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CAPACITY BUILDING FOR CLIMATE MITIGATION IN THE MARITIME SHIPPING INDUSTRY

THE GLOBAL MTCC NETWORK (GMN) PROJECT

Third MTCC-Pacific Steering Committee Meeting

Pacifika Room, Nabua, Fiji

28 August 2018

EUROPEAN UNION

IMO INTERNATIONAL MARITIME ORGANIZATION

Pacific Community
Communauté du Pacifique

HOST INSTITUTIONS OF MTCC-PACIFIC

SPREP
Secretariat of the Pacific Regional Environment Programme

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THE GLOBAL MTCC NETWORK (GMN) PROJECT

Review of the Second MTCC-Pacific Steering Committee Meeting

Presenter: Thierry Nervale – Lore Croker
Head of MTCC-Pacific – Administration & Information Assistant

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Action Points of the Second Steering Committee Meeting

- ACTION POINTS
  - The Maritime Technology Cooperation Centre for the Pacific (MTCC-Pacific) Secretariat will share the TOR with the members of the Steering Committee
  - Proper minutes of the meeting will be produced to highlight main points of discussions and action points that the steering committee can follow-up and to report back on matters discussed at the last meeting.
  - All relevant documents relating to the meeting will be uploaded on the MTCC-Pacific website

MTCC-Pacific Website Demo

http://mtccpacific.spc.int/

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CAPACITY BUILDING FOR CLIMATE MITIGATION IN THE MARITIME SHIPPING INDUSTRY

THE GLOBAL MTCC NETWORK (GMN) PROJECT

MTCC- Pacific Pilot Progress and Performance

Presenter: Thierry Nervale
Head of MTCC-Pacific

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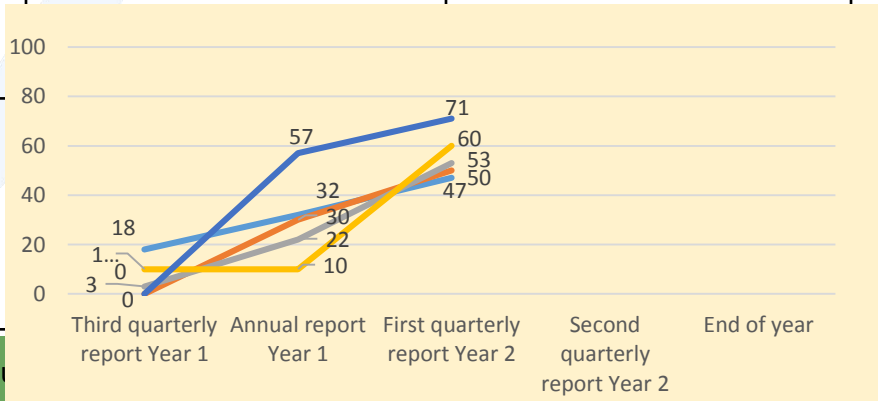
Overall Objective and IR-Intermediate Results	Target	2017 Actual	2018 Actual
Result 1: MTCC formed and established			
IR1.1 - MTCC established in the office of the HI	Office refurbished, desks and equipment procured and setup	Office refurnished, desks and equipment procured and setup	
IR1.2 Appoint qualified staff to MTCC	At least 3 staff recruited through the MTCC	3 staff recruited and 2 staff assigned to MTCC-Pacific	
IR1.3 MTCC strategic plan 2017-2019 and work plan for 2017 adopted	Strategic plan for MTCC along with 3 annual work plans developed	Fundraising Strategy approved 2017 & 2018 Work Plan approved	2018 Workplan approved
IR1.4 Project work plan activities and expenditures successfully implemented and reported	At least 80% of annual work plan activities and associated funds implemented annually	Average 2017 WP **83.6%**	Average 2018 WP **56.2%**
IR1.5 Implement partnerships and raise funds for MTCC from 2020 onwards	At least 2 additional grants secured during the lifespan of the project.		



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Overall Objective and IR- Intermediate Results	Target	2017 Actual	2018 Actual
Result 2: MTCC delivered capacity building workshop (national and regional)			
IR2.1/RW1 Regional Workshop to adopt a regional strategy for the uptake of low-carbon technology and operations	Workshop completed	Regional Conference and MTCC-Pacific Official Launch completed	
IR2.2/Regional Workshop on Energy Management in Ports	Workshop completed	Regional Workshop on Energy Management in Port completed	
IR2.3/Regional Workshop on the Implementation of Annex VI of MARPOL convention	Workshop completed		
IR2.4/Regional Train-the-Trainer (TTT) Course on Energy Efficient Operation of ships	Training course completed		
IR2.5/RW2 Regional Workshop on Low-carbon Maritime Transport in the Pacific	Workshop completed		
IR2.6-2.7/NW1 National Workshop on Energy Efficient Ship Operation and National Training on the development and Implementation of Ship Energy Efficiency Management Plan (SEEMP)	Workshop completed	NW in Fiji completed	NW in Solomon Islands, Vanuatu, Tuvalu, Samoa, Kiribati and Marshall Islands completed
IR2.8/DLP1-DLP2 on Energy Efficient Operation of ship &ships energy efficiency requirements	DLP1/DLP2 developed and available		

Overall Objective and IR- Intermediate Results	Target	2017 Actual	2018 Actual
Result 3: Implementation of a demonstration pilot project on "uptake of ship energy efficient technologies and operations"			
IR3.1 Developed and disseminated a generic draft of laws to enforce MARPOL Annex VI requirements	2014 generic Marine Pollution Act reviewed and disseminated to all PICTs	Draft generic regulation reflecting Reg.22&22A drafted + 2014 Marine Pollution Act reviewed	
IR3.2 Contributed to the extension of the module 2 of the Pacific Gender & Climate Change Toolkit for the maritime sector including energy efficiency	Pacific Gender & Climate Change Toolkit to climate change practitioners disseminated to all PICTs	Pacific Gender & Climate Change Toolkit drafted and under review	Pacific Gender & Climate Change Toolkit under publication
IR3.3 Developed and disseminated templates for energy efficiency policy and adapted SEEMP and EEOI calculator in shipping companies and on-board vessels	Templates of SEEMP and EEOI calculation disseminated to all PICTs	Templates of SEEMP and EEOI in development	Templates of SEEMP and EEOI disseminated
IR3.4 Developed and disseminated a guide for port energy management based on ISO 50000 standards	Guide disseminated to all PICTs and at least 2 ports report using of Guide	Guide developed and disseminated with RW1 material	
IR3.5 Implemented an adapted SEEMP based on ship energy audit in shipping companies and on-board vessels	At least 1 shipping company in each targeted countries has SEEMP as part of SMS and established EEOI as baseline		30 vessels visited & 18 vessels in 6 countries have SEEMP

Overall Objective and IR-Intermediate Results	Target	2017 Actual	2018 Actual
Result 3: Implementation of a demonstration pilot project on "uptake of ship energy efficient technologies and operations"			
IR3.6 Reviewed and audited the implementation of SEEMP measures	At least 1 ship in each targeted country has an improved EEOI		
IR3.7 Coordinate and completed a research, case study and expertise to uptake a low-carbon technology	At least 1 expertise/study completed		
IR3.8 Implement a low-carbon technology on board vessels	At least 1 ship has implemented low-carbon technology		RfQ drafted and under SPC Procurement Office review
IR3.9 Conducted energy audit level 1 in pacific port	At least 1 port in each targeted country is audited	Audit level 1 conducted in Samoa and SI (Honiara & Noro)	Energy Audit level 1 conducted in Tuvalu, RMI, Vanuatu & Kiribati
IR3.10 GHG reduction project implemented in port	At least one port has reduced GHG emissions from its infrastructure and operations	Honiara Port reduction of SBD40,000 on electricity bill corresponding 9,800kWh and 6.7t of GHGE	Suva Port elect. drop at Muaiwalu House by 21% Honiara Port overall energy drop by 8% (15t GHG/month)
IR3.11 Conducted energy audit level 2 or 3 in port	At least one port is audited at level 2 or 3	Audit level 2 in Fiji (Suva) ongoing	Audit level 2 in Fiji completed Audit level 2 in SI completed

Overall Objective and IR-Intermediate Results	Target	2017 Actual	2018 Actual
Result 4: Implementation of a pilot project on "fuel consumption data collection and reporting" in line with IMO regulations			
IR4.1 Developed and disseminated a data collection template	Data collection templates disseminated to all PICTs	Data collection templates developed and reviewed	Data collection template published on website
IR4.2 Developed and disseminated a generic regulation for data collection for ships, shipping companies and ports	Data collection template and associated regulation disseminated to all PICTs	Draft generic regulation reflecting Reg22&22A drafted	Draft generic regulation reflecting Reg22&22A under review
IR4.3 Collected relevant data and information	Data collected in each country available in SPC database	Data collected in Tuvalu	Data collected in Fiji, Vanuatu, Solomon Islands, Tuvalu, Samoa and Kiribati
IR4.4 Analysed data and information and produced a report on GHG emissions in the Pacific maritime sector	Report on GHG emissions from the Pacific maritime sector is published		Raw data compiled and first analysis completed

Overall Objective and IR-Intermediate Results	Target	2017 Actual	2018 Actual
Result 5: MTCC delivered all agreed communication and visibility actions			
IR5.1. Communication and visibility plan designed and approved	At least 80% of all annually planned communication activities achieved annually	R5-88%	R5-71%
IR5.2. Commemorative plaque, posters and brochures produced for the launch of the Pacific MTCC	At least 100 number of brochures disseminated annually	147 brochures + 252 flyers + 6 posters disseminated	285 brochures, 285 flyers and 32 posters disseminated
IR5.3. Dedicated website for the Pacific MTCC designed and launched	At least 100 websites hits per year	MTCC-Pacific website operational and launched at RW1	MTCC-Pacific website populated with all CB & meetings information
IR5.4. Produced and disseminated a promotional audio-visual product	At least 2 MTCC videos produced	One video produced for the MTCC-Pacific Official Launch	
IR5.5. Progress on all project activities in IR 1 to 5 is systematically reported	At least 10 press releases per year	12 MR	6 MRs
IR5.6. MTCC article regularly published in each of the 3-yearly issues of PMW & PE	6 published articles in PMW & PE	2 articles on GMN/MTCC-Pacific in PMW	5 articles on GMN-MTCC in May 2018 PMW
IR5.7. Published regular technical advisories and policy briefs	At least 2 technical advisories published annually		2 Technical Advisories published
IR5.8. Established MTCC presence and exposure	At least 2 annual high level meeting's agenda papers include MTCC	MTCC-Pacific paper submitted at 2017 SPREP meeting	MTCC-Pacific papers at 5 regional and international events

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Summary

- Delivered in 2017-2018:
  - All 7 National Workshops delivered
  - All 7 Port Energy Audits completed – one more audit completed in SI
  - More than 30 vessels visited & 18 have SEEMP
  - Reduction of GHGe in Honiara and Suva ports
  - Retrofitting of ships in Fiji started (RfP advertised)
- Major deliverables in 2018-2019:
  - 2019 Regional Conference
  - Vessel retrofit in Fiji
  - SEEMP implementation review in all 7 countries
  - Data collection continued and EEOI calculation + Estimate maritime GHGe contribution

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CAPACITY BUILDING FOR CLIMATE MITIGATION IN THE MARITIME SHIPPING INDUSTRY

THE GLOBAL MTCC NETWORK (GMN) PROJECT

MTCC- Pacific Pilot Project Update

Presenter: M. A. Zullah, PhD
Maritime Industry Energy Efficiency Adviser

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MTCC-Pacific

Capacity Building for Climate Mitigation in the Pacific Maritime Shipping Industry - Support Pacific SIDS and LDCs in limiting and reducing GHG emissions from their shipping sectors

Consortium of hosting institutions: SPC & SPREP

Fiji is the host country

Targeted countries:

- **Fiji, Samoa, Marshall Islands, Kiribati, Solomon Islands, Tuvalu and Vanuatu**

MTCC-Pacific results:

- **Establishment and operation**
- **Regional and national capacity building workshops**
- **Pilot project on the "uptake of ship energy efficient technologies and operations**
- **Pilot project on "fuel consumption data collection and reporting"**

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MTCC-Pacific Vision

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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 techn. and operations and energy efficient practises in the maritime industry

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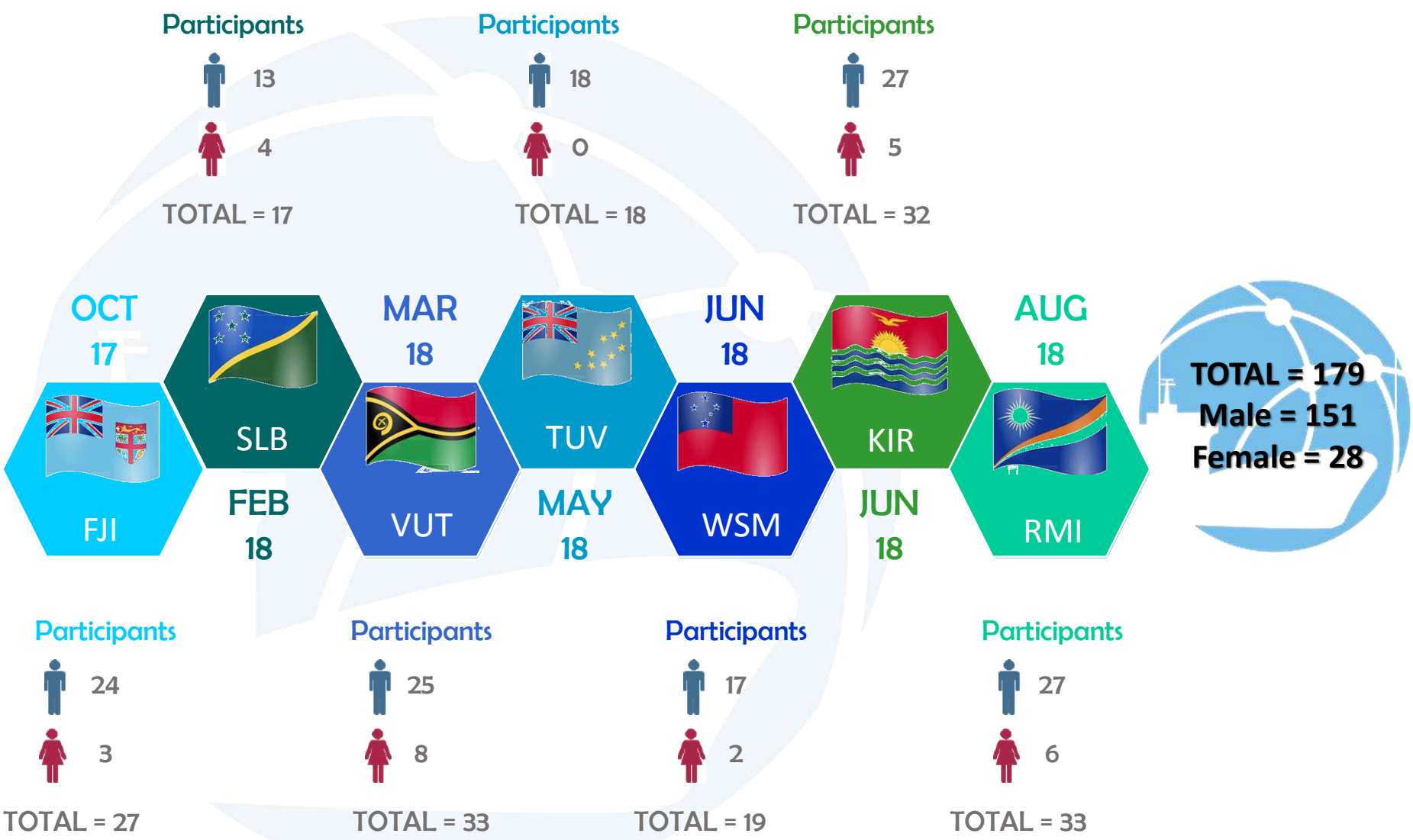
Capacity Building Activities



