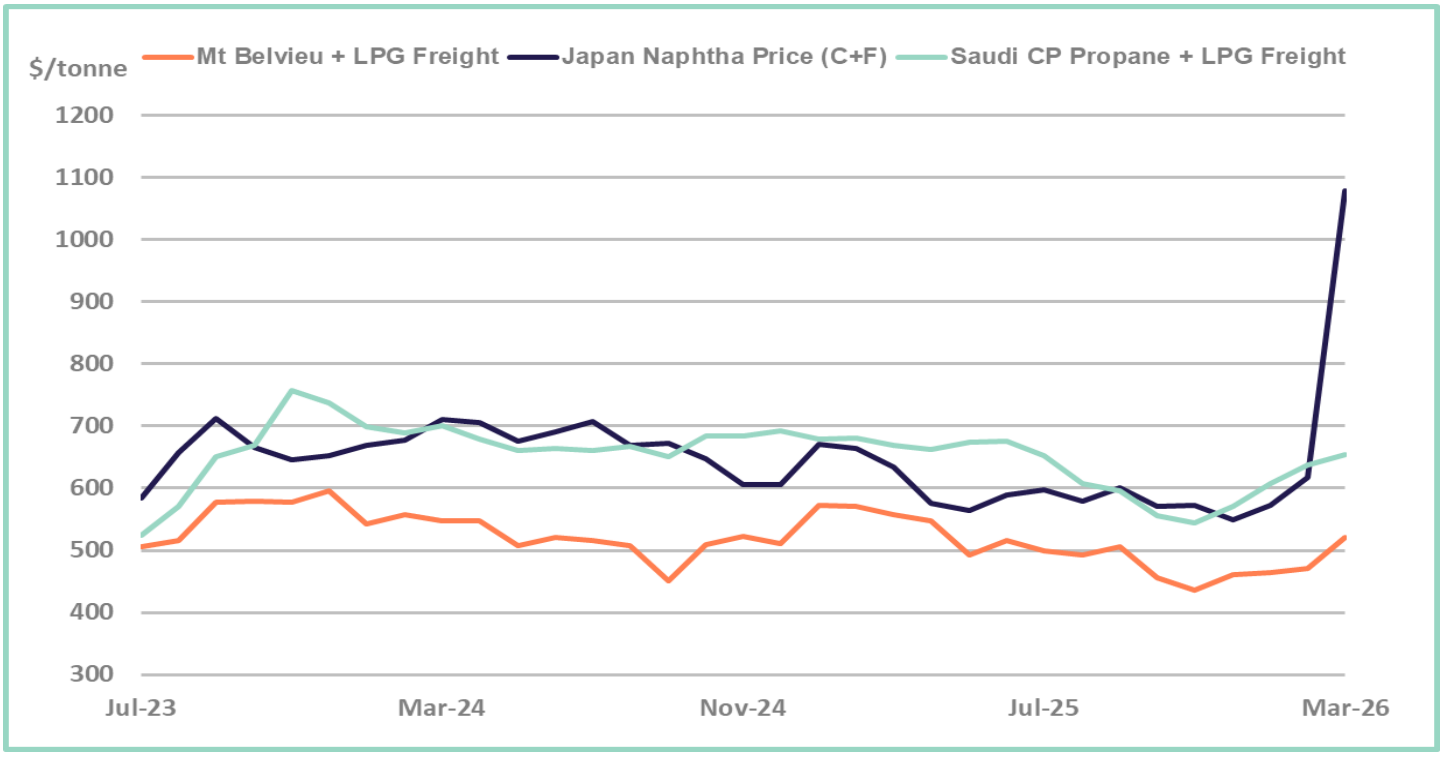
In the LPG market, the response follows a familiar but nonlinear pattern. Supply disruption leads to sharp price increases, particularly for butane, which has fewer substitution pathways. While U.S. propane exports may rise in response, the gap is not fully bridged. Instead, the market adjusts through a combination of substitution and demand response. In price-sensitive regions, sustained high prices lead to demand destruction, as consumers reduce usage or shift to alternative fuels.

Within this broader disruption, LPG pricing dynamics provide a clear reflection of how a regional supply shock has translated into a global market response. In January and February, price movements remained relatively measured, suggesting that the market had yet to fully internalize the scale of disruption.

Delivered LPG linked to Saudi Contract Price (CP) increased from $607/tonne in January to $637/tonne in February, while Mont Belvieu plus freight moved only marginally from $464/tonne to $470/tonne, indicating that supply chain constraints were still in the early stages of transmission.

By March, however, pricing began to reflect a more complete impact of the crisis. Saudi CP-linked LPG rose further to $654/tonne, capturing tightening Middle Eastern availability, while delivered Mont Belvieu cargoes increased to $521/tonne, driven largely by rising freight costs and arbitrage pull rather than a fundamental shift in US supply conditions. At the same time, naphtha surged sharply to $1080/tonne, significantly widening the spread versus LPG and reinforcing LPG's relative attractiveness as a petrochemical feedstock in Asia. This shift highlights the point at which the disruption moved beyond a regional constraint to a globally transmitted pricing shock, with March representing a more accurate reflection of a structurally tighter, risk-driven LPG market.

