

# CHARTING A GREENER COURSE: THE 2023 IMO STRATEGY FOR NET-ZERO EMISSIONS IN INTERNATIONAL SHIPPING

## MAIN

International Maritime Organization (IMO)  
Member States meeting in the Marine  
Environment Protection Committee (MEPC) in  
July 2023 welcome the adoption of the 2023  
IMO GHG Strategy





**Rakin Rahman**, Staff Reporter, Port Technology International, interviewing **Roel Hoenders**, Head Air Pollution and Energy Efficiency, Marine Environment Division, IMO

**Could you touch on some of the key aspects of your plan to achieve net-zero by 2050 alongside any limiting factors to this endeavour?**

On 7 July 2023, International Maritime Organization (IMO) Member States meeting in the Marine Environment Protection Committee (MEPC) adopted the "2023 IMO Strategy on Reduction of GHG Emissions from Ships" (2023 IMO GHG Strategy), with enhanced targets to tackle harmful emissions.

The 2023 IMO GHG Strategy represents the continuation of work by IMO as the appropriate international body to address greenhouse gas (GHG) emissions from international shipping.

**Vision**

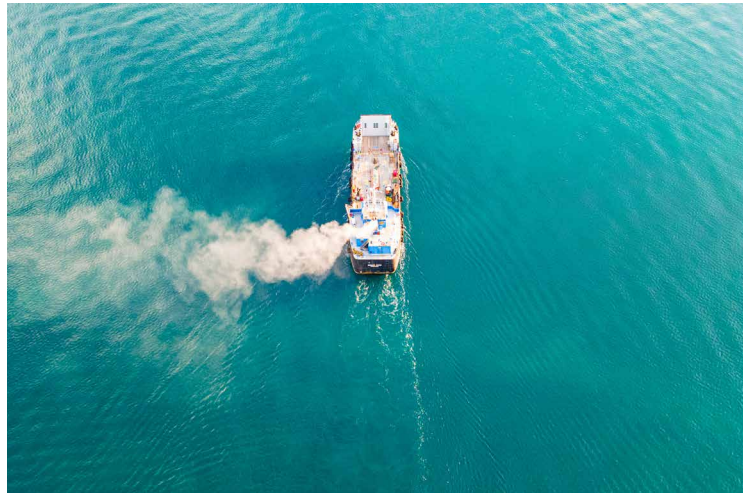
IMO remains committed to reducing GHG emissions from international shipping and, as a matter of urgency, aims to phase them out as soon as possible while promoting, in the context of this Strategy, a just and equitable transition.

**Levels of ambition**

Levels of ambition directing the 2023 IMO GHG Strategy include:

1. carbon intensity of the ship to decline through further improvement of the energy efficiency for new ships to review with the aim of strengthening the energy efficiency design requirements for ships;
2. carbon intensity of international shipping to decline to reduce CO2 emissions per transport work, as an average across international shipping, by at

**RIGHT**  
Global shipping spews out 3 per cent of worldwide GHG



- least 40 per cent per cent by 2030, compared to 2008;
3. to increase uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources to represent at least 5 per cent, striving for 10 per cent, of the energy used by international shipping by 2030; and
4. to peak GHG emissions from international shipping as soon as possible and to reach net-zero GHG emissions by or around, i.e. close to, 2050, taking into account different national circumstances, whilst pursuing efforts towards phasing them out as called for in the Vision consistent with the long-term temperature goal set out in Article 2 of the Paris Agreement.

**Indicative checkpoints**

Indicative checkpoints to reach net-zero GHG emissions from international shipping are:

1. to reduce the total annual GHG emissions from international shipping by at least 20 per cent, striving for 30 per cent, by 2030, compared to 2008; and
2. to reduce the total annual GHG emissions from international shipping by at least 70 per cent, striving for 80 per cent, by 2040, compared to 2008.

**Basket of candidate mid-term GHG reduction measures**

The 2023 GHG Strategy states that a basket of candidate measure(s), delivering on the reduction targets, should be developed and finalised comprised of both:

- a technical element, namely a goal-based marine fuel standard regulating the phased reduction of the marine fuel's GHG intensity; and
- an economic element, on the basis of a maritime GHG emissions pricing mechanism.



The timeline set out in the Strategy envisages an impact assessment of measures proposed. The adoption of mandatory measures is foreseen for 2025.

**For years, the shipping industry, governments and environmental groups have wrangled on how to make the transport of goods by sea greener. Why do you think it has been so difficult to decarbonise the industry?**

The first set of mandatory measures to enhance energy efficiency of ships and therefore reduce emissions were adopted in 2011. They have since been continuously enhanced. IMO has set shipping on a trajectory to be more environmentally-friendly, since it first adopted the MARPOL treaty to prevent pollution from ships in 1973.

There are many ways in which ships can be more fuel efficient, through design, hull cleaning, speed optimisation, on-board technology and so on. Of course, ultimately, full decarbonisation will be achieved

through a switch to low or zero-carbon fuels. This means ensuring that sufficient such fuels are available for ships – which consume some 300 million tonnes of fuel oil a year. This also presents great opportunities for developing countries, in particular, to use abundant solar, wind and hydroelectric power to produce clean fuels.

