



Virtual National Workshop for Domestic Ship Operators on MARPOL Annex VI

21-22 OCTOBER 2021



Purpose

The purpose of the workshop was to gather ship operators and maritime stakeholders in Solomon Islands to discuss the latest developments with regards to the reduction of GHG emissions from ships, short-, medium- and long-term perspectives for the country and know about projects Solomon Islands is partnering to in this area. The workshop was organised by the Solomon Islands Maritime Authority (SIMA) and the Maritime Technology Cooperation Centre in the Pacific (MTCC-Pacific) hosted by the Pacific Community (SPC).

Meeting Arrangements

Dates: 21-22 October 2021.

Location: Honiara, Heritage Park Hotel and remote participation from Papua New Guinea and Fiji.

Arrangements: face-to-face workshop and remote participation of facilitators and speakers from SPC.

Objective

The objective of the workshop was to provide participants with information related to ongoing projects at International Maritime Organization (IMO), SPC and the University of New South Wales (UNSW) and their successes, challenges and some of the perspectives to reduce GHG emissions from ships and ports in the Solomon Islands context. Solomon Islands is a partner country of the IMO-Norway GreenVoyage2050 project, the MTCC-Pacific project and the Multi-Country NDC project funded by the World Bank (WB) and implemented by UNSW under the Pacific Blue Shipping Partnership (PBSP).

Outcomes

During the meeting, all participants acknowledged the participation of Solomon Islands in projects relating to the reduction of GHG emissions from ships, Solomon Islands leadership at the international level and willingness to lead by example at the national level.

They recognised the need to move towards “Green Ships in Green Ports in Solomon Islands” but requested investment and capacity building support now to allow the uptake of new technologies and operations by the maritime industry.

They agreed to establish the National Task Force under the GreenVoyage2050 Project and nominated its members.



Photo 2 – Ms. Ore from SPC discussing with the NTF members.



Photo 3 - Members of the National Task Force



Photo 1- Director of SIMA, Mr. Thierry Nervale responding to questions to

Discussion

Agenda No.	Qtn No	Questions	Response from SPC & SIMA
Day 1			
1		Welcome Address – SIMA & SPC	
2		Opening Remarks	
3		Recap of Solomon Islands first National Workshop outcome	
4		MARPOL Annex VI	
	4.1	Why do we have to reduce GHG? Why start now? What are the benefits for Ship Owners/Operators?	<ul style="list-style-type: none"> Reducing GHG emissions is in the move all over the world and is providing huge opportunities in industries. There is no other future than phasing out fossil fuel and working towards carbon-free shipping in Solomon Islands as the country cannot stay behind and be the dumping station of all vessels not able to operate in other countries which have moved faster. GHG emissions are directly link to the fuel consumption of a vessel and transport conditions (cargo, passengers, etc) translating in energy efficient operations of a vessel. In other words, improving energy efficiency by some operational or technical measures will directly reduce the operational cost of the vessel offering better opportunities to invest in other operational areas.
	4.2	Do you have the scientific information to prove that reducing GHG emission increase the profitability of the ship owner? Do you have the statistics?	<ul style="list-style-type: none"> Yes, SPC has the statistics which will be presented in the next agenda and there are success story like in Vanuatu where a ship operator has been saving a lot of money from the system that has been installed on board the vessel and at the same time reinvested savings into other businesses and maintenance of the vessel.
5		Case studies and opportunities from ship energy efficient technologies	
	5.1	The MTCC project is all new and what's next from here? How can operators be part of this project and incentives that are introduced today?	<ul style="list-style-type: none"> The key outcomes from initial workshop in SI was to identify the participating domestic vessels that will be keen to implement some of the measures on board to promote the uptake of energy efficiency. Next is consistent data collection to move towards GHG emission reduction. Ship operators are encouraged to collect data into the templates that were produced and will basically lay the foundation pathway for projects such as MTCC and other development partners to consider green technology pilot project.

