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Session 2: The Marine Ecosystem

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The need to think differently..!

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November 2022

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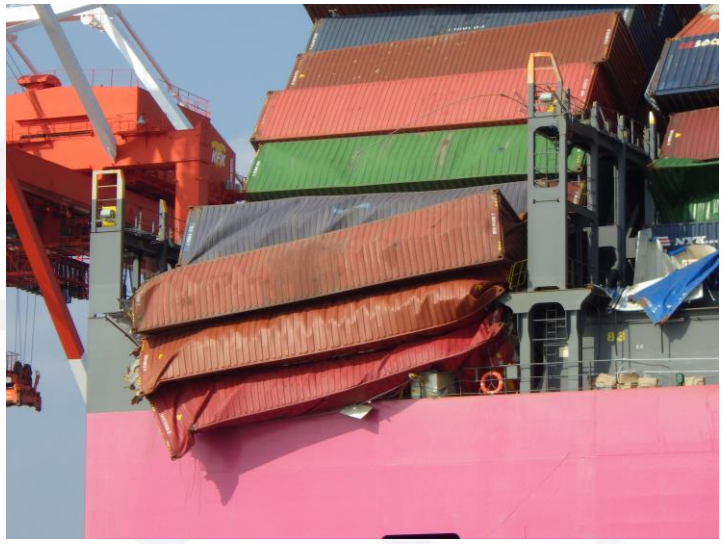
Prevention rather then cure

Credit:- WK Webster & Co Ltd

Prevention rather then cure



BRITANNIA P&I
TRUSTED SINCE 1855

REDUCING CONTAINER LOSSES

OPERATIONAL GUIDANCE

UNFAVOURABLE COMBINATIONS OF ROLLING PERIOD, VESSEL SPEED, HEADING AND WAVE CONDITIONS, CAN TRIGGER SUDDEN AND EXTREMELY RAPID INCREASES IN ROLL MOTIONS, WHICH MIGHT LEAD TO EXCESS LOADING ON CONTAINER SECURING DEVICES AND IN THE WORST CASES, CONTAINER STACK COLLAPSES AND CONTAINER LOSSES.

IMO MSC.1 / Circ.1228 provides guidance to the Master for avoiding dangerous situations in adverse weather and sea conditions, which may cause capsizing of the vessel or heavy rolling with a risk of damage. The worst situations are identified as:

- **SURF-RIDING AND BROACHING-TO**
- **SUCCESSIVE HIGH-WAVE ATTACK**
- **SYNCHRONOUS AND PARAMETRIC ROLL MOTIONS**

HOW TO IDENTIFY SYNCHRONOUS AND PARAMETRIC ROLL MOTIONS

- **Synchronous rolling** occurs in beam seas, when the roll period of the vessel matches the wave period. The vessel heels over with ever larger successive roll angles.
- **Parametric rolling** occurs due to changes in vessel stability as the vessel moves in waves. It is most common in heavy head seas but can occur also in following seas. It is a sudden phenomenon with large and rapidly increasing roll angles experienced over a short period of time.

KEY TRIGGERING CONDITIONS TO WATCH FOR

- **Vessel rolling period** (time it takes for the vessel to roll from port, to starboard, then back to port) approximately equal to the wave encounter period, or twice the wave encounter period.
- **A low metacentric height (GM)** leading to long rolling period.
- Near following sea conditions or head seas.

The wave encounter period can be measured with a stopwatch as the time between two wave crests. It is close to the vessel pitching period (time it takes for the vessel to pitch bow down, stern down and back to bow down).

STEPS OF PARAMETRIC ROLLING

Vessel rolls to one side whilst on the wave crest, stability decreases and large roll motions are experienced.

As Vessel uprights on the trough of the wave, stability increases leading to a strong push, worsened by a high GM / stiff vessel.

Vessel is on top of the wave crest again, and rolls even further ...

WHAT TO DO WHEN IT HAPPENS

To reduce the risk of large roll motions, IMO guidance recommends changing the vessel heading or adjusting the speed, whilst avoiding abrupt steering. The guidance in the following pages shows, for a range of generic containership vessel sizes and typical loading conditions, the expected safe zone where dangerous situations are less likely to occur.

