İSTANBUL VE MARMARA, EGE, AKDENİZ, KARADENİZ BÖLGELERİ DENİZ TİCARET ODASI
ISTANBUL & MARMARA, AEGEAN, MEDITERRANEAN, BLACKSEA REGIONS CHAMBER OF SHIPPING

Sayı : 38591462-010.07.03-2025-1644 24.07.2025
Konu : MARPOL Ek IV'da Yapılması Planlanan Değişikler Öncesi Ülke Görüşünün Oluşturulması Hk.

Sirküler No: 566

Sayın Üyemiz,

Ulaştırma ve Altyapı Bakanlığı Denizcilik Genel Müdürlüğü tarafından Odamıza gönderilen 22.07.2025 tarihli Ek'te sunulan yazıda;

Uluslararası Denizcilik Örgütü'nün (International Maritime Organization–IMO) Deniz Çevresini Koruma Komitesi 83'üncü Dönem Toplantısı'nda (Marine Environment Protection Committee-MEPC 83) MARPOL Ek-VI'ya IMO Net Sıfır Çerçevesi adında yeni bir bölüm olarak eklenmesine ilişkin çalışmaların yapıldığı, ancak söz konusu planlanan değişikliklere birçok IMO üyesi devlet tarafından itiraz edildiği bildirilmekte,

Yazıda devamla, planlanan değişikliklerin kabul edilmediğine ilişkin kararların IMO üyesi devletler tarafından IMO Sekretaryası'na bildirildiği, Sekreterya tarafından alınan kararla değişikliklerin Üye Devletlerin oylamasına sunulduğu ve %79 oranında bir çoğunluk sağlandığı, ancak bahse konu değişikliklerin yürürlüğe girmesi için 14-17 Ekim 2025 tarihleri arasında gerçekleştirilecek olağanüstü MEPC oturumunda MARPOL Sözleşmesi'nin 16(2)(b), (c) ve (d) maddeleri uyarınca kabul edilmek üzere tekrar oylamaya sunulmasının planlandığı belirtilmekte,

Bu kapsamda, ülkemizin taraf devlet olarak oy kullanacağı oylama öncesinde, ilgili sektör paydaşlarının da görüşlerinin alınarak kapsayıcı bir ülke görüşü oluşturulmasının hedeflendiği ifade edilmektedir.

Bu itibarla, Ek'te yer alan dokümanlara ilişkin görüşlerinizin Denizcilik Genel Müdürlüğü'ne iletilmek üzere **29.07.2025 tarihi mesai bitimine kadar** Odamıza (cevre@denizticaretodasi.org.tr) gönderilmesi hususunu bilgilerinize arz ve rica ederim.

Saygılarımla,

e-imza
İsmet SALİHOĞLU
Genel Sekreter

Ek:
1- Denizcilik Genel Müdürlüğü'nün 22.07.2025 Tarihli Yazısı (2 Sayfa)

Bilgi için: Buse ÖZTÜRK ÇAKIR **Telefon:** 0212 252 01 30/249
E-Posta: buse.cakir@denizticaretodasi.org.tr
Meclis-i Mebusan Caddesi No:22 34427 Fındıklı-Beyoğlu-İSTANBUL/TÜRKİYE
Tel : +90 (212) 252 01 30 (Pbx) **Faks:** +90 (212) 293 79 35 **KEP:** imeakdto@hs01.kep.tr
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2- MEPC.ES 2 Öncesi Türk Bayraklı Filo Analizi (14 Sayfa)
3- MEPC.ES 2 Gündemi (2 Sayfa)
4- MARPOL Ek VI 2025 Taslağı (125 Sayfa)
5- IMO Net Sıfır Çerçevesi Uygulama Planı (17 Sayfa)

Dağıtım:

Gereği:
- Tüm Üyeler (Odamız web sitesi ve e-posta ile)
- İMEAK DTO Şube ve Temsilcilikleri
- Türk Armatörler Birliği
- S.S. Armatörler Taşıma ve İşletme Kooperatifi
- GİSBİR (Türkiye Gemi İnşa Sanayicileri Birliği Derneği)
- Gemi, Yat ve Hizmetleri İhracatçıları Birliği
- VDAD (Vapur Donatanları ve Acenteleri Derneği)
-TÜRKLİM (Türkiye Liman İşletmecileri Derneği)
- KOSDER (Koster Armatörleri ve İşletmecileri Derneği)
- GBD (Gemi Brokerleri Derneği)
- TURSSA (Gemi Tedarikçileri Derneği)
- Gemi Geri Dönüşüm Sanayicileri Derneği
- S.S. Anadolu Yakası Kumcular Üretim ve Pazarlama Kooperatifi
- ROFED (Kabotaj Hattı Ro-Ro ve Feribot İşletmecileri Derneği)
- Yalova Altınova Tersane Girişimcileri San.ve Tic.A.Ş.
- UTİKAD (Uluslararası Taşımacılık ve Lojistik Hizmet Üretenleri Derneği)

Bilgi:
- Yönetim Kurulu Başkan ve Üyeleri
- İMEAK DTO Şube YK Başkanları
-İMEAK DTO Sürdürülebilirlik Komisyonu
- İMEAK DTO Meslek Komite Başkanları

Bilgi için: Buse ÖZTÜRK ÇAKIR **Telefon:** 0212 252 01 30/249
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Meclis-i Mebusan Caddesi No:22 34427 Fındıklı-Beyoğlu-İSTANBUL/TÜRKİYE
Tel : +90 (212) 252 01 30 (Pbx) **Faks:** +90 (212) 293 79 35 **KEP:** imeakdto@hs01.kep.tr
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T.C.
ULAŞTIRMA VE ALTYAPI BAKANLIĞI
Denizcilik Genel Müdürlüğü