**With 90 per cent of the world's goods transported by ships, do you think the economic incentives of ensuring the safe transportation of these goods have historically outweighed the environmental concerns?**

IMO has a long track record of regulating international shipping by setting safety and environmental standards addressing all operational pollution of ships. Maritime transports costs and freight rates are subject to constant fluctuations. Regulatory compliance costs are only one of the various cost elements determining economic incentives.

#### ABOVE

International Memorial to Seafarers, IMO Headquarters, London, UK

#### What methods will you employ to actively remove greenhouse gases from the atmosphere?

IMO as an organisation is not involved in directly removing GHG from the atmosphere.

It is worth noting that IMO's treaties, the London Convention and London Protocol, address carbon capture and sequestration in sub-sea geological formations (CCS-SSGF) as a method to reduce pollution from ships. So there is a legal basis in international environmental law to regulate carbon capture and storage in sub-seabed geological formations for permanent isolation. This practice would typically apply to large point sources of CO<sub>2</sub> emissions, including power plants and cement works, but excludes the use of such CO<sub>2</sub> waste streams for enhanced oil recovery.

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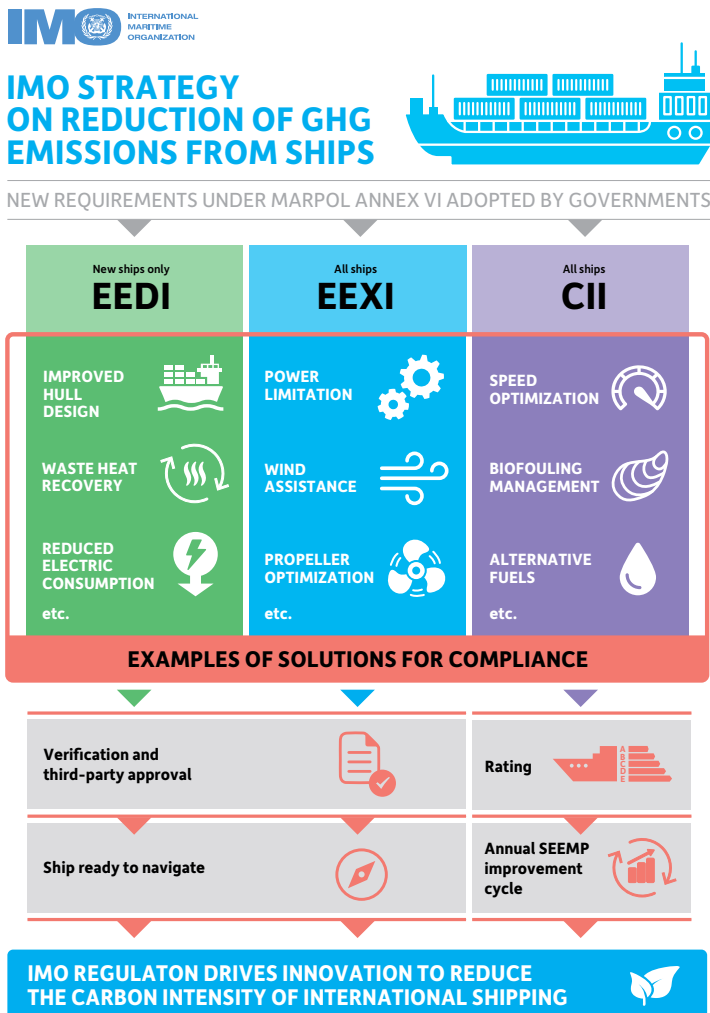
Further, the London Convention/ Protocol address marine geoengineering, which is defined as "a deliberate intervention in the marine environment to manipulate natural processes, including to counteract anthropogenic climate change and/or its impacts, and that has the potential to result in deleterious effects, especially where those effects may be widespread, long-lasting or severe." The London Protocol provides that all ocean fertilisation activities other than those referred to above shall not be permitted. An ocean fertilisation activity may only be considered for a permit if it is assessed as constituting legitimate scientific research taking into account any specific placement assessment framework.

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**“IMO REMAINS COMMITTED TO REDUCING GHG EMISSIONS FROM INTERNATIONAL SHIPPING AND, AS A MATTER OF URGENCY, AIMS TO PHASE THEM OUT AS SOON AS POSSIBLE.”**



**“IMO HAS AN EXTENSIVE PROGRAMME OF SUPPORT TO COUNTRIES TO IMPLEMENT IMO MEASURES. IN THE STRATEGY, THE COMMITTEE RECOGNISES THAT DEVELOPING COUNTRIES, IN PARTICULAR LEAST DEVELOPED COUNTRIES (LDCS) AND SMALL ISLAND DEVELOPMENT STATES (SIDS), HAVE SPECIAL NEEDS WITH REGARD TO CAPACITY-BUILDING AND TECHNICAL COOPERATION. AN APPENDIX PROVIDES AN OVERVIEW OF RELEVANT IMO INITIATIVES SUPPORTING THE REDUCTION OF GHG EMISSIONS FROM SHIPS.”**



LEFT  
IMO strategy on reduction of GHG emissions from ships

**Could it be that some countries are better equipped to accommodate their shipping ports to your targets than others, and what will you do to support them, particularly developing countries?**

IMO has an extensive programme of support to countries to implement IMO measures. In the Strategy, the Committee recognises that developing countries, in particular Least Developed Countries (LDCs) and Small Island Development States (SIDS), have special needs with regard to capacity-building and technical cooperation. An appendix provides an overview of relevant IMO initiatives supporting the reduction of GHG emissions from ships.

