

# MTCC Caribbean – Regional Effort Towards Low Carbon Shipping in the Caribbean

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MTCC CARIBBEAN  
Maritime Technology Cooperation Centre



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Maritime Technology Cooperation Centre



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



INTERNATIONAL  
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ORGANIZATION



Project funded by  
the EUROPEAN UNION

- The Maritime Technology Cooperation Centre – Caribbean (MTCC Caribbean) is part of the Global MTCC Network (GMN) project.
- The GMN project is funded by the EUROPEAN UNION and implemented by the International Maritime Organization (IMO).



European Union



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# The Issue: Climate Change

- “The world is facing an existential threat from climate change and if rapid action is not taken, there will be catastrophic biodiversity loss and untold human misery” – letter signed by 20,000 scientists.
- International Response: Paris Agreement 2015 “to limit global temperature increases to well below 2°C” and “pursue efforts to limit the temperature increase to 1.5°C” compared to pre-industrial levels”.
- Paris agreement assigned responsibility for climate action for maritime and aviation to the IMO and ICAO.
- Shipping currently accounts to 2.4% of world carbon dioxide emissions.
- GMN represents an ambitious initiative by the IMO to address maritime emissions.



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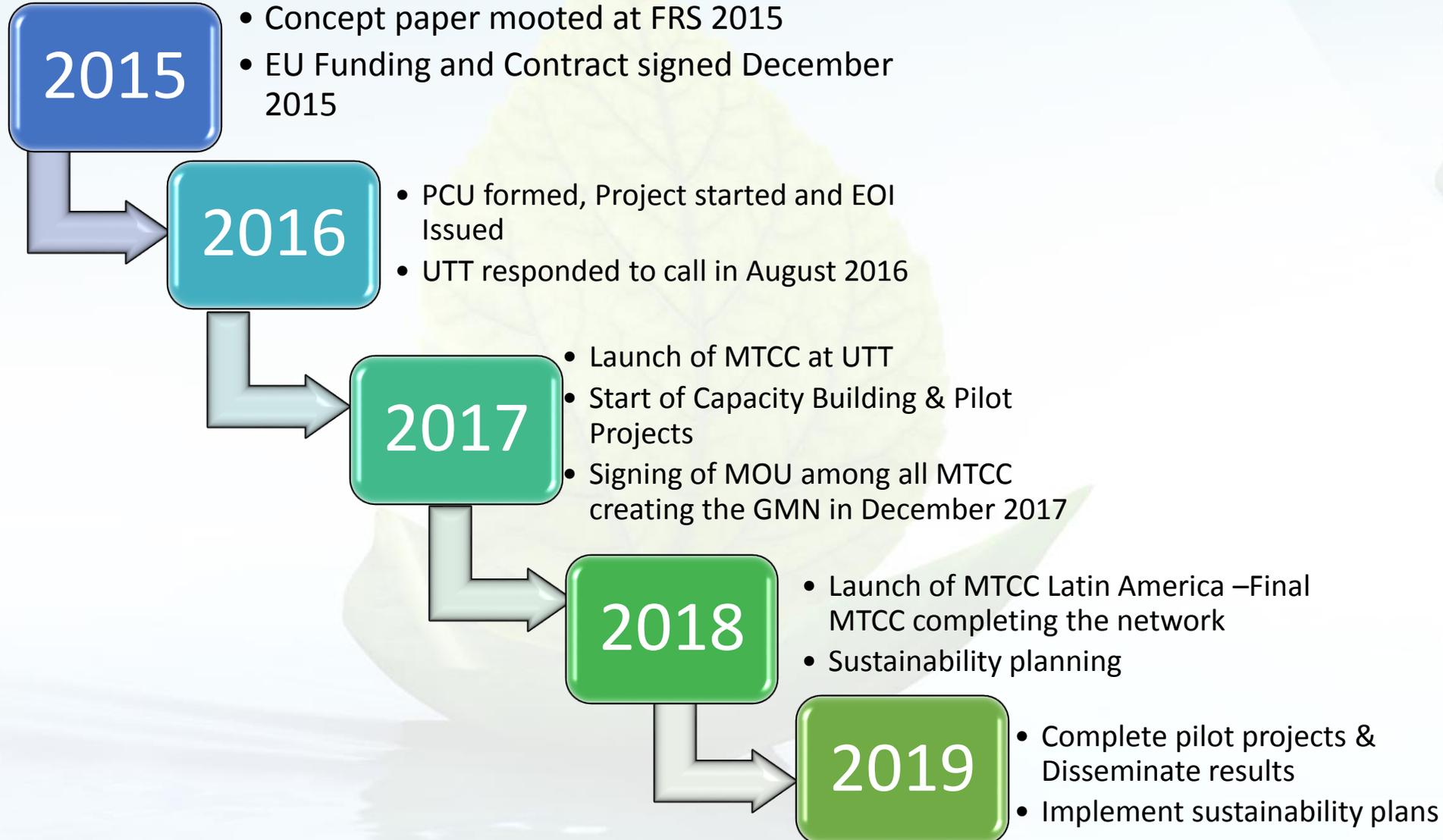


