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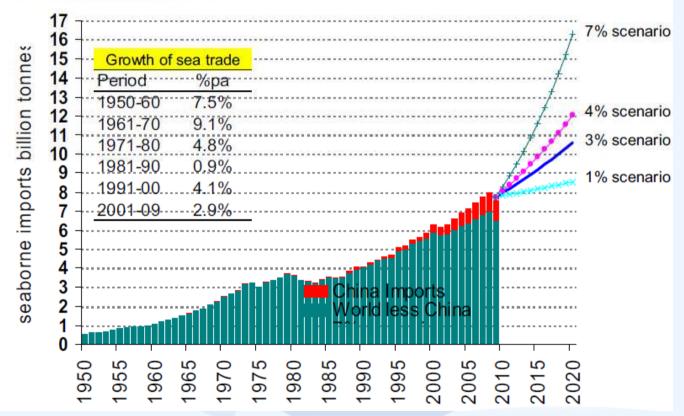
Measures to reduce CO₂ Emissions from Shipping Specific Situation of the Dredgers and Position on Market Based Measures

Wouter DIRKS

Chairman CO₂ Working Group European Dredging Association

Maritime sector will continue to grow

Sea Trade Scenarios 1950-2020



Source: Clarkson Research Services Ltd



CO₂ legislative background and recent developments

IMO Developments

Shipping is a global industry competing in a single global market. ⇒ therefore preferred regulator IMO (vs UNFCCC-CBDR; vs EU)

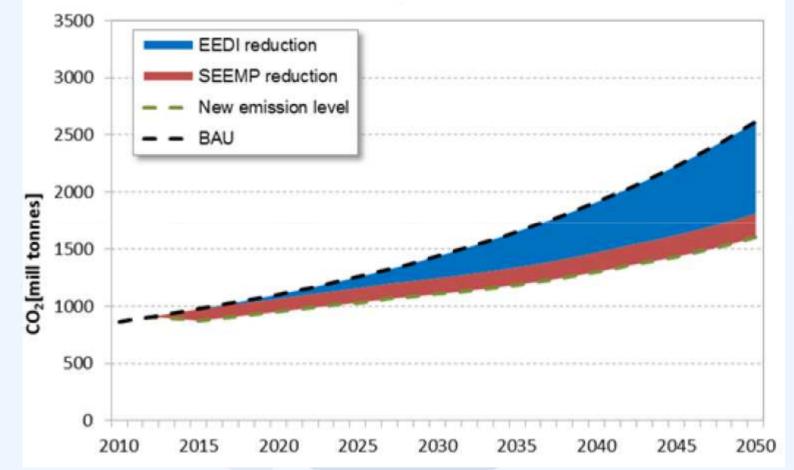
Three categories of measures under development

- ✓ Technical (EEDI) now in Marpol (Dredgers not yet)
- ✓ Operational (SEEMP) now in Marpol for all vessels
- ✓ Market based Measures (MBM)- slow progress
- Results MEPC 62nd session 11 15 July 2011: Agreement on EEDI (not for dredgers) and SEEMP. Regulations apply to all 400 GT< ships from 1st January 2013.
- MBM on top of technical and operational measures to enhance commercial incentives for energy efficiency.



IMO predicted CO₂ emissions

World fleet - Average scenario: A1B-4 and B2-1



Source: IMO Feasibility Study and Impact Assessment on the proposed MBMs



EEDI for Dredgers?

EEDI not suitable for reducing dredging emissions because:

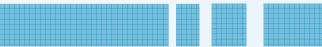
Emissions of a dredger are depending on the specific project conditions such as:

- ⇒ Soil conditions
- ⇒ Depth
- ⇒ Space for manoeuvring
- ⇒ Loading and unloading requirements



EEDI for Dredgers?





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EuDA CO₂ emissions

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EuDA Sea-Going Dredging Equipment	K Installed Powe	D Fuel Consump	ton CO ² Emissions
2008		ton	lon
Global Operations and emissions	1,510,000	1,090,000	3,440,000
European Operations and emissions	420,000	280,000	880,000
2009			
Global Operations and emissions	1,587,000	1,016,000	3,211,000
European Operations and emissions	511,000	307,000	1,088,000
2010			
Global Operations and emissions	1,591,462	998,930	3,155,225
European Operations and emissions	654,069	419,853	1,326,014
2011			
Global Operations and emissions	1,722,267	1,002,051	3,160,919
European Operations and emissions	652,118	455,484	1,124,181
Source: EuDA			



Increased efficiency EuDA fleet driven by economics

Cycle Pumping Sand on 1000 m and 10 nm sailing : CO₂ emission 5.00 4.50 4.00 Emission (kg CO₂/m³ loaded) 3.50 3.00 2.50 2.00 15% improvement since 1990 1.50 1.00 0.50 0.00 1960 1970 1980 1990 2000 2010 Year of construction or main engine refit

Source: EuDA



Future reductions

External factors	Industry response	CO ₂ emission up or down
NO _x : tier III requirement.	Tier III compliance: lower fuel efficiency.	Scope 1 = up
Transition to low sulphur fuel	Subject to availability of fuel and technology.	Scope 3 = up
Market Based Measures	Investments in efficiency improvement.	Scope $1 = down$
Alternative fuel supply; LNG, Biofuels	Subject to availability and infrastructure: long term.	Scope 1 = down



EuDA position on MBM's

Instrument should:

- be effective in reducing CO₂ emissions
- be binding and include all flag states
- be cost effective
- not distort competition
- be practical, transparent, free of fraud and easy to administer

EuDA supports proposal for an **International Greenhouse Gas Levy Fund**

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Thank you !

• European Dredging Association:

148 Avenue Grandchamp, B-1150 Brussels e-mail: <u>info@euda.be</u> Tel.: +322 6468183 Fax : +322 6466063

• Website: <u>ww.european-dredging.eu</u>

