

Implications of IMO Strategy Plan on shipping and shipbuilding industry



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Goal-based verification heralds new era for ship construction rules

Maritime Safety Committee confirm classification societies' ship construction rules for oil tankers and bulk carriers conform to the goals and functional requirements set by IMO. more...



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1. UN SDGs and IMO Strategy Plan

SDGs in Maritime Sector (IMO SP)

1. UN 2030 Agenda for Sustainable Development
 - 17 Sustainable Development Goals(SDGs)/IMO(G1-G17, except G15-Life on Land)
 - A particular connection to maritime transportation (G2, G5, G7, G9, G13, G14)





1. UN SDGs and IMO Strategy Plan

1. What is sustainable development ?

- Sustainable development has been defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs
- Sustainable development calls for concerted efforts towards building an inclusive, sustainable and resilient future for people and planet
- For sustainable development to be achieved, it is crucial to harmonize three core elements: economic growth, social inclusion and environmental protection. These elements are interconnected and all are crucial for the well-being of individuals and societies.

2. How will the SDGs be implemented ?

- Implementation and success will rely on countries' own sustainable development policies, plans and programs, and will be led by countries. The SDGs will be a compass for aligning countries' plans with their global commitments.
- Nationally owned and country-led sustainable development strategies will require resource mobilization and financing strategies.
- All stakeholders : governments, civil society, the private sector, and others, are expected to contribute to the realization of the new agenda.
- A revitalized global partnership at the global level is needed to support national efforts recognizing the 2030 Agenda. Multi-stakeholder partnerships have been recognized as an important component of strategies that seek to mobilize all stakeholders around the new agenda



1. UN SDGs and IMO Strategy Plan



End poverty in all its forms everywhere

Billions of people all over the world rely on maritime transport in their everyday lives – even though they may not



End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Fish is a major source of nutrition globally, and IMO is working with the Food and Agriculture Organization of the United Nations (FAO) to address illegal, unreported and unregulated (IUU) fishing. IUU Fishing is a serious issue for the global fishing sector that impacts negatively on safety, on environmental issues, on conservation and on sustainability. In addition to harming fish populations, IUU fishing creates unfair market competition for – and threatens the livelihoods of – fishers who follow sustainable practices.

In a wider context, international shipping plays an essential role in the import and export of food all around the world, ensuring that growers, producers and consumers all have access to one another. IMO measures ensure that shipping is safe, secure and environment friendly.



1. UN SDGs and IMO Strategy Plan



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

In the maritime world, education and training are vital. But their importance extends far beyond shipping itself. The safety and security of life at sea, the protection of the marine environment and the efficient movement of global trade depend on the professionalism and competence of seafarers. The IMO's International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) sets global standards of competence for seafarers and effective mechanisms for enforcing its provisions.

IMO also contributes to inclusive and high-quality education by providing training activities, in particular through its technical cooperation programmes and its global maritime training institutions – the World Maritime University (WMU) and the IMO International Maritime Law Institute (IMLI).



1. UN SDGs and IMO Strategy Plan



Achieve gender equality and empower all women and girls

Shipping has historically been a male-dominated industry and that tradition runs long and deep. However, IMO believes that empowering women fuels thriving economies, spurs productivity and growth, and benefits every



Ensure access to water and sanitation for all

There is enough fresh water on the planet for everyone to have access to clean water. But due to bad economics or poor infrastructure, every year millions of people die from diseases associated with inadequate water supply, sanitation and hygiene. Effective management of waste disposal and dumping is vital if this goal is to be achieved; the London Convention and its Protocol regulate dumping and waste disposal at sea, a key component of the overall waste-management cycle.



1. UN SDGs and IMO Strategy Plan



Promote inclusive and sustainable economic growth, full and productive employment and decent work for all

Today we all depend on seafarers for most of the things we take for granted in our everyday lives. Over one million seafarers operate the global fleet – they bring both the essentials and the luxuries of life to billions of people. Shipping is essential to the world – but there would be no shipping without seafarers.

A concern for seafarer welfare, both as employees and as individuals, can be seen in IMO's continuing work on issues such as fatigue, fair treatment and liability and compensation for seafarers – not to mention the annual [Day of the Seafarer](#), celebrated each year on June 25th, when IMO campaigns globally to give wider recognition to seafarers.

IMO also cooperates with the International Labour Organization (ILO) to address various issues concerning health services and social security protection for seafarers.



1. UN SDGs and IMO Strategy Plan



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



10 REDUCED INEQUALITIES

Reduce inequality within and among countries

IMO contributes to SDG 10 by providing extensive technical cooperation assistance to developing countries. While the Organization adopts international shipping regulations, it is the responsibility of governments to implement those regulations. IMO has developed an Integrated Technical Cooperation Programme (ITCP) which is designed to assist governments which lack the technical knowledge and resources that are needed to operate a shipping industry safely and efficiently.

IMO's ITCP has a mission statement to "help developing countries improve their ability to comply with international rules and standards relating to maritime safety and the prevention and control of maritime pollution, giving priority to technical assistance programmes that focus on human resources development and institutional capacity-building."



1. UN SDGs and IMO Strategy Plan



Make cities and human settlements inclusive, safe, resilient and sustainable



Ensure sustainable consumption and production patterns

IMO contributes to SDG 12 through the reduction of waste generation, both operational waste from ships (through the MARPOL Convention) and dumping of wastes under the London Convention and Protocol (LC/LP). For garbage and several other types of waste generated on board ships, MARPOL requires port States to provide adequate reception facilities for the safe and sound management of wastes.

IMO also works to enhance technical capacities in wastewater management on board ships and in ports, and to promote recycling, cleaner production technologies and more sustainable consumption patterns.

IMO's Hong Kong International Convention provides a framework for safe and environmentally sound recycling of ships themselves.



1. UN SDGs and IMO Strategy Plan



13 CLIMATE ACTION

Take urgent action to combat climate change and its impacts

Responding to climate change is one of the greatest challenges of our era and one which IMO has been tackling for some time. In its role as the global regulator of international shipping, IMO has developed a raft of measures designed to control emissions from the shipping sector.

Thanks to IMO, international shipping was the first global industry sector to be subject to mandatory, binding energy-efficiency regulations and standards designed to address GHG emissions throughout the industry.

Emissions from international shipping are regulated by Annex VI of IMO's MARPOL Convention. They cover air pollution, energy efficiency and greenhouse gas (GHG) emissions.

In addition, the London Protocol addresses carbon capture and sequestration in subsea geological formations and marine geoengineering, such as ocean fertilization, which have great potential for climate change mitigation.

Combatting climate change will continue to be a vital strategic direction for IMO, both in short and the long term. IMO will continue to develop appropriate, ambitious and realistic solutions to minimize shipping's contribution to air pollution and its impact on climate change.



1. UN SDGs and IMO Strategy Plan



14 LIFE BELOW WATER

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Because international shipping takes place on the world's oceans, the work of IMO, which is responsible for measures to improve the safety and security of international shipping and to prevent pollution from ships, is integral to most, if not all, of the SDG 14 targets. To be sustainable, human activities have to be balanced with the oceans' capacity to remain healthy and diverse in the long term. A major part of IMO's role is to ensure that shipping continues to make its contribution to the global economy without upsetting that delicate balance.

IMO covers all aspects of international shipping – including ship design, construction, equipment, manning, operation and disposal – to ensure that this vital sector remains safe, environmentally sound, energy efficient and secure.

Implementing and enforcing the main conventions and regulations adopted by IMO Member States actively addresses marine pollution, mainly from sea-based sources but also, at least indirectly, from land-based sources.

IMO also supports the targets for managing and protecting marine and coastal ecosystems, not least through the establishment of Special Areas and Particularly Sensitive Sea Areas. Protecting marine biodiversity has also been a key theme for IMO for many years, most notably in its work to mitigate the threat of harmful invasive species being carried around the world by ships.

To help protect maritime wildlife, IMO's work includes reduction of underwater noise from ships and adopting measures to avoid collisions between ships and marine mammals. IMO has also banned the discharge of harmful litter from ships, and is part of the Global Partnership on Marine Litter, while the dumping of wastes at sea is regulated by the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, commonly called the London Convention, and its 1996 Protocol.



1. UN SDGs and IMO Strategy Plan



16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

IMO facilitates the global maritime transportation system through its global regime of treaties covering myriad aspects of ships and shipping. IMO assists developing countries in building effective institutions to ensure the safe, secure and environmentally protective flow of maritime commerce.

Students from IMO's educational establishments (the World Maritime University and the International Maritime Law Institute) often provide the core institutional capacity in their home countries to successfully implement the global regulatory regime for international shipping.



1. UN SDGs and IMO Strategy Plan



Strengthen the means of implementation and revitalize the global partnership for sustainable development

SDG 17 calls upon global partnerships to support the achievement of the SDGs in all countries, in particular developing countries.

IMO currently has partnership arrangements with more than 60 IGOs and more than 70 NGOs, including major global environmental organizations and bodies.

IMO actively pursues specific partnerships with its Member States and others to execute individual projects or initiatives at both regional and global level. Most of these are aimed at developing regions, which typically benefit from training events, fellowships and technical advisory missions.

Major examples of recent partnership initiatives from IMO include the Globallast Partnerships Project (with the GEF and UNDP), the Global Industry Alliance, under the GloMEEP Project, and the GMN Project (with EU funding) with its five regional centres of excellence for maritime technology.

Together, these and many other partnerships involving IMO make a significant contribution to the sustainable development of the maritime community.



1. UN SDGs and IMO Strategy Plan

SDGs in Maritime Sector (Education - WMU SP)

- ❖ **A particular connection to WMU related to UN 2030 SDGs Agenda**
 - * *In an environmentally responsible way, to safe, secure and efficient shipping on clean oceans in support of the maritime industry as an engine of world trade and as a leader in sustainable development*
 - * **G4**(Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all)
 - * **G5**(Achieve gender equality ad empower all woman and girls)
 - * **G7**(Ensure access to affordable, reliable, sustainable and modern energy for all :
 - * **G9**(Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
 - * **G13**(Take urgent action to combat climate change and its impacts)
 - * **G14**(Conserve and sustainably use the oceans, seas and marine resources for sustainable development)
 - * **G17**(Strengthen the means of implementation and revitalize the global partnership for sustainable development)

Source : <http://www.wmu.se/news/wmu-and-un-2030-sustainable-development-agenda>



1. UN SDGs and IMO Strategy Plan

SDGs in Maritime Sector (IMO SP)

- ❖ Trends, Developments and Challenges facing the IMO in the 2018-2023 period
 - A particular connection to maritime transportation
 - * *G2(End hunger, achieve food security and improved nutrition and promote sustainable agriculture*
 - * *G7(Ensure access to affordable, reliable, sustainable and modern energy for all : the continued efficient functioning of the maritime sector can trade flow freely, and food and energy be delivered cost-effectively across the globe; maritime transportation plays a central role, in particular for Small Island Developing States*
 - * *G5(Achieve gender equality ad empower all woman and girls : Shipping has traditionally been a male-dominated industry. IMO is making a concerted effort to empower women to be more broadly represented within the maritime community*
 - * *G9(Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation: This is central to the effective functioning of the whole transportation sector and therefore a major driver for the delivery of other goals; focus on regional and transborder infrastructure to support economic development and human well-being, is central to ensure the best use of financial resources and seek synergies.*

Source : C 116/4/1, Strategy, Planning and Reform(6 May 2016)



1. UN SDGs and IMO Strategy Plan

SDGs in Maritime Sector (IMO SP)

* *G13(Take urgent action to combat climate change and its impacts :*

Following from the Paris Agreement, through which 195 Parties to the United Nations Framework Convention on Climate Change (UNFCCC) have pledged to curb emissions, strengthen resilience and agreed to take common climate action, there is an expectation that maritime transportation considers which further measures to take from an industry that is truly global, and therefore not covered by national measures

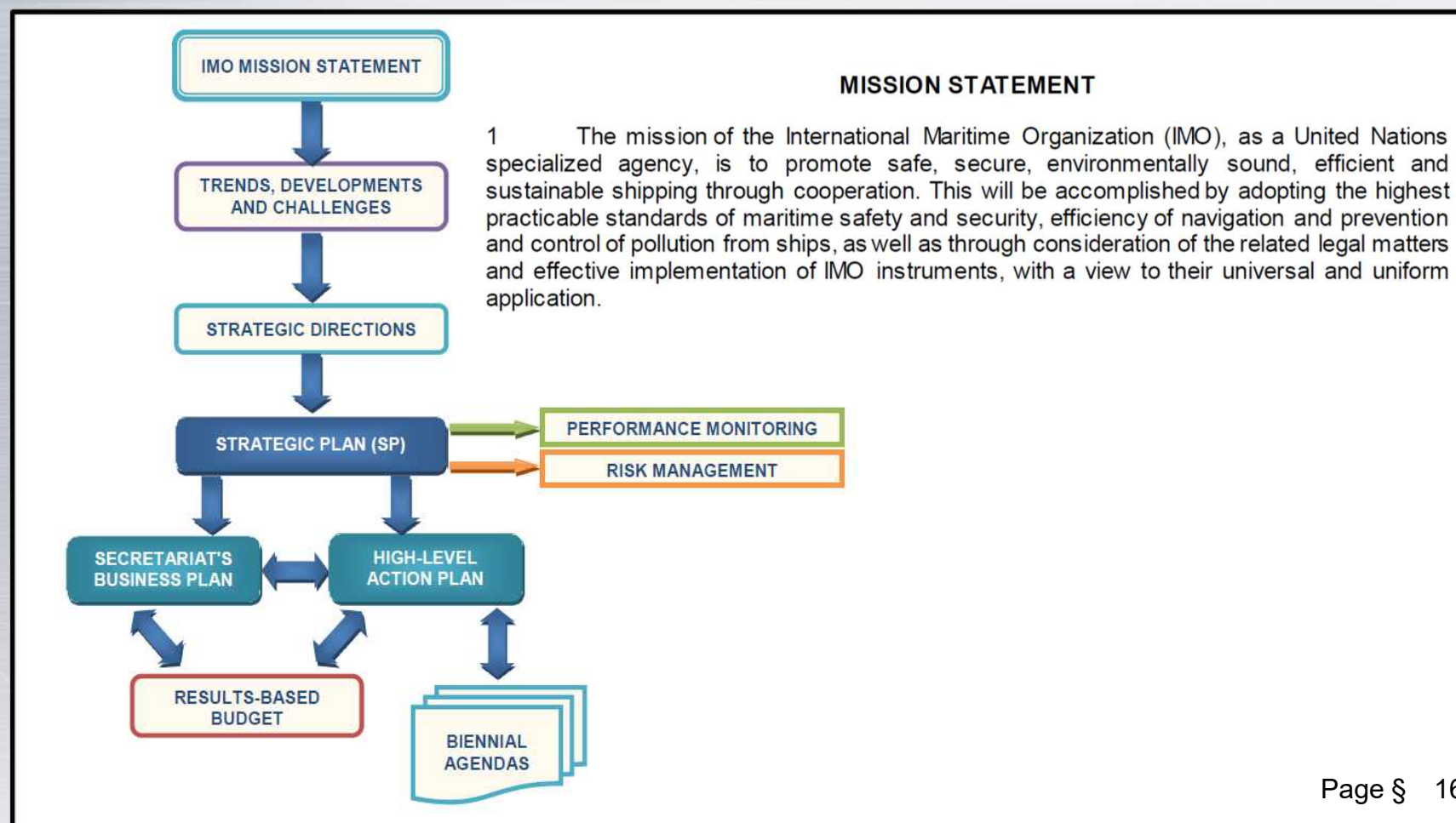
* *G14(Conserve and sustainably use the oceans, seas and marine resources for sustainable development. Oceans, seas and coastal areas from an integrated and essential component of the Earth's ecosystem and are critical to sustainable development. They cover more than two-thirds of the earth's surface and contain 97% of the planet's water. As users of the oceans and seas, the maritime community has a central role to play in ensuring among other things good governance and adequate measures to reduce the negative anthropogenic impacts on the marine environment*

