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## **EUROPEAN DREDGING ASSOCIATION POSITION PAPER ON MONITORING, REPORTING AND VERIFICATION OF CARBON DIOXIDE EMISSIONS FROM MARITIME TRANSPORT**

### **Executive Summary**

- This paper is intended for the public administrations dealing with MRV issues, including IMO, European Commission and Flag States.
- Maritime dredging is the maritime transportation of natural (extracted) materials from one part of the water environment to another by specialised sea-going self-propelled dredging vessels.
- The European Dredging Industry is operating a large fleet of dredging ships worldwide in order to construct and maintain ports and waterways, to execute coastal protection, land reclamation and environmental remediation projects. The European Dredging Industry is an essential part of the Maritime Cluster that has created Europe's reputation of excellence in maritime infrastructure construction.
- As shipping is a global industry competing in a single global market, it should be regulated at global level. Therefore, the European Dredging Association (EuDA) supports the regulatory process to reduce CO<sub>2</sub> emissions being developed and implemented by IMO. Global regulation is required to maintain a level playing field for all ships, irrespective of flag or ownership.
- Even as frontrunner, the European MRV system should be aligned with IMO regulation to avoid 'regional' competitive distortions.
- The European MRV system should focus on CO<sub>2</sub> emissions only, calculated from fuel consumption, using existing systems and available data and excluding small emitters (ships < 5,000GT).
- The European Dredging Industry is prepared to contribute its share to the current and future efforts to reduce the emissions of greenhouse gases (GHG), in particular CO<sub>2</sub>. However:
  - CO<sub>2</sub> emissions for dredging should be optimised at project level (not per ship).
  - Ship performance data should not be made publicly available on individual but aggregated basis.
- EuDA supports the introduction of a fair, effective and equitable market-based measure (MBM) that should be applied on a global basis and is in favour of developing a GHG Levy Fund under IMO. Such an instrument (MBM) should also be linked to carbon offsetting measures (e.g. restoration of blue carbon habitats).
- An important source of improvement for the international shipping energy efficiency is the development of maritime and energy infrastructures adapted to the needs of the future generations of energy efficient ships.
- The European Dredging Industry is fully committed to pursue its innovation efforts to keep improving its technology and to keep optimising its operations.



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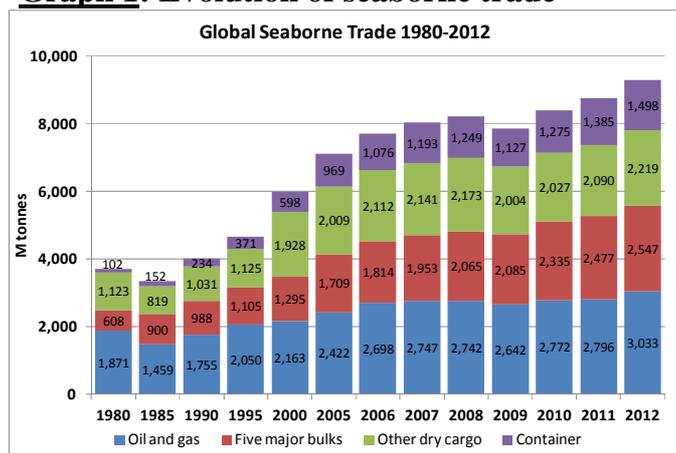
# 1. Introduction

## 1.1 Maritime Transport

In the global transport logistical chains, maritime transport plays a critical role: around 90% of Europe's international trade and 40% of the intra-EU trade is done through maritime transport. Maritime transport is a catalyst of economic development and prosperity, ensuring security of supply of energy, food and commodities. As a consequence, around 80 % of the world's largest population centres are located in coastal areas, which are by definition more vulnerable to sea level rise and would need to adapt their defences in the coming decades. This could result in an increased demand for dredging projects.

