

# Recent developments made by IMO in respect of protection of the marine environment

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## Outline

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- Presentation of IMO technical bodies
- Overview of MEPC current topics /  
Summary of MEPC 71
- Focus on IMO's discussions on GHG emissions and energy efficiency



## IMO bodies

### Marine Environment Protection Committee (MEPC)

IMO's senior technical body on marine pollution related matters

### Sub-Committee on Pollution Prevention and Response (PPR)

Prevention and control of pollution of the marine environment (including air pollution); recycling of ships; evaluation of safety and pollution hazards of liquid substances in bulk transported by ships; control and management of harmful aquatic organisms in ballast water and biofouling; pollution preparedness, response and cooperation for oil, hazardous and noxious substances

### Sub-Committees under MEPC and MSC

Implementation of IMO Instruments (III), Carriage of Cargoes and Containers (CCC)

### Intersessional working groups and correspondence groups

Correspondence groups: Review of the status for implementation of the EEDI, Fuel oil quality, etc.  
Intersessional meetings: ISWG-GHG, ESPH-WG, Sulphur Cap WG

# Overview of MEPC current topics

## Summary of MEPC 71

- Ballast water management
- Special areas and PSSAs
- Use and carriage of HFO in the Arctic
- Pollution prevention, preparedness and response
- Technical cooperation activities
- Air pollution
- Energy efficiency
- Greenhouse gas emissions



## Ballast water management

### Outcome of MEPC 71

Approved amendments to the BWM Convention circulated upon entry into force (8 September) for adoption at MEPC 72

Review of BWMS approval framework	<ul style="list-style-type: none"><li>Approval of the mandatory <i>Code for approval of ballast water management systems</i></li><li>Consequential amendments to regulations A-1 and D-3; and to the Guidelines on scaling and type approval of BWMS (BWM.2/Circ.33 and BWM.2/Circ.43)</li></ul>
Timeline for implementation of BW treatment	<ul style="list-style-type: none"><li>Approval of draft amendments to regulation B-3 and associated draft resolution</li><li>Resolution MEPC.287(71) adopted with a view to facilitating the smooth and uniform implementation of the amendments</li></ul>
Experience-building phase	<ul style="list-style-type: none"><li>Resolution MEPC.290(71) adopted; commencement of data gathering encouraged, in anticipation of the future approval of a data gathering and analysis plan</li></ul>
Survey and certification	<ul style="list-style-type: none"><li>Ill 4 instructed to incorporate the Interim Survey Guidelines (BWM.2/Circ.7) in the next edition of the HSSC Guidelines, with a view to adoption at A 30</li><li>Approval of draft amendments to regulations E-1.1.5, E-5.8 and E 5.9.1</li></ul>
Other revised and new guidelines	<ul style="list-style-type: none"><li>Revision of Guidelines on ballast water exchange (G6) and risk assessment (G7)</li><li>Approval of various new or revised guidances, including on contingency measures</li></ul>
Other matters	<ul style="list-style-type: none"><li>Approval of BWMS; revision of the GESAMP-BWWG Methodology; consideration of possible amendments to Procedure (G9); etc.</li></ul>

