

# Scrubbers pros and cons

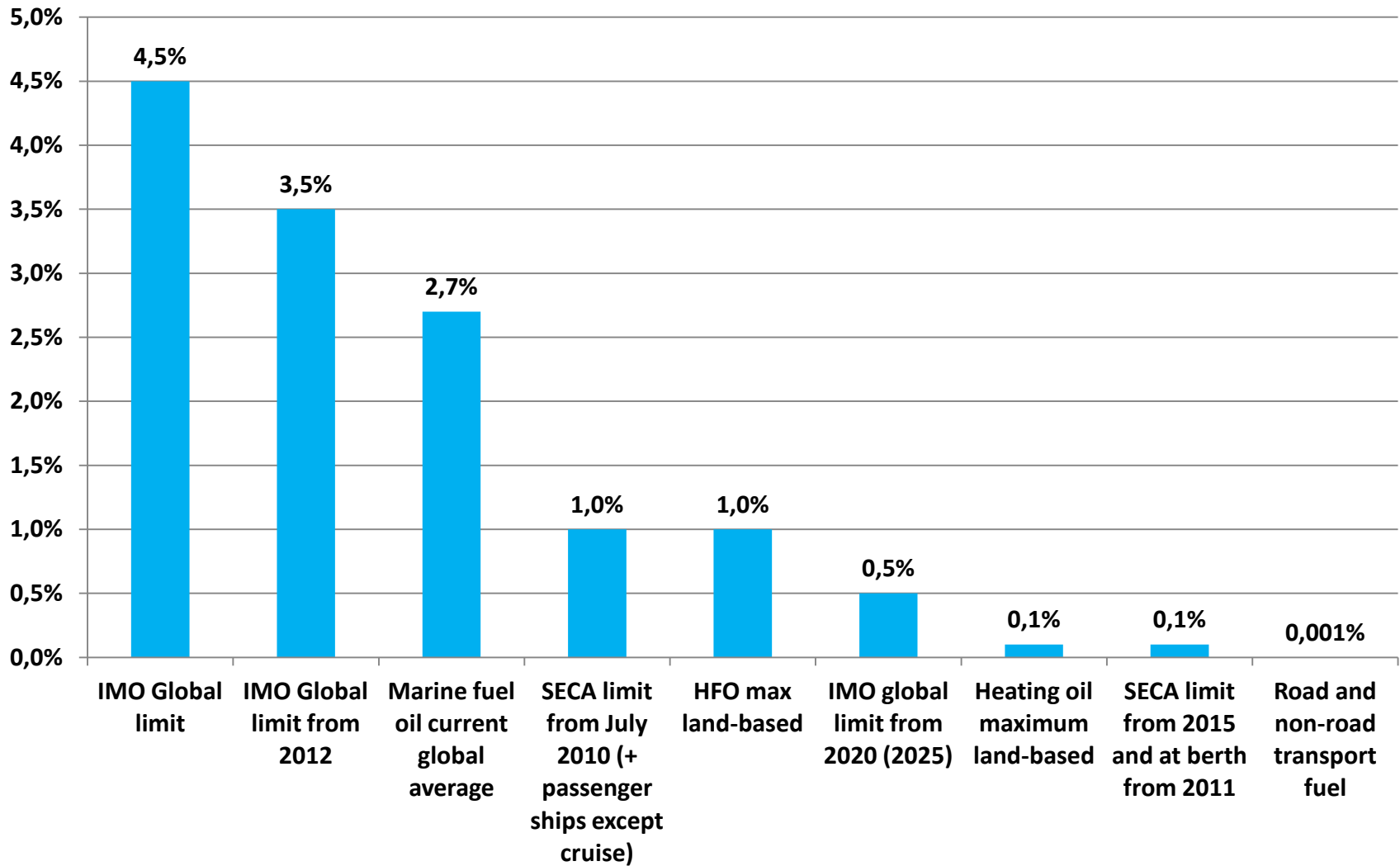
## Position of an NGO



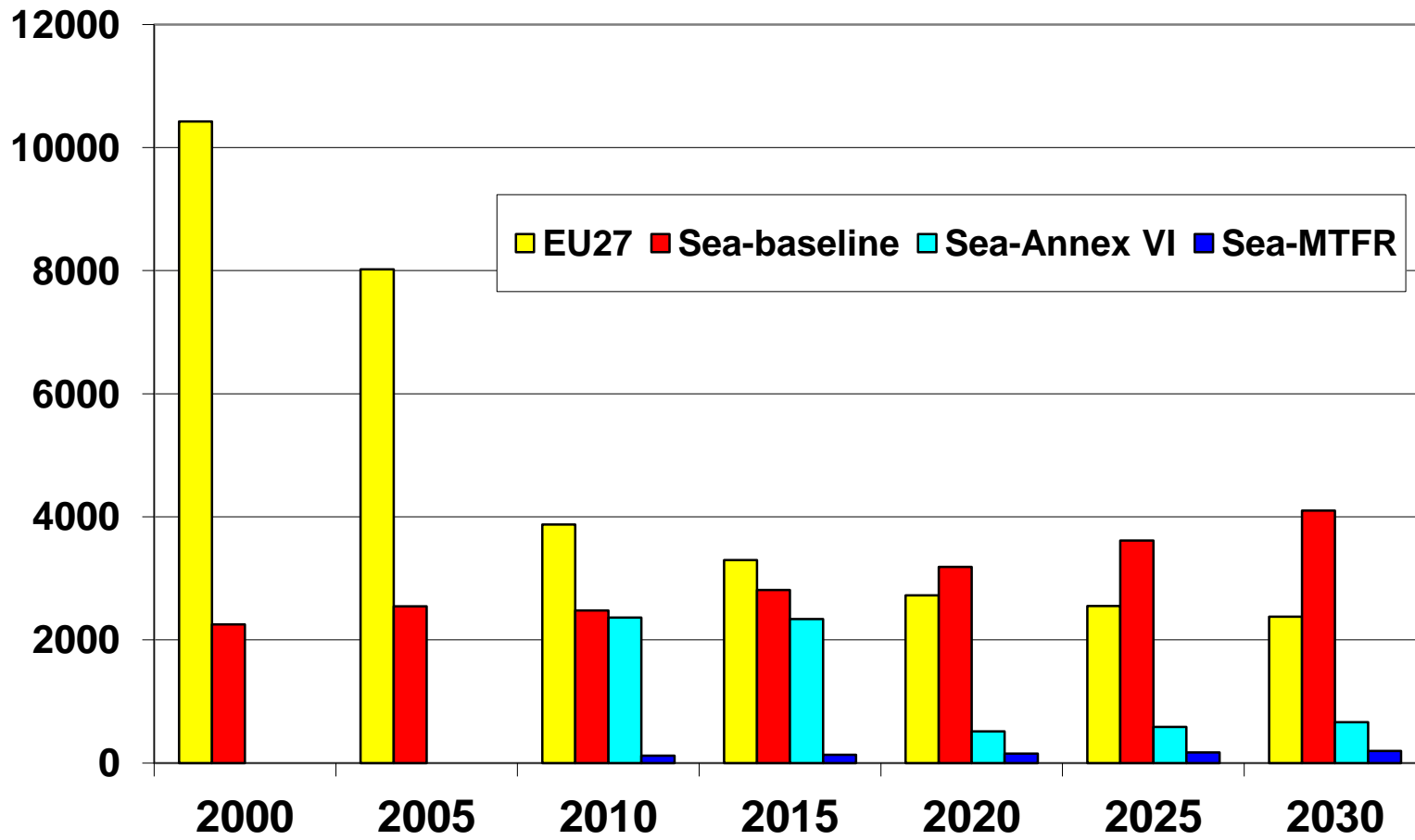
