



**GMN** | The Global  
MTCC Network  
A global network for energy-efficient shipping

# The GMN Project

## MTCC-Africa Conference, October 2019



EUROPEAN UNION

The Global MTCC Network (GMN) project  
is funded by the European Union and implemented by IMO  
The views expressed in this presentation  
can in no way be taken to reflect the views of the European Union



INTERNATIONAL  
MARITIME  
ORGANIZATION

ANNEX 11

RESOLUTION MEPC.304(72)  
(adopted on 13 April 2019)

INITIAL IMO STRATEGY ON REDUCTION OF GHG EMISSIONS FROM SHIPS

THE MARINE ENVIRONMENT PROTECTION COMMITTEE

RECALLING Article 38(e) of the Convention on the International Maritime Organization (the Organization) concerning the functions of the Marine Environment Protection Committee (the Committee) conferred upon it by international conventions for the prevention and control of marine pollution from ships,

ACKNOWLEDGING that work to address greenhouse gas (GHG) emissions from ships has been undertaken by the Organization continuously since 1997, in particular, through adopting global mandatory technical and operational energy efficiency measures for ships under MARPOL Annex VI,

ACKNOWLEDGING ALSO the decision of the thirtieth session of the Assembly in December 2017 that adopted for the Organization a strategic direction entitled "Respond to Climate Change",

RECALLING the United Nations 2030 Agenda for Sustainable Development,

ADOPTS the Initial IMO Strategy on Reduction of GHG Emissions from Ships (hereinafter the Initial Strategy) as set out in the annex to the present resolution;

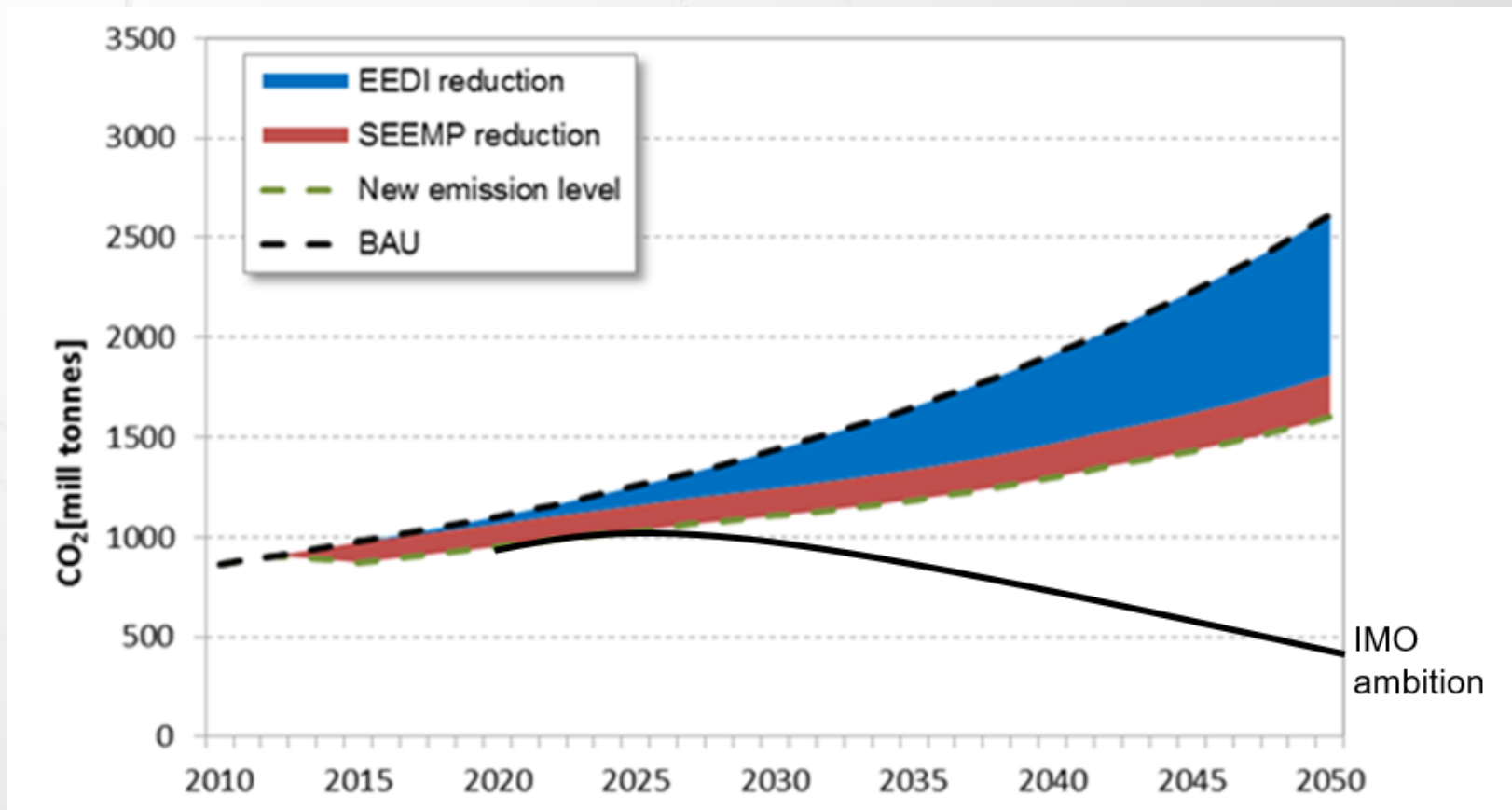
INVITES the Secretary-General of the Organization to make adequate provisions in the Integrated Technical Cooperation Programme (ITCP) to support relevant follow-up actions of the Initial Strategy that may be further decided by the Committee and undertaken by developing countries, particularly least developed countries (LDCs) and small island developing States (SIDS);

AGREES to keep the Initial Strategy under review, with a view to adoption of a Revised IMO Strategy on reduction of GHG emissions from ships in 2023.

