INSIGHTS – 2026 LOOK AHEAD

THE GLOBAL GLYCERIN MARKET

Surplus dynamics, pricing pressures, and the biodiesel connection

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EXECUTIVE SUMMARY

The global glycerin market (~4.78 million tonnes, valued at $3.1 billion in 2025) faces a structural dichotomy: commodity-grade oversupply driven by biodiesel expansion coexists with tightening refined-grade availability in pharmaceutical and speciality chemical applications.

Biodiesel mandates — particularly Indonesia's B40 and the EU's renewable energy directives — continue to increase crude glycerol output. Yet the concurrent growth of HVO (hydrotreated vegetable oil), which does **not** produce glycerin as a by-product, introduces a supply-side risk that consensus forecasts have largely overlooked.

Regional pricing divergence has widened: European glycerol reached EUR 1,490/MT in mid-2025 (+26% YoY), while Indonesian refined glycerin trades at USD 430–570/MT FOB. The refined-to-crude spread is the key metric for margin positioning through 2027.

The medium-term outlook favours bifurcation: commodity crude glycerin faces secular pricing pressure, while refined and speciality grades — particularly for bio-epichlorohydrin and propylene glycol synthesis — increasingly decouple from commodity dynamics.

The global glycerin market faces structural oversupply driven by biodiesel expansion, with crude glycerol production reaching 6 million tonnes in 2024 and refined grades accounting for 68% of demand. As HVO (hydrotreated vegetable oil) displacement gains pace, the glycerin supply base paradoxically tightens, creating a complex arbitrage between commodity pricing pressures and emerging high-value applications in speciality chemicals.

Market Context and Current Conditions

The global glycerin market stands at approximately 4.78 million tonnes in 2025, with projections reaching 5.95 million tonnes by 2030, representing a compound annual growth rate of 4.5%. The market valuation of $3.1 billion reflects an equilibrium between commodity-grade oversupply and selective demand strength in pharmaceutical and personal care segments. This dichotomy—simultaneously characterized by price deflation at the low end and margin expansion at the premium end—defines the strategic landscape for traders and producers.

Glycerin's dual identity as both a high-volume by-product and a strategic raw material for fine chemicals creates persistent mispricing opportunities. The spread between crude and refined glycerin widened substantially through 2025, a direct consequence of refining capacity utilization constraints and shifting feedstock sourcing dynamics in key producing regions.

Supply-Side Analysis — The Biodiesel Connection

Approximately 60% of global glycerin supply in 2024 originated from biodiesel production, with an estimated 4 million tonnes of the 6 million tonnes crude glycerol output derived from FAME (fatty acid methyl ester) transesterification. The chemistry is straightforward: 100 pounds of vegetable oil or animal fat, combined with 10 pounds of methanol, yields approximately 100 pounds of biodiesel and 10 pounds of glycerol in a near-stoichiometric reaction. This relationship has historically anchored glycerin pricing to biodiesel margins, creating a de facto link between energy and oleochemicals markets.

Asia-Pacific dominates production geography, holding approximately 48% of global market share, with Europe as the secondary production center. Indonesia remains the critical marginal supplier, particularly following the implementation of its B40 mandate (40% biodiesel blending) in January 2025. However, Indonesia's contemporaneous restrictions on exports of used cooking oil (UCO) and palm oil residue—intended to secure domestic biodiesel feedstock—have created supply distortions that ripple through global glycerin pricing.

The European biodiesel market faces distinct headwinds. Anti-dumping duties on Chinese biodiesel, ranging from 10% to 35.6% and effective from February 2025 for a five-year period, have compressed EU biodiesel production economics and, consequently, domestic glycerin yields. This protective measure paradoxically tightens European glycerin supply by discouraging FAME production relative to alternative pathways.

The Quality Split: Crude vs. Refined Glycerin

The market distinction between crude and refined glycerin has sharpened materially over the past 18 months. Refined grades commanded 68% of market demand in 2024, establishing a clear preference hierarchy among end-users. This bifurcation reflects both regulatory tightening in pharmaceuticals and personal care and the economics of glycerin deployment in emerging high-value applications.

Crude glycerol, typically 75-85% purity, trades at steep discounts to refined equivalents and finds utility primarily in commoditized outlets: soap and detergent manufacture, animal feed supplementation, and industrial solvents. Refined glycerin—meeting USP (United States Pharmacopeia) or EP (European Pharmacopoeia) standards at 99%+ purity—commands premiums reflecting refining cost, regulatory compliance, and end-use exclusivity in pharmaceuticals, cosmetics, and food applications. The economics of refining have remained pressured, with fixed-cost structures sensitive to capacity utilization and variable costs tied to methanol displacement of water-based purification routes.

