



MARPOL AT 50
OUR COMMITMENT GOES ON

Latest developments in IMO's efforts to phase out GHG emissions from international shipping

Mombasa, 5 May 2023

Dr. Harry Conway

Chair, Marine Environment Protection Committee (MEPC)

International Maritime Organization (IMO): a global regulator addressing global challenges for a global industry



United Nations Specialized Agency mandated to define a **global regulatory framework** to ensure safe, secure and efficient shipping on cleaner oceans



175 Member States, 3 associated members, 143 observer organizations (IGOs and NGOs)



IMO regulates > 50,000 ships trading worldwide



IMO's instruments contain **binding obligations**, which are **enforced globally by flag and port States**



Safe, secure and efficient shipping on cleaner oceans

Context: Climate change impacts in Africa

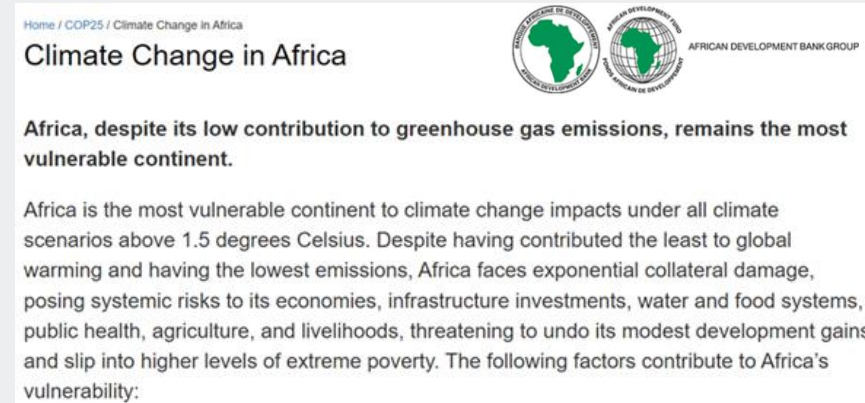


The screenshot shows the UN News website header with the United Nations logo and the text "UN News Global perspective Human stories". A search bar is visible. Below the header is a navigation menu with "Home", "Topics", "In depth", "Secretary-General", and "Media". There are also links for "AUDIO HUB" and "SUBSCRIBE". The main article title is "WMO: Climate change in Africa can destabilize 'countries and entire regions'". Below the title is a photograph of two women in a dry, sandy landscape. One woman is wearing a green headscarf and a patterned dress, and the other is wearing a blue headscarf and a patterned dress. The background shows sparse vegetation and a clear sky.

Impacts of climate change becoming increasingly severe - developing States particularly affected



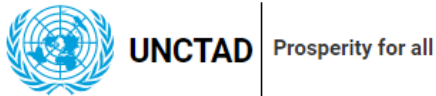
The screenshot shows an article titled "Climate Change Is an Increasing Threat to Africa" dated 27 October 2020. It includes social media sharing icons for Facebook, LinkedIn, Twitter, and Email. Below the title is a photograph of a woman in a green shirt and patterned skirt carrying a large blue bucket on her head, standing in a field of tall green crops. Another person is visible in the background. The sky is blue with white clouds.



The infographic is titled "Climate Change in Africa" and is part of a report from the African Development Bank Group. It features logos for the African Union and the African Development Bank Group. The text states: "Africa, despite its low contribution to greenhouse gas emissions, remains the most vulnerable continent." Below this, it explains that Africa is the most vulnerable continent to climate change impacts under all scenarios above 1.5 degrees Celsius, despite having contributed the least to global warming and having the lowest emissions. It lists various risks to its economies, infrastructure, water, food systems, public health, agriculture, and livelihoods, threatening to undo its development gains and lead to higher levels of extreme poverty. The infographic concludes by stating that the following factors contribute to Africa's vulnerability:

Context: Climate change also affects maritime operations

Port infrastructure and operations worldwide increasingly affected by more frequent and severe bad weather conditions (typhoons, flooding, droughts) affecting global trade



Climate change impacts on seaports: A growing threat to sustainable trade and development

04 June 2021

Written by Regina Asariotis, Article No. 75 [UNCTAD Transport and Trade Facilitation Newsletter N°90 - Second Quarter 2021]



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TAGS: [Environment](#) | [Ports and Logistics](#) | [International](#)