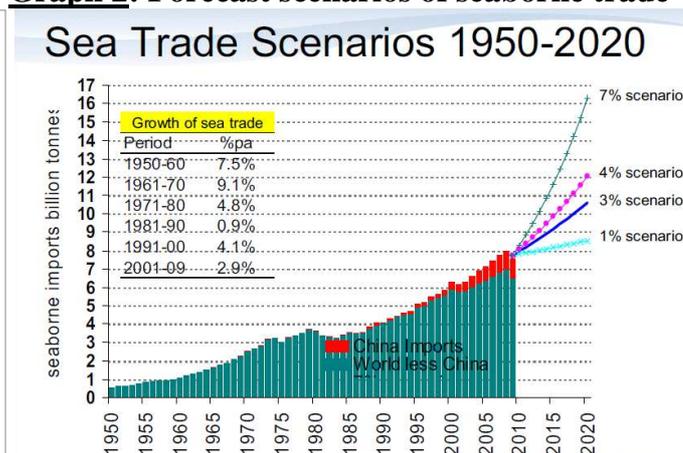
Due to its close connection to global commerce, international shipping plays a vital role in the facilitation of world trade. In the past decades, the developments in seaborne trade have been impressive and were made possible thanks to continuous technological developments.

**Graph 1: Evolution of seaborne trade**



Source: UNCTAD 2013

**Graph 2: Forecast scenarios of seaborne trade**



Source: Clarkson Research Services Ltd

As sea transport is predicted to continue to grow significantly in line with world trade, a global approach is needed for further improvements in energy efficiency and emissions reduction

## 1.2 The European Dredging Industry

**Maritime dredging** is the maritime transportation of natural (extracted) materials from one part of the water environment to another by specialised sea-going self-propelled dredging vessels.

The essential difference between the shipping sector and the fleet of working vessels is that the latter, besides transporting material, also perform specific tasks such as *seabed stabilisation, offshore wind turbine installation, pipe/cable laying, land reclamation, coastal protection and dredging*. These specialised vessels need distinct consideration.

Within maritime transport and the broader EU maritime cluster, maritime dredging plays a critical role in developing and maintaining ports and port access, but the industry provides also marine infrastructure. Dredgers facilitate and help further



develop activities linked to maritime trade and offshore energy installations. Moreover, European Dredgers are the natural allies of the European shipping industry and Port Authorities: *without dredging, there would be no harbours, no ports, no access channels and ultimately no global trade and economic development as we know today.*

While dredging activities are not necessarily well known by the larger public, European dredging companies are world market leaders who service about 80% of the worldwide open dredging market.

The European Dredging Industry is operating a large fleet of dredging vessels, which are deployed worldwide, executing projects under often stringent environmental requirements with its multidisciplinary, multicultural and specialised teams providing state of the art knowledge, know-how, equipment and environmentally sound methods.

## 2. Brief overview of maritime CO<sub>2</sub> Emissions

### 2.1 Maritime Transport

Maritime shipping is the most environmentally-friendly and energy efficient mode of mass transport (on a tonne-mile basis)<sup>1</sup>. Indeed, while moving a considerable part of world trade, shipping is only a modest contributor to the total global CO<sub>2</sub> emissions (estimated at around 3%<sup>2</sup>).

In view of the pressures to reduce global greenhouse gas emissions, in particular CO<sub>2</sub> emissions, the shipping sector is prepared to make its contribution. Reducing CO<sub>2</sub> emissions from shipping can be achieved through **technical solutions** (e.g. improving fuel efficiency through more energy efficient ship designs, better performing engines, etc.), **operational solutions** (improving the best practices and optimising the fuel consumption during operations) and/or through **market incentives** (financially motivating the economic players to accelerate the implementation of available solutions and/or to offset their CO<sub>2</sub> emissions).

Improving fuel efficiency is an obvious source of significant CO<sub>2</sub> emissions reduction. When considering the improvement of ships' fuel efficiency, one must also take into account the possible "economies of scale": *the larger the ship is (at a given speed), the lower the fuel consumption per unit of cargo*. However, such potential economies of scale are often hampered by physical port limitations (e.g. draught), trade considerations or cargo logistics issues. As far as physical port limitations are concerned, they can be reduced through the development of *maritime (and energy) infrastructures for the future generations of energy efficient ships*. The European Dredging Industry can play an important role in realising tomorrow's maritime infrastructure.

Another significant source of reduction of CO<sub>2</sub> emissions can be found through alternatives to fossil fuels. However, it is not expected that substitutes for fossil fuel will be available for a large scale energy transition in the near future.