Source : C 116/4/1, Strategy, Planning and Reform(6 May 2016)



2. Implementation of IMO Strategic Plan

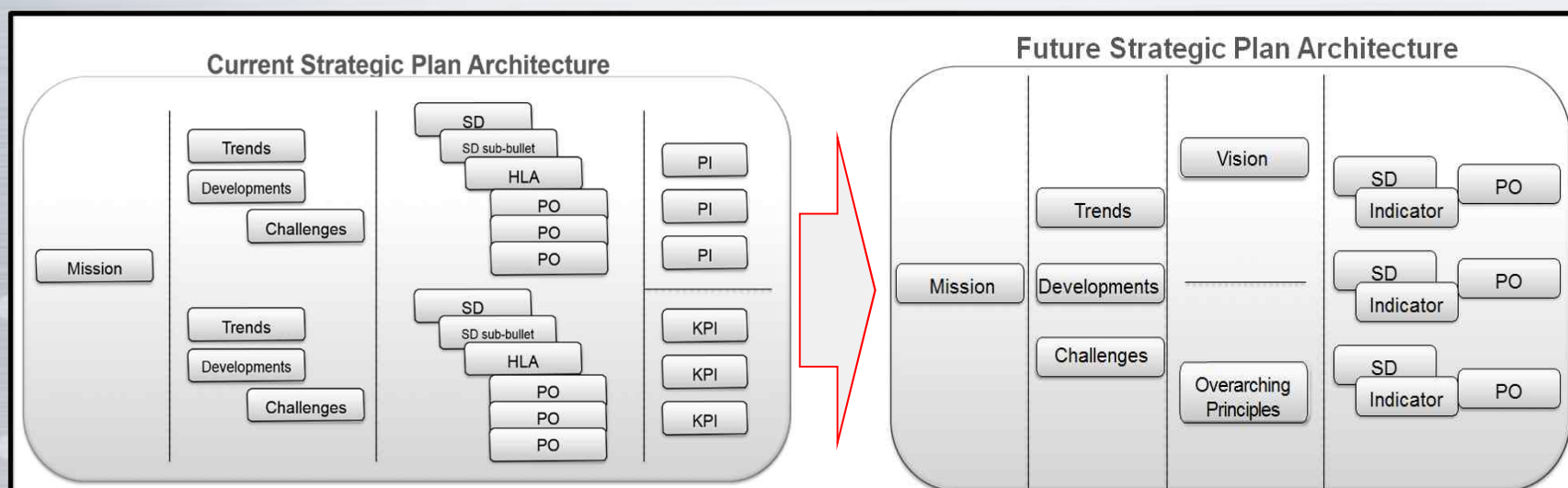
The Structure of IMO SP





2. Implementation of IMO Strategic Plan

Change of the Structure



VISION STATEMENT

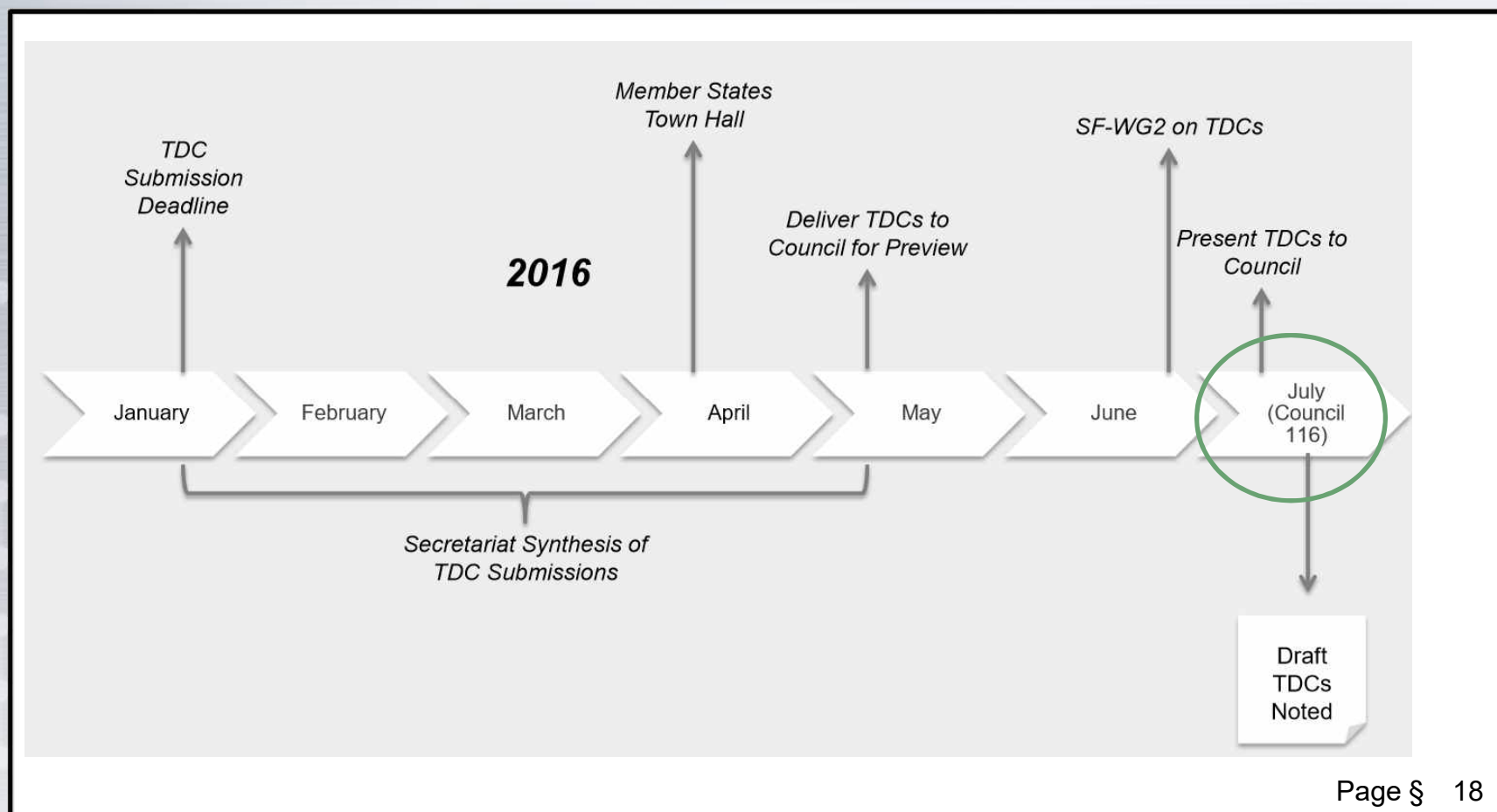
The vision for the International Maritime Organization for the period 2018-2023 is:

- .1 IMO will uphold its leadership role as the global regulator of shipping, promote greater recognition of the sector's importance and enable the advancement of shipping, whilst addressing the challenges of continued developments in technology and world trade; and the need to meet the 2030 Agenda for Sustainable Development.
- .2 To achieve this, IMO will focus on review, development and implementation of and compliance with IMO instruments in its pursuit to proactively identify, analyse and address emerging issues and support Member States in their implementation of the 2030 Agenda for Sustainable Development.



2. Implementation of IMO Strategic Plan

IMO SD





2. Implementation of IMO Strategic Plan (TDCs)

World economy and seaborne trade

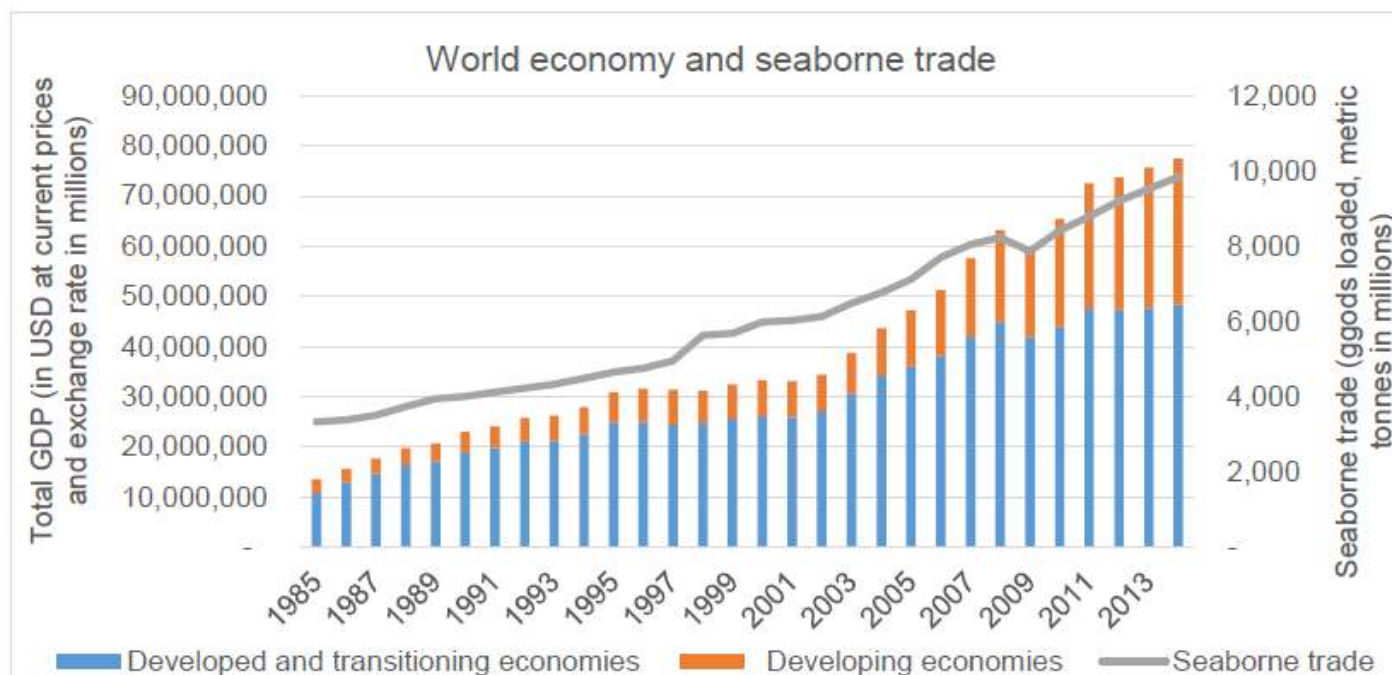


Figure 1 – World Economy and Seaborne Trade, 1985-2014
(UNCTAD, 2015a; UNCTAD, 2015b)



2. Implementation of IMO Strategic Plan (TDCs)

World population

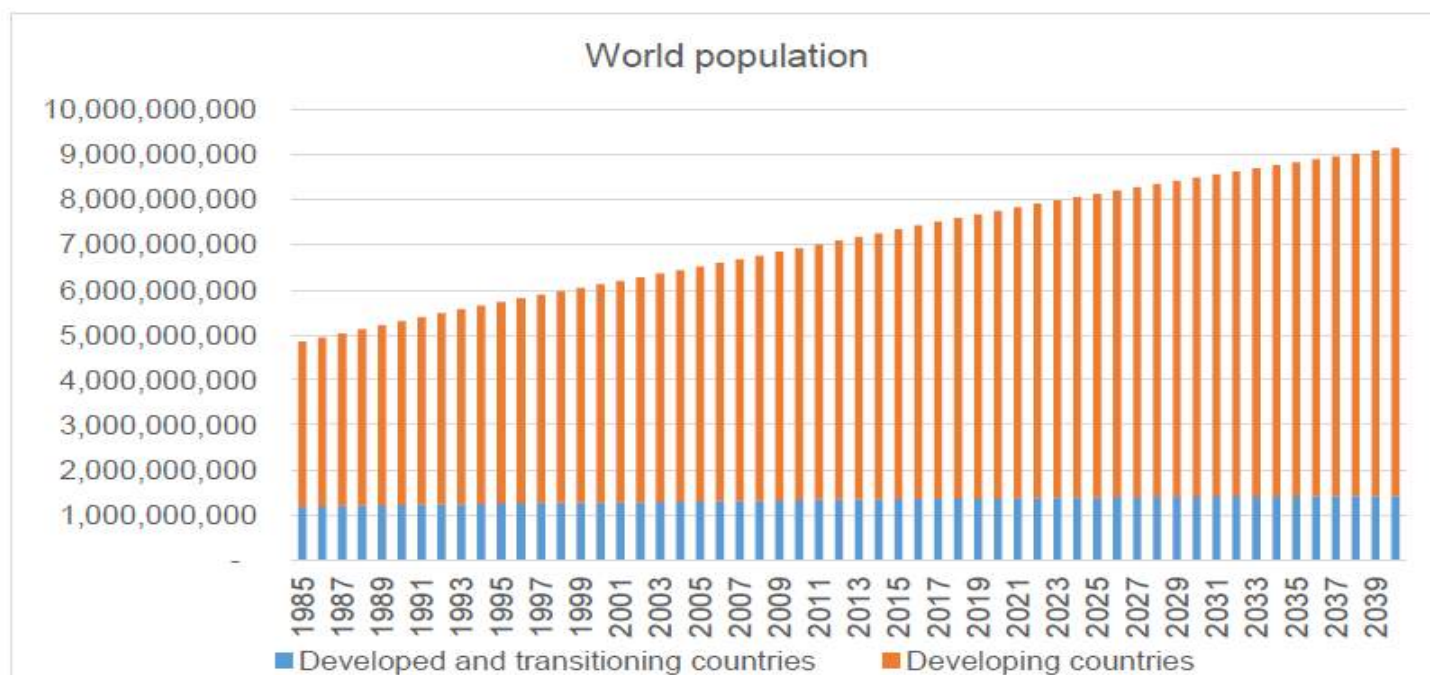


Figure 2 – World Population, 1980-2040
(UNCTAD, 2015c)



2. Implementation of IMO Strategic Plan (TDCs)

Top ten exports

Top ten export routes in terms of annual percentage growth, 2015-2020				Top ten export routes in terms of annual percentage growth, 2021-2030			
	Country	Exporting to	Annual % growth		Country	Exporting to	Annual % growth
1	Viet Nam	India	20	1	Viet Nam	China	15
2	Ireland	Viet Nam	19	2	Bangladesh	China	14
3	Bangladesh	UAE	18	3	India	China	14
4	Viet Nam	Bangladesh	16	4	Viet Nam	Malaysia	14
5	Bangladesh	India	16	5	China	Viet Nam	14
6	UAE	Turkey	16	6	China	Malaysia	14
7	Viet Nam	UAE	16	7	Viet Nam	India	14
8	China	Viet Nam	16	8	China	India	14
9	Bangladesh	Ireland	16	9	India	Viet Nam	14
10	Viet Nam	China	16	10	Bangladesh	India	14