EMAIL

Almost 90% of all major ports face climate risks, study finds

Research points to a climate risk worth \$67bn for ports and the global economy each year

17 Jan 2023 | NEWS



by Enes Tunagur

Enes.tunagur@lloydlistintelligence.com

Research on 1,340 ports found 86% face climate hazards, including tropical cyclones and river flooding of ports

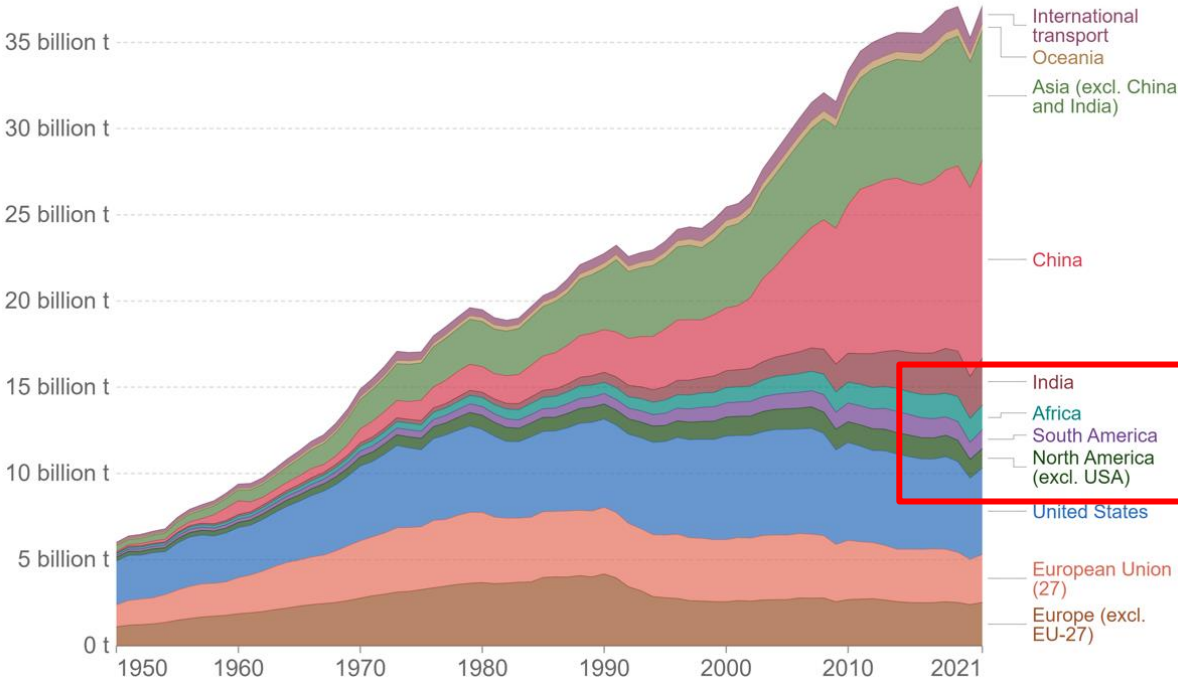
Context: Contribution to global carbon emissions by Africa is limited

Africa's contribution to global CO2 emissions is relatively low - yet, expected to increase due to population and economy growth

Annual CO2 emissions by world region

This measures fossil fuel and industry emissions¹. Land use change is not included.

