



India's Maritime Transition: Technology, Propulsion and Sustainability

Directorate General of Shipping

10th February 2026 | Mumbai



Contribution of the Blue Economy



Towards Viksit Bharat 2047

India and its Blue Economy

95%

By trade volume

70%

By trade value

India's Infrastructure Leverages

12

Major Ports

200+

Non-major Ports

11,098 km

Total length of India's coastline

India's Vessel Advantage



India has 1,520+ merchant vessels with 13 mn+ GT capacity



India ranks 18th globally in flag registration and 19th globally in carrying capacity

India is emerging as the leader of the Blue Economy in the world with multiple initiatives focusing on infrastructure, business and the overall economy

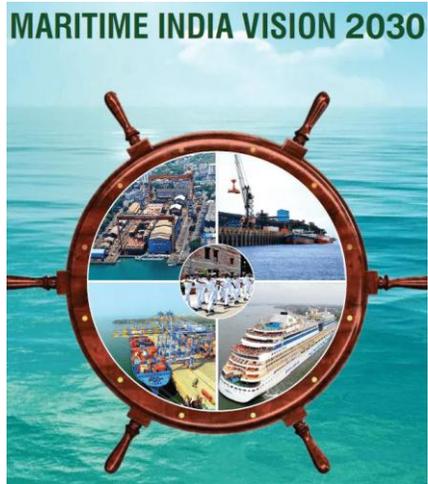
Port-led Development

Ports for Prosperity

Policy reforms driving EoDB, modern infrastructure and multi-modal logistics

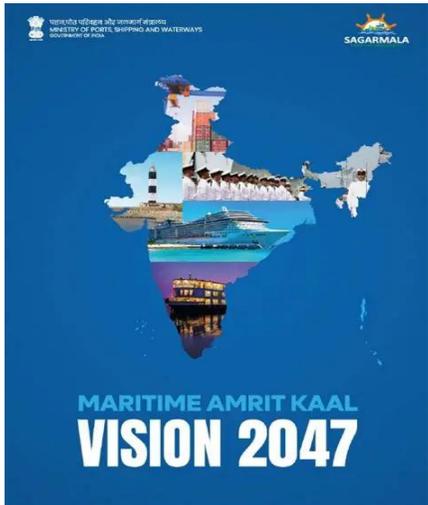


India's Vision for the Maritime Sector



Maritime India Vision (MIV) 2030

- Position India Globally in the Top 10 Shipbuilding, repair nations (from 30k GT to 500k + GT).
- Renewable Energy Share at Major Ports : >60%
- Promote Waste to Wealth through ship recycling. India from #2 to #1 ship recycling nation.
- Encourage green belt development (plantations) : Atleast 33% of port area
- Investment: INR 20,000+ Crores
- Employment Generation: 1,00,000+ additional jobs (direct and indirect)



Maritime Amrit Kaal Vision 2047

- Advanced phase targeting Top 5 global position in shipbuilding and maintaining 1 position in ship recycling
- Carbon neutral ports (green fuel, electrification, SPS). $\geq 60\%$ renewable-energy share, create hydrogen hubs, emission & resource monitoring toolkits for ports.
- Promote Alternate/ Green Fuels, Bunkering infrastructure, green framework for terminal operations, introduce incentives in port duties for low emission vessels .
- 300+ Strategic Initiatives across 11 key maritime areas
- Financial Assistance: 20-30% assistance for green vessels (including retrofitting)



Two Pillars of Maritime Transformation



Technology & Sustainability

Technology Integration - Digital Platforms

1. Flagship platforms: e-Samudra, SAGAR SETU, Maritime Single Window (MSW).
2. e-Samudra integrates 60+ maritime services (MTO registration, shipbuilding aid).
3. AI-powered exams & simulations for seafarer training.
4. Real-time vessel/cargo monitoring via Command & Control Centre.
5. Digital Centre of Excellence (DCoE) promotes AI, IoT, blockchain.
6. Reduced cargo dwell time; enhanced port efficiency.
7. Swachh Sagar Portal

Sustainability Initiatives - Green Shipping Agenda

1. Targets: 500 GW non-fossil energy (2030), 1 billion-ton carbon cut, net-zero by 2070.
2. Policies encourage LNG, green hydrogen, biofuel vessels.
3. Mandates shore power, waste, and renewable port integration.

Sustainability Initiatives - Key Programmes

1. Harit Sagar Guidelines support 100% renewable energy, AI/IoT logistics in ports.
2. Green Tug Transition: 50% hybrid/electric tugs by 2030.
3. Green hydrogen plant at Deendayal Port scaling to 10 MW; 5 million tonnes by 2030 goal.

INDIA'S MARITIME TECHNOLOGY TRANSFORMATION IN 2025

-  **CLOUD - NATIVE PLATFORMS**
-  **ARTIFICIAL INTELLIGENCE**
-  **BLOCKCHAINS**
-  **MARITIME SINGLE WINDOW**
-  **SIGNIFICANT REDUCTION IN CARGO DWELL TIMES**
REAL TIME VESSEL TRACKING
-  **DIGITAL CENTER OF EXCELLENCE**

INDIA'S MARITIME SUSTAINABILITY INITIATIVES

 500 GW NON-FOSSIL ENERGY BY 2025	 1 BILLION TONNE CARBON REDUCTION	 LNG GREEN HYDROGEN VESSEL
 100% RENEWABLE ENERGY PORTS	 GREEN TUGS TRANSITION PROGRAMME	 GREEN SHIPPING CORRIDORS
	 GREEN HYDROGEN	 GREEN SHIPPING CORRIDORS
 ₹ 25,000 CRORES MARITIME DEVELOPMENT FUND		



Green Shipping – The Big Picture



- Shipping is the **backbone of global trade** – carrying 80% of goods worldwide.
- Shipping contributes to ~3% of global CO₂ emissions.
- Green Shipping = *making ships, ports, and supply chains cleaner, smarter, and future-ready.*
- It's not just about compliance — it's about **staying competitive in a low-carbon economy.**
- **Vision & Commitments:**
 - Aligned with *Maritime India Vision 2030 & Maritime Amrit Kal Vission 2047.*
 - Supports IMO's **Net Zero 2050** ambition.
 - Anchored in India's **Panchamrit Pledge** – 500 GW non-fossil capacity by 2030, Net Zero by 2070.