Figure 4 – Top Ten Export Routes, 2015-2020 and 2021-2030
(HSBC, 2012)



2. Implementation of IMO Strategic Plan (TDCs)

Seaborne trade by type of cargo

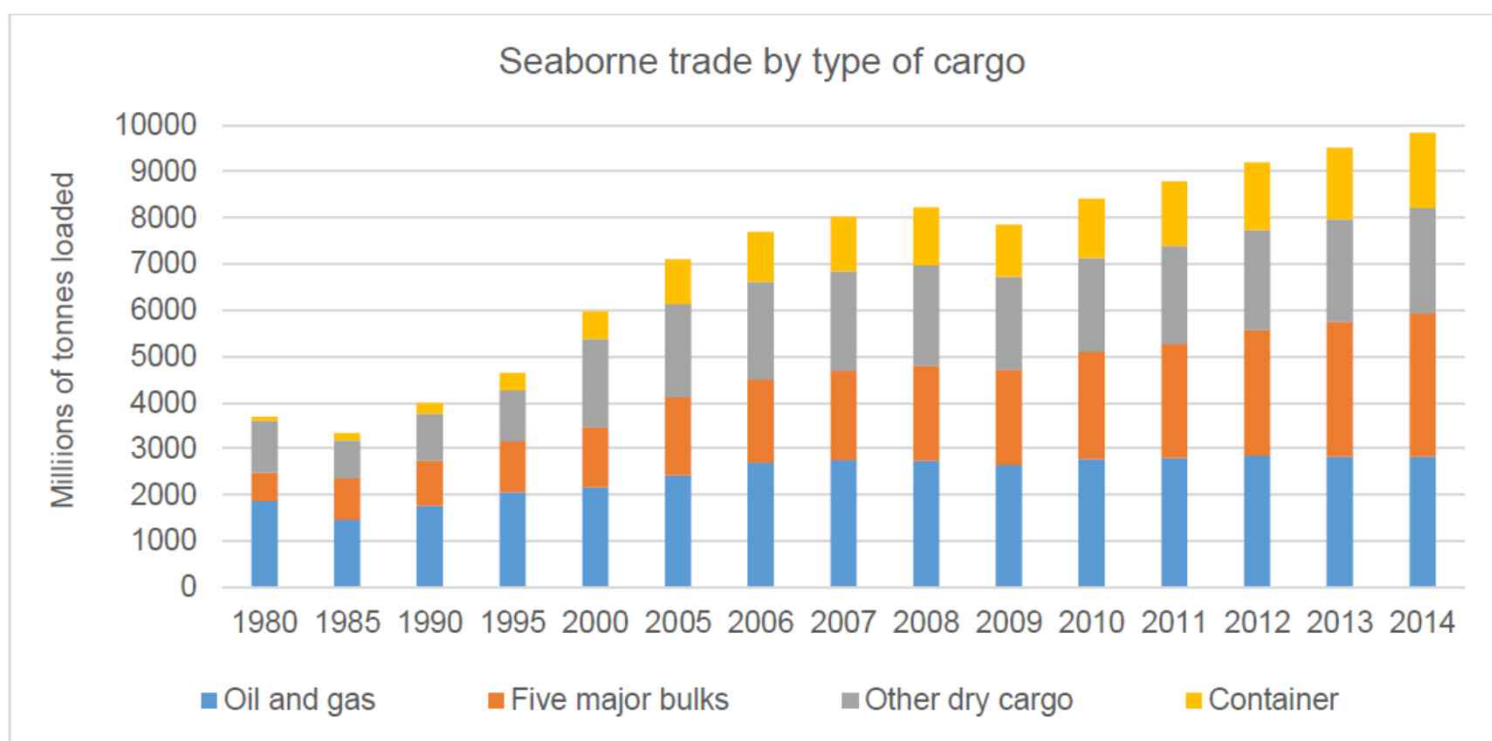


Figure 5 – Seaborne Trade by Type of Cargo
(UNCTAD, 2016d)



2. Implementation of IMO Strategic Plan (TDCs)

Ocean Surface Acidity

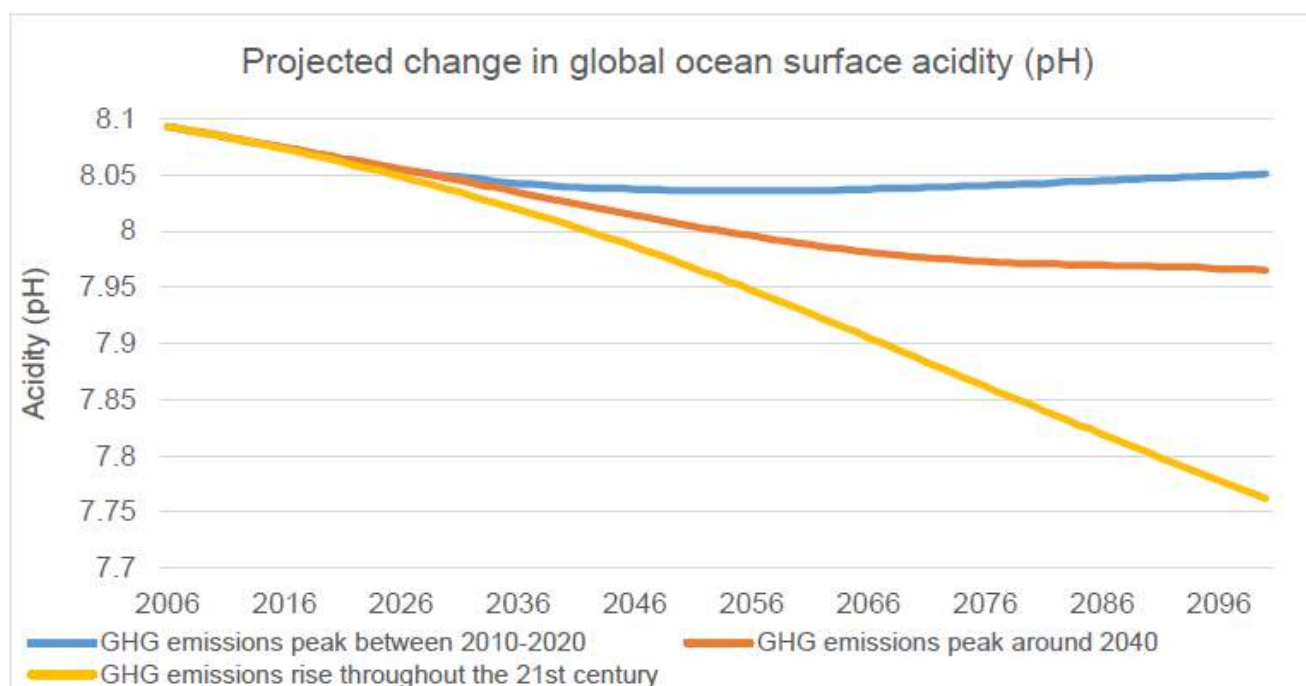


Figure 6 – Projected Change in Global Ocean Surface Acidity
(European Environment Agency, 2012)



2. Implementation of IMO Strategic Plan (TDCs)

Sea Level Rise

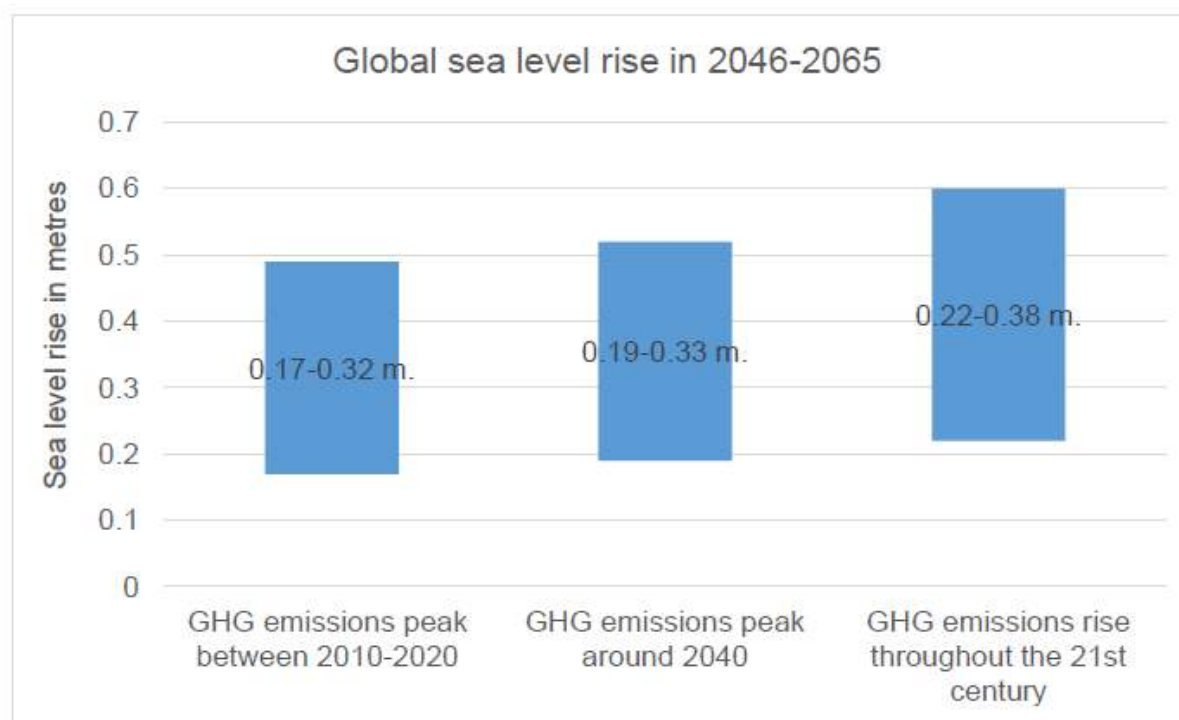


Figure 7 – Sea Level Rise
(IPCC, 2013)



2. Implementation of IMO Strategic Plan (TDCs)

Sea Level Rise

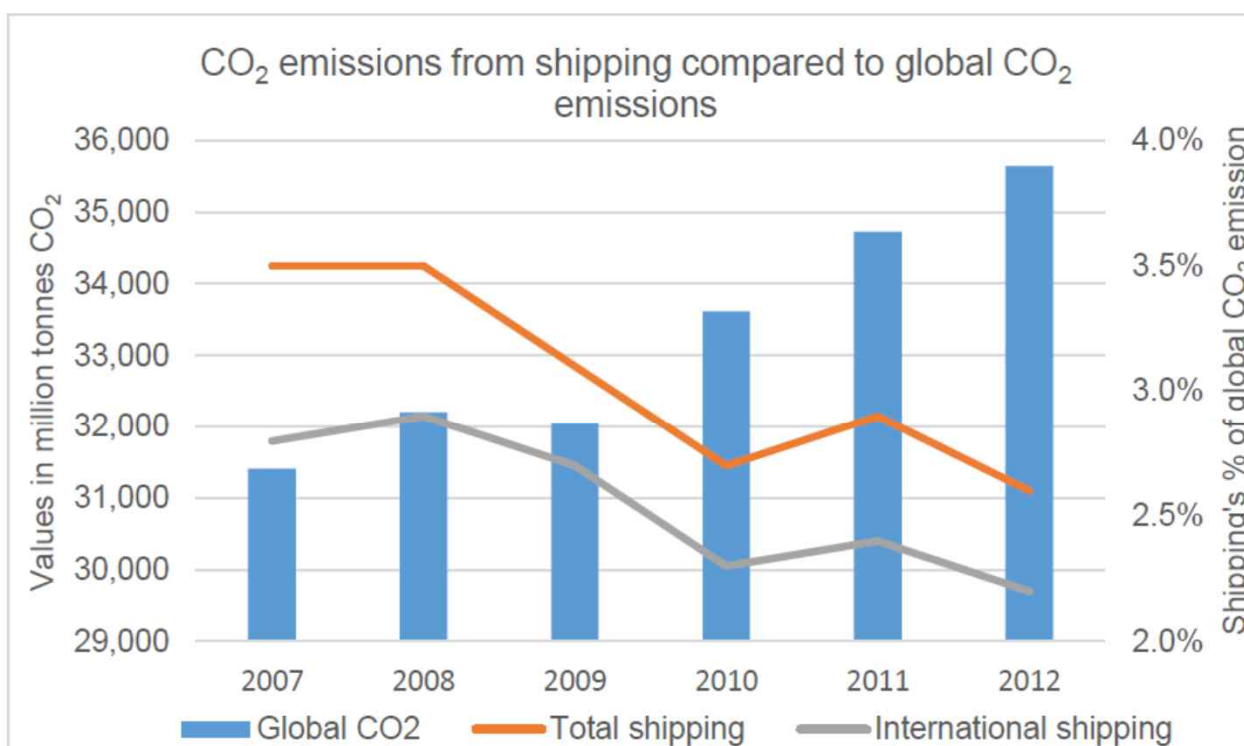


Figure 8 – CO₂ Emissions from Shipping and Global CO₂ Emissions (IMO, 2015)



2. Implementation of IMO Strategic Plan (TDCs)

IMO mandatory instruments

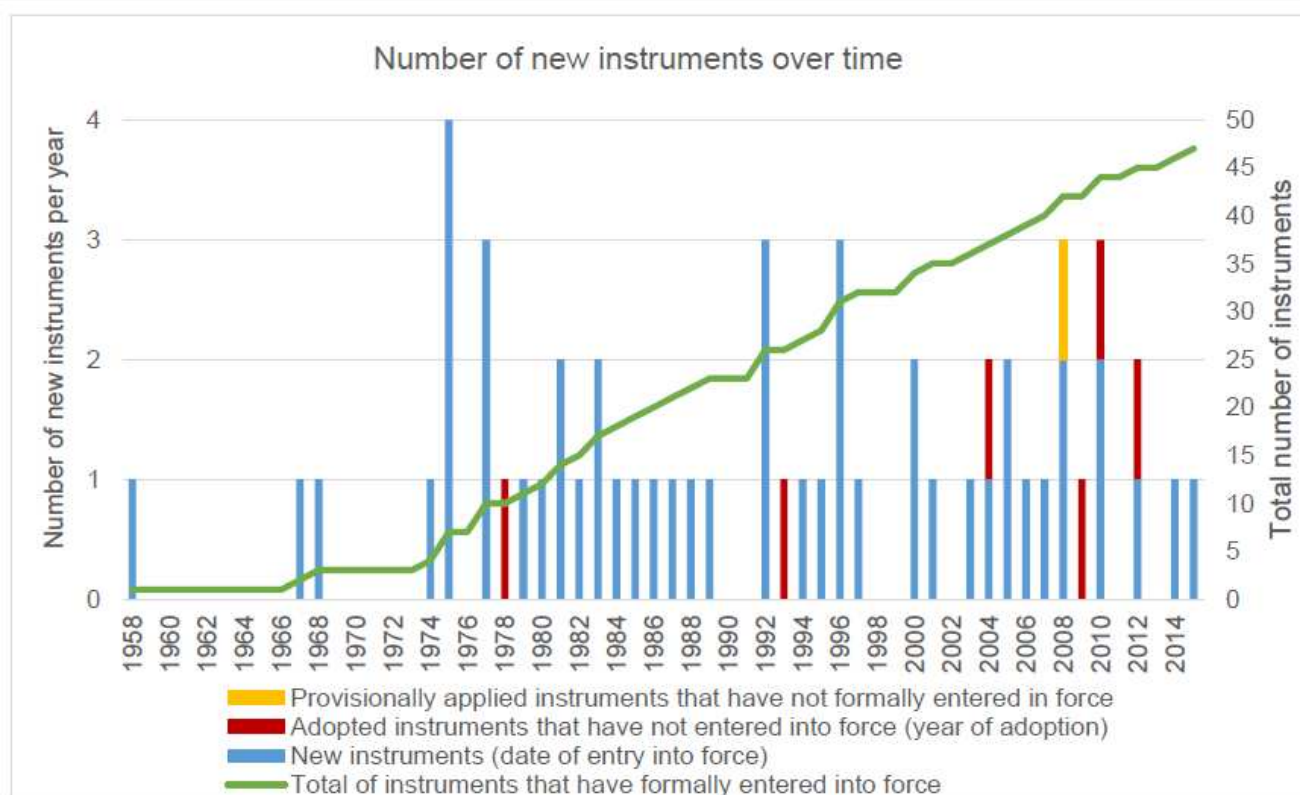


Figure 9 – Instruments over Time
(IMO, 2016a)



