



Finance & Economics Club
IIT Guwahati

Garden Reach Shipbuilders & Engineers Ltd



COMPANY INTRO

Garden Reach Shipbuilders & Engineers Ltd (GRSE), **established in 1884**, is a premier Indian shipyard **specializing in the construction and repair of naval and commercial vessels**. **Nationalized in 1960**, GRSE operates under the **administrative control of the Ministry of Defense** and is headquartered in Kolkata. Renowned for its **expertise in building frigates, missile corvettes, anti-submarine warfare corvettes, survey vessels, and offshore patrol vessels**, GRSE plays a pivotal role in strengthening India's maritime defense capabilities. Under the leadership of **Commodore PR Hari** (Retd.), the company continues to innovate and contribute to the **"Make in India"** initiative by focusing on **indigenous production and advanced technologies**.

BUSINESS SEGMENTS

Segment	Key Services	Revenue Contribution
Naval Shipbuilding	Frigates, Missile Corvettes, Patrol Vessels	40%
Commercial Shipbuilding	Ocean-going Ferries, Tugs, Dredgers	25%
Engineering Products	Bailey Bridges	15%
Marine Diesel Engines	Diesel Engines for Naval Applications	20%

SECTOR ANALYSIS

CONTRIBUTION TO GDP

- The Indian shipbuilding industry contributes **0.15% to GDP**, with GRSE playing a key role in defense shipbuilding, which accounts for **25-30% of the sector**.
 - The industry is valued at **\$2 billion** as of **FY 2022-23** and is expected to grow significantly under government initiatives like "**Aatmanirbhar Bharat**".
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GOVERNMENT POLICIES

- The Union Budget 2025-26 allocates **₹25,000 crore to the Maritime Development Fund**, with 49% government contribution and 51% from private sector investments.
 - The revamped Shipbuilding Financial Assistance Policy offers up to **30% financial support** for vessels powered by green fuels and **20% for hybrid propulsion systems**.
 - Exemption of Basic Customs Duty on raw materials for shipbuilding has been **extended for another decade**.
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MARKET CHALLENGES

- High Costs:** Shipbuilding is capital-intensive, with Indian shipyards facing higher financing costs (**10-11%**) compared to global competitors like South Korea (**5-6%**).
 - Infrastructure Bottlenecks:** Many shipyards **lack modern dry docks** and **automated facilities**, limiting their capacity to build large vessels.
 - Regulatory Constraints:** Complex policies and bureaucratic hurdles **discourage private sector participation**.
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EMPLOYMENT GENERATION

- GRSE directly employs over **2,000 skilled workers** and indirectly supports thousands of jobs through its supplier network.
 - Training initiatives further enhance workforce skills, contributing to employment growth in the defense and shipbuilding sectors.
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MARKET TRENDS

- India's shipbuilding industry is projected to grow from \$1.12 billion in 2024 to **\$8 billion by 2033** (CAGR 60%).
 - The sector benefits from **increased global trade, aging fleets**, and **government support** through initiatives like "Make in India" and Sagarmala.
 - India's strategic location and **labor cost advantages** further boost competitiveness
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SPECIFIC FACTORS

- Dependence on Imports:** Heavy reliance on imported marine-grade steel and propulsion systems **increases costs** and **supply chain risks**.
 - Smuggling Impact:** Illicit activities in maritime trade result in significant **revenue losses** for the government
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MACRO-ECONOMIC FACTORS

- Economic growth drives demand for ships, while **inflation erodes purchasing power**.
- High taxes** on shipbuilding materials (up to 28% GST) further strain affordability.
- Sociocultural factors** and evolving energy need also influence market dynamics.

COMPANY ANALYSIS

SWOT ANALYSIS

STRENGTHS

Government Backing: GRSE benefits from consistent support and contracts from the Ministry of Defense, ensuring financial stability and a steady project pipeline.

Expertise in Naval Shipbuilding: Decades of experience in constructing frigates, corvettes, and patrol vessels give GRSE a competitive edge in defense shipbuilding.

Focus on Innovation: Initiatives like GAINS 2024 foster technological advancements and collaboration with startups, enhancing GRSE's innovation capabilities.

Alignment with "Make in India": GRSE's focus on indigenous production strengthens India's defense self-reliance and reduces dependency on imports.

OPPORTUNITIES

Global Market Expansion: GRSE is pursuing export opportunities to friendly nations, diversifying its revenue streams.

Rising Demand for Naval Security: Increased maritime security concerns in the Indo-Pacific region present new contract opportunities.

Focus on Innovation: Initiatives like GAINS 2024 enable GRSE to adopt advanced technologies and green solutions.

WEAKNESSES

Reliance on Government Contracts: Heavy dependence on defense contracts makes GRSE vulnerable to shifts in government spending or policy changes.