**adopted**



# Adoption of the Initial IMO Strategy on Reduction of GHG emissions from ships



# Adoption of the Initial IMO Strategy on Reduction of GHG emissions from ships



U.N. shipping agency reaches deal to cut CO2 emissions

Shipping Regulators Reach Deal to Cut Carbon Emissions For The First Time, Maritime Shipping Has A Climate Target

Science & Environment

Global shipping in 'historic' climate deal



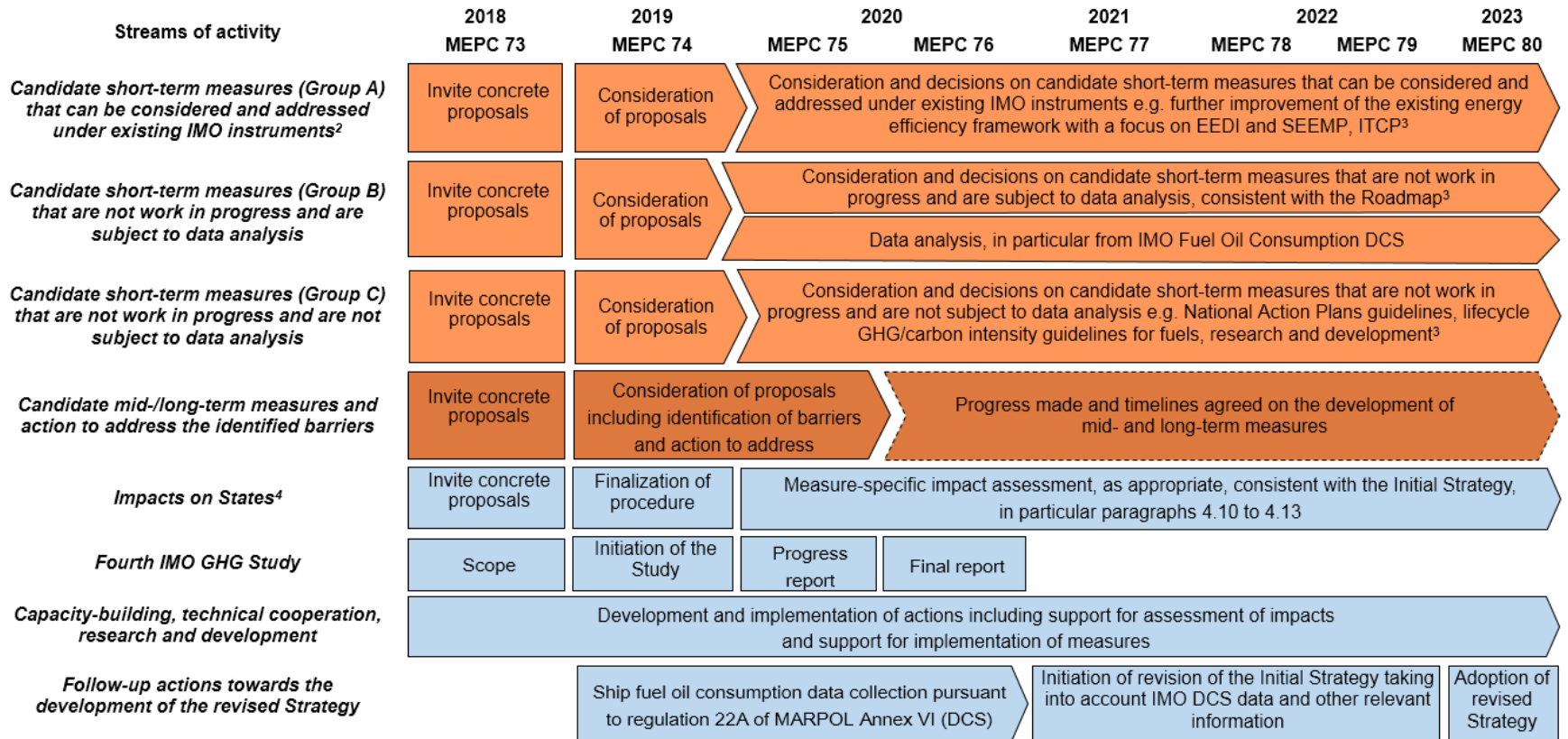
Energy and Environment  
The shipping industry is finally going to cut its climate change emissions. That's a big deal.

Carbon emissions from global shipping to be halved by 2050, says IMO

Carbon dioxide from ships at sea to be regulated for first time

Nations Strike Historic Deal to Curb Shipping Emissions

# Programme of follow-up actions of the Initial Strategy up to 2023



<sup>2</sup> Includes ongoing work pursuant to regulation 21.6 of MARPOL Annex VI.

