財團法人驗船中心
CR CLASSIFICATION SOCIETY

MEPC.328(76)

防止船舶污染國際公約附錄 VI(MARPOL Annex VI)修正案

– 內容摘要

◆ 目的

為因應氣候變遷，IMO 於 2018 年通過關於船舶溫室氣體減排初步策略的決議案 MEPC.304(72)，當中提到，國際航運碳排放強度相比於 2008 年應在 2030 年降低 40%、2050 年降低 70%。為了達到減碳目標，MEPC76 採納了 MARPOL Annex VI 的修正案，並於 2022 年 11 月 1 日生效。修正案主要新增了現成船能源效率指數(Energy Efficiency Existing Ship Index, EEXI)及碳強度指標(Carbon Intensity Indicator, CII)，前者屬技術層面要求，後者則為操作層面要求。

◆ 內容摘要

一、 新增現成船能源效率指數(Energy Efficiency Existing Ship Index, EEXI)規定：

1、 根據第 23 條規定，EEXI 達成值(attained EEXI)計算應根據 MEPC.333(76)「2021 年現成船能源效率指數(EEXI)達成值之計算方法準則」進行計算。

2、 若經認可之 EEDI 達成值(attained EEDI)小於等於 EEXI 要求值(required EEXI)，則 EEDI 計算值可當作其 EEXI 達成值(attained EEXI)，並依據 EEDI 技術文件進行驗證。

3、 EEXI 要求值(required EEXI)計算公式如下：

$$\text{Attained EEXI} \leq \text{Required EEXI} = \left(1 - \frac{y}{100}\right) \cdot \text{EEDI 參考基值}$$

其中 y 值之折減因子如表 1 規定，EEDI 參考基值參閱 MARPOL Annex VI 24.3 及 24.4 段計算。

(註:駛上駛下貨船及駛上駛下客船之參考基值則為 24.3 之第 2 階段)

4、 為因應 EEXI 的實踐，IMO 另外制定 3 個準則，供各方參採使用：

- RESOLUTION MEPC.333(76) 2021 GUIDELINES ON THE METHOD OF CALCULATION OF THE ATTAINED ENERGY EFFICIENCY EXISTING SHIP INDEX (EEXI)
2021 年現成船能源效率指數(EEXI)達成值之計算方法準則

- RESOLUTION MEPC.334(76) 2021 GUIDELINES ON SURVEY AND CERTIFICATION OF THE ENERGY EFFICIENCY EXISTING SHIP INDEX (EEXI)

2021 年現成船能源效率指數(EEXI)檢驗與發證準則

- RESOLUTION MEPC.335(76) 2021 GUIDELINES ON THE SHAFT/ENGINE POWER LIMITATION SYSTEM TO COMPLY WITH THE EEXI REQUIREMENTS AND USE OF A POWER RESERVE

2021 年為符合現成船能源效率指數(EEXI)而採用的軸/主機功率限制系統和儲備功率使用準則

表 1、y 值折減因子

Ship type	Size	Reduction factor
Bulk carrier	200,000 DWT and above	15
	20,000 and above but less than 200,000 DWT	20
	10,000 and above but less than 20,000 DWT	0-20*
Gas carrier	15,000 DWT and above	30
	10,000 and above but less than 15,000 DWT	20
	2,000 and above but less than 10,000 DWT	0-20*
Tanker	200,000 DWT and above	15
	20,000 and above but less than 200,000 DWT	20
	4,000 and above but less than 20,000 DWT	0-20*
Containership	200,000 DWT and above	50

Ship type	Size	Reduction factor
	120,000 and above but less than 200,000 DWT	45
	80,000 and above but less than 120,000 DWT	35
	40,000 and above but less than 80,000 DWT	30
	15,000 and above but less than 40,000 DWT	20
	10,000 and above but less than 15,000 DWT	0-20*
General cargo ship	15,000 DWT and above	30
	3,000 and above but less than 15,000 DWT	0-30*
Refrigerated cargo carrier	5,000 DWT and above	15
	3,000 and above but less than 5,000 DWT	0-15*
Combination carrier	20,000 DWT and above	20
	4,000 and above but less than 20,000 DWT	0-20*
LNG carrier	10,000 DWT and above	30
Ro-ro cargo ship (vehicle carrier)	10,000 DWT and above	15
Ro-ro cargo ship	2,000 DWT and above	5
	1,000 and above but less than 2,000 DWT	0-5*
Ro-ro passenger ship	1,000 DWT and above	5
	250 and above but less than 1,000 DWT	0-5*
Cruise passenger ship having non-conventional propulsion	85,000 GT and above	30
	25,000 and above but less than 85,000 GT	0-30*

二、 新增碳強度指標(Carbon Intensity Indicator, CII)規定：

1、 CII 將要求「總噸位 5,000 以上且適用 EEDI 船型」之船舶，於 2023 年 1 月 1 日前須於其船舶能效管理計畫(SEEMP)制定其 CII 達成計畫並經認可組織(RO)認可簽發符合確認書(CoC)。