Masters should use this guidance with particular observation of the specifc features of their vessel and its behaviour in heavy weather. All deck officers should familiarise themselves with the applicable chart for their size of vessel and the loading condition at the beginning of a voyage, so they are familiar with actions to be taken to reduce the rolling, as parametric rolling in particular, can develop quickly necessitating prompt remedial actions.

If you have any questions, or would like further advice on reducing container losses, then contact Waves Group at: mail@waves-group.co.uk

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Lloyd's Register

BRITANNIA P&I
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CONTAINER LOSS MITIGATION

OPERATIONAL GUIDANCE

OPERATIONAL GUIDANCE FOR REDUCING CONTAINER LOSSES

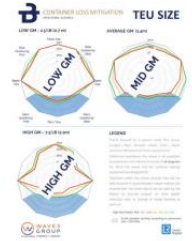
For a typical containership vessel hull shape, and sizes ranging from 2000 TEU to 23500 TEU, this guidance gives an indication of significant wave height, vessel speed and heading combinations, for which there is a risk of experiencing high roll angles that may overload the vessel's cargo securing devices, leading to the collapse and / or loss of containers.

HOW TO USE THIS GUIDANCE

1 Select the page or two pages with the most relevant containership vessel sizes.

2 Find the two metacentric heights (GM) closest to the vessel operating conditions (Upper / Lower). For each containership size, three GM values are covered in the guidance (Low GM / Average GM and High GM), based on the range of GM values recommended by Classification Society Guidelines for the design of securing elements on containerships.

Depending on the Classifcation Society, the range can vary slightly. It is expressed as a % of the vessel Breadth in the following guidance.



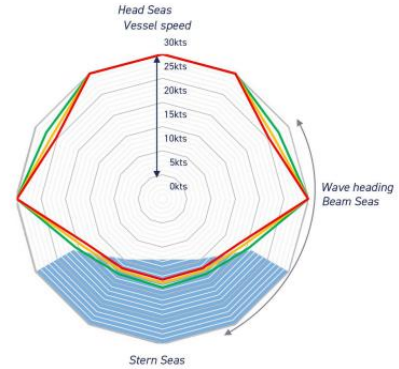
HOW TO READ THE CHARTS

The charts show the vessel speed and headings at which roll motions in excess of 16 degrees (for vessels of 2,000TEU to 14,000TEU capacity), and 12 degrees (for vessels of 23,500TEU capacity) are expected for a range of significant wave height conditions (Hs=6m, Hs=8m, Hs=10m).

The 'at risk' areas are defined as per IMO Circular MSC.1 / Circ.1228 and are highlighted for the vessel category (vessel lengths and breadths are provided).

Operating within the at risk zone may still be safe, however, if uncomfortable motions are experienced, the charts can be used to identify what change of vessel speed and heading can be taken to bring the vessel to safer operating conditions (within the high roll motion risk curves, and away from the IMO Circular at risk zones).

This guidance is general only – it is not specific to any vessel or sea conditions. At all times, the prevailing sea conditions and the specific characteristics of the vessel for which you are responsible must be taken into account when assessing the correct action in any given situation.



High roll motion risks for a given Hs, wave heading and vessel speed.

- Hs = 10m
- Hs = 8m
- Hs = 6m
- At risk situation as defined in MSC.1 / Circ. 1228