<sup>3</sup> "In aiming for early action, the timeline for short-term measures should prioritize potential early measures that the Organization could develop, while recognizing those already adopted, including MARPOL Annex VI requirements relevant for climate change, with a view to achieve further reduction of GHG emissions from international shipping before 2023" (paragraph 4.2 of the Initial Strategy).

<sup>4</sup> Assessment of impacts on States to be undertaken in accordance with the procedure to be developed by the Organization.

## Outcome of MEPC 74 on GHG matters

- MEPC 74 established the **"GHG Trust Fund"**
- a voluntary multi-donor trust fund to provide a dedicated source of financial support to sustain the Organization's technical cooperation and capacity-building activities to support the implementation of the Initial IMO Strategy on Reduction of GHG emissions from ships



## Outcome of MEPC 74 on GHG matters

- During MEPC 74, a new major international project to support the Initial Strategy has been launched: **GreenVoyage-2050**
- the project will initiate and promote global efforts to ***demonstrate and test technical solutions for reducing GHG emissions***, as well as ***enhancing knowledge and information sharing to support the Initial Strategy***.
- collaboration between IMO and the Government of Norway and will run for an initial two-year period.
- More than 50 countries in 14 sub-regions across the globe are expected to participate in the Project, including strategic partners from the private sector, who will contribute expertise and experience.



## Outcome of MEPC 74 on GHG matters

- MEPC 74 adopted **resolution MEPC.323(74) on *Invitation to Member States to encourage voluntary cooperation between the port and shipping sectors to contribute to reducing GHG emissions from ships***
- This resolution encourages to the port sector to engage in the efforts to reduce GHG emissions from ships. It identifies in particular four possible areas of interest:
  - development of Onshore Power Supply facilities (preferably from renewable sources);
  - provision of safe bunkering of alternative low-carbon and zero-carbon fuels;
  - promotion of port incentives schemes; and
  - optimization of port calls, including facilitation of Just-in-Time arrival of ships.





**GMN** | The Global  
MTCC Network  
A global network for energy-efficient shipping

## GMN – serving the IMO strategy

**AN ESTABLISHED GLOBAL NETWORK TO SUPPORT IMO'S INITIAL GHG STRATEGY THROUGH CAPACITY BUILDING AND TECHNOLOGY TRANSFER IN DEVELOPING REGIONS**



Project funded by the  
EUROPEAN UNION



**INTERNATIONAL  
MARITIME  
ORGANIZATION**

# A truly global network



**MTCC PACIFIC**  
Maritime Technology Cooperation Centre



**MTCC AFRICA**  
Maritime Technology Cooperation Centre



**MTCC ASIA**  
Maritime Technology Cooperation Centre



**MTCC CARIBBEAN**  
Maritime Technology Cooperation Centre



**MTCC LATIN AMERICA**  
Maritime Technology Cooperation Centre



# Major projects & the IMO GHG strategy



**Initial IMO GHG Strategy, paragraph 5.5:** *“the Organization is requested to assess periodically the provision of financial and technological resources and capacity-building to implement the Strategy through the ITCP and other initiatives including the **GloMEEP project** and **the MTCC network**”.*

**Initial IMO GHG Strategy, paragraph 5.4:** *“The Committee could assist the efforts to **promote low-carbon technologies** by facilitating public-private partnerships and information exchange”.*

# What has been achieved so far?



## Stakeholders



# Pilot Projects & technical expertise



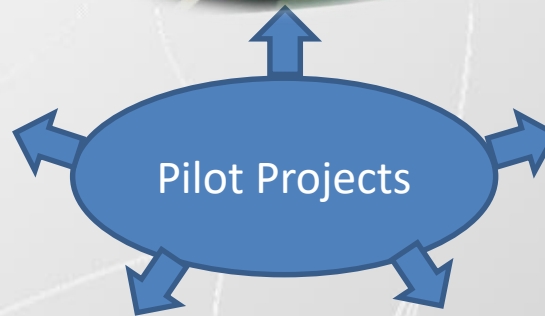
**MTCC PACIFIC**  
Maritime Technology Cooperation Centre