## Special Areas, ECAs and Particularly Sensitive Sea Areas

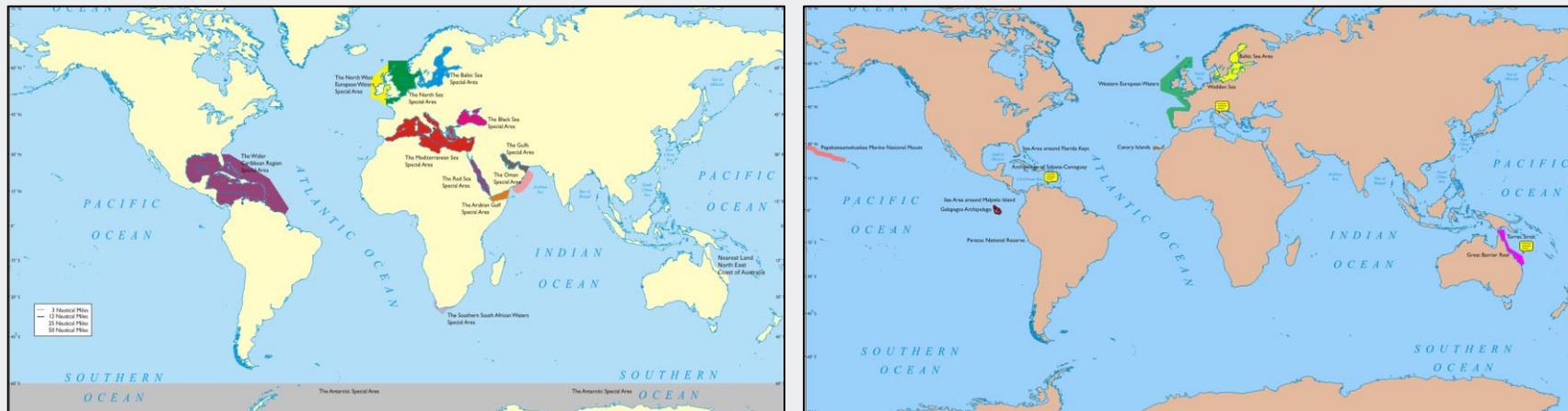
### Special areas and ECAs - higher level of protection (designated under MARPOL)

- for technical reasons relating to oceanographical and ecological conditions and sea traffic

### PSSAs - special protection through action by IMO

- due to significance for recognized ecological, socio-economic or scientific attributes vulnerable to damage by international shipping activities
- associated protective measures adopted by MSC

**14 PSSAs (including 2 extensions) currently in existence globally**



## Special Areas and Particularly Sensitive Sea Areas

### Recent developments

- Effective dates for the Baltic Sea Special Area under MARPOL Annex IV (Prevention of pollution from sewage) established at MEPC 69
- New PSSA, Tubbataha Reefs Natural Park in the Philippines, designated at MEPC 71, bringing the total number of PSSAs to 15
- Current list of special areas, ECAs and PSSAs issued as MEPC.1/Circ.778/Rev.2



## Measures to reduce risks of use and carriage of HFO in the Arctic

### Protecting the Arctic from heavy fuel oil – work to begin at MEPC 72

- MEPC 71 agreed new output on “Development of measures to reduce risks of use and carriage of heavy fuel oil (HFO) as fuel by ships in Arctic waters” and included it in MEPC 72 agenda (April 2018)
- Member Governments and international organizations invited to submit concrete proposals on what type of measures should be developed, including scope of the work, to MEPC 72, so that clear instructions can be given to PPR 6 (early 2018) which will carry out the detailed technical work
- Use and carriage of HFO is banned in Antarctic waters under MARPOL; Polar Code recommends that States follow same practice in Arctic



## Pollution preparedness and response

### Global framework for international cooperation

Despite effective prevention measures such as those established through MARPOL, accidents still occur, in which case a good level of preparedness to effectively respond is key

- The International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC) and OPRC–HNS Protocol



## Pollution preparedness and response

### Guidelines and tools completed recently or currently under development



#### Completed at PPR 4 and approved at MEPC 71

- Update of IMO OPRC Model Training Courses



#### To be considered at PPR 5 (February 2018)

- Part IV (Sub-sea dispersant application) of the *Guidelines for the use of dispersants for combating oil pollution at sea* (IMO Dispersant Guidelines)
- Practical guidelines on the effective implementation of the OPRC Convention and OPRC-HNS Protocol

### Current OPRC related technical cooperation projects

- Global Initiative Programme: Partnership between IMO and IPIECA to enhance the capacity to prepare for and respond to marine oil spills in West and Central Africa (GI WACAF) and South East ASIA (GI SEA).
- NORAD Project to enhance regional cooperation in marine pollution preparedness and response in the SACEP region.
- Support to implementation of Aktau Protocol to enhance regional cooperation in the Caspian Sea.

