

The LNG Coast: Financing LNG Infrastructure and Rising Methane-Related Risks at the Galveston LNG Bunker Port (GLBP)

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Introduction

Along the U.S. Gulf Coast, a new generation of LNG infrastructure projects is emerging to serve the maritime sector. Among them is the proposed Galveston LNG Bunker Port (GLBP)—a pre-FID joint venture between Seapath and Navenergy Infrastructure Partners seeking to establish a dedicated LNG bunkering hub for the Houston–Galveston region.

Gulf Coast energy infrastructure often relies on long-term financing structures that expose lenders, municipalities, and communities to significant financial and environmental risks. GLBP fits squarely within this pattern: a capital-intensive, long-lived fossil-fuel asset whose revenue model depends on volatile commodity markets, uncertain demand, and tightening regulations.

This paper evaluates GLBP through integrating financial structure, public-risk exposure, market fundamentals, regulatory pressures, and community impacts. The findings indicate that GLBP’s business case is fragile, its credit profile is impaired under realistic volatility conditions, and its long-term competitiveness is eroding as the maritime sector moves beyond methane.

Background: The GLBP Project

GLBP is designed to supply LNG to cruise ships, container vessels, and bulk carriers beginning in 2027, tentatively. The project includes:

- Natural gas liquids and refrigerant storage
- Feed gas pre-treatment
- A bunker vessel loading berth
- Marine and cargo-handling infrastructure
- Initial production of 380,000 gallons/day, expanding to 720,000 gallons/day

The project remains pre-FID, with MUFG serving as financial advisor. As with many Gulf Coast energy ventures, GLBP seeks 20–30-year project finance despite relying on short-term (1–3 year), non-binding, volume-uncertain commercial agreements. This structural mismatch is the foundation of GLBP’s financial risk.

Structural Financial Weakness: Duration Mismatch and Cash-Flow Instability

Key structural weaknesses include:

- **Short-term contracts vs. long-term debt**
GLBP’s commercial agreements are typically 1–3 years, while its infrastructure requires 20–30-year financing.
- **Cash-flow instability**
Revenue depends on volatile spot-market LNG prices indexed to Henry Hub.

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- **Refinancing risk**
Lenders must rely on uncertain contract renewals to maintain coverage ratios.
- **High sensitivity to market downturns**
Without long-term offtake commitments, GLBP's cash flows are exposed to commodity cycles.

This is a structural flaw that undermines the project's bankability.

Quantitative Risk Assessment: Price Volatility Dominates Cash-Flow Exposure

Using GLBP's own assumptions:

- Capex: **\$250–300M**
- Utilization: **60%**
- Monthly volume: **6.57M gallons**
- Net margin: **\$0.30/gal**
- Monthly EBITDA: **\$1.97M**
- Monthly debt service: **\$750k**

Henry Hub volatility¹ ($\sigma = \$0.58/\text{MMBtu}$) is the dominant driver of cash-flow risk.

Price-Driven Risk

- Monthly CF standard deviation: **\$1.14M**
- VaR₉₅: **\$1.88M**
- ES₉₅: **\$2.35M**

Interpretation:

In a typical 1-in-20 month, GLBP loses nearly its entire EBITDA. In a tail-event month, losses exceed \$2.3M—fully eroding debt-service coverage.

Demand-Driven Risk

- VaR₉₅: **\$324k**
- ES₉₅: **\$406k**

Demand volatility is secondary but still material.

Combined Price + Demand Risk

- Total CF SD: **\$1.16M**
- VaR₉₅: **\$1.91M**
- ES₉₅: **\$2.39M**

GLBP's downside risk exceeds its monthly EBITDA even before accounting for operational disruptions, regulatory costs, or counterparty risk.

Credit Risk: DSCR Collapse Under Realistic Market Conditions

GLBP's base Debt Service Coverage Ratio (DSCR) is **2.63×**. However:

- DSCR volatility: **1.55×**
- DSCR VaR₉₅: **0.08×**

¹ Methodology Note: Historical simulation and parametric (variance–covariance weighted blended sigma (σ)) using Henry Hub Index Monthly Spot & Forward rates between 1 Dec 2020 and 1 Nov 2028. Note the data was extracted on 7 Dec 2025, prior to the start of the Iran war. Current environment is already more volatile than the projections.

- DSCR ES₉₅: **-0.56x**

Scenario Analysis

Scenario	CF SD	VaR ₉₅	ES ₉₅	DSCR VaR ₉₅	DSCR ES ₉₅
Base	\$1.16M	\$1.91M	\$2.39M	0.08x	-0.56x
Conservative	\$1.40M	\$2.32M	\$2.90M	-0.46x	-1.24x
Stress	\$1.67M	\$2.78M	\$3.48M	-1.08x	-2.02x

Under conservative assumptions, DSCR is already negative. Under stress, DSCR becomes deeply negative, indicating material credit impairment.

No lender can reasonably ignore these results.