**MTCC ASIA**  
Maritime Technology Cooperation Centre



**MTCC AFRICA**  
Maritime Technology Cooperation Centre



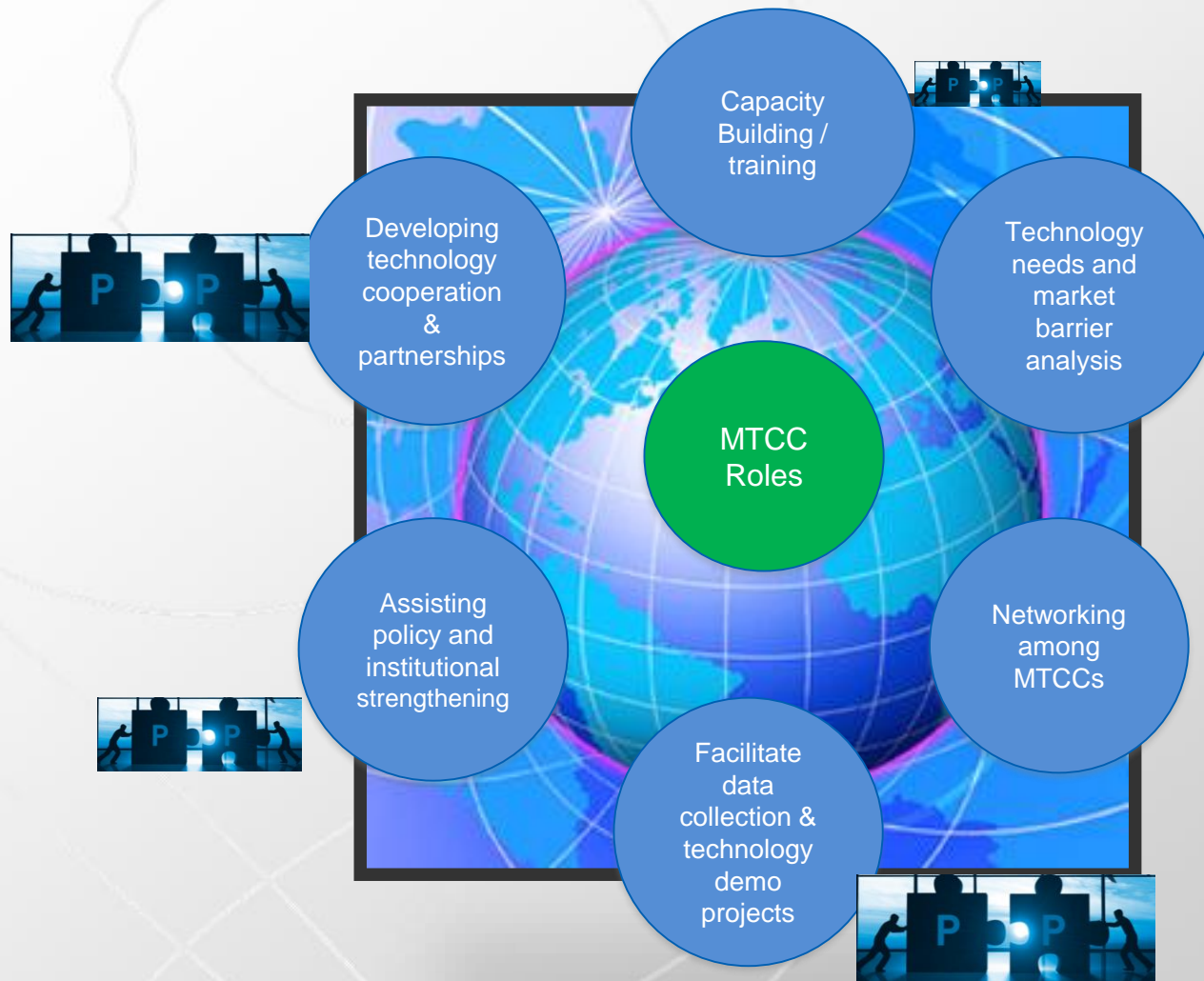
**MTCC CARIBBEAN**  
Maritime Technology Cooperation Centre



**MTCC LATIN AMERICA**  
Maritime Technology Cooperation Centre



# The future of GMN

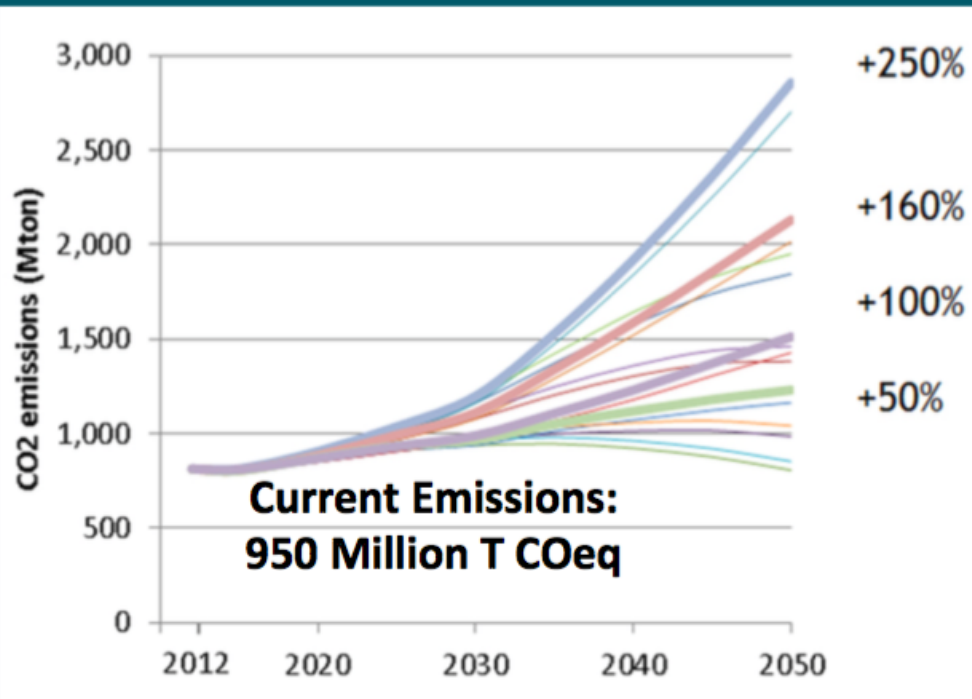


# Conclusion

Energy efficiency,  
GHG emissions and  
MTCCs

MTCCs at the centre of regional  
maritime networks

Technical expertise and proven  
results



GMN a key tool to support SIDS / LDCs  
and achieve quantifiable results

# Further information

- GMN project website: <http://gmn.imo.org/>

The screenshot shows the homepage of the GMN project website. The header features the GMN logo (a globe with green lines) and the text "The Global MTCC Network A global network for energy-efficient shipping". To the right is the European Union flag and the text "Project funded by the European Union". Further right is the IMO logo and the text "INTERNATIONAL MARITIME ORGANIZATION". A search bar is located on the right side of the header.