Fig 6 Saudi CP vs Delivered Naphtha in Japan



This recent movement in the CFR Far East market reinforces the broader pricing narrative, suggesting that while March reflects a structurally tighter system, short-term corrections are already emerging within that elevated price environment.

Following the sharp rise to $1080/tonne in naphtha and firm pricing linked to Saud CP, the market has begun to show signs of demand resistance, with propane prices easing as buyers in key Asian markets step back due to high price levels. The availability of US-origin propane cargoes has further softened sentiment, contributing to a looser propane balance despite the broader supply disruption. However, this softness is not uniform across the barrel.

Butane-rich cargoes continue to command strong premiums, with buyers willing to pay significantly above CP-linked levels, reflecting tighter availability and limited substitution options in blending and residential markets.

This divergence highlights an important nuance in the current crisis: while overall LPG prices have risen due to Middle East-driven supply constraints, demand elasticity and product-specific dynamics are beginning to shape price direction at the margin.

In this context, the recent pullback does not contradict the March pricing structure but rather indicates a market recalibrating within a higher price band, where propane faces resistance while butane remains structurally supported.

At the same time, the impact extends into shipping economics. Rising oil prices and war-risk premiums are increasing vessel operating costs, affecting not only fuel expenses but also maintenance, insurance, and logistics.

If elevated energy prices persist, these cost pressures are likely to spread across the shipping value chain, further reinforcing inflationary dynamics within global trade.

When Supply Chains Fracture: What the Latest Disruption Reveals About the LPG Market

The latest disruption in global LPG trade has peeled back the layers of a system that, while vast and interconnected, is far from seamlessly flexible. Beneath the surface lies a market shaped by structural constraints, regional specializations, and logistical realities that resist quick rebalancing when shocks occur.

At its core, the global LPG landscape is anchored by two dominant supply pillars. The Middle East delivers scale, a balanced mix of propane and butane, and geographic advantage, sitting close to key demand hubs in Asia. The United States, by contrast, functions as a flexible, propane-heavy supplier, capable of ramping flows but constrained by product composition and export infrastructure. These differences are not cosmetic; they are fundamental. They limit substitution, particularly when demand profiles and downstream usage are tightly calibrated to specific LPG blends.

So, when a critical artery like the Strait of Hormuz is disrupted, the market does not simply adjust. It jolts.

Rather than smoothly redistributing supply, the system experiences a chain reaction. Cargo flows are rerouted, freight markets tighten, price signals distort, and end-users begin to pull back. The result is not equilibrium, but a combination of tighter availability, elevated costs, and ultimately, demand erosion.

VLGC Market Dynamics

West of Suez: Strength Amid Uncertainty

VLGC market showed resilience in the west despite ongoing uncertainty in late February and early March. Sentiment in the US Gulf started cautiously optimistic, but participants remained hesitant as they assessed the impact of vessel diversions and the unclear trajectory of Middle Eastern exports.

That hesitation did not last long. As constraints in the Middle East effectively sidelined a portion of global supply, attention snapped toward the USG.

Freight fundamentals tightened quickly. Periodic softening in rates appeared, but these dips proved fleeting, unable to counter the underlying upward momentum.

Fixing activity accelerated. Cargo enquiries surged. Longer-haul voyages to Asia began absorbing available tonnage, including vessels that would otherwise be ballasting. The freight market responded decisively, with rates climbing from the low $135/tonne to peaks in the $175/tonne. Even against the headwind of higher bunker costs, time charter equivalent (TCE) returns remained robust.

By the end of the month, sentiment out of the USG was firmly bullish, underpinned by record spot fixing levels and the persistent uncertainty surrounding geopolitical developments.