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## *Capacity Building for Climate Mitigation in the Maritime Shipping Industry*

- ✓ Funded by the European Union and implemented by the International Maritime Organization, the Global MTCC Network (GMN) – formally titled “Capacity Building for Climate Mitigation in the Maritime Shipping Industry”. This initiative created and unites Maritime Technologies 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.
- ✓ Developing countries and, in particular, Least Developed Countries and Small Islands Developing States, are expected to be the main beneficiaries of this initiative.

# Timeline of the GMN



# Host Institutions of Maritime Technology Cooperation Centres



MTCC CARIBBEAN  
Maritime Technology Cooperation Centre



MTCC CARIBBEAN  
Maritime Technology Cooperation Centre



The University of Trinidad & Tobago



MTCC AFRICA  
Maritime Technology Cooperation Centre



Jomo Kenyatta University of Agriculture & Technology, Kenya



MTCC ASIA  
Maritime Technology Cooperation Centre



Shanghai Maritime University, China



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MTCC PACIFIC  
Maritime Technology Cooperation Centre



The Pacific Community (SPC), Fiji



MoU Signing Ceremony  
Launch of Global MTCCs Network  
4th December 2017  
London, IMO HQ



MTCC LATIN AMERICA  
Maritime Technology Cooperation Centre



International Maritime University of Panama, Panama

# MTCC's Regional Membership



MTCC	Host Institution	No. of Member States
MTCC Caribbean	The University of Trinidad and Tobago	16 Countries
MTCC Latin America	International Maritime University of Panama	17 Countries
MTCC Africa	Jomo Kenyatta University of Agriculture and Technology	42 Countries
MTCC Asia	Shanghai Maritime University (Branch Offices in Bangladesh, Myanmar & Cambodia)	32 Countries
MTCC Pacific	Pacific Community & SPREP (Branch office in Samoa)	13 Island States

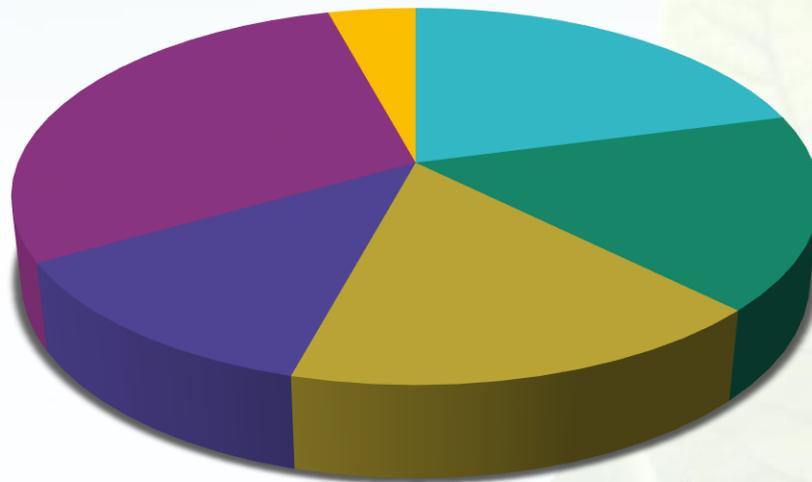
# Pilot Projects of the MTCCs

- MTCC Africa - On shore power supply at Port of Mombasa
- MTCC Caribbean - Establishment of an Maritime Energy Efficiency Baseline & Voluntary Data Reporting System throughout the Caribbean
- MTCC Asia - Updating Trim Optimization Management System
- MTCC Pacific - Energy Audits of Maritime Ports
- MTCC Latin America - Examining the barriers and constraints faced by regional ship owners and operators when implementing the IMO regulations