“The future of shipping is green — by necessity, not by choice.”

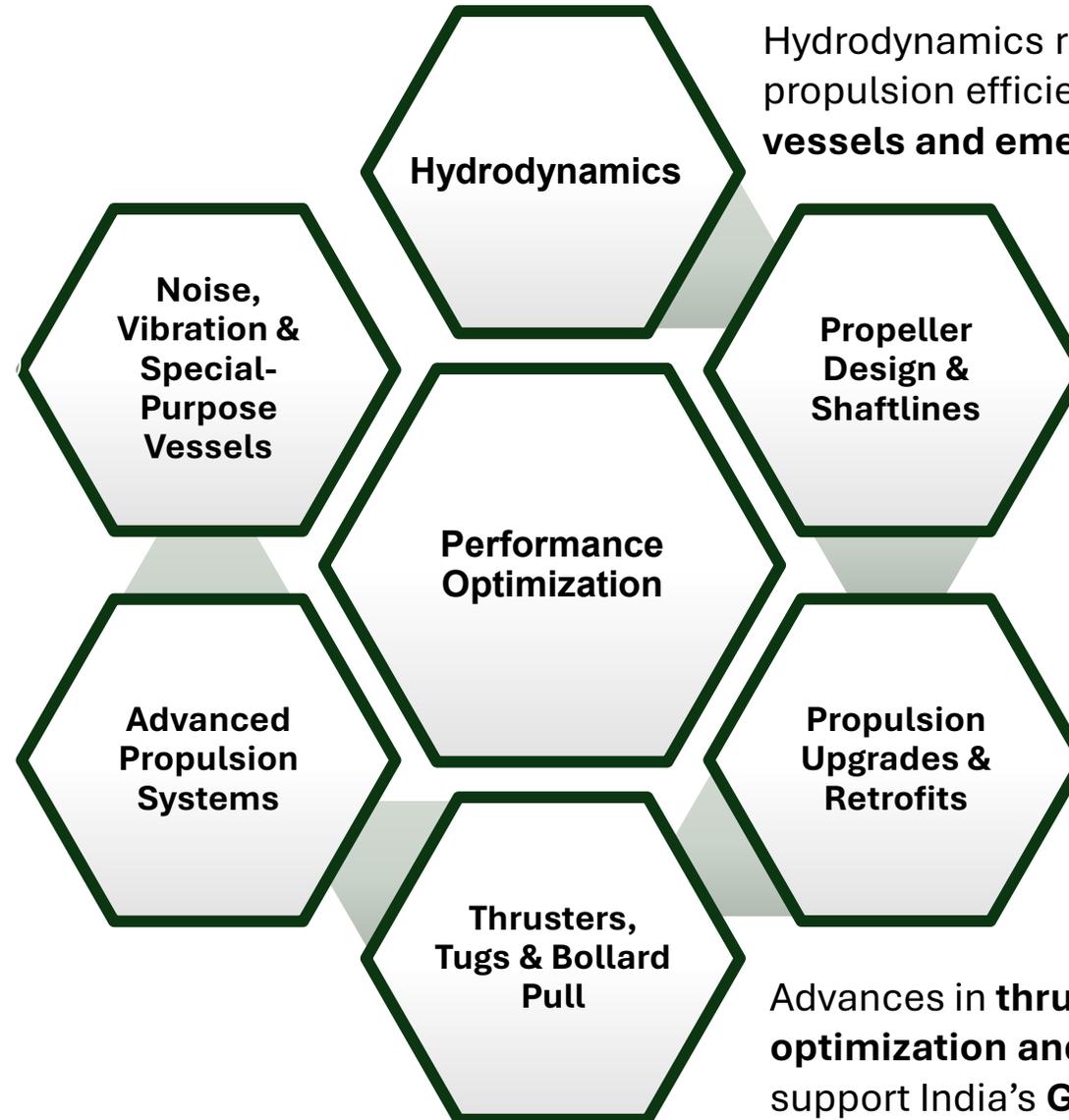


Hydrodynamics and Propulsion



Low noise, vibration control, ice-class capability and specialised propulsion needs are increasingly relevant across naval, research and port operations.

Podded propulsion, rim-driven systems and waterjets offer opportunities for improved efficiency, control and operational flexibility.



Hydrodynamics remains the foundation of propulsion efficiency for both **conventional vessels and emerging green and electric ships.**

Optimized propeller design, cavitation control and reliable shaftline systems critical for performance, efficiency and lifecycle cost.

Hydrodynamic optimisation and propulsion upgrades will play a key role alongside newbuilds during the transition phase.