Demand-Side Analysis

Glycerin demand segregates into distinct end-markets with divergent growth trajectories. Pharmaceutical applications command approximately 22% of demand, maintaining stable consumption despite cost pressures—a reflection of the small glycerin allocation within final drug costs. Personal care and cosmetics account for 34% of demand, driven by sustained emerging-market consumption and premiumization in developed markets. The remaining 44% disperses across industrial applications: polyols for polyurethane production, food additives, tobacco additives, and—increasingly—feedstock for advanced oleochemical synthesis.

The emerging applications deserve particular attention. Bio-based epichlorohydrin synthesis from glycerin, pioneered by Solvay and Dow, represents a discrete shift toward higher-value utilization. Equally significant is the development of propylene glycol synthesis via glycerin hydrogenolysis, a route that converts low-margin commodity glycerin into a higher-value platform chemical for anti-freeze, personal

care, and polyester applications. These pathways, while currently representing a modest share of demand, are the margin-accretive outlets that incentivize refinement capacity investment.

End-Use Segment	Market Share (%)	Growth Profile
Pharmaceutical	**22%**	Stable; regulatory-driven quality premiums
Personal Care & Cosmetics	**34%**	Steady; emerging-market driven
Polyols (Polyurethane)	**18%**	Moderate; industrial construction-linked
Food & Additives	**12%**	Stable; regulatory constraints
Speciality Chemicals (epichlorohydrin, propylene glycol)	**8%**	Accelerating; margin-accretive shift
Other Industrial	**6%**	Declining; commoditized outlets

Price Dynamics and Recent Movements

Glycerin pricing in Q4 2025 reflected broad commodity deflation coupled with regional supply-demand imbalances. USA glycerin quoted at **USD 472.67/MT FOB Houston**, establishing a baseline for trans-Atlantic arbitrage. Indonesian refined glycerin, the marginal clearing market, posted a notable recovery in Q1 2026, rebounding 17.75% quarter-on-quarter to a range of **USD 430–570/MT FOB**, signaling supply constraint relief following mandated export restrictions and seasonal biodiesel production dynamics.

European glycerin prices reached **EUR 1,490/MT in mid-2025**, representing a 26% year-on-year increase —a premium above North American pricing that persisted despite inventory buildup. This regional premium reflected both anti-dumping duties on biodiesel (tightening domestic supply) and logistical arbitrage barriers in the refined segment. The European premium has since compressed as inventory normalization occurs and alternative refining capacity activation offsets structural tightness.

Forward pricing suggests modest consolidation around current levels through 2026, with limited upside absent supply disruption or demand acceleration in speciality applications. The spread between crude and refined widened to historical extremes in Q4 2025 before moderating, reflecting temporary refining bottlenecks rather than fundamental structural change.

The HVO Factor — A Nuanced Supply-Side Risk

Hydrogenated vegetable oil (HVO), also termed renewable diesel, represents a fundamental supply-side threat poorly understood in consensus glycerin outlooks. Unlike FAME biodiesel—which produces glycerol as a stoichiometric co-product—HVO synthesis via hydrogenation and isomerization produces propane as the by-product, not glycerin. As HVO mandates expand globally and FAME production contracts, the glycerin supply base paradoxically contracts despite continued biodiesel feedstock deployment.

This structural divergence is material. The European Commission's classification of HVO as compliant with renewable fuel mandates has accelerated HVO blending relative to traditional FAME. Indonesia's B40 mandate explicitly permits HVO co-blending with FAME, creating ambiguity around the effective

biodiesel-to-glycerin correlation. If HVO penetration reaches 30-40% of the renewable fuel mix by 2027—a plausible scenario given margin economics favoring renewable diesel over traditional biodiesel—glycerin supply tightens by an equivalent magnitude.

Market consensus has largely ignored this dynamic, treating renewable diesel deployment as neutral to glycerin supply. This represents a material mispricing of downside risk to glycerin availability and upside opportunity for glycerin values, particularly in the refined segment where demand is least price-sensitive.

Regional Trade Flows

Glycerin trade flows have reorganized substantially following regional production shifts and tariff regimes. Indonesia, the world's largest glycerin exporter, exported approximately 1.2 million tonnes in 2024, with flows directed primarily to India, China, and emerging Southeast Asian markets. The January 2025 implementation of Indonesia's B40 mandate, combined with simultaneous export restrictions on UCO, created temporary supply disruptions that raised spot market values but are unlikely to persist as producers optimize feedstock blending strategies.

