



GMN | The Global MTCC Network

A global network for energy-efficient shipping

Maritime GHG emissions and the IMO initiatives to support developing countries

COP 26 – Glasgow - 10 November 2021



EUROPEAN UNION

The Global MTCC Network (GMN) project
is funded by the European Union and implemented by IMO
The views expressed in this presentation
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INTERNATIONAL
MARITIME
ORGANIZATION

The International Maritime Organization (IMO)



UN specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships



IMO regulates over **50,000** merchant ships trading worldwide

HQ in London



Assist developing countries improve their ability to comply with international rules and standards



174 Member States & 3 associated members

143 observer organizations (IGOs and NGOs)



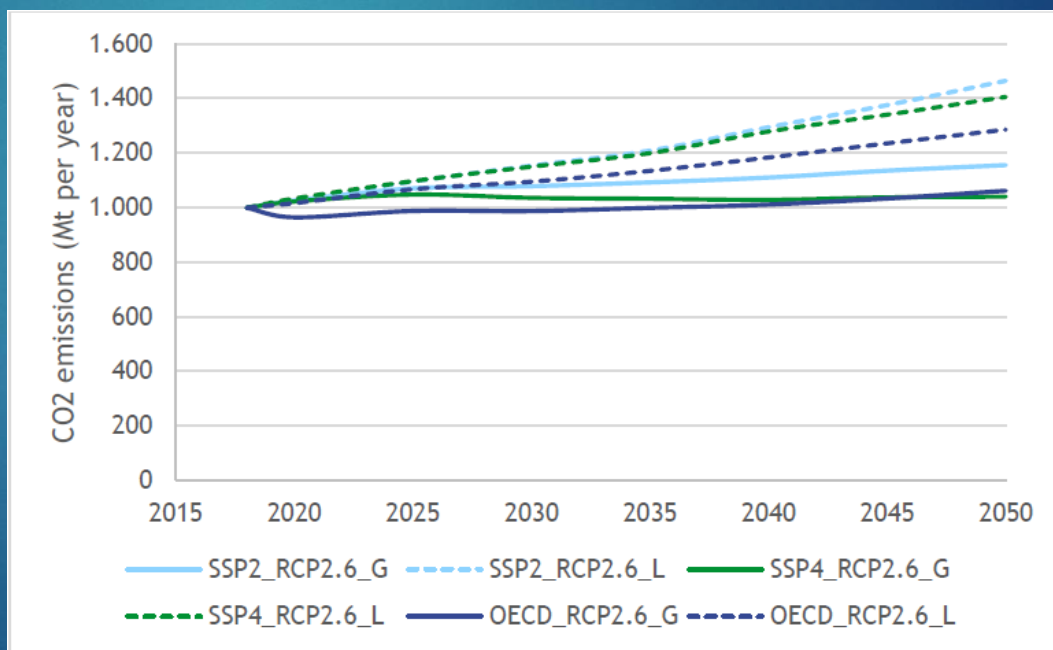
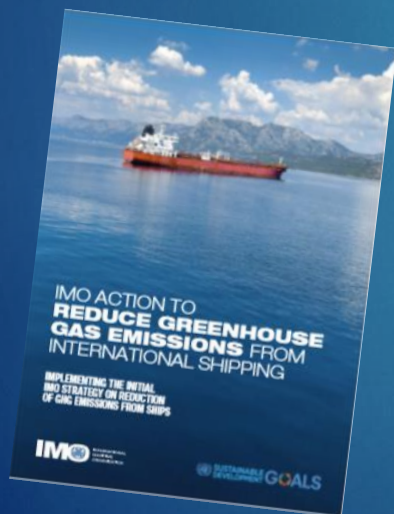
IMO stands for safe, secure and efficient shipping on cleaner oceans



Context: shipping & GHG emissions



- The share of shipping emissions in global anthropogenic emissions has increased from 2.76% in 2012 to 2.89% in 2018
- Demand is the key driver for growth in emissions
- **Emission projections:** under Business-as-usual scenarios, 2050 emissions from shipping are expected to represent **between 90% and 130% of 2008 emissions**