The main navigation menu includes: HOME, ACTIVITIES, ABOUT THE PROJECT, MTCC INFORMATION, MEDIA CENTRE, and CONTACT US.

The main content area features a large image of a green ship on a globe. To the left of the ship is a text box with the following content:

**A global network for energy-efficient shipping**  
Funded by the European Union and implemented by IMO, the Global MTCC Network initiative unites Maritime Technology Cooperation Centres – MTCCs – in targeted regions into a global network. Together, they are promoting technologies and operations to improve energy efficiency in the maritime sector and help navigate shipping into a low-carbon future  
[Discover more.](#)

Below the main content area, there are two columns of information:

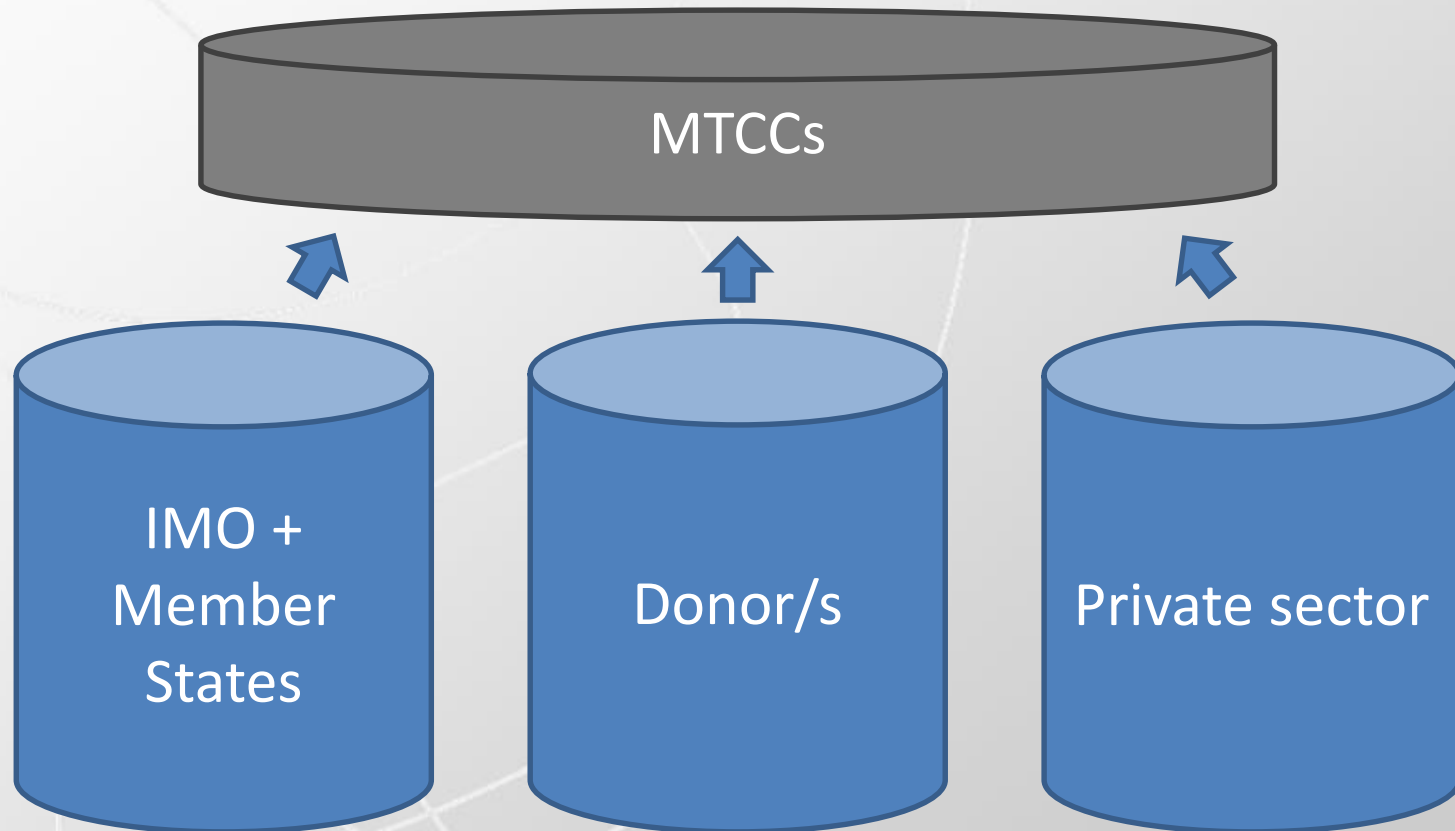
- Maritime Technology Cooperation Centres**: A photograph of a modern building with a curved facade, labeled "MTCC Africa".
- Upcoming MTCC Activities**: A list of events with a "View all" link.