2025 AİLE YILI

Ek-1

Sayı : E-36712415-160.02-2887861
Konu : MARPOL Ek IV'da Yapılması Planlanan Değişikler Öncesi Ülke Görüşünün Oluşturulması

DAĞITIM YERLERİNE

Bilindiği üzere, 2018 yılında MEPC 72. Dönem toplantısında kabul edilen 2018 IMO Sera Gazı Strateji (MEPC.304(72)) ile IMO, deniz taşımacılığı kaynaklı sera gazı emisyonlarının azaltımı yol haritasını belirlerken teknik ve ekonomik tedbirleri içinde barından bir orta-vadeli önlem paketi uygulamayı taahhüt etmiştir. MEPC 80. Dönem toplantısında kabul edilen 2023 IMO Sera Gazı Stratejisi (MEPC.377(80)) ile birlikte IMO'nun küresel deniz taşımacılığı kaynaklı sera gazı emisyonlarının azaltılması için orta vadeli ekonomik ve teknik tedbirler sepetinin uygulama takvimi netleştirilmiş ve MEPC 83. Dönem toplantısında bahsi geçen tedbirlerin belirlenmesi hedefi konulmuştur.

7-11 Nisan 2025 tarihleri arasında geçekleştirilen MEPC 83. Dönem toplantısında ise MARPOL Ek VI'ya IMO Net-Zero Çerçevesi adında yeni bir bölüm (Chatpter V) getirilmesi üzerinde çalışmalar yapılmış ancak planlanan değişiklikler bir çok üye devletin yoğun itirazına maruz kalmıştır. Suudi Arabistan öncülüğünde bir çok üye devlet IMO Sekreteryasına bahsi geçen değişiklikleri kabul etmediğini bildirmiş ve Sekreterya tarafından alınan kararla değişiklikler Üye Devletlerin oylamasına sunulmuştur. Yapılan oylama sonucunda 63 Üye Devlet lehte, 16'sı aleyhte oy kullanmış, 24 Üye Devlet ise çekimser kalmıştır. Böylelikle %79 oranında bir çoğunluk sağlanmıştır. Ancak düzenlemelerin yürürlüğe girmesi için 14-17 Ekim 2025 tarihinde gerçekleştirilecek olağanüstü oturumda, MARPOL Sözleşmesinin 16(2)(b), (c) ve (d) maddeleri uyarınca kabul edilmek üzere, değişiklikler tekrar oylamaya sunulması planlanmaktadır. Bu kapsamda yapılacak oylamada, anılan değişikliğin onaylanabilmesi için MARPOL Ek VI'ya taraf olan üye devletlerin üçte iki çoğunlukla düzenlemelerin lehine oy kullanması gerekmektedir.

Ülkemizin taraf devlet olarak oy kullanacağı bu oylama öncesinde, ilgili sektör paydaşlarının görüşleri de alınarak kapsayıcı bir ülke görüşü oluşturulması hedeflenmektedir. Bu itibarla, Ek'te yer alan dökümanlara ilişkin görüşlerinizin **07 Ağustos 2025 tarihine kadar** Genel Müdürlüğümüze iletilmesi hususunda bilgilerinizi ve gereğini rica ederim.

Ünal BAYLAN
Bakan a.
Denizcilik Genel Müdürü

Ek:
1 - MEPC.ES 2 Öncesi Türk Bayraklı Filo Analizi (14 Sayfa)
2 - MEPC.ES 2 Gündem (2 Sayfa)

Hakkı Turayliç Caddesi No:5 06338 Emek / Çankaya / ANKARA
KEP Adresi : uab@hs01.kep.tr
Bilgi için:Murat POLAT
Mühendis

3 - MARPOL Ek VI 2025 Taslağı (125 Sayfa)
4 - IMO Net-Sıfır Çerçevesi Uygulama Planı (17 Sayfa)

Dağıtım:

IMEAK DENİZ TİCARET ODASINA
Mersin Deniz Ticaret Odasına
Gisbir - Türkiye Gemi İnşa Sanayicileri Birliğine
Türk Armatörler Birliğine
Türkiye Liman İşletmecileri Derneğine

Hakkı Turayliç Caddesi No:5 06338 Emek / Çankaya / ANKARA
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Mühendis

T.C.
ULAŞTIRMA VE ALTYAPI BAKANLIĞI
Denizcilik Genel Müdürlüğü

IMO DENİZ ÇEVRESİNİ KORUMA KOMİTESİ (MEPC) 2. OLAĞANÜSTÜ TOPLANTISI (14-17 EKİM 2025) ÖNCESİNDE TÜRK BAYRAKLI FİLONUN MEVCUT DURUM ANALİZİ

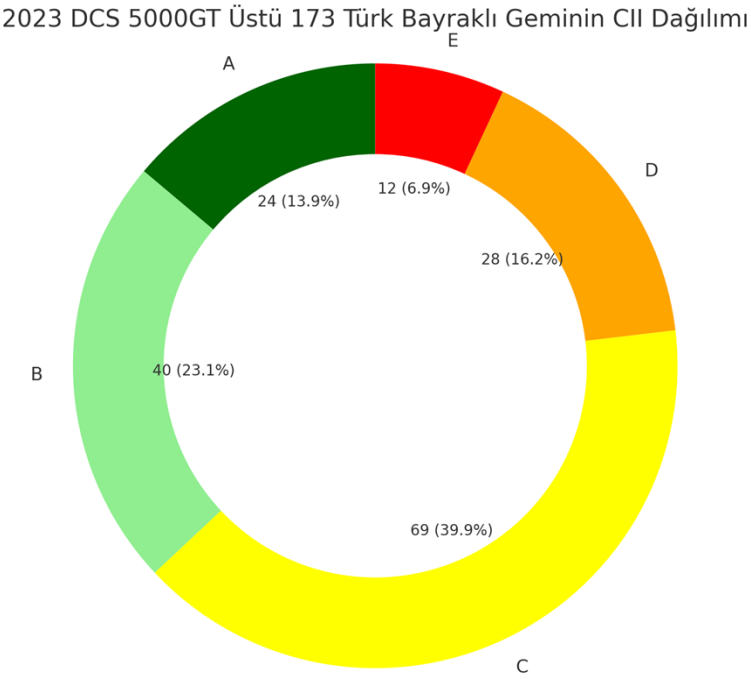
Türk Bayraklı Filonun Karbon Yoğunluğu Göstergesi (CII) Performansı

