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LGC And VLGC LPG Shipyard Carrier Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented, By Vessel Type (Large Gas Carriers (LGC), Very Large Gas Carriers (VLGC)), By End-User (New Build Construction, Retrofit Projects), By Capacity (Small (less than 50,000 cubic meters), Medium (50,000 to 100,000 cubic meters), Large (over 100,000 cubic meters)), By Region & Competition, 2020-2030F

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Abstracts

Market Overview

The LGC And VLGC LPG Shipyard Carrier Market was valued at USD 2.09 Billion in 2024 and is expected to reach USD 2.93 Billion by 2030 with a CAGR of 5.61%. The LGC (Large Gas Carrier) and VLGC (Very Large Gas Carrier) LPG Shipyard Carrier Market refers to the global industry focused on the design, construction, and delivery of large and very large vessels specifically built for transporting liquefied petroleum gas (LPG) across international waters. This market encompasses shipyards and maritime engineering companies that specialize in producing high-capacity LPG carriers, typically ranging from 50,000 to over 85,000 cubic meters in cargo capacity, to support the growing global trade of liquefied gases such as propane and butane.

These vessels are essential components in the global energy supply chain, facilitating the bulk movement of LPG from major exporting regions—such as the United States, the Middle East, and Africa—to high-demand import markets including Asia Pacific, Europe, and Latin America. The market is driven by the expansion of LPG production through

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shale gas and natural gas liquids, increased energy consumption in emerging economies, and the shift towards cleaner-burning fuels for residential, commercial, and industrial applications. The shipyards operating in this space are responsible not only for building new LPG carriers but also for upgrading existing fleets with advanced propulsion technologies, emission-reduction systems, and enhanced cargo-handling capabilities to meet evolving regulatory and environmental standards. Furthermore, the market is closely linked to innovations in ship design, such as dual-fuel engines, enhanced hull structures, and digital monitoring systems that improve fuel efficiency, operational safety, and real-time cargo management.

Key Market Drivers

Rising Global Demand for LPG as a Cleaner Energy Source

The growing global demand for liquefied petroleum gas (LPG) as a cleaner, cost-effective energy alternative is a key driver for the expansion of the LGC and VLGC LPG shipyard carrier market. As countries intensify efforts to transition away from coal and oil-based fuels, LPG has emerged as a strategic interim solution due to its lower carbon emissions, flexibility in applications, and existing infrastructure compatibility. It is increasingly being adopted in residential, commercial, and industrial sectors for cooking, heating, and power generation, particularly in emerging economies where grid-based energy infrastructure remains limited. The ability of LPG to reduce particulate matter and greenhouse gas emissions makes it a more environmentally acceptable option, supporting global climate action objectives.

Additionally, developed nations are encouraging LPG usage in transport and marine sectors, further expanding demand. This rising global consumption necessitates the expansion of maritime transport capacity, especially for large-scale, long-distance shipments. VLGCs, with their high-volume capacity of over 80,000 cubic meters, are ideally suited to serve this growing global LPG trade by transporting large cargoes between production hubs in the United States, Middle East, and Australia to major demand centers in Asia and Europe.

As demand continues to surge, shipowners and operators are under pressure to modernize fleets with larger, more efficient carriers to meet trade requirements and maintain profitability amid fluctuating freight rates. This growing demand profile is prompting shipyards to ramp up construction and innovation in LGC and VLGC segments, integrating more fuel-efficient designs, enhanced cargo handling systems, and regulatory compliance features. As a result, the rising global appetite for LPG as a

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transitional energy source is directly fueling investment and activity within the LGC and VLGC carrier market. Global LPG consumption surpassed 330 million metric tons annually, driven by increasing adoption across residential, commercial, and industrial sectors. Over 3 billion people worldwide rely on LPG for cooking and heating, especially in emerging economies. LPG use in transportation is growing, with over 27 million Autogas vehicles operating globally. LPG demand is rising at an average annual growth rate of 3–4%, fueled by its cleaner-burning properties compared to coal and diesel. The residential sector accounts for approximately 45% of global LPG consumption, followed by industrial and chemical feedstock applications. Asia-Pacific remains the largest consumer, accounting for nearly 40% of global LPG demand.

Key Market Challenges

High Capital Investment and Financial Risk

One of the primary challenges facing the LGC and VLGC LPG shipyard carrier market is the substantial capital investment required for the construction and operation of these large-scale vessels, which poses significant financial risk to both shipbuilders and shipowners. Building LGCs and VLGCs involves advanced engineering, compliance with complex regulatory standards, specialized materials, and highly skilled labor, all of which contribute to high production costs that can range into hundreds of millions of dollars per vessel.