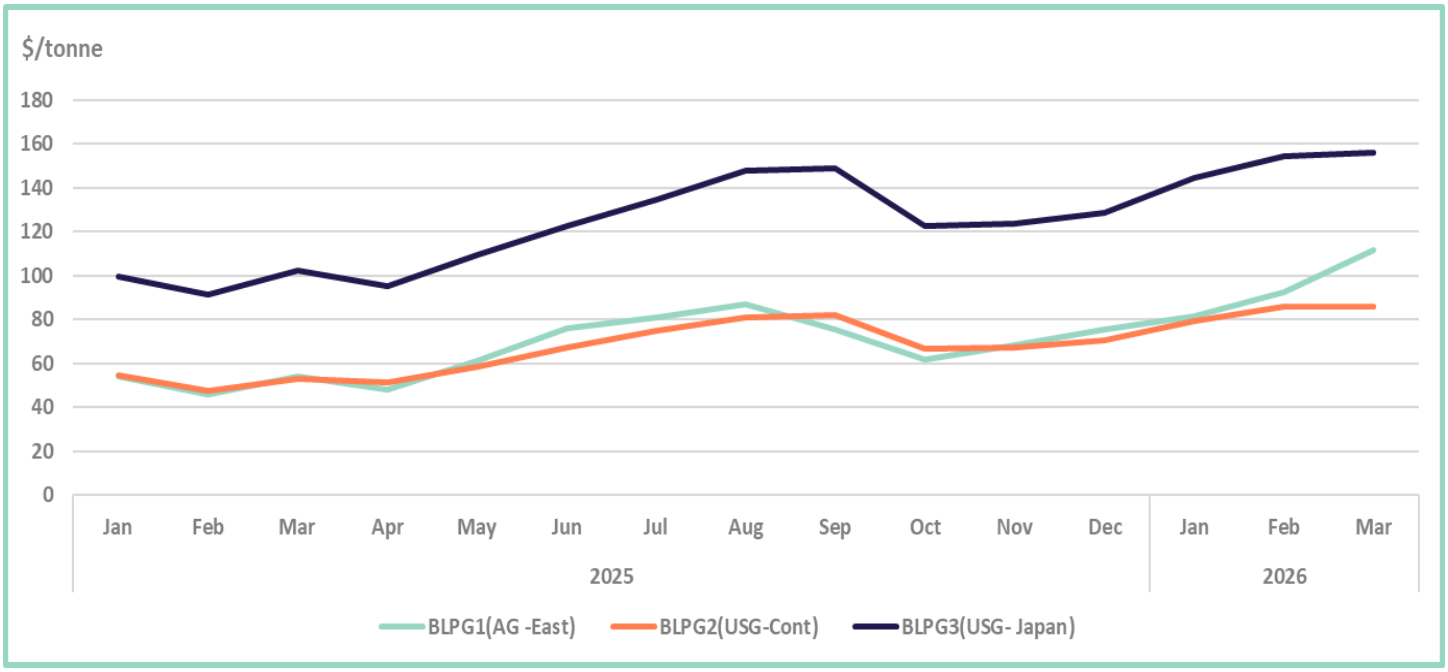
East of Suez: Paralysis and Dislocation

East of Suez, the picture was starkly different. The effective shutdown of the Strait of Hormuz brought Arabian Gulf loadings to a near halt. Cargo cancellations mounted, and any clarity around resumption timelines remained elusive. For shipowners, safety concerns became paramount, making it increasingly difficult to commit vessels to the region. The result was a wave of failed tenders and a sharp contraction in freight activity.

Compounding the situation were attacks on critical energy infrastructure, amplifying fears about the longer-term reliability of exports from the region. What emerged was not just a temporary disruption, but a deeply uncertain operating environment.

As a consequence, tonnage originally positioned for the Arabian Gulf began migrating elsewhere, most notably toward the USG. This shift reshaped global position lists and further reinforced the West's growing importance in balancing supply.

Fig 7 VLGC Freight rates



There were occasional signs of life, with isolated fixture discussions outside the immediate conflict zone and reports of some vessels transiting the strait. But these were exceptions rather than indicators of recovery. Overall availability remained severely constrained.

By month-end, the Eastern VLGC market was defined by fragmentation. Activity was sparse, risk aversion was high, and direction was unclear. Market participants, lacking reliable signals from fundamentals, turned their focus almost entirely to geopolitical developments as the primary driver of sentiment.

VLGC Freight Outlook Q2: Elevated Levels with Increasing Volatility

VLGC freight trend in the second quarter is best described as elevated but choppy, with an upward bias that gradually flattens.

In the near term, rates should remain supported as the market continues to digest reduced effective vessel availability, longer-haul US Gulf flows, and ongoing disruption in the Middle East. This keeps a firm floor under freight, especially in the Atlantic Basin. However, the rally seen in March is unlikely to extend cleanly. As LPG prices stay high, particularly propane, demand begins to push back, slowing fixing momentum and introducing periodic soft patches. These corrections are unlikely to turn into a sustained downturn, as each dip will be met with underlying tightness and fresh arbitrage-driven enquiry.

As Q2 progresses, the trend likely transitions into sideways consolidation at high levels, rather than continued escalation. The key swing factor remains the Strait of Hormuz. If disruption persists, the market holds firm with intermittent volatility. If flows resume, expect a temporary rate pullback driven by the release of trapped tonnage, followed by stabilization. In short, the market is shifting from a panic-driven spike to a structurally supported but demand-capped plateau.

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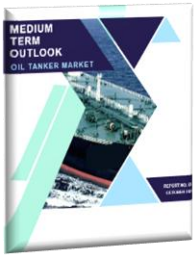

MEDIUM TERM OUTLOOK – OIL TANKER MARKET

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