Advances in **thruster efficiency, bollard pull optimization and maneuverability** directly support India's **Green Tug Transition Program.**



National Green Shipping Policy

Maritime Vision for a Green Future

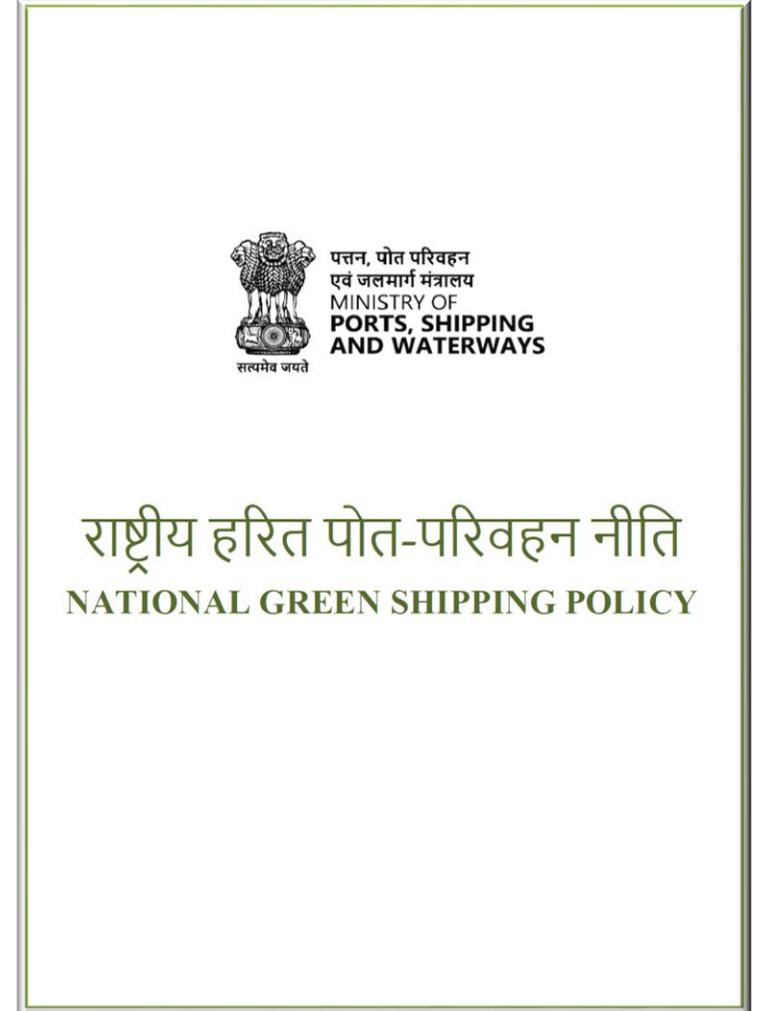


The NGSP is India's strategic response to the global decarbonisation mandate, a policy blueprint designed to secure maritime growth while transitioning towards clean energy, sustainable ships and climate-resilient ports.

Key Transition Pillars:

- Green Ships
- Green Ports
- Green Fuels
- Green Technology
- Green Recycling
- Green Financing
- Green Skill Development & Capacity Building

**Maritime INDIA @ Net Zero – Multi Stakeholder
Workshop convened on 14 -15 January 2026 at India
Habitat Centre, New Delhi**





National Green Shipping Policy – The 7 Pillars (1/2)

Building a Holistic Green Maritime Ecosystem



Pillar 1: Green Ships

Lifecycle-based decarbonization of India's fleet through energy-efficient, fuel-flexible and low- to zero-emission vessels, supported by green ship certification and lifecycle emissions accounting.

Pillar 2: Green Ports

Port-led decarbonisation by integrating clean energy, electrification and efficient operations, positioning Indian ports as competitive, low-carbon logistics gateways.

Pillar 3: Green Fuels

A safe, phased and technology-neutral transition to alternative marine fuels, guided by lifecycle performance, bunkering safety and infrastructure readiness.



National Green Shipping Policy – The 7 Pillars (2/2)



Decarbonization to Implementation Enablers

Pillar 4: Green Ship Recycling

Advancing safe, environmentally sound and circular ship recycling aligned with the Hong Kong Convention, strengthening worker safety, material recovery and digital transparency.

Pillar 5: Green Finance

De-risking maritime decarbonisation by mobilising affordable, long-term capital through blended finance, risk-sharing instruments and ESG-aligned investment frameworks.

Pillar 6: Green Skill Development & Capacity Building

Preparing the maritime workforce and institutions for new fuels, technologies and regulatory requirements, ensuring a just, inclusive and execution-ready transition.

Pillar 7: Green Technology & Innovation

Accelerating adoption and indigenisation of advanced maritime technologies through digitalisation, pilot projects and innovation sandboxes to enhance efficiency, safety and competitiveness.



Maritime INDIA @ Net Zero

14 – 15 January 2026, India Habitat Centre (Hybrid)



Maritime INDIA @ Net Zero was jointly organised by the Directorate General of Shipping (DGS) and NCoEGPS at TERI as a **high-level multi-ministerial action plan and governance workshop** to translate the National Green Shipping Policy (NGSP) vision into **phased, implementation-ready national pathways** aligned with India's climate commitments.

Way Forward

- **Conduct focused stakeholder webinars** to validate priority actions and implementation sequencing
- **Undertake inter-ministerial consultations** to finalise roles, timelines and coordination mechanism
- **Final submission of consolidated roadmap and action matrix to NITI Aayog** for strategic guidance and national rollout





Why Alternative Maritime Fuels Matter for India



- The global shipping sector is entering a decisive transition decade
- Climate commitments, fuel regulations, and market signals are converging rapidly
- Fuel choices are becoming a strategic factor in trade competitiveness
- Early action will shape future shipping routes, port relevance, and investment flows
- India is located at a strategic crossroads of major global trade routes
- The transition presents an opportunity to move from fuel consumer to fuel enabler
- This opportunity is not automatic — it must be planned, enabled, and coordinated



Alternative Fuels for Maritime



LNG

- **Current Use:** Operational for select Indian coastal and LNG carriers; IGF Code compliant
- **Infrastructure:** LNG terminals at **Dahej, Hazira, Kochi**; feasibility for bunkering at JNPA
- **Maritime Role:** Transition fuel till 2035 under IMO GHG transition
- **Limitation:** Methane slip & future carbon costs reduce long-term advantage