Küresel ticaretin %80'inden fazlası deniz yoluyla gerçekleşmesine rağmen, uluslararası deniz taşımacılığı, küresel sera gazı emisyonlarının %3'ünden daha az bir kısmından sorumludur. Bu yönüyle deniz taşımacılığı kara ve hava ulaşımına kıyasla, en iklim dostu ulaştırma yöntemi olma özelliğini korumaktadır. Gemilerin mobil sera gazı kaynakları olması ve hem sera gazlarının hem de deniz taşımacılığı operasyonlarının ülkelerin sınırları ile kısıtlanamayan doğası sebebiyle, kara kaynaklı emisyonlara kıyasla, gemi kaynaklı sera gazı emisyonlarının düzenlenmesi daha karmaşık ve kapsamlı tedbirler gerektirmektedir. Bu durum, uluslararası sularda faaliyet gösteren gemilerden kaynaklanan sera gazı emisyonlarının azaltımına yönelik düzenlemelerin, denizcilik sektörünün küresel düzeydeki çatı kuruluşu olan Uluslararası Denizcilik Örgütü (IMO) bünyesinde üye devletlerin katılımıyla geliştirilmesi ve hayata geçirilmesi gerekliliğini ortaya koymaktadır.

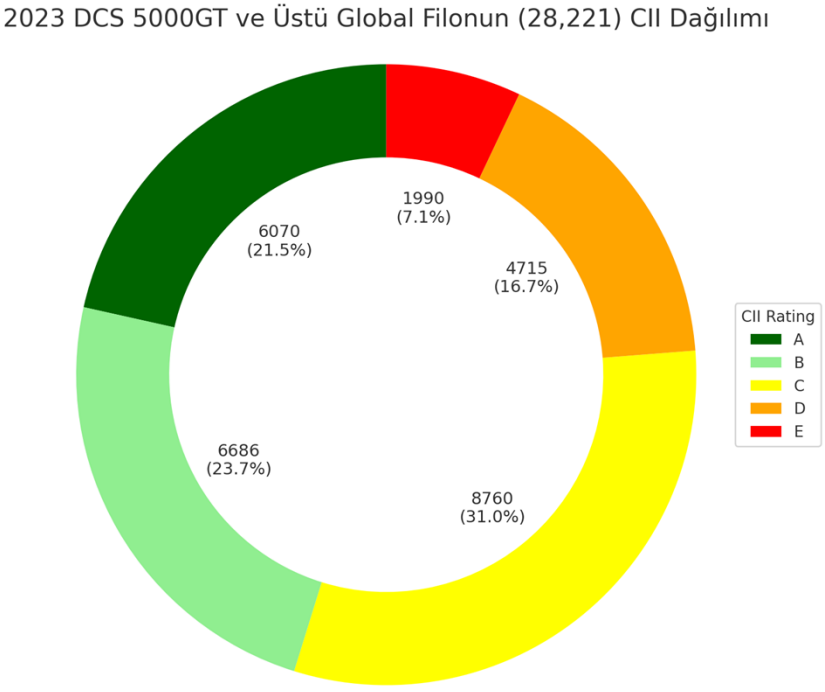
IMO, 2013 yılından itibaren gemilerde enerji verimliliğini arttırarak gemi kaynaklı sera gazı emisyonlarının azaltılmasını hedefleyen dizayn ve operasyonel tabanlı bir dizi düzenlemeyi hayata geçirmiştir. Bunlar gemilerde dizayn temelli iyileştirmeleri zorunlu kılan Yeni Gemilerde Enerji Verimliliği Dizayn Göstergesi (EEDI- 2013), Mevcut Gemilerde Enerji Verimliği Dizayn Göstergesi (EEXI- 2023) ve operasyon temelli iyileştirmeleri zorunlu kılan Gemilerde Enerji Verimliliği Yönetim Planı (SEEMP- 2013), IMO Yakıt Tüketimi Veri Toplama Sistemi (IMO DCS- 2018), Gemilerde Karbon Yoğunluğu Göstergesi (CII- 2023)'dir.

Türk bayraklı filonun performansı CII düzenlemesinin yürürlüğe girdiği 1 Ocak 2023 tarihinden itibaren incelendiğinde, her iki yılda da uluslararası filoyla benzer bir performans sergilediği görülmektedir (Bknz. Figür 1-4). Türk bayraklı filonun ortalama olarak 4,6 yıl daha yaşlı olduğu (Baknz. Figür 5) dikkate alındığında, bu filonun küresel filoya kıyasla daha enerji etkin uygulamalarla operasyonlarını gerçekleştirdiği çıkarımı yapılabilmektedir. Bu durum, raporun ilerleyen bölümlerinde ele alınacak olan ve MARPOL Ek 6'ya yeni bir bölüm (Chapter V) olarak eklenmesi planlanan IMO Net-Sıfır Çerçevesi (IMO Net-Zero Framework) kapsamında geliştirilen Deniz Yakıtları Sera Gazı Karbon Yoğunluğu göstergesi (Greenhouse Gas Fuel

Intensity-GFI) için Türk bayraklı filo ile küresel filonun mevcut kondisyonu hakkında önemli bir fikir vermektedir.



Figür 1: 2023 DCS Verilerine göre 173 adet 5000GT ve üstü Türk bayraklı filonun CII performansı.



