



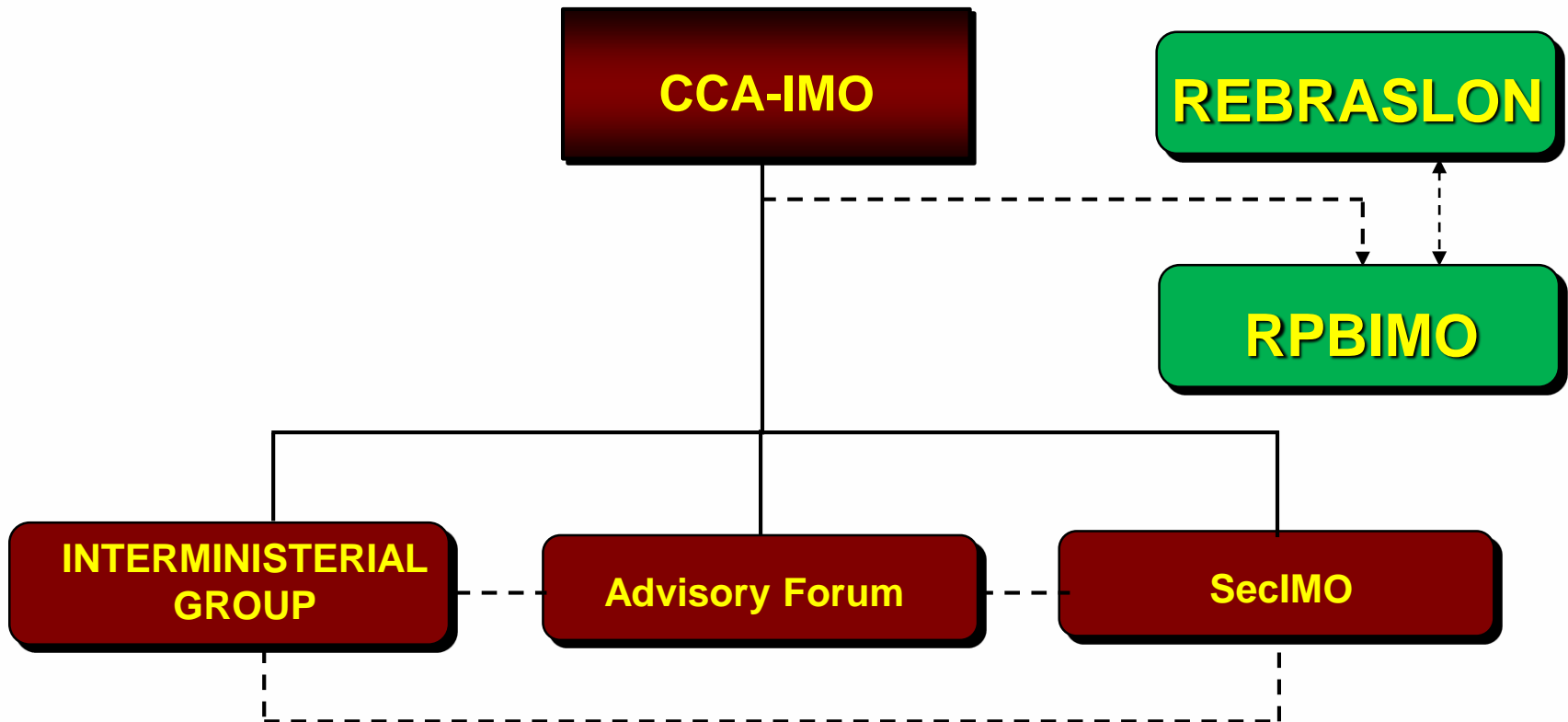
**IMO**

*Energia em Transição: Infraestrutura e Distribuição  
de Combustíveis Marítimos no Brasil em  
Conformidade com a IMO 2020*

*Painel 6: A Qualidade dos Combustíveis Novos e  
Existentes e Manutenção da Conformidade com  
2020 - Aplicação nos Portos Brasileiros*

