

# Seafarers and Energy Efficient ships: One step Ahead!



**MARENER 2017**  
**24<sup>th</sup>. & 25<sup>th</sup>. January 2017**  
**World Maritime University - Malmo**

**Dr Mohab Abou-Elkawam**  
**Liverpool John Moores University**  
**UK**

## Content

**Overview of IMO activities**

**Changes to existing Annex VI Regulations**

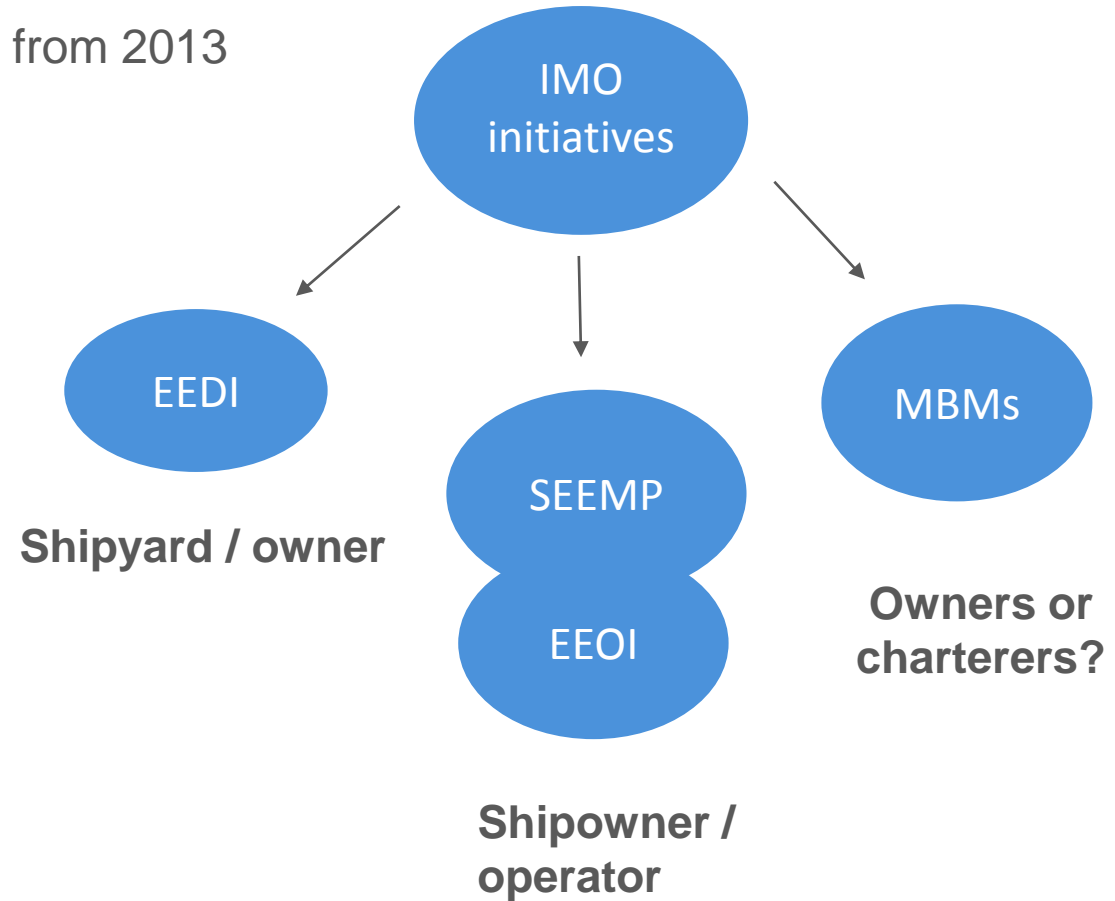
**Regulations on EEDI**

**SEAFARERS' Feedback**

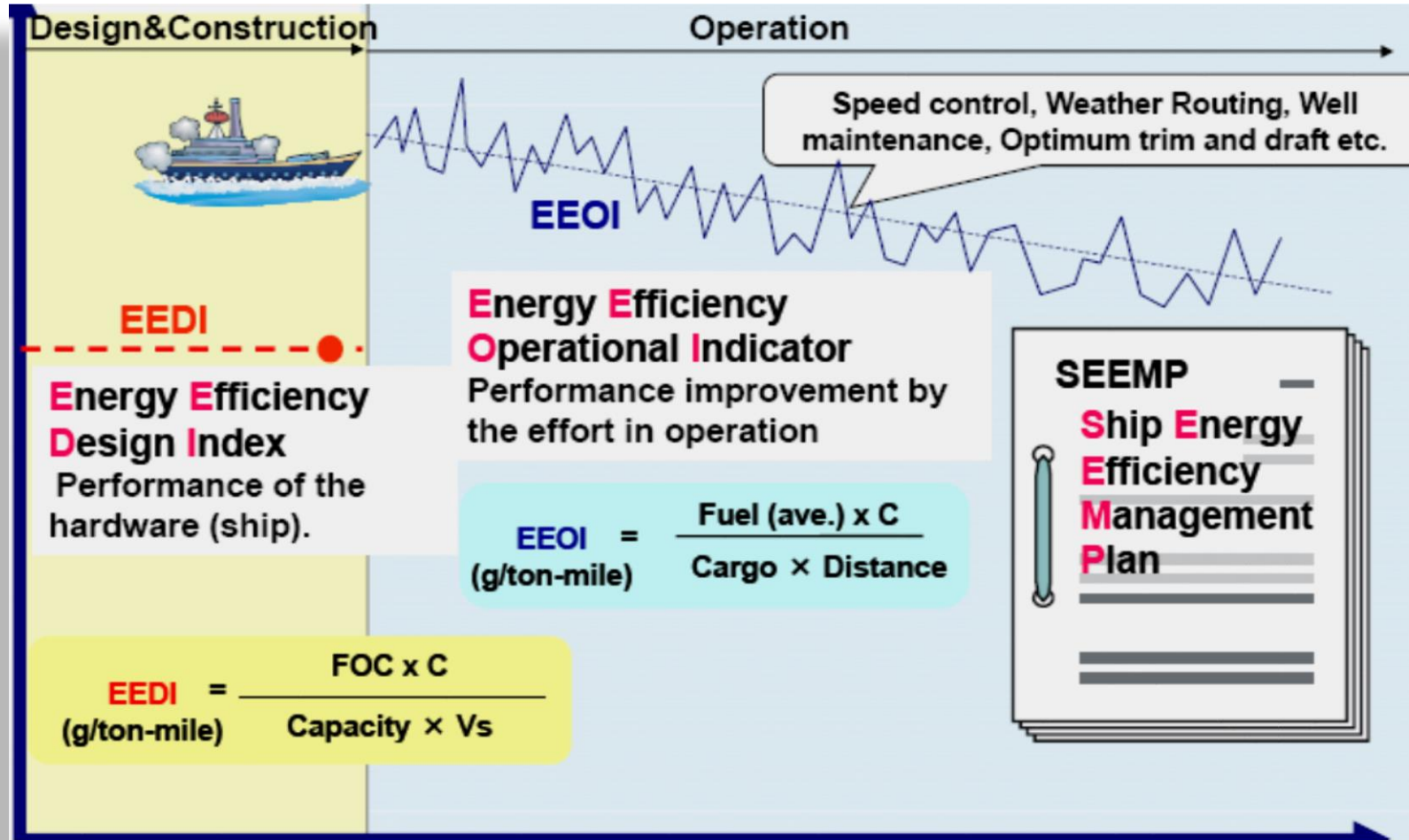
# IMO initiatives for GHG emissions control from ships