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<sup>1</sup> (First) IMO GHG Study 2000

<sup>2</sup> Second IMO GHG Study 2009: Shipping was estimated to have emitted **1,046 million tonnes of CO<sub>2</sub> in 2007**, which corresponded to 3.3% of the global emissions during 2007. International shipping was estimated to have emitted 870 million tonnes, or about 2.7% of the global emissions of CO<sub>2</sub> in 2007.

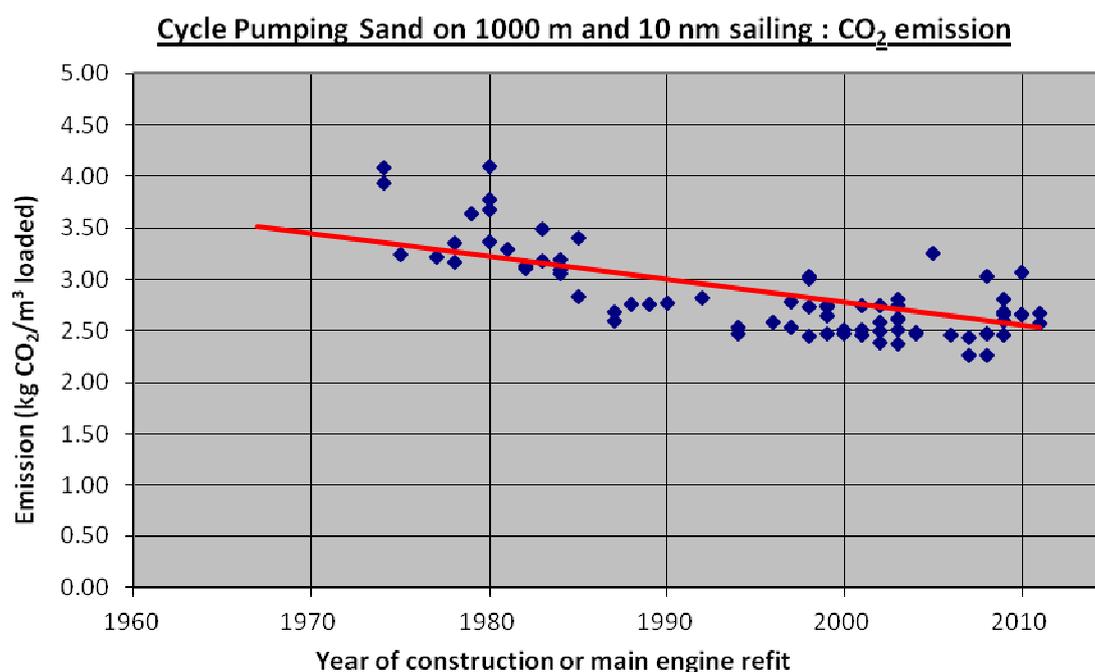


The economical and financial incentives to reduce CO<sub>2</sub> emissions can be introduced through market-based measures.

## 2.2 European Dredging

Within the overall shipping sector the European dredging fleet represents about 0.3% of the capacity (in GT). The corresponding CO<sub>2</sub> emissions are in the same order of magnitude. Even though the share in the overall fleet is limited, emissions reduction is an objective for the dredging sector. The European dredging sector has initiated its programme for improvements by collecting actual statistical data on fuel consumption and emissions. The data in graph 3 show that there is a clear trend towards improved dredging performance (fuel efficiency per m<sup>3</sup> of dredged sand) and thereby CO<sub>2</sub> performance (averaged). This has been achieved for a large part by up-scaling equipment and installing modern engines as well as energy management systems on board of dredging ships.

**Graph 3: EuDA CO<sub>2</sub> emissions reduction** (*typical Trailing Suction Hopper Dredgers activity*)



Source: EuDA



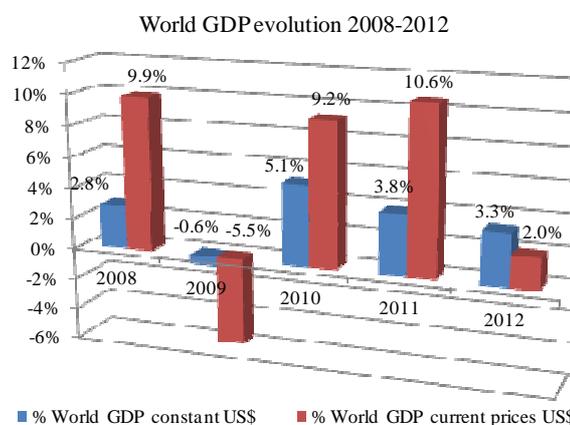
In absolute numbers, the world seagoing dredging fleet was estimated to have produced 6.3 Mton of CO<sub>2</sub> in 2008. The emissions of the European Dredgers (EuDA members) in 2008 were about 3.4 Mton. From 2009, the European dredgers' CO<sub>2</sub> emissions dropped progressively from an estimated at 3.2 Mton to 3.1 Mton in 2012.