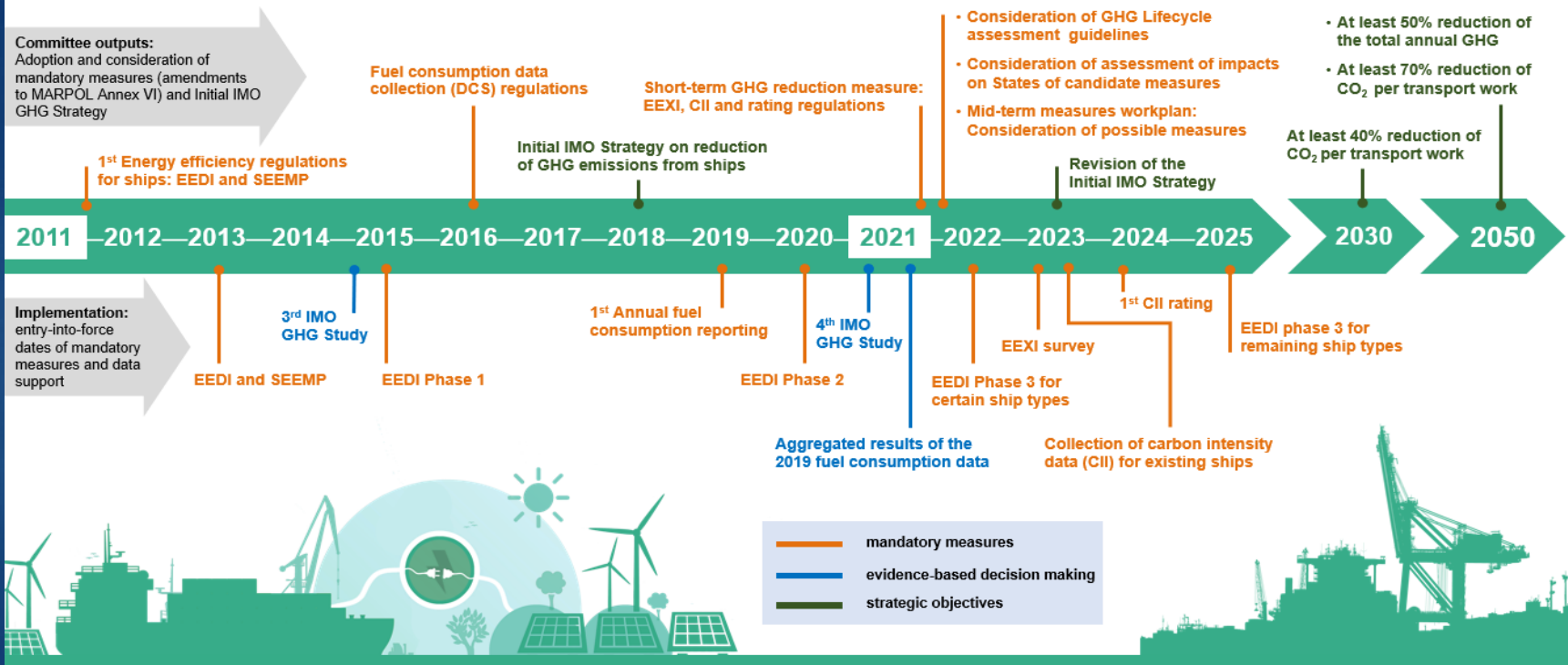


A decade of IMO regulatory action to reduce GHG emissions from shipping

Addressing climate change



A decade of **regulatory action** to cut GHG emissions from shipping:
towards phasing out GHG emissions from international shipping as soon as possible in this century



See: <https://www.imo.org/en/MediaCentre/HotTopics/Pages/Cutting-GHG-emissions.aspx>



Supporting implementation: technical assistance and capacity building

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MEPC 72/17/Add.1
Annex 11, page 1

ANNEX 11

RESOLUTION MEPC.304(72)
(adopted on 13 April 2018)

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",

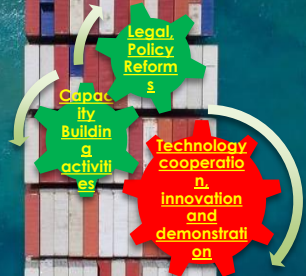
RECALLING the United Nations 2030 Agenda for Sustainable Development,

1. 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;
2. 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 States (SIDS), particularly least developed countries (LDCs) and small island developing States (SIDS);
3. 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.