Biofuel

- **Marine Trials:** Successfully tested on marine engines
- **Supply Base:** Drop in Blends. Domestic production. **Blending with FAME, HVO**
- **Distribution:** Can use existing bunkering infrastructure without port redesign
- **Advantage:** Short-term compliance option for Indian fleet under CII/GHG without retrofits

Ammonia

- **Export Positioning:** **Kandla to produce green ammonia** (L&T + Itochu JV) for **Singapore bunkering**
- **Maritime Use:** Target fuel for deep-sea vessels (tankers, bulk carriers) post-2035
- **Challenges:** High Toxicity, safety standards, crew training, IMO safety code under development
- **Strategic Role:** India positioning as **future fuel exporter**, not just consumer

Methanol

- **Marine Use:** Dual-fuel methanol engines already ordered by global majors
- **Breakthrough:** **India's first Green Methanol Bunkering Hub** under construction at **VOC Port (Tuticorin)** – 750 m³ terminal (SOPAN Group)
- **Production Shift:** India transitioning from coal-based brown methanol to green methanol (hydrogen + CO₂ capture)
- **Maritime Suitability:** Engine-ready (Maersk, MAN ES technology) – early adopter fuel under IMO
- **Role:** Likely first large-scale alternative fuel to enter Indian ports post-2030

Hydrogen

- **Port Pilot:** **VOC Port launched India's first Green Hydrogen Pilot Plant** (5 Sep 2025)
- **Use in Maritime:** Not direct – used to produce ammonia/methanol as bunkering fuels
- **Infrastructure Need:** Electrolysers, Liquefaction, port pipelines; **High CAPEX**
- **Long-Term Role:** Backbone fuel for synthetic maritime fuels; export market focus



Alternative Fuels Properties Comparison

Parameter	E-LNG	Methanol	Ammonia	Hydrogen
Physical properties for storage	Liquid at -162 °C	Liquid (up to 65 °C)	Liquid at -33 °C	Compressed gas at > 250 bar or liquid at -253 °C
Fuel tank size for same energy content as MDO	1.8 times	2.5 times	3 times	5–7 times
Flammability limits in air (%V/V)	5%–15% (Methane)	6%–36.5%	15%–28%	4%–75%
Ignition temperature (°C)	595	464	630	560
Flashpoint (°C)	-188	12	132	—
Density of liquid phase (kg/m ³)	450	790	696	71
LCV (MJ/kg)	50	19.9	18.6	120
Energy density (MJ/L)	21.2	15.7	12.7	8.5

Data Source : MARIKO (2022) Ammonia as ship fuel, DLR (2023) PtX Fuels in Shipping



Alternative Fuels Comparison



Hydrogen

Pros

- High gravimetric energy density
- Very pure hydrogen
- Only emits water

Cons

- Highly flammable
- Cryogenic temperature
- Complex storage necessary
- Difficult to handle
- No IMO rules available

E-Ammonia

Pros

- Carbon free
- Experience as cargo or refrigerant
- Higher energy density than hydrogen
- Since Dec 2024 IMO guidelines

Cons

- Toxic
- Not commercially available yet
- Highly trained personal needed
- High cost

E-Methanol

Pros

- Liquid at room temperature
- Easy to handle
- Mature technology
- Rules exist
- Higher energy density than hydrogen

Cons

- Toxic
- Highly flammable
- Still contains carbon
- High cost

E-LNG

Pros

- Mature technology
- Rules exist
- Higher energy density than hydrogen

Cons

- Not commercially available yet (fuel production)
- Cryogenic temperature
- Complex storage necessary
- High cost
- Risk of methane leakage / slip



India as a Net Green Energy Exporter & Bunkering Destination



From energy importer to future maritime fuel hub

Strategic Advantage

- Long coastline with major ports on **East–West shipping lanes**
- Abundant renewable energy for **green hydrogen, ammonia, methanol**
- Cost advantage in **solar + wind production**, lowering fuel export price

Fuel Export Readiness

- **Green Ammonia** : Kandla supply to Singapore (L&T–Itochu JV)
- **Green Methanol** : VOC Port bunkering hub under development
- **Hydrogen Derivatives** : Mission to export through maritime corridors

Port Infrastructure Transformation

- Dedicated **Green Bunkering Terminals** (VOC Port, Kandla, JNPA)
- Upcoming **Green Shipping Corridors**: Tuticorin – Kandla – Singapore – Rotterdam
- Integration of **renewable power, storage & safety systems**

Economic & Diplomatic Impact

- Reduces dependency on oil imports
- Positions India as **fuel supplier to global shipping lines**
- Enhances maritime influence under **Global South leadership**

Policy Backing

- Supported by **National Green Hydrogen Mission & NGSP**
- Incentivized by **Harit Sagar & MIV 2030**
- Aligned with **Make in India & Energy Security Vision 2047**

India is not just preparing for Green Fuels — it is preparing to Fuel The World.



Shore to Ship



What is Shore Power?

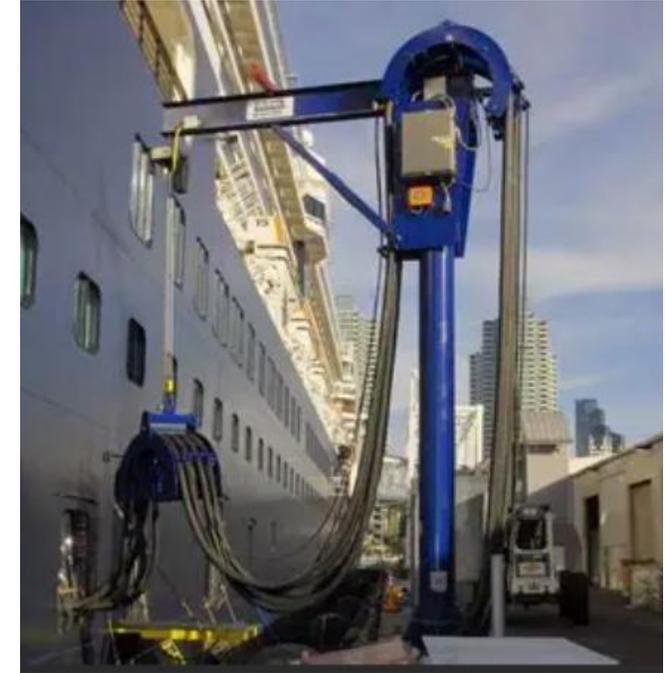
Electricity supplied from the shore to berthed ships, allowing engines to be switched off and eliminating fuel combustion while docked.