Chinese glycerin imports have moderated as domestic biodiesel capacity expanded, reducing reliance on Southeast Asian feedstock. However, China remains the largest end-user market, absorbing glycerin both for direct industrial consumption and for intermediate chemical synthesis. India has emerged as a secondary import hub, balancing domestic glycerin production from vegetable oil processing with imports to meet growing food additive and pharmaceutical demand.

European inter-regional flows have contracted sharply. Historically, Central European biodiesel producers (particularly Germany and Austria) exported surplus glycerin to commodity markets in Eastern Europe and the Mediterranean. Anti-dumping duties on biodiesel and the consolidation of refining capacity in fewer, larger facilities have redirected European glycerin supply toward direct end-use consumption and specialty applications, reducing mercantile flow volumes.

Region	Production (2024)	Net Trade Position	Price Level (Q1 2026)
Asia-Pacific	~2.3 MT	Net exporter (~1.2 MT)	USD 430–570/MT FOB
Europe	~1.4 MT	Net importer (~0.35 MT)	EUR 1,450–1,550/MT
North America	~0.8 MT	Net importer (~0.25 MT)	USD 460–490/MT FOB
Rest of World	~0.3 MT	Broadly balanced	Spot-determined

Forward Outlook (2026–2027)

The glycerin market enters 2026 in a state of cautious equilibrium. Commodity pricing remains under structural pressure from biodiesel oversupply in key producing regions, yet refined segment demand remains resilient and growth in speciality applications is beginning to inflect the margin profile. Three scenarios merit consideration for trajectory planning.

Base Case (60% probability): Global glycerin supply and demand remain in approximate balance through 2026, with modest price consolidation near current levels. Crude glycerin remains commodity-like in pricing, ranging USD 380–450/MT regionally. Refined premiums persist at 40–50% above crude, sustained by pharmaceutical and personal care demand. HVO displacement of FAME proceeds gradually

(10–15% substitution by end-2026), creating supply tightness in refined segments but insufficient to trigger material price acceleration.

Bull Case (20% probability): Accelerated HVO deployment, driven by EU taxonomy reclassification favoring renewable diesel, constrains glycerin supply faster than consensus forecasts. Combined with emerging specialty chemical demand (bio-epichlorohydrin, propylene glycol), refined glycerin reaches USD 650–750/MT in Europe by Q4 2026. Crude remains depressed, widening spread to 60%+ premiums. This scenario triggers supply-side investment in glycerin refining capacity, particularly in Asia and emerging Eastern Europe.

Bear Case (20% probability): Biodiesel mandates face political rollback or suspension in Europe and North America, triggered by cost-of-living pressures on fuel consumers. Glycerin supply swells as biodiesel production accelerates in response to margin recovery. Commodity pricing compresses to USD 300–350/MT, triggering producer margin compression and consolidation in refining capacity. Specialty applications expand market share but remain insufficient to stabilize pricing.

The medium-term (2026–2027) market structure is likely to bifurcate further: commodity crude glycerin faces secular pricing pressure, while refined and specialty-grade glycerin increasingly decouples from commodity trends, driven by regulatory compliance requirements and emerging application economics.

Key Risks and Watch Items

Several exogenous factors warrant close monitoring. First, biodiesel mandate policy remains subject to political reversal, particularly in Europe where cost-of-living pressures and agricultural lobbying could trigger policy relaxation. A significant mandate reduction would collapse glycerin supply discipline and crush pricing across all segments. Conversely, accelerated HVO mandating (particularly if coupled with strict FAME phase-out timelines) would tighten refined glycerin supply faster than currently priced.

Second, Chinese refining capacity expansion and downstream integration into speciality chemicals could shift regional arbitrage dynamics and absorb marginal glycerin supply at lower price points than Western specialty applications, compressing global pricing ceilings. Third, geopolitical tensions affecting biodiesel feedstock sourcing (particularly palm oil and soy supply from Southeast Asia and South America) could create supply shocks with direct glycerin implications.

Fourth, the development and commercialization of bio-epichlorohydrin and propylene glycol synthesis pathways remain at pilot or early commercial stage. If adoption accelerates ahead of current expectations, refined glycerin demand could surge and re-rate valuations materially. Conversely, if these applications prove uneconomic at current glycerin price levels, their trajectory stalls and commodity pricing dynamics reassert dominance.

> *The glycerin market's structural shift from commodity surplus to refined scarcity—driven by HVO displacement of FAME—remains unpriced by consensus. Traders positioning for specialty demand inflection or hedging HVO-induced supply tightness should structure positions around the refined-to-crude spread, where margin expansion is most likely to persist.*

Finally, regulatory tightening in pharmaceutical and personal care segments could mandate further glycerin purity standards or sustainability certification requirements (e.g., feedstock traceability, carbon intensity limits), creating supply-side frictions that support refined premiums regardless of commodity pricing trajectory.