2. Implementation of IMO Strategic Plan (TDCs)

IMO mandatory instruments

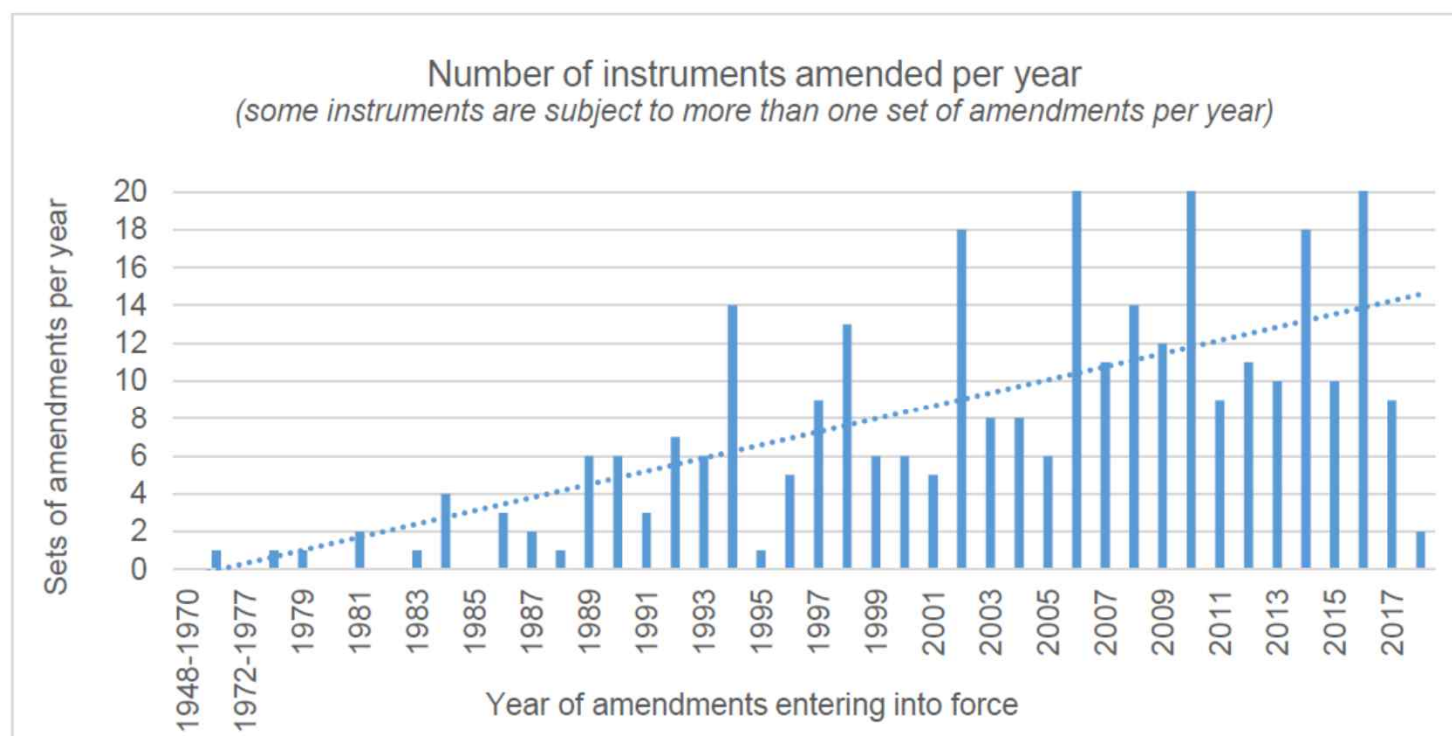


Figure 10 – Number of Instruments Amended per Year
(IMO, 2016b)



2. Implementation of IMO Strategic Plan (TDCs)

IMO mandatory instruments

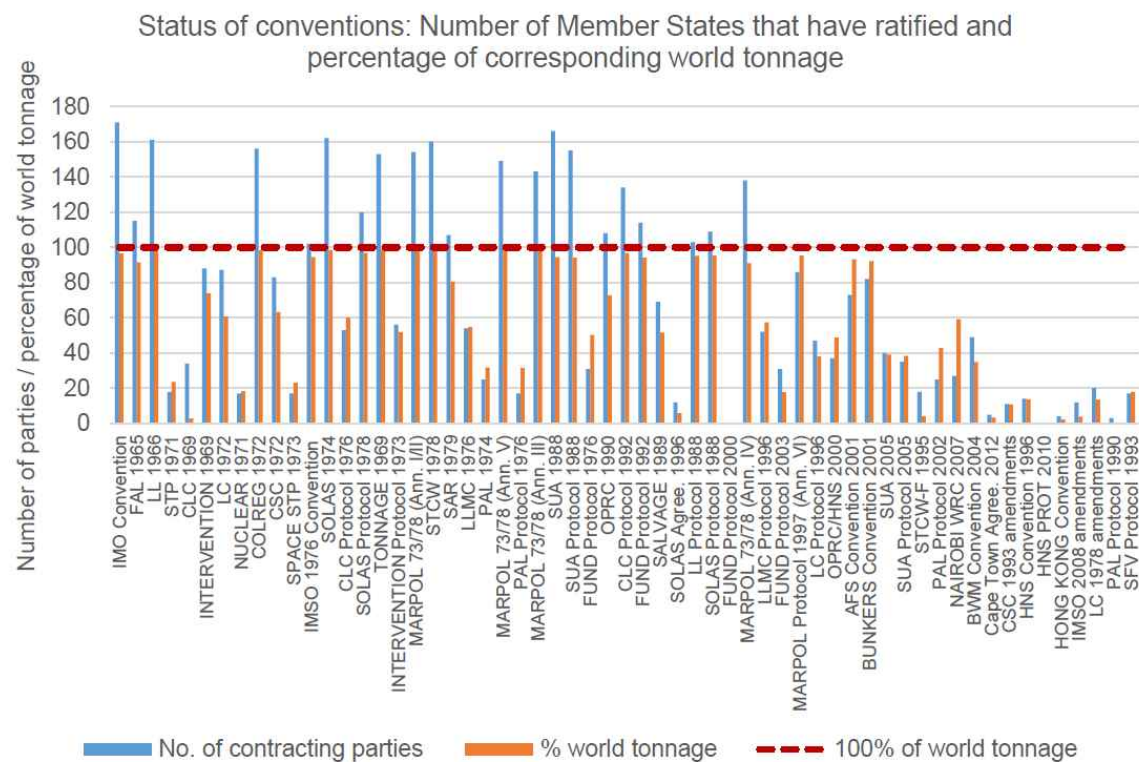


Figure 11 – Status of Conventions
(IMO, 2016a)



2. Implementation of IMO Strategic Plan (TDCs)

IMO mandatory instruments

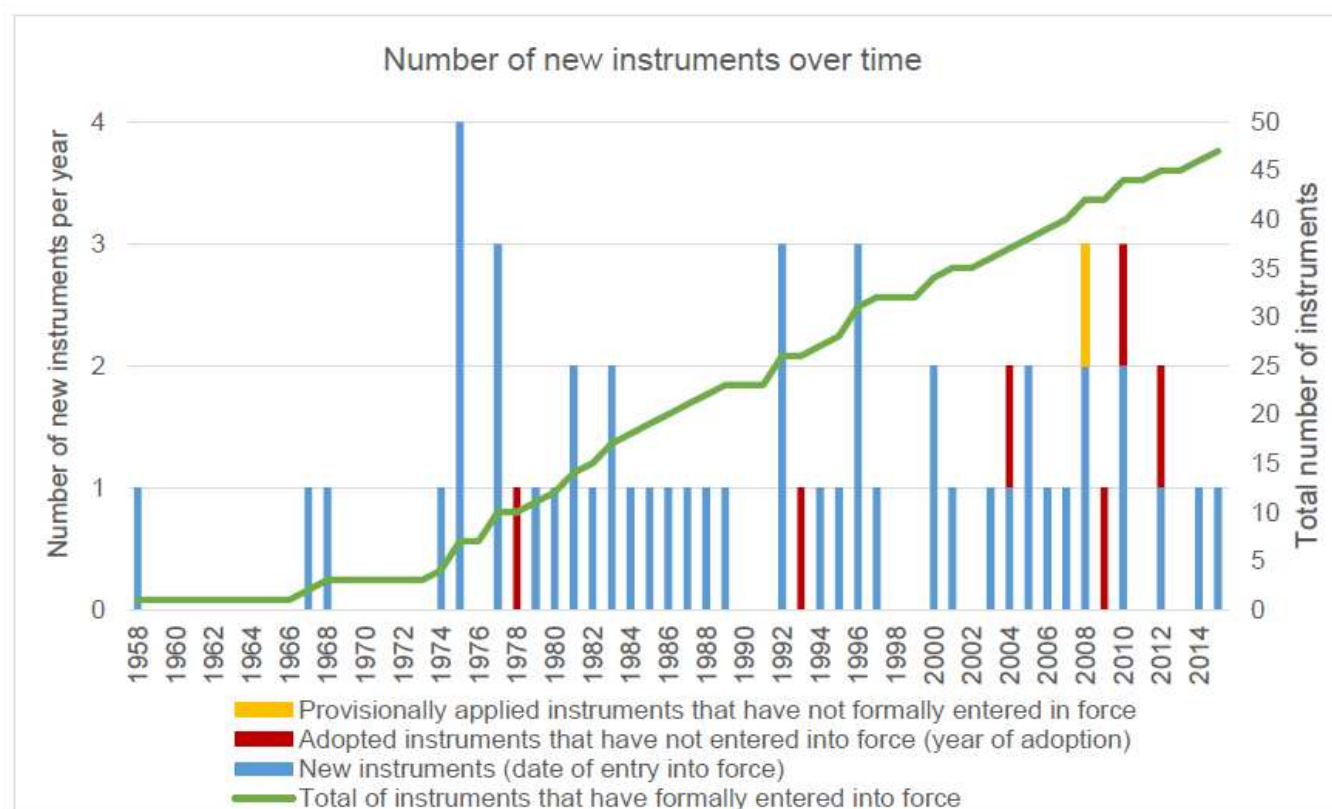


Figure 9 – Instruments over Time
(IMO, 2016a)



2. Implementation of IMO Strategic Plan (TDCs)

Seafarers

Perceived Level of Administrative Burdens (from survey among international seafarers)				
Type of task	Tasks are repeated too often		Tasks require too much documentation	
	Agree	Disagree	Agree	Disagree
Port and pre-arrival	71%	29%	79%	21%
PSC, FSC, class inspections	66%	34%	76%	24%
Vetting inspections	66%	35%	76%	24%
ISPS requirements	66%	34%	74%	27%
Internal QMS	63%	37%	76%	24%
Journals	59%	41%	65%	35%
Exercises and drills	51%	49%	64%	37%

Figure 13 – Perceived Level of Administrative Burdens
(COWI, 2013)



2. Implementation of IMO Strategic Plan (TDCs)

Administrative burden

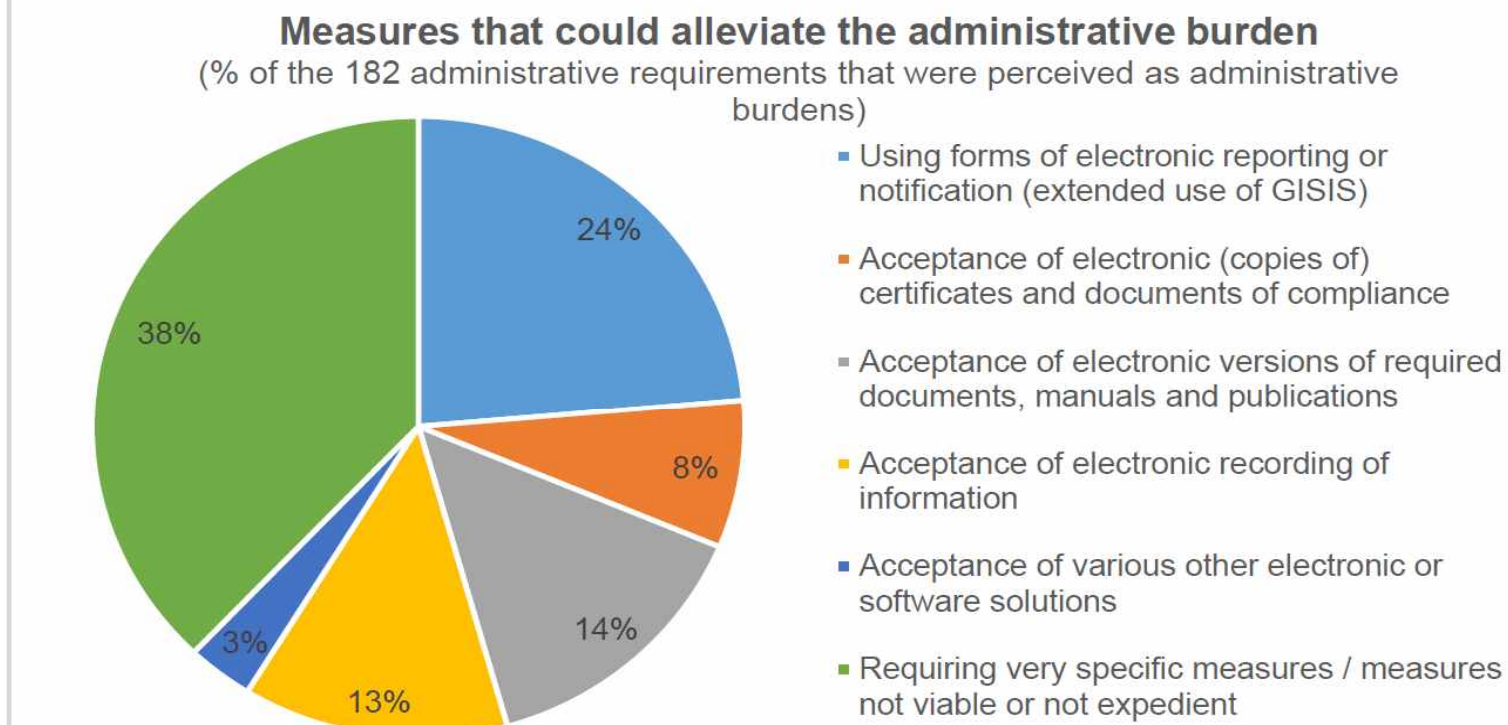


Figure 14 – Measures to Alleviate Administrative Burdens
(IMO, 2014a)