	5.2	<p>Is waste Management part of this project?</p> <p>Who is the service provider responsible for installations of the solar panels in the pilot project?</p> <p>If this project/ low energy technologies are rolled out in SI will we have the local capacity to support ship Owners/Operators?</p>	<ul style="list-style-type: none"> • Waste management is not an area under MTCC and GreenVoyage2050. • However, in SPC's Safe Operational Plans and Procedures templates, there is a form introduced that looks into the collection of garbage, oil spills disposal procedures at sea, etc.. • Also, SI is selected and is partnering with IMO and FAO on the GloLitter Project and the core of this project is management of waste on board vessels to prevent marine litter. The project is still in the design phase for the implementation of the MARPOL Annex V which is the convention that covers management of waste and garbage on board ships. • There will be some capacity building activities with ship operators but the project has a strong component on marine litter from fishing vessels specifically plastics. NFD is a partner to GloLitter project. • It is challenging to identify service and technology providers who have the capacity to design and install solar panel, but SPC worked with one firm in Fiji for the pilot project in Samoa. • In terms of capacity building under the project, SPC delivers national workshops for 3-5 days on the ground. One of the practical components is complementary wto the Pacific Islands Domestic Ship Safety (PIDSS) project where vessels are boarded to inspect and identify what energy efficient technologies may be considered. • The other is developing and reviewing documents as part of safety measures on board vessels-help operators look at guidelines and SPC provide on the ground support and capacity building opportunities. • Solomon Islands is one of the MTCC's targeted country.
	5.3	<p>If it is raining for 5 day and the panels are not charged, will it affect the power supply of the vessel?</p> <p>Is there any such experience on that?</p>	<ul style="list-style-type: none"> • The hybrid system that is installed is integrated with the vessels power generation system. There are two options one is the solar radiation and the other option is to charge using the generator. There is a changeover switch to generator once power supply is low. • Until now there is no situation with existing pilot vessels where they have to charge using the generator. There are also contingency plans in place for bad weather situations.
	5.4	<p>Most of the domestic vessels is SI are not designed to hold Solar Panels and this is one of the main challenges for ship Owners/Operators. Is there any alternative</p>	<ul style="list-style-type: none"> • Yes, there are other alternative fuels that operators can use to reduce GHG emissions. • Technical challenge is that not all technologies can be adapted. This is where data and blueprints of vessels are very important. The details can entail which renewable energy source is suitable for the vessel whether it be solar, propeller generated power.

		fuel to diesel that can be used to reduce GHG emissions?	<ul style="list-style-type: none"> Reviewing the vessel machinery system through the ships blueprint enables the reduction of GHG emission with other options to retrofit or improve the vessel to reduce fuel consumption. Reducing GHG emissions cannot be only one technology but a mix of operational and technologic measures.
	5.5	Is there any plan to reduce fuel oil consumption of main engine to reduce GHG emissions?	<ul style="list-style-type: none"> The focus basically is to reduce total fuel consumption so if you are looking at the main engine we can actually really look into the design and energy efficient fuel injection system. Others options include wind thrust/sails retrofitted onboard vessels and later alternative fuels. All technologies can be reviewed against the data from the vessel and the operational conditions for a life cycle analysis. For example, if a vessel is more than 30 years old and you are looking at improving your fuel efficiency at least by 30-40% the vessel owner need to decide to retrofit the vessel with energy efficient technologies to improve operational and technical aspects of the vessel. Looking at the vision of the sector for 2030 & 2050. For 2030 we need to look at the existing vessels and what we can do to improve or reduce GHG emission so probably retrofitting vessels with energy efficient technologies. 2050 is a long-term approach that is now decarbonising the maritime sector excluding fossil fuels from the picture. So the question is which vessels will be in operation in SI in 2050 and how we plan now to have a carbon-free domestic shipping? We lay the foundation now and until 2030 to make the transition to 2050 carbon-free domestic shipping a reality. There is no other pathway and this requires decisions and investment now.
	5.6	If GHG emission is reduced in SI, can it be considered as carbon trading?	<ul style="list-style-type: none"> IMO is still in negotiations stages for ship operators to implement market-based measures (carbon trading) for international shipping. Pacific Islands are leading in these negotiations to push for market-based measures with the intention of funds generated to assist developing countries and particularly SIDS and LDCs to decarbonise their shipping sector.
7	GreenVoyage 2050 Project introduction and MTCC-Pacific involvement		
8	Data collection and analysis		
	8.1	Specify what type of data you are collecting and what results you will achieve from this data?	<ul style="list-style-type: none"> The data required from operators include: <ul style="list-style-type: none"> I. Fuel consumption/trip II. Activities of the vessel -distance travelled, speed, departure & arrival time III. Capacity of cargo onboard IV. Vessel blueprint