Our World in Data



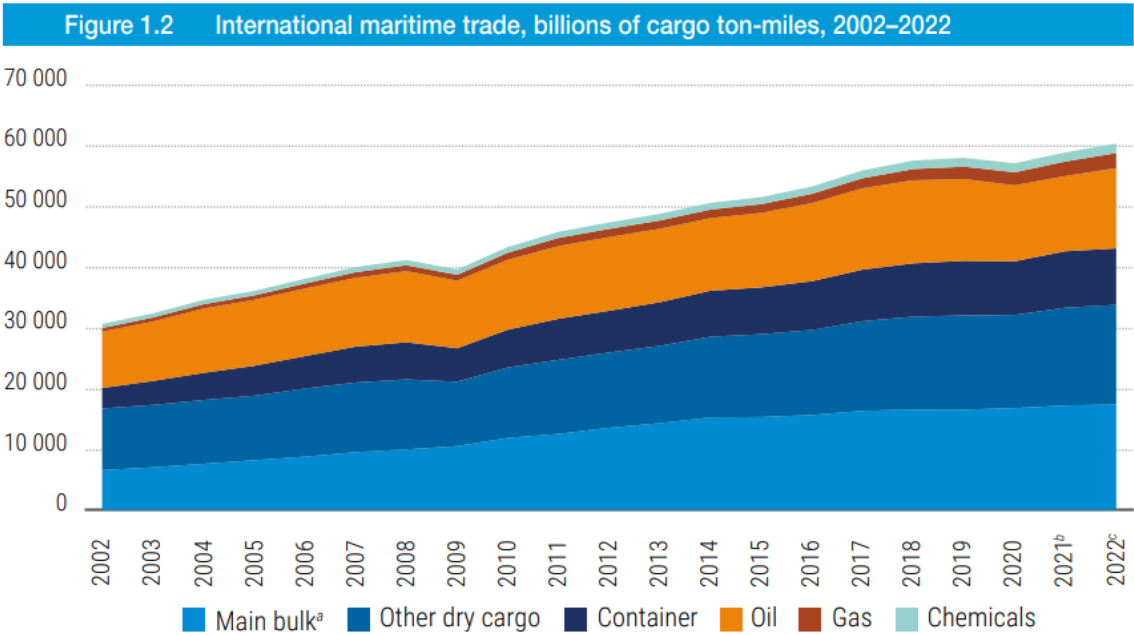
Source: Our World in Data based on the Global Carbon Project (2022)

OurWorldInData.org/co2-and-greenhouse-gas-emissions • CC BY

1. **Fossil emissions:** Fossil emissions measure the quantity of carbon dioxide (CO₂) emitted from the burning of fossil fuels, and directly from industrial processes such as cement and steel production. Fossil CO₂ includes emissions from coal, oil, gas, flaring, cement, steel, and other industrial processes. Fossil emissions do not include land use change, deforestation, soils, or vegetation.

Context: Shipping is the backbone of the world's economy; transporting over 80% of total world trade

Global trade volume transported by ship continues to increase - and so are greenhouse gas (GHG) emissions if no action is taken



Source: UNCTAD secretariat, based on estimates from Clarksons Research (Clarksons Research, 2022b).

^a Includes iron ore, grain, coal, bauxite/alumina, and phosphate.

^b Estimated.

^c Forecast.

SHIPPINGWATCH

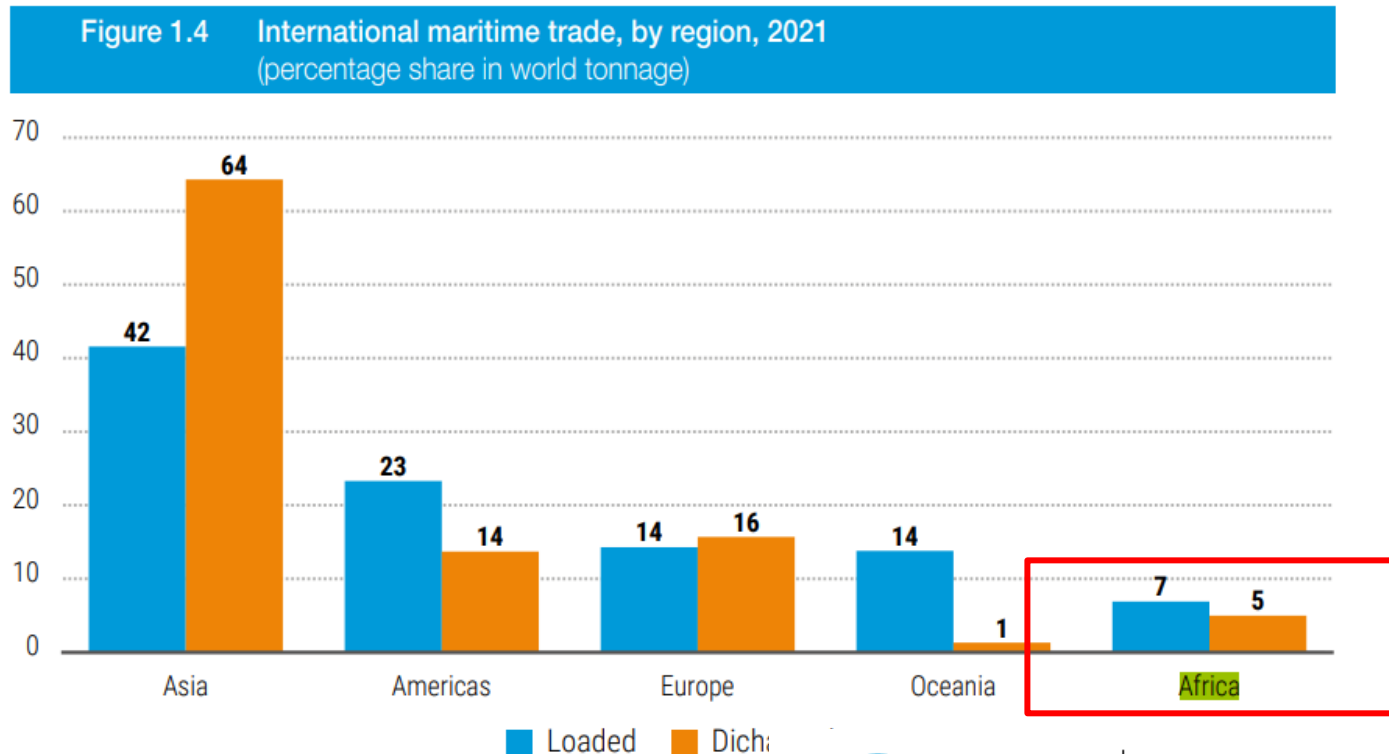
World trade growth expected to be higher in 2022 and 2023 than prior to Covid