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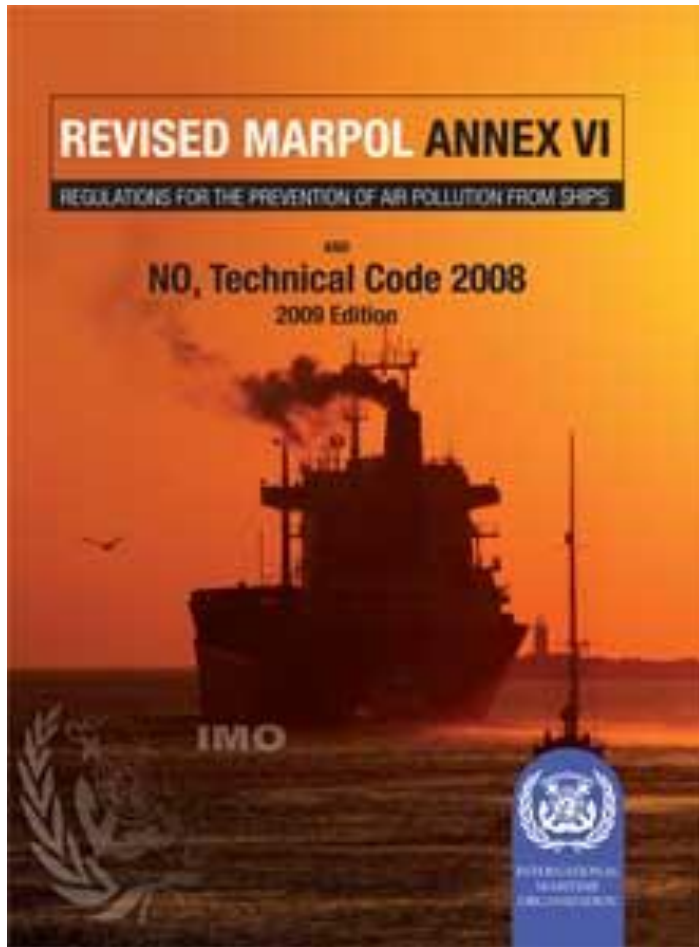
# Sulphur in fuel limits



