Italian situation and implementation on board of “green” technologies

CONFITARMA

Italian Shipowner's Association

Young Shipowner's Group

Green Economy Committee meeting
– Rome 21th September 2010

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Environmental Issues Specialist

ITALIAN SITUATION

Pollutants & relevant rules

AIR EMISSIONS

New requirements

1. **SOx emissions**
   - Revised MARPOL Annex VI requirements
   - EC low sulphur Directive (2005/33/CE)
   - Decreto Legislativo n.205 09/11/2007
3. **Ozone Depleting Substances**
   - Revised MARPOL Annex VI requirements
4. **CO2 Emission**
   - Draft revision of MARPOL Annex VI (requirements for new and existing ships: EEDI, SEEMP)
   - Market Based Instruments

Under discussion

Pollutants & relevant rules

WATER EMISSIONS

New requirements not yet in force

1. **Harmful acquatic horganisms**
   - BWM Convention

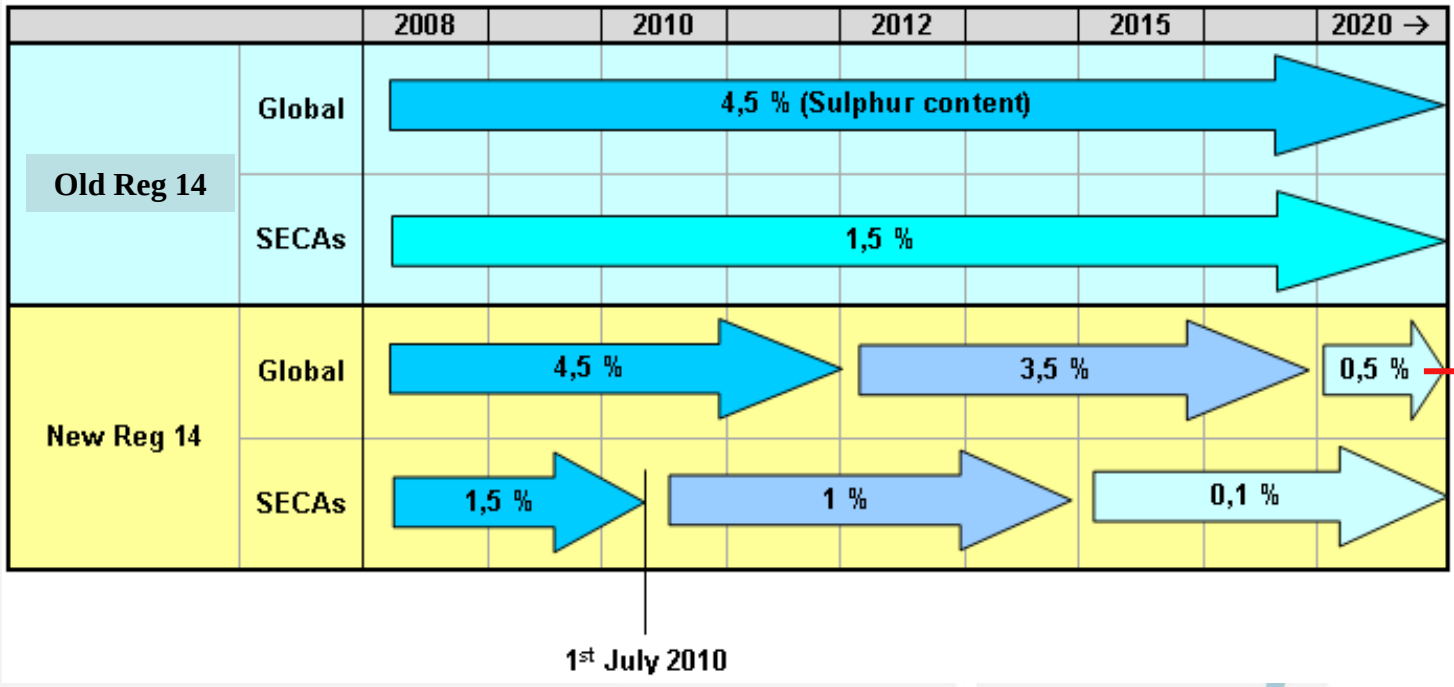
2. **Pollution by sewage**
   - Draft revision of MARPOL Annex IV (possible introduction of special areas – Baltic Sea)

3. **PSSA (Particular Sensitive Sea Area)**
   - Strait of Bonifacio

Under discussion

SOx emissions

Revised MARPOL Annex VI requirements



Expert Group IMO

Endorsed to verify the availability of 0,5% fuel oil (study to be completed until 2018)