## Technical cooperation activities

### Major projects on environmental topics in support of developing countries



- GloBallast, GEF-UNDP-IMO project to assist developing countries to reduce the transfer of harmful aquatic organisms in ships' ballast water ended on 30 June 2017 with a "Highly Satisfactory" rating from GEF and UNDP (the highest rating) after having achieved 100% of all its deliverables



- Safe and environmentally sound ship recycling in Bangladesh – Phase I,
- To improve occupational safety and health, working conditions and environmental protection of ship recycling in Bangladesh (NORAD and BRS funds)
- Timeframe: Jan. 2015 – Oct. 2017; Budget: USD1.5 million



- GEF-UNDP-IMO GloMEEP Project, launched Oct. 2015; Budget: ~ USD2 million
- To build capacity in developing countries for implementing the technical and operational measures for energy-efficient shipping



- IMO-EU Global MTCC Network (GMN) Project, December 2015 – December 2019; Budget: EUR10 million
- To establish 5 Maritime Technology Cooperation Centres (MTCCs) in 5 regions worldwide to promote energy efficient technologies in the maritime sector



- Proposed new project on biofouling (GloFouling) under preparation → global benefits to marine ecosystems and reductions of GHG emissions from shipping
- Building on successful GEF-UNDP-IMO model of GloBallast and GloMEEP

## Air pollution

**Shipping is the most environmentally-friendly means of transport thanks to its efficiency, but it does have significant impact particularly on coastal areas mainly due to the widespread use of heavy fuel oil**

### **Emissions of air pollutants from ships**

- Sulphur oxides (SO<sub>x</sub>)
- Nitrogen oxides (NO<sub>x</sub>)
- Particulate matter (PM)
- Volatile organic compounds (VOC)
- Ozone depleting substances (ODS)

Significant reductions in the emissions of all air pollutants generated on board are possible through the application of an array of abatement technologies and other technical and operational measures



## Air pollution – Fuel oil availability and quality

### Fuel oil availability review

- Review of global sulphur content standard (0.50% m/m) to determine availability of compliant fuel oil (MARPOL Annex VI, regulation 14) completed in 2017.
- MEPC 70 decided that the sulphur content limit for ships' fuel oil of 0.50% m/m shall become effective on 1 January 2020.

### Global sulphur cap implementation

- MEPC 71 agreed scope of work needed to achieve consistent implementation of 0.50% global sulphur cap as suggested by PPR 4.
- MEPC 71 approved holding of an intersessional working group meeting in the second half of 2018 to progress the work.

### Fuel oil quality

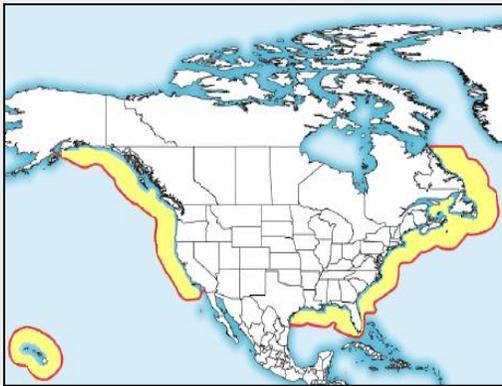
- MEPC 69 established correspondence group to further develop draft guidance on best practice for fuel oil purchasers/users and Member States/coastal States.