# EU SO<sub>2</sub> – The MARPOL Effect



# The regulatory framework



- The sulphur content of **fuels** is limited (Reg. 14 MARPOL Annex VI)
- '**Equivalents**' allowed to meet the same emissions reductions (Reg. 4 MARPOL Annex VI)
- **Geographical elements**: Member States can designate the so called SOx Emissions Control Areas (Appendix III + Reg 14 MARPOL Annex VI)
- Shipowners must keep a **record** of the quality of the fuel they buy and burn (Reg. 18 MARPOL Annex VI)

# How to comply with the limits: solutions in practice

Use of distillate fuels



Switch to LNG



After-treatment



All these solutions have to be compared for their costs and benefits, their market-readiness, their technical and environmental performance, etc.

# Performance of scrubbers - 1

- Regulation 4.4 of MARPOL Annex VI which requires that measures equivalent **do not damage the environment, health, property or resources of any State**.
- This provision is in addition to, not in lieu of, the regulation 4.1 which states that an equivalent is **at least as effective in terms of emission reductions** as that required by MARPOL Annex VI.

# Performance of scrubbers - 2

- **What do we do with wash-water?** The previously agreed pH level of 6.5 is already considerably more acidic than seawater. The pH 3 standard proposed by Interferry is 100.000 times more acidic than seawater!
- How to ensure that the scrubber was performing all the time, that it wasn't bypassed, etc? **The case for continuous monitoring**



# Practical solutions for sulphur compliance: role of ports

Use of distillate fuels



**Ensure fuel availability**

Switch to LNG



**Develop bunkering facilities**

After-treatment



**Reception facilities for the disposal of wash-water**

**+ other technical measures for ships at berth: cold-ironing, etc.**

# Food for thoughts – 1

- A switch to distillate: advantages of a general improvement of fuel quality
- Scrubbers: don't replace emissions to air by emissions to the sea!
- LNG: compelling option for the sector but no silver bullet
- ...

# Food for thoughts – 2

- It is difficult to guess what will the **preferred compliance option** of ship-owners at this stage (concerns over infrastructure, performance, etc.)
- Although provisions primarily affect ship-owners, port authorities have also an important role to play in providing the **necessary environment for compliance, in particular: fuel availability and wash-water disposal**