**Table 1: EuDA fleet CO<sub>2</sub> emissions (2012)**

EuDA Sea-Going Dredging Equipment	Installed Power	Fuel Consumption	CO <sub>2</sub> Emissions
	kW	ton	ton
<b>2008</b>			
Global Operations and emissions	1,510,000	1,090,000	3,440,000
European Operations and emissions	420,000	280,000	880,000
<b>2009</b>			
Global Operations and emissions	1,587,000	1,016,000	3,211,000
European Operations and emissions	511,000	307,000	1,088,000
<b>2010</b>			
Global Operations and emissions	1,591,462	998,930	3,155,225
European Operations and emissions	654,069	419,853	1,326,014
<b>2011</b>			
Global Operations and emissions	1,779,152	1,002,702	3,163,003
European Operations and emissions	636,790	356,809	1,126,267
<b>2012</b>			
Global Operations and emissions	1,845,002	985,998	3,108,075
European Operations and emissions	501,981	283,388	896,361

Source: EuDA

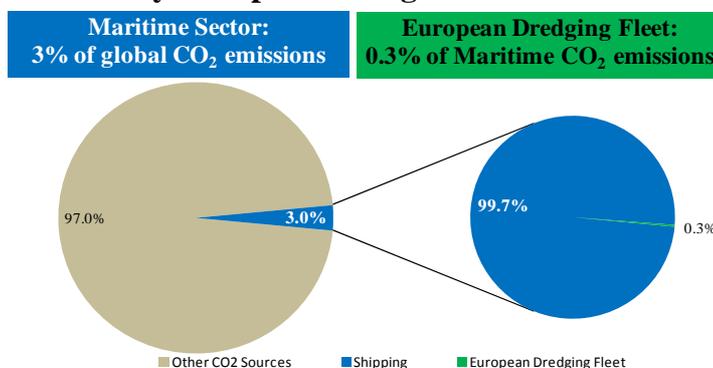
**Graph 4: Evolution of World GDP (2012)**



Source: IMF

The figures in Table 1 above confirm that the worldwide CO<sub>2</sub> emissions of the European Dredgers are decreasing since 2008. The reduction in the CO<sub>2</sub> emissions can be partly attributed to the effects of the economic crisis, reducing the level of occupancy. With the reclamation phase of Maasvlakte 2 concluding in the Netherlands, the level of activity (and CO<sub>2</sub> emissions) in Europe, which peaked in 2010, is returning progressively to its 2008 levels.

**Graph 5: CO<sub>2</sub> emissions by European Dredgers**



Source: EuDA



### 3. Regulatory Aspects

#### 3.1 Global Developments

**Shipping is a truly global industry** and ships are competing in a single global market. Therefore, regulation to reduce GHG emissions by the shipping industry should be developed and implemented at **global level** in order to be environmentally effective (avoid carbon leakage). Moreover, in order to maintain a level playing field for all shipping sectors, irrespective of flag or ownership, this can only be achieved via an organisation with **maritime competence** at the global scale, namely the IMO.

Within IMO discussions have been taking place on introducing effective schemes for emissions reduction on the basis of the three aspects: *design of vessels*, *operational improvements* and *market-based incentives*. The Marine Environment Protection Committee (MEPC), which is the responsible body within IMO, has set out to define common agreed principles for emissions reduction measures.

