



MTCC AFRICA

Maritime Technology Cooperation Centre

CAPACITY BUILDING FOR CLIMATE CHANGE MITIGATION IN THE
MARITIME SHIPPING INDUSTRY

UPTAKE OF PORT ENERGY EFFICIENT TECHNOLOGIES AND OPERATIONS

Available technologies

By: Eng. Denis M. Mulwa; PE, MICS, MIEK

EE Expert-MTCC Africa

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AVAILABLE TECHNOLOGIES



LAMU PORT

CLASSIFICATION OF AVAILABLE GREENING INITIATIVES

- QUAY BASED INITIATIVES
- YARD BASED INITIATIVES
- OFFICE AND SHORE INITIATIVES

QUAY BASED INITIATIVES

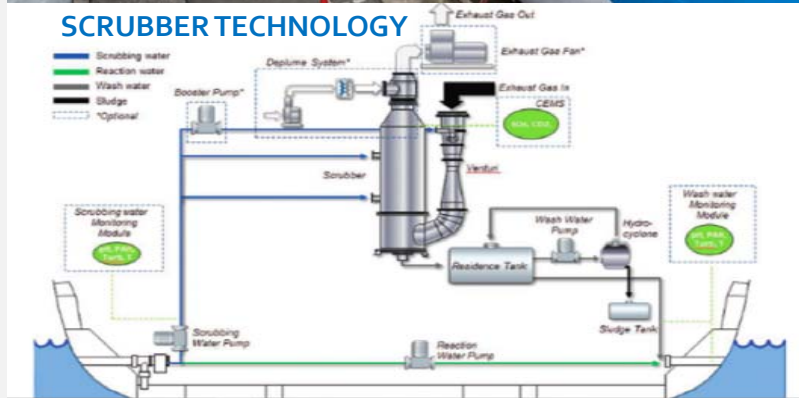
PROVISION OF SHOREPOWER



SMALL CRAFTS



SCRUBBER TECHNOLOGY



Issues to consider:-

- Installation of supporting Infrastructure(Grid)
- Power Supply Capacity(Port): 30kw-12MW
- Frequency of Grid
- Source of Grid(Energy Mix)
- Cost: USD 0.5m-6m

YARD BASED INITIATIVES

ELECTRIFICATION OF HMC/eRTGS



USE HYBRID RTGS



USE OF VRF AND INVERTER TYPE ACS



USE OF ECO HOPPERS



YARD BASED INITIATIVES

EE GANTRY CRANE SOLUTIONS



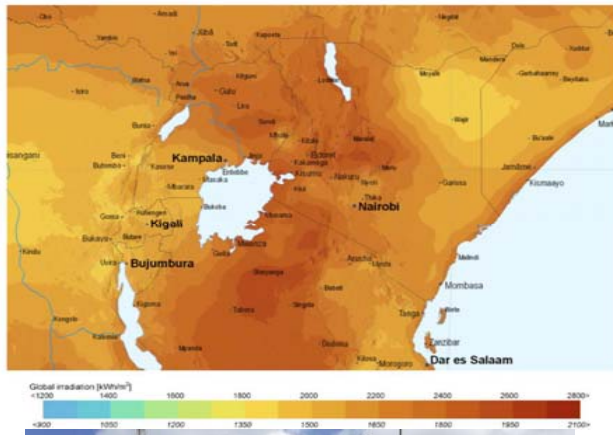
1. Retrofit :Premium Efficiency motors(91%)
Standard Efficiency : 81%
2. Use of RIS-GA system on Gensets(RTG & MHC) Optimizes diesel generator speeds during reduces total fuel consumption by 20%



- Floodlights: LED rather than High Pressure Sodium.
- Replace electromagnetic ballasts with electronic type
- Skylights AND Solar Tubes

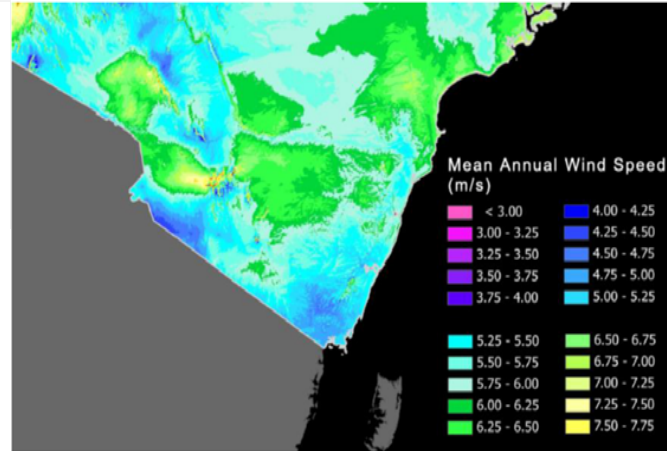
SHORE BASED INITIATIVES

RENEWABLE ENERGY SOURCES/EE POWER CONNECTION



Mombasa
2200kWh per m2 per year

Germany: Largest Solar Producer
1100kWh per m2 per year



Wind Data speeds for different areas need to be considered

Wind speeds for POM is 5.5m/s (Not feasible for large wind turbines)

Most turbines reach their rated power at minimum wind speeds in the range from 10 – 15 m/sec

At 5.5m/s, turbine outputs would vary between approximately 10 and 20% of the rated power.



- High Level Tapping: (132kV,66kV or 33kV)
- Improved tariffs(Large Consumers)
- Stability of supply
- Ohmic Losses (LV distribution)
- Redundancy in supply
- Loops
- Alternate Feeders

INTERNATIONAL WORKSHOP



 **THANK YOU!**