Why It Matters

- Cuts **CO₂, NO_x, SO_x and Particulate Matter** emissions in port zones
- Improves **Air Quality and ESG scores** for Indian ports
- Supports compliance with **IMO CII, GHG & Green Port Index**

Implementation Status in Indian Ports

- **Kamarajar Port** - 500 kW, 400V, 50-60 Hz in Coal Berth 1 & 2
- **VO Chidambaranar Port** - 305 kW, 400V 60Hz in VOC Berth 2 & 3
- **Jawaharlal Nehru Port Authority** - SPS used for Tugs. SPS for all terminals planned (45MVA; INR 600 crore expected)
- **Paradip Port** - Newly commissioned. Delivered full load power to MV APJ Indrani at CB1 Berth.



Possible Financing options

Blended finance → govt + MDBs + private capital.

Green/blue bonds → specifically earmarked for OPS infra.

PPP models → private players co-invest in OPS roll-out.



Green Ports

Driving Sustainable Maritime Growth



Concept of Green Ports

- Ports designed & operated with minimal environmental impact.
- Integration of clean energy, efficiency, and circular economy practices.

Key Initiatives in India

- Harit Sagar Guidelines (2023): National framework for green port development.
- Proposed National Port Sustainability Council (NPSC): Metrics for emissions, energy, waste, and community impact.
- Onshore Power Supply (OPS): Cut ship emissions at berth by connecting to shore electricity.
- Waste & Plastics Management: Port reception facilities for MARPOL Annex V compliance.

Sustainable Indicators for Ports

- Green Port Index (GPI)
- Green Port Readiness Level (GPRL)
- Shore Power Readiness Indicator (SPRI)
- Environmental Ship Index (ESI)





GHG Emission Scope at Ports



Scope 1 : Direct Emissions

- From port owned/controlled sources
- Diesel generators, cranes, dredgers, tugs, vehicles, fuel machinery

Scope 2 : Indirect Emissions (Purchased Electricity)

- Power consumed but generated elsewhere (state grid)
- Lighting, pumps, reefer containers, terminal operations
- Coal-based power grid

Scope 3 : Other Indirect Emissions (Value Chain)

- Ships at berth using auxiliary engines
- Trucks, trains, barges transporting cargo
- Business travel, investments, waste treatment



Green Tug Transition Program (GTTP)



- Initiative of **MoPSW** for transition of harbour tugs to green propulsion
- Targets **progressive replacement of diesel-powered tugs**
- Applicable to **~400 harbour tugs** operating across Indian ports
- Implemented through **Approved Standard Tug Designs & Specifications (ASTDS-GTTP)**
- Initial focus on **battery-electric tugs**, with provision for **hybrid, methanol and hydrogen**

Phased Implementation Framework

Phase 1 (2024–27)

- Induction of **battery-electric green tugs** at Major Ports
- Deployment based on **ASTDS-GTTP**

Phase 2–3 (2028–33)

- **30%–60%** of operational tug fleet to be ASTDS-GTTP compliant
- Introduction of **alternate fuels and hybrid technologies**

Phase 4–5 (2034–40)

- **100% transition** of harbour tugs at Major Ports
- Nationwide adoption aligned with **vessel life / charter cycles**



GTTP : Rationale and Enablers



Harbour Tugs – Ideal for Early decarbonization

- Operate within **confined port limits** with predictable duty cycles
- **High power demand for short durations** (<5% of operating hours)
- Limited range enables **battery-electric and hybrid solutions**
- Immediate benefits in **local air quality, noise and vibration**

Make-in-India Capability

- GTTP-compliant tugs to be **built in Indian shipyards**
- Standardised designs under ASTDS-GTTP to ensure consistency, quality and benchmarked performance
- Promotes collaboration across:
 - Shipyards
 - Technology providers
 - Ports and operators

GTTP supports domestic shipbuilding and maritime capability development.

Technology Enablement

- **Performance-based framework** enabling multiple green propulsion technologies
- Initial focus on **battery-electric tugs**, with provision for **hybrid, methanol and hydrogen**
- Optimisation permitted within **ASTDS-GTTP** specifications
- **Phased adoption** of emerging green propulsion technologies



GTPP : Governance, Infrastructure and Outcomes



Governance & Execution Framework

- Implemented through a **Standing Specifications Committee (SSC)**
- SSC comprises **ports, shipyards, classification society and technical experts**
- Responsible for:
 - **ASTDS-GTPP**
 - **Model tender documents**
 - **Standard shore infrastructure requirements**
- Ensures **uniform implementation across ports** within approved standards

Shore Infrastructure & Energy Readiness

- **Dedicated charging infrastructure** for battery-electric GTPP tugs
- Electricity to be sourced from **captive green energy or green power purchase agreements**
- Provision for **infrastructure to support adoption of alternate green fuels**
- Alignment with **Harit Sagar – Green Port Guidelines** for port-level decarbonisation

Environmental & Operational Outcomes

- **Reduction in emissions** from harbour tug operations
- Contribution towards **port-level decarbonisation targets**
- Supports implementation of **Green Port initiatives** under Harit Sagar
- Enables **progressive transition** without compromising port operations



Ship Recycling



- Process of dismantling end-of-life ships to recover **steel and other valuable materials**.
- India is a **global leader**, with Alang–Sosiya in Gujarat being the **world’s largest ship recycling cluster**.
- Governed internationally by the **Hong Kong Convention (HKC)**, which came into force on **26 June 2025**.
- Integral to the **circular economy**, reducing the demand for virgin raw materials.