##### 3.1.1 Key Principles of a Global Regulation

In April 2008, MEPC 57 agreed with an overwhelming majority on the following principles:

*A coherent and comprehensive IMO regulatory framework should be*

1. *effective in contributing to the reduction of total GHG emissions;*
2. *binding and equally applicable to all flag States in order to avoid evasion;*
3. *cost-effective;*
4. *able to limit, or at least, effectively minimise competitive distortion;*
5. *based on sustainable environmental development without penalising global trade and growth;*
6. *based on a goal-based approach and not prescribe specific methods;*
7. *supportive of promoting and facilitating technical innovation and R&D in the entire shipping sector;*
8. *accommodating to leading technologies in the field of energy efficiency; and*
9. *practical, transparent, fraud free and easy to administer.*

##### 3.1.2 Technical and Operational Measures

The work on GHG in IMO identified three distinct types of measures: the **technical measures** that will mainly be applied to *new ships*, the **operational measures** for *all ships* (new and existing), and the **Market-Based Measures** providing *incentives* to the shipping industry by setting a price on its emissions.

As a result, the following IMO circulars were produced:

1. interim guidelines on the method of calculation of the Energy Efficiency Design Index for new ships (**EEDI**) (*MEPC.1/Circ.681*);
2. interim guidelines for voluntary verification of Energy Efficiency Design Index (*MEPC.1/Circ.682*);
3. guidance for the development of a Ship Energy Efficiency Management Plan (**SEEMP**) (*MEPC.1/Circ.683*); and
4. guidelines for voluntary use of the Energy Efficiency Operational Indicator (**EEOI**) (*MEPC.1/Circ.684*).



The Energy Efficiency Design Index (EEDI) is a performance-based mechanism promoting the use of more energy efficient (less polluting) equipment and engines. In fact, the EEDI establishes a **minimum energy efficiency requirement for new ships** depending on *ship type and size*.

The EEDI was developed for the largest and most energy intensive segments of the world merchant fleet and will embrace **70% of emissions from new ships** covering the following ship types: *oil and gas tankers, bulk carriers, general cargo and container ships*. For ship types not covered by the current formula, suitable formulas will be developed in the future addressing the largest emitters first.

At the MEPC62, the EEDI has been adopted as a mandatory measure for new ships (new chapter 4 in MARPOL Annex VI on *Regulations on energy efficiency for ships*) will enter into force on **1<sup>st</sup> January 2013**.

This proposal respects the IMO principle of “**non discrimination**”, as the contribution *applies to all ships (above 400 GT in international trade), irrespective of flag or ownership*, and respects the UNFCCC principle of “**common but differentiated responsibility**”, when the revenue is distributed for *mitigation, adaptation and capacity building activities in developing countries*.

The Ship Energy Efficiency Management Plan (SEEMP) is an operational measure that establishes a mechanism to assist a shipping company and/or a ship to improve the energy efficiency of its ship operations in a cost-effective manner. The SEEMP provides an approach for monitoring ship and fleet efficiency performance over time. The SEEMP is meant to be a management tool to assist a company in managing the ongoing environmental performance of its vessels: it should be adjusted to the characteristics and needs of individual companies (and ships) and should keep onboard administrative burden to a minimum.

At the MEPC62, the SEEMP has been adopted as a mandatory measure for all ships (new chapter 4 in MARPOL Annex VI) will enter into force on **1<sup>st</sup> January 2013**.

The Energy Efficiency Operational Indicator (EEOI) will be used as a monitoring tool in the SEEMP and benchmark tool to establish benchmarks for different ship segments of the world fleet categorised by ship type and size.

EEOI remains a voluntary measure.

### 3.1.3 Market-Based Measure

So far the discussions and work in IMO have only been successful in the development of technical and operational measures. Nevertheless, an overwhelming majority in IMO agreed that only technical and operational measures would not suffice to achieve the emission reduction target and that a Market-Based Measure (MBM) was needed as part of a comprehensive package of measure for the effective regulation of GHG



emissions from international shipping. In-depth debates on MBMs have taken place at every MEPC since MEPC 59. A work plan for the further consideration of MBMs was agreed. MEPC 60 called for an expert group to undertake a **feasibility study and impact assessment of the MBMs** that had been proposed by governments and observer organisations. However at the moment (MEPC 66) no clear majority is forming around any particular MBM (10 different possible MBMs were submitted).

Market-Based Measures (MBMs) effectively place a price on GHG emissions and serve two main purposes:

1. providing an economic incentive for the maritime industry to reduce its fuel consumption by investing in more fuel efficient ships and technologies and to operate ships in a more energy efficient-manner (**in-sector reductions**); and
2. offsetting in other sectors of growing ship emissions (**out-of-sector reductions**).