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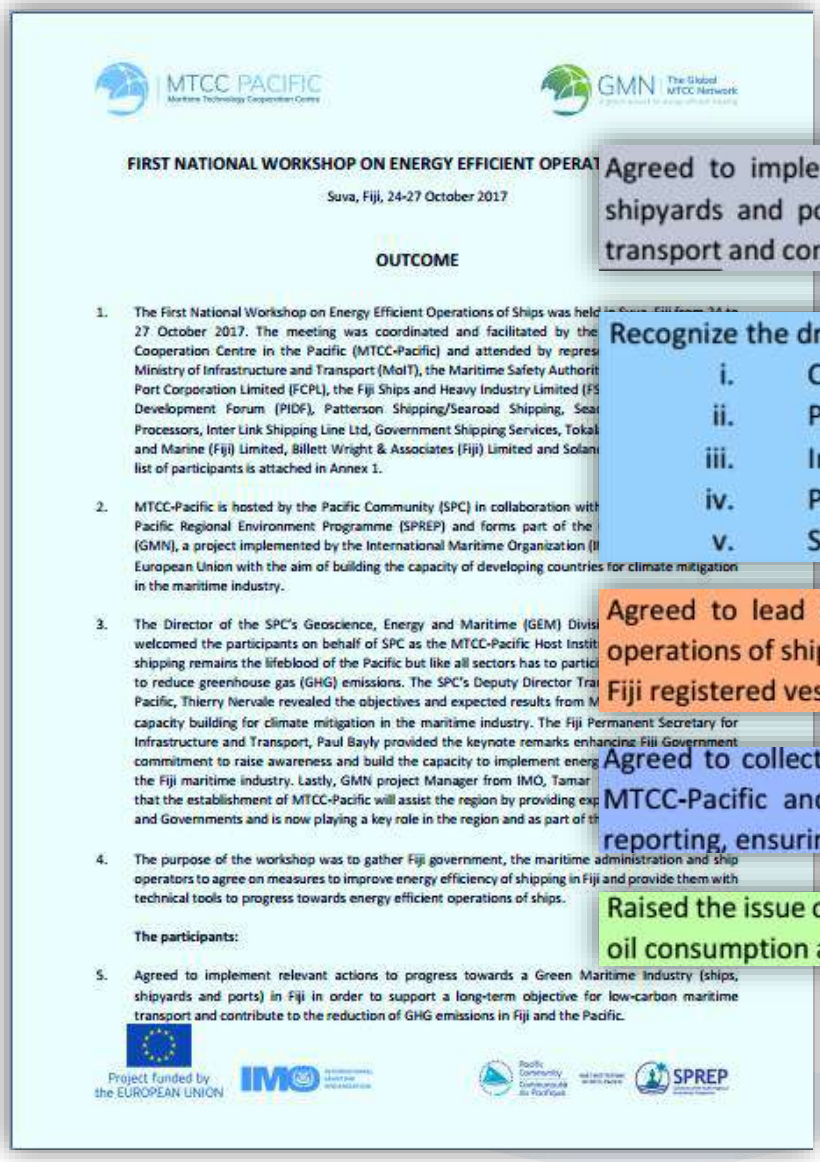
National Workshops

- Overall good attendance
- Group discussion on issues relating SEEO
- Discussion on CC, GHGE and P/SEM measures
- Interactive knowledge transfer on EEDI, EEOI, SEEMP, and PIDSS
- Interactive sessions on IMO GMN technology transfer and technical cooperation- SEET
  - PBCF, LED, WHRS, SG, and PV
- Discussion on the climate mitigation in maritime industry: To reduce fuel oil consumption and GHG emission.
  - What are the **drivers**?
  - What are the **needs**?
  - What are the **barriers**?
  - What are the **relevant actions**?

DNBA Matrix Sample

Drivers	Needs	Barriers	Relevant action
Solomon Islands National Workshop on Energy Efficient Operations of Ships, Honiara, Solomon Islands, 13-15 February 2018			
Capacity Building (C-B) e.g. HR Development and Awareness of Training opportunities	HR development More and better training institutions	• Lack of higher (only up to Class 4) crew qualification • No idea about PIDSS program (for non-participating vessels) • Insufficient resources	Building an adaptive capacity that will ensure application of EE measures on board domestic vessels
Costs of energy	• Baseline DC to show reduction in fuel oil consumption (FOC) • Pacific Regional bulk purchase of fuel	• Transition costs for additional or change of equipment • No SOPs and standards set for SI fleet • Insufficient financial resources (low per capita income)	• Implement safety & energy management with the support of SPC (MSA, PIDSS and MTCC-Pacific) • Improve practices & implement Ship Energy Efficiency Management Plan (SEEMP) under the PIDSS program
Improve profitability of ships, reliability and efficiency of domestic shipping	• Appropriate/relevant legal, regulatory and technical measures adapted to the size of the vessels and the capacity and resources of SI shipowners • Training on safety, efficiency including ship energy efficiency (SEE), etc. • Reduced competition that can compromise safety, efficiency and reliability of shipping services • Reduce lost time for berthing	• Under-regulation & not locally adapted • Measures are often adapted to vessels of more than (>)50m while most of domestic vessels are under this size & old • Unfair competitive advantage for shipping/transport grant under [MID Central Project Implementation Unit (CPIU)] owners	• Implementation of measures adapted to the Pacific domestic fleet • Control domestic fleet tonnaging and pre-inspection/limitation for vessels purchase overseas • C-B of ship operators and crews on SEE measures and practises • Infrastructure development in outer islands to facilitate domestic shipping
Legislation, Regulations and standards for domestic ships including safety, training, pollution prevention and efficiency	• Create awareness of SIMSA and its regulations • Awareness of Maritime Compliance through mainstream media • Regulate traditional wooden boat building in regards to safe construction and operations	• High cost of dry-dock facilities (4) • Lack of port control in outer islands to foster fair-trade between domestic vessels • Lack of support to provide information and technical tools on energy efficiency	• Availability of new equipment & more affordable • Technical support and C-B provided by MTCC-Pacific, SPC & SIMSA to implement adapted measures • Infrastructure development in outer islands to facilitate domestic shipping and in SI ports to provide onshore power supply • Support from government through subsidies and tax incentives for safety, energy efficiency equipment, ship building and maintenance

NW Outcome Sample



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FIRST NATIONAL WORKSHOP ON ENERGY EFFICIENT OPERAT

Suva, Fiji, 24-27 October 2017

OUTCOME

1. The First National Workshop on Energy Efficient Operations of Ships was held in Suva, Fiji from 24 to 27 October 2017. The meeting was coordinated and facilitated by the Cooperation Centre in the Pacific (MTCC-Pacific) and attended by repres Ministry of Infrastructure and Transport (MoIT), the Maritime Safety Authorit Port Corporation Limited (FCPL), the Fiji Ships and Heavy Industry Limited (FS Development Forum (PIDF), Patterson Shipping/Searoad Shipping, Sea Processors, Inter Link Shipping Line Ltd, Government Shipping Services, Tokal and Marine (Fiji) Limited, Billett Wright & Associates (Fiji) Limited and Solan list of participants is attached in Annex 1.

2. MTCC-Pacific is hosted by the Pacific Community (SPC) in collaboration with Pacific Regional Environment Programme (SPREP) and forms part of the (GMN), a project implemented by the International Maritime Organization (I European Union with the aim of building the capacity of developing countries for climate mitigation in the maritime industry.

3. The Director of the SPC's Geoscience, Energy and Maritime (GEM) Divisi welcomed the participants on behalf of SPC as the MTCC-Pacific Host Instit shipping remains the lifeblood of the Pacific but like all sectors has to partici to reduce greenhouse gas (GHG) emissions. The SPC's Deputy Director Tra Pacific, Thierry Nervale revealed the objectives and expected results from M capacity building for climate mitigation in the maritime industry. The Fiji Permanent Secretary for Infrastructure and Transport, Paul Bayly provided the keynote remarks enhancing Fiji Government commitment to raise awareness and build the capacity to implement energ the Fiji maritime industry. Lastly, GMN project Manager from IMO, Tamar that the establishment of MTCC-Pacific will assist the region by providing exp and Governments and is now playing a key role in the region and as part of th

4. The purpose of the workshop was to gather Fiji government, the maritime administration and ship operators to agree on measures to improve energy efficiency of shipping in Fiji and provide them with technical tools to progress towards energy efficient operations of ships.

The participants:

5. Agreed to implement relevant actions to progress towards a Green Maritime Industry (ships, shipyards and ports) in Fiji in order to support a long-term objective for low-carbon maritime transport and contribute to the reduction of GHG emissions in Fiji and the Pacific.

Project funded by the EUROPEAN UNION

IMO

SPREP

Agreed to implement relevant actions to progress towards a Green Maritime Industry (ships, shipyards and ports) in Fiji in order to support a long-term objective for low-carbon maritime transport and contribute to the reduction of GHG emissions in Fiji and the Pacific.

Recognize the drivers, needs, barriers and relevant actions stated in Annex 2 that should include:

i. Capacity building and awareness;
ii. Policy and legislation review;
iii. Incentives towards energy efficiency and use of new technologies;
iv. Private-public partnerships; and
v. Ship maintenance and use of energy efficient equipment on board existing vessels.

Agreed to lead by example and be involved in MTCC-Pacific pilot-projects on energy efficient operations of ships and data collection that will assist in implementing immediate actions adapted to Fiji registered vessels, ports and shipyards.

Agreed to collect and share relevant data on fuel consumption through protocols with MoIT and MTCC-Pacific and request MTCC-Pacific to provide templates and assist in the collection and reporting, ensuring confidentiality and accessibility of information.

Raised the issue of lack of infrastructure in outer islands to facilitate shipping services and reduce fuel oil consumption and the opportunity to explore onshore power supply at domestic wharves.

MTCC-Pacific pilot-projects

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Objective to lead by example and assist Pacific Islands Countries and Territories (PICTs) to reduce fuel oil consumption and GHG emissions from the maritime sector

2 pilot-projects have been approved for MTCC-Pacific

Pilot-project on “uptake of ship energy efficient technologies and operations”

Focus mainly on domestic shipping and ports

Provide tools to develop/improve energy management

Pilot-project on “fuel oil consumption data collection and reporting”

Data collection on fuel oil consumption in domestic shipping

MTCC-Pacific pilot-projects

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Pilot project of Energy Efficiency

- Develop generic laws for MARPOL Annex VI
- Extension of the Pacific Gender & Climate Change Toolkit
- Develop templates for energy efficiency policy and adapted SEEMP and EEOI
- Develop a guide for port energy management based on ISO 50000 standards
- Implemented an adapted SEEMP onboard vessels
- Review the implementation of SEEMP measures
- Research, case study and expertise to uptake a low-carbon technology on board vessels
- Implement a low-carbon technology onboard vessel
- Conduct energy audit level 1 in pacific port
- GHG reduction project implemented in port
- Conduct energy audit level 2 or 3 in port

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MTCC-Pacific pilot-projects

Pilot project on data collection

- Develop a data collection template
- Develop a generic regulation for data collection
- Collect relevant data and information
- Analyse data and information and produce a report on GHG emissions

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Pilot projects on EE

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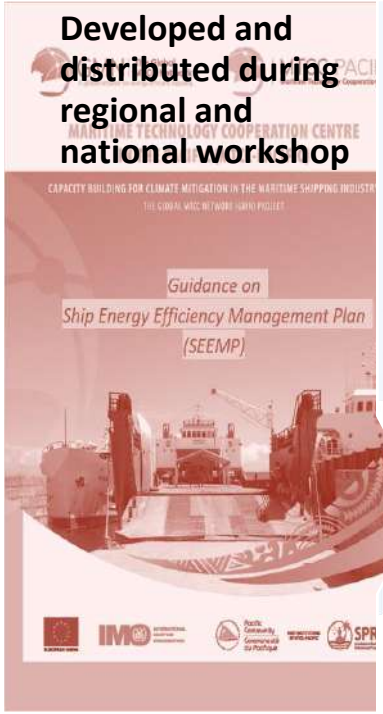
SEEMP Template

Developed and distributed during regional and national workshop



SEEMP Implementation

Drafted SEEMP for Vessel by country

Fiji – 7

SLB – 5

VUT – 6

TUV – 1

WSM – 0

KIR – 12

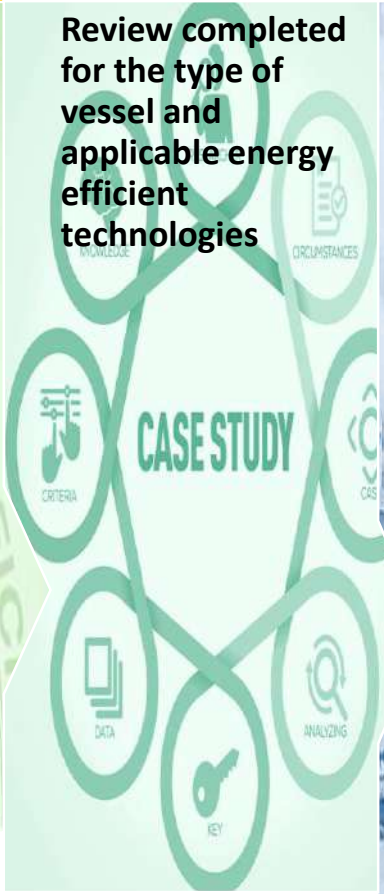
RMI– 4

SEEMP Assessment

To be conducted together with the PIDSS (SOP)

Case study

Review completed for the type of vessel and applicable energy efficient technologies



Pilot Project

Marine Landing Craft that is 45.05 meter long and has a capacity to carry 25 passenger and 200 metric tonnes of cargo