| Region        | Event  | Dates                                 | Location   |
|---------------|--|---------------------------------------|--|
| Africa        | MTCC-Africa First National Event             | 19 June 2017 - 20 June 2017           | Jomo Kenyatta University of Agriculture and Technology |
| Caribbean     | MTCC-Caribbean First Regional Event          | 27 June 2017 - 28 June 2017           | University of Trinidad and Tobago                      |
| Asia          | MTCC-Asia First Regional Event               | 18 September 2017 - 21 September 2017 | Shanghai Maritime University                           |
| Latin America | MTCC-Latin America Launch and Regional event | 2 October 2017 - 6 October 2017       | International Maritime University of Panama            |

At the bottom of the page, there is a "Connecting..." status indicator and a faint world map graphic.

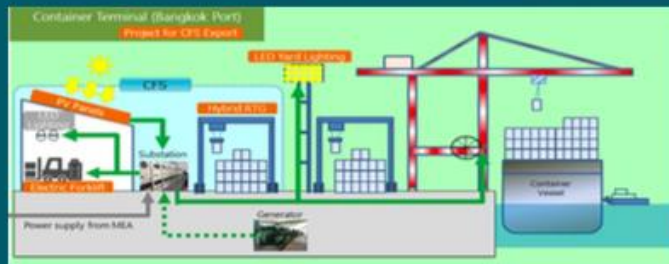
# Long-term sustainability

3 key pillars of support



# Looking ahead

## Focus on Green Ports



**Port: Just in Time Services (Digital Infrastructure)**

**Port: Shore Based Power Supply**

**Port: Energy Efficient Equipment and Operations**

# Supporting IMO technical cooperation

- GloMEEP



- GIA



GLOBAL INDUSTRY ALLIANCE  
TO SUPPORT LOW CARBON SHIPPING

- Green Voyage



- ITCP





# The GloMEEP and IMO... Global Industry Alliance



[glomeep.imo.org](http://glomeep.imo.org)



# The GloMEEP and IMO... Global Industry Alliance



[glomeep.imo.org](http://glomeep.imo.org)

# The GloMEEP project



## Legal, Policy and Institutional Reforms (LPIR)

Development of **tools** that specifically address the legal, policy and institutional challenges that might be expected to arise on the road to implementation of MARPOL Annex VI at a national level.

### Ship Emissions Toolbox - 3 guides

### Port Emissions Toolbox - 2 guides



In collaboration with:



# The GloMEEP and IMO... Global Industry Alliance



[glomeep.imo.org](http://glomeep.imo.org)

## Outcome of MEPC 74 on GHG matters

*“The specification for and agreement on the procedure for assessing and taking into account the impacts of measures related to international shipping on States should be undertaken as a matter of urgency as part of the follow-up actions”*

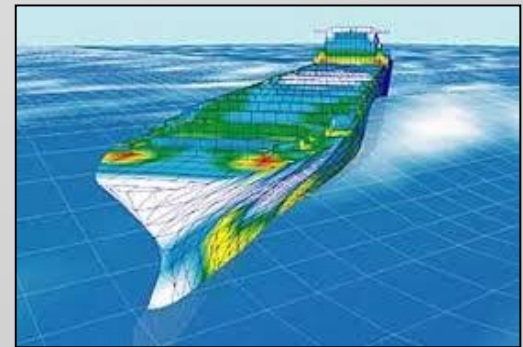
- MEPC 74 approved **MEPC.1/Circ.855 on Procedure for assessing the impacts on States of candidate measures**
- The procedure identifies four steps for the impact assessment:
  - Step 1: initial impact assessment, to be submitted as part of the initial proposal to the Committee for candidate measures;
  - Step 2: submission of commenting document(s), if any;
  - Step 3: comprehensive response, if requested by commenting document(s); and
  - Step 4: comprehensive impact assessment, if required by the Committee.
- The procedure provides further detail on the content and methodologies of the initial and comprehensive impact assessments.
- Duration of the impact assessment = one to four meetings depending on the level of assessment required

## Outcome of MEPC 74 on GHG matters

- Based on the recommendations from an Expert Workshop held in March 2019, MEPC 74 approved the terms of reference of the **Fourth IMO GHG Study**
- The call for tenders was issued on the IMO website on 29 May
- Final report of the Study to be submitted to MEPC 76 (Autumn 2020)
- The Study will include:
  - an inventory of current global emissions of GHGs and relevant substances emitted from ships of 100 GT and above engaged in international voyages from 2012 to 2018, or as far as statistical data are available
  - estimates of carbon intensity (estimates of world fleet's CO<sub>2</sub> emissions per transport work, from 2012 to 2018, or as far as statistical data are available);
  - possible estimates of carbon intensity of international shipping for the year 2008 (the baseline year for the levels of ambition identified in the Initial Strategy); and
  - scenarios for future international shipping emissions 2018-2050.
- A Steering Committee of Member States will be established to review and monitor progress and confirm that the Study meets its terms of reference

## Outcome of MEPC 74 on GHG matters

- MEPC 74 approved, for adoption at the next session in April 2020, draft amendments to MARPOL Annex VI to significantly strengthen the **EEDI phase 3** requirements. The draft amendments bring forward the entry into effect date of phase 3 to 2022, from 2025, for several ship types, including gas carriers, general cargo ships and LNG carriers.
  - Example: for a containership of 200,000 deadweight tonnage and above, the EEDI reduction rate is expected to be set at 50% from 2022, instead of 30% from 2025
- The Committee also agreed terms of reference for a correspondence group to look into the introduction of a possible EEDI phase 4.



