MARITIME TECHNOLOGY COOPERATION CENTRE – PACIFIC (MTCC-PACIFIC)

CAPACITY BUILDING FOR CLIMATE MITIGATION IN THE MARITIME SHIPPING INDUSTRY
THE GLOBAL MTCC NETWORK (GMN) PROJECT

Low carbon, safe, accessible, and affordable maritime transport

Presenter: Amelia Bola
Maritime Greenhouse Gas Officer
ameliab@spc.int

The Global MTCC Network (GMN) project is funded by the European Union and implemented by the IMO.
MTCC-Pacific Activities

- Pacific low-carbon maritime transport that supports the sustainable development goals of PICTs
- Support national approaches to uptake low-carbon technologies and operations within PICTs maritime sectors to reduce GHG emissions and reliance to fossil fuels
- Provide capacity-building activities to improve the capacity of PICTs to comply with international instruments and facilitate the implementation of energy efficient measures in the maritime industry
- Contribute to international and regional networks of centres of excellence to share information and experiences and promote the uptake of low carbon technology and operations and energy efficient practices in the maritime industry

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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.

<table>
<thead>
<tr>
<th>Kind of Vessel</th>
<th>Landing Craft</th>
<th>Year Built</th>
<th>Length Overall</th>
<th>Gross Tonnage</th>
</tr>
</thead>
<tbody>
<tr>
<td>VANUATU</td>
<td></td>
<td>1979</td>
<td>31 meters</td>
<td>172</td>
</tr>
<tr>
<td>SAMOA</td>
<td></td>
<td>1998</td>
<td>46.7 meters</td>
<td>1045</td>
</tr>
</tbody>
</table>

- **Identified Savings**
  - 32% Savings
  - Estimated annual cost savings: 60,000 AUD
  - Greenhouse gas emissions reduction: 101 tonnes
  - Payback Period: 1 year 5 months

- **SAMOA**
  - 10% Savings
  - Estimated annual cost savings: 64,000 AUD
  - Greenhouse gas emissions reduction: 135 tonnes annually
  - Payback Period: 7 years
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.
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<table>
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<tr>
<th>Vessel Name</th>
<th>Lady Samoa III</th>
</tr>
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<tbody>
<tr>
<td>Vessel Type</td>
<td>Ro-Ro Passenger Ferry</td>
</tr>
<tr>
<td>Year Built</td>
<td>1998</td>
</tr>
<tr>
<td>Overall Length</td>
<td>46.7m</td>
</tr>
<tr>
<td>Gross Tonnage</td>
<td>1045</td>
</tr>
</tbody>
</table>

**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%
Green Pacific Ports

- Green Pacific Ports
  - Flexibility, Innovation, Adaptation

- Operations
  - Improving port operations efficiency

- Energy
  - Reducing port carbon footprint

- Environment
  - Preventing port marine pollution

- Quality Management
- Legal Framework
- Climate Resilience
- Energy Management
- Energy audits
- Energy Conservation
- Environmental Management
- Waste Management
- Pollution Response

Solomon Islands Ports Authority
- 8 months Savings
  - 27% electricity emissions
  - 13% electricity and fuels.

Fiji Ports Corporation Limited
- 21% of office electricity usage.
- 19,000 FJD reduced as a result of the power factor correction.

Port of Tonga
- 6 months
- 17% electricity emissions
- 11% electricity and fuels.
Demonstration project on hybrid outboard electric motor

Demonstrate a solar powered outboard motor on an outboard or a fibre glass boat belonging to a rural maritime community in Fiji.

20HP hybrid outboard electric motor and battery power bank with marine accessories.

Encourage behavioural change to buying fossil fuel powered crafts.
Opportunities and Learning

- Review energy efficient technologies for PIC vessel types
- Practical demonstration
- Data collection training

- Template developed through national and regional participation
- Conducted together with PIDSS (SOP)
- Extensive involvement from ship owners, operators, DPA and maritime administration

- Lighting upgrade to LED
- “Switch the light” new policy
- Green Pacific Ports

- Capacity building for climate mitigation in shipping industry
- Range of topics
- Complete in own time/own pace
Need and Barriers

Data and Information
- Reliable, consistent, timely data lacking
- Capacity building on data collection
- Demonstration of results

Business Management
- Fundamental behavioural shift
- Private sector training on business management

Policies, Laws, Standards
- Maritime emissions not captured in national targets
- Legal capacity development
- New tech require technical expertise & technical standards

Technology
- Unavailability of new tech
- Lack of local suppliers
- Limited access to affordable marine-grade appliances

Education
- Maritime Training Institutions lack adequate resources/infrastructure
- Limited employment opportunities
- Shortage in administrative roles

Finance
- Shipping is marginal business
- Inadequate revenues
- Compromised private sector investment

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In Summary,

A lot of lessons learned have been gained from the pilot-project that will guide MTCC-Pacific in the future.

Pilot project challenges have been heightened by the COVID19 pandemic. With limited budget and timeframe, MTCC-Pacific engaged primarily with countries that have shown commitment by the operators to implement some ship energy efficiency activities which meant scaling its scope and reach in the region.

Solar systems are applicable to all ages of vessels trading in the Pacific islands areas and is one of the potential immediate technical measure that could be adopted by the aging fleet in the region and significantly contribute to explore targets of 40% GHG emissions reduction by 2030 as discussed in the last events in the region.

The MTCC-Pacific pilot project is also a way of promoting renewable energy on board ships but the crucial need to collect reliable data and information on fuel consumption to ensure informed decision-making by ship operators.
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THANK YOU