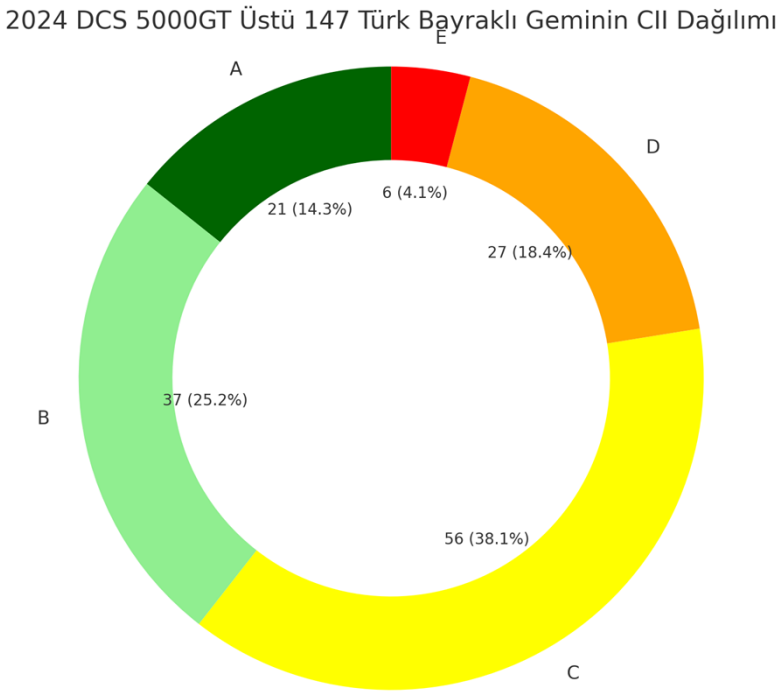
Figür 2: 2023 DCS Verilerine göre 28.221 adet 5000GT ve üstü Global filonun CII performansı.

Gemi Tipi	A	B	C	D	E	Toplam
Kuruyük	4	6	20	3	1	34
Konteyner	7	7	15	13	6	48
LPG Tankeri	0	1	1	1	1	4
Genel Yük Gemisi	3	3	3	1	0	10
Ro-Ro	1	6	10	1	0	18
Ro-Ro (Vehicle Carri	1	0	0	0	0	1
Tanker	8	17	20	9	4	58
Toplam	24	40	69	28	12	173

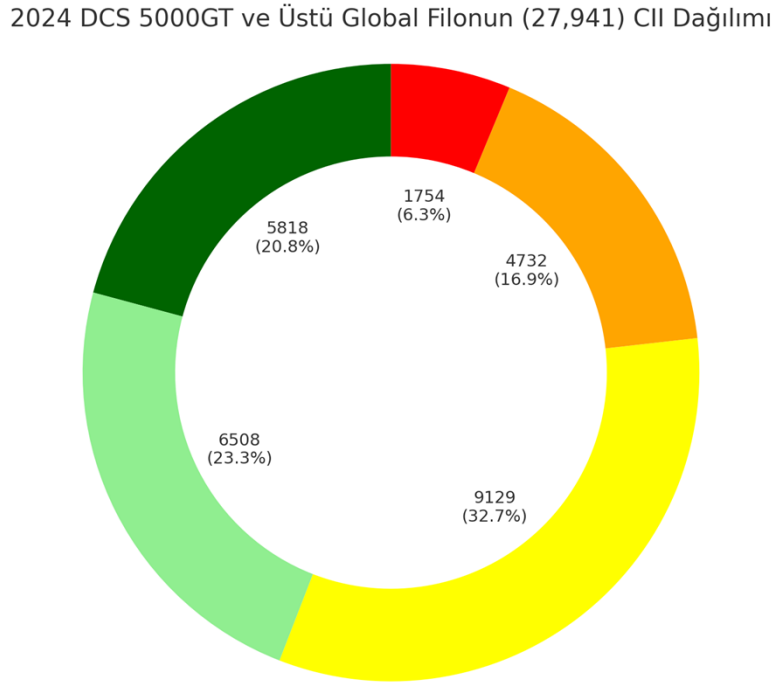
Tablo 1: 2023 DCS Verilerine göre 173 adet 5000GT ve üstü Türk bayraklı filonun CII değerlerinin gemi tipine göre dağılımı.

Gemi Tipi	A	B	C	D	E	Toplam
Kuruyük	1764	2202	3535	2174	831	10506
Kombine Yük Gemisi	8	11	6	0	0	25
Konteyner	1241	1271	1672	734	216	5134
Kruvaziyer Tipi Yolcu Gemisi	51	54	82	41	39	267
LPG Tankeri	252	228	188	122	58	848
Genel Yük Gemisi	646	593	567	241	111	2158
LNG Tankeri	159	196	153	95	55	658
Diğer	17	18	38	25	19	117
Yolcu Gemisi	6	14	19	10	17	66
Frigorifik Yük Gemisi	33	45	90	24	14	206
Ro-Ro	61	80	112	63	26	342
Ro-Ro (vehicle carrier)	89	108	278	167	62	704
Ro-Ro / Yolcu Gemisi	60	90	118	54	58	380
Tanker	1683	1776	1902	965	484	6810
Toplam	6070	6688	8760	4715	1990	28221

Tablo 2: 2023 DCS Verilerine göre 28.221 adet 5000GT ve üstü Global filonun CII değerlerinin gemi tipine göre dağılımı



Figür 3: 2024 DCS Verilerine göre 147 adet 5000GT ve üstü Türk bayraklı filonun CII performansı.