			<ul style="list-style-type: none"> • This data will help SPC analyse/evaluate the energy efficiency of the vessel and identify the most suitable energy-efficient technical for that particular vessel. • The data provided will help SPC/MTCC to formulate technical advice to reduce operational cost for the ship operator and make informed decision to invest in new technologies or new vessels.
	8.2	Where does training come in all this?	<ul style="list-style-type: none"> • There is a central role for maritime training institutes to promote the uptake of energy-efficient and carbon-free technologies renewable energy. Some training materials (like IMO model courses) will have to be incorporated into the seafarer training courses syllabi. • We need to train our seafarers on the use and maintenance of new technologies for vessels.
	8.3	If an operator has provided all the required data who will assist to purchase new technologies? Any financial assistance for operators?	<ul style="list-style-type: none"> • MTCC and other organisations engaged in this area can assist to identify relevant technologies and advice ship operators in terms of investment and return on investment. • GreenVoyage2050 project main objective is to conduct a rapid assessment of GHG emissions and to develop a National Action Plan. Data and information will surely help development partners to assist in pilot-projects and possibly financing options.
	8.4	Is the hybrid Solar powered OBM going to be part of this project?	<ul style="list-style-type: none"> • MTCC and other organisations have identified options for small OBM boats knowing that there are 3000+ of these boats in the region. Options are to transition from 2/4 stroke to electric OBM or consider sailing canoe. • A good example is the solar OBM in Fiji made possible since the solar supplier and installer was based in Fiji. GIZ project in Marshall Islands is another good example of sailing canoes.
	8.5	Is it mandatory for all ship operators/owners to engage in this GHG emission project and when will it come into force for SI?	<ul style="list-style-type: none"> • No, it is not mandatory and there are no existing legislation or law that forces ship operators to go into GHG emission or use of energy efficient technologies. • However, ship operators must understand that it is the future for the maritime industry throughout the world so technology will become available and new type of vessels will come. • It is the intention of the Solomon Islands Government to create an enabling environment for that transition that will probably include some obligations in the future like data collection and increase energy efficiency or reduce GHG emissions. • For now any projects are on a voluntary basis for willing ship operators.
	8.6	Are there any difficulties faced by the 2 pilot projects that can relate to SI context?	<ul style="list-style-type: none"> • In Samoa there was no solar system provider, so the challenge was to get the technology provider from Fiji to do installation. Then came the COVID-19 which is posing bigger challenges of trying to complete this project remotely and unfortunately is still to be completed.