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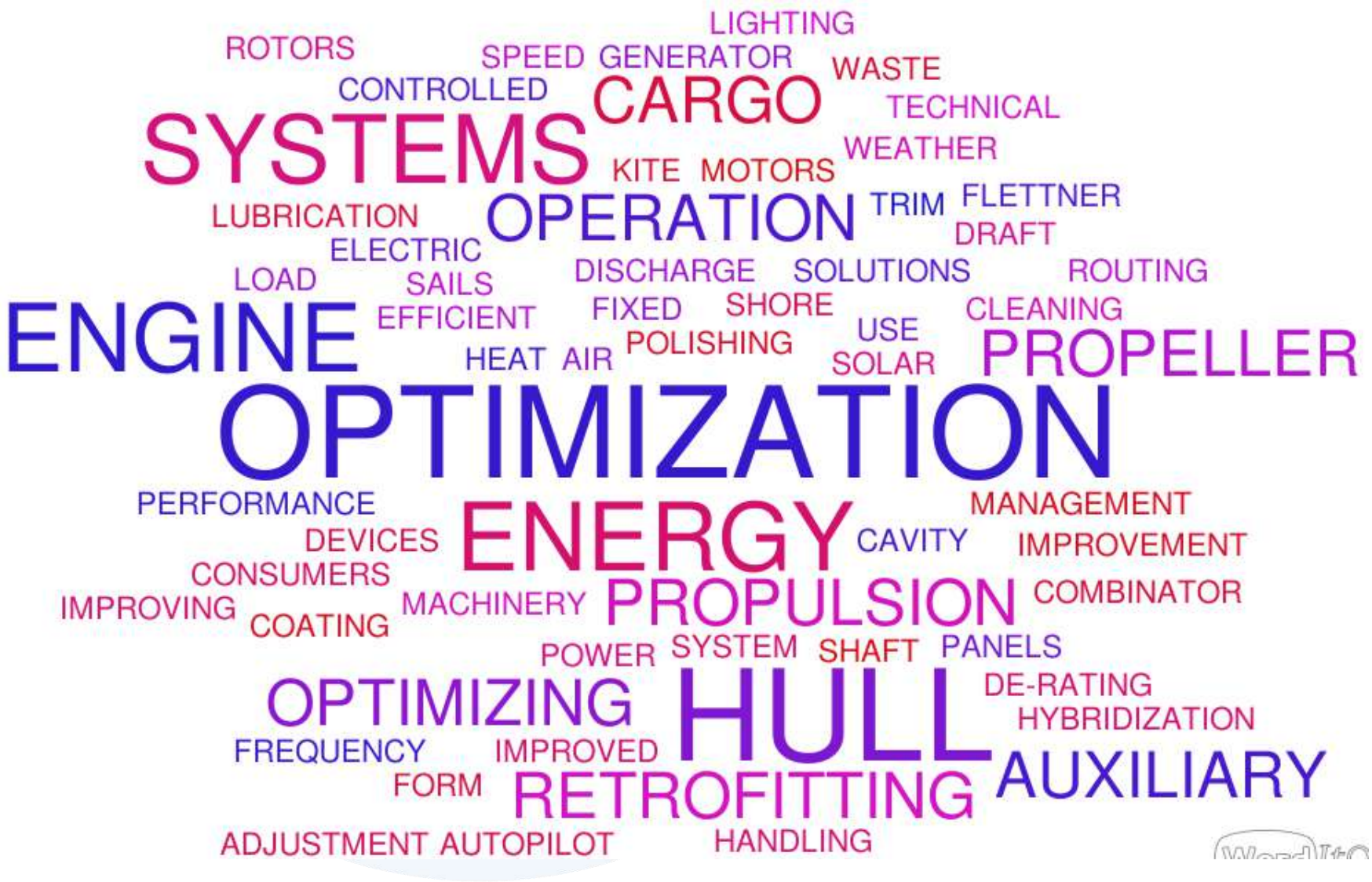
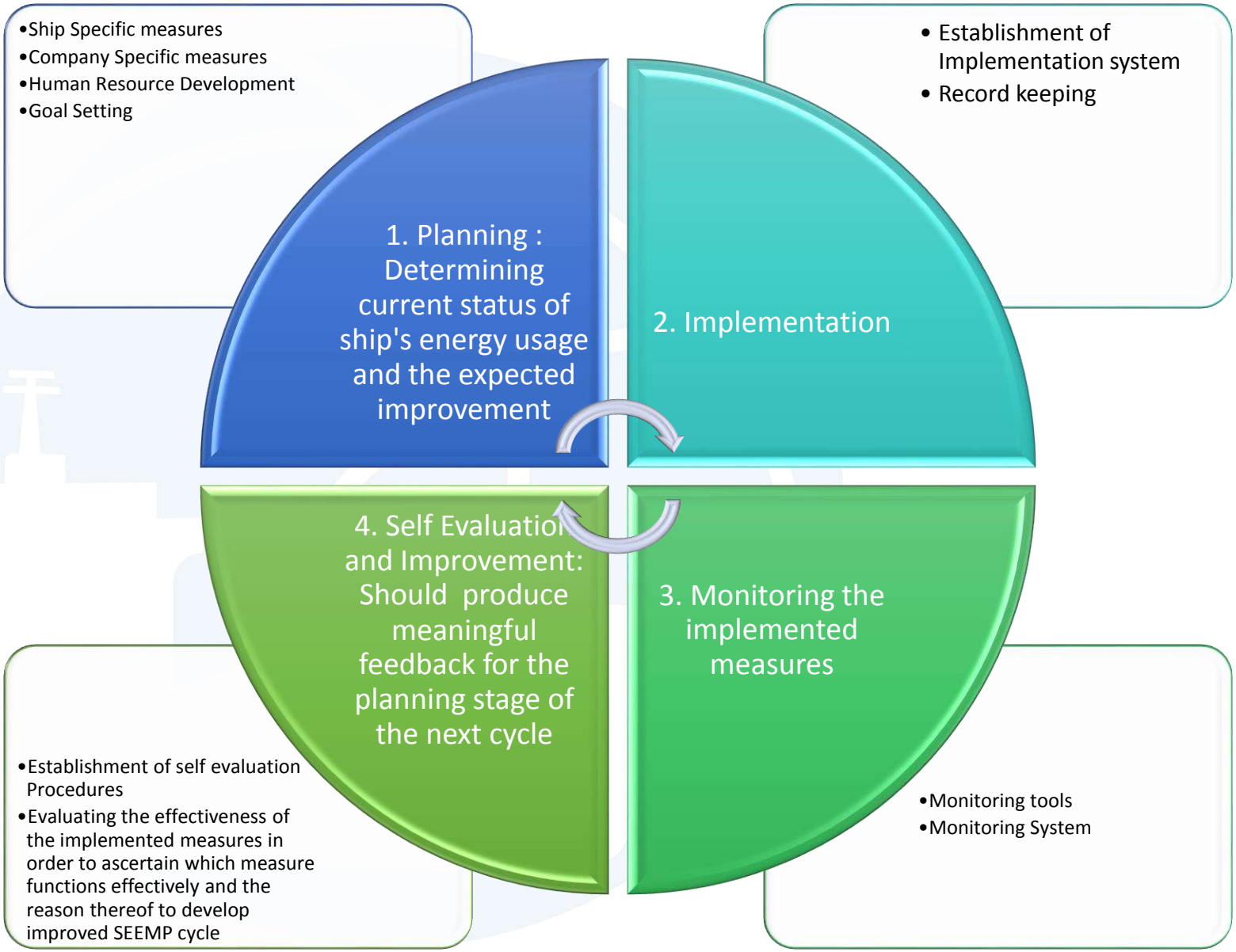
Ship Energy Efficiency Management Plan (SEEMP)



SEEMP Framework



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SEEMP Training On Vessels

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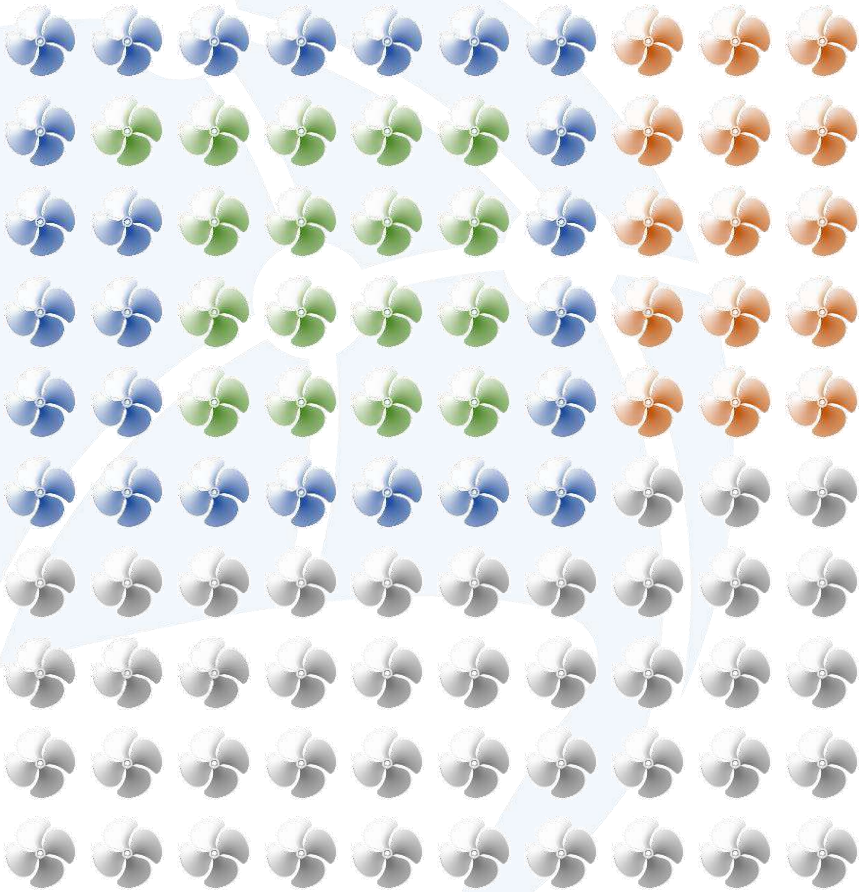
Case study – Vessel Age

Review of the age of the fleet from 7 target countries

After 2012 (< 6 years)
EEDI applicable to 13.3%



After 2000
(18 - 28 years) 41%

Between 2000 - 1990
(18 - 28 years) 15.9%

Before 1990 (> 28 years)
43.1%

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Tug/ Cargo/ LC/ or Pax

No of vessels more than 15meters and above 400GT

Energy Efficient Tech.

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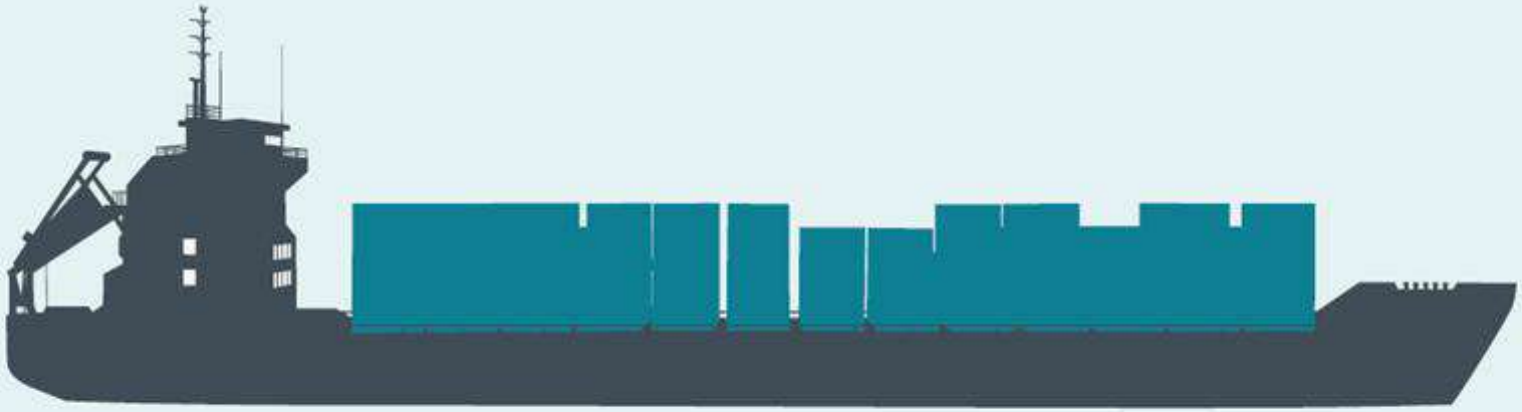
Operational
Weather routing **1-4%**
Autopilot upgrade **1-3%**
Speed reduction **10-30%**

Auxiliary power
Efficient pumps, fans **0-1%**
High efficiency lighting **0-1%**
Solar panel **0-3%**

Aerodynamics
Air lubrication **5-15%**
Wind engine **3-12%**
Kite **2-10%**



Thrust efficiency
Propeller polishing **3-8%**
Propeller upgrade **1-3%**
Prop/rudder retrofit **2-6%**

Engine efficiency
Waste heat recovery **6-8%**
Engine controls **0-1%**
Engine common rail **0-1%**
Engine speed de-rating **10-30%**

Hydrodynamics
Hull cleaning **1-10%**
Hull coating **1-5%**
Water flow optimization **1-4%**

Figure 1: *Potential fuel use and CO_2 reductions from various efficiency approaches for ships (International Council on Clean Transportation (ICCT, July 2013). Long-term potential for increased shipping efficiency through the adoption of industry-leading practices.*

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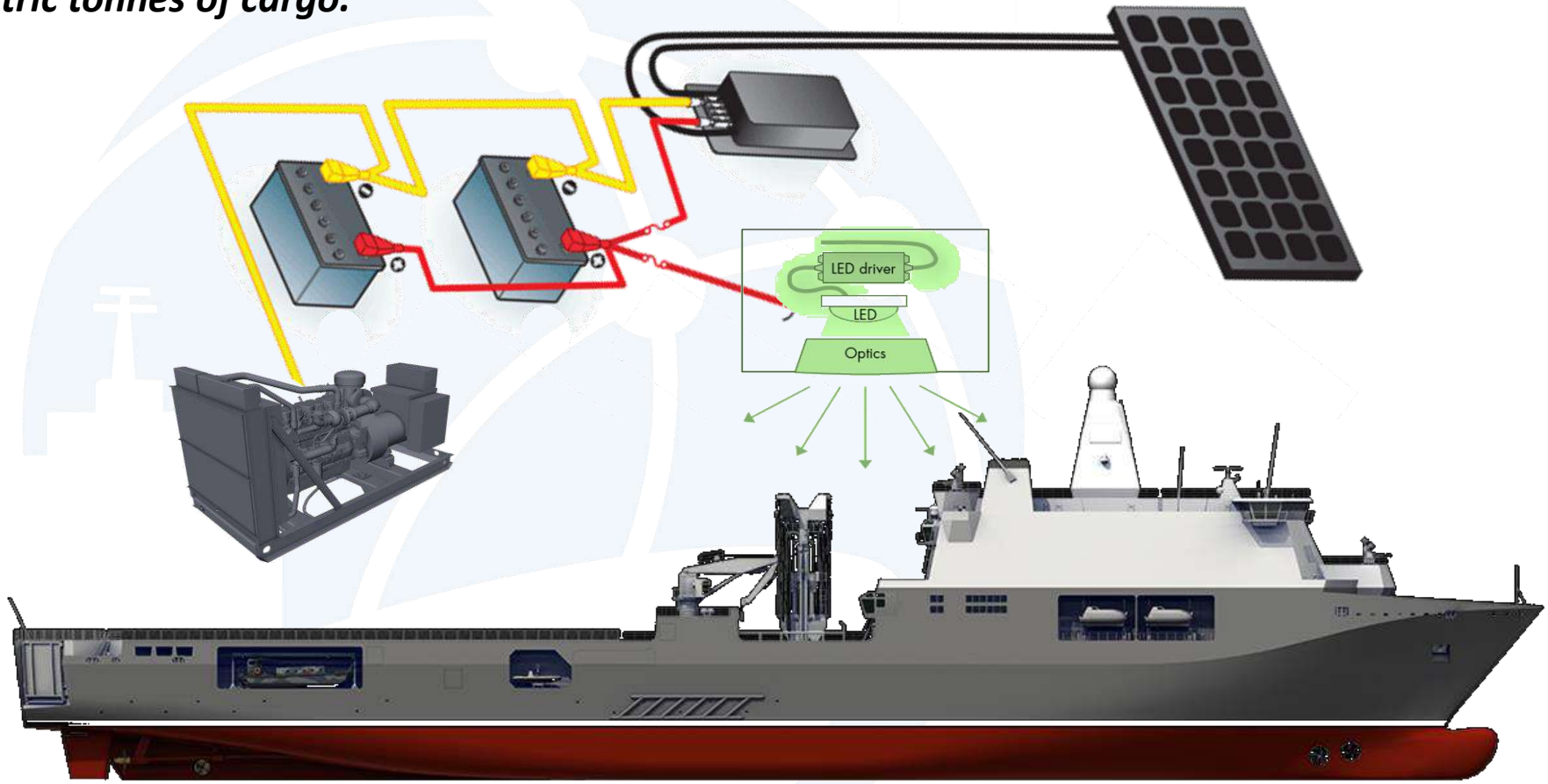
Retrofitting with EE Tech.