India’s Role & Importance

- Handles **30% - 35% of global ship recycling tonnage** annually.
- Provides **20 - 25% of India’s ferrous scrap requirement**, reducing dependence on imports.
- India is the **only country with 100+ HKC Compliant Recycling Yards**.
[115 HKC Compliant Yards at Alang]
- Supplies input material for the **Green Steel ecosystem**, boosting India’s low-carbon transition.
- Generates **direct employment for 15000+ workers** and **indirect livelihood opportunities** for thousands more in logistics, scrap processing, and allied services.
- Strengthens India’s position in **global maritime sustainability**.





Ship Recycling Credit Note



- Introduced under **Ship Building Financial Assistance Scheme 2.0 (SBFA 2.0)**
- Incentivizes ship owners to **recycle in India** and **build new ships in Indian shipyards**

How It Works

- When a vessel is recycled in a certified Indian yard, the ship owner receives a **Credit Note for 40% of scrap value.**
- The Credit Note remains valid until the owner builds a new vessel/ ship in an Indian shipyard
- Redeemed as **financial assistance/ subsidy** under SBFA 2.0

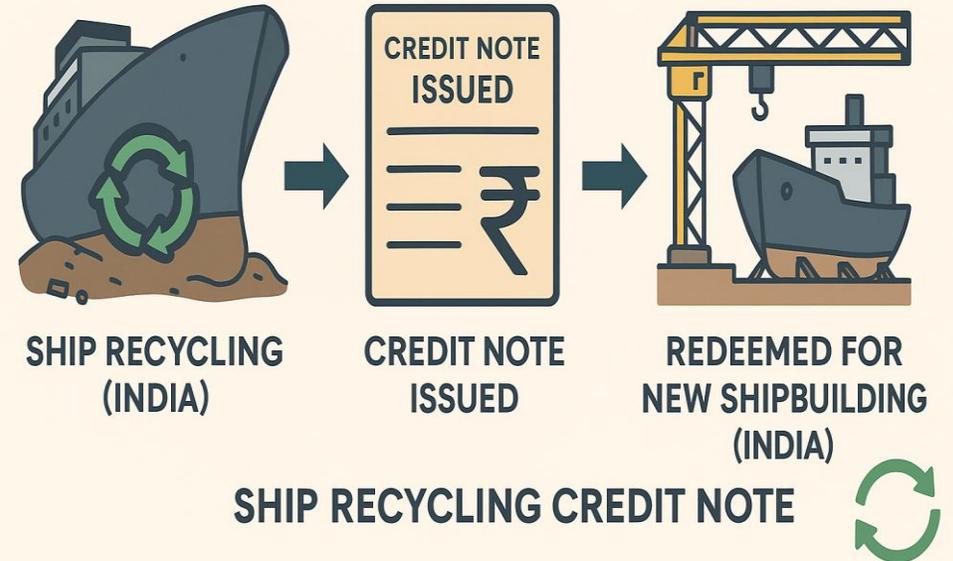
Expected Benefits

- Encourages **safe and HKC compliant ship recycling** in India
- Provides direct **business boost for Indian shipyards**
- Attracts **new players** to India's ship recycling and shipbuilding ecosystem
- Strengthens India's **circular economy** : recycling feeds into new shipbuilding
- Positions India as a leader in **Green and Sustainable Maritime**

Allocation of : ₹ 4,001 crore
(under SBFA)

SHIP RECYCLING CREDIT NOTE

Linking Recycling with Shipbuilding





Green Steel

- “Green Steel” is defined by its CO₂ emission intensity — less than 2.2 tonnes CO₂ emission per tonne of finished steel (tfs).
- Greenness is expressed as a percentage reduction below the threshold of 2.2 tonnes CO₂ emission per tonne of finished steel
- The certification done via NISST (National Institute of Secondary Steel Technology) under the Bureau of Energy Efficiency (BEE) Measurement, Reporting and Verification (MRV) methodology.

Star Rating System

- Five-Star: < 1.6 tCO₂e/tfs 
- Four-Star: 1.6 – 2.0 tCO₂e/tfs 
- Three-Star: 2.0 – 2.2 tCO₂e/tfs 
- > 2.2 tCO₂e/tfs → Not eligible for green rating
(Threshold reviewed every 3 years)