			<ul style="list-style-type: none">For Vanuatu the only challenge was with the ship operator and frequent staff turnover. Initially the staff that was in charge of the solar system ensuring the system is operating smoothly and collecting data/information left without passing the responsibility to the next staff so there are gaps in data collected.In terms of technical and maintenance aspects of the pilot project so far there has not been any issues and is operating very well since its installation.Ship operators have benefitted significantly especially in Vanuatu.Solar radiation is readily available in SI so solar system options should be considered as a first attempt to reduce GHG emissions.
Question for Ship Operators from SIMA Director		Which of the ship operators would be willing to work with SIMA & SPC-MTCC in the National Task Force to look at this project and be a champion to progress reduction of fuel consumption from their vessel?	
Comment from Stalin Daefa – SINU		This is a very important initiative even though SI is not a great contributor to GHG emissions in the world and urge all to ship operators to participate.	
Day 2			
10	GreenVoyage2050 National Task Force (NTF) first meeting <i>Development National Action Plan</i>		
	10.1	Participants were asked if they are happy with the proposed list of operators and if they are willing to be part of the Green Voyage 2050 Project NTF?	<ul style="list-style-type: none">Most of the participants are willing and have agreed to be part of the NTF as follows:<ul style="list-style-type: none">I. Tanny Saepio – NFDII. Selwyn Riumana – Uta ShippingIII. Stanley Daefa – SINUIV. David Tufi – MECDMV. Reginal Douglas – Douglas LogisticsVI. Ashley Vasula – SIPAVII. John Evio – SPOVIII. Ezekiel Tabolo – TNCIX. Shirleyter Abe – Solfish Co. LtdX. Charles Fox – Southern Seas LogisticsXI. Allen Ofea– SIMAXII. Thierry Nervale – SIMAXIII. Jimmy Nuake – MIDXIV. SIMA Board Rep.XV. Representative Langlanga shipbuilders
Update on GreenVoyage2050 project workplan			

	10.2.1	Does this GHG Emission reduction project involve garbage disposal and Oil Spill management plan and or if not do we have to develop a manual/environmental plan for this?	<ul style="list-style-type: none"> This project activities are focussing on GHG Emissions and MARPOL Annex VI and not activities related to oil spill or pollution prevention from ships.
	10.2.2	Is it proper to implement/advocate MARPOL Annex VI when the legitimate sovereign government of SI is yet to ratify this convention?	<ul style="list-style-type: none"> SI has not ratify MARPOL Annex VI. Government is currently looking at this matter because at IMO SI is leading in some of these questions for the reduction of GHG in International Shipping so of course when you want to have some weight and a strong voice at IMO in one of the topic it is in our best interest to ratify this convention. Director SIMA is of the opinion that this is the future and where we are moving to. In the Pacific Islands region, the need to reduce reliance on fossil fuels is paramount, so if we reduce reliance on fossil fuels, we will all benefit from it as the all world is moving in the same direction. We will send a strong signal if we acceded to Annex VI of MARPOL. However, it is clear that we do not need to wait for accession to the MARPOL Annex VI to reduce GHG emissions specifically when it comes to domestic shipping.. To strengthen our position, we need to have some policies and laws in place on GHG emissions reduction and to implement MARPOL ANNEX VI.
	10.2.3	Is there any reason as to why SIG fail/delay ratification of MARPOL Annex VI?	<ul style="list-style-type: none"> SI has not been so strong in keeping pace in ratifying/acceding conventions not only Annex VI MARPOL. SI implements amendments to Conventions we have ratified by tacit acceptance but Annex VI of MARPOL is a protocol that must be ratified or acceded which has not been in SI plans.
	10.2.4	Where do South Pacific Oil (SPO) stand in this seen that it is the sole supplier of fuel and may not be in SPO interest?	<ul style="list-style-type: none"> Oil companies are involved in discussions and negotiations relating to reducing GHG emissions. None are against and most are already working in designing the future pahsing out fossil fuels. For example, they will be the one providing alternative fuels, promoting energy mix and involving in alternative energy. SIMA has no doubt oil companies are ready and will assist industry in the transition. SPO confirmed that the fuel they are selling have reduced content of sulphur for example and follow new developments.