Addressing specific challenges of SIDS and LDCs

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GreenVoyage2050



Global MTCC Network

MTCC ASIA
Shanghai Maritime University, China

MTCC PACIFIC
Pacific Community (SPC), Fiji

MTCC LATIN AMERICA
International Maritime University of Panama, Panama

University of Trinidad & Tobago

Jomo Kenyatta University of Agriculture & Technology, Kenya

GMNI The Global MTCC Network
A global network of maritime education

GloFouling Partnerships

SHIPS ANTI-FOULING

GloFouling PARTNERSHIPS

Blue Solutions

Integrated Approach for GHG Reduction: ships, ports and hinterland.



INTERNATIONAL
MARITIME
ORGANIZATION

Promoting Inclusive Innovation Through Demonstration Projects & Knowledge Platforms



GLOBAL INDUSTRY
ALLIANCE TO SUPPORT
LOW-CARBON SHIPPING



GHG
SMART

FIN SMART

Financing Sustainable Maritime Transport RoundTable

IMO | European Bank | THE WORLD BANK

NEXT GEN

Innovation Forum

The Global MTCC Network (GMN) project

- EU and IMO partnership project launched in 2016
- Focused upon reducing GHG emissions from the shipping sector and supporting IMO's Initial GHG Reduction Strategy – LDCs & SIDS
- A network of 5 Maritime Technology Cooperation Centre's (MTCC's) established in - Africa, Asia, Caribbean, Latin America and Pacific



GMN Concept



- A more sustainable approach
- Institutionalization of capacity building and technology cooperation
- The need to create long term solutions
- Creating centre's of excellence in-region





Achievements



97 Participating Countries

19 Small Islands Developing States and 10 Least Developed Countries



IMO Headquarters
London



€ 10M million funds by EU
+2M million IN-KIND support

2 GMN films

MTCC LATIN AMERICA

MTCC CARIBBEAN

MTCC AFRICA

MTCC ASIA

MTCC PACIFIC

79
Total Stakeholders



3 Branch offices
Cambodia
Myanmar
Samoa



MTCC PACIFIC

- Conducted 12 port energy audits across 8 countries
- Solomon Islands port of Honiara saving around 15 tonnes of greenhouse gas emissions a month; translating to savings of approximately AUD \$12,000 a month

Spotlight: MTCC Caribbean

MTCC Caribbean's Pilot Project and Action Items

Pilot 1

Uptake of ship energy efficient technologies and operations.



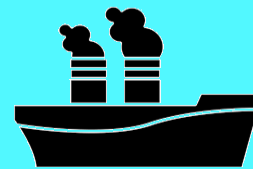
Created a baseline of existing technologies and best practices utilized on-board vessels trading in the Caribbean Area between 2017-2018.

Pilot 2

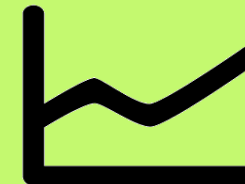
Fuel consumption data collection and reporting in line with IMO regulations.



Established a voluntary fuel consumption data reporting system to aid regional administration.



Highlights the main energy consumers on board and the emissions abatement measures currently used in the region.



Provides a baseline of the fuel consumption and estimated GHG emissions for ships trading in the Caribbean region.



Facilitates technology uptake based on a cost benefit analysis



Compile and communicate data to the IMO



Impact

- ▶ A basis for setting targets and ensuring accountability to relevant stakeholders
- ▶ Allows informed decision making on investments
- ▶ Increased awareness amongst regional stakeholders
- ▶ Will assist in the development of a consistent regional approach

Spotlight: MTCC Pacific



Energy-efficient ports



- Conducted 12 port energy audits across 8 countries
- Collection of baseline data
- Advice on energy savings to reduce GHG emissions from port operations



Data collection

- 8 vessels voluntarily supplying data
- Developing capacity to collect fuel oil consumption data on board ships
- Addressing challenges in data collection (old system with no flow meter, tank sounding, and gauge)
- Data on fuel oil consumption allow calculation of the Energy Efficiency Operational Indicator (EEOI) which guide operational measures to reduce fuel oil consumption and greenhouse gas emissions

Energy-efficient ships



Rolling out the implementation of Ship Energy Efficiency Management Plans (SEEMPs)

- Introduced in the national workshops
- 26 ship operators and 39 vessels in total
- 39 vessels visited; 36 vessel SEEMPs drafted
- Integrated with Safe Operational Plan through SPC's Pacific Islands Domestic Ship Safety (PIDSS) Programme