2. Implementation of IMO Strategic Plan (TDCs)

Piracy

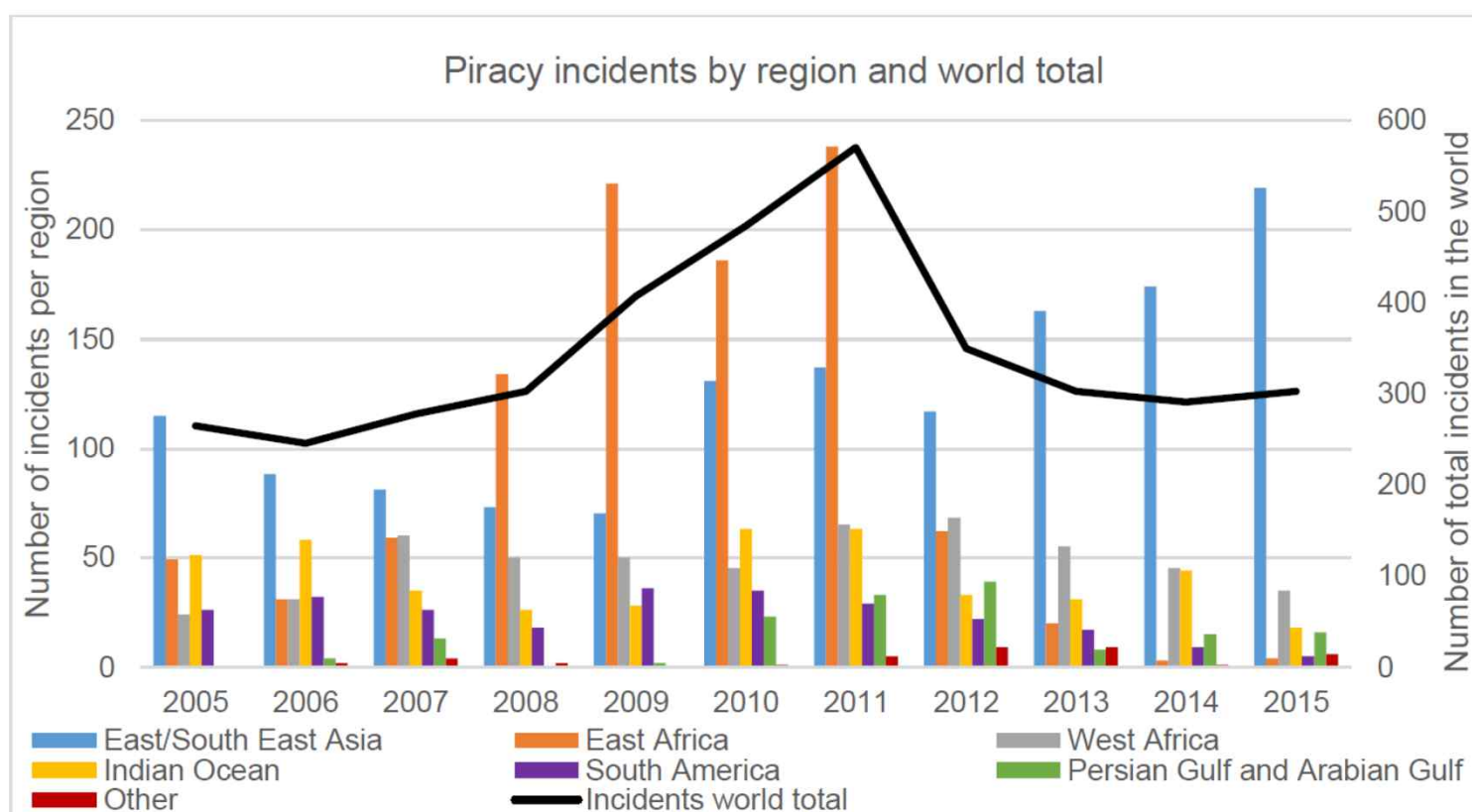


Figure 16 – Piracy Incidents, 2005-2015
(IMO, 2016c)



2. Implementation of IMO Strategic Plan (TDCs)

Container port global annual throughput

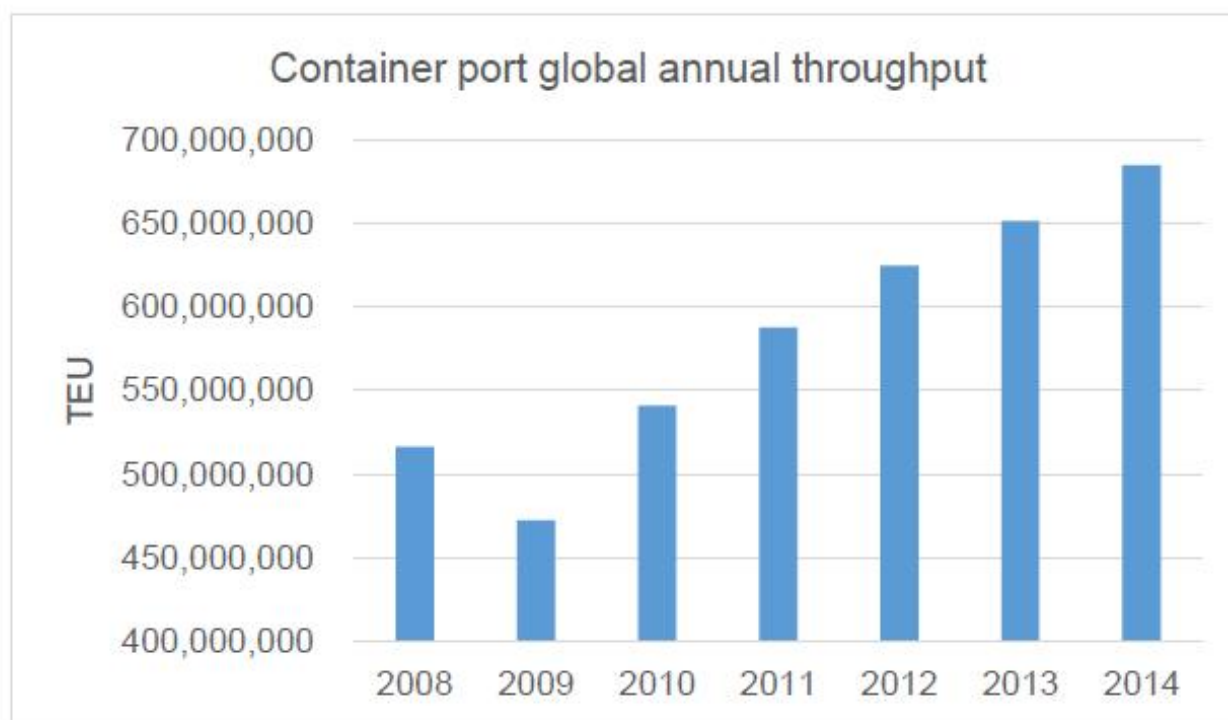


Figure 17 – Container Port Global Annual Throughput
(UNCTAD, 2015e)



2. Implementation of IMO Strategic Plan (TDCs)

Cyber incidents

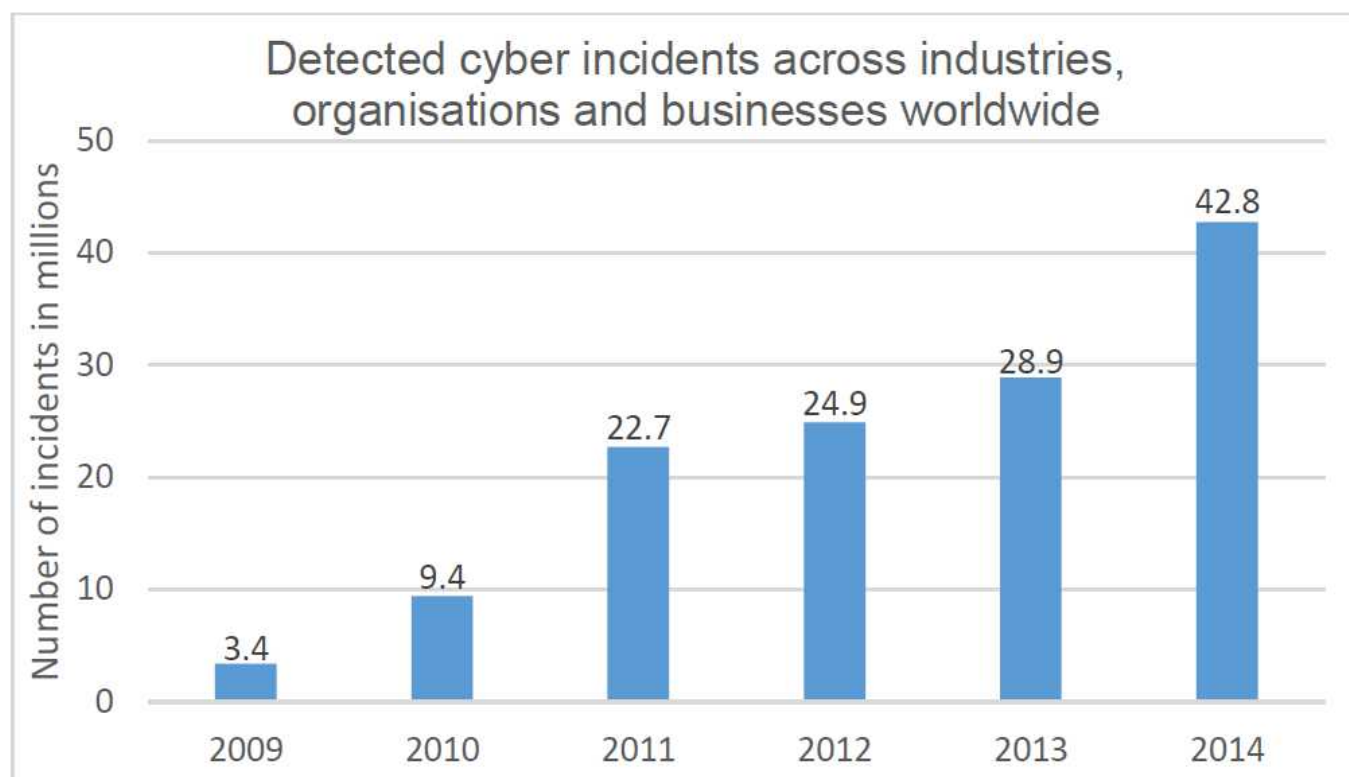


Figure 21 – Cyber Incidents, 2009-2014
(PwC, 2015)



2. Implementation of IMO Strategic Plan (TDCs)

Container Ship Size

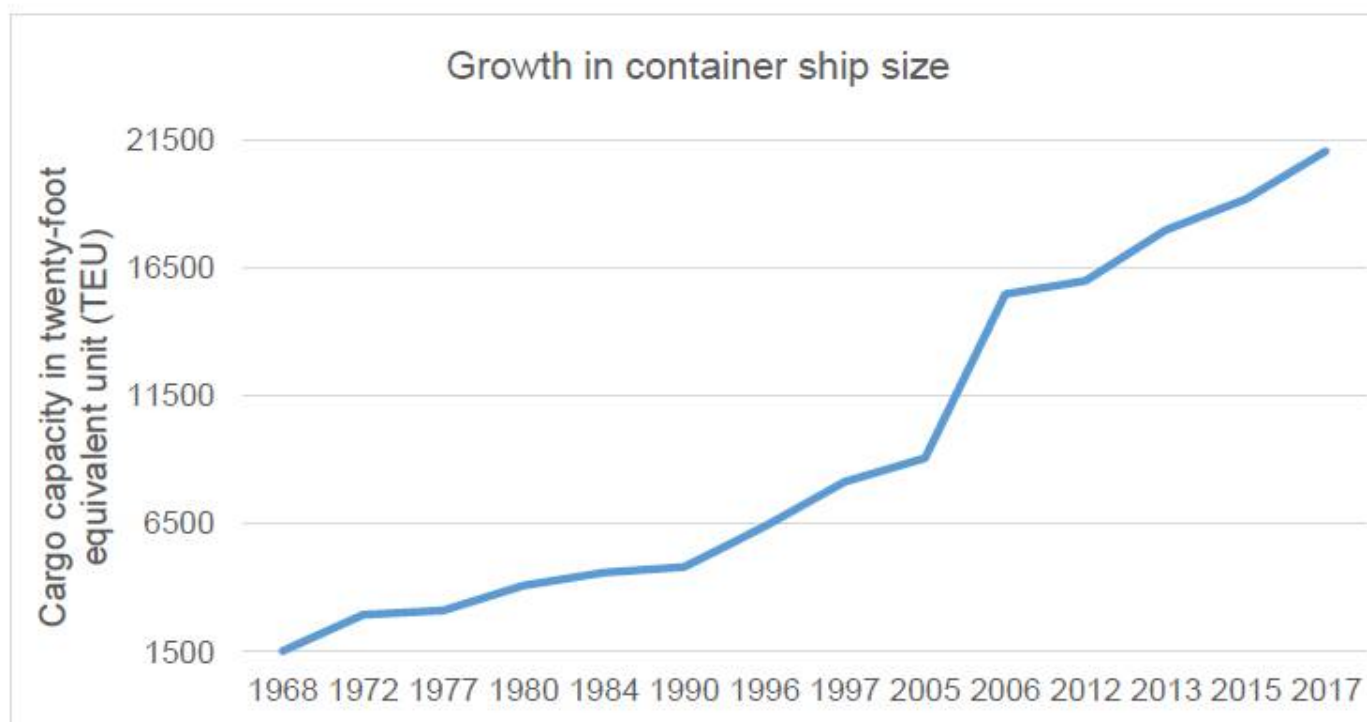


Figure 23 – Development in Container Ship Size
(Allianz Global Corporate & Specialty, 2015; Maersk, 2016; OECD & IFT, 2015)



