



**MTCC AFRICA**  
Maritime Technology Cooperation Centre



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



## MARITIME TECHNOLOGY COOPERATION CENTRE for AFRICA (MTCC-AFRICA)



This project is financed by the European Union and implemented by the International Maritime Organization



Host of  
MTCC Africa

MTCC Africa is supported by  
Kenya Maritime Authority &  
Kenya Ports Authority

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## MESSAGE FROM MTCC-AFRICA

MTCC Africa was established in 2017 as a centre to build capacity for Climate Change Mitigation in the Maritime Shipping Industry. The main aim of the centre is to enhance global efforts to reduce Greenhouse Gas emissions for the Maritime Shipping sector.

MTCC Africa is governed by a board of directors. The chair is the The Principal Secretary, State Department For Maritime And Shipping Affairs while the co-chair is the Jomo Kenyatta University of Agriculture and Technology (JKUAT) Vice Chancellor. Other board members include Kenya Maritime Authority (KMA) and Kenya Ports Authority (KPA).

MTCC Africa is particularly keen on implementing and completing its pilot projects which will be highlighted in this newsletter. This newsletter is also a highlight of MTCC Africa milestones.



### OUR VISION

“To be part of the Global Network of Centres of Excellence promoting the uptake of low carbon technologies and energy efficient practices in the maritime and shipping industry”



## THE GMN INITIATIVE

Funded by the European Union (EU) signed and implemented by the International Maritime Organization (IMO), the Global MTCC Network (GMN) is formally titled *“Capacity Building for Climate Change Mitigation in the Maritime Shipping Industry”*. This initiative establishes and unites Maritime Technologies Cooperation Centres (MTCCs) from five regions into one global network. The five target regions are Africa, Asia, the Caribbean, Latin America and the Pacific which were selected on account of the many developing countries, especially Least Developed Countries and Small Island Developing States located therein.

Directors of the five MTCCs signed a Memorandum of Understanding to officially establish the Global Maritime Technology Centre Network (GMN). MTCC-Africa was part of this grand feat held at the IMO Headquarters.

### MTCC AFRICA

Over the project life-span, The Maritime Technology Cooperation Centre for Africa (MTCC Africa) has been focused on;

- 1. Compliance:** Facilitating ratification & compliance with The International Convention for the Prevention of Pollution from Ships (MARPOL Annex VI)
- 2. Capacity Building:** Improving capability in the region by working with maritime administrations, port authorities, government departments and shipping stakeholders to facilitate compliance with international regulations on Energy Efficiency for ships
- 3. Pilot Projects:** Promoting the uptake of low-carbon technologies and operations in the maritime sector through pilot projects
- 4. Climate Change:** Raising awareness about climate change policies, strategies and measures for the reduction of GHG and other emissions from the maritime shipping industry
- 5. Technologies:** Demonstrating a pilot-scale system for collecting data and reporting on ships’ fuel consumption to improve ship owners’ and maritime administrations’ understanding in this regard
- 6. Outreach:** Disseminating and sharing experiences of the project through appropriate communication and visibility actions with Maritime Administrations and Port Authorities in the region
- 7. Sustainability:** Developing and implementing strategies to sustain the MTCC beyond the project time-line

different African maritime regions of Northern Maritime Region (Suez/Mediterranean), Western Maritime (Atlantic Ocean), Southern African, Eastern Maritime (Gulf of Eden/Indian Ocean) Small Islands States and Central Maritime (Landlocked Countries).



### COLLABORATION WITH FOCAL POINT COUNTRIES

In order to execute its mandate, MTCC-Africa has continued to work in collaboration with countries in the



## UPTAKE OF PORT ENERGY EFFICIENT TECHNOLOGIES AND OPERATIONS

*By Eng. Denis Mulwa; PE, MICS, MIEK  
EE Expert for MTCC-Africa*

The main objective of this pilot project has been to promote the uptake of energy efficient technologies and operations within the African ports through the implementation of energy efficiency strategies.

The pilot project also aims to promote the uptake of Energy-Efficient technologies and operations within African ports. MTCC-Africa plans to achieve this through checking the extent of implementation of energy-saving strategies at the Port of Mombasa where a level 1 energy audit was done earlier and carrying out level 1 energy audit on one or two other selected African ports. The energy auditors will be involved in the walk-through audits, data collection for the baseline data and report preparation.

The formulation of the Alternative Pilot project 1 concept note on Energy Audit for the Port of Mombasa and any two other ports in Africa was done in the first quarter of 2019. The concept note described in brief the activities to be undertaken, timelines attached to the activities and the projected outcomes for the Pilot project. The concept-note then underwent the various approvals with the IMO PCU and eventually with the EU to get the go ahead to start implementation.


Upon approval of the concept note, the Energy Efficiency team started on delivery of the milestones set up on the deliverables in the project. The first report included drawing up an analysis of the earlier audits carried out in the Port of Mombasa which was completed and submitted to the IMO PCU.