### 3.2 EU MRV Regulation

In IMO, there is also agreement on the need for a *global data collection system for GHG emissions from ships* and there are currently discussions about the way to establish such a system. Europe wants to be at the forefront on the CO<sub>2</sub> reduction issue and, through its specialised DG on Climate Action (DG CLIMA), the European Commission has been putting pressure on IMO to accelerate and conclude its process.

Following extensive consultations with the sector and the Member States, DG CLIMA concluded that in the context of monitoring, reporting and verifying CO<sub>2</sub> emissions from shipping:

- ☞ fuel consumption should be monitored;
- ☞ the ship should be the reporting entity (as too many possibilities exist involving ship-owner/operator/charterer, cargo-owner);
- ☞ the implementation should remain simple, a yearly based exercise making use of existing systems and available data (e.g. IMO SEEMP requirements, ISO 14064);

On 28 June 2013, the European Commission proposed the ‘*MRV Regulation*’ (COM(2013)480) focusing on Monitoring, Reporting and Verification (MRV) of CO<sub>2</sub> emissions (if possible, other Greenhouse Gases (GHG)/SO<sub>x</sub>/NO<sub>x</sub>) from ships of more than 5,000GT making voyages into, out of and between EU ports. The regulation would be using existing systems/data for an annual reporting.

In its accompanying communication (COM(2013)479), the Commission stated that the MRV was the first step towards its policy objectives which include:

- ☞ to implement MRV and establish CO<sub>2</sub> emissions from maritime transport;
- ☞ to establish (agreed) global energy efficiency standard;
- ☞ to consider introduction of an MBM at global level (if not, then EU only).



### 3.3 Considerations for Dredging

#### 3.3.1 *General Aspects*

The dredging sector in Europe is fully committed to play its role in implementing effective reduction schemes. However, there is an essential difference between the shipping sector, which provides transport of goods and products across the globe, and the fleet of working vessels, which not only transport material, but also perform specific tasks (seabed stabilisation, offshore windfarms installation, pipe/cable laying, dredging, ...). These sectors need special consideration.

Over the last 20 years the EuDA members have invested billions in newer dredging equipment and in the upgrading of older equipment with new installations and engines (e.g. over the period 2008-2012 EuDA members have invested around 7 billion € in new equipment).

This has resulted in a European dredging fleet that is the most powerful and technologically advanced in the world and at the same time has become more and more energy efficient. For example when we compare the fleet of Trailer Suction Hopper Dredgers (TSHD's) over the years on a typical project (dredged, transport over 10 NM<sup>3</sup> and pump ashore) figures show that the newest generation of dredging vessels (including refitted older vessels) is on average 15% more energy efficient than the vessel generation that was built around 1990 (see graph 3).

An important remark is that this overall improvement is the result of new vessels being larger in size and of increased general energy efficiency. At the same time many of the older vessels have been refitted with new main engines and this has also significantly contributed to the overall increase of the energy efficiency of the EuDA fleet.

It is important to note that on projects with limited navigational depth or very short transport distances the smaller and older vessels can match and even outperform the larger new dredgers. The large size dredgers will simply not be able to work in an optimal energy efficient mode when they need to sail with limited payload due to depth restrictions or when their dredging cycle is restrained by manoeuvrability issues. When relatively small quantities need to be dredged smaller dredgers can be more energy efficient than larger dredgers by avoiding significant mobilisation and demobilisation emissions for the larger dredgers. In real life project evaluators should not only look at minimising CO<sub>2</sub> emissions, but at optimising the different aspects and overall project impact and cost. For smaller projects, it may make more sense to use smaller dredgers already available in the project area rather than larger vessels that need to be mobilised from a different part of the globe.

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<sup>3</sup> Nautical miles (= 1,852 metres).



### 3.3.2 Alternative ‘Industry Approach’ to CO<sub>2</sub> Emissions Reduction

In 2010, the European Dredging Association (EuDA) and the International Association of Dredging Companies (IADC) circulated a joint statement to IMO, where the dredging associations pointed out that the Energy Efficiency Design Index (EEDI) could not be applied to the dredging sector. Instead, they proposed an industry specific alternative including:

- a set of fact based CO<sub>2</sub> emission figures valid for different types of operations under normalised conditions;
- a transparent calculation method based on energy performance of specific types of ships for variable project specifications;
- a benchmark for future emission reduction.