Possible postponement of the application date (1st January 2025)

EC low sulphur Directive 2005/33/CE
(Decreto Legislativo n.205 09/11/2007)

From	Fuel	ITALY	Notes
11/08/2006	Marine fuels	1,50%	**Pax ship in regular service to or from member state ports in territorial waters, pollution control zones and economic exclusive zone ***
01/01/2010	Marine fuels	0,10%	**all ships at berth in Community ports****

- ***** **"regular service":** series of passenger ship crossings operated so as to serve traffic between the same two or more ports, or a series of voyages from and to the same port without intermediate calls, either: (i) according to a published timetable, or (ii) with crossings so regular or frequent that they constitute a recognisable schedule;
- ****** **exemptions**: stops less than two hours

Air emissions - Sulphur Oxides (SOx)

ITALY - pollution control zones and economic exclusive zone

Roma .....

Ministero dell'Ambiente
e della Tutela del Territorio
e del Mare
DIREZIONE GENERALE PER LA PROTEZIONE DELLA NATURA

Al RINA SpA
Via Corsica, 12
16128 Genova

c.a. Ing. Pierluigi Gaggero

e p.c. Direzione Generale per le Valutazioni Ambientali
SEDE

Ministero dell'Ambiente e della Tutela del Territorio e del Mare - Direzione Protezione Natura
N. ..... prot DPN - 2010 - 0017134 del 06/08/2010
Risposta al Foglio N. .....
All. N. ..... Allegati .....

OGGETTO: D.L. n. 205 del 9 novembre 2007 – Zone Economiche Esclusive e Zone di Protezione Ecologica

Si fa riferimento alla nota prot. n. RSSE/ENVT/PGG/70472 del 30/07/2010 di codesto Registro Navale con la quale si chiedono informazioni circa l'istituzione di Zone di Protezione Ecologica ai fini dell'applicazione di quanto fissato dal D.L. n. 205 del 9 novembre 2007.

A tal proposito si comunica che le procedure per l'istituzione della ZPE del Mediterraneo nord-occidentale, del Mar Ligure e del Mar Tirreno sono in corso di definizione e che, ad oggi, non è stata ancora istituita nessuna ZPE ai sensi della L. 61/2006.

Il Dirigente
Dr. Oliviero Montanaro

1,5 % sulphur content limits only for Pax ship in regular service to or from member state ports in territorial waters

EC low sulphur Directive 2005/33/CE
(Decreto Legislativo n.205 09/11/2007)

0,1% requirement for ships at berth in community ports

New and existing ships already capable of using Low Sulphur Fuels (LSF) content not exceeding 0.1% by mass

LOW SULPHUR ADDITIONAL

CLASS NOTATION

to highlight that evidence has been provided to the Society about the capability of some or all on board fuel oil consumers to use LSF.

Ozone Depleting Substances

(Reg. 12)

Installations containing ozone depleting substances are prohibited:

1. On board ships constructed ≥ 19 May 2005
2. In case of ships constructed < 19 May 2005 with a contractual (or actual) delivery date ≥ 19 May 2005

Exception for new installations containing HCFCs (1 January 2020)

Main change to the current text of Reg.12

OZONE DEPLETING SUBSTANCES RECORD BOOK

- All ships ≥ 400 GT
- It shall contain data relevant to recharge operations, emissions to the atmosphere (leaks), discharges to land based reception facilities…..(kg)

OZONE DEPLETING SUBSTANCES RECORD BOOK

"This Record Book may form part of an existing log-book or electronic recording system as approved by the Administration"

RINA

Fax / E-mail Message

DATE: 20/5/2010 | OUR REF.: SAFS/TMO/35363 | PAGE 1

FROM: SAFETY- MARITIME LABOUR AND DANGEROUS GOODS

TO: Ministro Infrastrutture e Trasporto Ufficio 1 - Reparto 6 | ATT.: | FAX/E-MAIL: ufficio1.reparto6@mit.gov.it

COPY TO: luigi.giardino@mit.gov.it | ATT.: | FAX/E-MAIL: luigi.giardino@mit.gov.it

SUBJECT: **Implementation of revised MARPOL Annex VI Reg. 12.6**

Dear Sirs,

As you surely know, amended MARPOL Annex VI, as contained in Resolution MEPC.176(58), will enter into force on 1 July 2010.