Despite supply chain congestion, high inflation, expensive energy, and Russia's invasion of Ukraine, world trade is set for continual growth into 2023, forecasts DHL in global trade report.



Context: Africa's participation in global maritime trade

Africa's participation in global maritime trade today is relatively small, but expected to raise because of rapid population and economic growth



Source: UNCTAD secretariat, based on table 1.2 of this report.



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Prosperity for all

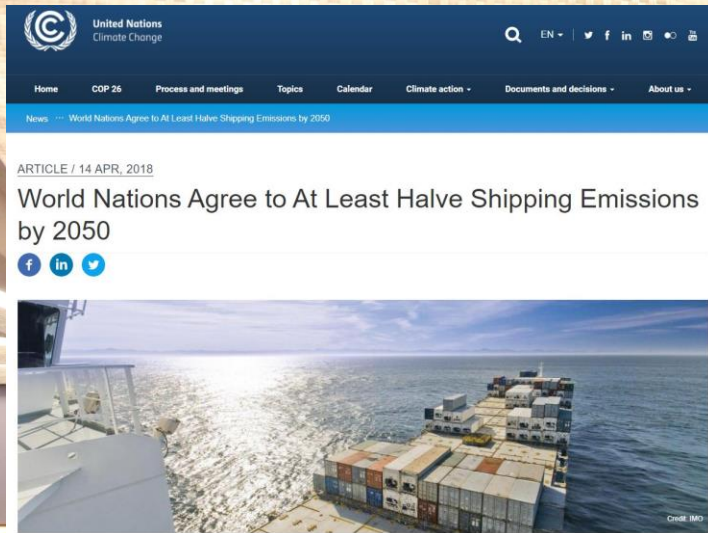
Global commitment to reduce GHG emissions: UNFCCC

2015 Paris Agreement:

- limit global warming to **well below 2, preferably to 1.5 degrees Celsius**, compared to pre-industrial levels
- States to submit **National Determined Contributions (NDCs)** identifying increasingly ambitious national climate action
- **GHG emissions from shipping to be reported separately: international action to reduce GHG emissions from international shipping to be undertaken by IMO**



IMO's commitment following the 2015 Paris Agreement: 2018 IMO Initial GHG Strategy to reduce GHG emissions from international shipping



Initial IMO GHG Strategy: IMO's existing strategic objectives in reducing GHG emissions from international shipping

2018 Initial IMO GHG Strategy

Vision

- **To phase out GHG emissions from international shipping** as soon as possible in this century

Levels of ambitions

- Further **strengthen energy efficiency design requirements** for ships
- **2030**: reduce **carbon intensity by at least 40%**, compared to 2008
- **2050**: reduce **total GHG emissions by at least 50%**, compared to 2008

Other key elements

- **Impacts on States** of candidate GHG reduction measures to be assessed before adoption
- **Initial Strategy to be revised by 2023**

