

Decarbonising Maritime Industry

Mains Syllabus: GS II - Important International institutions, agencies and fora- their structure, mandate; GS III- Infrastructure: Energy, Ports, Roads, Airports, Railways etc. & environmental pollution and degradation.

Why in the News?

Recently, International Maritime Organization (IMO) has approved net-zero regulations for global shipping

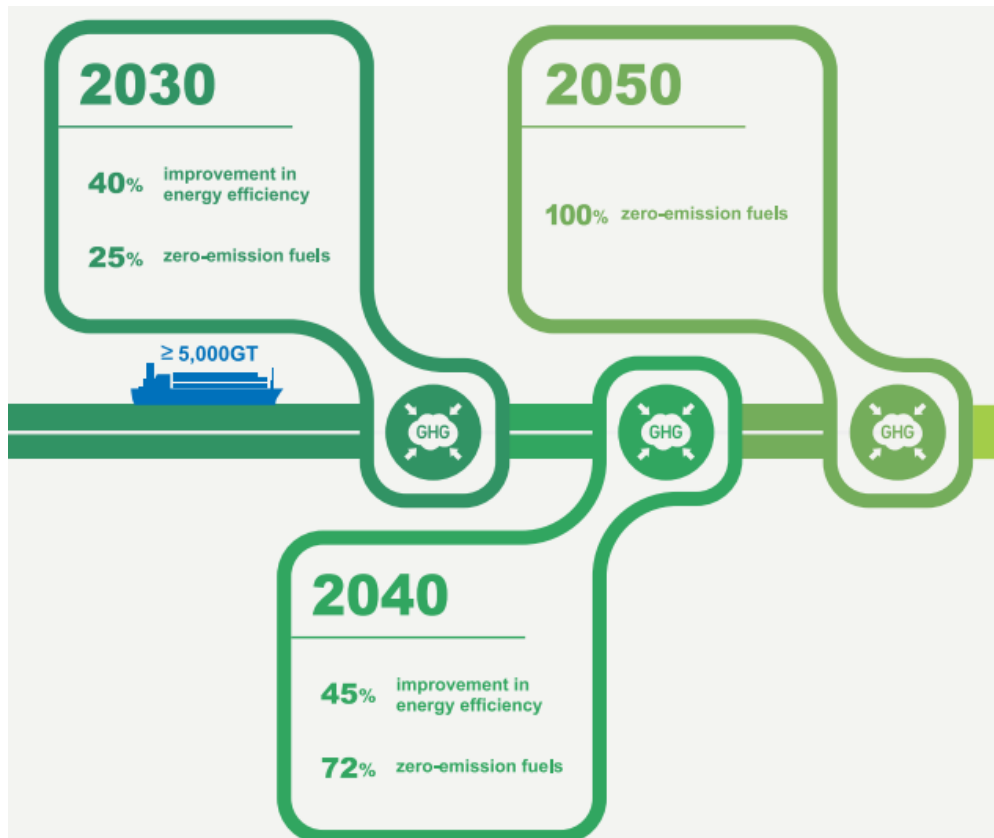
What are the importances of controlling global shipping emission?

- **Shipping Emissions** - The sector emits approximately one billion metric tonnes of GHG each year, representing about 2.8% of total global emissions.
- If ranked as a country, international shipping would be the sixth-largest emitter in the world, between Germany and Japan.
- **Future Increase** - Projections indicate that, without corrective action, emissions from shipping could rise by as much as 50 to 250% by 2050.
- **International Emission Targets** - To align with the 13th UN Sustainable Development Goal as well as the Paris Agreement.

Sustainable Development Goal (SDG) 13, "Climate Action," aims to take urgent action to combat climate change and its impacts.

What are the measures taken by IMO to reduce shipping emission?

- **The MARPOL convention** - The International Convention for the Prevention of Pollution from Ships, is a major international treaty aimed at preventing pollution of the marine environment by ships.
- It was adopted at the International Maritime Organization (IMO) in 1973.
- **IMO GHG Strategy** - IMO began implementing emissions-reduction measures in 2011, followed by the Initial GHG Strategy in 2018.
- **IMO GHG Strategy in 2023** - It aims at reaching net-zero GHG emissions by or around 2050.



- **Ship Energy Efficiency Management Plan** - It is a mandatory, ship-specific plan designed to improve the energy efficiency of a vessel.
 - All ships of 400 gross tonnage (GT) and above engaged in international voyages are required to develop and maintain a SEEMP.
- **Energy Efficiency Design Index** - It is an important technical measure aiming at promoting the use of more energy efficient equipment and engines for the design of new ships in order to make them less polluting.

What is the IMO Net Zero framework?

- **IMO Net Zero Framework** - This is the first in the world to combine mandatory emissions limits and GHG pricing across an entire industry sector.
- **Adoption and Enforcement** - These measures are set to be formally adopted in October 2025 before entry into force in 2027.
- **Applicability** - They will be applicable to large ocean-going ships over 5,000 gross tonnage.
- This category ships account for 85% of the total CO₂ emissions from international shipping.
- **MARPOL Convention** - The IMO Net-Zero Framework will be included in the International Convention for the Prevention of Pollution from Ships (MARPOL).

What are the features of IMO framework?

- The framework combines mandatory emissions limits and GHG pricing across an entire industry sector.
- The measures include a new fuel standard for ships and a global pricing mechanism for emissions

- **Global fuel standard** - Ships must reduce, over time, their annual greenhouse gas fuel intensity (GFI) – that is, how much GHG is emitted for each unit of energy used.
- **Global economic measure** - Ships emitting above GFI thresholds will have to acquire remedial units to balance its deficit emissions.
- Those using zero or near-zero GHG technologies will be eligible for financial rewards.
- **Ensuring compliance** - Ships that emit above the set thresholds can balance their emissions deficit by:
 - Transferring surplus units from other ships
 - Using surplus units they have already banked
 - Using remedial units acquired through contributions to the IMO Net-Zero Fund.
- **MO Net-Zero Fund** - The IMO Net-Zero Fund will be established to collect pricing contributions from emissions.

What are the potential impacts for India?

- **Initial Short-Term Challenges** - While the carbon levy and GHG targets set by the IMO may pose short-term challenges for certain sectors of the Indian economy, India is likely to emerge as a long-term beneficiary of the new framework.
- **Moderate impact on Logistics Cost** - According to the United Nations Conference on Trade and Development, the impact on India's maritime logistics costs will be modest in the near term — ranging from 4.98 to 7.29% on imports and 5.92 to 8.09% on exports by 2030.
- **No Impact on Coastal Fleet** - Since the new framework applies only to international shipping, India's coastal fleet remains unaffected.

India currently operates nearly 236 ships over 5,000 gross tonnage, with only 135 involved in international voyages.

- **Increase in Fuel Cost** - At present, India spends roughly \$400 million per year on fuel for its international fleet.
- The new targets are projected to increase this by approximately \$108 million by 2030.
- **Boost to Green Energy Export** - India is now investing heavily in green hydrogen through its National Hydrogen Mission and three Indian ports are preparing to offer green hydrogen bunkering services.
- This alignment creates a significant opportunity for India to export green fuels globally and capitalise on international incentives.

Conclusion

- Global shipping now stands at a transformative moment.
- Despite persistent disagreements and uncertain implementation pathways, the adoption of the framework represents a milestone in the journey toward decarbonisation.
- If successful, this framework could make shipping the first truly global sector to operate under binding climate goals, setting a powerful precedent for others to follow.

Reference