Market Fundamentals: LNG Bunkering Demand Is Uncertain and Reshaped by the Iran War

The market outlook for LNG bunkering has shifted dramatically in the wake of the Iran war, which has upended global gas balances and disrupted the assumptions that underpinned pre-war LNG demand forecasts. Prior to the conflict, the International Energy Agency (IEA) projected that nearly 300 billion cubic meters of new LNG export capacity—roughly 220 million tons—would come online by 2030, driven largely by megaprojects in the United States and Qatar. This anticipated supply wave was expected to ease global markets, reduce price volatility, and support long-term LNG contracting. However, the Iran war has fundamentally altered this trajectory. The effective closure of the Strait of Hormuz to LNG carriers, combined with direct attacks on liquefaction and export infrastructure in the Gulf, has removed an estimated 120 bcm of LNG supply from the 2026–2030 period. As a result, the IEA now expects tighter LNG markets through the end of the decade, with elevated price volatility and reduced contract visibility replacing the previously anticipated oversupply.

These geopolitical disruptions have cascading effects on LNG bunkering demand. Higher and more volatile LNG prices undermine the economic rationale for shipowners considering LNG as a marine fuel, especially when compared to emerging alternatives such as methanol, ammonia, and hydrogen-derived fuels. At the same time, methane-intensity regulations under the IMO and EU FuelEU Maritime frameworks continue to tighten, and real-world methane slip—measured at 6.4% for common dual-fuel engines—exceeds regulatory assumptions. This widens the compliance gap for LNG-fuelled vessels and increases the cost of meeting lifecycle greenhouse-gas intensity thresholds. The Iran war amplifies these pressures by raising upstream methane-intensity uncertainty, as disrupted supply chains force buyers to source LNG from regions with higher emissions profiles.

Commercial signals from major LNG developers and financiers reinforce this weakening outlook. Even before the conflict, several global energy companies were reassessing their LNG exposure; since the onset of the war, this trend has accelerated. The strategic retreat of major sponsors from large-scale LNG export projects—most notably Shell and Mitsubishi’s exploration of divestment from the \$40 billion LNG Canada venture—reflects a broader loss of confidence in LNG’s long-term competitiveness. For GLBP, which depends on sustained growth in LNG-fuelled shipping and stable long-term contracting, these developments raise significant concerns about whether sufficient demand will materialize to support multi-decade infrastructure debt.

Taken together, the Iran war has transformed LNG from a fuel pathway once expected to enjoy steady growth into one characterized by geopolitical fragility, regulatory headwinds, and declining commercial certainty. GLBP’s long-term revenue assumptions now rest on a market whose structural foundations have been weakened by conflict-driven supply disruptions, rising compliance costs, and accelerating competition from

non-methane marine fuels. In this environment, LNG bunkering demand is not only uncertain—it is increasingly exposed to systemic downside risk.

Conclusion: GLBP Is a High-Risk, Low-Alignment Investment

The cumulative evidence presented in this analysis demonstrates that the Galveston LNG Bunker Port is a financially fragile and strategically misaligned project whose risks have intensified in the aftermath of the Iran war. The conflict has reshaped global LNG markets in ways that directly undermine the assumptions underpinning GLBP's business model. The effective closure of the Strait of Hormuz, the loss of Gulf export capacity, and heightened geopolitical instability have removed a substantial portion of expected LNG supply through 2030, replacing the previously anticipated oversupply with a prolonged period of tight markets and elevated price volatility. For a project whose revenue model is indexed to Henry Hub and dependent on predictable margins, this shift introduces structural uncertainty that cannot be reconciled with long-term infrastructure debt.

At the same time, the maritime sector is moving decisively beyond methane-based fuels. Methane-intensity regulations are tightening, real-world methane slip remains significantly higher than regulatory assumptions, and alternative fuels such as methanol, ammonia, and hydrogen-derived options are scaling rapidly. These trends erode LNG's competitiveness as a marine fuel and weaken the long-term demand outlook for bunkering services. GLBP's reliance on short-term, non-binding contracts further compounds this vulnerability, leaving the project exposed to contract renewal risk at precisely the moment when shipowners are reassessing their fuel strategies in response to geopolitical and regulatory pressures.

The project's financial structure amplifies these risks. Quantitative modeling shows that GLBP's DSCR collapses under realistic volatility conditions, with negative coverage ratios emerging even under conservative scenarios. This level of cash-flow instability is incompatible with prudent project-finance standards and signals material credit impairment. Beyond financial fragility, GLBP faces significant physical, environmental, and community risks, including storm surge exposure, safety hazards inherent to LNG handling, and environmental justice concerns in the surrounding region. These risks introduce additional layers of regulatory, litigation, and reputational exposure that are not adequately reflected in the project's public materials.

Overall, GLBP represents a high-risk, low-alignment investment whose long-term viability is increasingly doubtful in a maritime sector transitioning beyond methane. For lenders and financial institutions, the combination of geopolitical instability, weakening demand fundamentals, structural financial flaws, and rising compliance and community risks makes financing GLBP a materially hazardous proposition. Declining to finance or pricing in the identified risks for the project is a prudent course of action for institutions seeking to manage credit risk responsibly and align with emerging market, regulatory, and climate-transition realities.