*Comandante Fernando*





## SUMMARY

- ❖ Motivation
- ❖ National and international regulation
- ❖ Implementation
- ❖ Challenges
- ❖ Prospects
- ❖ Conclusion

Source: Maritime Connector



## Motivation

- ❖ SO<sub>2</sub> (sulfur dioxide) e SO<sub>3</sub> (sulfur tri oxide)
- ❖ SO<sub>2</sub> + pollutants = Particulate matter
- ❖ SO<sub>2</sub> e SO<sub>3</sub> - Respiratory morbidity/airway inflammation
- ❖ Particulate matter – cardiovascular diseases
- ❖ Asthmatics, children and the elderly

Source: Marine Insight



## Motivação

- ❖ Ocean Acidification
- ❖ Drop in atmospheric visibility
- ❖ Damage to agribusiness (fall in yield and growth period)
- ❖ Acceleration of corrosion on concrete, metal and limestone surfaces (buildings)

Source: WorldAtlas.com

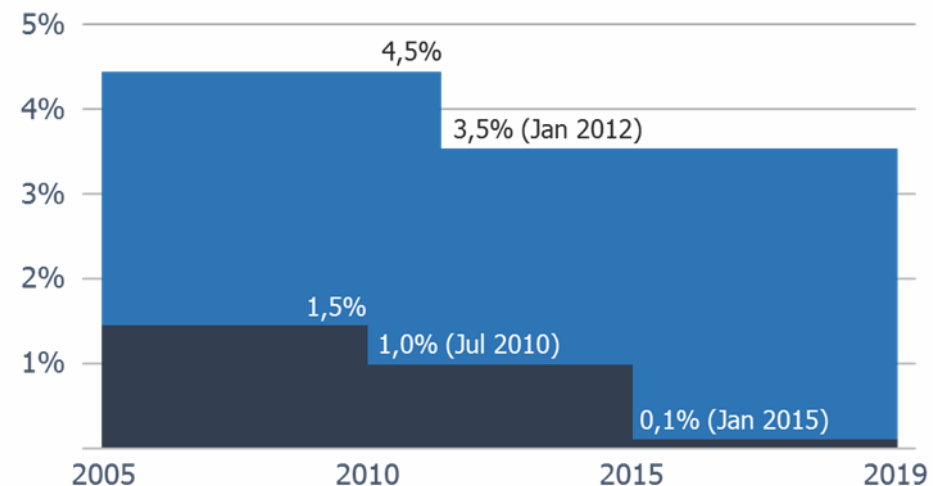


## National and international regulation (international)

- ❖ Regulation 14.3 “0.50% m/m on and after 1 January 2020”
- ❖ Regulation 14.8 review
- ❖ Regulation 14.9 Group of experts

- ❖ Regulation 18

Availability and quality



## National and international regulation (international)

- ❖ **MEPC 68/21** (May 2015) – “3.45 Consequently, the Committee considered the establishment of a **Steering Committee** (and its terms of reference) as the de facto "group of experts" required by Regulation **14.9 of MARPOL Annex VI** to develop the appropriate information to inform the decision to be taken by the Parties and noted that all delegations that expressed a view on the establishment of a Steering Committee supported the proposal.”



## National and international regulation

### (international)

❖ **MEPC 70/5/3** (October 2016) Annex - Delft Consortium Study - 5.8 Conclusions for 2020 – “The modelling results indicate that the refinery industry can produce **sufficient amounts** of marine fuels of the required quality in the base case, the high case and the low case while **at the same time supplying other sectors** with the petroleum products they require.”