Marine Landing Craft of 45.05 meter long and has a capacity to carry 25 passenger and 200 metric tonnes of cargo.



The energy storage modules could be re-charged via the solar panels, by the ships main generators or from shore power when available.

Retrofitting with EE Tech.

REQUEST FOR PROPOSAL

RFP No: RFP 18/048

DATE: 27th August, 2018

SUBJECT : **DESIGNING, INSTALLATION, PROCUREMENT, MANAGEMENT AND COMPLETION WORK OF PILOT PROJECT HYBRID/ PHOTOVOLTAIC SYSTEMS WITH LIGHT EMITTING DIODES (LED) ON BOARD A SELECTED VESEL**

You are requested to submit a comprehensive proposal to supply all components of a **hybrid / hybrid/ solar system** under the *Maritime Technology Cooperation Centre in the Pacific (MTCC-Pacific), in Fiji,* a project funded by the European Union (EU) and implemented by the International Maritime Organization (IMO).

To enable you to submit a Proposal, please find enclosed:

Annex I: Instructions to bidder

Annex II: Scope of work and technical specifications and standards

Annex III: Proposal submission form

Annex IV: Technical submission form

MTCC-Pacific pilot-projects

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

MTCC PACIFIC
Maritime Technology Cooperation Centre

Target Countries	Completed
Fiji	25-29 September 2018 9-13 April 2018
Solomon Islands	21-25 August 2017
Samoa	21-25 August 2017
Tuvalu	28 May-1 June 2018
Marshall Islands	11-15 June 2018
Vanuatu	2-9 July 2018
Kiribati	19-25 July 2018

igure 2 Delap Dock: Areas under the

Energy Saving Measures

Many ways to save energy and cut emissions, some of them:

- Lighting upgrades to LED
- Purchasing policies
- Vehicle selection
- Slow steaming pilot/tug boats
- Yard planning
- Switching off

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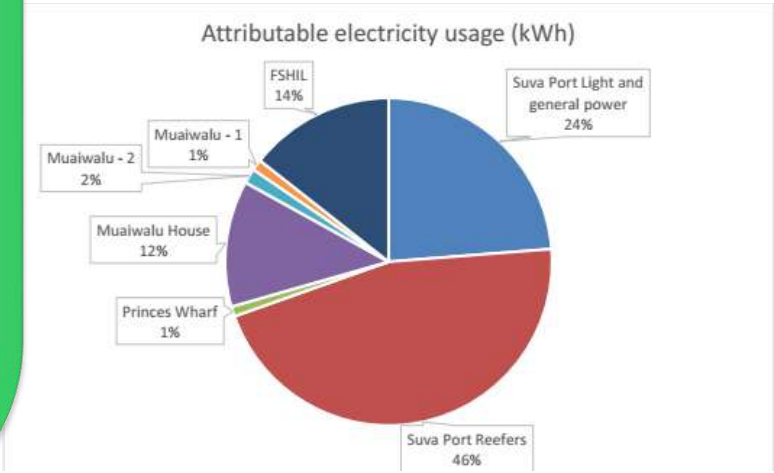
MTCC-Pacific pilot-projects

Green Ports : FPCL – Port of Suva

- Baseline energy usage: 2015/2016 – 3,100 tonnes of GHG (CO2-e), cost FJ$2,100,000
- Implemented projects:
  - Data collection/tracking (exc. Terminal fuel)
  - Office lighting upgrade to LED end of 2016: Usage 21% lower in 2017 vs 2016, saving FJD $31,000 and 32t CO2-e.
  - Power factor correction installed (Aug 2018), expected to save FJD $300,000 annually

igure 1: Electricity and Fuels Comparative Chart



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MTCC-Pacific pilot-projects

Green Ports : SIPA – Port of Honiara

Straight after energy audit improved yard lighting control undertaken. In the following 8 months:

- Overall energy use dropped 8%, saving 15 tonnes of greenhouse gas a month on average.
- Electricity usage dropped 21%, saving 13 tonnes of GHG a month on average.
- Diesel usage dropped 7%, saving 4 tonnes of GHG a month on average.
- Monthly energy costs have dropped by 13% overall, saving on average SBD $72,000 a month, or around AUD $12,000 a month

If we **assume** all these savings are a result of **implementation** of measures recommended in the **energy audit**, over the 8 months to end of April 2018, **126 tonnes of GHG** was saved, and **SBD $570,000** or around **$AUD 96,000** in **energy costs.**

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Pilot projects on Data Collect.

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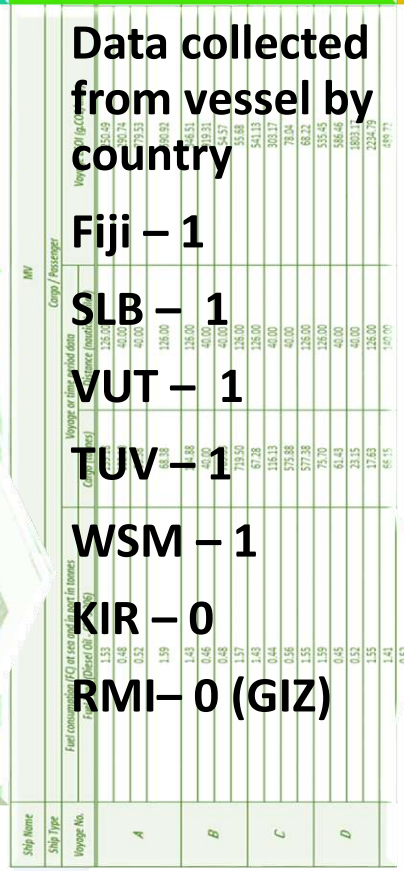
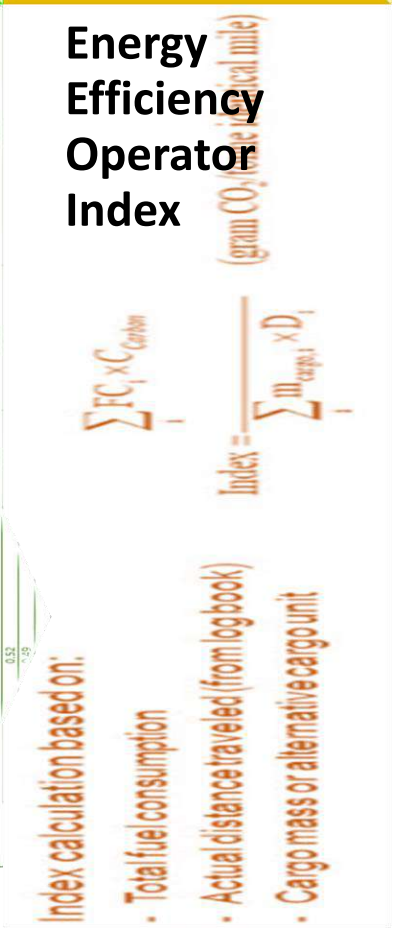
DC template	Regulation	Data Collect.	Analysis
Developed and disseminated	Currently Drafted	Data collected from vessel by country Fiji – 1 SLB – 1 VUT – 1 TUV – 1 WSM – 1 KIR – 0 RMI– 0 (GIZ)	Energy Efficiency Operator Index





*If **You Can't Measure** It, **You Can't Improve** It.*

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Energy Eff. Operator Index

EEOI

- EEOI can be used to establish a consistent approach
- It will assist ship-owners/operator… in the evaluation of the performance of their fleet with regard to CO_2 emissions.
- In short, every operation aspect of ship has its own impact on EEOI and causes its variability.

1. EEOI for a voyage; generally means the EEOI calculated for the period between a departure from a port to the departure from the next port.

2. Average Voyage EEOI; generally means the EEOI calculated for a number of voyages taken to return to the port of departure origin.

$$EEOI = \frac{\sum_j FC_j \times C_{Fj}}{mass_{cargo} \times D}$$

Where:

- *j is the fuel type (Diesel);*
- *i is the voyage number;*
- *FC_j j is the mass of consumed Diesel j at voyage i;*
- *C_{Fj} is the fuel mass to CO_2 mass conversion factor for Diesel j = 3.206;*
- *m_{cargo} is cargo carried in tonnes (t); and*
- *D is the distance in nautical miles (nm) corresponding to the cargo carried.*

The calculated EEOI is expressed as ***grams. CO_2 / (tonnes · nautical miles)*** *i.e.* ***g.CO_2 / t.nm***

Data Collection Template

FUEL OIL CONSUMPTION DATASHEET

(Form M)

Name of Ship : _____

Ship Type : _____

Point of Departure	Date	Time (Hrs)	Point of Arrival	Date	Time (Hrs)	Duration	Distance	Speed	DO Consumed	No. of Pax.	Cargo On-board (tons)
Tarawa Port	26/6	10.00		27/6	8.00	22hrs			50L		
Tarawa	27/6	8.00	North Tarawa	27/6	14.30	6.5hrs	58	10knts	925 L		1642.60 tons
North Tarawa Port	27/6	14.30		27/6	15.30	1hrs			45L		
North Tarawa Port	27/6	15.30	Tarawa	27/6	21:30	7hrs	60	9.5knts	910 L		213.33 tons
Tarawa Port	27/6	21.30		28/6							

Raw Data Collection

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Maritime Technology Cooperation Centre

Point of Departure	Date	Hour	Point of arrival	Date	Hour	Duration	Distance	Consumption	Nb Passenger	Apr Whe
PORT VILA	21/04	15[20]	LENAKEL	22/04	08[14]	16[54]	130	1986	80 PAX	2
LENAKEL	22/04	22[10]	VILA	23/04	12[25]	14[15]	130	1669	65 PAX	

Date	Time	FUEL CONSUMERS: Main Engine (DO) onboard (tonnes)	FUEL CONSUMERS: Auxiliary Engine (LFO) onboard (tonnes)	FUEL OILS USED ON BOARD: Diesel Oil (DO) onboard (tonnes)	FUEL OILS USED ON BOARD: DO Used (tonnes)	FUEL OILS USED ON BOARD: Light Fuel Oil (LFO) onboard (tonnes)	FUEL OILS USED ON BOARD: LFO Used (tonnes)	POTABLE WATER: Potable Water onboard (tonnes)	POTABLE WATER: Potable Water Used (tonnes)	BALLAST WATER: Ballast Water (BW) onboard	BALLAST WATER: BW pumped in (tonnes)	BALLAST WATER: BW pumped out (tonnes)	CARGO: Cargo onboard (DWT)	CARGO: Cargo Loaded (tonnes)	CARGO: Cargo Discharged (tonnes)	DEADWEIGHT (tonnes)	Distance Travelled (nm)	Hours Underway (hours)	Remarks
3/9/18	2040	95	6.5	86300	101.5	4000	—	303.16	2	—	—	—	1Cm		16	442.37	00 0	000	DEPART SUVA
	2400	750	32.5	85416	792.5		—	305.14	2								21.1	4.7	
4/9/18	0440	750	32.5	84633	792.5		—	303.10	2								49.2	9.66	
	0840	750	32.5	83851	792.5		—	301.10	2								63.3	14.25	
	1240	750	32.5	83068	792.5		—	299.0	2								84.4	18.95	
	1446	750	32.5	81286	792.5		—	297.0	2								105.5	23.65	
5/9/18	0040	750	32.5	80503	792.5		—	295.0	2								126.6	28.35	
	0540	750	32.5	79721	792.5		—	293.0	2								147.7	33.05	
	1040	750	32.5	78938	792.5		—	291.0	2								168.8	37.45	
	1540	750	32.5	78156	792.5	1000	—	289.0	2								190	42.5	ARRIVED AT ROTUMA
				78156	7143			289	20								190	43	

Date	Time	FUEL CONSUMERS: Main Engine	FUEL CONSUMERS: Auxiliary Engine	FUEL OILS USED ON BOARD: DO onboard (tonnes)	FUEL OILS USED ON BOARD: DO Used (tonnes)	FUEL OILS USED ON BOARD: LFO onboard (tonnes)	FUEL OILS USED ON BOARD: LFO Used (tonnes)	POTABLE WATER: Potable Water onboard (tonnes)	POTABLE WATER: Potable Water Used (tonnes)	BALLAST WATER: BW onboard (tonnes)	BALLAST WATER: BW pumped in (tonnes)	BALLAST WATER: BW pumped out (tonnes)	CARGO: Cargo onboard (tonnes)	CARGO: Cargo Loaded (tonnes)	CARGO: Cargo Discharged (tonnes)	DEADWEIGHT (tonnes)	Distance Travelled (nm)	Hours Underway (hours)	Remarks
09/09/18	1200	95	6.5	48149	101.5			280	02		5019		08				0000	0000	START BOTH
	1800	600	26	76088	626			278	01								191	0400	M/E'S
	2400	600	26	77412	626			277	01								38.2	08	
	0600	600	26	76986	626			276	03								57.3	12	
08/09/18	1200	600	26	76160	626			273	03								76.4	16	
	1800	600	26	75534	626			270	03								95.5	20	
	0000	600	26	74908	626			268	05								146.6	34	
	0600	600	26	74282	626			265	01								133.7	28	
	1200	600	26	73656	626			264	01								152.8	32	
	1800	600	26	73030	626			263	01								171.9	36	
	2400	600	26	72404	626			261	02								191	40	
09/09/18	0600	465	26	72259	571														
				72259	6246			261	20								191	40	

FUEL CONSUMTION

Data collected for MTCC-PACIFIC (Maritime Technology Cooperation Centre in the Pacific)
For Capacity Building for Climate Mitigation in the Maritime Shipping Industry