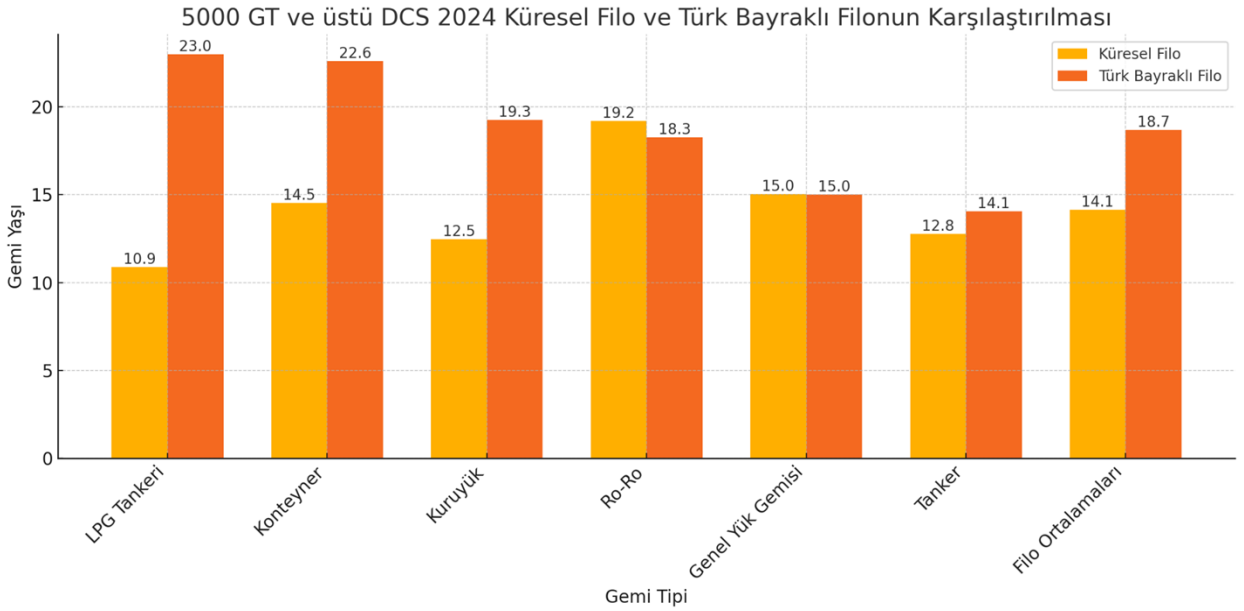
Figür 4: 2024 DCS Verilerine göre 27.941 adet 5000GT ve üstü Global filonun CII performansı.

Gemi Tipi	A	B	C	D	E	Toplam
Kuruyük	3	7	11	9	1	31
Konteyner	7	8	19	10	0	44
LPG Tankeri	1	1	1	1	0	4
Genel Yük Gemisi	3	6	1	0	0	10
Ro-Ro	2	5	11	1	0	19
Tanker	5	10	13	6	5	39
Toplam	21	37	56	27	6	147

Tablo 3: 2024 DCS Verilerine göre 147 adet 5000GT ve üstü Türk bayraklı filonun CII değerlerinin gemi tipine göre dağılımı.

Gemi Tipi	A	B	C	D	E	Toplam
Kuruyük	1654	2086	3797	2254	744	10535
Kombine Yük Gemisi	7	10	6	0	0	23
Konteyner	1206	1210	1686	878	337	5317
Kruvaziyer Tipi Yolcu Gemisi	50	60	90	34	28	262
LPG Tankeri	242	301	172	96	37	848
Genel Yük Gemisi	588	546	613	205	96	2048
LNG Tankeri	229	197	125	78	44	673
Diğer	13	2	37	8	9	69
Yolcu Gemisi	8	9	9	0	14	48
Frigorifik Yük Gemisi	30	52	98	31	16	227
Ro-Ro	63	76	104	60	23	326
Ro-Ro (Vehicle Carrier)	135	110	323	112	20	700
Ro-Ro / Yolcu Gemisi	49	75	118	51	54	347
Tanker	1544	1775	1951	916	332	6518
Toplam	5818	6508	9129	4732	1754	27941

Tablo 4: 2024 DCS Verilerine göre 27941 adet 5000GT ve üstü Global filonun CII değerlerinin gemi tipine göre dağılımı



Figür 5: 2024 DCS Verilerine göre 5000GT ve üstü Türk bayraklı filo ve küresel filonun gemi yaşı ve gemi tipi üzerinden karşılaştırması

Deniz Taşımacılığı Kaynaklı Emisyonların Fiyatlandırılması

2018 yılında MEPC 72. Dönem toplantısında kabul edilen İlk IMO Sera Gazı Strateji (MEPC.304(72)) ile IMO, deniz taşımacılığı kaynaklı sera gazı emisyonlarının azaltımına yönelik yol haritasını belirlemiş ve teknik ile ekonomik tedbirleri kapsayan bir orta-vadeli tedbirler paketi uygulamayı taahhüt etmiştir. Ancak hem uygulanacak tedbirlerin belirsizliği hem de zaman çizelgesinin net olmaması, IMO'nun yavaş ilerleyen karar alma süreciyle birleşince, gemi kaynaklı sera gazı emisyonlarının fiyatlandırılması sürecine Avrupa Birliği (AB) gibi bölgesel, Birleşik Krallık ve Türkiye gibi ulusal aktörler de dahil olmuştur.