Shipbuilding Scenario in India



**30,000
GT**

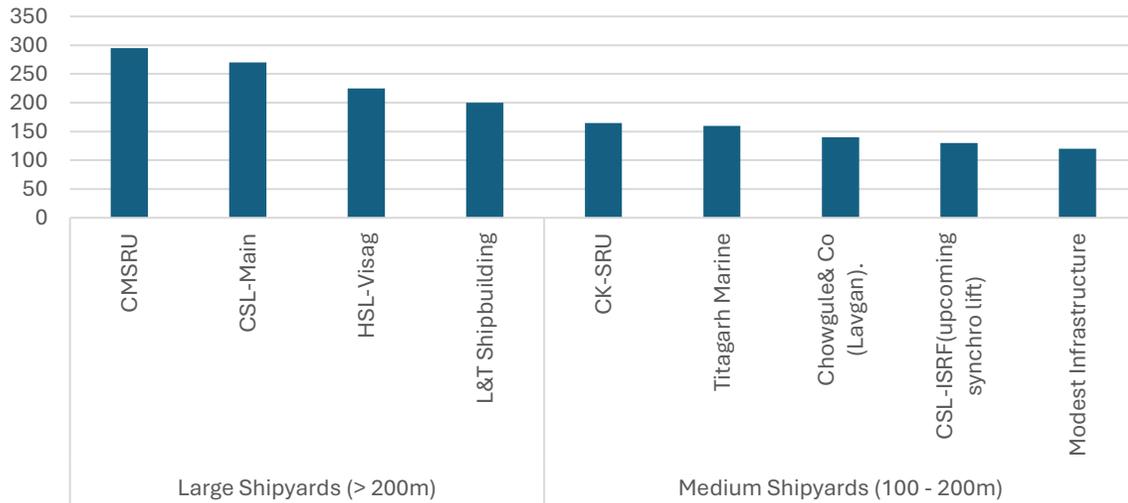
**Current Annual
Tonnage
Produced**

53*

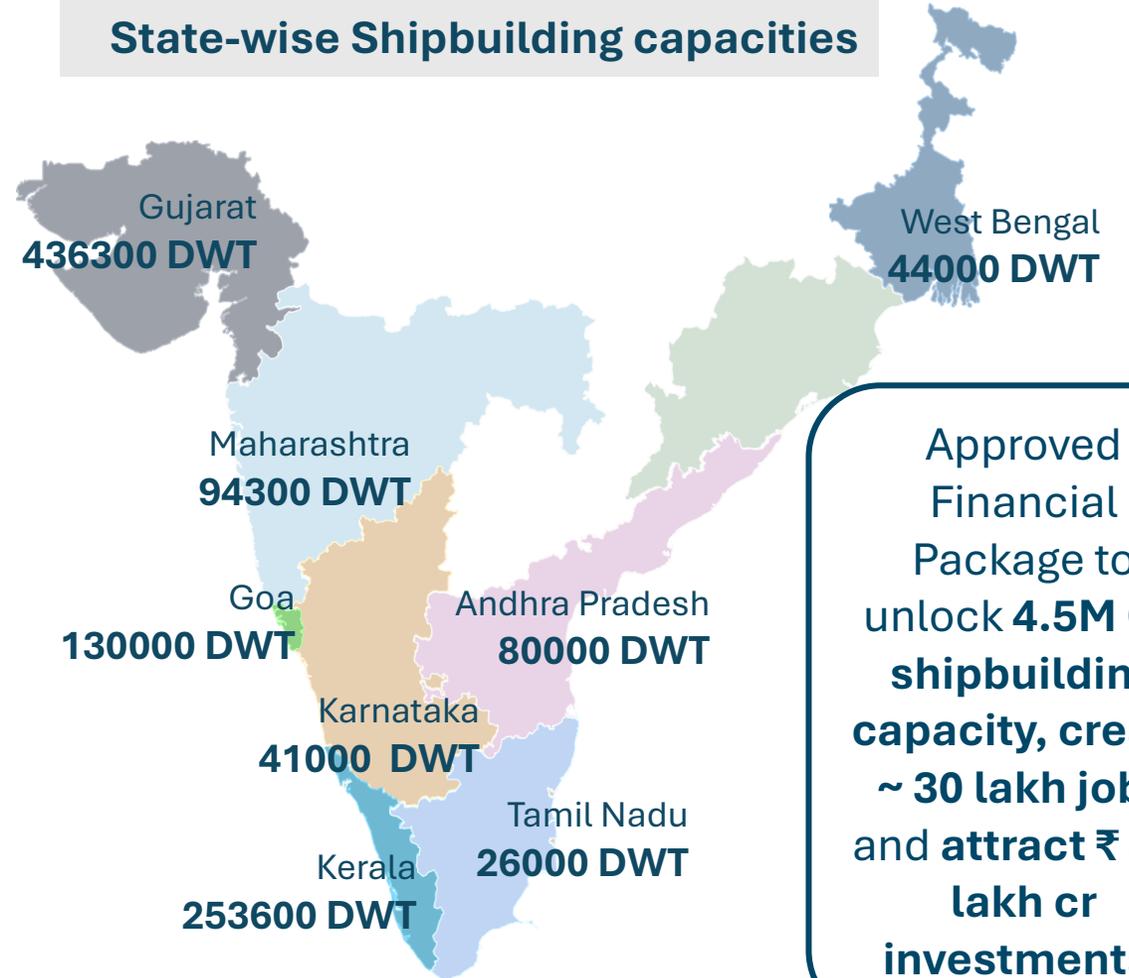
**Total Number of
Shipyards**

**Annual Report, MoPSW*

Shipyards with capacity based on Ship's length for docking



State-wise Shipbuilding capacities



Approved Financial Package to unlock **4.5M GT** shipbuilding capacity, create **~ 30 lakh jobs** and attract **₹ 4.5 lakh cr** investments.



Four Pillar Approach



Cabinet approves ₹ **69,725** crore Package to Revitalize India's Shipbuilding and Maritime Sector



Shipbuilding Financial Assistance scheme

Allocation: ₹24,736 crore

- Overcome cost differential vis-a-vis foreign shipyards.
- Credit note for new builds against ship scrapping in India
- Establish National Shipbuilding Mission



Maritime Development Fund

Allocation: ₹25,000 crore

- Enable long-term financing to maritime sector through equity & debt-based funding:
- Maritime Investment Fund
 - Interest Incentivization Fund
 - Credit Guarantee Fund



Shipbuilding Development Scheme (SbDS)

Allocation: ₹19,989 crore

- Greenfield cluster creation
- Brownfield capacity expansion to **4.5 million GT**
- Risk outlay for shipyards
- Setting up of India Ship Technology Centre (ISTC) as Apex body under IMU