LADY SAMOA III	DATE	TRIP	TIME DEPART	TIME ARRIV	FUEL CONSUM AT SEA (LTR) MAIN ENGS PT	MAIN ENGS STB	GENERATOR PT	GENERATOR STB	FUEL CONSUM IN PORT DAY IN PORT NIGHT GENERATOR PT	GENERATOR STB	REMA AND
EXAMPLE	18 Jun 2018	MF-SL	1200	1310	96	97		24			
		SL-MF	1400	1514	106	103		24			
		MF-SL	1600								
	19 Jun 2018	SL-MF	0600								
		MF-SL	0800								
		SL-MF	1000								
		MF-SL	1200								
		SL-MF	1400								
		MF-SL	1600								
	WED:										
	20 Jun 2018	SL-MF	0600	0710	102	102	26				
		MF-SL	0800	0910	102	102	24				
		SL-MF	1000	1110	103	103	25				
		MF-SL	1200	1310	102	102	24				
		SL-MF	1400	1510	103	103	24				
		MF-SL	1600	1710	102	103	24				146
	THU:										
	21 Jun 2018	SL-MF	0600	0710	102	102	24				
		MF-SL	0800	0910	103	103	25				
		SL-MF	1000	1110	103	103	26				
		MF-SL	1200	1310	102	102	24				
		SL-MF	1400	1510	103	103	24				
		MF-SL	1600	1710	102	102	25				117
	FRIDAY										
	22 Jun 2018	SL-MF	0600	0710	111	114		31			
		MF-SL	0800	0910	106	105		31			
		SL-MF	1000	1110	99	101		24			
		MF-SL	1200	1312	102	102		23			
		SL-MF	1400	1512	111	109		30			
		MF-SL	1600	1712	101	104		22			169
	SATURDAY										
	23 Jun 2018	SL-MF	0600	0710	99	96	26				
		MF-SL	0800	0946	107	105	25				
		SL-MF	1000	1116	110	105	31				
		MF-SL	1200	1314	103	102	24				
		SL-MF	1400	1514	97	99	23				
		MF-SL	1600	1715	98	98	24				115
	SUN:										
	24 Jun 2018	SL-MF	1000	1110	114	118	26				
		MF-SL	1200	1312	100	100	24				
		SL-MF	1400	1520	96	100	27				
		MF-SL	1600	1710	98	97	21				111

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Data sorting

Voyage No.	Outbound EEOI (g.CO2/t.nm)	Outbound Cargo (t)
13B/18a	115.32	409.15
14B/18a	161.86	256.60
15B/18a	348.64	116.38
17B/18a	440.14	87.95
18B/18a	536.33	75.48

Voyage EEOI

Voyage No.	Inbound EEOI (g.CO2/t.nm)	Inbound Cargo (t)
13B/18b	641.04	56.38
14B/18b	1756.22	19.88
15B/18b	787.97	43.05
17B/18b	4794.72	7.93
18B/18b	4210.38	8.83

Ship Name	*MV*				
Ship Type	*Cargo / Passenger*				
Voyage No.	*Fuel consumption (FC) at sea and in port in tonnes*	*Voyage or time period data*		*Voyage EEOI (g.CO2/t.nm)*	*Average EEOI (g.CO2/t.nm)*
	Fuel Type (Diesel Oil - CF- 3.206)	*Cargo (tonnes)*	*Distance (nautical miles)*		
14/18	1.53	155.18	126.00	250.49	370.62
	0.48	132.10	40.00	290.74	
	0.52	53.38	40.00	779.53	
	1.59	68.38	126.00	590.92	
15/18	1.43	104.88	126.00	346.51	94.54
	0.46	40.00	40.00	919.31	
	0.48	703.83	40.00	54.57	
	1.57	719.50	126.00	55.68	
16/18	1.43	67.28	126.00	541.13	117.13
	0.44	116.13	40.00	303.17	
	0.56	575.88	40.00	78.04	
	1.55	577.38	126.00	68.22	
18/18	1.59	75.70	126.00	535.45	870.48
	0.45	61.43	40.00	586.46	
	0.52	23.15	40.00	1803.17	
	1.55	17.63	126.00	2234.79	
19/18	1.41	66.15	140.00	489.72	1012.87
	0.52	57.85	40.00	723.93	
	0.49	7.55	40.00	5213.24	
	1.72	9.00	140.00	4381.98	

Average EEOI

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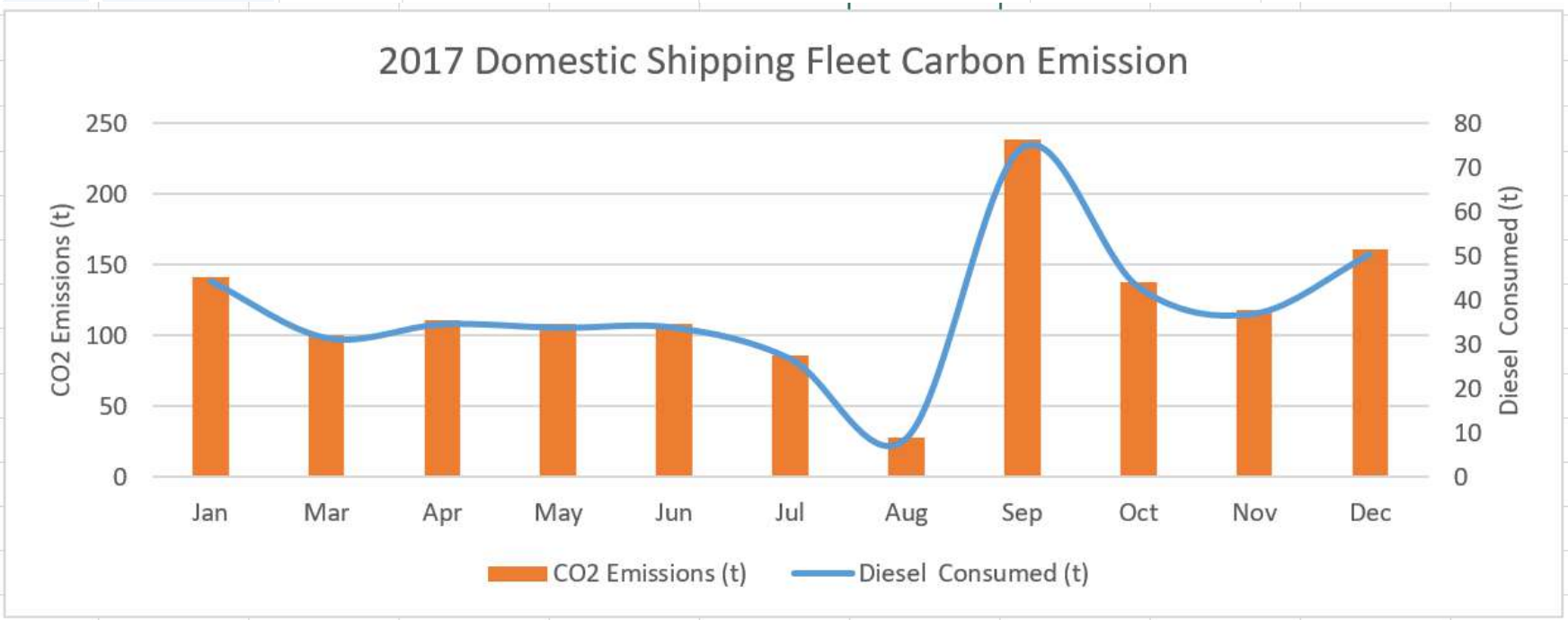
Data sorting

2017	Diesel CF(t-CO2/t-Fuel)	Diesel Consumed (t)	CO2 Emissions (t)
Jan	3.206	44.26	141.72
Mar		31.43	100.64
Apr		34.56	110.66
May		33.75	108.07
Jun		33.78	108.16
Jul		26.74	85.62
Aug		8.78	28.11
Sep		74.42	238.31
Oct		43.03	137.79
Nov		36.92	118.22
Dec		50.36	161.24



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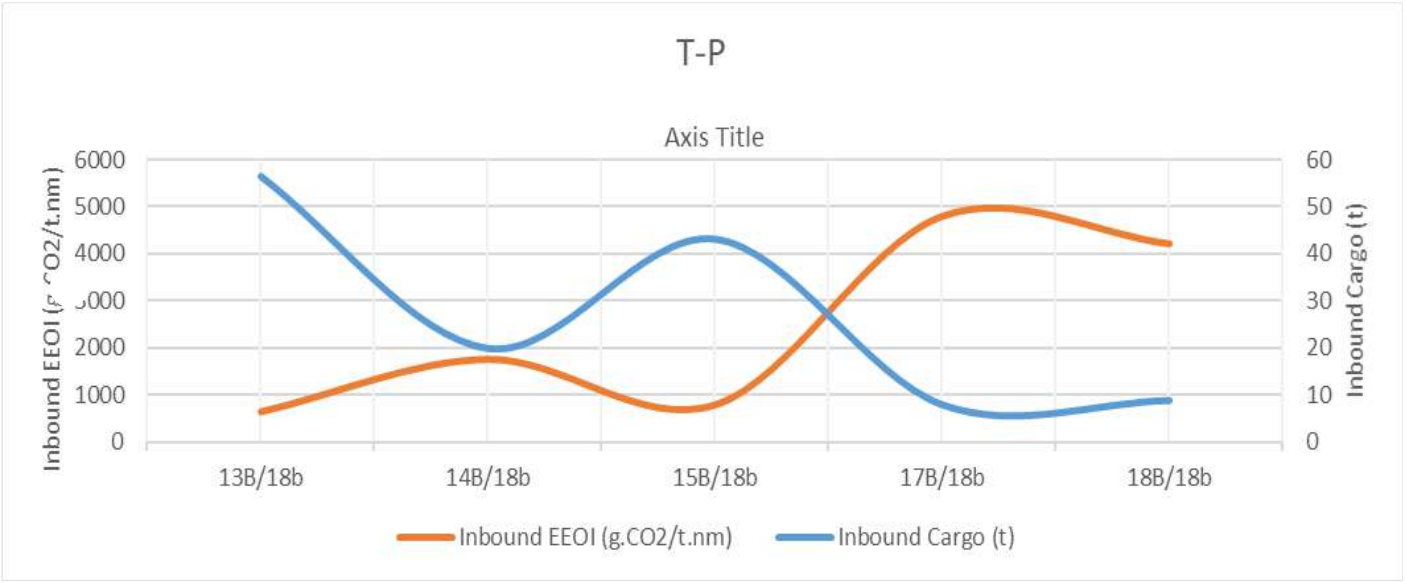
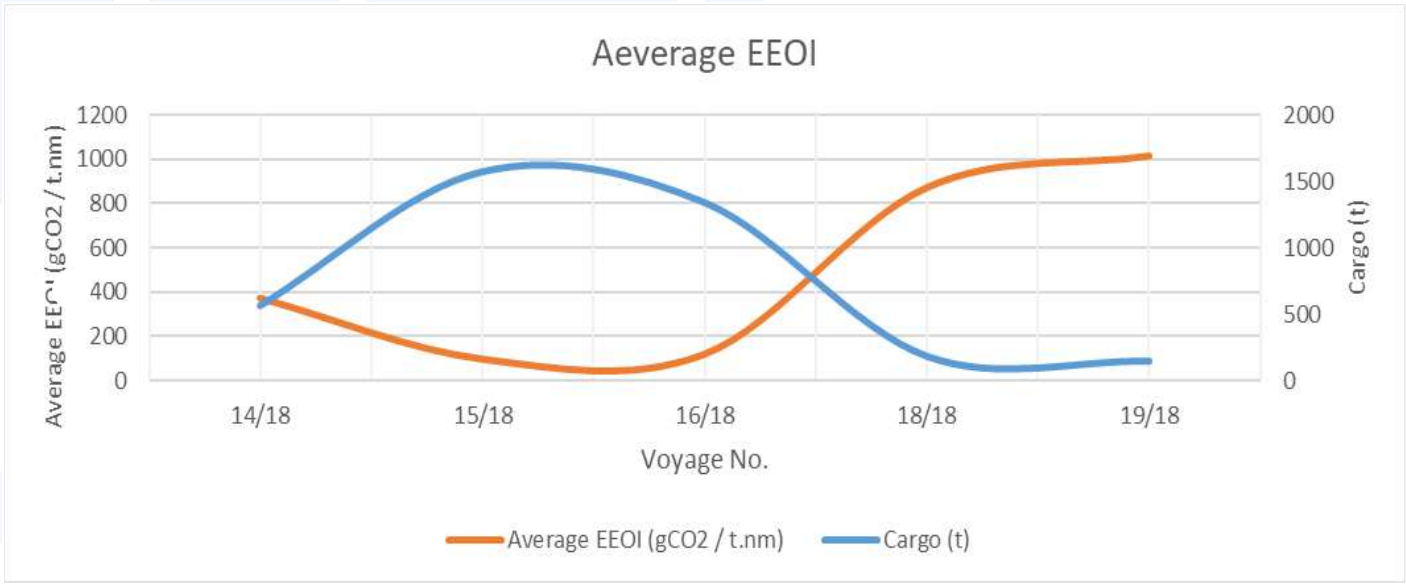
Voyage Data Analysis