2、 自 2023 年 1 月 1 日起，每年需計算並回報其年度 CII 值，並每年進行評等，等級按優劣分為 A 級到 E 級，如圖 1。 此外，隨後每一年該等級閾值將越來越嚴格，若船舶連續三年落入 D 級或有一年落入 E 級，則須制訂矯正計畫並取得認可組織(RO)之認可。

3、 計算 CII 達成值(attained CII)請參考 MEPC.336(76)決議案、CII 要求值(required CII)參考 MEPC.338(76)決議案，CII 等級分配方法則可參考 MEPC.339(76)決議案。為因應 CII 的實踐，IMO 制定 4 個準則，供各方參採使用：

- RESOLUTION MEPC.336(76) 2021 GUIDELINES ON OPERATIONAL CARBON INTENSITY INDICATORS AND THE CALCULATION METHODS (CII GUIDELINES, G1)
2021 年營運之碳強度指標及計算方法準則

- RESOLUTION MEPC.337(76) 2021 GUIDELINES ON THE REFERENCE LINES FOR USE WITH OPERATIONAL CARBON INTENSITY INDICATORS (CII REFERENCE LINES GUIDELINES, G2)
2021 年營運之碳強度指標之基線準則

- RESOLUTION MEPC.338(76) 2021 GUIDELINES ON THE OPERATIONAL CARBON INTENSITY REDUCTION FACTORS RELATIVE TO REFERENCE LINES (CII REDUCTION FACTOR GUIDELINES, G3)
2021 年營運之碳強度對於基線之折減因子準則

- RESOLUTION MEPC.339(76) 2021 GUIDELINES ON THE OPERATIONAL CARBON INTENSITY RATING OF SHIPS (CII RATING GUIDELINES, G4)
2021 年船舶營運之碳強度評分準則

4、 每年回報 CII 達成值(attained CII)為前一年 1 月 1 日起至 12 月 31 日之計算總值，並於該年度結算日三個月內向主管機關或其認可組織(RO)回報，最晚不遲於下一年度的 3 月 31 日前回報。

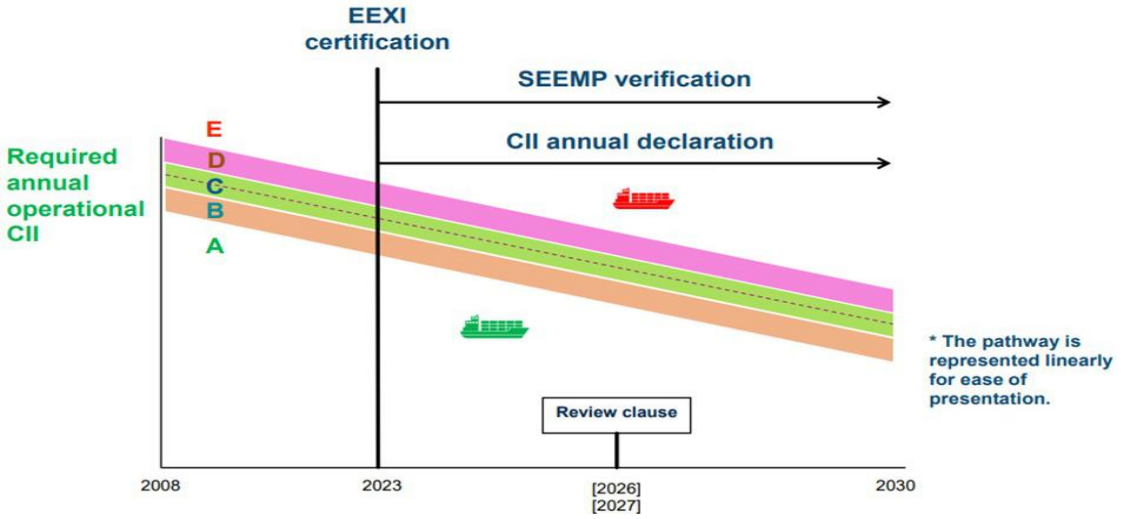

圖 1、CII 逐年等級分配示意圖

三、 無論船舶建造年份，在 2023 年 1 月 1 日以後的第一次國際防止船舶空氣污染(IAPP)定期檢驗、中期檢驗或是換證檢驗(以較早遇到者為準)前，須對其 EEXI 進行驗證，並換發國際能源效率證書(IEEC)，證書如圖 2。

Form of International Energy Efficiency (IEE) Certificate

INTERNATIONAL ENERGY EFFICIENCY CERTIFICATE

Issued under the provisions of the Protocol of 1997, as amended, to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 related thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

.....

(full designation of the country)

by .....

(full designation of the competent person or organization authorized under the provisions of the Convention)

Particulars of ship[70]

Name of ship .....

Distinctive number or letters .....

Port of registry .....

Gross tonnage .....

IMO Number[71] .....

THIS IS TO CERTIFY:

圖 2、國際能源效率證書(IEEC)