# Capacity building



Training Activities Delivered: 24 with 14 more activities planned for 2018/19

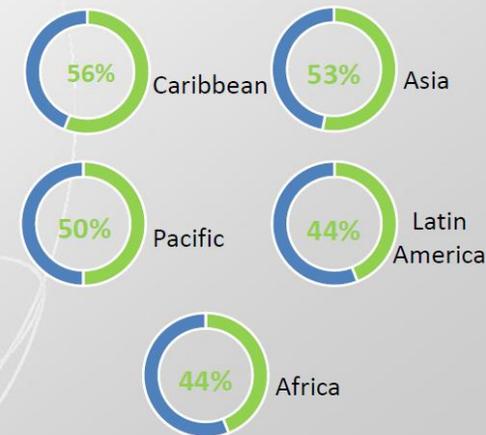


- MTCC Caribbean
- MTCC Africa
- MTCC Latin America
- MTCC Asia
- MTCC Pacific
- GMN

## Progress charts



### Individual MTCCs\*

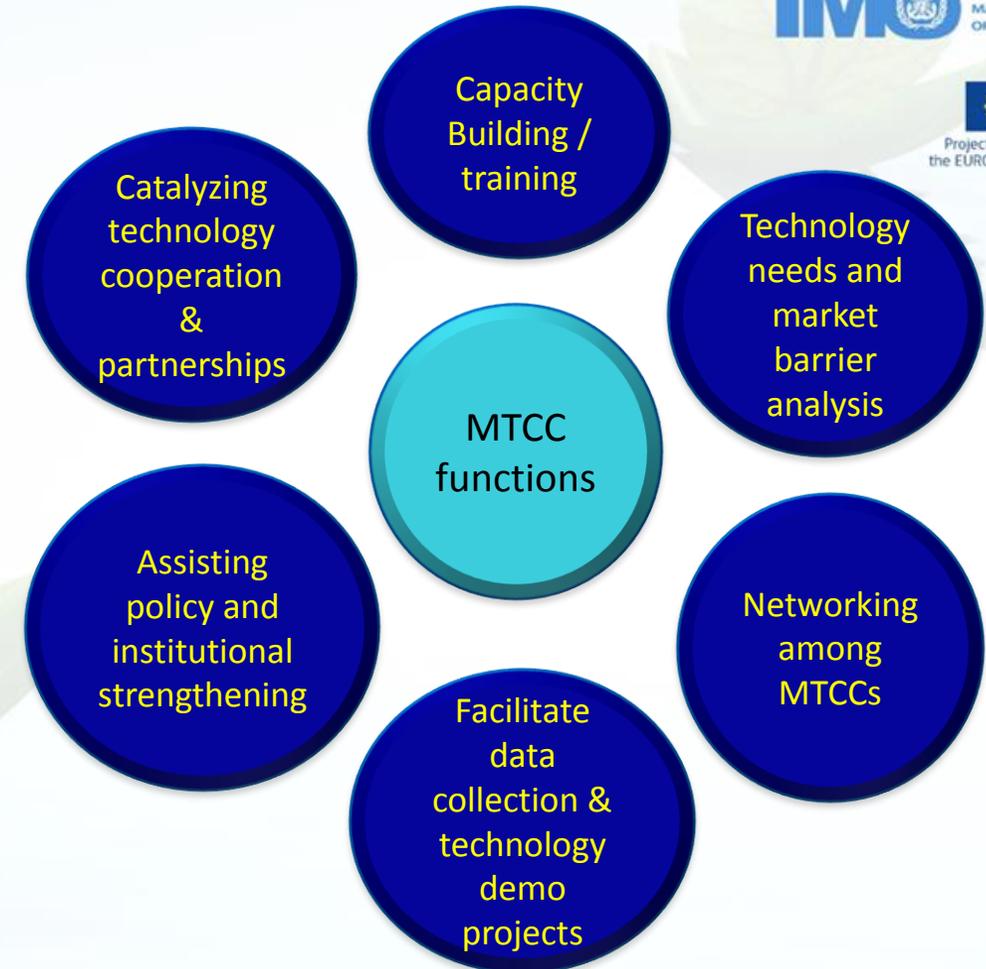


# Aims of MTCC Caribbean

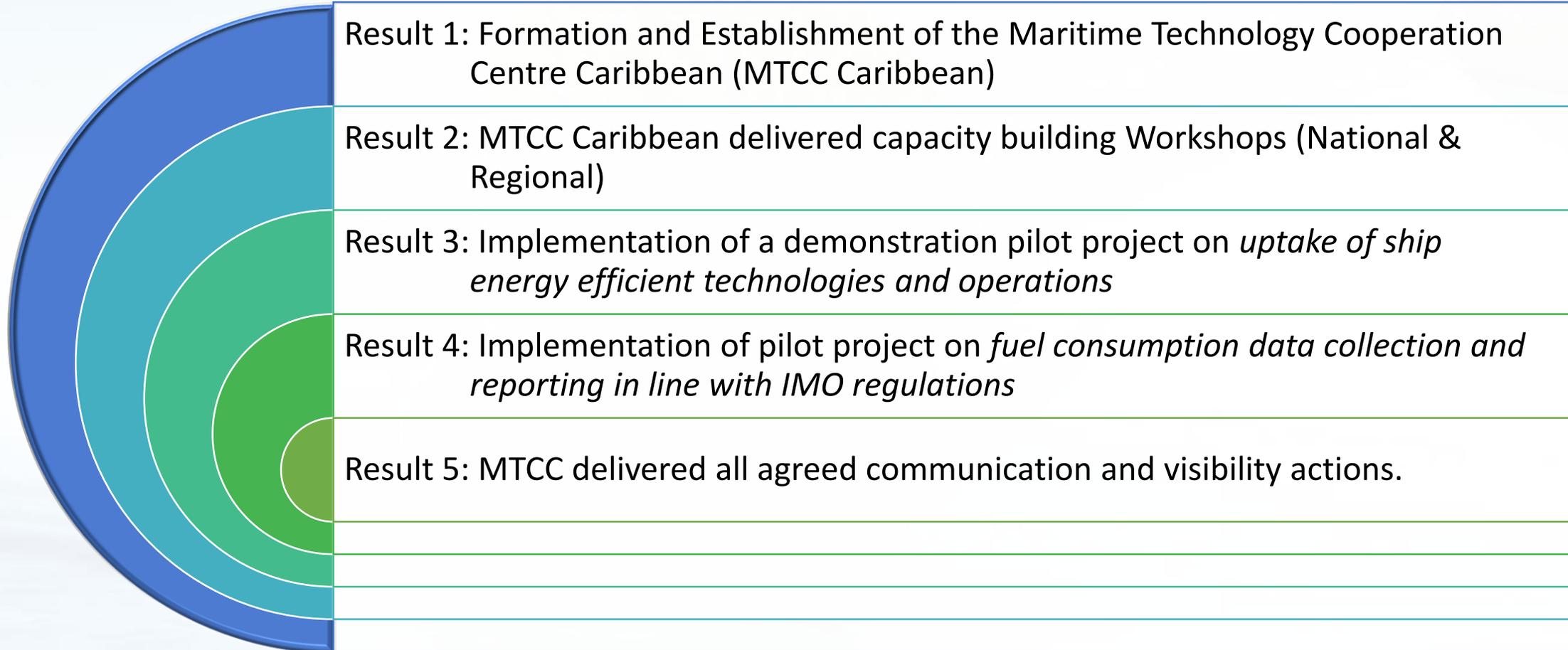


## MTCC Caribbean aims to:

- Provide a platform for partnerships in enhancing energy efficient methods at global and local level, specifically in the Caribbean region.
- Identify environmentally friendly and sustainable technologies available to the region.
- Enhance awareness and uptake of environmentally sound technologies and expertise within the Caribbean region.
- Provide advisory and market development services for technology adopters and suppliers
- Monitor regional energy efficiency needs and align training programmes to meet these needs.