Voyage EEOI



Average EEOI



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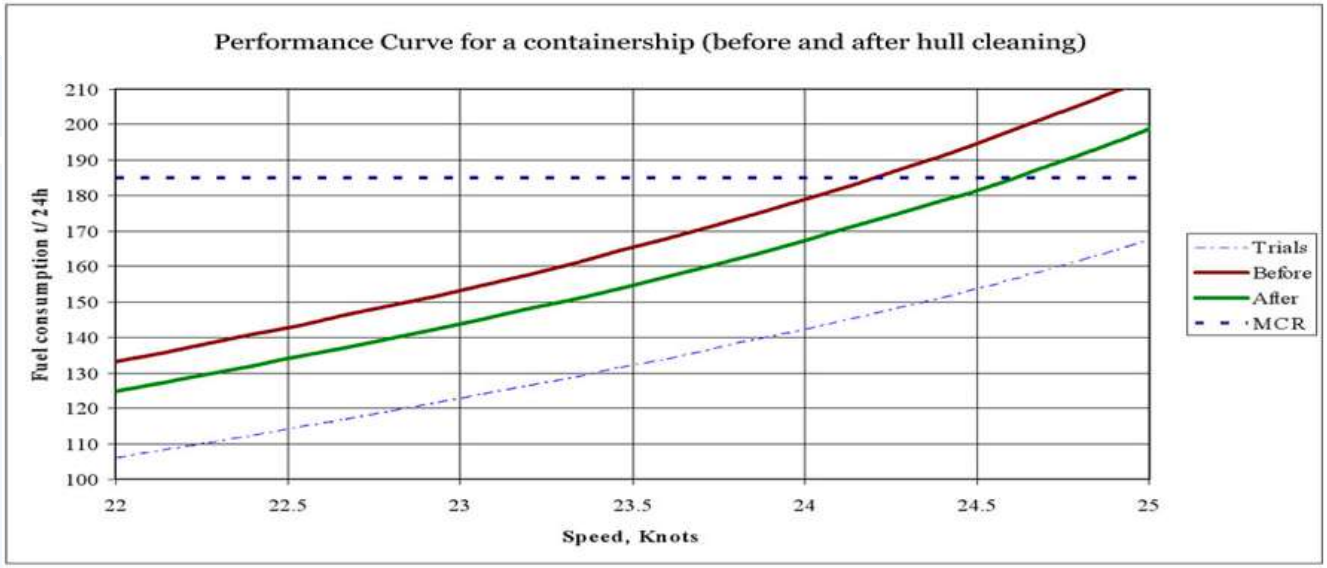
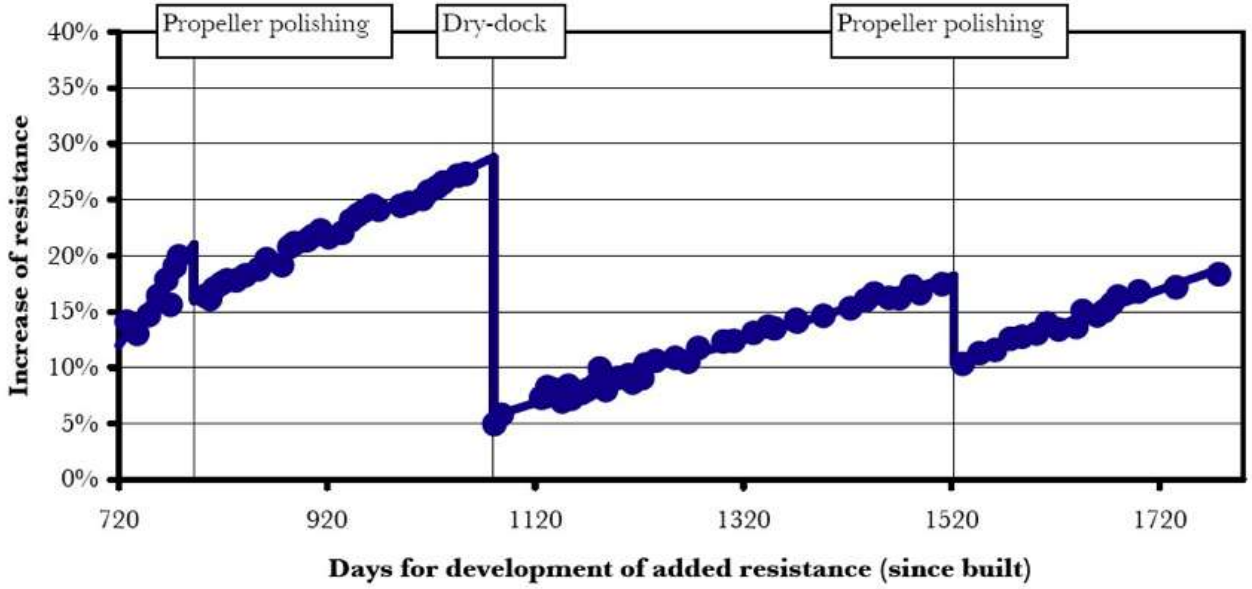
Voyage Data Analysis

A Dirty Ship is an Expensive Ship to Operate

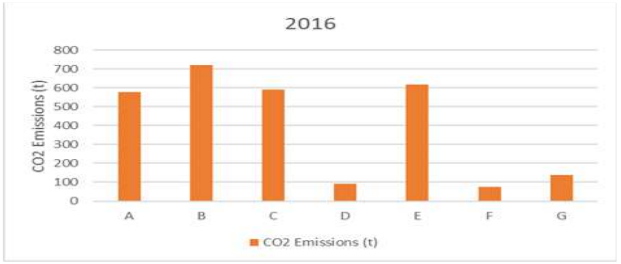




Bulk Fuel Data Analysis

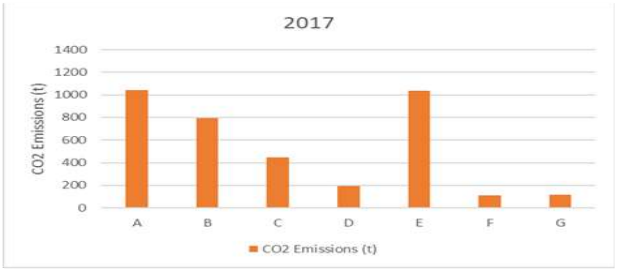
Monthly data

2016	Diesel CF (t-CO2/t-Fuel)	CO2 Emissions (t)
A	3.206	578.2
B		721.8
C		590.3
D		93.2
E		616.9
F		73.4
G		139.9



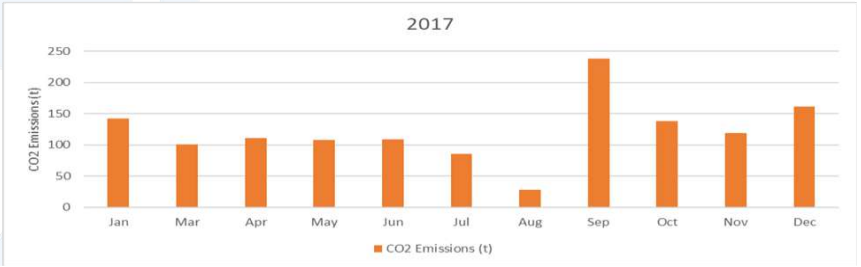
Monthly data

2017	Diesel CF (t-CO2/t-Fuel)	CO2 Emissions (t)
A	3.206	1041.2
B		794.7
C		447.3
D		193.9
E		1037.6
F		111.2
G		118.3



Yearly data

2017	Diesel CF (t-CO2/t-Fuel)	CO2 Emissions (t)
Jan	3.206	141.72
Mar		100.64
Apr		110.66
May		108.07
Jun		108.16
Jul		85.62
Aug		28.11
Sep		238.31
Oct		137.79
Nov		118.22
Dec		161.24



For the purposes of calculating CO2 emissions, following formula was used:

$$\textbf{Emission Factor } (EF) = \textbf{Fuel Consumped} \times C_{Fj}$$

Summary

Country	SEEMP	DATA
Fiji	7	1
Solomon Islands	5	1
Vanuatu	6	1
Tuvalu	1	1
Samoa	0	1
Kiribati	2	0
Marshall islands	4	GIZ

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Challenges

Pilot project of Energy Efficiency

- Vessels drawings and documentations unavailable
- No Maintenance Plan
- Safe Operational Plan not implemented
- Energy efficiency not practiced on board
- Lack of awareness created by the ship operator on safety & efficiency

Pilot project on data collection

- Inconsistent data provided
- Data not supplied as agreed during NW
- Lack of trained crew on board
- Lack of enforcement

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Maritime Technology Cooperation Centre

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THANK YOU

EUROPEAN UNION

IMO INTERNATIONAL MARITIME ORGANIZATION

Transitioning to Low Carbon Sea Transport (TLCSeaT)

financed by German Government (BMU)

Suva, August 28, 2018

A Transition towards Low Carbon Sea Transport

in The Republic of The Marshall Islands

Contents

I Overview on Objectives

- Reduction of RMI‘s GHG-Emissions from domestic sea transport

- Two phase approach:

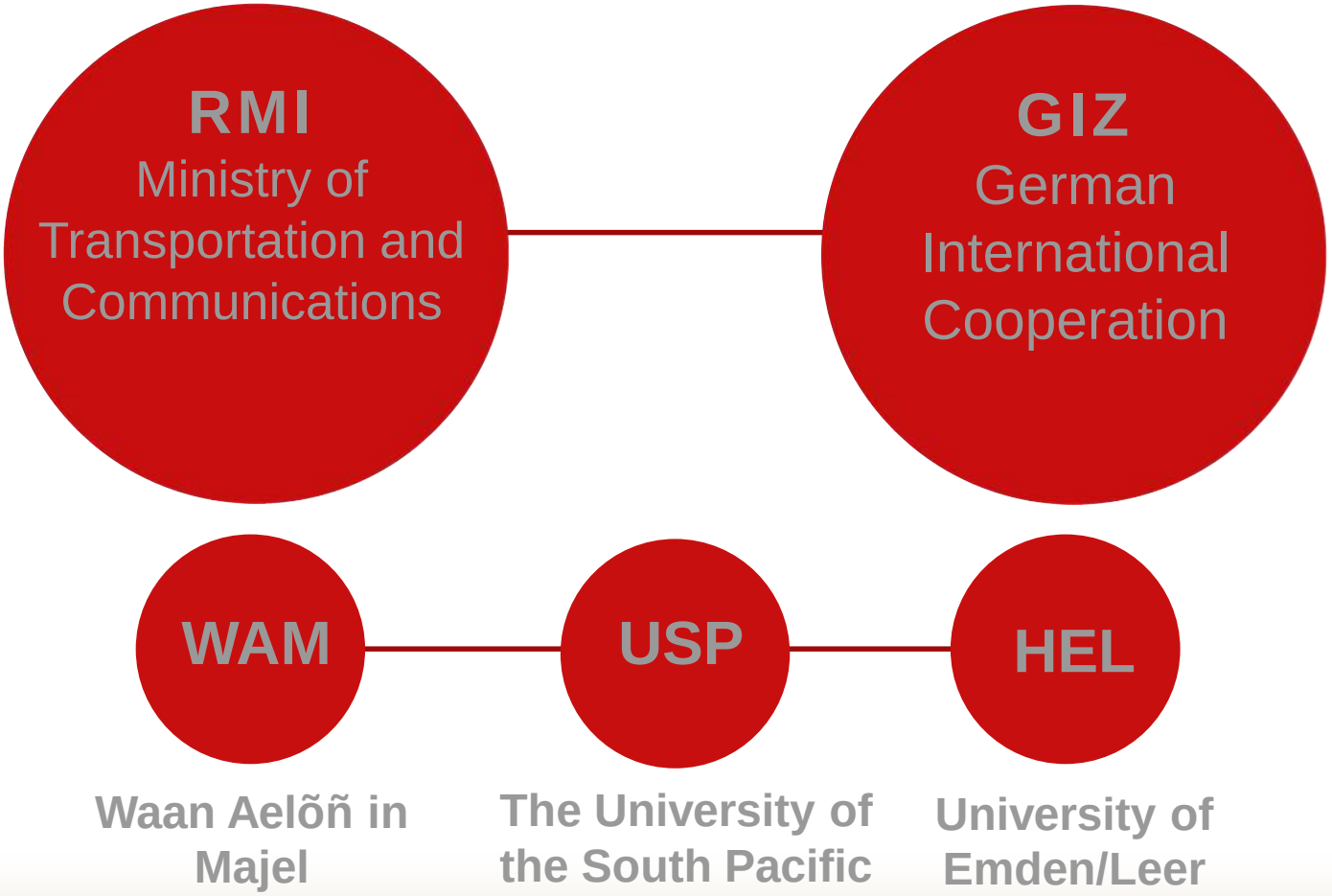
  1 Assessment of emissions, logistics and economics of domestic fleet operations

  2 Development of options for low-carbon-propulsion technologies

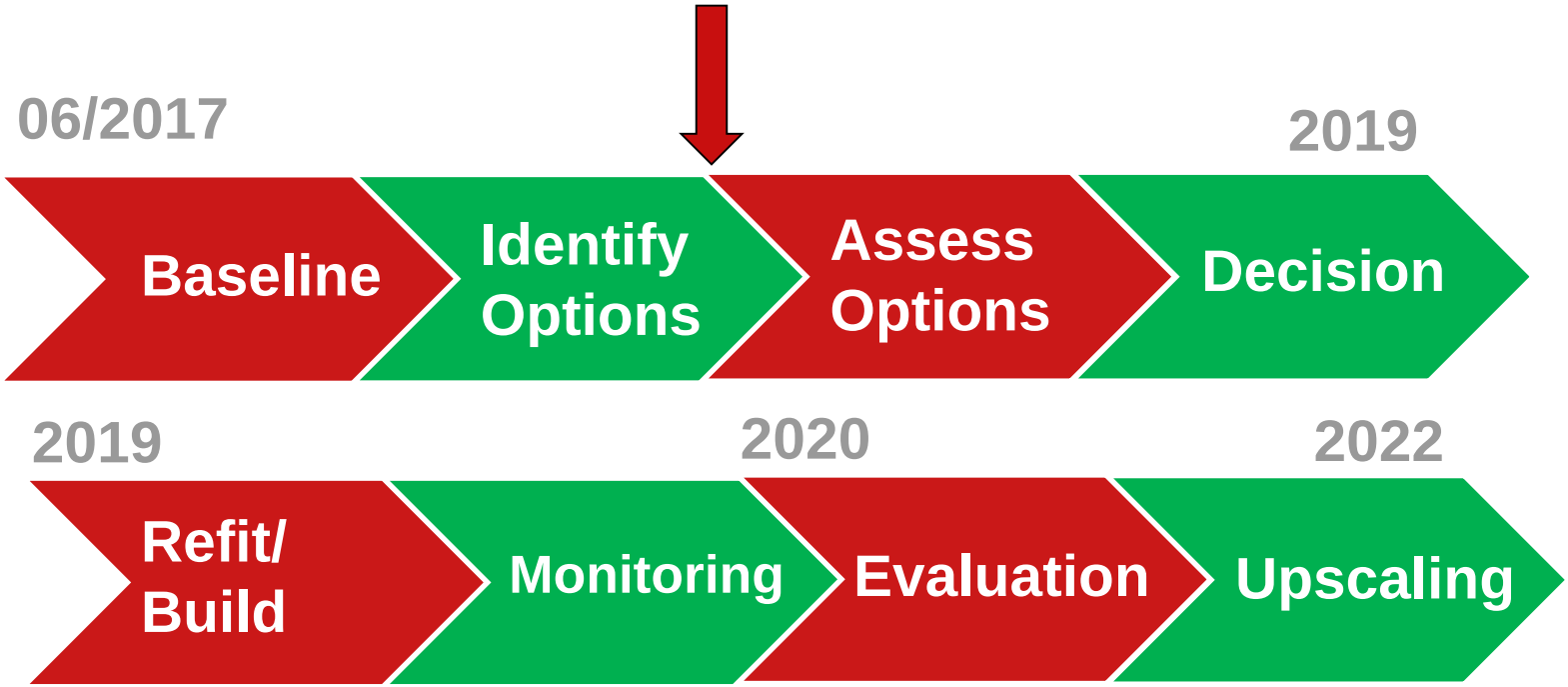
  for inter-atoll and inside-lagoon sea transport

- Policy Support to the RMI Government: strengthening, i.e. the High Ambition Coalition (HAC) for UNFCCC negotiations/IMO

II Implementing Partner Organisations



III Time Frame



IV Impact of TLCSeaT Project

Short/Medium Term Benefits

- Influence at international negotiations increased
- Raising of ambitions at IMO level in order to reduce emissions

IV Impact of TLCSeaT Project

Medium Term Benefits

- Lower costs in sea transport due to less fuel consumption
- Private sector operators: cost efficient sea transport
- Other States within the Pacific: fossil fuel reduction
- RMI mariners, students et al.: enhanced capacity

IV Impact of TLCSeaT Project

Long Term Benefits

- Contribution to achieve RMI‘s NDC targets
- Increased project impact due to upscaling process
- For RMI: improved connectivity between and within atolls

Why RMI?

- Front Runner (High Ambition Coalition) in the international Climate Debate
- Transport Sector is part of their NDC
- High Ambition in their NDC
- Highly dependent on Sea Transport
- Climate Vulnerable Country

Vinaka!