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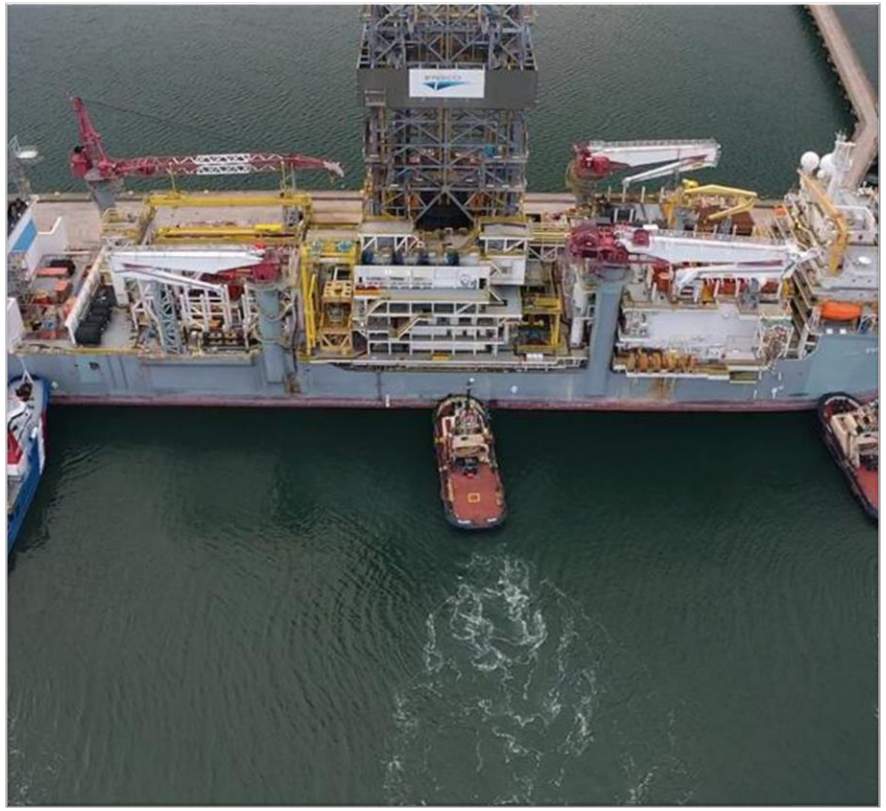
Prevention rather then cure

Prevention rather then cure



INTERNATIONAL SALVAGE UNION

The global salvage industry

ISU

Key messages

Saving lives

Protecting the environment

Preventing loss and mitigating risk

keeping trade flowing and ports open

LLOYD'S STANDARD FORM OF SALVAGE AGREEMENT

(Approved and Published by the Council of Lloyd's)

NO CURE - NO PAY

1. Name of the salvage Contractors: (referred to in this agreement as "the Contractors")	2. Property to be salved: The vessel: her cargo freight bunkers stores and any other property thereon but excluding the personal effects or baggage of passengers master or crew (referred to in this agreement as "the property")
3. Agreed place of safety:	4. Agreed currency of any arbitral award and security (if other than United States dollars)
5. Date of this agreement	6. Place of agreement
7. Is the Scopic Clause incorporated into this agreement? State alternative: Yes/No	
8. Person signing for and on behalf of the Contractors Signature:	9. Captain or other person signing for and on behalf of the property Signature:

In particular:

(i) the Contractors may make reasonable use of the vessel's machinery gear and equipment free of expense provided that the Contractors shall not unnecessarily damage abandon or sacrifice any property on board;

(ii) the Contractors shall be entitled to all such information as they may reasonably require relating to the vessel or the remainder of the property provided such information is relevant to the performance of the services and is capable of being provided without undue difficulty or delay;

(iii) the owners of the property shall co-operate fully with the Contractors in obtaining entry to the place of safety stated in Box 3 or agreed or determined in accordance with Clause A.

G **Rights of termination:** When there is no longer any reasonable prospect of a useful result leading to a salvage reward in accordance with Convention Articles 12 and/or 13 either the owners of the vessel or the Contractors shall be entitled to terminate the services hereunder by giving reasonable prior written notice to the other.

H **Deemed performance:** The Contractors' services shall be deemed to have been performed when the property is in a safe condition in the place of safety stated in Box 3 or agreed or determined in accordance with clause A. For the purpose of this provision the property shall be regarded as being in safe condition even though that property (or part thereof) is damaged or in need of maintenance provided that (i) the Contractors are not obliged to remain in attendance to satisfy the requirements of any port or harbour authority, governmental agency or similar authority and (ii) the continuation of skilled salvage services from the Contractors or other salvors is no longer necessary to avoid the property becoming lost or significantly further damaged or delayed.

I **Arbitration and the LSA Clauses:** The Contractors' remuneration and/or special compensation shall be determined by arbitration in London in the manner prescribed by Lloyd's Salvage Arbitration Clauses ("the LSAC") in force at the date of this agreement. The provisions of the said LSAC are deemed to be incorporated in this agreement and form an integral part hereof. Any other difference arising out of this agreement or the operations hereunder shall be referred to arbitration in the same way.