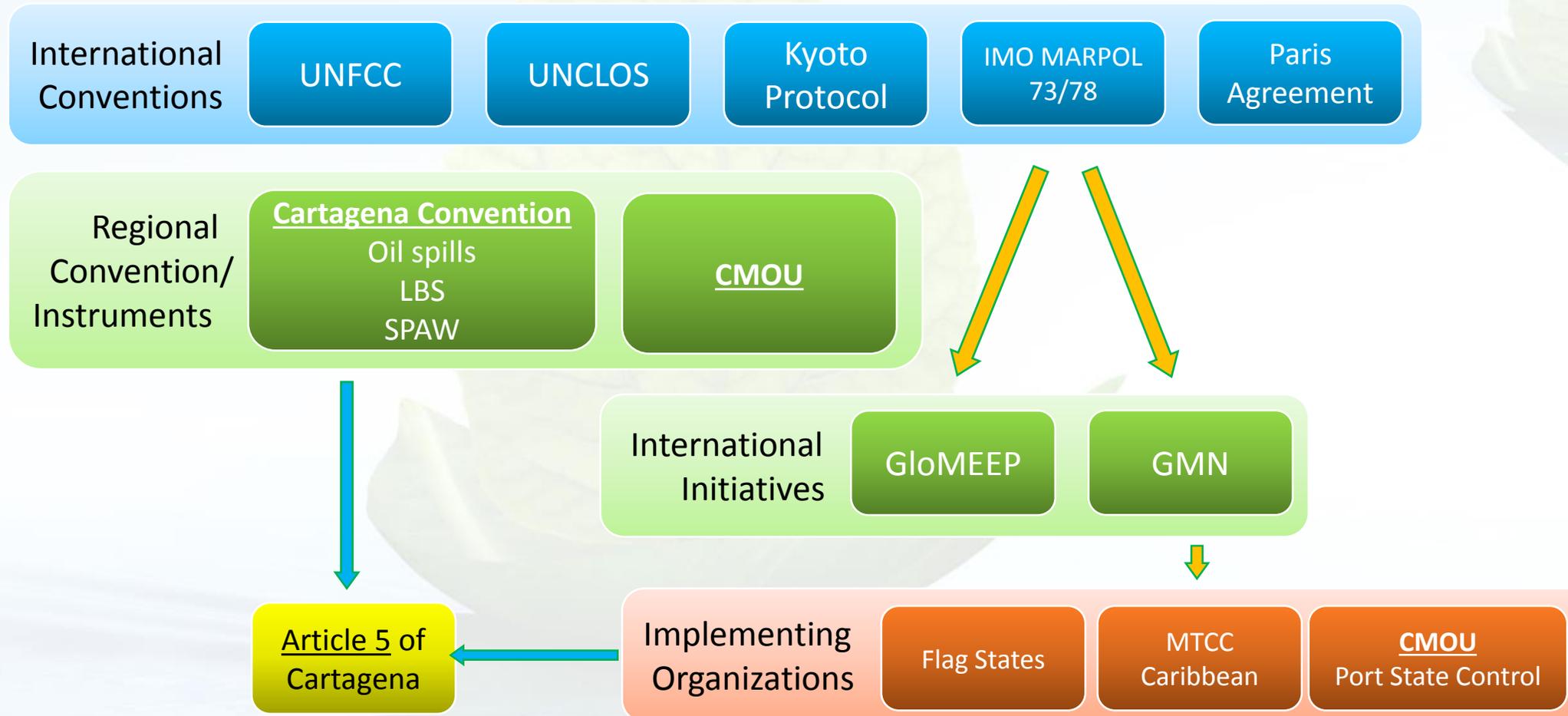
# MTCC Caribbean –5 Results



## Implementation Update:

- The Legal frameworks of the territories have remained substantially the same but the creation of Energy Efficiency Focal Points and the RSC represent institutional progress.
- Whilst Caribbean States have largely recognised the importance of MARPOL, effective implementation remains elusive.
- The IMO's Regional Maritime Advisor for the Caribbean has indicated that while over 70% of the region has ratified MARPOL 73/78, less than 30% report effective implementation.
- Notwithstanding the above, there are existing mechanisms that we can leverage.

# Legal Framework for Implementation of MARPOL Annex VI



# Imperatives for Implementation: Leveraging Flag, Port and Coastal State Jurisdiction

- The CMOU represents an effective regime to support enforcement of the requirements of MARPOL in the region. States that are not party to the CMOU should explore joining the CMOU as an avenue for harmonized implementation.
- Port State Control supports Flag State implementation and the NMFT allows for implementation and enforcement. Absence of Flag State legislation maybe problematic if challenged.
- Commercial risk of PSC therefore creates an incentive for compliance for vessel flagged in “non convention” countries.
- Framework arrangements exist but we need to tap into the existing implementation agencies at the local, regional and international levels. Closer collaboration with Planning Ministries, and governmental agencies responsible for environmental management.
- Maritime targets must be adequately represented in national carbon reduction policies and strategies.