For shipyards, the need to maintain cutting-edge dry dock facilities, specialized assembly lines, cryogenic handling systems, and rigorous quality control mechanisms further escalates operational expenses. Moreover, the long construction lead times—often spanning 18 to 24 months—tie up capital and increase exposure to market fluctuations in demand, fuel prices, steel costs, and foreign exchange rates. The economic viability of each vessel depends on long-term freight rates and utilization, which are influenced by volatile global LPG supply-demand dynamics, geopolitical developments, and macroeconomic conditions. A downturn in the shipping industry or delays in vessel deployment can result in project cost overruns, revenue shortfalls, and loss of investor confidence.

Financing these high-value vessels also requires strategic partnerships with banks, leasing firms, or export credit agencies, all of whom may adopt a conservative approach in uncertain economic climates. Additionally, regulatory changes related to decarbonization—such as carbon taxation or stricter emissions standards—can further impact vessel value and require mid-project design modifications, leading to added

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costs and delays. Small and mid-sized shipyards often struggle to compete due to limited financial bandwidth and lack of access to advanced technologies, consolidating orders among a few major players and creating entry barriers.

These high capital thresholds not only restrict innovation and competition but also heighten exposure to contractual risks, such as penalties for late delivery or cost disputes with clients. As shipowners become more cautious with their fleet expansion strategies due to uncertain LPG demand projections and the potential oversupply of tonnage, shipyards face a more competitive pricing environment, margin pressures, and the growing need to offer financing or flexible contract terms—further complicating the risk-reward dynamics of participating in this segment of the maritime industry.

Key Market Trends

Increasing Demand for Dual-Fuel Propulsion Systems in LPG Carriers

A prominent trend in the LGC and VLGC LPG shipyard carrier market is the rising demand for dual-fuel propulsion systems, particularly those capable of operating on liquefied petroleum gas (LPG) alongside conventional marine fuels. With growing environmental regulations and mounting pressure on the maritime industry to decarbonize, shipowners and operators are increasingly prioritizing vessel designs that offer fuel flexibility and emissions compliance. Dual-fuel engines allow carriers to switch between LPG and conventional fuels such as marine gas oil (MGO) or low-sulfur fuel oil, depending on availability and cost-effectiveness.

This capability enables operators to reduce sulfur oxide (SOx), nitrogen oxide (NOx), and carbon dioxide (CO?) emissions, making it easier to align with IMO 2020 sulfur cap regulations and upcoming greenhouse gas targets. Shipyards across Asia—particularly in South Korea, Japan, and China—are reporting a growing number of VLGC orders that specify dual-fuel capabilities, reflecting a shift in the buyer mindset from cost to long-term regulatory resilience. Technological advancements in engine design, tank materials, and fuel control systems have made dual-fuel propulsion more reliable and commercially viable, accelerating adoption across both newbuild and retrofit segments.

Key Market Players

Hyundai Heavy Industries Co., Ltd. (HHI)

Daewoo Shipbuilding & Marine Engineering Co., Ltd. (DSME)

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Samsung Heavy Industries Co., Ltd.

China State Shipbuilding Corporation (CSSC)

Hyundai Samho Heavy Industries Co., Ltd.

Mitsubishi Heavy Industries, Ltd.

Kawasaki Heavy Industries, Ltd.

Namura Shipbuilding Co., Ltd.

Japan Marine United Corporation (JMU)

Imabari Shipbuilding Co., Ltd.

Report Scope:

In this report, the Global LGC And VLGC LPG Shipyard Carrier Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

LGC And VLGC LPG Shipyard Carrier Market, By Vessel Type:

Large Gas Carriers (LGC)

Very Large Gas Carriers (VLGC)

LGC And VLGC LPG Shipyard Carrier Market, By End-User:

New Build Construction

Retrofit Projects

LGC And VLGC LPG Shipyard Carrier Market, By Capacity:

Small (less than 50,000 cubic meters)

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Medium (50,000 to 100,000 cubic meters)

Large (over 100,000 cubic meters)

LGC And VLGC LPG Shipyard Carrier Market, By Region:

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia-Pacific

China

India

Japan

Australia

South Korea

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South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Kuwait

Turkey

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the Global LGC And VLGC LPG Shipyard Carrier Market.

Available Customizations:

Global LGC And VLGC LPG Shipyard Carrier Market report with the given Market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional Market players (up to five).

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