These include: the IMO Integrated Technical Cooperation Programme (ITCP); voluntary multi-donor trust fund ("GHG TC-Trust Fund"); the Global Maritime Technologies Cooperation Centres (MTCC) Network (GMN) EU supported project; the Norway supported Green Voyage 2050 project; the GHG-SMART Programme and Future Fuels and Technology for Low- and Zero-carbon Shipping Projects (FFT project) supported by Republic of Korea; the UNDP-GEF GloFouling Partnerships project; the Norway supported TEST Biofouling (Transfer of Environmentally Sound

Technologies) project; the Kingdom of Saudi Arabia-supported IMO CARES (Coordinated Actions to Reduce Emissions from Shipping) Foundation Project; the IMO-UNEP-Norway Innovation Forum; the IMO-EBRD-World Bank co-led Financing Sustainable Maritime Transport (FIN-SMART) Roundtable; and the NextGEN (Green and Efficient Navigation) portal and NextGEN Connect projects.

## READ MORE

**Some countries may rely more on imports and exports for the wellbeing of their economies more so than other countries. How would you go about mitigating this?**

The 2023 IMO GHG Strategy says that the impacts on States of a GHG reduction measure/combination of measures should be assessed and taken into account as appropriate before adopting the measure in accordance with the Revised procedure for assessing impacts on States of candidate measures. Particular attention should be paid to the needs of developing countries, especially LDCs and SIDS.

When assessing impacts on states, the impact of a measure should be considered, as appropriate, inter alia, in the following terms:

- geographic remoteness of and connectivity to main markets;
- cargo value and type;
- transport dependency;
- transport costs;
- food security;
- disaster response;
- cost-effectiveness; and
- socio-economic progress and development.

Disproportionately negative impacts should be assessed and addressed, as appropriate.

The Procedure for assessing impacts on States of candidate measures for reduction of GHG emissions from ships ([MEPC.1/Circ.885/Rev.1](#)) identifies four steps:

- **Step 1:** initial impact assessment, to be submitted as part of the initial proposal to the Committee for candidate measures;
- **Step 2:** submission of commenting document(s), if any;
- **Step 3:** comprehensive response, if requested by commenting document(s); and
- **Step 4:** comprehensive impact assessment, if required by the MEPC.

Impact assessments should be evidence-based and should take into account, as appropriate, analysis tools and models, such as, cost-effectiveness analysis tools, e.g. maritime transport cost models, trade flows models, impact on Gross Domestic Product (GDP); updated Marginal Abatement Cost Curves (MACCs); and economic trade models, transport models and combined trade-transport models.

**In the recent MEPC 80 session it was mentioned that before 2050 there will be periodic checkpoints between 2030 and 2040. What will these checkpoint signify and how will it be measured?**

The indicative checkpoints in the 2023 IMO GHG Strategy to reach net-zero GHG emissions from international shipping are as follows:

1. to reduce the total annual GHG emissions from international shipping by at least 20 per cent, striving for 30 per cent, by 2030, compared to 2008; and
2. to reduce the total annual GHG emissions from international shipping by at least 70 per cent, striving for 80 per cent, by 2040, compared to 2008.

The 2023 GHG Strategy makes reference to future annual IMO emission and carbon intensity estimates using the available data from the IMO Ship Fuel Oil Consumption Database (IMO DCS) and other relevant sources.

## ABOUT THE AUTHOR :

Roel Hoenders is Head of the Air Pollution and Energy Efficiency team in the Marine Environment Division of the IMO Secretariat. He is responsible for IMO's regulatory agenda on the reduction of atmospheric pollution from ships in line with MARPOL Annex VI and the implementation of the IMO GHG Strategy. Prior to joining the IMO Secretariat, Roel worked as Legal Expert and Policy Officer on defining EU clean air and renewable energy policies in the Directorate-General for Environment of the European Commission and on promoting sustainable shipping in the environment department of the European Maritime Safety Agency (EMSA). In earlier functions at the European Sea Ports Organization (ESPO) and DHL Netherlands he advised on corporate climate and sustainability strategies.

## ABOUT THE ORGANISATION :

The IMO is a specialised agency of the United Nations which is responsible for measures to improve the safety and security of international shipping and to prevent pollution from ships. It is also involved in legal matters, including liability and compensation issues and the facilitation of international maritime traffic. It was established by means of a Convention adopted under the auspices of the United Nations in Geneva on 6 March 1948 and met for the first time in January 1959.