IMO's global regulatory framework aimed at decarbonizing international shipping and ensuring a global level-playing-field

Over 10 years of mandatory IMO energy-efficiency requirements in MARPOL Annex VI

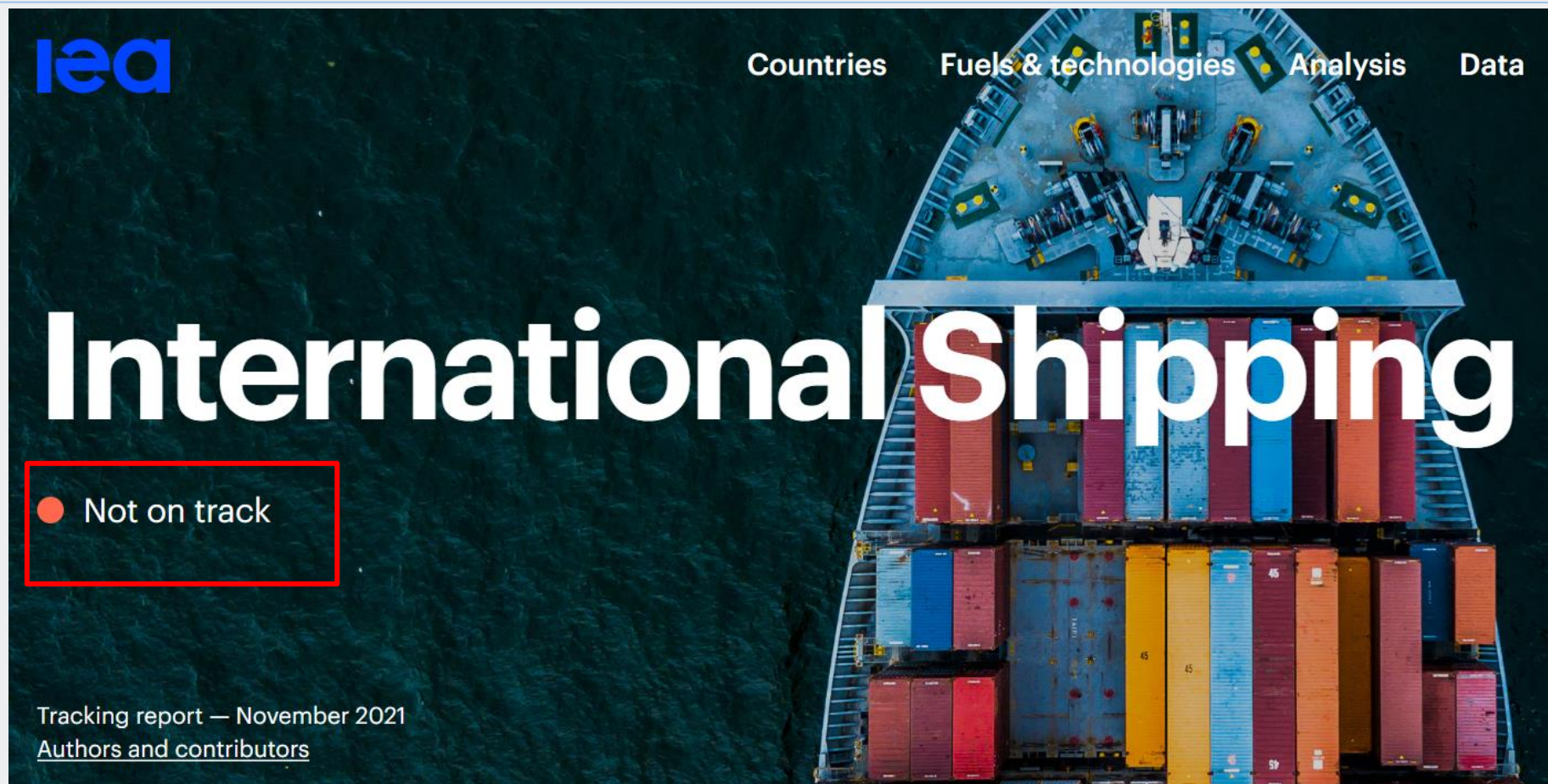
.1 Since 2013: ships to have a Ship Energy Efficiency Management Plan (SEEMP) on board