High Operating Costs: Shipbuilding is capital-intensive, with infrastructure maintenance and supply chain issues impacting profitability.

Limited Export Portfolio: GRSE's international presence is relatively small compared to global competitors, limiting revenue diversification.

Technology Upgradation Challenges: Regular technological advancements are necessary for competitiveness, requiring consistent investments.

THREATS

Intense Competition: GRSE faces challenges from domestic and international shipbuilders, impacting market share.

Supply Chain Disruptions: Heavy reliance on imported materials exposes GRSE to geopolitical risks and trade restrictions.

Regulatory Changes: Shifts in defense policies or reduced government spending could affect GRSE's revenue pipeline.

BUSINESS MODEL

CUSTOMER SEGMENTATION

- GRSE primarily serves government clients, including the **Indian Navy, Coast Guard**, and other **defense sectors**.
- The company is also expanding into export markets, targeting nations in **Southeast Asia, Africa**, and **Latin America**.

DISTRIBUTION CHANNELS

- Operates under a **B2G (Business-to-Government)** model for defense contracts.
- Expands through **B2B (Business-to-Business)**

partnerships for international exports and collaborations.

VALUE PROPOSITION

- GRSE delivers high-quality, cost-competitive defense vessels with a **focus on indigenous production**, aligning with the **"Make in India"** initiative.
- Expertise in advanced ship designs, autonomous systems, and green technology positions GRSE as a **leader in sustainable and innovative shipbuilding**.

DATA OVERVIEW

- **Turnover:** GRSE achieved a turnover of approximately **₹2,500 crore** (~\$300 million) for **FY 2022-23**, reflecting a **12% year-on-year growth**.
- **Profit After Tax (PAT):** The company reported a PAT of **₹220 crore** (~\$26 million), showcasing robust profitability.
- **Order Book:** GRSE holds a substantial order book valued at **₹26,000 crore** (~\$3.1 billion), ensuring long-term revenue visibility.
- **Workforce:** The company employs around **3,000 skilled professionals**, contributing to its operational efficiency and expertise.
- **Export Achievements:** GRSE has successfully exported vessels to countries like **Mauritius** and **Vietnam**, strengthening its position in international markets.
- **Recent Contracts:** Key projects include the construction of **five Anti-Submarine Warfare Shallow Water Crafts** for the **Indian Navy**, valued at **₹1,800 crore** (~\$220 million).

RISK ANALYSIS

MANUFACTURING RISKS

- **Material Availability:** Dependence on imported marine-grade steel and propulsion systems increases supply chain vulnerability.
- **Fire Hazards:** Use of flammable materials during welding and painting heightens the risk of fires.
- **Worker Safety:** Exposure to hazardous chemicals and heavy machinery poses risks to employee health and safety.
- **Quality Control Issues:** Errors in production or assembly can lead to delays and cost overruns.

OTHER RISKS

- **Regulatory Compliance:** Changes in defense procurement policies or international trade regulations may impact operations.
- **Cybersecurity Threats:** Increased digitization exposes sensitive data and intellectual property to potential breaches.
- **Environmental Concerns:** Compliance with evolving environmental regulations, including ballast water management and emissions control, requires constant adaptation.

TRANSPORTATION & DISTRIBUTION RISKS

- **Weather-Related Delays:** Severe weather conditions can disrupt ship delivery schedules.
- **Port Congestion:** Congestion at loading/unloading ports can lead to delays in vessel deployment.
- **Cargo Damage:** Improper handling or stowage during transit may result in damage to vessels or equipment.
- **Piracy and Theft:** Security risks during transportation, particularly in high-risk regions.

RISK MITIGATION FRAMEWORK

- **Proactive Identification:** Conduct regular risk assessments to categorize and prioritize risks based on impact and likelihood.
- **Preventive Measures:** Strengthen supply chain resilience, implement advanced safety protocols, and ensure compliance with environmental regulations.
- **Contingency Planning:** Develop backup strategies for supply disruptions, regulatory changes, and unforeseen delays.
- **Monitoring and Evaluation:** Use digital tools to track risks in real-time and periodically review mitigation strategies for effectiveness.