1. EEDI and SEEMP: Mandatory from 2013
2. EEOI: Voluntary
3. MBMs: Currently suspended

Data collection system:  
currently under discussion

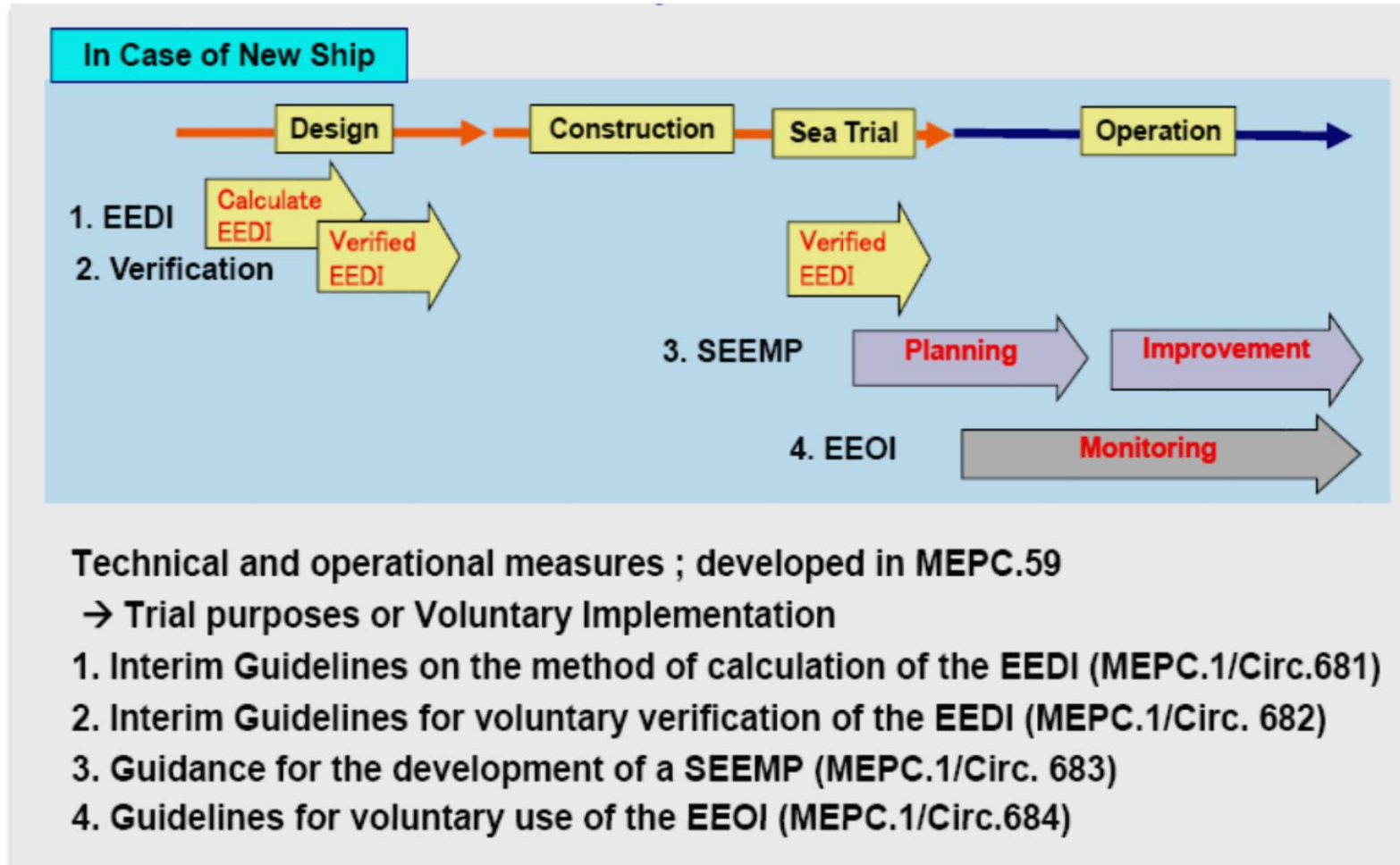


# EEDI, SEEMP and EEOI links





# EEDI, EEOI and SEEMP processes



# Amendments to MARPOL Annex VI as a result of Energy Efficiency Regulations

Relevant IMO MEPC resolutions:

- **MEPC.203(62)**: Inclusion of Chapter 4 regulations, adopted 15 July 2011.
- **MEPC.251(66)**: Further amendments for inclusion of more ships, adopted 4 April 2014.

As a result:

- **Existing Regulations** have been amended, as needed.
- **New Regulations** have been added.

## **Amendments to existing Annex VI Regulations**

# Res. MEPC.203(62) vs Res. MEPC.176(58)

Regulations marked in **RED** have changed as a result of Chapter 4

Resolution MEPC.176(58)	Resolutions MEPC.203(62) & MEPC.251 (66)
<b>Chapter I</b> Reg. 1 Application Reg. 2 Definitions Reg. 3 Exceptions and Exemptions Reg. 4 Equivalentents	<b>Chapter I</b> Reg. 1 Application <b>Reg. 2 Definitions</b> Reg. 3 Exceptions and Exemptions Reg. 4 Equivalentents
<b>Chapter II</b> Reg. 5 Surveys Reg. 6 Issue or endorsement of a Certificate Reg. 7 Issue of a Certificate by another Party Reg. 8 Form of Certificate Reg. 9 Duration and Validity of Certificate Reg. 10 Port State Control on Operational Requirements Reg. 11 Detection of Violations and Enforcements	<b>Chapter II</b> <b>Reg. 5 Surveys</b> <b>Reg. 6 Issue or endorsement of a Certificate</b> <b>Reg. 7 Issue of a Certificate by another Party</b> <b>Reg. 8 Form of Certificate</b> <b>Reg. 9 Duration and Validity of Certificate</b> <b>Reg. 10 Port State Control on Operational Requirements</b> Reg. 11 Detection of Violations and Enforcements