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MTCC PACIFIC
Maritime Technology Cooperation Centre

MARITIME TECHNOLOGY COOPERATION CENTRE – PACIFIC (MTCC-PACIFIC)

CAPACITY BUILDING FOR CLIMATE MITIGATION IN THE MARITIME SHIPPING INDUSTRY

THE GLOBAL MTCC NETWORK (GMN) PROJECT

IMO Initial Strategy on Reduction of GHG emissions from ships

Presenter: Thierry Nervale
Head of MTCC-Pacific

EUROPEAN UNION

IMO INTERNATIONAL MARITIME ORGANIZATION

Pacific Community
Communauté du Pacifique

HOST INSTITUTIONS OF MTCC-PACIFIC

SPREP
Secretariat of the Pacific Regional Environment Programme

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

Adoption of the initial Strategy

- Resolution MEPC.304(72) adopted 13 April 2018
- Strategy is in annex of the Resolution
- MEPC Res.:
  - ✓ Adopts the Strategy
  - ✓ Invites IMO SG to make adequate provisions in the Integrated Technical Cooperation Programme (ITCP) to support relevant action to be undertaken by developing countries, particularly LDCs and SIDS
  - ✓ Agrees to keep the Strategy under review with a view to adoption of a Revised IMO Strategy in 2023

Strategy introduction & context

- Work of IMO:
  - Assembly resolution A.963(23) on *IMO policies and practices related to the reduction of greenhouse gas emissions from ships*, adopted on 5 December 2003
  - MEPC.203(62) (July 2011) on *Inclusion of regulations on energy efficiency for ships in MARPOL Annex VI* introducing mandatory technical (EEDI) and operational (SEEMP) measures for the energy efficiency of ships
  - MEPC.229(65) (May 2013) on *Promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships*
  - MEPC.278(70) (October 2016, amendments to MARPOL Annex VI to introduce the *data collection system for fuel oil consumption of ships*
- Context
  - UNCLOS, UNFCCC and its related legal instruments, including the Paris Agreement
  - Leading role of IMO for the development, adoption and assistance in implementation of environmental regulations applicable to international shipping
  - IMO Strategic Direction entitled “Respond to climate change”
  - United Nations 2030 Agenda for Sustainable Development
- Emissions and emission scenarios
  - Third IMO GHG Study 2014 has estimated that:
    - GHG emissions from international shipping in 2012 accounted for some 2.2% of anthropogenic CO2 emissions
    - Such emissions could grow by between 50% and 250% by 2050
    - Future IMO GHG studies would help reduce the uncertainties associated with these emission estimates and scenarios.

Strategy vision & level of ambition

- Vision – Reducing GHG emissions from international shipping and, as a matter of urgency, aims to phase them out as soon as possible in this century
- Level of ambition
  - ***carbon intensity of the ship to decline through implementation of further phases of the energy efficiency design index (EEDI) for new ships***
  - ***carbon intensity of international shipping to decline*** to reduce CO_2 emissions per transport work, as an average across international shipping, by at least 40% by 2030, pursuing efforts towards 70% by 2050, compared to 2008
  - ***GHG emissions from international shipping to peak and decline*** to peak GHG emissions from international shipping as soon as possible and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008 whilst pursuing efforts towards phasing them out as called for in the Vision as a point on a pathway of CO_2 emissions reduction consistent with the Paris Agreement temperature goals

Strategy short-, mid- and long-term measures

- Short-term candidate measures agreed by the Committee between 2018 and 2023
  - Further energy efficiency measures EEDI, SEEMP, etc.
  - Existing Fleet Improvement Programme
  - Speed optimization and reduction
  - Capacity-building and technical cooperation under ITCP
  - Port development to supply alternative fuels, OPS
- Mid-term candidate measures to be agreed by the Committee between 2023 and 2030
  - Effective uptake of alternative low-carbon and zero-carbon fuels
  - Energy efficiency measures for both new and existing ships
  - Market-based measures
  - Capacity-building and technical cooperation under ITCP
- Long-term candidate measures to be agreed by the Committee beyond 2030
  - Development and provision of zero-carbon or fossil-free fuels to enable the shipping sector to assess and consider decarbonization in the second half of the century
  - Encourage and facilitate the general adoption of other possible new/innovative emission reduction mechanism(s)

Impact on States and barriers

- Before adoption of measures, impact on states to assessed particularly LDCs and SIDS:
  - Geographic remoteness of and connectivity to main markets
  - cargo value and type
  - transport dependency
  - transport costs
  - food security
  - disaster response
  - cost-effectiveness
  - socio-economic progress and development.
- Disproportionately negative impacts should be assessed and addressed
- Recognises special needs of developing countries particularly LDCs and SIDS with regard to capacity building and technical cooperation
- Need to assist the efforts to promote low-carbon technologies by facilitating public-private partnerships and information exchange
- Provide mechanisms for facilitating information sharing, technology transfer, capacity-building and technical cooperation
- Need to assess periodically the provision of financial and technological resources and capacity-building to implement the Strategy through ITCP and other initiatives including the GloMEEP project and the MTCC network

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Key stages for the adoption of a Revised IMO GHG Strategy in 2023

Spring 2018 (MEPC 72)	Adoption of the Initial Strategy, including, inter alia, a list of candidate short-, mid- and long-term further measures with possible timelines
January 2019	Start of Phase 1: Data collection (Ships to collect data)
Spring 2019 (MEPC 74)	Initiation of Fourth IMO GHG Study using data from 2012-2018
Summer 2020	Data from 2019 to be reported to IMO
Autumn 2020 (MEPC 76)	Start of Phase 2: data analysis (no later than autumn 2020) Publication of Fourth IMO GHG Study for consideration by MEPC 76
Spring 2021 (MEPC 77)	Secretariat report summarizing the 2019 data pursuant to regulation 22A.10 Initiation of work on adjustments on Initial IMO Strategy, based on Data Collection System (DCS)
Summer 2021	Data for 2020 to be reported to IMO
Spring 2022 (MEPC 78)	Phase 3: Decision step Secretariat report summarizing the 2020 data pursuant to regulation 22A.10
Summer 2022	Data for 2021 to be reported to IMO
Spring 2023 (MEPC 80)	Secretariat report summarizing the 2021 data pursuant to regulation 22A.10 Adoption of Revised IMO Strategy, including short-, mid- and long-term further measure(s), as required, with implementation schedules

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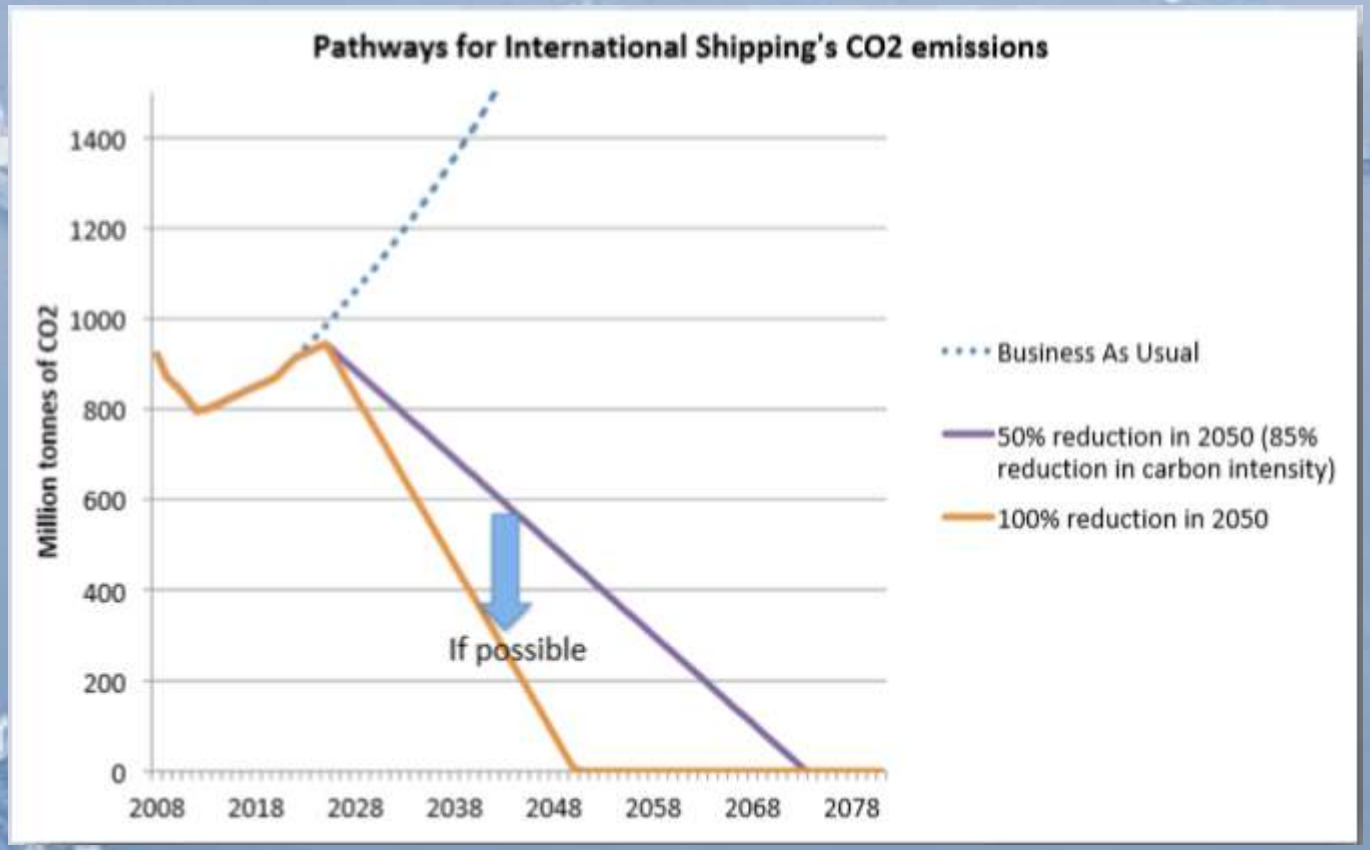
THIRD MTCC-PACIFIC STEERING COMMITTEE MEETING

Suva, Fiji, 28 August 2018

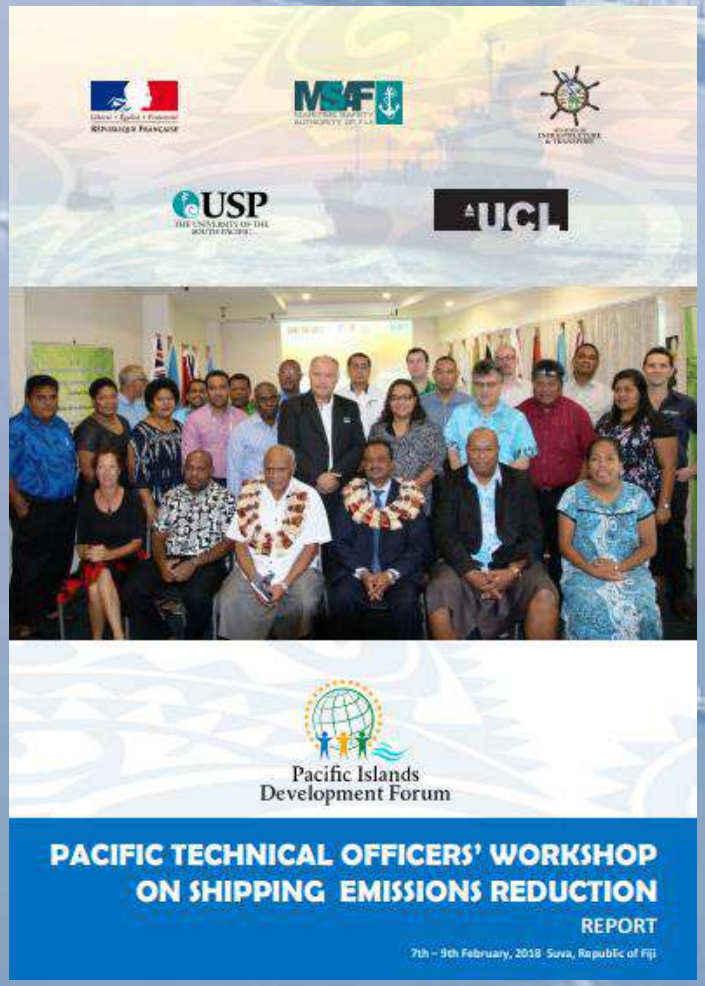
Why the stress?

- We cannot wait until we start taking action.



Preparation for MEPC72

- Workshop on 7-9 Feb. 2018 in Suva, Fiji
- Preparation and agreement on a Pacific position paper
- Two submission papers with Pacific input and backing.
- Full workshop report: http://greenbusiness.solutions/pacific-maritime-technical-officers-workshop-shipping-emissions-7-9-february-2018/



Outcome of the MEPC72

What did we get? Reduction of shipping emissions by at least 50% by 2050 compared to 2008 levels.

What did we want? Reduction by 100% by 2035-2050.

Caveat: has to be in line with Paris Agreement.

Post MEPC72 Talanoa

- Talanoa held at USP ICT Centre on 7 June 2018 jointly organised with USP, MCST and UCL. Linked with other USP centres.
- Full report at: http://greenbusiness.solutions/wp-content/uploads/2018/08/Post_MEPC72_Talanoa_Report_hires.pdf

MEPC73

- Dates: 22-26 October 2018
- Prior to launch of full 1.5^{o}C IPCC special report but follows the release of the “Summary for Policymakers” expected on **Monday 8 October 2018**.
- From report leaks we know the report concludes that limiting temperature rise to 1.5^{o}C is still possible but we need to start action now.

MEPC73 Agenda

1 Adoption of the agenda
2 Decisions of other bodies
3 Consideration and adoption of amendments to mandatory instruments
4 Harmful aquatic organisms in ballast water
5 Air pollution and energy efficiency
6 Further technical and operational measures for enhancing the energy efficiency of international shipping
7 Reduction of GHG emissions from ships
8 Development of an action plan to address marine plastic litter from ships
9 Development of measures to reduce risks of use and carriage of heavy fuel oil as fuel by ships in Arctic waters
10 Identification and protection of Special Areas, ECAs and PSSAs
11 Pollution prevention and response
12 Reports of other sub-committees
13 Technical cooperation activities for the protection of the marine environment
14 Capacity-building for the implementation of new measures
15 Work programme of the Committee and subsidiary bodies
16 Application of the Committees' Method of Work
17 Election of the Chair and Vice-Chair
18 Any other business
19 Consideration of the report of the Committee

Pacific focus for MEPC73

- Action plan to achieve actual GHG emissions reductions starting before 2023
- Procedures for assessing measures
- Determining impact on SIDS
- Mechanisms to mitigate these impacts on SIDS

Follow MEPC73 issues online

- Soon we will have a dedicated MEPC73 page on Pacific Green Business Portal at URL
  www.greenbusiness.solutions/mepc73 (second week Sept.)

Clean Transport Forum & Expo

Planned for 6 – 11 Nov, 2018

Venue: USP

Hosts: USP, Government of Marshall Islands, the Fiji Ministry of Infrastructure and Transport and COP23 Secretariat.

Major partners: PIDF, LTA, IUCN, MCST, GGGI.

Other partners welcome.

The Forum

The Pacific Transport Forum will:

(i) Identify necessary steps in each nation to establish a comprehensive baseline understanding of the current role of the transport sector (land, sea, and air) in national GHG emissions;

(ii) Provide an opportunity for High-Level government representatives to engage with the private sector, development partners and regional and international organizations, exploring technology exchange and trade opportunities through participation in Transport Exposition events; and

(iii) Create an ongoing Pacific Regional Working Group of government officials in the transport sector who may exchange concepts, initiatives, and data regarding establishment of transport policy, designing financial mechanisms, and strengthening environmental accountability.