### Fuel oil quality correspondence group

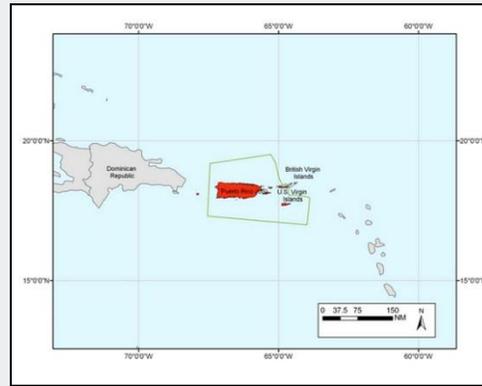
- MEPC 71 further developed draft guidance on best practice for fuel oil purchasers/users, with a view to finalization at MEPC 72.
- Best practice for Member States/coastal States will be finalized at MEPC 73.

## Air pollution – Emission control areas (ECAs)

### Stricter limits for SO<sub>x</sub>, PM and NO<sub>x</sub>

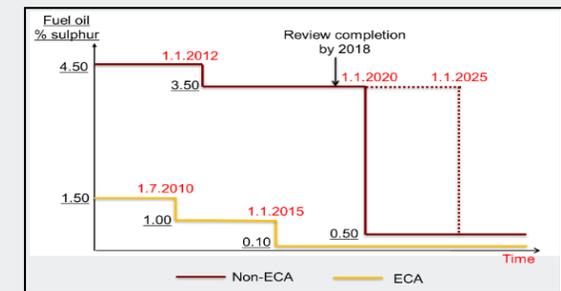


North American and US Caribbean Sea ECAs



North Sea and Baltic Sea ECAs

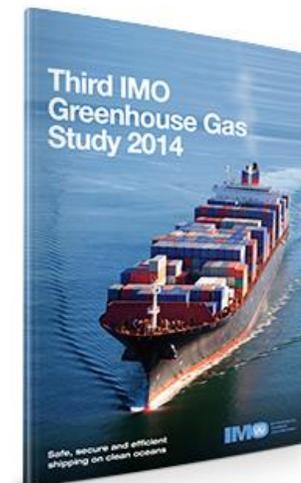
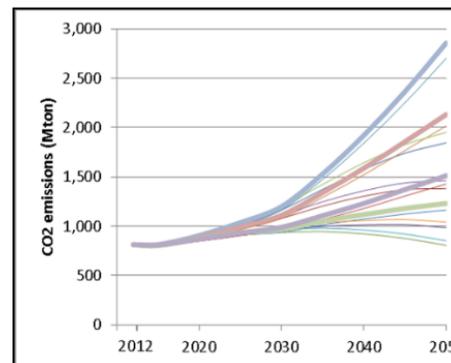
- Compliant fuel oil, e.g. ultra low sulphur fuel oil or marine gas oil
- Equivalents, e.g. exhaust gas cleaning systems (scrubbers)
- Alternative fuels, e.g. gas (dual fuel or gas only), biodiesel, methanol, etc.
- Onshore power supply when at berth in ports