	10.2.5	SIG may not have the money to move the ratification which could be the cause of the delay. Now that we have SIMA, we can consider what the fees are and look at how we can address this issue and pay our own membership to this convention?	<ul style="list-style-type: none"> SIMA has a strong role to play to monitor and assist SIG in IMO negotiations, ratifying/acceding conventions and implementing conventions in country. SIMA has now responsibility of paying membership fees.
	Update on Green Port initiative at SIPA – Ashley Vasula (SIPA)		
	10.3.1	<p>SIPA is intending to develop a solar farm in Noro and in Honiara a domestic terminal. For the domestic terminal do you intend to have in the plan solar and what would be the design like?</p> <p>According to some experts solar runs north pole which means our panels should face north to get maximum solar radiation intensity solar panels must face northward. I see some solar panels in the presentation facing south. For this do you receive maximum intensity by facing the opposite direction?</p> <p>Is SIPA going to have solar in this domestic terminal?</p> <p>Is SIPA reducing some of its charges to Shipping Operators since it is saving money?</p>	<ul style="list-style-type: none"> Only CEO can respond to fees, charges etc. For the solar panels they are installed facing the movement of the sun and it mostly depend on the type of batteries used. The capacity of the battery and the inverter also contributes to the solar power supply. Panels are all procured from Speed Tech so they are responsibility for supplying the parts. There are initiatives that are in the plan for Ship Operators if certain percentage of the power supply is sourced from green energy. In this case then maybe incentives to reduce charges and fees. The domestic terminal is very big and may not be solar powered. Plan for Noro port to be 0% GHG Emission by 2030.
	10.3.3	Raise flag about consistency in lighting along the domestic wharf. Some operations run very late and the lightings at the back are powered by solar. At some instances Operators experience no lighting which reduces visibility and leads to theft. Can there be additional lights to support the existing ones?	<ul style="list-style-type: none"> The current system is not at the port so the lights are switched on and off manually. The duty officers will be advised to take note of the shipping operation schedule and ensure the lights are turn on to maximum for good visibility. Opt to install some more solar lights on both sides of the road and towards the jetties.

	10.3.4	Shipping Operators be entitled to receive any assistance from this green port project? Is there other alternatives in renewable energy?	<ul style="list-style-type: none"> • Only data collection will ensure we have a better understanding of other alternative renewable energy that SI can harness. In terms of wind energy, there are still no data collected to understand how it can be installed etc. • Green voyage will be able to assist all operators but otherwise this question can be forwarded to SIPA management to decide.
	10.3.5	SIPA has made a lot of improvement with lighting etc at night. Are there any big solar powered machines that can be used to fasten the operations of domestic ships along the jetty?	<ul style="list-style-type: none"> • SIPA is still heavily reliant on fuel power supplied from Solomon Power for electricity.
	10.3.6	What happens to Solar panels when it needs replacing and is there any disposal plans for solar panels?	<ul style="list-style-type: none"> • Currently the panels are maintained by SIPA however the panels are either sent to the supplier or are safely stored until the technology to service the panels are available here.
	10.3.7	Is it possible for SPC to run another workshop on solar systems in terms of design and installation to develop the knowledge and competency within the Maritime Sector?	<ul style="list-style-type: none"> • Demonstration of installations on the pilot projects at Vanuatu and Samoa can be used to showcase how solar panels were installed on board vessels. Support from SPC can be provided once data is provided relating to your vessel and its blueprint etc to conduct analysis and develop a plan on the type of system to install on board the vessel. • Not all vessels can have solar system installed to power all the utilities on board and so in some cases it can only be for lighting etc.

Annex I – Agenda

Time	Agenda item	Agenda issues	Presenters
Day 1 Sessions			
0930 – 1000	Morning Tea & Registration		
1000 – 1200		Welcome Address	SIMA
		Opening Remarks	MTCC-Pacific
	1	Recap of Solomon Islands first National Workshop Outcome	MTCC-Pacific
	2	MARPOL Annex VI – Chap 4 SEEMP & EEOI	MTCC-Pacific
	3	Case studies and opportunities from ship energy efficient technologies	MTCC-Pacific
		Discussion	All
1200 – 1300	Lunch		
1300 – 1500	4	GreenVoyage2050 Project introduction and MTCC-Pacific involvement	GreenVoyage 2050
	5	Data collection and analysis	SIMA
		Discussion	All
Day 2: Sessions			
0930 – 1000	Morning Tea & Registration		
1000 – 1200	6	GreenVoyage2050 National Task Force (NTF) first meeting <i>Update on GreenVoyage2050 project workplan</i> <i>Development National Action Plan</i> <i>Update on Green Port initiative at SIPA</i>	SIMA MTCC-Pacific SIPA
		Discussions	All
		Wrap Up and Closing Remarks	MTCC-Pacific SIMA
1200	Lunch		