J **Governing law:** This agreement and any arbitration hereunder shall be governed by English law.

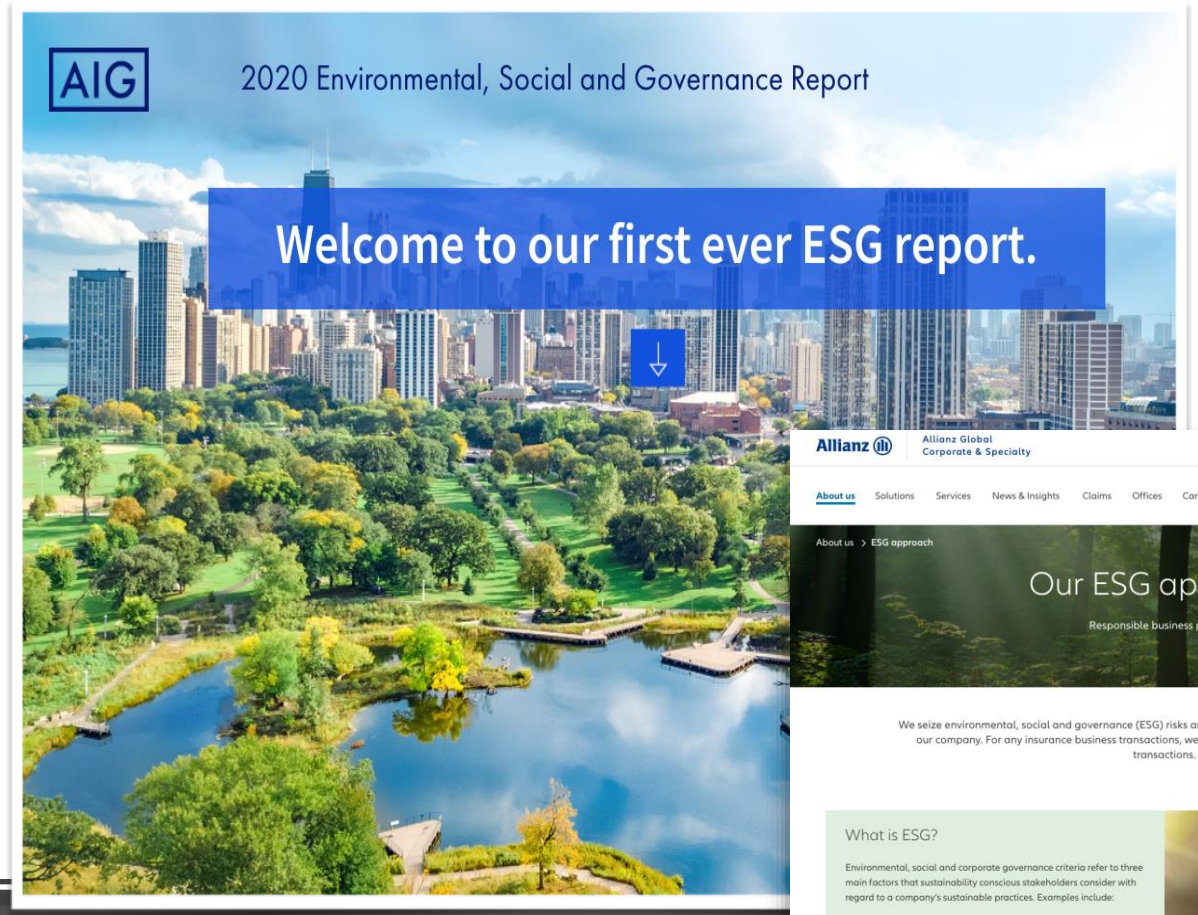
K **Scope of authority:** The Master or other person signing this agreement on behalf of the property identified in Box 2 enters into this agreement as agent for the respective owners thereof and binds each (but not the one for the other or himself personally) to the due performance thereof.