Regulation 12 Paragraph 6 of amended MARPOL Annex VI requires:

Each ship subject to regulation 6.1 which has rechargeable systems that contain ozone depleting substances shall maintain an Ozone Depleting Substances Record Book. This Record Book may form part of an existing log-book or electronic recording system as approved by the Administration

In this respect RINA, unless otherwise instructed, will:

a) accept the Ozone Depleting Record Book both in paper format or electronic recording system (an updated back up of electronic data is to be maintained on board).

b) accept the Ozone Depleting Record Book, as an independent record book or as part of other existing log-books

For any possible information or clarification, please contact Mr Claudio ABBATE, Head of Safety Sectors, RINA Technical Services, e-mail: claudio.abbate@rina.org, tel.+39 010 5385 714.

Yours Sincerely

Italian Administration requires approval if the record book is an electronic recording system

STATE OF THE ART WITHIN IMO

1. Technical Measures

- EEDI (Energy Efficiency Design Index)
- EEOI (Energy Efficiency Operational Indicator)
- SEEMP (Ship Energy Efficiency Operational Plan)

2. Market Based Measures

- Emission Trading Scheme
- Levy on fuels

Air emissions – GHG Emissions

1. Technical Measures

REVISION OF MARPOL ANNEX VI

- **New ships (EEDI)**
- **New and existing ships (SEEMP)**

MEPC 61 (27 September – 1 October)

ITALY will vote in favour of MARPOL Annex VI amendments

Air emissions – GHG Emissions

2. Market Based Measures

EUROPEAN POSITION

- **Levy on fuels**
- **Emission Trading Scheme**

MEPC 61 (27 September – 1 October)

ITALIAN position not yet defined……

BWM CONVENTION - CONDITIONS FOR THE ENTRY INTO FORCE (Article 18)

12 Months after the ratification by at least:

- **30 States**
- **35 % of world merchant shipping tonnage**

STATUS OF THE CONVENTION

26 States

24.44 % of world merchant shipping tonnage

ITALY has not yet ratified the Convention

The ratification process in progress…..

GU del 8-9-2010 - Suppl. Ordinario n.213

Decreto 16 giugno 2010

Procedure nazionali per il rilascio della Certificazione di Tipo Approvato per impianti di trattamento di acque di zavorra prodotti da aziende italiane

ITALY has not yet established any national regulation to prevent the transfert of harmful aquatic organisms

Water Emissions – Revision of MARPOL Annex IV

Proposal under discussion at MEPC 61

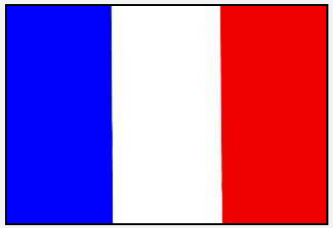
1. introduction of special areas **for passenger ships only** under MARPOL Annex IV:
   - Introduction of more stringent discharge requirements
   - Introduction of the obligation to discharge untreated sewage to land based reception facilities

BALTIC SEA

New ships	Existing ships
1 January 2013	1 January 2018

ITALY will likely support the proposal

Proposal under discussion at MEPC 61



1. Designation of the Strait of Bonifacio as Particular Sensitive Sea Area (ITALY&FRANCE)

- **Adoption by IMO of a mandatory traffic separation scheme (TSS)**
- **Promulgation of areas to be avoided close to reefs that present particular dangers to shipping**
- **Establishment of a vessel traffic system (VTS) in accordance with the provisions of the SOLAS Convention**
- **Establishment of a mandatory pilotage system for ships following the Strait of Bonifacio**

IMPLEMENTATION ON BOARD OF "GREEN" TECHNOLOGIES

Ballast water treatment systems

Implementation table of BWM convention

Minimum requirements of the BWM Convention when it will enter into force

Ship Keel laying	Ship Ballast Water Capacity BWC	2009	2010	2011	2012	2013	2014	2015	2016	2017
Before 2009	1.500 ≤ BWC ≤ 5.000									
	BWC < 1.500; BWC > 5.000									
2009	BWC < 5.000			(1)						
	BWC ≥ 5.000									
2010 - 2011	BWC < 5.000									
	BWC ≥ 5.000									
2012	All BWC									

Legenda	
	Ballast Water Exchange
	Ballast Water Treatment

Note:

(1) ships constructed in 2009 and with a ballast water capacity of less than 5000 cubic meters are not required to comply with Ballast Water Treatment (D-2 standard) until their second annual survey, but no later than 31 December 2011.