AB, IMO'nun gemi kaynaklı sera gazı emisyonlarının azaltılması hususunda yavaş ilerlediğini öne sürerek bir dizi bölgesel uygulama hayata geçirmiştir. 2018 yılı başında, IMO DCS'ye alternatif olarak, sefer bazlı yakıt tüketimi takibini esas alan AB İzleme, Doğrulama ve Raporlama (EU MRV) sistemine, AB Ekonomik Alanı limanlarına gelen 5000 GT ve üzeri gemilerin emisyonlarını dahil etmiştir. Ardından AB'nin 55'e Uyum (EU Fit for 55) hedefleri kapsamında, 1 Ocak 2024 tarihinden itibaren AB Ekonomik Alanı limanlarında operasyon yapan gemiler, AB Emisyon Ticaret Sistemi (EU ETS)'ne dahil edilmiştir. Benzer şekilde, Birleşik Krallık da 2022 yılından itibaren limanlarında operasyon yapan gemileri ulusal MRV sistemine dahil etmiştir. Ülkemiz ise, 2024 yılında 618 sayılı Limanlar Kanunda yapılan değişiklik ile Türk limanlarına gelen ve giden gemilerin ürettiği sera gazı emisyonların fiyatlandırılmasının önünü açmıştır. Kanunla elde edilecek gelir, yeşil denizcilik alanında araştırma, geliştirme, dönüşüm ve yeni gemi inşa faaliyetlerinin desteklenmesi amacıyla Ulaştırma ve Altyapı Bakanlığı bütçesine özel ödenek olarak aktarılacaktır. Bu doğrultuda, Türk limanlarında operasyon yapan gemilerden kaynaklı sera gazı emisyonların izlenmesi, doğrulanması ve raporlanmasına yönelik teknik ve mevzuat altyapısı hazırlanmaktadır.

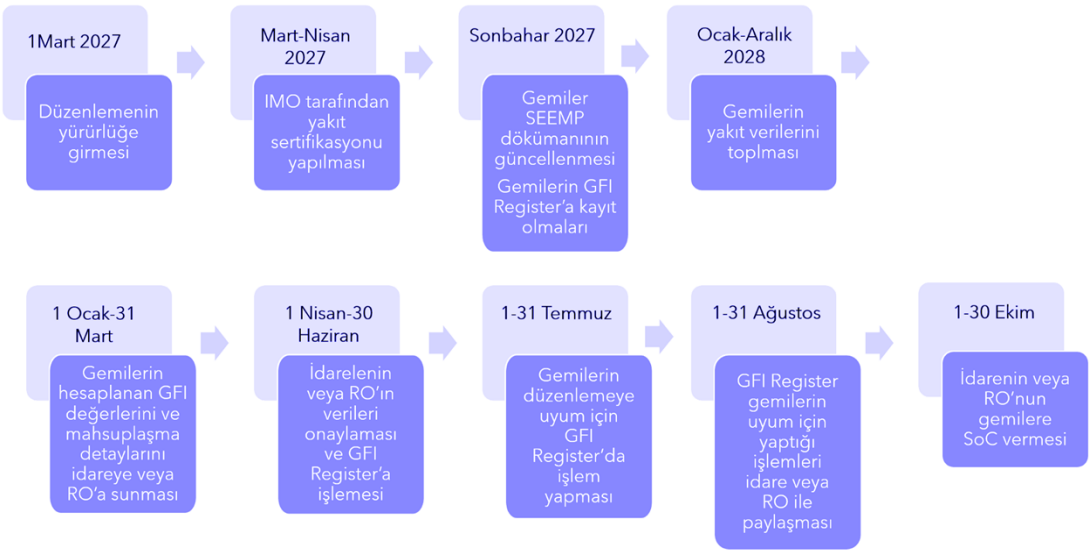
Bahsi geçen bölgesel ve ulusal uygulamalarla üzerindeki baskı artan IMO, MEPC 80. Dönem toplantısında 2023 IMO Sera Gazı Stratejisi'ni (MEPC.377(80)) kabul etmiştir. Bu Strateji ile birlikte, küresel deniz taşımacılığından kaynaklanan sera gazı emisyonlarının azaltılmasına yönelik orta vadeli teknik ve ekonomik tedbirler sepetinin uygulama takvimi belirlenmiştir. MEPC 80 toplantısının ardından, "Aday Orta Vadeli Tedbirler Sepetinin Ülkeler Üzerine Kapsayıcı Etki Analizi" (Comprehensive Impact Assessment of the Basket of Candidate Mid-term Measures) süreci başlatılmıştır. Süreç, katılım göstermek isteyen taraf devletlerin delegasyonlarından oluşan bir Yürütme Kurulu ile Eylül 2023 – Eylül 2024 tarihleri arasında yürütülmüş, aday tedbirlerin küresel denizcilik filosu ve devletler üzerindeki etkilerinin değerlendirilmesi hedeflenmiştir.

Ekim 2023'te gerçekleştirilen MEPC'nin 82. Dönem toplantısında, Stratejide belirlenen orta vadeli tedbirlerin uygulama takvimi gündeme gelmiştir. Ancak, Birleşmiş Milletler Ticaret ve Kalkınma Konferansı (UNCTAD) tarafından hazırlanan etki değerlendirme raporunun, Mısır

öncülüğündeki Afrika ülkeleri tarafından; aday orta vadeli tedbirlerin devletlerin gıda güvenliği üzerindeki etkilerini yeterince değerlendirmediği gerekçesiyle yetersiz bulunması, sürecin yavaşlamasına neden olmuştur. Orta-vadeli tedbirlerin belirlenmesine ilişkin süreç, 7-11 Nisan 2025 tarihlerinde gerçekleştirilen MEPC'nin 83. Dönem toplantısında, çok sayıda üye devletin yoğun itirazına rağmen nihai bir sonuca kavuşturulmaya çalışılmıştır. MEPC 83'ün 7. gündem maddesi olan gemi kaynaklı sera gazı emisyonlarının tartışıldığı Çalışma Grubu'nda, Suudi Arabistan öncülüğündeki birçok Üye Devlet ile Marshall Adaları öncülüğündeki küçük ada devletleri (SIDs), IMO Sekretaryasına söz konusu değişiklikleri kabul etmediklerini bildirmiş ve alınan kararla değişiklikler Üye Devletlerin oylamasına sunulmuştur. Yapılan oylama sonucunda 63 Üye Devlet lehte, 16üye devlet ise aleyhte oy kullanmış ve %79'luk bir çoğunluk sağlanmıştır. Bu sonuç, taslak düzenlemelerin IMO Genel Sekreteri tarafından MARPOL Ek VI'ya taraf ülkelere iletilmesinin önünü açmıştır. Ancak düzenlemelerin yürürlüğe girmesi için, 14-17 Ekim 2025 tarihlerinde yapılacak olağanüstü oturumda, MARPOL'ün 16(2)(b), (c) ve (d) maddeleri uyarınca kabul edilmek üzere oylamaya sunulacaktır. Bu oylamada, MARPOL Ek VI'ya taraf üye devletlerin üçte ikilik çoğunlukla düzenlemelerin lehinde oy kullanması gerekmektedir.