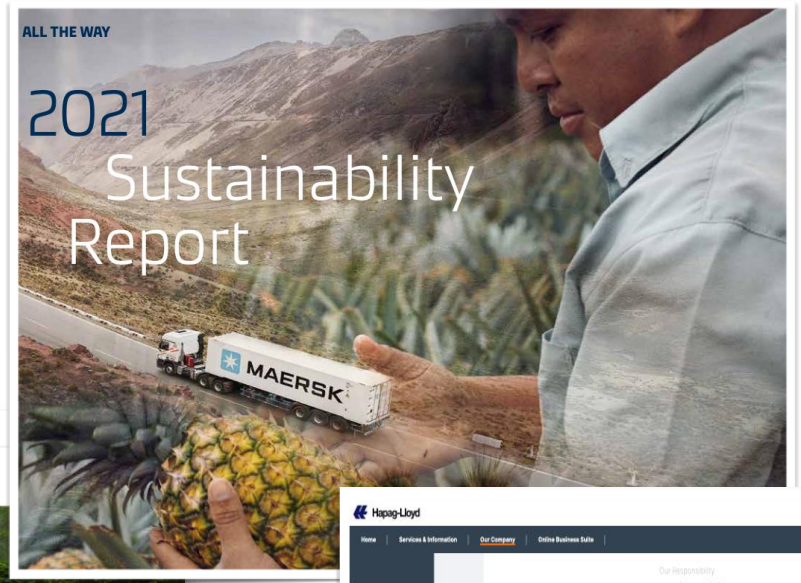
L **Inducements prohibited:** No person signing this agreement or any party on whose behalf it is signed shall at any time or in any manner whatsoever offer provide make give or promise to provide or demand or take any form of inducement for entering into this agreement.

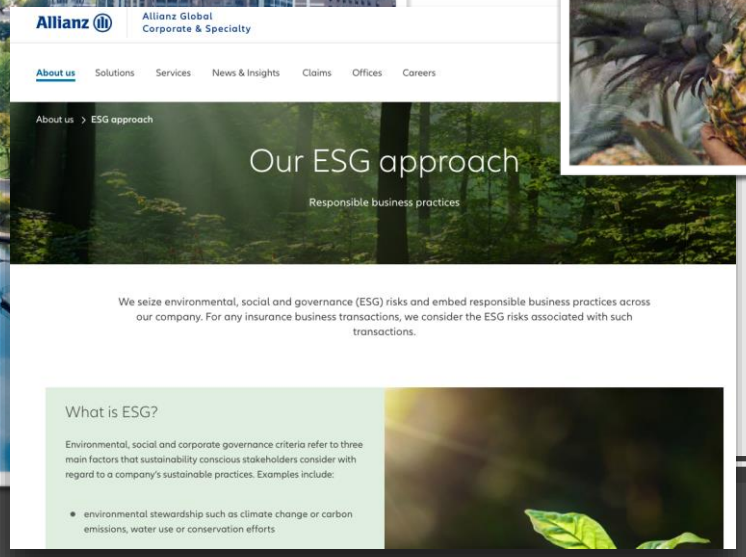
IMPORTANT NOTICES

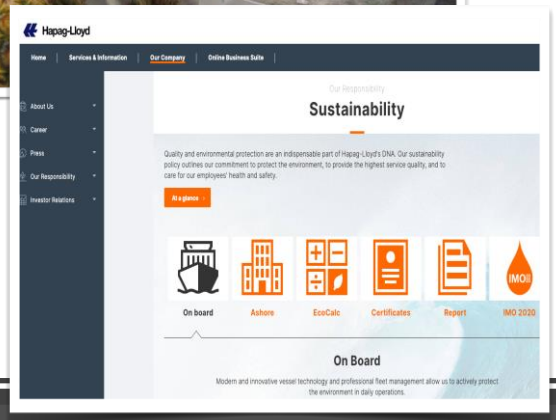
1 **Salvage security.** As soon as possible the owners of the vessel should notify the owners of other property on board that this agreement has been made. If the Contractors are successful the owners of such property should note that it will become necessary to provide the Contractors with salvage security promptly in accordance with Clause 4 of the LSAC referred to in Clause I. The provision of General Average security does not relieve the salved interests of their separate obligation to provide salvage security to the Contractors.