.2 Since 2015: Energy Efficiency Design Index (EEDI) for new built ships

.3 Since 2019: Ships over 5,000 gt to report annual fuel consumption data to IMO Fuel Consumption Data Collection System (IMO DCS)

.4 Since 2023: all ships to comply with Energy Efficiency Operational Index (EEXI) and Carbon Intensity Indicator (CII)

Despite IMO energy efficiency requirements, further action in reducing GHG emissions from international shipping is needed



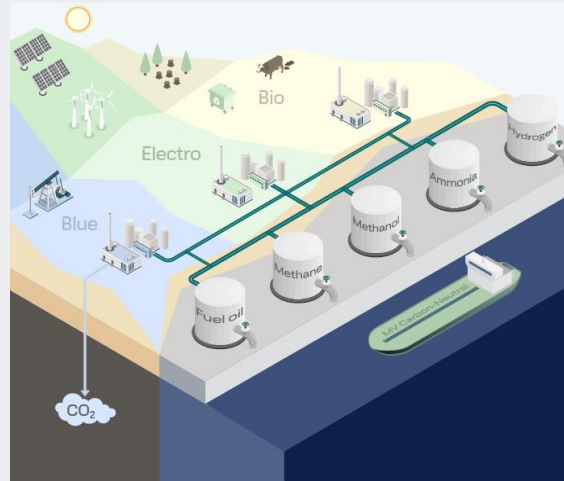
Source: International Energy Agency (IEA)

Towards the decarbonization of shipping: energy efficiency measures alone will not be enough and new fuels are required



Liquid hydrogen as shipping fuel | Pioneering intercontinental H2 carrier gets technical green light

Kawasaki Heavy-designed vessel engineered to store 100 times more hydrogen than shipbuilder's Suiso Frontier, which delivered world's first liquefied H2 cargo in early 2022



Shipping giant Maersk to become major green hydrogen consumer as it embraces methanol fuel

Danish company has ordered 12 methanol-powered container vessels from shipbuilder Hyundai Heavy Industries

11 January 2022 19:17 GMT UPDATED 13 January 2022 5:00 GMT

By Leigh Collins

Op-Ed: Putting Bio-LNG and Synthetic LNG Into Focus



Image courtesy CMA CGM

PUBLISHED JUN 15, 2021 1:23 PM BY PETER KELLER

Rio Tinto and BP Starting Year-Long Sustain Trial of Biofuels



RTM Tasman loading at Iron Ore Company of Canada's Sept-Îles port in Quebec, during the first trial voyage using biofuel

PUBLISHED MAY 23, 2022 2:55 PM BY THE MARITIME EXECUTIVE

Shipbuilders Make Progress with Designs for Ammonia-Fueled Ships



Mitsubishi completed designs for a LPG-fueled gas carrier that it says will be simple to convert to ammonia (Mitsubishi Shipbuilding)

PUBLISHED JUN 9, 2022 6:37 PM BY THE MARITIME EXECUTIVE

IMO's further commitment to global climate action

2023 is a crucial year for IMO in defining the global shipping's industry pathway to decarbonization:

- **Important decisions to be made by MEPC 80 (July 2023)**
- **Everyone to be involved: leaving nobody behind**

**Adoption of the 2023
IMO GHG Strategy**

**Defining a basket of
mid-term GHG
reduction measure,
including both
technical and
economic elements**

**Adoption of IMO
Life-cycle GHG
assessment
guidelines to facilitate
uptake of alternative
marine fuels**

MEPC 80 (July 2023) to adopt the 2023 IMO GHG Strategy

IMO member States have agreed to revise the IMO GHG Strategy in all its elements, including a strengthened level of ambition

Main outstanding issues in revision of IMO GHG Strategy :

- **Phase out date of emissions from international shipping:**
 - 2050? Net-zero? Zero?
- **Intermediate targets**
 - 2030, 2040?
- **How to ensure a “just and equitable” transition**
 - Assessing and addressing impacts on States
 - Collecting and distributing revenues from an economic measure
 - Supporting technology transfer and capacity building
- **Supporting 1st movers whilst ensuring a global level-playing-field**
 - Role for maritime corridors?