IMPACT PROBABILITY

<ul style="list-style-type: none">• Material Supply Delays: Dependence on imported marine-grade steel and propulsion systems increases vulnerability to supply chain disruptions.• Workplace Hazards: Risks include injuries from heavy machinery, exposure to hazardous chemicals, and fire hazards during welding and painting processes.• Quality Control Issues: Errors in production or assembly can lead to delays and cost overruns, affecting project timelines.• Weather Disruptions: Adverse weather conditions, such as cyclones, can delay ship delivery schedules and damage assets.• Port Congestion: Overcrowded ports may hinder timely loading/unloading of vessels, impacting delivery timelines.• Security Concerns: Risks of piracy or cargo theft during transit in high-risk maritime zones.• Regulatory Compliance: Changes in defense procurement policies or environmental regulations may impact operations and increase costs.• Cybersecurity Threats: Increased reliance on digital systems exposes sensitive data to potential breaches.• Economic Factors: Inflation and fluctuating exchange rates could increase operational costs and reduce profitability.	Risk	Impact probability
	Material Supply Delays	High
	Workplace Hazards	Medium
	Quality Control Issues	Medium
	Weather Disruptions	High
	Port Congestion	Medium
	Security Concerns	Low
	Regulatory Compliance	Medium
	Cybersecurity Threats	High
	Economic Factors	Medium

GROWTH POTENTIAL

COLLABORATIONS

- **Investments in Subsidiaries:** GRSE is expanding its operational scope through **partnerships with startups** and **MSMEs** under the GAINS 2024 initiative, focusing on green technologies and AI-driven shipbuilding solutions.
- **Export Agreements:** Strategic contracts with countries like **Mauritius** and **Vietnam** strengthen GRSE's global presence in defense and commercial shipbuilding.
- **Defense Partnerships:** Collaborations with global leaders like **Thales Group** and **Rolls-Royce** enhance GRSE's technological capabilities in combat systems and propulsion technologies.
- **Public-Private Partnerships:** GRSE is exploring PPP models to modernize its infrastructure and boost production capacity.

PERFORMANCE

- **Diversified Revenue Streams:** GRSE's revenue streams include **naval shipbuilding**, **commercial vessels**, engineering products like **Bailey bridges**, and **marine diesel engines**, ensuring financial stability.
- **Synergies:** Integration of advanced manufacturing techniques such as 3D modeling, robotics, and **digital project management** has improved efficiency and reduced lead times.
- **Market Expansion:** GRSE is actively exploring new markets in **Southeast Asia**, **Africa**, and **Latin America**, positioning itself as a key player in international shipbuilding.
- **Sustainability Initiatives:** Adoption of green shipbuilding technologies, including **zero-emission ferries** and **hybrid propulsion systems**, aligns GRSE with global environmental goals.

PRODUCT & SERVICES

Naval Shipbuilding:

- GRSE specializes in constructing advanced naval vessels, including **frigates**, **missile corvettes**, **anti-submarine warfare corvettes**, **survey vessels**, and **offshore patrol vessels**. These ships are designed to meet the operational needs of the Indian Navy and Coast Guard, contributing significantly to India's maritime defense. This segment forms the backbone of GRSE's revenue stream, with robust profit margins.

Commercial Shipbuilding:

- The company has expanded into commercial shipbuilding, producing **ocean-going ferries**, **tugs**, **dredgers**, and other vessels tailored for civilian use. GRSE's expertise in this segment supports diversification and enhances its presence in international markets.

Engineering Products:

- GRSE manufactures **Bailey bridges**, used for both defense and civilian infrastructure projects. Known for their durability and ease of deployment, these bridges are a critical component of GRSE's engineering portfolio.

Marine Diesel Engines:

- GRSE supplies marine diesel engines for naval and commercial applications. Collaborations with global leaders like Rolls-Royce enhance its capabilities in **engine production**, ensuring high-quality **propulsion systems**.

MANUFACTURING

Products: Naval Ships, Commercial Ships, Bailey Bridges, Marine Diesel Engines.

COMMON STEPS

- **Raw Material Procurement:** GRSE sources marine-grade steel and propulsion systems from domestic and international suppliers to ensure high-quality shipbuilding.
- **Blending and Processing:** Modular construction techniques are employed for efficient assembly, reducing production time.
- **Outfitting and Trials:** Ships undergo outfitting, setting-to-work, and sea trials to ensure operational readiness.

FACILITIES

- **Shipbuilding Units:** GRSE operates advanced shipyards in Kolkata with dry docks, wet basins, and automated assembly lines.
- **Diesel Engine Plant:** Located in Ranchi, this facility specializes in assembling marine diesel engines.
- **Modernization Efforts:** GRSE is upgrading its infrastructure with robotics and green technologies to enhance efficiency.

PRODUCT-SPECIFIC MANUFACTURING

- **Naval Vessels:** Construction of frigates, corvettes, and patrol vessels using advanced modular techniques.
- **Commercial Vessels:** Production of ferries, tugboats, and dredgers for civilian use.
- **Engineering Products:** Manufacturing Bailey bridges and deck machinery for defense and civilian applications.

