

5. Carbon Free Shipping – International Organizations

Countries vote to delay implementation of carbon-free shipping plan. The International Maritime Organization (IMO) has postponed the adoption of its net-zero shipping strategy under pressure from major economies, delaying global efforts to reduce maritime emissions. Shipping currently contributes about 3% of global greenhouse gas emissions, projected to rise sharply without regulation.

1. Context

The International Maritime Organization (IMO) member countries, including India, have postponed a vote on the strategic plan for achieving net-zero emissions in shipping by 2050. The delay was mainly due to pressure from the United States and other major economies concerned about potential economic implications.

2. Current Status of IMO Greenhouse Gas (GHG) Strategy (2023)

Adopted by – International Maritime Organization (IMO).

Objectives – Reduce the carbon intensity of international shipping by at least 40% by 2030 (measured in CO₂ per transport work). Ensure zero or near-zero emission fuels and technologies constitute 5–10% of the energy used in shipping by 2030.

Coverage – Applies mainly to large ocean-going ships above 5,000 gross tonnes (GT), which account for nearly 85% of total shipping emissions.

Emissions Data –

1. Global anthropogenic CO₂ emissions from shipping – 1.7–2.3% (2016–2023).
2. Without intervention, the share could rise to 10% by mid-century.
3. Currently, the shipping sector contributes about 3% of total global GHG emissions.

3. Carbon-Free Shipping

Carbon-free shipping involves operating ships and maritime logistics in a way that produces zero or minimal carbon dioxide (CO₂) emissions.

Key Features –

1. **Zero- or Low-Emission Fuels** – Includes green hydrogen, ammonia, biofuels, synthetic fuels. Reduces dependence on traditional fossil fuels (heavy fuel oil, marine diesel).
2. **Energy-Efficient Technologies** – Use of wind-assisted propulsion, electric or hybrid engines, advanced hull designs. Optimized route planning and speed regulation for lower energy use.
3. **Carbon Capture and Offsetting** – Ships may incorporate onboard carbon capture systems or invest in carbon offset projects to neutralize emissions.
4. **Global Standards and Regulation** – IMO leads the formulation of global rules for emission reduction. Includes IMO Net-Zero by 2050 framework and proposed carbon pricing mechanisms.

4. Significance of Carbon-Free Shipping

The shipping industry contributes about 3% of global GHG emissions. Essential for meeting Paris Agreement climate goals. Promotes innovation in ship design, fuels, and digital efficiency systems. Helps reduce the carbon footprint of international trade, aligning with Sustainable Development Goals (SDGs).

5. Challenges in Achieving Carbon-Free Shipping

Challenge	Description / Impact
High Cost of Green Technologies	Advanced propulsion systems (hydrogen, ammonia engines) need large capital investments.
Limited Sustainable Fuel Supply	Over 95% of zero-emission fuel projects are still in the pre-investment stage; demand-supply gap persists.
Regulatory Uncertainty	IMO's proposed global carbon pricing (\$100/tonne CO ₂) faces delay due to opposition from major countries like the U.S. and Saudi Arabia.
Economic & Political Resistance	Some nations fear carbon pricing may raise shipping costs, causing inflationary pressure and reduced competitiveness.
Infrastructure Limitations	Ports and logistics chains lack facilities for fuel storage, refueling, and maintenance for green energy vessels.

6. International and National Measures

Level	Initiative / Policy	Key Details / Targets
International (IMO)	Net-Zero Framework	Target - Net-zero shipping emissions by 2050; adoption delayed to 2026.
	Global Fuel Standards	Cleaner fuels mandated for ships >5,000 GT, covering ~85% of shipping emissions.
	Emissions Pricing Mechanism	Proposal for a \$100/tonne CO ₂ carbon price to promote low-carbon fuels.
India (National Level)	Merchant Shipping Act, 2025	Aligns with IMO guidelines; enhances environmental protection in maritime sector.
	Indian Ports Act, 2025	Promotes integrated port development, ensuring pollution control and safety.
	Renewable Energy Targets	Target - 60% port energy from renewables by 2030, 90% by 2047.
	Carbon Capture Incentives	Government encourages carbon capture technologies on ships and at ports.

7. Way Forward

1. **Accelerate Adoption of Zero-Emission Fuels** - Scale up production of green hydrogen, ammonia, and biofuels. Currently, >95% of global zero-emission fuel projects are at the planning or pre-investment stage.
2. **Strengthen Regulatory Frameworks** - Implement IMO's Net-Zero Strategy and carbon pricing (\$100/tonne CO₂) without further delay. Introduce national-level incentives and fiscal support to encourage private participation.
3. **Develop Infrastructure** - Upgrade ports and refueling networks to handle alternative fuels. India targets 60% renewable port energy by 2030 and 90% by 2047.
4. **Promote Technological Innovation** - Encourage energy-efficient ship design, wind-assisted propulsion, hybrid engines, and AI-based route optimization. Achieve 40% reduction in carbon intensity by 2030 as per IMO roadmap.
5. **Strengthen Global Cooperation** - Encourage coordination between major emitters like the U.S., China, EU, and India. Ensure policy harmonization to prevent trade distortion and protect developing economies.

Source - <https://www.thehindu.com/sci-tech/energy-and-environment/countries-vote-to-delay-implementation-of-carbon-free-shipping-plan/article70179200.ece>