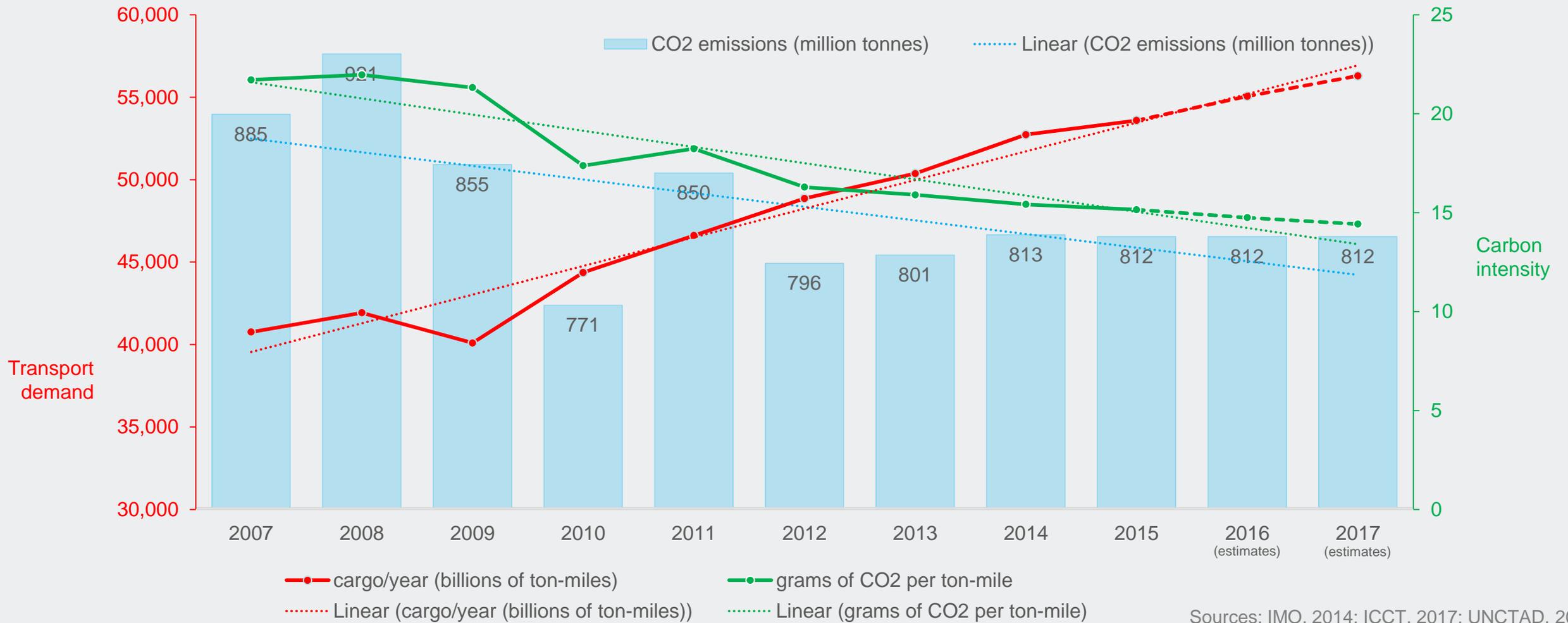
## GHG emissions from ships

### Third IMO GHG Study 2014 approved at MEPC 68

- Shipping CO<sub>2</sub> emissions are projected to increase by 50% to 250% in the period to 2050, depending on future economic and energy developments
- Demand is the primary driver
- Technical and operational efficiency measures can provide significant improvements but will not be able to provide total net reductions if demand continues
- Changes in the fuel mix have a limited impact on GHG emissions



## World seaborne trade and associated CO<sub>2</sub> emissions



Sources: IMO, 2014; ICCT, 2017; UNCTAD, 2017

## Energy efficiency of ships – EEDI and related work

**Shipping is the most efficient means of transport, but there is increased attention on further improving the energy efficiency of ships**

### **Technical tools (new ships)**

- EEDI (Energy Efficiency Design Index)

$$EEDI = \frac{CO_2 \text{ emission}}{\text{transport work}}$$

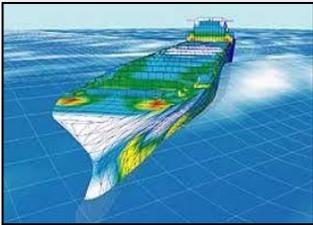
### **Operational tools (existing ships)**

- EEOI (Energy Efficiency Operational Indicator)
- SEEMP (Ship Energy Efficiency Management Plan)

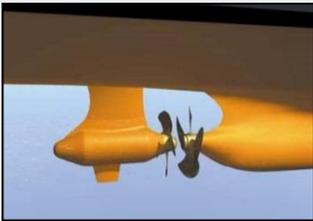
**Goal: Significant reduction of greenhouse gas emissions**

## Energy efficiency of ships – EEDI and related work

### Outcome of MEPC 71



MEPC 71 approved draft amendments to regulation 21 of MARPOL Annex VI regarding EEDI requirements for ro-ro cargo and ro-ro passenger ships, with a view to adoption at MEPC 72.



