Preliminary Report on MTCC Caribbean’s Technical Deliverables

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Basis of pilot projects – As guided by IMO’s past work

RESOLUTION MEPC.229(65) Adopted on 17 May 2013 PROMOTION OF TECHNICAL CO-OPERATION AND TRANSFER OF TECHNOLOGY RELATING TO THE IMPROVEMENT OF ENERGY EFFICIENCY OF SHIPS

Regulation 23 MARPOL Annex VI - represents the integration of UNFCCC concepts by the introduction of Technology Transfer (TT). This relates to the important notion of “common but differentiated responsibility” as introduced by the Kyoto protocol in Articles 3, 10 and 11.
The GMN project identified the need of two pilots

“Promote the uptake of low-carbon technologies and operations in maritime transport through the implementation of technology-related pilot projects, thus creating an ‘enabling environment’ for energy-efficient practices within the shipping sector; “

“establish pilot-scale voluntary data collection and reporting systems to support ship-owners and maritime administrations, and feed the experience and understanding of these systems into debates and decision-making processes at IMO... “
The challenge and scope for MTCC Caribbean

At any given instant there are approximately 4202 vessels within Caribbean sea area.

<table>
<thead>
<tr>
<th>Vessel type</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleasure craft</td>
<td>2804</td>
</tr>
<tr>
<td>Commercial vessels including fishing vessels</td>
<td>1398</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Port calls</th>
<th>Numbers</th>
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</thead>
<tbody>
<tr>
<td>Daily average based on Last week</td>
<td>125</td>
</tr>
<tr>
<td>Daily average based on Last month</td>
<td>146</td>
</tr>
<tr>
<td>Daily average based on Last 3 months</td>
<td>141</td>
</tr>
<tr>
<td>Daily average based on Last 6 months</td>
<td>142</td>
</tr>
<tr>
<td>Daily average based on Last 12 months</td>
<td>140</td>
</tr>
</tbody>
</table>

Vessel GT > 5000 = 567
Vessel GT > 400 = 833
MTCC Caribbean Pilot Projects

Pilot 1 - Uptake of ship energy efficient technologies and operations.

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

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

Facilitate technology uptake based on cost benefit analysis.

Pilot 2 - Fuel consumption data collection and reporting in line with IMO regulations.

To establish a voluntary fuel consumption data reporting system to aid regional administrations.

To provide a baseline of the fuel consumption and estimated GHG emissions for ships trading in the Caribbean region for different operating and load conditions.

Compile and communicate data to IMO.
Following recommendations from IMO past studies were considered while planning Pilots

- to consider direct vessel observations to the greatest extent possible.
- to use vessel-specific activity and technical details in a bottom-up inventory model.

Bottom-up evaluations are a method of assessing emissions data using census information and emissions activity data combined with emission factors to generate independent estimates to compare to existing data.

Strength - The emission estimates generated using this methodology are very accurate if demographic and activity data are accurate.

Limitations
- Extensive data requirements
- Accuracy of emission factors
- Accuracy of activity data
- Time consuming
The use of common data collection form was designed to facilitate ease of participation for vessels and associated shipping agents.

The use of one document takes into consideration the practical challenges of shipboard operations and enhances the chances of voluntary participation and implementation of the project.

Data Collection using MTCC Caribbean’s data collection form began 1st June, 2017 in Trinidad and Tobago

Feedback to improve the data collection form is obtained at regular intervals
The Project is Funded by the European Union and implemented by the International Maritime Organization.

Reported Forms submitted by the Respective EE Focal Points of 6 Countries to MTCC Caribbean

Reported Forms for Trinidad & Tobago received from TTBizLink

Direct Reporting from Vessels to MTCC Caribbean

Direct Reporting from Carnival Cruise Line
MTCC Caribbean Data Collection and Reporting System

**Challenges**

- Absence of any regional reporting requirement
- Differing levels of technology in trade facilitation and monitoring and reporting for Maritime traffic
- Voluntary nature of reporting form.
- Absence of motivating factor for participation

**Bottom Up method 2**
Hybrid of Bottom up 1 and Top down approach. IHS database and AIS live was used to obtain:
- Activity based data
- Engine type, fuel consumption and fuel type

- 76 Daily reports received by MTCC Caribbean
- 6 Average Daily reports received by MTCC Caribbean

- 29,679 port calls
- 50%
MTCC Caribbean and Pilot projects

Establishment of voluntary reporting system tracking EE Technology and Fuel consumption onboard ships within the region.

Baseline of GHG emissions and EEOI from ships calling ports in the Caribbean (captures 50% of ships in combined approach)

Baseline of existing EE technology onboard ships trading in the Caribbean (captures 62% of ships > 400GT)

Establishment of EE database for the region

Type of fuel consumed by vessels within the region (captures 62% of ships > 400GT)
The Project is Funded by the European Union and implemented by the International Maritime Organization.

EEOI Baseline – Base ship

Increase in Deadweight (amount of cargo carried)

Operational measures (Slow Steaming, SEEMP)

Technology Use (Reduced fuel Consumption, Increase in efficiency)

EEOI Baseline – Modified ship

EEOI (g / tonne mile)

Fuel consumed (g) x Emission Factor
Cargo Mass (tonne) x Distance sailed (mile)
Database – Ship data

The Project is Funded by the European Union and implemented by the International Maritime Organization
Database – Country List

Trinidad and Tobago

- Port Description
- General Information
- Pre-Arrival Information

- Mechanism for mandatory IMO data reporting
- Mechanism for MTCC Caribbean data reporting
- Energy Efficiency Focal Point Person (EEFFP) Contact/Details

- Status of MARPOL Annex VI Implementation
- Other GHG Reduction Initiatives
- Other Green Technology Initiatives

- Number of vessels registered under flag
- Number of vessels >500GT registered under flag
- Number of vessels calling parts within this territory (Monthly/Annually)

- Port State Control activities
Maritime Technology Needs Assessment

- Determine the available technologies in the participating countries
- Determine the technology gaps that exist
- Determine the technology needs of participating countries
- Determine the barriers to implementing their technology needs
- Determine the actions required to help overcome these barriers
**A Regional Approach in the Diffusion of EE Technologies**

- Need for interrelated actions for the diffusion of EE technologies.
- Funding and depend on international donors or public sector grants.
- Capacity building initiatives at regional levels.

**Implementation of Specific Prioritized Technology**

- To be sponsored by the stakeholders benefitting from such activity.
- Small scale technology uptake pilot projects are expected to provide solutions to the issues arising from this TNA.
Thank You!

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