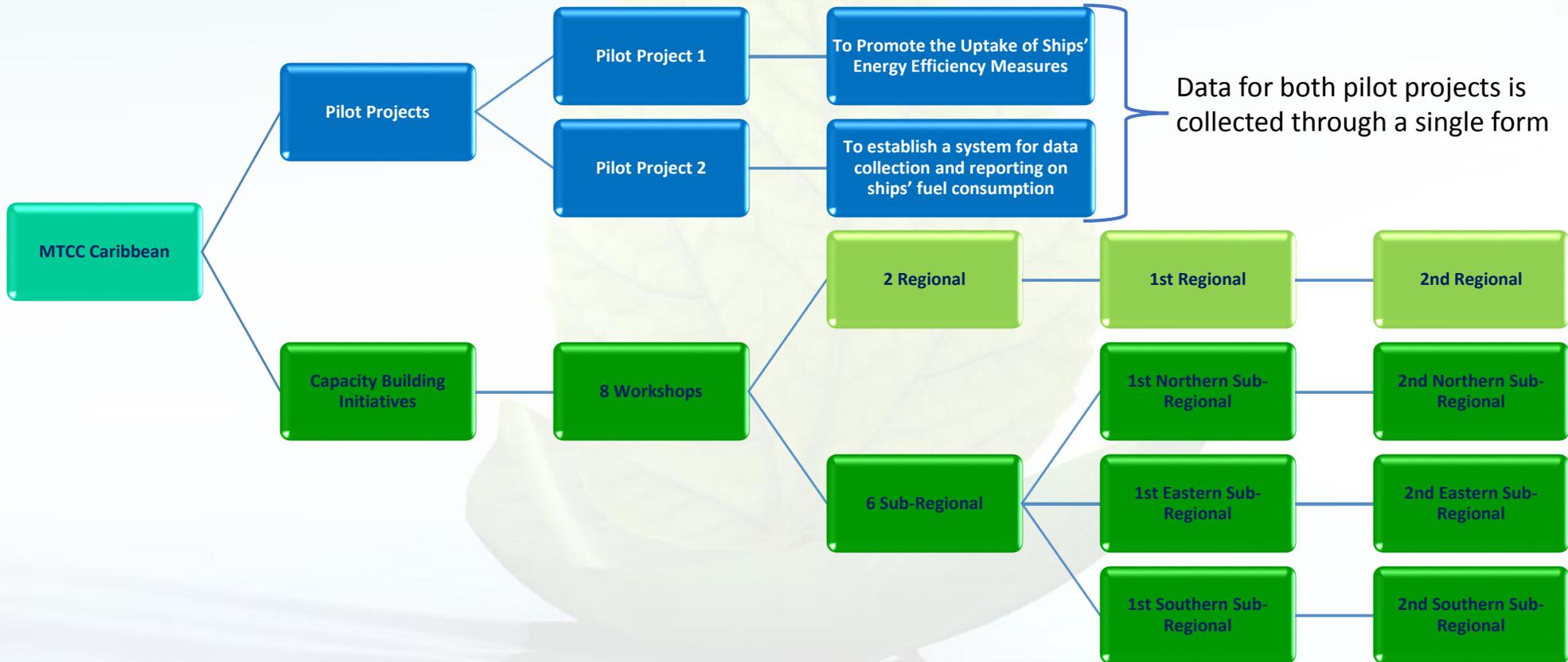
# Imperatives for Implementation

- In the absence of a legislative framework for Monitoring of GHGs from Ships trading in the Caribbean:
  - Implementation of the Voluntary System of Reporting using the MTCC data collection system;
  - Such Reporting will enable the first baseline of GHGs from Shipping in the Caribbean;
  - Data will assist in informing interventions for the climate action in the Maritime sector at local, regional and international levels.

# MTCC Caribbean's Pilot Projects

- MTCC Caribbean objectives include promoting technological and operational measures to improve energy efficiency in the maritime sector and help navigate into a future with reduced GHG emissions from international shipping.
- MTCC Caribbean has implemented two pilot projects to promote the capacity building and technical cooperation within the Caribbean region.
  - Pilot Project 1- ***To Promote the Uptake of Ships Energy Efficiency Measures***
  - Pilot Project 2- ***To establish a system for data collection and reporting on ships fuel consumption***

# MTCC Caribbean's Pilot Projects and Capacity Building Initiatives



- Build capacity within territories to promote the uptake of Energy Efficient Technology
- The use of fuel consumption reporting regulations and
- Enable compliance with MARPOL Annex VI

# Data Collection

- To fulfil the objectives of the two pilot projects data must be collected from the vessels trading in the region.
- This is the rationale behind the development of MTCC Caribbean's data collection process which is currently being implemented in Trinidad and Tobago, The Bahamas; Belize; St. Vincent and the Grenadines; Suriname.
- We must gather as much accurate data from the 16 territories as possible to fulfill the objectives of the pilot projects.