Ekim ayında gerçekleştirilecek MEPC'nin 2. Olağanüstü Oturumunda, MEPC 83. Dönem Toplantısı'nda kabul edilen değişikliklerin MARPOL Ek VI'ya taraf üye devletler tarafından onaylanması halinde, IMO Net-Zero Framework adı altında MARPOL Ek VI'ya eklenecek yeni bir bölüm (Chapter V) kapsamında belirlenen kurallar Mart 2027 tarihinde yürürlüğe girecektir. MARPOL Ek VI'da yapılması planlanan bu değişiklikler kapsamında, ilk raporlama yılı 1 Ocak-31 Aralık 2028 olarak öngörülmektedir. Bu kapsamda, geminin kullandığı deniz yakıtlarının karbon yoğunluğunu ifade eden GFI metriği esas alınarak bir fiyatlandırma mekanizması uygulanacaktır. İlk fiyatlandırma yılı 2029 olan bu düzenlemeden elde edilecek gelirler, 2030 yılında belirlenecek kriterler çerçevesinde dağıtılacaktır.

Düzenlemenin işleyişinde, MARPOL Ek VI'daki CII çerçevesine benzer bir yapı öngörülmekte olup aşağıdaki iş akışı izlenecektir:



CII düzenlemesinde olduğu gibi, 5000GT ve üzeri uluslararası sefer yapan gemileri kapsayan yeni düzenleme ile gemiler, bir takvim yılı boyunca kullandıkları deniz yakıtlarının yaşam döngüsü değerlendirmesi (lifecycle assessment) yaklaşımıyla hesaplanan karbon yoğunluklarının ağırlıklı aritmetik ortalaması hesabı ile elde edecekleri Erişilen GFI (GFI Attained) değeri elde edeceklerdir.

$$GFI_{attained} = \frac{\sum_{j=1}^{J} EI_j \times Energy_j}{Energy_{total}}$$

GFI_attained, bir geminin belirli bir yıldaki gerçekleşen yıllık GFI değeri olup;

- **j**, yakıt türünü ifade etmektedir;
- **J**, raporlama döneminde kullanılan toplam yakıt türü sayısıdır (IMO DCS Veritabanı'na bildirilen);
- **EI_j**, gCO_2eq/MJ cinsinden, yakıt türü *j*'nin gemi tarafından kullanımında oluşan sera gazı yoğunluğudur. Yaşam döngüsü (well-to-wake) yaklaşımıyla hesaplanmakta ve Kuruluş kılavuzları dikkate alınmaktadır;

- **Energy_j**, MJ cinsinden, gemi tarafından raporlama döneminde *j* yakıt türü için kullanılan enerji miktarını ifade etmektedir;

- **Energy_total**, MJ cinsinden, gemi tarafından raporlama döneminde kullanılan toplam enerji miktarını ifade eder. Bu yalnızca yakıt yağlarını değil; karadan sağlanan elektrik enerjisini, rüzgarla sevk ve güneş enerjisi gibi sıfır emisyonlu enerji kaynaklarını da kapsamaktadır.

IMO İdaresi, 1 Mart 2027 tarihinden önce deniz yakıtlarının yaşam döngüsü verilerini değerlendirmek üzere Fuel Lifecycle Label (FLL) ve Sürdürülebilir Yakıt Sertifikasyon Sistemi (Sustainable Fuel Certificate System-SFCS) mekanizmalarını geliştirecektir.

Gereken GFI (Required GFI) değerinin hesaplanmasında temel değer olarak 2008 yılı uluslararası filo ortalaması kabul edilmiş ve bu değer 93.3 gCO_2eq/MJ olarak belirlenmiştir. Bu değerin, 2028 yılından itibaren belirlenen azaltım (Z) faktörleri ile her yıl uyum sağlaması giderek zorlaştırılarak, sıfır veya sıfıra yakın karbon yoğunluğuna sahip alternatif deniz yakıtlarının kullanımının artırılması hedeflenmektedir. Böylece, 2023 Stratejisi kapsamında belirlenen 2050 yılı civarına kadar gemi kaynaklı sera gazı emisyonlarında net-sıfır hedefine ulaşılması amaçlanmaktadır.

$$GFI_T = (1 - Z_T/100) \times GFI_{2008}$$

$Year_T$	Z_T for Base target	Z_T for Direct compliance target
2028	4.0	17.0
2029	6.0	19.0
2030	8.0	21.0
2031	12.4	25.4
2032	16.8	29.8
2033	21.2	34.2
2034	25.6	38.6
2035	30.0	43.0

GFI compliance balance (expressed in tonnes of CO_2eq) =
(Direct compliance target annual GFI – Attained annual GFI) × $Energy_{total}$

Bir geminin Erişilen GFI (Attained GFI) değeri, IMO tarafından ilgili takvim yılı için belirlenen Doğrudan Uyum Hedefi Yıllık GFI (Direct compliance target annual GFI) değerinden düşük ise gemi Surplus Unit (SU) elde etmeye hak kazanmaktadır. Gemiler elde ettikleri SU'ları bir sonraki sene için saklayabilmekte, başka bir gemiye transfer edebilmekte (o geminin tier 2 açığına karşılık olarak) veya iptal edebilmektedir. Gemiler SU'ları iki sene içinde kullanmalıdır.

