



# SEEMP ?

# EEOI ?





# SEEMP

S : SHIP

E : ENERGY

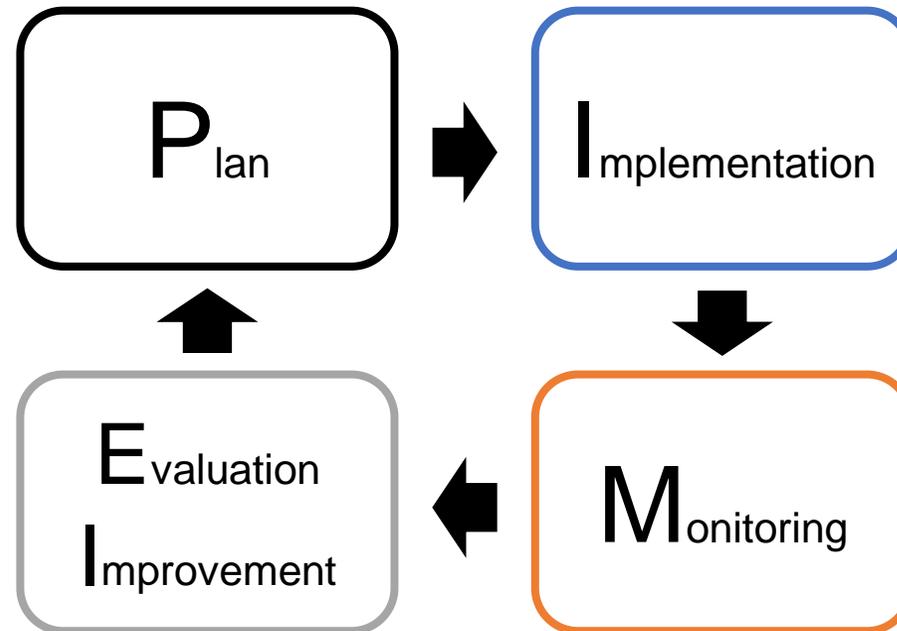
E : EFFICIENCY

M : MANAGEMENT

P : PLAN

## Key Points of the SEEMP

1. Improve of Energy Efficiency
2. Establish a mechanism of continuous improvement
3. Four Step Cycle ;





## Monitoring Period (Current Period)

From : Commenced time of voyage in September 20XY



To : Completed time of voyage in September 20XZ

## Key Points of the Monitoring

1. Quantitatively
2. Continuous
3. Consistent Data



# EEOI





# SEEMP / EEOI

Monitoring

## EEOI

Units : tonnes CO<sub>2</sub> / (ton \* nm)

Energy

Efficiency

Operational

Index

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

### FUEL Consumption X Conversion Factors

Fuel oil Type	C <sub>F</sub> (t-CO <sub>2</sub> / t- Fuel)
Diesel/Gas Oil (ISO 8217 DMX through DMB)	3.206
Light Fuel Oil (ISO 8217 RMA through RMD)	3.151
Heavy Fuel Oil (ISO 8217 RME through RMK)	3.114
Liquefied Petroleum Gas (Propane)	3.000
Liquefied Petroleum Gas (Butane)	3.030
Liquefied Natural Gas	2.750
Methanol	1.375
Ethanol	1.913

Cargo Weight X Distance



# SEEMP / EEOI

Monitoring

## EEOI

Units : tonnes CO<sub>2</sub> / (ton \* nm)

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

$$\sum_j FC_j \times C_{Fj}$$

FUEL Consumption X Conversion Factors

Fuel Consumption = M/E + D/G + etc...

Example :

Daily Consumption (VLSFO CF : 3.114)

M/E 20.0 MT/day

D/G 1.5 MT/day

M/E : 20.0MT X 3.114 = 62.28

D/G : 1.5MT X 3.114 = 4.67

**M/E : 93%**

D/G : 7%

Emission from Main Engine occupies most of EEOI!!





EEOI

END



By the wind? EEOI ?