To implement this alternative ‘industry approach’, EuDA established the ad hoc **Task Group on Emission Figures (TGEF)**, gathering experts from the dredging industry (Jan De Nul, DEME, Boskalis, Van Oord) and the shipbuilding industry (IHC/MTI).

The main findings of the TGEF confirmed the following:

*Each dredging project has a different scope and is carried out under specific conditions and technical requirements. This has resulted in a worldwide fleet of dredging ships with very diverse specifications adapted to the projects’ specific requirements. The combination of unrepeatable project conditions and very diverse equipment specifications makes it impossible to transpose efficiency indices and indicators for regular shipping to dredging operations for the purpose of assessing CO<sub>2</sub> emissions on a dredging project. The optimisation of CO<sub>2</sub> emissions on a dredging project can best be achieved by evaluating the specific project conditions in the light of the different execution methods and available dredging equipment.*

*Therefore, as far as EEDI is concerned, in its current form, it cannot be applied to dredging vessels.*

The TGEF has established a **common calculation tool for the CO<sub>2</sub> emissions** to be expected in typical dredging cycles for the main categories of dredging vessels (Trailing Suction Hopper Dredgers, Cutter Suction Dredgers and Backhoe Dredgers). This common calculation tool is progressively made available by EuDA to project owners (such as public administrations or port authorities) during their tendering procedures. This common calculation tool allows for the establishment of an initial benchmark for assessing CO<sub>2</sub> emissions at project level.



### 3.3.3 *EuDA's Views on the Proposed MRV Regulation*

Looking back at the *key principles for a global regulation* (MEPC 57, April 2008), EuDA agrees with the Commission that an effective system should include a robust Monitoring element. However, the other 8 key principles should not be overlooked

2. *binding and equally applicable to all flag States in order to avoid evasion;*  
To become global, the EU's proposed data collection system should also be implemented by IMO.
3. *cost-effective;*  
Priority should be given to existing systems and available information.
4. *able to limit, or at least, effectively minimise competitive distortion;*  
An EU only system, with its 'regional' character is likely to create some competitive distortion.
5. *based on sustainable environmental development without penalising global trade and growth;*  
The absolute reduction targets effectively attempt to disconnect shipping's CO<sub>2</sub> emissions from global trade. This is unrealistic unless there is an established and effective MBM system from which additional emissions can be borrowed from other industries or bought through carbon offsetting measures (e.g. restoration of Blue Carbon Habitats).
6. *based on a goal-based approach and not prescribe specific methods;*  
Prescriptive legislations 'kill' innovation and one-size-fits-all solutions should be avoided in general and, in the particular case of the dredging industry, a constructive dialogue should be maintained in order to effectively select the most suitable and effective approach.
7. *supportive of promoting and facilitating technical innovation and R&D in the entire shipping sector;*  
See point 6 here above.
8. *accommodating to leading technologies in the field of energy efficiency; and*  
See point 6 here above.
9. *practical, transparent, fraud free and easy to administer.*  
This is a very important principle: an overly complicated and impossible to implement system is unlikely to produce any positive effects (see also point 3 here above).

In view of these principles, EuDA welcomes and rightfully supports the pragmatic approach exposed under the 'operational features' of the proposed MRV:

- ☞ *"Focus on CO<sub>2</sub> as predominant GHG emitted by ships and [...] at this stage, the proposed MRV system should be implemented for CO<sub>2</sub> emissions only;*  
Although in principle, the MRV system could also cover emissions of other greenhouse gases, climate forcers and air pollutants such as SO<sub>x</sub> and NO<sub>x</sub>, the MRV system, especially in an introductory stage, should be based on existing documents and equipment on board of ships (which currently could not be used to measure other emissions than CO<sub>2</sub>).
- ☞ *Calculate annual CO<sub>2</sub> emissions based on fuel consumption and fuel type and energy efficiency using available data from log books, noon reports and bunker delivery notes;*



Dredging vessels are not making voyages as defined under the MRV regulation, the *modus operandi* cannot be compared with regular shipping. Voyage information (if required) may therefore not be the most appropriate. Per project aggregated data or annual data would provide more meaningful information for dredging vessels with much lower costs and administrative burden.