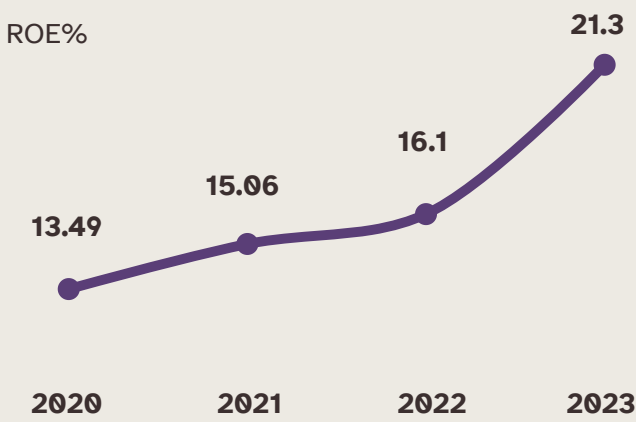
INTERNATIONAL PRESENCE

- **Exports:** GRSE has delivered vessels to Mauritius, Bangladesh, Vietnam, Seychelles, and Guyana, expanding its global footprint.
- **Services:** The company offers ship repair services internationally, ensuring better margins and customer retention.

FINANCIAL RATIOS

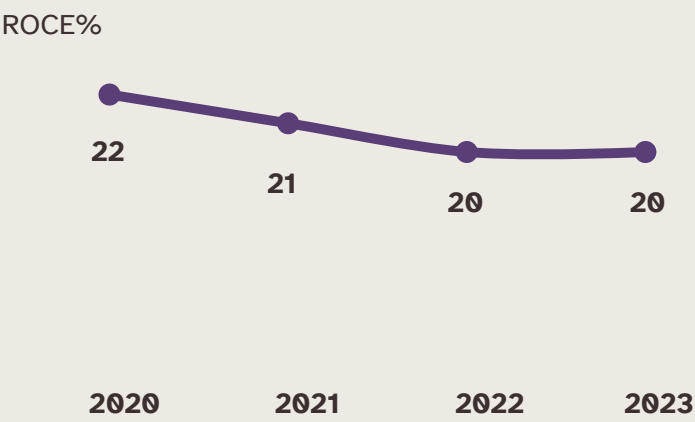
Year	Revenue (Cr)	Net Profit Margin	Return on Assets (ROA)	Return on Equity (ROE)	Earnings Per Share (EPS)	Debt-to-Equity Ratio
2020	1140.84	13.45	2.7	13.49	13.40	0.001
2021	1757.51	10.77	3.0	15.06	16.55	0.001
2022	2561.15	8.9	2.2	16.1	19.91	0.007
2023	3592.64	9.9	3.6	21.3	31.19	0.005

ROE AND ROCE ANALYSIS



ROE :

- **Value:** ROE improved from **16.1%** in FY22 to **21.3%** in FY23.
- **Interpretation:** The increase reflects GRSE's enhanced ability to generate profits using shareholders' equity, driven by strong project execution and financial management.



ROCE :

- **Value:** ROCE increased from **22%** in FY22 to **27%** in FY23.
- **Interpretation:** This indicates efficient utilization of total capital employed, showcasing GRSE's operational effectiveness and profitability.

CONCLUSION

Garden Reach Shipbuilders & Engineers Ltd (GRSE) stands as a cornerstone of India's defense and shipbuilding industry, playing a pivotal role in advancing the "Make in India" initiative. **Founded in 1884 and nationalized in 1960**, GRSE has evolved into a premier shipyard with expertise in constructing advanced warships, patrol vessels, and engineering products like Bailey bridges. The company's contributions to India's maritime security and economic growth are underscored by its strong order book of **₹26,000 crore** (~\$3.1 billion) and its ability to deliver cutting-edge solutions for both domestic and international markets.

GRSE's robust financial performance, marked by consistent revenue growth, high **ROE (22.2%)**, and **ROCE (27.4%)**, reflects its operational efficiency and strategic management. Its focus on innovation is exemplified by initiatives like **GAINS 2024**, which fosters collaboration with startups and MSMEs to integrate AI, robotics, and green technologies into shipbuilding processes. GRSE's commitment to sustainability is evident in projects like the **zero-emission ferry "Dheu"** and the **E-VOLT 50 electric tug**, positioning it as a leader in green shipbuilding.

Despite challenges such as reliance on government contracts, global competition, and supply chain vulnerabilities, GRSE is well-equipped to navigate these hurdles through diversification into export markets, modernization efforts, and **partnerships with global leaders** like **Rolls-Royce** and **Seatech Solutions International**. The company's ability to **concurrently construct 24 ships at a time** highlights its infrastructure capabilities and readiness to meet growing demand.

GRSE's skilled workforce of over **3,000 professionals**, combined with its innovative R&D initiatives and commitment to indigenization, reinforces its role as a **key player in India's defense manufacturing** landscape. By embracing advanced technologies, eco-friendly practices, and global collaborations, GRSE is poised for sustained growth while contributing significantly to India's defense capabilities and economic development.