

To All Shipowners and Ships Managers of Malaysian Vessels,

- 1. Resolution MEPC.278(70) has been adopted which require mandatory fuel oil consumption data collection and reporting through the new Regulation 22A of MARPOL Annex VI.
- 2. From calendar year 2019 (i.e. 01/01/2019 to 31/12/2019), each ship of 5,000 gross tonnage and above shall collect the data in a predefined form, for that and each subsequent calendar year or portion thereof, as appropriate, according to the methodology included in the Ship Energy Efficiency Management Plan (SEEMP).
- 3. At the end of each calendar year, ships shall aggregate the data collected in that calendar year or portion thereof, as appropriate.
- 4. In order to collect the required data, a new SEEMP Part II that followed IMO MEPC.282(70) has been developed which outline the methodology used to collect fuel oil consumption data, information of consumption by the main engines, auxiliary engines, gas turbines, boilers and inert gas generator, for each type of fuel oil consumed, regardless of whether a ship is underway or not as well as on the methods to measure distance travelled, hours underway and other information.
- 5. Sample of fuel oil consumption data collection process and its future utilization are summarize in **Figure 1**.
- 6. Sample forms for data collection system of the fuel oil consumption are attached as **APPENDIX 1, 2 and 3**.
- 7. Shipowners and operators are encourage to start utilize and kept these information as appropriate for future reference.



Figure 1: Sample of fuel oil consumption data collection process

Note: The calendar dates shall be determine by the Administration

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APPENDIX 1

SAMPLE FORM OF SHIP MANAGEMENT PLAN TO IMPROVE ENERGY EFFICIENCY (PART I OF THE SEEMP)

Name of ship:	Gross tonnage:	
Ship type:	Capacity:	

Date of development:		Developed by:	
Implementation period:	From: Until:	Implemented by:	
Planned date of next evaluation:			

1 MEASURES

Energy efficiency measures	Implementation (including the starting date)	Responsible personnel						
Weather routing	<example> Contracted with (Service providers) to use their weather routing system and start using on trial basis as of 1 July 2012.</example>	<example> The master is responsible for selecting the optimum route based on the information provided by (Service providers)</example>						
Speed optimization	While the design speed (85% MCR) is 19.0 kt, the maximum speed is set at 17.0 kt as of 1 July 2012.	The master is responsible for keeping the ship's speed. The log- book entry should be checked every day.						

2 MONITORING

Description of monitoring tools

3 GOAL

Measurable goals

4 EVALUATION

Procedures of evaluation

APPENDIX 2

SAMPLE FORM OF SHIP FUEL OIL CONSUMPTION DATA COLLECTION PLAN (PART II OF THE SEEMP)

1 Ship particulars

Name of ship	
IMO number	
Company	
Flag	
Ship type	
Gross tonnage	
NT	
DWT	
EEDI (if applicable)	
Ice class	

2 Record of revision of Fuel Oil Consumption Data Collection Plan

Date of revision	Revised provision

3 Ship engines and other fuel oil consumers and fuel oil types used

-	-		
	Engines or other fuel oil	Power	Fuel oil types
	consumers		
1	Type/model of main	(kW)	
	engine		
2	Type/model of auxiliary	(kW)	
	engine		
3	Boiler	()	
4	Inert gas generator	()	

4 Emission factor

 C_F is a non-dimensional conversion factor between fuel oil consumption and CO₂ emission in the 2014 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships (resolution MEPC.245(66)), as amended. The annual total amount of CO₂ is calculated by multiplying annual fuel oil consumption and C_F for the type of fuel.

Fuel oil Type	CF				
	(t-CO ₂ / t-Fuel)				
Diesel/Gas oil (e.g. ISO 8217 grades DMX through DMB)	3.206				
Light fuel oil (LFO) (e.g. ISO 8217 grades RMA through RMD)	3.151				
Heavy fuel oil (HFO) (e.g. ISO 8217 grades RME through RMK)	3.114				
Liquefied petroleum gas (LPG) (Propane)	3.000				
Liquefied petroleum gas (LPG) (Butane)	3.030				
Liquefied natural gas (LNG)	2.750				

RESOLUTION MEPC.282(70) (Adopted on 28 October 2016) 2016 GUIDELINES FOR THE DEVELOPMENT OF MEPC 70/18/Add.1 A SHIP ENERGY EFFICIENCY MANAGEMENT PLAN (SEEMP) Annex 10, page 18

Fuel oil Type	C _F
	(t-CO ₂ / t-Fuel)
Methanol	1.375
Ethanol	1.913
Other ()	

5 Method to measure fuel oil consumption

The applied method for measurement for this ship is given below. The description explains the procedure for measuring data and calculating annual values, measurement equipment involved, etc.

Method	Description

6 Method to measure distance travelled

Description	

7 Method to measure hours underway

Description

8 Processes that will be used to report the data to the Administration

Description

9 Data quality

Description

RESOLUTION MEPC.282(70) (Adopted on 28 October 2016) 2016 GUIDELINES FOR THE DEVELOPMENT OF A SHIP ENERGY EFFICIENCY MANAGEMENT PLAN (SEEMP)

MEPC 70/18/Add.1 Annex 10, page 19

APPENDIX 3

STANDARDIZED DATA REPORTING FORMAT FOR THE DATA COLLECTION SYSTEM

measure fuel oil mption ^g	Other()	(Cf ;)	Ethanol (C _f : 1.913)	Methanol (C _f : 1.375)	LNG (C _f : 2.750)	LPG (Butane) (C _f : 3.030)	LPG (Propane)	HFO (C _f : 3.114)	LFO (Cf: 3.151)	Diesel/Gas Oil (C _f : 3.206)	derway (h)	avelled (nm)	Auxiliary Engine(s)	Main Propulsion Power	f applicable)	pplicable) ⁶ 2/t.nm)	VT ⁵	Τ ⁴	onnage ³	type ²	umber ¹	ld/mm/yyyy)	dd/mm/yyyy)
Method used to consul						Fuel oil consumption	E)				Hours un	Distance Tr	Power output (rated power)	(kW) ⁸	lce class ⁷ (i	EEDI (if a (gCO		Z	Gross t	Ship	u OMI	End date (c	Start date (

1 In accordance with the IMO Ship Identification Number Scheme, adopted by the Organization by resolution A.1078(28).

- 2 As defined in regulation 2 of MARPOL Annex VI or other (to be stated).
- 3 Gross tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969.
- 4 NT should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969. If not applicable, note "N/A".
- 5 DWT means the difference in tonnes between the displacement of a ship in water of relative density of 1025 kg/m³ at the summer load draught and the lightweight of the ship. The summer load draught should be taken as the maximum summer draught as certified in the stability booklet approved by the Administration or an organization recognized by it.
- 6 EEDI should be calculated in accordance with the 2014 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships, as amended, adopted by resolution MEPC 245(66). If not applicable, note "N/A".
- 7 Ice class should be consistent with the definition set out in the International Code for ships operating in polar waters (Polar Code), adopted by resolutions MEPC.264(68) and MSC.385(94)). If not applicable, note "N/A".
- 8 Power output (rated power) of main and auxiliary reciprocating internal combustion engines over 130 kW (to be stated in kW). Rated power means the maximum continuous rated power as specified on the nameplate of the engine.
- 9 Method used to measure fuel oil consumption: 1: method using BDNs, 2: method using flow meters, 3: method using bunker fuel oil tank monitoring