- 👉 *Use existing structures and bodies of the maritime sector, in particular recognised organisations to verify emission reports and to issue documents for compliance;*

In the context of an ISO 14064 certification (where GHG accounting and verification are implemented), the already gathered information and data should be deemed acceptable in the MRV system. Other certification schemes, such as the Dutch CO<sub>2</sub> performance scale, should also qualify as acceptable in the MRV system.

- 👉 *Exclude small emitters (ships below 5,000 GT) which represent about 40% of the fleet, but only 10% of the total emissions.”*

Reducing this threshold at this introductory phase would be premature.

EuDA recommends the use of a project basis approach for the better capture of the specificity of the dredging activities. Additionally, while ready to accept the collection of data on individual ship basis, EuDA is seriously concerned about the publication of individual ships' performance data as these would reveal a significant element of the cost and provide crucial information to competitors, with potential competition distorting effects. One way forward would be to aggregate data per fleet, company or project, to restrict data access to the relevant public administrations and to mark it as confidential.

The way the regulation has been written, it was clearly designed to capture all shipping and maritime transport activities. However, as explained in this paper, the dredging activities include both a transportation aspect and a 'working' aspect the relative importance of which varies from one project to another. Therefore, in line with the IMO EEDI implementation scope, these vessels should not be included in a first stage but in a later stage.



## 4. Conclusions

Shipping, including dredging, is a global industry which needs **global legislations** preferably from IMO.

The European Dredgers are prepared to contribute to CO<sub>2</sub> emissions reduction. However the **complexity of dredging operations** should be taken into consideration:

- ☞ dredging is a specialised transport sector providing specialised services to the maritime transport and energy cluster;
- ☞ dredging is using energy for working and for sailing;
- ☞ 'typical' dredging cycles (TSHD-CSD-BHD) are difficult to define;
- ☞ CO<sub>2</sub> emissions should be optimised per project (not per ship);

Therefore, the EEDI, in its current format, is not applicable to dredging vessels.

When a Market-Based Measure (MBM) is decided to provide incentives for CO<sub>2</sub> emissions reductions to complement the technical and operational measures, the **GHG Levy Fund** is the preferred option. Moreover, a fair, effective and equitable MBM should include and incentivise **carbon offsetting measures** (e.g. restoration of blue carbon habitats).

With regards to the European CO<sub>2</sub> Policy and more specifically to **MRV Regulation**:

- ☞ the European MRV system should focus on CO<sub>2</sub> emissions only, calculated from fuel consumption, using existing systems and available data and excluding small emitters (ships < 5,000GT);
- ☞ the scope of the MRV Regulation should clarify whether working vessels are included or not (yet);
- ☞ individual ship performance data should not be made publicly available, while aggregated data (per project, fleet or company) could;
- ☞ MRV regulation should be developed under IMO and a European MRV system should be aligned with IMO regulation to avoid 'regional' competitive distortions.

**EuDA**

Celebrating its 20<sup>th</sup> Anniversary in 2013, the European Dredging Association (“**EuDA**”) was founded in 1993 as a non-profit industry organisation for European dredging companies and related organisations to interface with the various European Union’s (“**EU**”) Institutions and also some International Organizations (such as IMO, HELCOM or ILO). EuDA members employ approximately 25,000 European employees directly “on land and on board of the vessels” and more than 48,300 people indirectly (through the suppliers and services companies). The combined fleet of EuDA’s members counts approximately 750 seaworthy EU-flagged vessels.

Dredging activities are not well known by the wider public, but as a matter of fact, the European dredging companies, members of EuDA, are world market leaders with about 80% share of the worldwide open dredging market and a turnover of 7.5bn Euro in 2012. Although 70% of operations take place outside Europe, 90% of the returns flow back to Europe.

The Association serves its members in all kinds of requests related to dredging issues, presently strongly focusing on Social, Environmental and Trade issues. These issues are coordinated by the Secretariat and executed by its specialised working groups composed of experts from the member companies.

The Association will pursue its goals by endorsing policies to create fair and equitable conditions for competition; commits to respecting applicable national, European and international rules and regulations; commits to operating its fleet safely, effectively and responsibly.