MEPC 71 also established a correspondence group on review of the Energy Efficiency Design Index (EEDI) beyond Phase 2, to report on progress by MEPC 72 and make a recommendation to MEPC 73 on the time period and reduction rates for EEDI Phase 3 requirements.

## Energy efficiency of ships – Further measures

### Data collection system for fuel consumption adopted at MEPC 70

#### 3-step approach agreed at MEPC 68

**Step 1**  
Data collection

**Step 2**  
Data analysis

**Step 3**  
Decision-making on what further  
measures, if any, are required

**Step 1: Data collection will provide  
basis for objective, transparent and  
inclusive policy debate at MEPC**

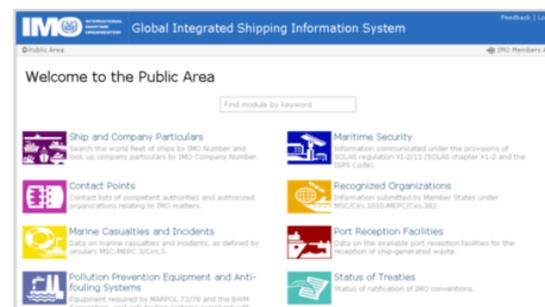
#### Outcomes of MEPC 71

- Adoption of 2017 Guidelines for Administration verification of ship fuel oil consumption data
- Adoption of 2017 Guidelines for the development and management of the IMO Ship Fuel Oil Consumption Database
- Approval of MEPC circular on Submission of data to the IMO data collection system for fuel oil consumption of ships from a State not Party to MARPOL Annex VI

## Energy efficiency of ships – Further measures

### Information to be submitted to the IMO Ship Fuel Oil Consumption Database

- IMO number
- Period of calendar year covered
- Technical characteristics of the ship
- Ship type
- Gross tonnage (GT)
- Net tonnage (NT)
- Deadweight tonnage (DWT)
- Power output (rated power) of main and auxiliary engines (kW)
- EEDI (if applicable)
- Ice class
- Fuel oil consumption, by fuel oil type, in metric tonnes and methods used for collecting fuel oil consumption data
- Distance travelled (over ground), hours underway



## GHG emissions from ships

### Outcome of MEPC 71

- Draft outline of the structure of the initial IMO GHG Strategy (following the Roadmap for developing a comprehensive IMO Strategy agreed at MEPC 70)
  1. Preamble/introduction/context/objectives including emission scenarios
  2. Vision
  3. Levels of ambition  
Guiding principles
  4. List of candidate short-, mid- and long-term further measures with possible timelines and their impacts on States
  5. Barriers and supportive measures; capacity building and technical cooperation; R&D
  6. Follow-up actions towards the development of the revised Strategy
  7. Periodic review of the Strategy
- Terms of reference for ISWG-GHG 2 and ISWG-GHG 3

## Focus on IMO's discussions on GHG emissions and energy efficiency

### Outcome of ISWG-GHG 2 (23-27 October 2017)

- ISWG-GHG 2 has made progress in starting to shape a draft initial IMO GHG Strategy including refining the **vision** for IMO, which will express IMO's further commitment to reducing GHG emissions from international shipping.
- While the structure of the Strategy has been largely agreed, the detailed text to be included is still under discussion.
- The group agreed that candidate short-term measures could be measures finalized and agreed by the Marine Environment Protection Committee (MEPC) between 2018 and 2023; candidate mid-term measures could be measures finalized and agreed by the MEPC between 2023 and 2030; and candidate long-term measures could be measures finalized and agreed by the MEPC beyond 2030.
- Dates of entry into force and when the measure can effectively start to reduce GHG emissions would be defined for each measure individually.
- The group supported the need for early action.



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