2. Implementation of IMO Strategic Plan (TDCs)

CO₂ emissions from shipping

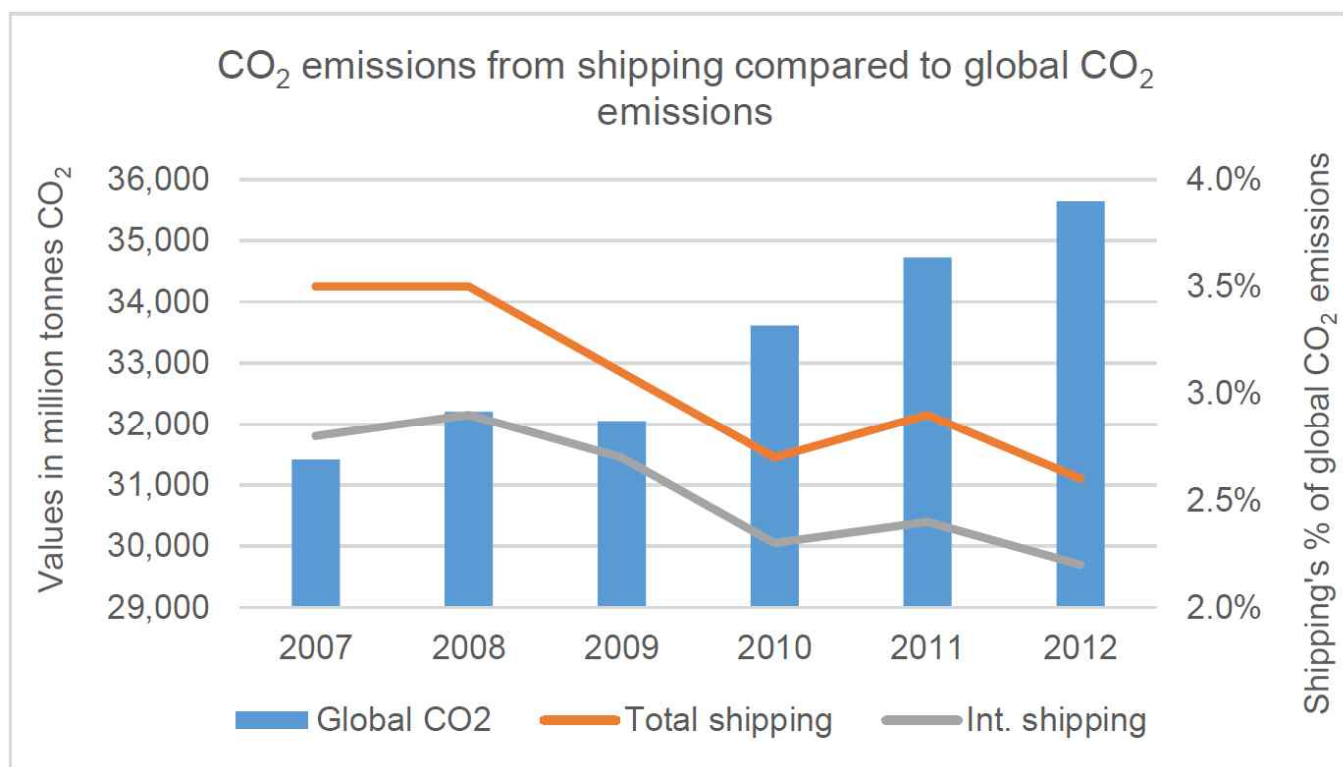


Figure 29 – CO₂ Emissions from Shipping compared to Global CO₂ Emissions (IMO, 2015)



2. Implementation of IMO Strategic Plan (TDCs)

Total global freight activity

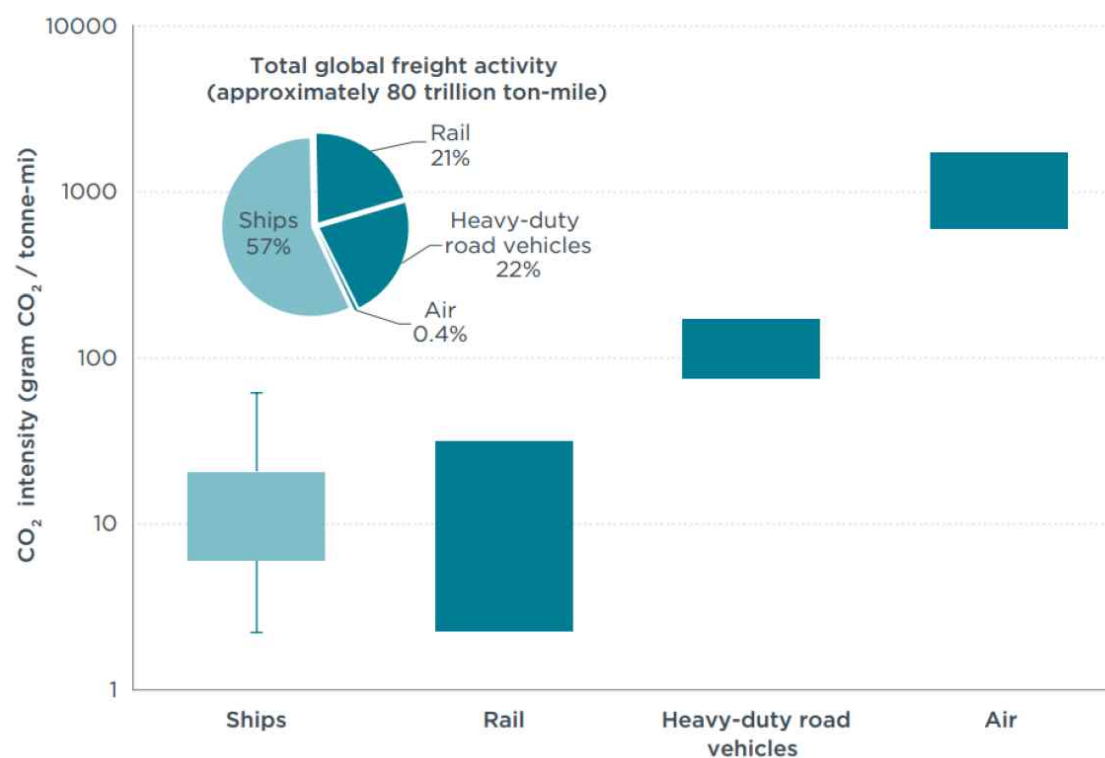
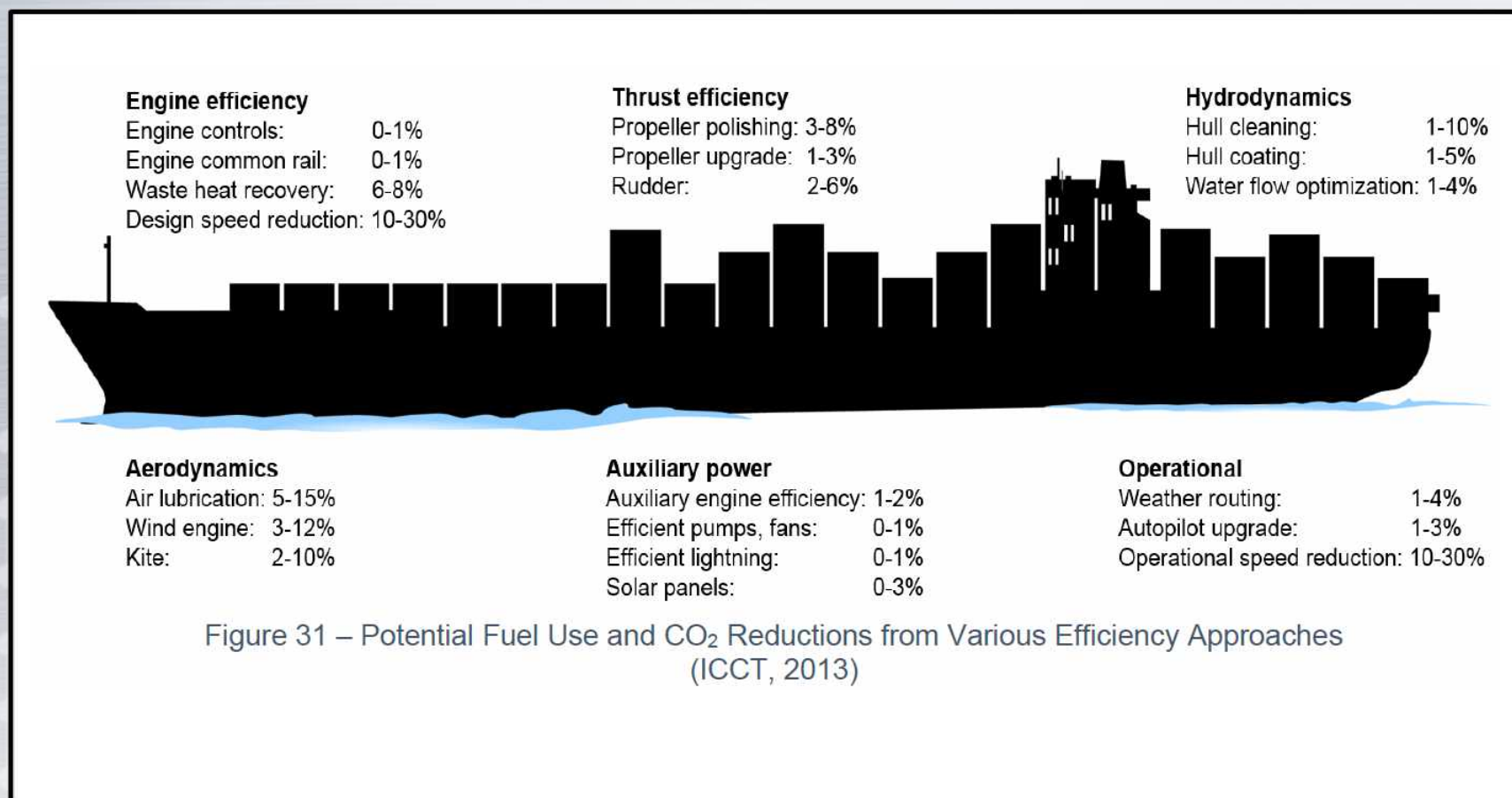


Figure 30 – CO₂ Intensity and Global Transport Activity of Different Freight Modes (ICCT, 2013)



2. Implementation of IMO Strategic Plan (TDCs)

CO₂ emissions from shipping





2. Implementation of IMO Strategic Plan (TDCs)

Sulphur content

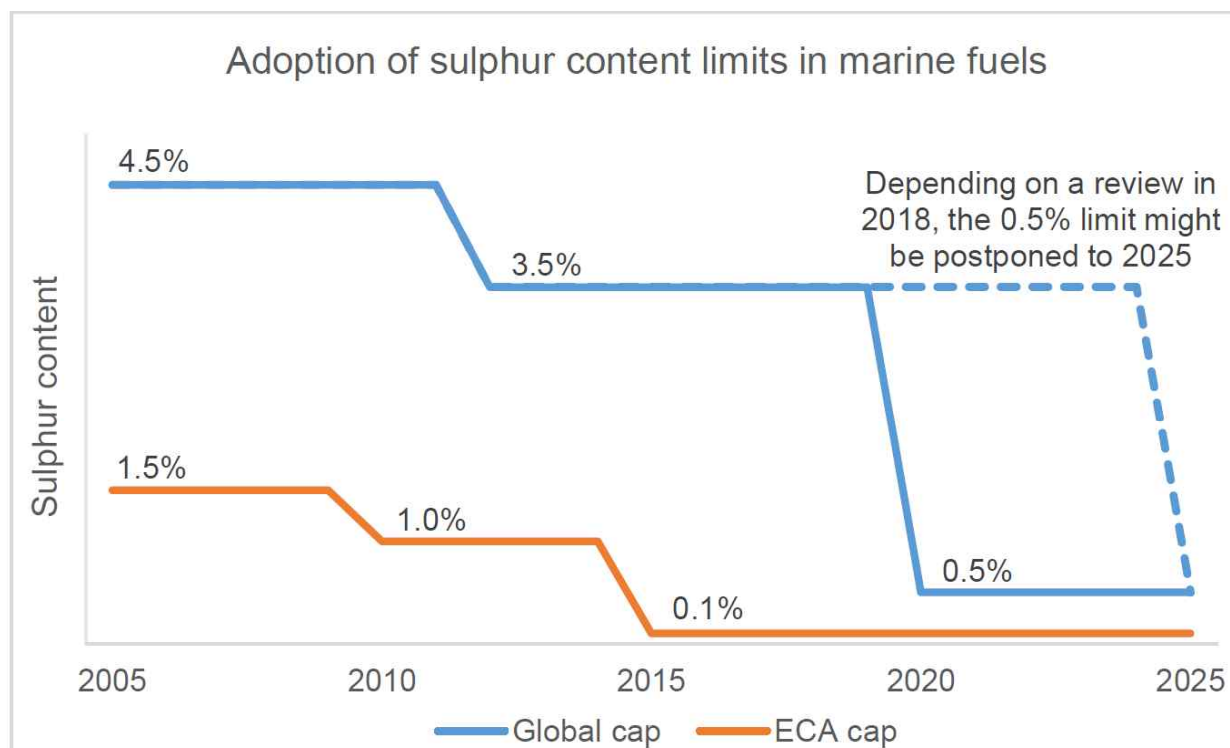


Figure 34 – Adoption of Sulphur Content Limits in Marine Fuels (IMO, 2016f)



2. Implementation of IMO Strategic Plan (TDCs)

Human Error

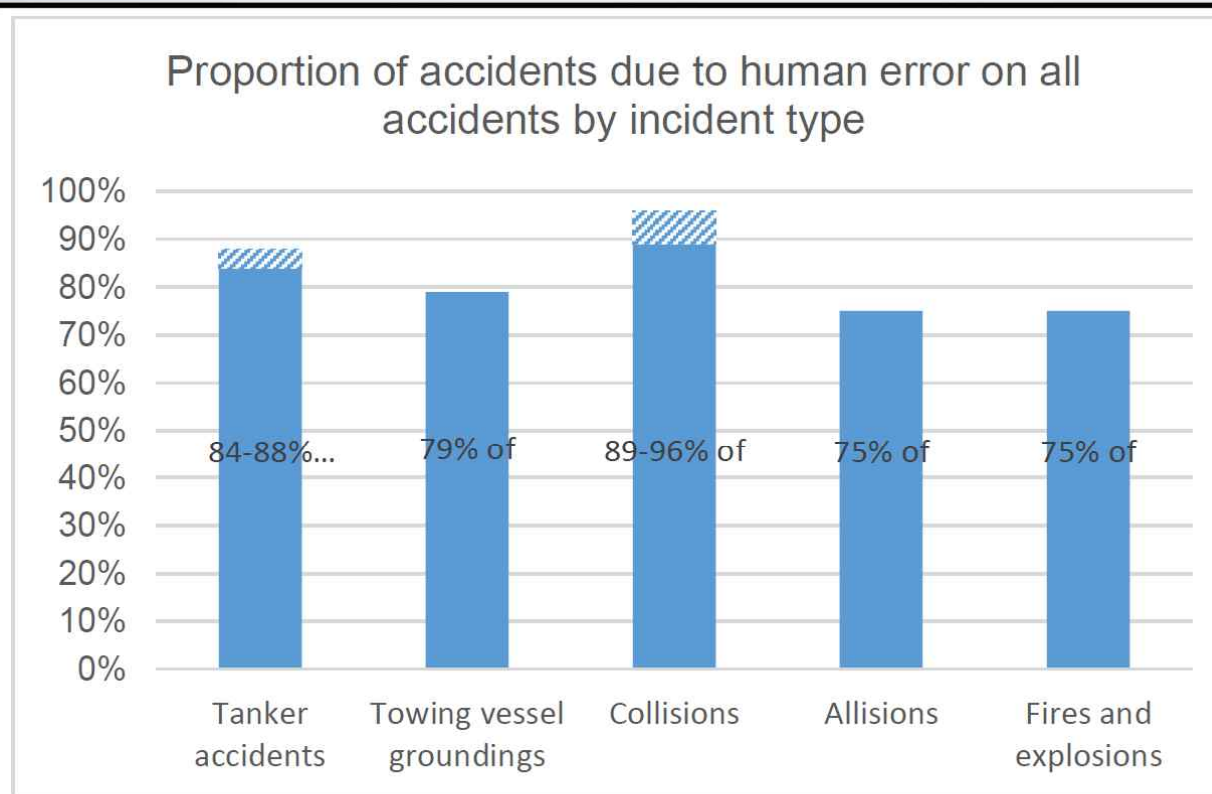


Figure 37 – Proportion of Accidents due to Human Error
(Rothblum, 2000)



2. Implementation of IMO Strategic Plan

IMO SP (24)