In line with concept note milestones, the next phase saw the determination of the impacts of the proposed energy saving/emission reduction strategies for the Port of Mombasa by previous energy audits. This included the analysis of the proposed energy saving measures that have already been implemented at the Port of Mombasa and an estimation of the impacts of the implemented strategies on the energy consumption and emissions at the Port.

The study also included Identifying the energy saving measures proposed in previous audits and that are yet to be implemented at the Port. A matrix on implementation Status for Energy Saving Measures at the Port of Mombasa was also developed. Additionally, the report identified the challenges/barriers in implementation of the proposed energy saving measures and proposals on measures that can be put in place to ensure that more energy savings are realized.

The next phase in the project implementation involves selecting of one or two more African ports to participate in Level 1 energy audit. To this end, a questionnaire on the status of port energy audits, adoption of energy efficient operations and use of renewable energy in African ports was developed and distributed to the focal point contacts to gauge the level of implementation of energy efficient operations at different countries. Feedback was received and analyzed ready for selection of the Port/s to participate in the study.

The IMO PCU has also already identified the Consultant (Royal Haskoning) who will be working with the MTCC Africa EE team on this study and it is expected that once the consultant is on the ground, the energy audits to the different ports will begin. In consultation with MTCC-Africa team, the consultant will prepare a verification plan based on the analysis and determination of the impacts of the previous audit report for Mombasa Port and undertake the verification mission at the Port. The consultant will additionally assist in the selection of the one or two port/s in which level 1 audit is to be undertaken. Eventually a GloMEEP Port Emission toolkit for assessment of Port emissions and development of port emission reduction strategy will be developed for each of the Ports to be audited.



The study aims to quantify the impact of greenhouse gases from the shipping industry in selected ports and waterways in the African region.

## FUEL CONSUMPTION AND EMISSIONS DATA COLLECTION AND REPORTING

A pilot project on fuel consumption and emissions data collection and reporting has been implemented. The study aims to quantify the impact of greenhouse gases from the shipping industry in selected ports and waterways in the African region by equipping selected ships with tablets on-board to provide real-time fuel consumption data. This information, once analysed, is useful in helping the shipping companies assess the efficiency of their fleet and formulate appropriate policies to reduce fuel consumption and improve efficiency, as well as for subsequent decision and policy making geared towards mitigating the effects of GHG emissions on climate change from the shipping industry.

These projects have been carried out by Green House Gas and Energy Efficiency Experts under the supervision of the MTCC-Africa Project Director & Project Head.

This project has been implemented and facilitated by the MTCC-Africa as per the contractual agreement signed between European Union -International Maritime Organization and the Maritime Technology Cooperation Centre (MTCC-Africa).

The study aims to quantify the impact of greenhouse gases from the shipping industry in selected ports and waterways in the African region by equipping selected ships with tablets on-board to provide real-time fuel consumption data.

The data collected is processed on-shore by use of a dedicated software to calculate the Energy Efficiency Operation Index (EEOI) of the ships; an indicator of the GHG/CO<sub>2</sub> emission potential and efficiency of the ship.

This information is useful in helping the shipping companies assess the efficiency of their fleet and formulate appropriate policies to reduce fuel consumption and improve efficiency.

The information will further be used for subsequent decision and policy making geared towards mitigating the effects of GHG emissions on climate change from the shipping industry.

Over course of the project timeline, MTCC Africa has trained ship crew on fuel consumption data collection and reporting using tablet based electronic forms. These forms were developed by the MTCC Africa GHG experts. Twelve (12) tablets were developed and deployed to vessels for the data collection and reporting.

# MTCC AFRICA EVENTS

GMN MOU SIGNING



1<sup>ST</sup> NATIONAL WORKSHOP



STAFF TRAINING



MTCC AFRICA LAUNCH



1<sup>ST</sup> REGIONAL WORKSHOP

MOU SIGNING



MOU SIGNING WITH NIMASA

MADAGASCAR WORKSHOP



7102

8102

# MTCC AFRICA EVENTS

8102



NAMIBIA WORKSHOP



GHANA WORKSHOP



FOCAL POINT MEETING



MOU SIGNING WITH SAMSA



9102 TCO - 9102 NAJ

# MTCC-AFRICA PICTORIAL



# MTCC-AFRICA PICTORIAL





[mtccafrica@jkuat.ac.ke](mailto:mtccafrica@jkuat.ac.ke)

(+254) 41 2315434 / (+254) 735 628272

[gmni.org/mtcc/africa](http://gmni.org/mtcc/africa)

<http://mtccafrica.jkuat.ac.ke/>

Twitter: @mtcc\_africa

Facebook: [facebook.com/mtccafrica.1](https://www.facebook.com/mtccafrica.1)

Jomo Kenyatta University of Agriculture and  
Technology (Mombasa CBD Campus),  
P.O. Box 81310-80100 Mombasa - Kenya.



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