BWM-T system technologies

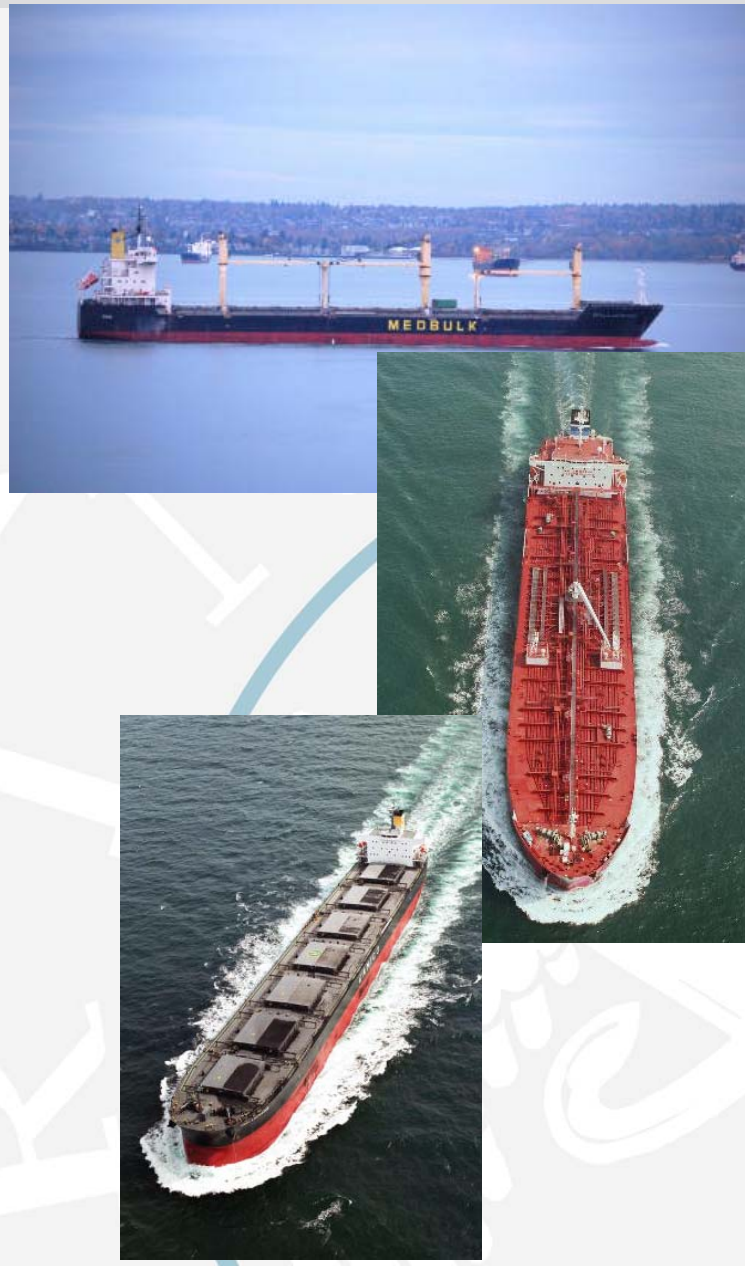
Systems, based on different technologies, are nowadays available on the market:

- **Mechanical filtration**
- **UV lamps**
- **Oxidation**
- **De-oxygenation (inert gas or CO2)**
- **Electrolysis/electro-chlorination**
- **Ozonation**
- **Etc…**

BWT system installation

The study has considered three existing ships:

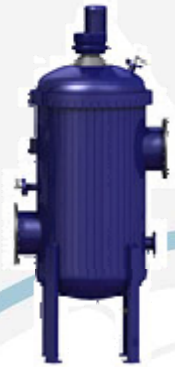
- **General cargo ship Handysize**
  - **Ballast water transfer capacity: 1500 m3/h**
  - **Electric power installed: 3 x D.G. 740 kW (1 spare)**
- **Product carrier (41000 DWT)**
  - **Ballast water transfer capacity: 1500 m3/h**
  - **Electric power installed: 4 x D.G. 740 kW (1 spare)**
- **Bulk Carrier Panamax**
  - **Ballast water transfer capacity: 2200 m3/h**
  - **Electric power installed: 3 x D.G. 400 kW (1 spare, ship without cranes)**



BWM-T system

The systems considered in the study consist in two physical components:

- **a mechanical filter**



- **a “biological killer unit” (UV lamps, Oxidation)**

Main modifications to the BWM system

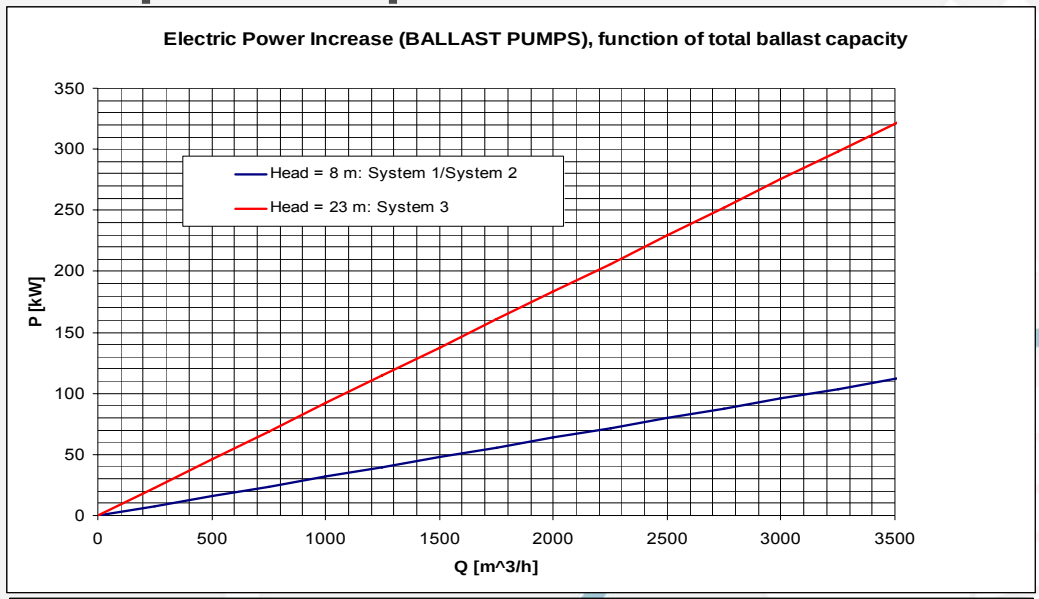
- **Ballast piping modifications:**
  - modifications required to connect the BWT system to the existing BW piping
  - possible change of the **scantling of the lines/valves** caused by the higher design pressure of part of the system
  - **possible modification of the stripping system** in order to win the pressure drop inside the BWT system

- **Electric balance**
  - Increase of power of **ballast pumps** to overcome the pressure drop lost in the BWT system
  - Power required by **ballast water treatment** system

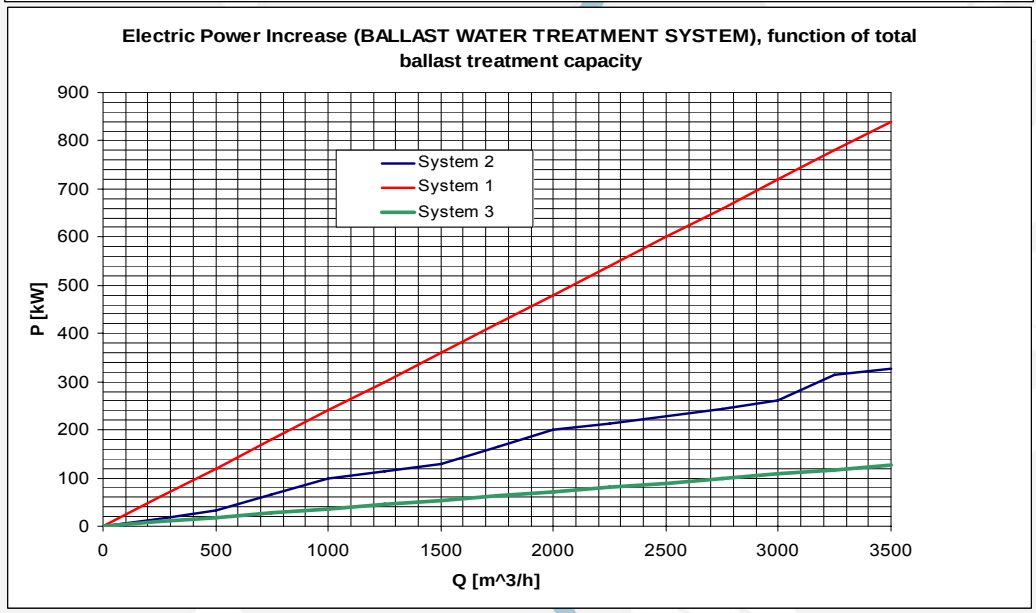
Electric Balance

Two are the main contributions to power requirements increase:

- **Increase of ballast pumps power**

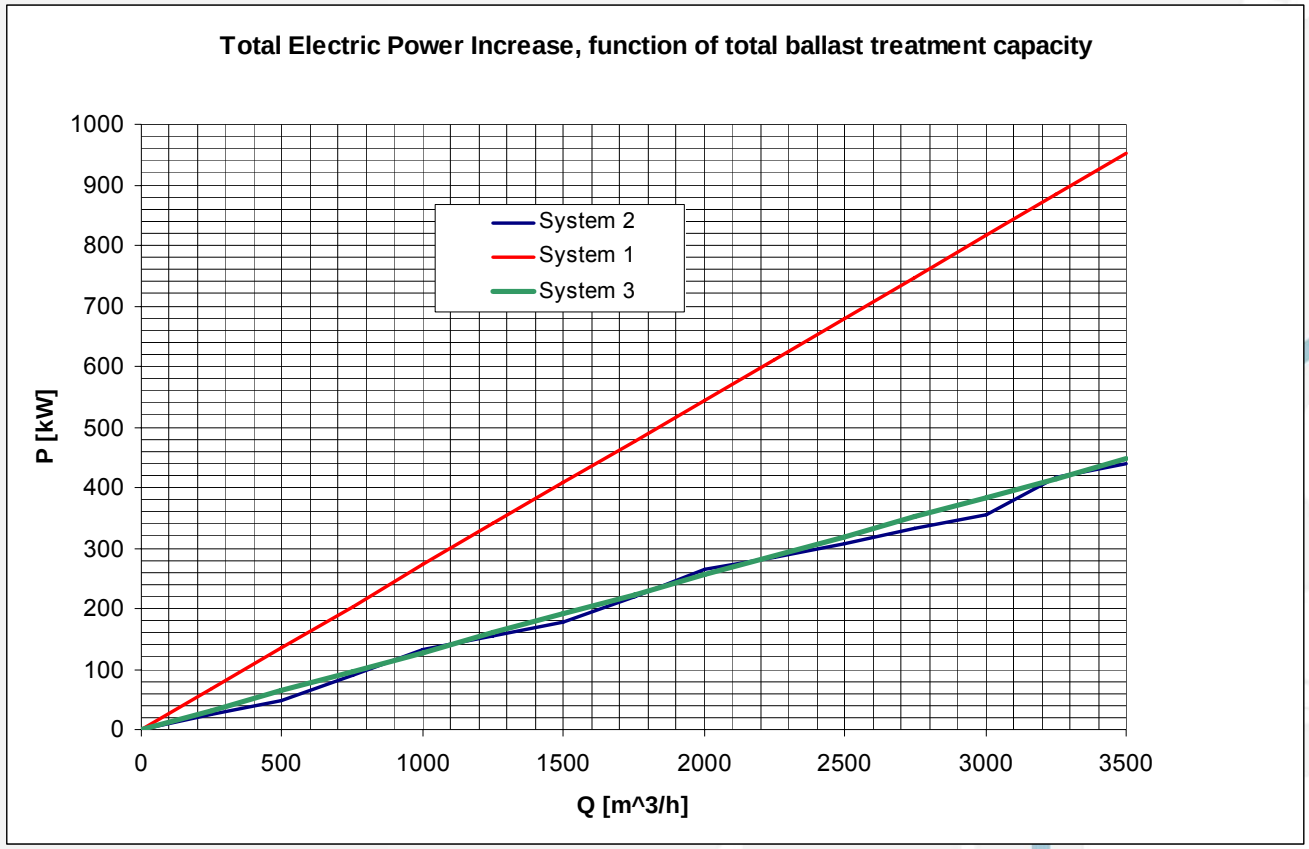


- **Power required by ballast water treatment system**

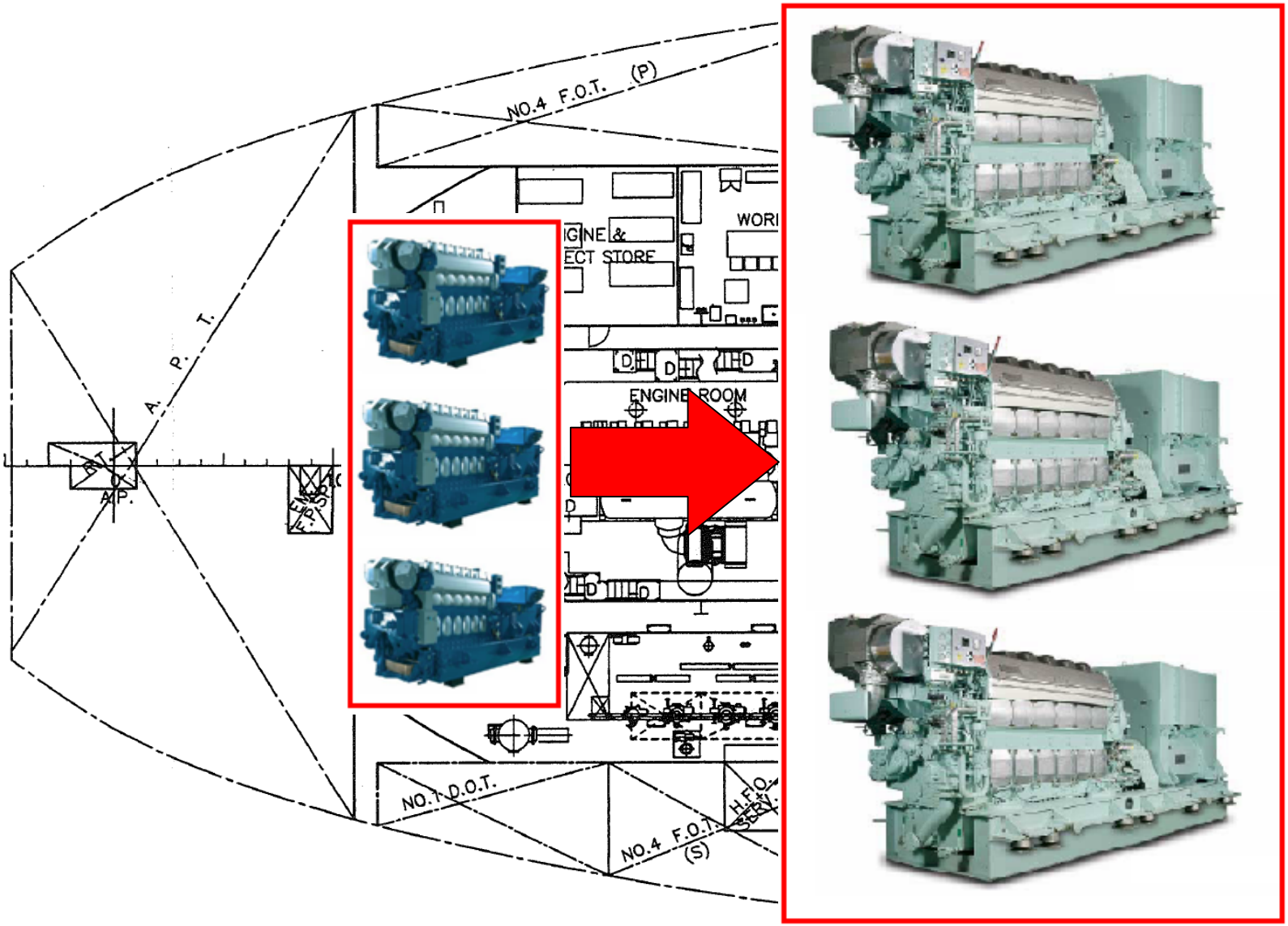


Electric Balance