# IMO SG calls on all maritime industry sectors to be involved meeting GHG emission targets

“We need to focus on technology transfer and research and development; we need IMO’s Member States to come together as one; **We need to involve all maritime sectors – not just shipping. Investment in port infrastructure is just as important”**

Conference on Climate Change and Oceans Preservation, Brussels, Belgium  
Feb - 2019



# Programme of follow-up actions of the Initial Strategy up to 2023

- October 2018, MEPC 73 approved the **Programme of follow-up actions** of the Initial IMO Strategy on reduction of GHG emissions from ships up to 2023
- This programme of actions identifies several parallel streams of activity:
  - Consideration of **concrete proposals for new measures** by MEPC 74 (May 2019)
    - the use of speed optimization and speed reduction
    - incentives for first movers to develop and take up new technologies
    - Capacity-building, technical cooperation, R&D
  - Mechanism to assess **impacts on States** of measures
  - Fourth IMO GHG Study to update estimates and projections



## Example of candidate short-term measure: ports

- the **Initial IMO Strategy** identifies as a candidate short-term measure:

“consider and analyse measures to encourage port developments and activities globally to facilitate reduction of GHG emissions from shipping, including provision of ship and shoreside/onshore power supply from renewable sources, infrastructure to support supply of alternative low-carbon and zero-carbon fuels, and to further optimize the logistic chain and its planning, including ports;

”

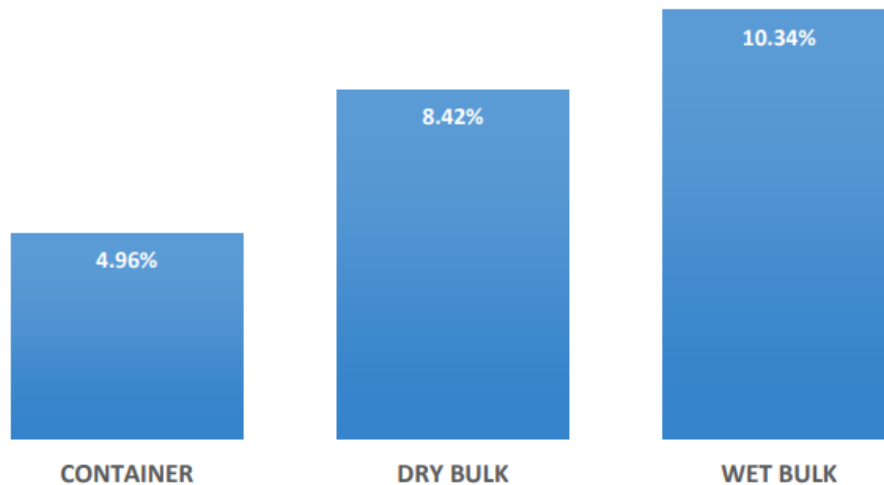
# Why are ports so important to the IMO climate mitigation strategy?

## Ships spend time waiting at anchorage



GLOBAL INDUSTRY ALLIANCE  
TO SUPPORT LOW CARBON SHIPPING

Time at anchorage



- In-kind contribution of data and analysis by MarineTraffic
- Data timeframe: 1/7/2017 – 15/7/2018
- Waiting time at anchorage for all ships > 999 GT



**MarineTraffic**

Global Ship Tracking Intelligence

# What is Just In Time (JIT) Operation of Ships?



GLOBAL INDUSTRY ALLIANCE  
TO SUPPORT LOW CARBON SHIPPING

JIT = maintain most efficient ship operating speed to arrive at Pilot Boarding Place when availability is ensured of:

- Berth
- Fairway
- Nautical services (pilots, tugs, linemen)





GLOBAL INDUSTRY ALLIANCE  
TO SUPPORT LOW CARBON SHIPPING

# Advantages - JIT can significantly reduce emissions

Absolute emissions reduction:

- Per voyage
- At anchorage due to reduced waiting time (at anchor ships still use auxiliary engines and boilers)