## National and international regulation (international)

❖ **MEPC 70/18** (October 2016) 5.49 “1 MEPC 70/5/6 containing the final report of the Steering Committee for the review of fuel oil availability and setting out that:

.1 the Steering Committee, by **majority with some dissension**, agreed that the assessment of fuel oil availability meets the terms of reference;

.2 the majority consensus was that the assessment carried out by the contractor (CE Delft Consortium) shall inform the decision to be taken regarding the implementation of the global 0.50% sulphur cap; and

.3 therefore, the assessment must be considered to be complete and eligible for submittal to MEPC 70;”

## National and international regulation (international)

❖ MEPC 70/18/Add.1 Annex 6 (Nov 2016) - Resolution MEPC.280(70)

“...NOTING that an assessment of fuel oil availability has been completed to inform the decision to be taken by the Parties to MARPOL Annex VI in accordance with regulation 14.10 of MARPOL Annex VI,

HAVING CONSIDERED, at its seventieth session, based on the aforementioned assessment of fuel oil availability, whether it is possible for ships to comply with the implementation date in regulation 14.1.3 of MARPOL Annex VI,

1 DECIDES that the fuel oil standard in regulation 14.1.3 of MARPOL Annex VI shall become effective on 1 January 2020...”

## National and international regulation (international)

- ❖ Appendix VI **Regulation 18.3** – Fuel oil for combustion purposes delivered to and used on board ships to which this annex applies shall meet the following requirements:
  - ❖ 3.1 except as provided in paragraph 3.2 of this regulation: (blend of hydrocarbons/free from inorganic acid/not include substance...**jeopardizes safety, harmful to personnel or contribute to air pollution**)
  - ❖ 3.2 fuel oil for combustion purposes derived by methods other than petroleum refining shall not: ... **jeopardizes safety, harmful to personnel or contribute to air pollution**

## National and international regulation (international)

- ❖ Appendix VI Fuel verification procedure for MARPOL Annex VI fuel oil samples (**Regulation 18.8.2**) 10 Appendix VI is **replaced with the following**: "Verification procedures for a MARPOL Annex VI fuel oil sample (regulation 18.8.2 or regulation 14.8)
- ❖ Part 1 – sample of fuel oil delivered in accordance with regulation 18.8.1, hereafter referred to as the "**MARPOL delivered sample**" as defined in regulation 2.54.
- ❖ Part 2 – sample of fuel oil in use, intended to be used or carried for use on board in accordance with regulation 14.8, hereafter referred to as the "**in-use sample**" as defined in regulation 2.55 and "**on board sample**" as defined in regulation 2.56.



## National and international regulation (national)

- ❖ MARITIME AUTHORITY STANDARDS 01/DPC
- ❖ MARITIME AUTHORITY STANDARDS 06/DPC

## Implementation (internacional)

❖ **MEPC 72/5/2** – (April de 2018) A letter was received by the Secretariat on 19 January 2018 from the convenor of **ISO/TC 28/SC 4/WG 61**, which identifies that:

.1 ISO recognizes the need for concerted action to ensure that the **quality of marine fuel oils** during the **transition** and implementation of the maximum **0.50% m/m** of Sulphur content does not result in causing any elevated risks to ships;...

.4 ISO has initiated the process to develop an ISO **Publicly Available Specification (PAS)** to provide detailed guidance to fuel suppliers and users to ensure a smooth transition to maximum 0.50% Sulphur content fuel oils and working closely with **CIMAC WG 72** on Fuels to develop guidelines related to fuel quality and operational aspects to ensure safe operations beyond 1 January 2020.

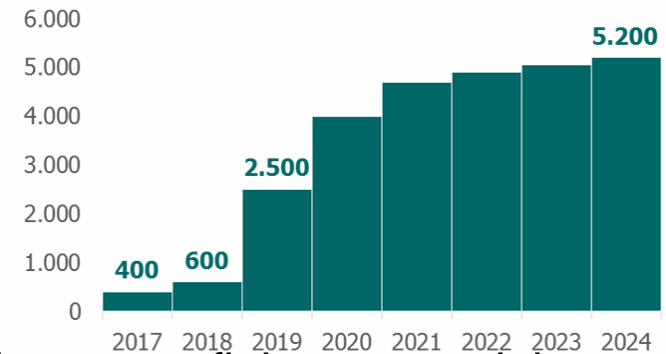
## Implementation (international)

- ❖ **MARPOL ANEXO VI** “Regulation 1 (application) The provisions of this Annex shall **apply to all ships**, except expressly otherwise in regulations 3,5,6,13, 15, 16, 18, 19, 20, 21 and 22 of this Annex.”
- ❖ **MARPOL ANEXO VI** “Regulation 1 (application) The provisions of this Annex shall **apply to all ships**, except where expressly provided otherwise”.