# Ship types definitions (part of Regulation 2)

For Chapter 4, ship types are defined under these Regulations:

- 2.25 Bulk carrier
- 2.26 Gas carrier (none LNG carriers)
- 2.27 Tanker
- 2.28 Container ship
- 2.29 General cargo ship
- 2.30 Refrigerated cargo ship
- 2.31 Combination carrier
- 2.32 Passenger ship
- 2.33 Ro-Ro cargo ships (vehicle carrier)
- 2.34 Ro-Ro cargo ships
- 2.35 Ro-Ro Passenger ship
- 2.38 LNG carrier
- 2.39 Cruise passenger ships
- A number of other clarifications are made under Regulation 2 (ice breaking cargo ship, conventional and non-conventional propulsions ..)

# New Chapter 4 of MARPOL Annex VI Regulations

## Res. MEPC.203(62) vs Res. MEPC.176(58)

Resolution MEPC.176(58)	Resolution MEPC.203(62)
Chapter III Reg. 12 Ozone Depleting Substances Reg. 13 Nitrogen Oxides(NOx) Reg. 14 Sulphur Oxides(SOx) and Particular Matter Reg. 15 Volatile Organic Compounds (VOCs) Reg. 16 Shipboard Incineration Reg. 17 Reception Facilities Reg. 18 Fuel Oil Availability and Quality	Chapter III Reg. 12 Ozone Depleting Substances Reg. 13 Nitrogen Oxides(NOx) Reg. 14 Sulphur Oxides(SOx) and Particular Matter Reg. 15 Volatile Organic Compounds(VOCs) Reg. 16 Shipboard Incineration Reg. 17 Reception Facilities Reg. 18 Fuel Oil Availability and Quality
	Chapter IV Reg. 19 Application Reg. 20 Attained EEDI Reg. 21 Required EEDI Reg. 22 SEEMP Reg. 23 Promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships
Appendix I ~VI	Appendix I ~VI Appendix VIII Form of International Energy Efficiency(IEE) Certificate

## Regulation 19 - Application

## Regulation 19 - Applications

- This chapter shall apply to all ships of 400 gross tonnage and above.
- The provisions of this chapter **shall not apply** to:
  - Ships solely engaged in voyages within waters of Flag State.
  - However, each Party should ensure ...that such ships are constructed and act in a manner consistent with chapter 4, so far as is reasonable and practicable.
- Regulations 20 and 21 shall not apply to ships which have **non-conventional propulsion**, except cruise passenger ships and LNG carriers having conventional or non-conventional propulsion, delivered on or after 1 September 2019.

## Regulation 19 – Application (Waiver)

- ... the Administration may waive the requirement for a ship ... from complying with regulation 20 and regulation 21.
- The provision of the above shall not apply to ships with:
  - Contract date 1 January 2017.
  - Keel laying 1 July 2017
  - Delivery date of 1 July 2019.
- The above implies that waiver is only for 4 years.
- The Administration of a Party ... which allows application of waiver ... to a ship .... shall communicate this to the Organization for circulation to the Parties ...



**Seafarers' Views !**

# We Need to Know More !

- The First phase of a qualitative enquiry covering active seafarers resulted in the following initial findings:
  - Senior Ranks ( Masters – Cos – CEs):
    - \* Clear ambivalence about means of balancing between commercial pressures and energy efficient measures on-board existing ships.
    - \* A notable lack of understanding regarding the design elements of new ships that can contribute to achieving MARPOL's annex six future standards.

- Junior Ranks:
  - - A dominant concern regarding the added daily compliance duties resulting from the implementation of the chapter four measures and the ability to avoid sanctions and detentions once enforcement dates approach.

# Food for thought !!

- The pending question(s) remain:
- Can we train our current and future seafarers to deal with this evolving demand?
- Will seafarers be able to squeeze these added compliance tasks efficiently within their busy daily schedule?
- More importantly, are they happy to do that?

# The Ongoing Study !

- As this is a longitudinal study focusing on MARPOL annex six evolution and development over the next 3 years, the sample size of respondents will be increased to cover different strands of flags , shipping companies , and geographic areas of trade to verify the response to what is already enforced and explore the perceptions and plans for getting ready for what is still in the pipeline !

Thank you

QUESTIONS ?

Dr Mohab Abouelkawam