# Challenges to port developments?

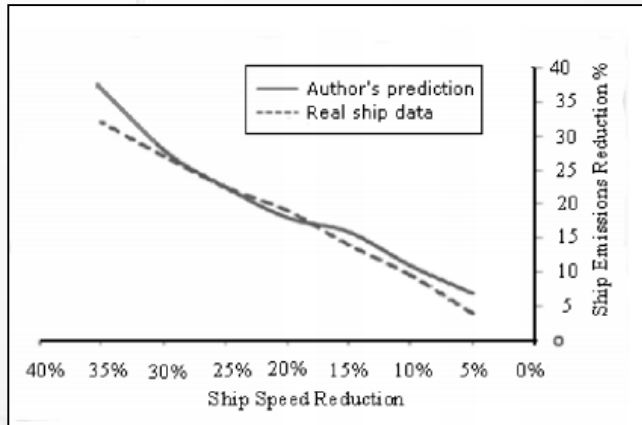


GLOBAL INDUSTRY ALLIANCE  
TO SUPPORT LOW CARBON SHIPPING

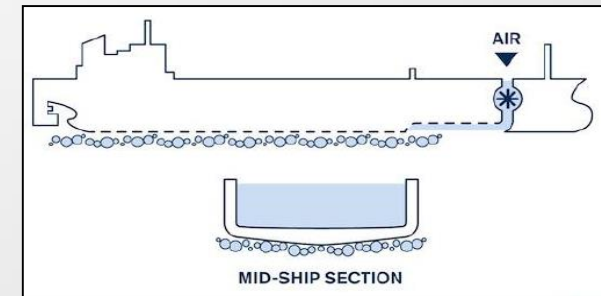
**Need for a common approach and the application of smart solutions**

# Technology transfer

- Global exhibition series



Ship speed reduction



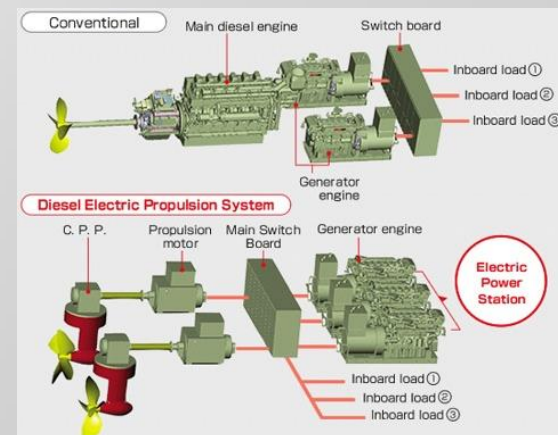
Air lubrication



Solar power



Wind power



Diesel-electric propulsion

# Technical Cooperation

## Integrated Technical Cooperation Programme (ITCP)

- Designed to **assist developing countries** improve their ability to comply with international rules and standards relating to maritime safety the protection of the environment.
- Gives priority to **technical assistance programmes** that focus on human resources, development and institutional capacity building
- Activities mostly delivered through **IMO Secretariat** and **regional outreach mechanisms**, such as REMPEC or MTCCs, which coordinate and manage regional technical assistance programmes.
- The IMO ITCP can easily respond to specific (emerging) issues; such as: controlling shipping atmospheric emissions, reducing marine plastic litter from ships, promoting energy efficient port operations, etc.



# Technical Cooperation

## Examples of major environmental projects in support of developing countries



- **IMO-Norad MEPSEAS Project**, to improve ratification and implementation of IMO instruments: MARPOL Convention, AFS Convention, London Convention, Ballast Water Management Convention
- 2018 to 2021



- GEF-UNDP-IMO **GloMEEP Project**, launched Oct. 2015. Budget: ~ US\$2 million
- To build capacity in developing countries for implementing the technical and operational measures for energy-efficient shipping



- IMO-EU **Global MTCC Network (GMN) Project**, 2015 – December 2019. Budget: €10 million
- To establish 5 Maritime Technology Cooperation Centres (MTCCs) in 5 regions worldwide to promote energy efficient technologies in the maritime sector



- **GloFouling**, new GEF-UNDP-IMO project to assist developing countries to reduce the transfer of harmful aquatic organisms through biofouling. Launched at MEPC 73. Budget: USD 7 million. Duration: 5 years. Same model as GloMEEP.
- Global benefits: resilience of marine ecosystems and reduction of GHG emissions from shipping.



- **GreenVoyage-2050**, new Norway-IMO project launched at MEPC 74. Budget: US\$1.1 million for the initial two years of the project.
- To promote global efforts to demonstrate and test technical solutions for reducing GHG emissions from ships, and to continue building capacity in developing countries. Private stakeholders and more than 50 countries are expected to participate.

# Why GloMEEP Project?

**GEF-UNDP-IMO Project** launched in 2015 to address:

- **Barriers to implementation** of IMO's energy efficiency requirements:
  - Global nature of shipping & large numbers of organisations / countries involved;
  - Heterogeneous nature of ships;
  - Split incentives between stakeholders;
  - Barriers to technological flows and technology transfer; and
  - General lack of capacity in developing countries
- **Capacity building** needed for the effective implementation of MARPOL Annex VI
- **Reg. 23** (and subsequent Resolution MEPC 229.(65) on technology transfer) support technical cooperation and capacity building for this purpose

⇒ **Overall objective:**

***Build capacity in developing countries for implementing the technical and operational measures for energy efficient shipping and catalyze overall reductions in GHG emissions from international shipping.***

# Legal, Policy and Institutional Reforms (LPIR)



Development of **tools** that specifically address the legal, policy and institutional challenges that might be expected to arise on the road to implementation of MARPOL Annex VI at a national level.

## Ship Emissions Toolbox - 3 guides

## Port Emissions Toolbox - 2 guides



In collaboration with:



# The GloMEEP and IMO... Global Industry Alliance



[glomeep.imo.org](http://glomeep.imo.org)

# Port improvements