1. Development and review of IMO regulations
2. Assessing the effectiveness of IMO regulations
3. Improving the IMO's working practices
4. Uniform Implementation
5. Reduction of administrative burdens
6. Electronic transmission of information,
including electric certificates
7. Single Window Approach
8. Security
9. Infrastructure facilities
10. Safe ship operation and navigation
11. Utilization of big data
12. Automation and remote operations

24 TDCs





2. Implementation of IMO Strategic Plan

IMO SP

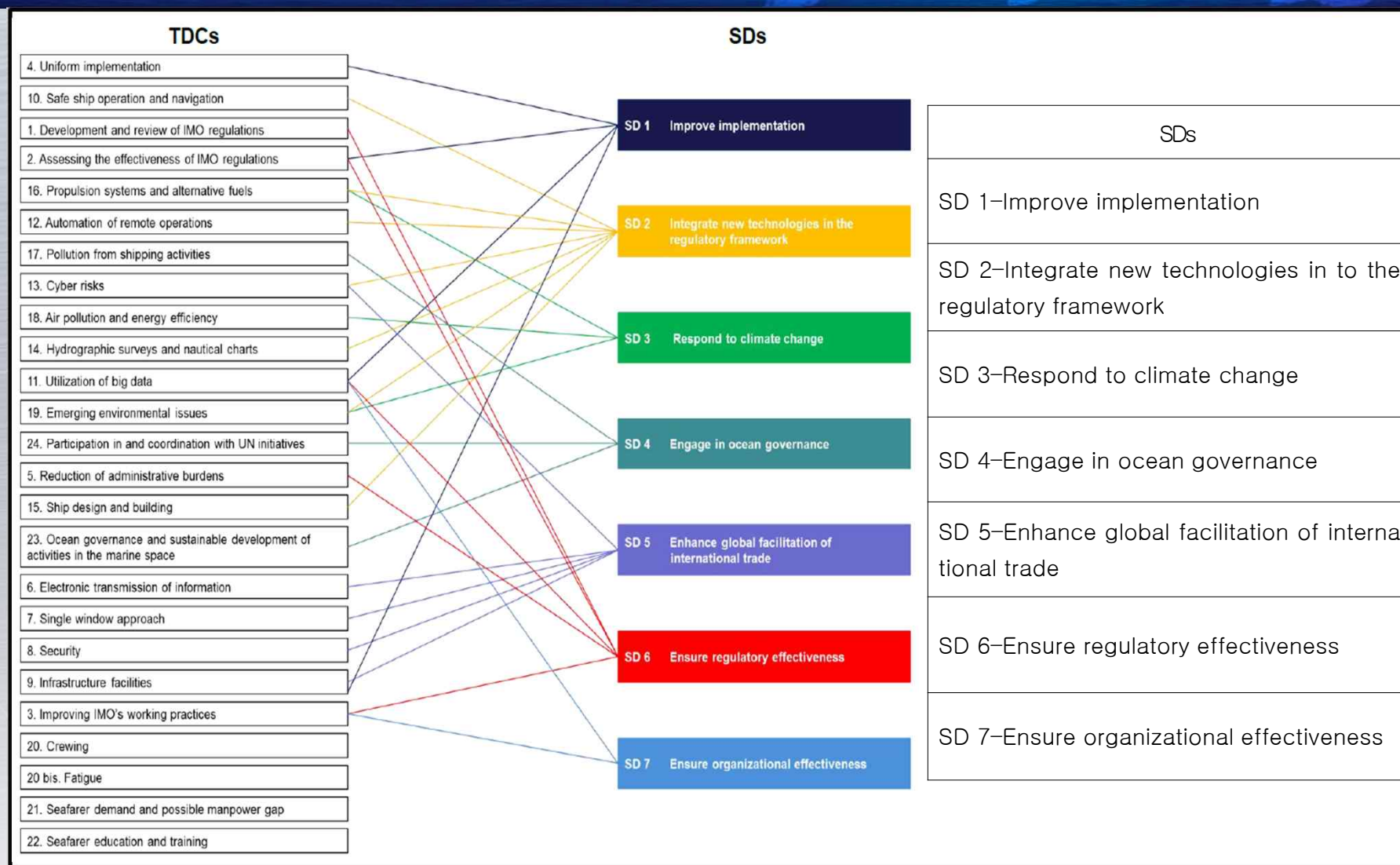
13. Cyber security
14. Hydrographic surveys and nautical chart
15. Ship design and ship building
16. Propulsion systems and alternative fuels
17. Marine pollution
18. Air pollution and energy efficiency
19. Emerging environmental developments
20. Crewing and fatigue
21. Seafarer demand and possible manpower gap
22. Seafarer education and training
23. Sustainable development of activities
in the marine space
24. Participation in and coordination with UN initiatives

24 TDCs





2. Implementation of IMO Strategic Plan





2. Implementation of IMO Strategic Plan

TABLE 1 – PERFORMANCE INDICATORS

SD	PI Index	PI Name
SD 1 Improve implementation	PI 1.1	# of references in audit findings per instrument (article and regulation)
	PI 1.2	% of audit findings and observations with corrective actions implemented according to the target completion dates
	PI 1.3	% of deficiencies and detentions per ship type
	PI 1.4	# of deficiencies per category of deficiency
	PI 1.5	# of Member States that have ratified each IMO instrument, including those yet to enter into force
	PI 1.6	% of the world merchant shipping (tonnage) covered by each IMO instrument, including those yet to enter into force
	PI 1.7	# of Member States requesting technical cooperation to implement corrective actions to address audit findings and observations
	PI 1.8	# of Member States receiving technical cooperation to implement corrective actions to address audit findings and observations
	PI 1.9	% of technical cooperation activities directed towards the implementation of IMO instruments with effective results for the receiving Member States



3. Impact of IMO Strategy Plan on related Industry

Growth of LNG-fueled Ship

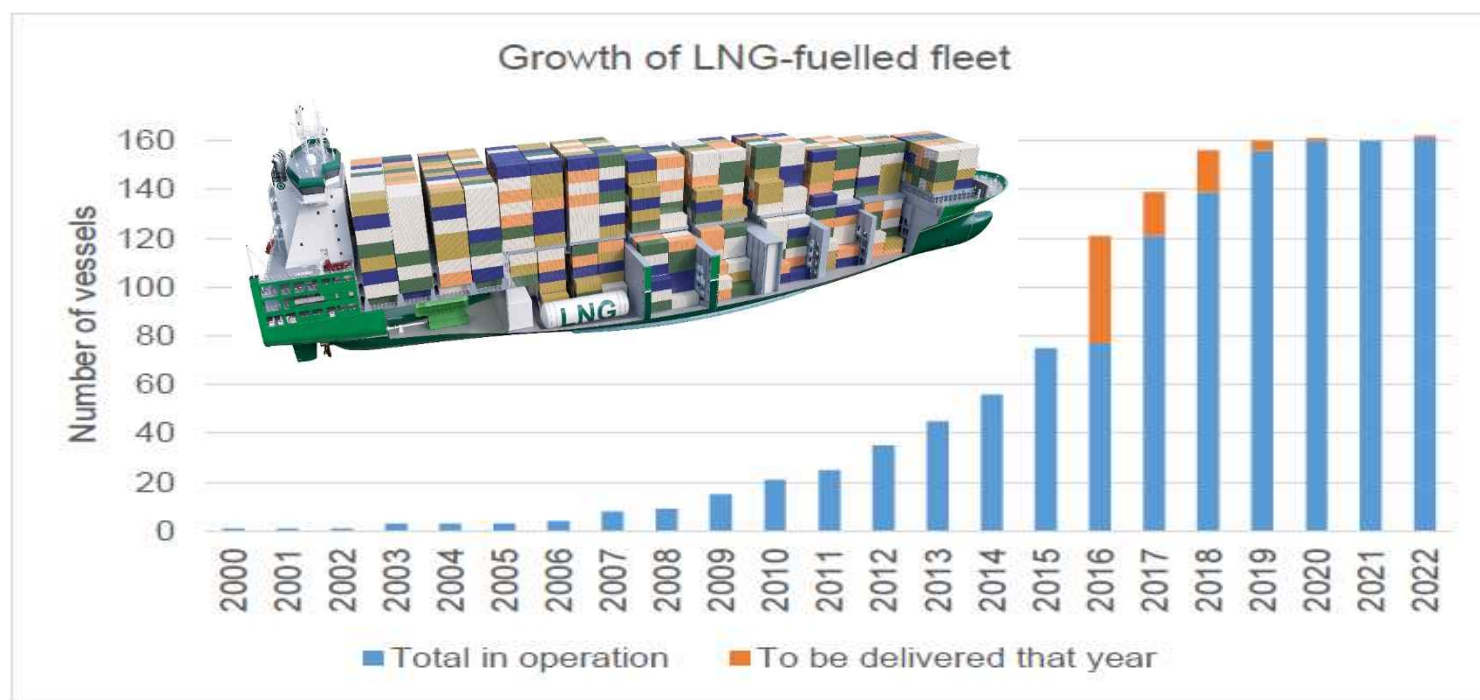
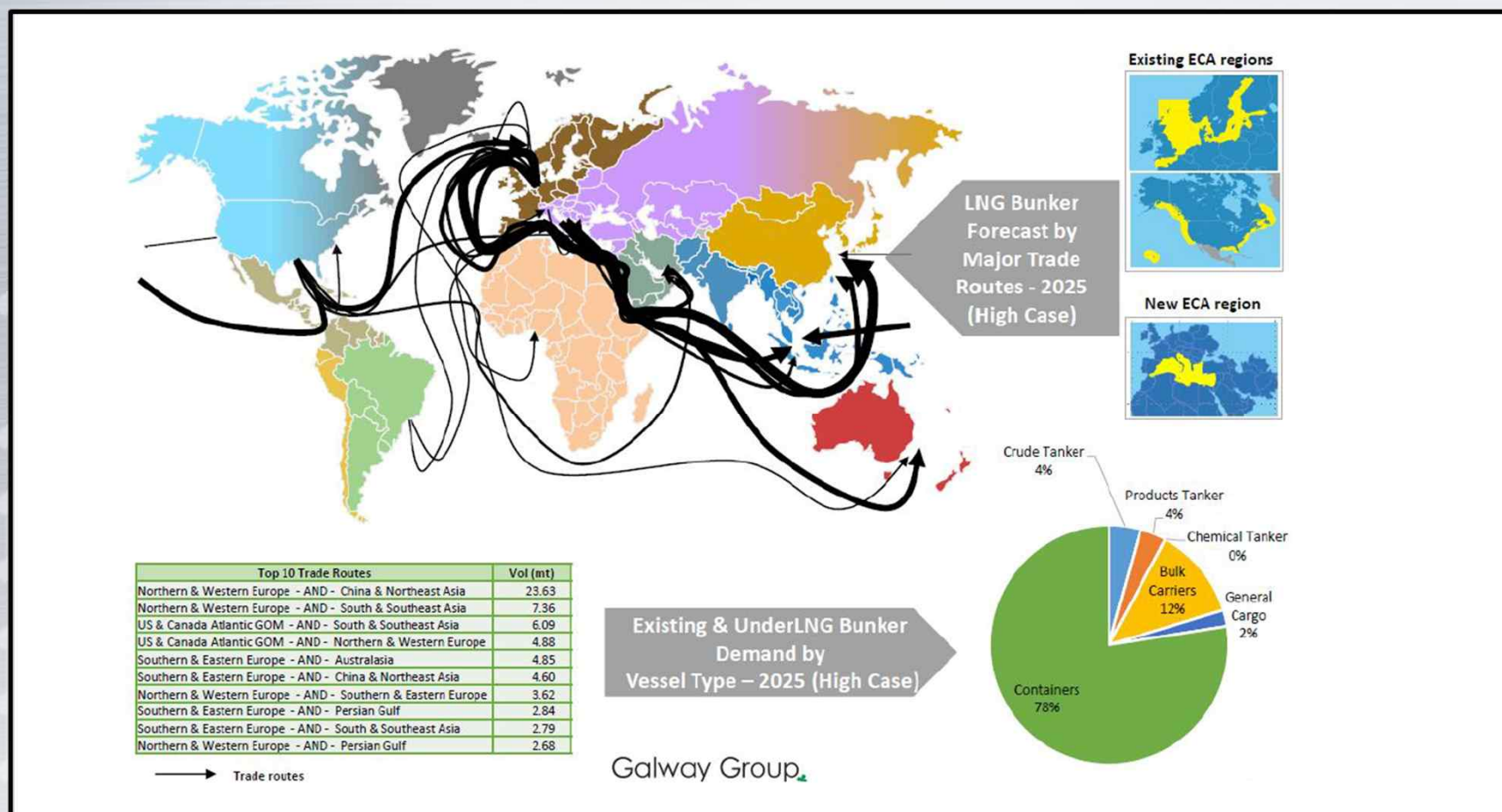


Figure 24 – World LNG-Fuelled Fleet
(DNV GL, 2016)



3. Impact of IMO Strategy Plan on related Industry

Growth and demand of LNG-fueled Ship





3. Impact of IMO Strategy Plan on related Industry

Growth of LNG-fueled Ship

- > 1,200 TEU feeder vessel
- > investment of LNG engine, tanks etc. of 5 million Euro (6 bn KRW)
- > break even at charter rate of 9,000 Euro/day
- > current charter rate: 6,000 Euro