Fonte: epe/MME

## Implementation (international)

### ❖ Regulation 4 (Annex VI) Equivalentents



1 The Administration of a Party may allow any fitting, material, appliance or apparatus to be fitted in a ship or other procedures, alternative fuel oils, or compliance methods used as an alternative to that required by this Annex if such fitting, material, appliance or apparatus or other procedures, alternative fuel oils, or compliance methods are **at least as effective** in terms of emissions reductions as that **required by this Annex**, including any of the standards set forth in regulations 13 and 14.



## Implementation (international)

- ❖ [Resolution MEPC.184\(59\)](#) 2009 GUIDELINES FOR EXHAUST GAS CLEANING SYSTEMS (**17 JUL 2009**)
- ❖ [Resolution MEPC.259\(68\)](#) 2015 GUIDELINES FOR EXHAUST GAS CLEANING SYSTEMS (**15 MAY 2015**)
- ❖ [Resolution MEPC.259\(68\)](#) - Whaswater discharge pH cannot be less than 6.5 - PAH cannot be greater than 50 µg/L - continuous maximum turbidity cannot be greater than 25 formazin nephelometric units (FNU) or 25 nephelometric turbidity units (NTU)
- ❖ [MEPC.1/circ.883](#) (**21 MAY 2019**) guidance on indication of ongoing compliance in the case of the failure ...EGCS

## Implementação

### (international - abstract)

- ❖ Regulations 14.3 and 18.3
- ❖ Resolution [MEPC. 280\(70\)](#) into force 01JAN20
- ❖ Annex VI: Regulation 1 all ships - Regulation 4 EGCS
- ❖ EGCS standardized ([MEPC.259\(68\)](#)) - effluents
- ❖ [PAS 23263](#) issued by second semester 2019 and ISO 8217 new revision planned for 2021 or 2022



## Implementation (national)

- ❖ Brazil contracting party MARPOL (Annex VI)
- ❖ NORMAM 01/DPC
- ❖ NORMAM 06/DPC
- ❖ Distritos Navais /Capitanias/  
Delegacias/Agências - PSCO



## Challenges

- ❖ Standardization
- ❖ Compatibility
- ❖ Stability
- ❖ Safety
- ❖ Debunkering

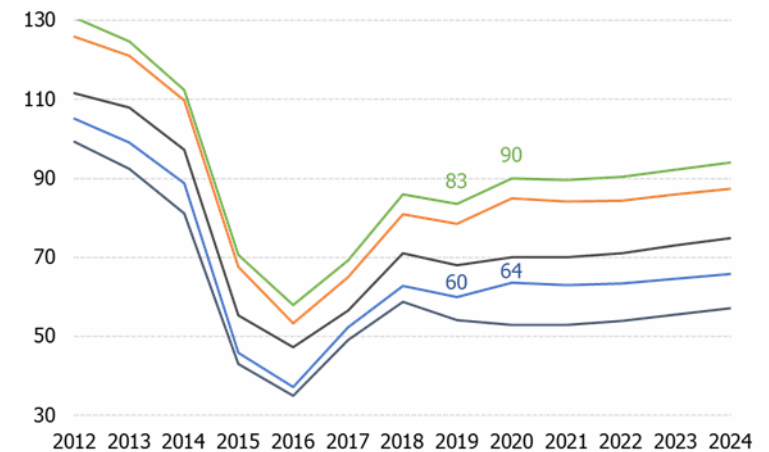
Fonte: The Dollar Business



## Prospects

- ❖ Transition phase
- ❖ Training of Administrations
- ❖ Logistic Normality
- ❖ Suitability of international shipping
- ❖ Scenario Harmonization

Source – epe/MME



## Conclusion

- ❖ New age for marine fuels
- ❖ Marine Fuel Industry Reengineering
- ❖ Strategic Business Decisions
- ❖ Temporary (or not) price increase
- ❖ Reflection in freight costs
- ❖ Effective contribution of international shipping industry to public health and the environment





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