Legal, Policy and Process Reforms

- Demand aggregation
- Large Ships as infrastructure
- Taxation issues
- Flagging reforms

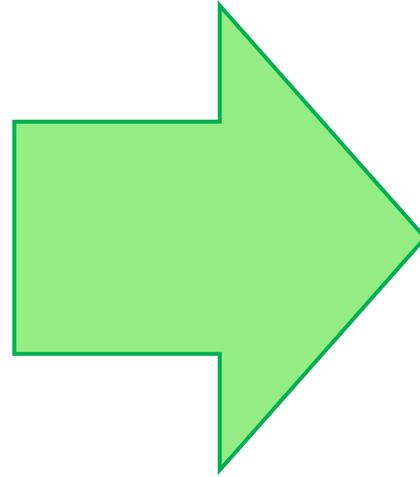


Provisions for Green Vessels as per SBFAP & SBFAS



SBFAP (2016-26)

- **30% Financial Assistance for vessels where main propulsion is powered by green fuels**, including: Methanol, Ammonia, Hydrogen fuel cells and Other approved alternative green fuels
- **20% Financial Assistance for vessels equipped with: Fully electric propulsion systems, or Hybrid propulsion systems (electric + conventional fuel)**
- Incentives aimed at accelerating adoption of **low-carbon and zero-emission technologies** in shipbuilding
- Encourages domestic shipyards and shipowners to invest in clean propulsion technologies

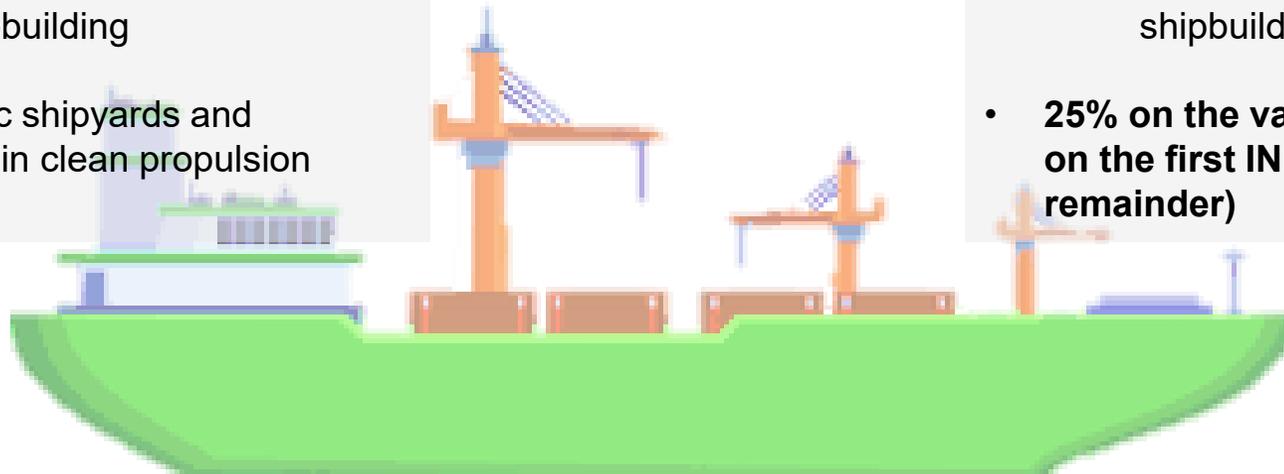


SBFAS (2026-36*)



- **Green Vessel Categories**
 - **Green Vessels:** Vessels operated through eco-friendly fuels like electric batteries, methanol, hydrogen fuel cells, or ammonia.
 - **Hybrid Vessels:** Vessels using conventional fuels (gas, LPG, oil) combined with rechargeable electric sources like batteries.
 - Vessels powered by dual-fuel main engine (methanol, ammonia, LNG, LPG etc.) accelerating adoption of low-carbon and zero-emission technologies in shipbuilding
- **25% on the value above INR 100 Crore (15% on the first INR 100 crore + 25% on remainder)**

** In Principal approval till 2047*



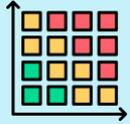


Digital Transformation and Governance



Technological Interventions/adoption in the Maritime Training Sector

Empowering trainers and trainees to achieve excellence beyond traditional boundaries



**MTI Modules- 3
+ helpline and
escalation
matrix**



**Learning
Management
System**



**Web based
simulation**



**Digitization of
Training and
Assessment
Record (TAR)**



**Centralized
Attendance
system CAS 2.0**



**Use of new analytics tools
for insight building and
effective decision making**



**Dynamic Batch
sizing**



**Placement
portal and
authentic job
portal**



**AI & Immersive
technology
strategy**



**Faculty
development
Program**



Sagar Mein Yog & Sagar Mein Samman

Wellness at Sea & Gender Inclusion in Maritime



Sagar Mein Samman

Sagar Mein Yog is a **comprehensive wellness program** built on the integration of yoga, mindfulness, emotional resilience, physical health, and spiritual well-being.

- In partnership with **NUSI** and knowledge partner Trijog
- Linked with MIV 2030 **Deliverable 10.16.3**
- SMY is being presented at 136th IMO Council



Sagar Mein Samman

Sagar Mein Samman (Honor at Sea) is the flagship initiative, **designed to transform India's maritime sector into a more inclusive, equitable, and aspirational ecosystem.**

- **Goal:** Build a resilient, diverse, and future-ready maritime workforce.
- These six pillars form the structural foundation of the initiative, ensuring a comprehensive and sustainable approach to empowering women across all layers of the maritime ecosystem.





संगच्छध्वं संवदध्वं सं वो मनांसि जानताम्।

“Move together,
speak together,
may your minds
be in harmony.”
(Rigveda 10.191.2)



सत्यमेव जयते

Ministry of Ports,
Shipping & Waterways
Government of India