Uptake of new technologies and operations on board

- Domestic vessel from Fiji was chosen as the 'Leader-Ship' – a 45 m marine landing craft, capacity 25 passengers, cargo 200 tonnes
- The 'Leader-Ship' is leading the way with new technologies and operations
- Beginning with on-board hybrid/solar system trials

Capacity building activities



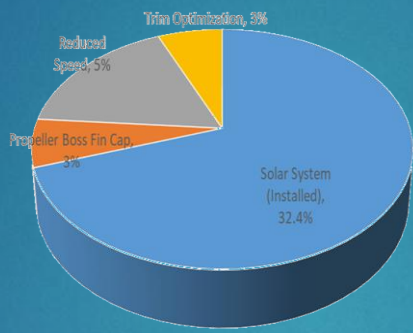
Fiji	24–26 October '17	24	3
Solomon Islands	13–15 February '18	13	4
Vanuatu	27–29 March '18	25	8
Tuvalu	9–11 May '18	18	
Samoa	12–14 June '18	17	2
Kiribati	18–25 June '18	27	5
Marshall Islands	20–21 August '18	27	6
Cook Islands	15–17 April '19	13	4



MTCC PACIFIC
Maritime Technology Cooperation Centre

PILOT PROJECT - VANUATU

The projects demonstrate the application of maritime solar energy in PICTs vessels with the view of reducing greenhouse gas emissions and progress low-carbon development in the Pacific maritime transport



Vessel Name	Tiwi Trader
Vessel Type	Landing craft
Year Built	1979
Overall Length	31m
Gross Tonnage	172

Identified Savings solar system	32%
Estimated annual cost savings	48,000 AUD
Greenhouse gas emissions reduction	101 tonnes annually
Payback period	9 months
Additional measures	
+ Propeller Boss Fin Cap (PBCF)	3%
+ operational measure (Optimised trim & speed)	5% & 3%
Total projected savings	43%

PILOT PROJECT - SAMOA

The projects demonstrate the application of maritime solar energy in PICTs vessels with the view of reducing greenhouse gas emissions and progress low-carbon development in the Pacific maritime transport



Vessel Name	Lady Samoa III
Vessel Type	Ro-Ro Passenger Ferry
Year Built	1998
Overall Length	46.7m
Gross Tonnage	1045

Identified Savings for solar system	17%
Estimated annual cost savings	25,000 AUD
Greenhouse gas emissions reduction	135 tonnes annually
Payback period	7 years
Additional measures	
+ Propeller Boss Fin Cap (PBCF)	3%
+ shaft generator	5%
+ operational measure (Optimised trim & speed)	5% & 10%
Total projected savings	40%



Port Energy Audits

Resounding success following the audits where improved energy efficiency & reduced GHG emission were observed :

-Solomon islands

Overall energy use in Honiara Port dropped 8%

-Fiji

Suva port reduced its energy consumption by 21%



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A global network for energy-efficient shipping

What next for GMN?

1

Dissemination, capacity building and sustainability

2

Linking to R&D developments

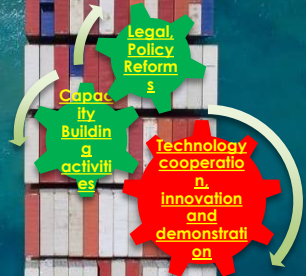
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Provide a platform for partnerships

GMN.imo.org



GreenVoyage2050



Global MTCC Network

MTCC ASIA
Shanghai Maritime University, China

University of Trinidad & Tobago

Jomo Kenyatta University of Agriculture & Technology, Kenya

MTCC PACIFIC
Pacific Community (SPC), Fiji

MTCC LATIN AMERICA
International Maritime University of Panama, Panama

GMNI The Global MTCC Network
A global network of engaged shipping

GloFouling Partnerships

SHIPS BIOFOULING
GloFouling PARTNERSHIPS

Blue Solutions

Integrated Approach for GHG Reduction: ships, ports and hinterland



Thank You! We are open for partnerships



<https://www.imo.org/en/OurWork/PartnershipsProjects/Pages/default.aspx>



GLOBAL INDUSTRY ALLIANCE TO SUPPORT LOW-CARBON SHIPPING



FIN SMART

Financing Sustainable Maritime Transport RoundTable

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Innovation Forum