Current issues - sustaining LOF

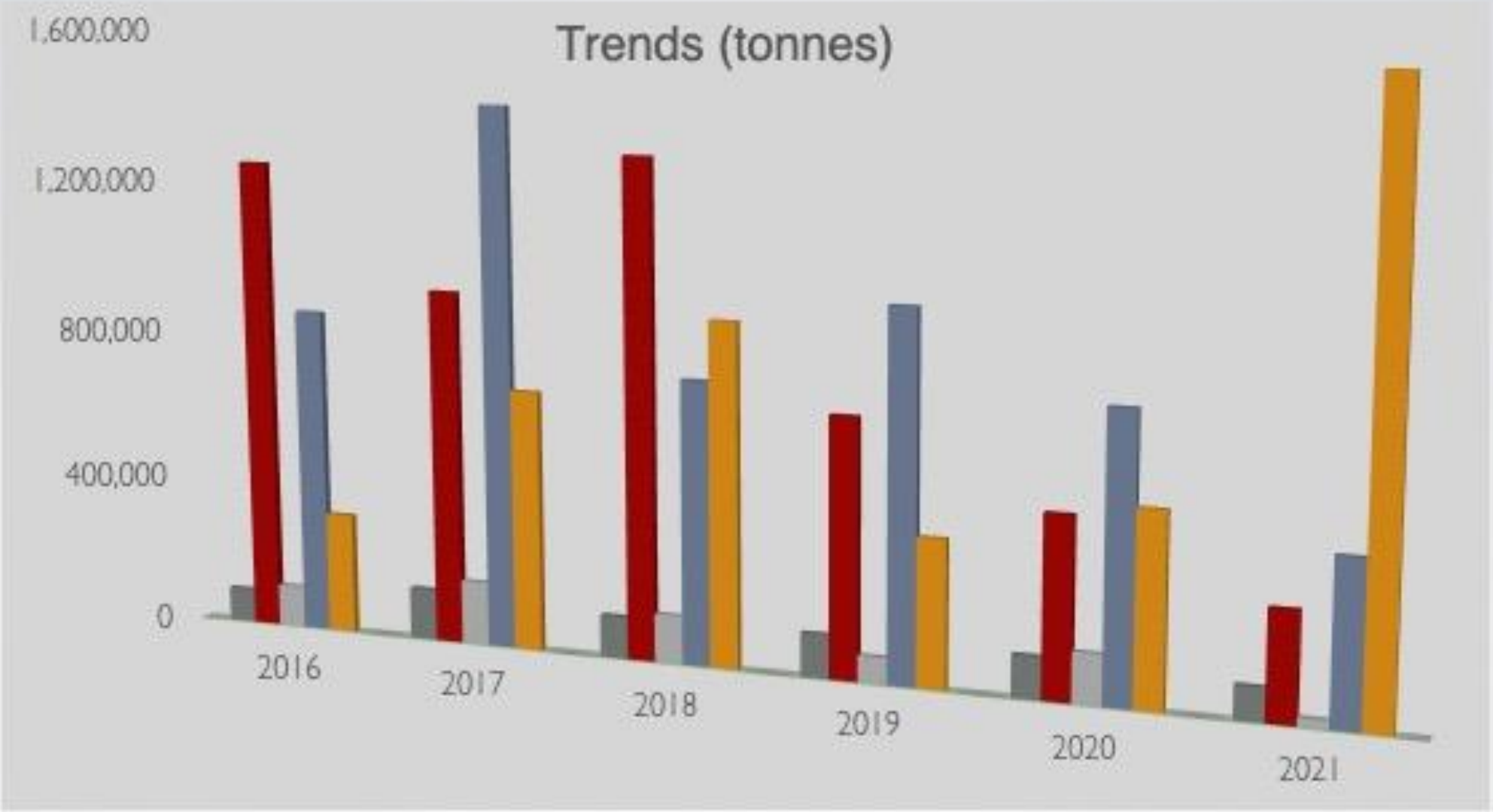








Environmental protection


Trends (tonnes)
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1,200,000
800,000
400,000
0
2016
2017
2018
2019
2020
2021
Bunkers
Oil
Chemicals
Bulk
Containers