# MTCC Caribbean's Data Collection Process- Understanding the form



- Forms are sent in an (electronic) excel format to the vessel



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Save for Upload

VESSEL GENERAL INFORMATION			
Vessel Name:		Year Built:	2007
IMO Number:		Ship Builder:	JIANGSU EASTERN SHIPYARD
Ship Type:	Container ship	Hull Number:	JSS02C-05
Shipowner/Company:	MS "SONDERBORG" Schiffahrtsgesellschaft UG	Shipping Agency:	VSH-SHIPPING
VESSEL PARTICULARS			
Length Overall (m):	147.9	Length Between Perpendiculars (m):	140.3
Breadth Moulded (m):	23.25	Deadweight at Summer Load Line Draught:	13760
Depth Moulded (m):	11.5	Summer Load Line Draught Moulded (m):	8.5
VESSEL SPEED & FUEL			
V <sub>ref</sub> - ship speed in deep water at summer load line draught @75%MCR (knots):	17		
Dual-fuel Engines:	Yes	Type(s) of fuel used:	HFO 380 / MDO

These forms have a "Save for Upload" function which converts the completed form into an xlsx file



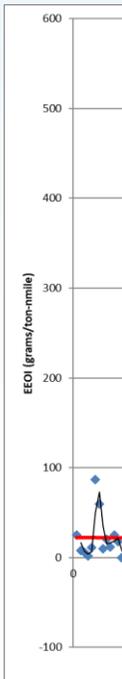
Answer  
02.10.2018  
05-48

- Both excel or xlsx format are acceptable for data analysis by MTCC Caribbean

Submission Date	Vessel Name	Year Built	IMO Number	Ship Builder	Ship Type	Hull Number	Shipowner/Company	Agent	Length Overall (m)	Breadth Moulded (m)
2018-10-02 05:48:47	0	2007	0	JIANGSU EASTERN SHIPYARD, CHINA	Container ship	JSS02C-05	MS "SONDERBORG" Schiffahrtsgesellschaft UG	KG VSH-SHIPPING	147.9	23.25



# Data Analysis - Ship type / EE Measures



EE Measure	Bulk Carriers	Container Vessels	Tankers
Waste Heat Recovery	75.00%	32.18%	45.07%
Propeller Boss Fins	93.33%	93.14%	66.15%
Low Energy Lighting System	77.78%	59.41%	44.74%
Air Cavity Lubrication	14.29%	14.29%	12.00%
Solar Panels	0.00%	0.00%	0.00%
Rudder Fins	86.67%	90.38%	65.08%
Trim Optimization	85.71%	97.83%	82.61%
Contra Rotating Propeller	11.11%	13.86%	13.33%
Hull Coating	83.33%	100.00%	85.33%
Kite	0.00%	0.00%	1.33%
Weather Routing	57.14%	89.25%	82.67%
Voyage Execution	57.14%	100.00%	64.79%

Advantages (%)
9.34
40.86
42.80
4.67
0.78
1.56

# Partnerships in Data Collection



# Climate Action in the Maritime Sector

- Partner with us for climate action - Ensure that concerns of SIDS and vulnerable States of the Caribbean are heard and documented in International Fora.
- China has proposed the creation of a GMN Voluntary Multi-Donor Trust Fund to support the MTCCs at the Marine Environmental Protection Committee (MEPC) under Agenda item 7 for the “Reduction of GHG Emissions from Ships to sustain the work of the MTCC post 2019” - Support from the Region for this is very important. The proposal has been accepted by MEPC and is subject to further discussions.
- Lobby for the inclusion of maritime actions in the National Climate Agendas and the National Determined Contributions.
- Promote the uptake of energy efficient technologies and operations within the maritime sector.
- Help navigate shipping into a low-carbon future.

# Vision of MTCC Caribbean





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*Thank You !*



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