The Expo

The Expo is expected to have the following impacts:

(i) Increased awareness within the Pacific public and private sector on global technology options for low-carbon/zero-emission transport, including public transit, non-motorized, and private vehicle modes;

(ii) University students gain exposure and experience showcasing creative work and technology projects with transport applications to an audience of policy makers and international industry representatives.

(iii)Networking with audience of policy makers and international industry representatives who may identify promising technologies and research, and facilitate industry dialogues to support future research and employment prospects; and

(iv) Trade relationships, both multilateral and bilateral between governments, and between Pacific businesses and global firms, is facilitated.

Transport at COP24

- Expect a greater emphasis on transport than previous COPs
- PIDF organising side-event with theme "Technological Transfer in Transport Sector for Pacific Clean Transport implementation."

THANKS

Questions?

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MARITIME TECHNOLOGY COOPERATION CENTRE – PACIFIC (MTCC-PACIFIC)

CAPACITY BUILDING FOR CLIMATE MITIGATION IN THE MARITIME SHIPPING INDUSTRY

THE GLOBAL MTCC NETWORK (GMN) PROJECT

MTCC-Pacific Perspectives

Presenter: Thierry Nervale
Head of MTCC-Pacific

EUROPEAN UNION

IMO INTERNATIONAL MARITIME ORGANIZATION

Pacific Community
Communauté du Pacifique

HOST INSTITUTIONS OF MTCC-PACIFIC

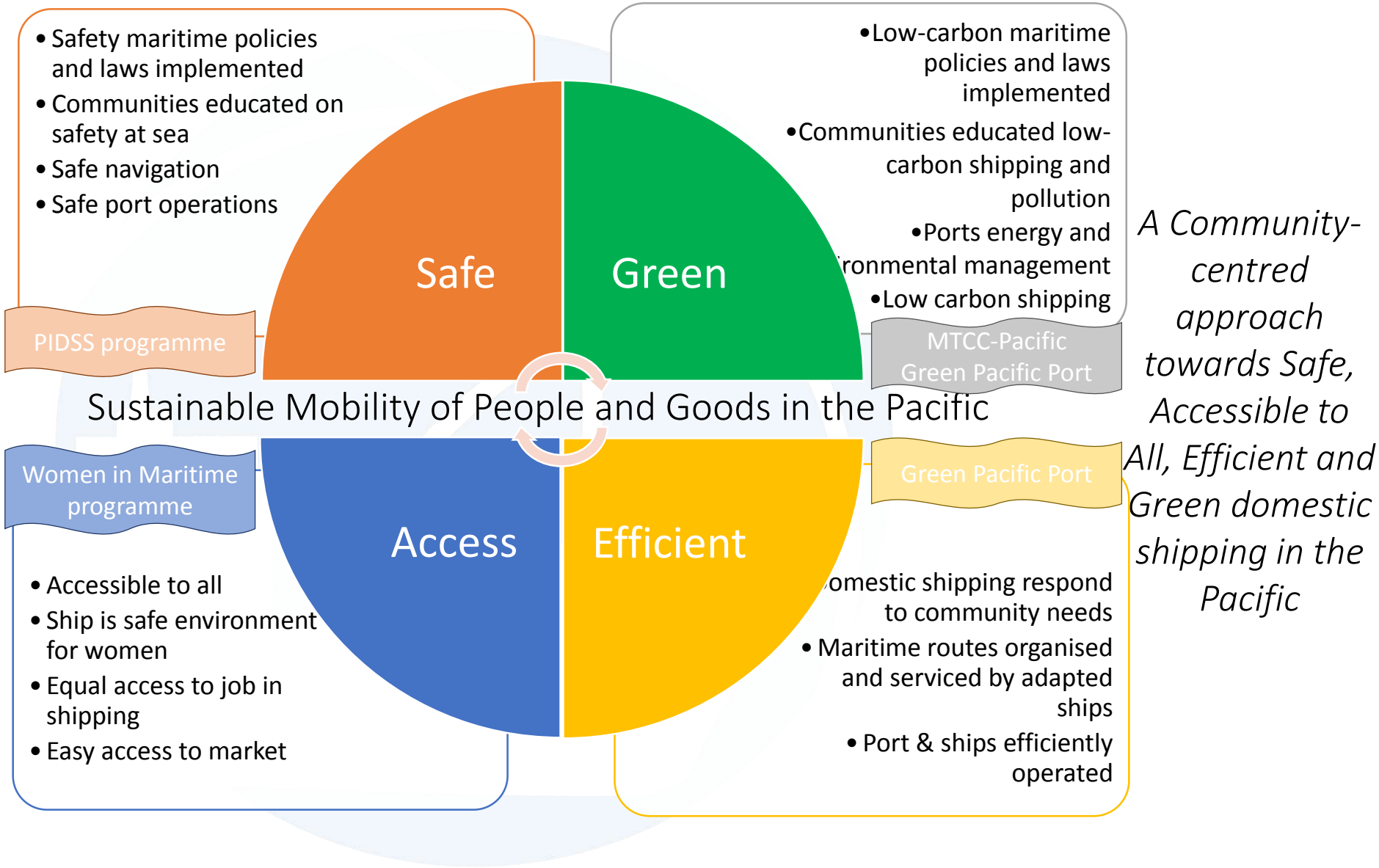
SPREP
Secretariat of the Pacific Regional Environment Programme

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

SPC approach to interisland shipping in the Pacific

- Issues affecting inter-island shipping in the Pacific:
  - Lack of safety management and safety awareness (ship operators and communities)
  - Inefficiency of domestic transportation systems in responding to communities needs
  - Lack of accessibility to shipping services by vulnerable groups
  - Lack of energy management (ship & shore)
- Need to rethink the approach to domestic shipping and commit as agreed in the December 2017 Regional Conference of MTCC-Pacific:
  - Infrastructure development and a combination of technical and operational measures, including options such as traditional navigation for inter-island mobility of people & goods
  - Need for collaboration, cooperation and partnerships from the international to regional, national and community levels

SPC approach to interisland shipping in the Pacific



A Community-centred approach towards Safe, Accessible to All, Efficient and Green domestic shipping in the Pacific

MTCC-Pacific Perspectives

- Appointment of one MTCC-Pacific Officer with SPREP:
  - Establishment of an office of MTCC-Pacific
  - MTCC-Pacific to benefit more from SPREP expertise (Env. Gov + CC)
- Regional framework
  - Regional Conference (outside of Fiji)
  - Collaboration in Marshall Islands:
    - with MCST for research
    - with GIZ to complement activities on board MISC vessels
- International framework
  - MTCC-Pacific own resource mobilisation strategy implementation
  - MTCC-Pacific is Chair of the MTCCs Coordinating Committee for RM
  - GMN and MTCCs identified as instruments to implement the IMO Strategy
  - Submission at MEPC 73 for further support post-2019 for GMN and MTCCs
  - Development of major project for GMN and MTCCs

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The Pacific Gender & Climate Change Tool Kit

Tools for Practitioners

28th August 2018

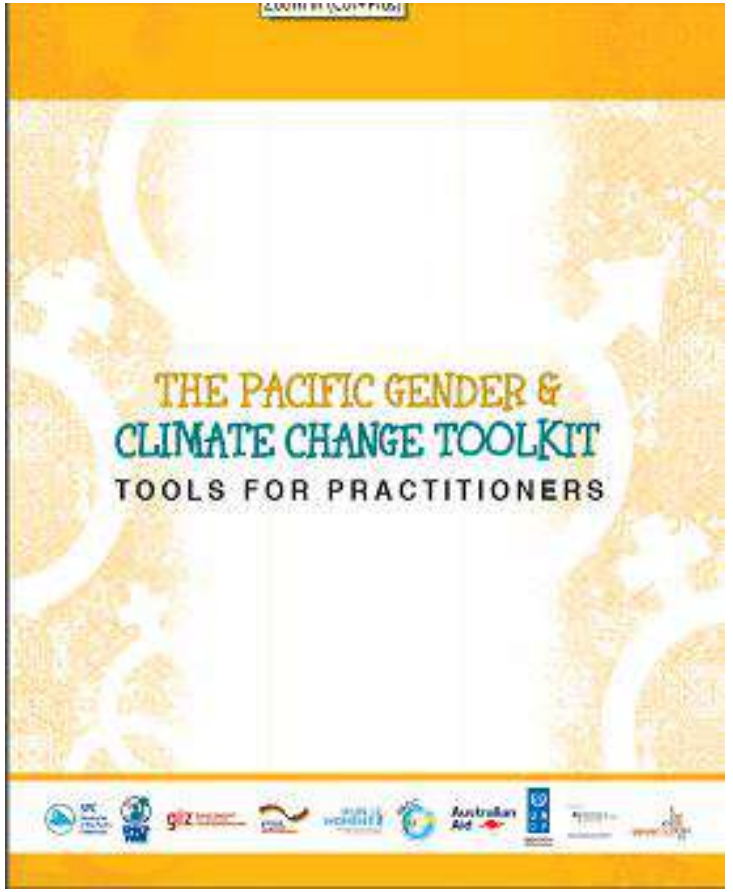
Ms. Ore Toua
Maritime Training Adviser
GEM, SPC

SNAP SHOT

1. What is this Tool Kit?
2. Applying a gender lens to key climate change and development priorities and sectors
3. Why include a maritime, gender and climate change module?
4. So what?
5. Wrap Up.

What is this Tool Kit?

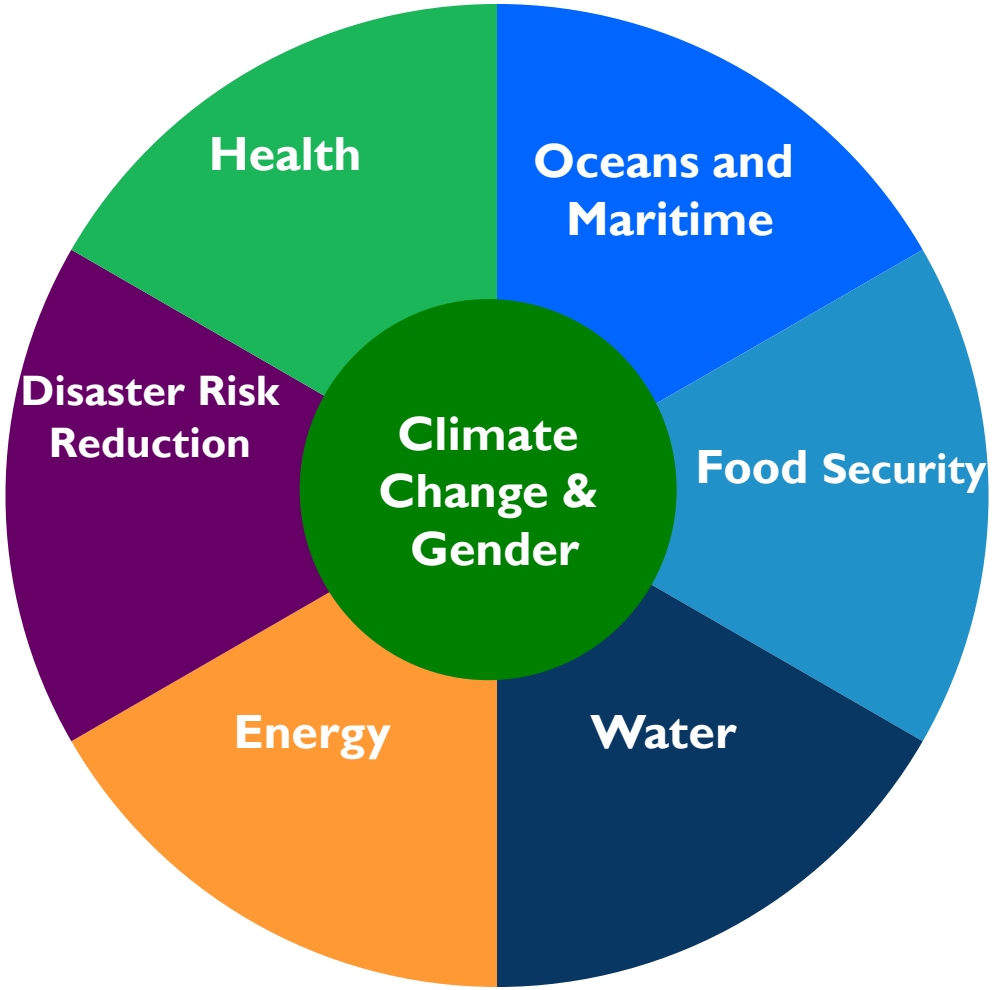
The toolkit is designed to support climate change practitioners in the national governments, non-governmental organizations, regional and international organizations, integrate gender into all aspects of policy, programming and project work



The toolkit is divided into three parts module:

- ✓ Module 1 is the introductory module explains why gender is a critical consideration in climate change programmes, projects and strategies, and clarifies some common misconceptions;
- ✓ Module 2 focuses on the links between gender and climate change in specific sectors (e.g. food security, water and energy); and uses sector relevant case studies to explain how to take gender into consideration; and,
- ✓ Module 3 is the ‘how-to’ section and will take you through the different phases of a typical climate change programme/project cycle, identifying potential entry-points for integrating gender in each phase and also includes a generic gender checklist that may be applied to programmes and projects.

Applying a gender lens to key climate change and development priorities/ sector



Why include a maritime, gender and climate change module?

- World seaborne trade amounts to 10.3 billion tons in 2016
- 90% of Pacific freight is transported by ship.
- Climate change is affecting the maritime transport in the Pacific, evidence of smaller island areas going under water. Which are potential port inter –island service areas and natural home communities.
- Increased intensity of storms and floods result in port closure and destruction of maritime infrastructure (like wharves, cargo and passenger terminals) and seriously affects safety of passengers and maritime crews; high-speed winds can result in delays in unloading/loading vessels.

Why include a maritime, gender and climate change module?

- No gender analysis had being done on consumption patterns and use of services of maritime transport.
- On the other hand, with limited job opportunities in the small islands states and higher level of education of women, maritime transport can offer interesting employment prospects that can support the economic empowerment of Pacific women, including in science and engineering, in order to address the challenges the maritime transport is facing because of the climate change impacts in the Pacific islands countries.

Why include a maritime, gender and climate change module?

- Climate change is growing threat to the people of the Pacific islands
- Climate change is likely to affect all people living in the Pacific Islands
- Men and women have different abilities, knowledge, skills and talents to contribute to adaption solution
- Mainstreaming gender by carrying out a gender analyses to inform critical stages in programming, projects and policy development will ensure that the needs of all group are considered, ultimately strengthening community resilience to climate change.

So What?

- **Social inclusion, especially for vulnerable groups is essential**
- **Climate Change is now development issue no longer stand alone environment issue**
- **Maritime sector is equally impacted/affected by climate change**

Wrap Up

Inclusion of this module will be now more useful (after approval by co-authors of the Tool kit) to inform Climate change practitioners to integrate gender dimension when developing policy, programmes and project work in the maritime sector.

Pacific Community
Communauté du Pacifique

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