- **Power increase of demand on board**



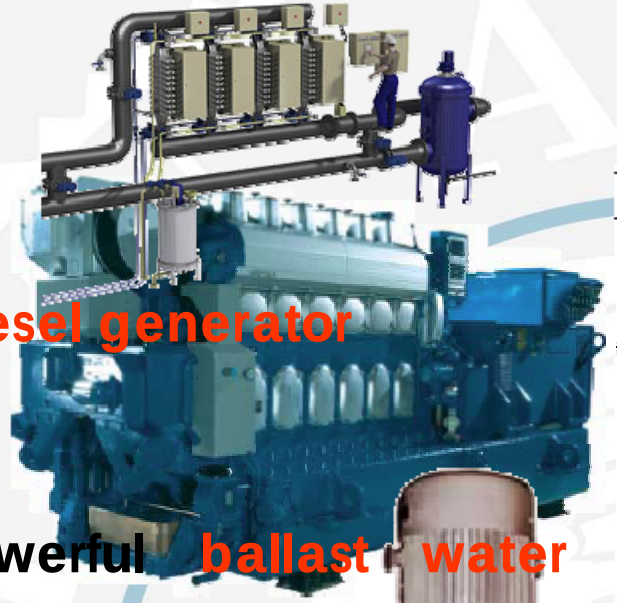
Power on board



Cost evaluation

For the increase of cost of delivery of ships with the BWM system the following aspects should be taken into account:

- **Cost of the ballast water treatment system**

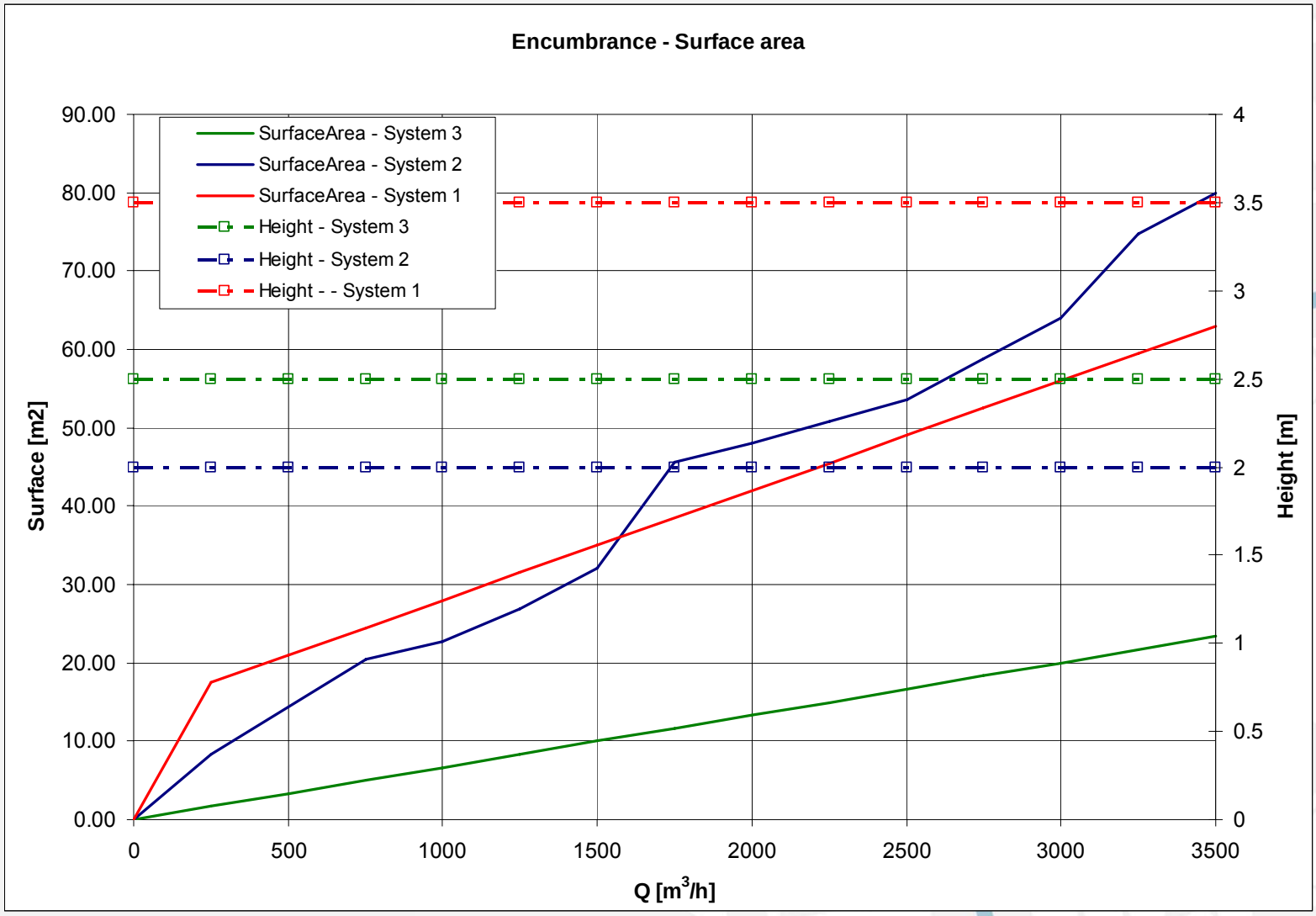


- **Increase of costs due to more powerful diesel generator**

- **Increase of costs due to more powerful ballast water pumps/electric engine**

- **Re-design costs**

BWT system dimensions



BWM-T systems and PSPC

Ballast water management systems

STRONG ⇕ **RELATIONSHIP**

Performance standard for Protective Coating:

This standard defines the system and application of coatings on new buildings with the aim to prevent a rapid corrosion and provide a minimum 15-year lifetime of the coating system

BWM and PSPC

PSPC and BWM does not make a direct reference to each other, while, in practice, a strong relationship exist.

All the BWM-T systems have an impact on the environment inside the ballast water tanks and, therefore, on the maintenance of the painting and the corrosion of the ballast water tanks; the final effect on structures corrosion can be positive or negative.

Some BWM-T systems designs have already taken into account the corrosion effect, by carrying out long duration corrosion tests.

Thank you for your attention !