→ impossible without public funding



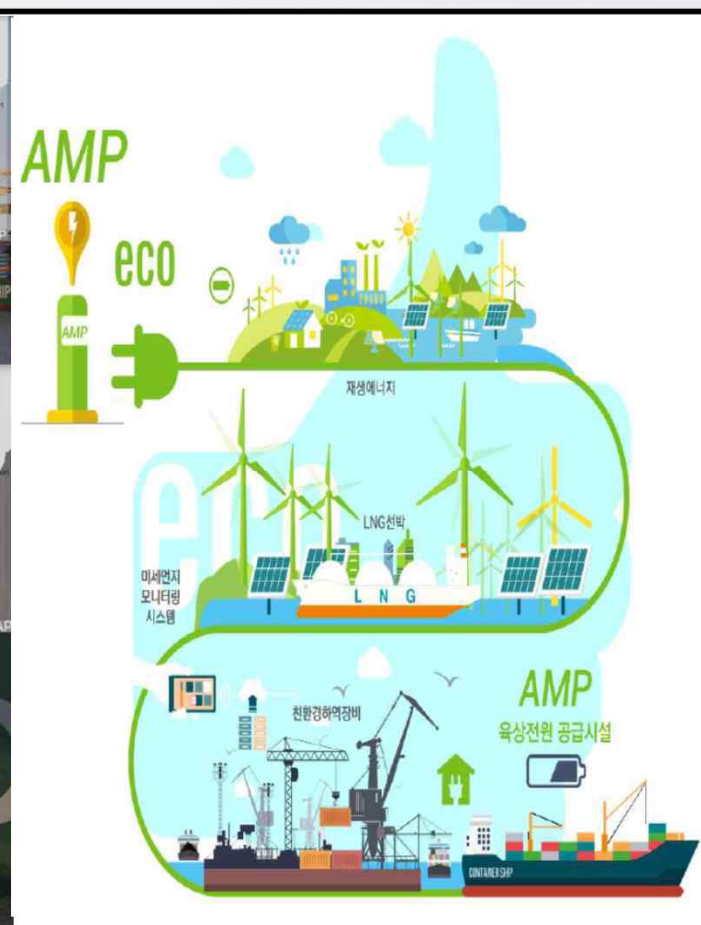
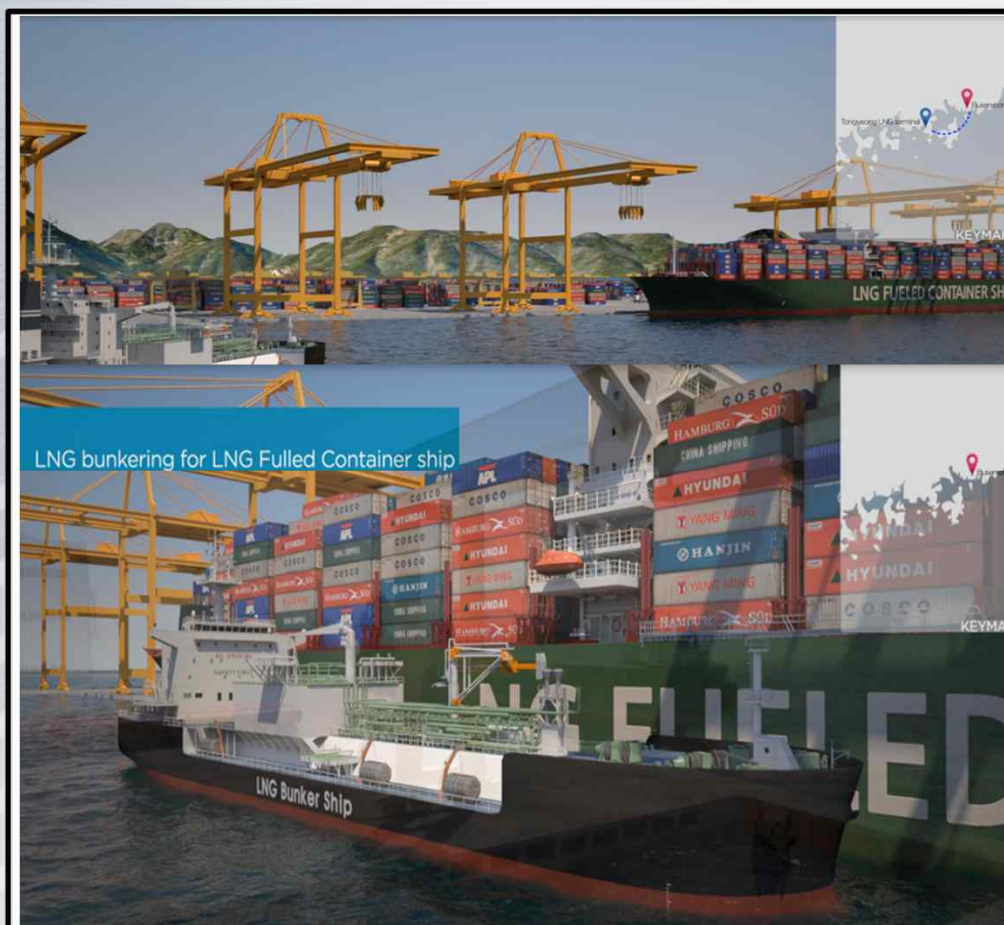
GasChem BELUGA. World's first two-stroke LNG engine.

- > price for **conventional engine: 2 million US\$** (MAN 6L32 HFO)
- > price for MAN two-stroke dual fuel **LNG/Ethan engine: 5.8 million US\$**
- > **plus gas tanks: 1 million US\$**
- > **plus gas fuel system: 2 million US\$**
- **additional costs: 6.8 million US\$**
- > **new design: two-stroke engine** (reducing methane slip significantly)



3. Impact of IMO Strategy Plan on related Industry

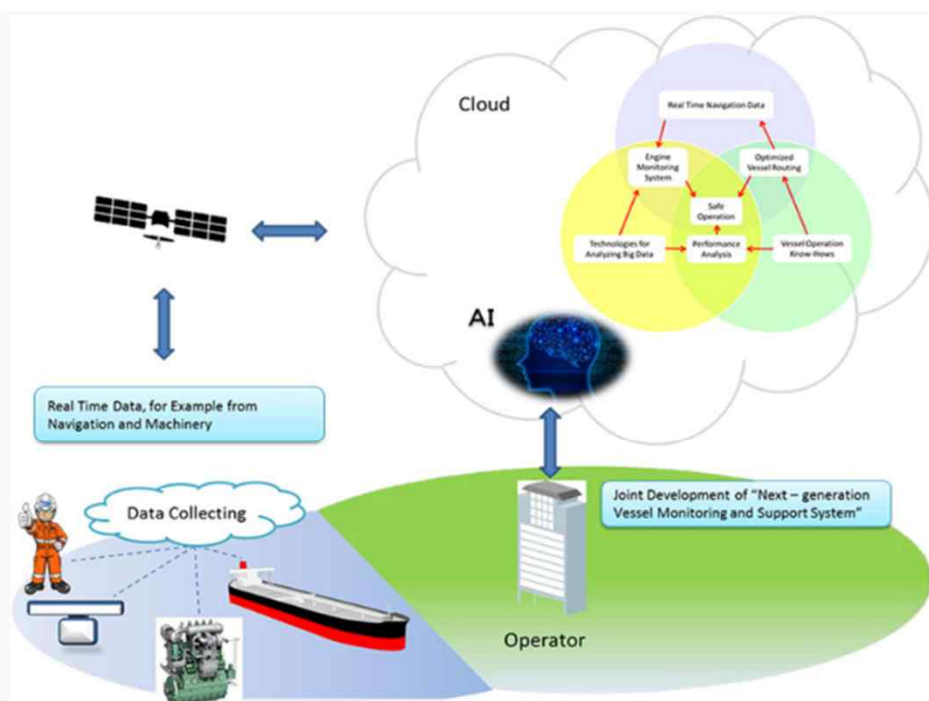
Terminal and port of LNG-fueled Ship





4. New maritime industrial conditions and prospects by IMO SP

Industry 4.0 (AI and Maritime Industry)



Mitsui O.S.K. Lines (MOL) has signed an agreement with Mitsui Engineering & Shipbuilding (MES) to jointly develop next-generation vessel monitoring and support systems for practical and commercialisation applications.





4. New maritime industrial conditions and prospects by IMO SP

Autonomous Ship

Finland's VTT develops new technology for autonomous ship navigation systems



VTT Technical Research Centre of Finland is developing a new steering technology for the remote-monitored and controlled autonomous ships of the future.

Rolls-Royce and Svitzer demonstrate remotely operated commercial vessel in Denmark



Rolls-Royce has collaborated with Denmark-based towage operator Svitzer to demonstrate the world's first remotely operated commercial vessel in Copenhagen harbour.



4. New maritime industrial conditions and prospects by IMO SP

Autonomous Ship

Japanese shipbuilding and shipping companies jointly develop remotely operated cargo ships by 2025

0 Shipyards June 9, 2017

PRINT EMAIL A- A+

Several Japanese shipbuilding and shipping companies have agreed to jointly develop and create a fleet of remotely operated cargo ships by 2025. The technology will be based on the concept of "Internet of things" and aims to integrate the ship's devices and equipment via the Internet for the collection and analysis of data, building a ship route. It is assumed that the exclusion of the "human" factor will significantly reduce risks and increase the safety of navigation. However, the ships will not be unmanned and will have a minimum crew to maintain technologies and devices, as well as monitor the correct operations.





4. New maritime industrial conditions and prospects by IMO SP

Autonomous Ship

Lloyd's Register unveils new code to certify unmanned vessels

Lloyd's Register (LR) has launched a new goal-based code that is designed to help undertake a structured approach to the assessment of unmanned marine systems (UMS) against a set of safety and operational performance requirements.

The new LR Unmanned Marine Systems Code offers processes that will also certify the safe design, build and maintenance of UMS against an established framework.

It is also intend to reduce the effort required by an owner or operator to achieve certification, and will be written in accordance with Flag States, local regulators and other parties.

The code will initially be used to certify small, non-conventional-sized UMS and naval systems, with plans in place to extend its application to larger and more complex vessels in the future.

Lloyd's Register marine and offshore technical director Tim Kent said: "The code provides a unique and valuable method of providing an assurance process for the safe design of unmanned marine systems in what is a rapidly developing area of the industry.

"The code complements our existing work on cyber-enabled ships and is also intended to support any future regulatory development by the IMO or national bodies."



Representation Image – Credits: rolls-royce.com



4. New maritime industrial conditions and prospects by IMO SP

Autonomous Ship or Smart-Ship

Autonomous Ships on IMO Agenda

By Aiswarya Lakshmi June 16, 2017



Image: Danish Maritime Authority

Now, the International Maritime Organization (IMO) Maritime Safety Committee will start to establish a new international legal framework for the safe operation of autonomous ships, says a statement from Danish Maritime Authority.

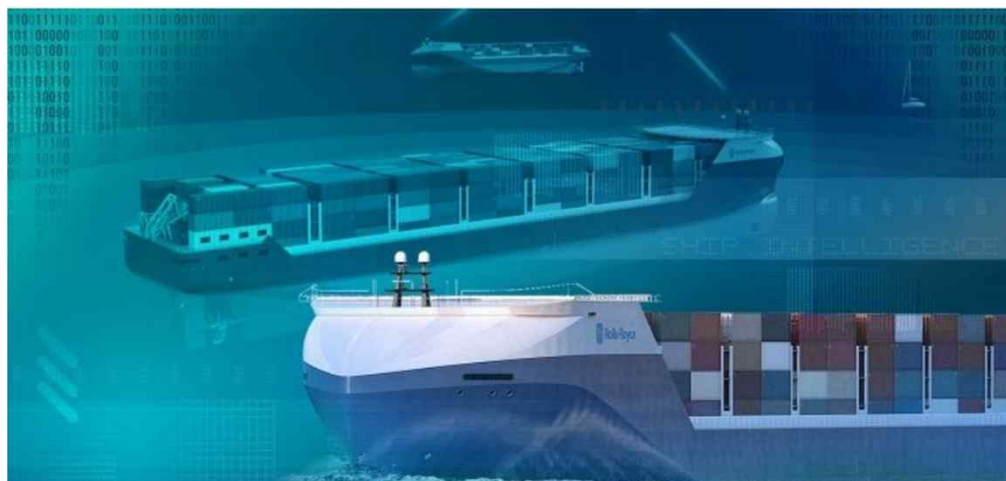
Together with a number of countries, Denmark, has taken the initiative to include autonomous shipping on the IMO agenda.

United Nations' IMO is in line with the proposal and will now start mapping how existing international regulation can be applied to autonomous ships and maritime technologies; technologies that are developing rapidly these years.



4. New maritime industrial conditions and prospects by IMO SP

Maritime Autonomous Surface Ship(MASS)



Machine learning will be used to develop awareness systems for autonomous ships

Google has joined the revolutionary trend of developing autonomous ships by partnering with Rolls-Royce Marine. The two companies have agreed to develop intelligent awareness systems for vessels, which are thought to be essential for making autonomous ships a reality.

Rolls-Royce has signed a deal to use Google's Cloud machine learning engine to further the artificial intelligence (AI)-based object classification system used for detecting, identifying and tracking the objects a vessel can encounter at sea.

This is part of Rolls-Royce's drive to introduce the first commercial autonomous vessel, whether it is in offshore services, passenger shipping or cargo transport, by 2020, Rolls-Royce Marine senior vice president for concepts, innovation and digital systems, Oskar Levandar told *Marine Electronics & Communications* at a recent conference in the UAE.

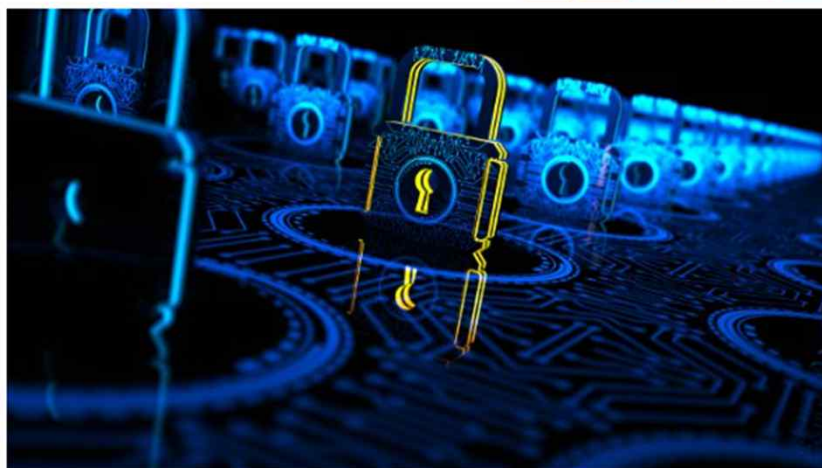


4. New maritime industrial conditions and prospects by IMO SP

Cyber risk and Attack

Wednesday Wisdom: Detect and Control Cyber Risks

05 Jul 2017 04:30pm



This week's Wednesday Wisdom, an interesting extract from one of PTI's technical papers, comes from Claudia Bosse, Scientific Researcher, and Martin Stamer, Scientific Researcher, Fraunhofer CML.

The technical paper 'Detect and Control Cyber Risks' focuses on the vulnerable IT infrastructure of ports.

Security is this week's Wednesday Wisdom topic as [Maersk is only just starting to recover from a massive cyber attack](#). Read the rest of this technical paper if you want to learn how to improve your security!

CYBER RISK | Tue Jun 27, 2017 | 10:37pm EDT

Maersk says global IT breakdown caused by cyber attack



The Maersk ship Adrian Maersk is seen as it departs from New York Harbor in New York City, U.S., June 27, 2017. REUTERS/Brendan McDermid



4. New maritime industrial conditions and prospects by IMO SP

Cyber risk and Attack

APM Terminals container facilities across the globe hit by cyber-attack



The operations container terminals around the world operated by APM Terminals, a unit of AP Moller-Maersk Group, have been affected following a ransomware attack on the Danish shipping giant, reports said.

AP Moller-Maersk **confirmed that on 27 June** the group "was hit as part of a global cyber-attack named Petya, affecting multiple sites and select business units."

Media reports from Dutch RTV Rijnmond said two container terminals in Rotterdam were impacted by the cyber-attack, while the Press Trust of India reported that India's Jawaharlal Nehru Port Trust (JNPT) facility was affected.



4. Conclusion

- ❖ Sustainable Development of Capacity-Building Program relating to UN agenda (17 SDGs)
 - Means of Implementation(MOI) of IMO Ships and Ports
 - Trends, Developments and Challenges facing the mitigation from ports and ships
- ❖ The role and responsibilities of States
 - Implementation of mandatory Instruments
 - A sustainable development of capacity-building program for mitigation
- ❖ The sustainable endeavor of GHG mitigation in relation to UNFCCC and IMO legally binding instruments
 - The international activities and International networking
 - Global Common Goal



4. Conclusion

- ❖ When visiting EU ports, ships will need to carry a document of compliance issued by an accredited MRV verifier.
- ❖ With regard to the data collection system, no decision was taken as to whether the system should be mandatory or voluntary, whether the data collected would be made publically available to create transparency, or whether in addition to fuel data the system should also incorporate the collection of energy efficiency information such as overall supply chain emissions
- ❖ A sustainable development of capacity-building program for mitigation
- ❖ Intended National Determined Contribution to CO₂ reduction for shipping and port activities, echoing the INDC of the Paris Agreement
- ❖ Rapid finalization of an MRV system

THANK YOU!



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