Lloyd's List 

More countries back net-zero target at IMO

July 2023 is the next MEPC meeting to watch as countries decide which carbon-pricing plans to support

13 Jun 2022 | NEWS

Developing a basket of mid-term IMO GHG reduction measures

Next Steps

- MEPC 80 to agree on the ‘basket’ of mid-term measures, containing both **technical and economic elements**
- Some convergence noted on a “**GHG fuel intensity regulating standard in combination with a mandatory levy/contribution**”; to be further considered/confirmed by MEPC 80
- The basket should **incentivize/reward use of low/zero carbon** fuels while **generating funds** to address identified negative impacts
- MEPC 80 to initiate a **comprehensive impact assessment** of the basket?
- MEPC to further consider the **collection and use of carbon revenues** to support **maritime projects in developing States**

Exploring opportunities in decarbonizing maritime transport

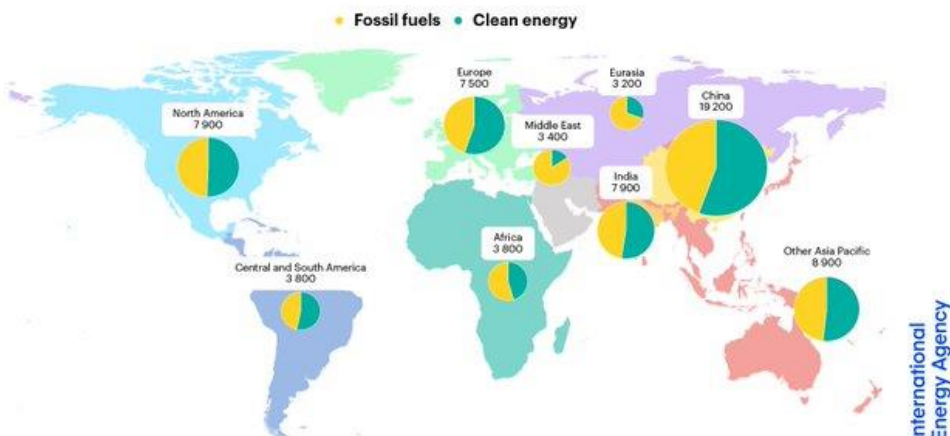
How can the 2023 IMO GHG Strategy and the basket of mid-term measures create opportunities in Africa?

- An ambitious IMO GHG reduction target for international shipping will send **strong signal to renewable fuel producers** to **invest** in production capacity in Africa
- An IMO 2050 reduction target for international shipping would **not prejudice national** GHG reduction targets
- Development of an **economic measure will generate revenues** to support developing States mitigating negative impacts of an IMO measure, e.g. supporting port infrastructure, re-skilling, yard/retrofitting capacity
- Decarbonization of shipping could accelerate the **transition to a broader national low-carbon economy**

Supporting opportunities in Africa

Job creation and attracting investments in the renewable energy sector

Energy employment in fossil fuel and clean energy sectors by region, 2019
World Energy Employment



Source: International Energy Agency (IEA) – World Energy Employment report



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Vulnerable countries need help to adjust to carbon cuts in maritime transport

05 July 2021

Technical and financial assistance to poorer nations will help alleviate the costs of a planned transition to low-carbon shipping.

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6 African countries launch the Green Hydrogen Alliance

by The Exchange — May 24, 2022 in Africa, Energy Reading Time: 3 mins read 945 71

Six African nations have formally launched the Africa Green Hydrogen Alliance. They include South Africa, Kenya, Egypt, Morocco, Namibia and Mauritania

- The Africa Green Hydrogen Alliance targets accelerating the transition from fossil fuels overreliance that has made the continent reluctant, as fossil fuels drive most economies in the continent
- Green hydrogen could provide Africans with new access to cleaner energy sources, employment opportunities, public health benefits due to cleaner air, GDP creation and export revenues outside Africa

IMO's GHG regulatory agenda

Next meetings

Expert Workshop on mid-term measures (25-26 May 2023)

Intersessional Working Group on the reduction of Greenhouse Gases (ISWG-GHG 15 - 26-30 June 2023)

- revision of the Initial GHG Strategy
- further consideration of proposals for future technical and economic GHG reduction measures
- consideration of draft IMO GHG Life-cycle guidelines

Expected deliverables at MEPC 80 (3-7 July 2023):

- adoption of the 2023 IMO GHG Strategy
- agreement on the outline of a “basket” of next GHG reduction measures with technical and economic elements to be developed as a priority
- Initiate a high-level analysis of possible impacts of the basket?
- Further consideration of collection/use of carbon revenues in developing States