Eğer geminin Attained GFI değeri IMO'nun o takvim yılı içinde belirlediği Direct compliance target annual GFI değerinden büyük ise gemi iki farklı aşama (tier) olarak borçlanmaktadır.

Geminin Attained GFI değeri Base compliance target annual GFI değerinden büyükse:

$$\text{Tier 1 compliance deficit} = (\text{Direct compliance target annual GFI} - \text{Base target annual GFI}) \times \text{Energy}_{\text{total}}$$

Geminin Attained GFI değeri Base compliance target annual GFI değerinden büyük olduğu için Direct compliance target annual GFI değerinden de büyük olur:

$$\text{Tier 2 compliance deficit} = (\text{Base target annual GFI} - \text{Attained annual GFI}) \times \text{Energy}_{\text{total}}$$

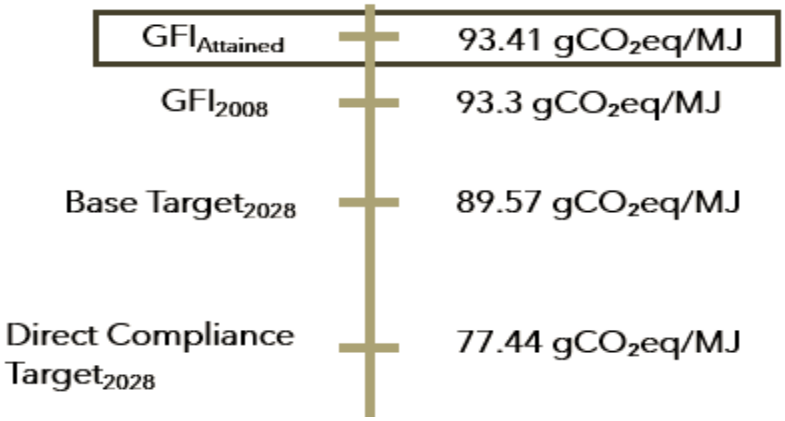
GFI Attained değeri 93.41 gCO_2eq/MJ olan ve enerji tüketimi toplamda 228,926,000 MJ olarak ölçülen bir gemi için örnek hesaplama:

Year$_T$	Z_T for Base target	Z_T for Direct compliance target
2028	4.0%	17.0%

$$GFI_T = (1 - \frac{Z_T}{100}) \times GFI_{2008}$$

$$\text{Base Target GFI} = 93{,}3 \times (1 - 0{,}04) = \boxed{89{,}57}$$

$$\text{Direct Target GFI} = 93{,}3 \times (1 - 0{,}17) = \boxed{77{,}44}$$



$$T1 = (89{,}57 - 77{,}44) \times 228.926.000 = 12{,}13 \times 228.926.000 = 2.775.666.380\,gCO_2eq = \boxed{2.775,67\ ton\ CO_2eq}$$

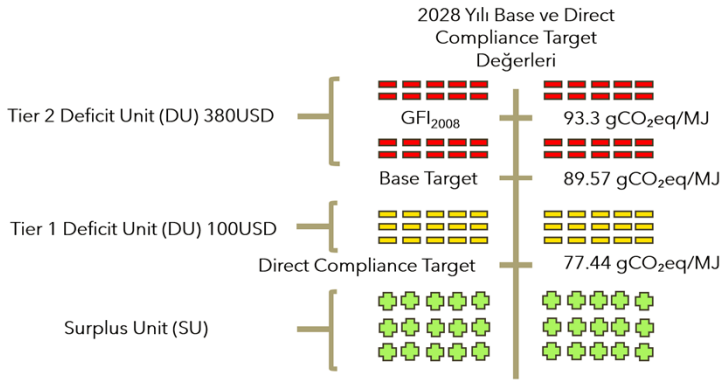
$$T2 = (89{,}57 - 93{,}41) \times 228.926.000 = \quad 3{,}84 \times 228.926.000 = \quad 879.098.840\,gCO_2eq = \boxed{879,10\ ton\ CO_2eq}$$

$$T1\ Maliyeti = 2.775{,}67 \times 100 = \boxed{277.567{,}00\ USD}$$

$$T2\ Maliyeti = 879{,}10 \times 380 = \boxed{334.058{,}00\ USD}$$

$$Toplam\ Maliyet = \boxed{611.625{,}00\ USD}$$

Gemiler, Tier 1 borçlarını yalnızca kurulacak GFI Sicili (GFI Registry) üzerinden satın alacakları Remedial Unit (RU) birimleriyle ödeyebileceklerdir. Geminin Tier 2 açığını kapatması için ise şu seçenekler bulunmaktadır: Başka bir gemiden SU transfer etmek, bir önceki yıldan varsa kalan birimleri kullanmak veya Tier 2 birim fiyatlarına göre fiyatlandırılmış sera gazı emisyon katkıları yoluyla IMO Net-Zero Fonu'ndan satın almak. 2028–2030 raporlama dönemleri için, Tier 1 telafi biriminin başlangıç fiyatı, CO_2eq ton başına 100 ABD Doları olacaktır. Aynı dönem için, Tier 2 telafi biriminin başlangıç fiyatı ise CO_2eq ton başına 380 ABD Doları olacaktır.



Ayrıca, gemiler sıfır veya sıfıra yakın sera gazı emisyonuna sahip (ZNZ) deniz yakıtları kullanarak IMO Net-Zero Fonu'ndan ödül almaya hak kazanabileceklerdir. İçeriği henüz netleştirilmiş olmakla birlikte, bu ödülün amacı, gemiler için ZNZ yakıtlarla fosil yakıtlar arasındaki maliyet farkını dengelemektir. İlk dönem için (31 Aralık 2034'e kadar), ZNZ yakıtları kapsayan GFI eşiği en fazla 19,0 gCO_2eq/MJ olarak, 1 Ocak 2035'ten itibaren ise bu eşik en fazla 14,0 gCO_2eq/MJ olarak belirlenmiştir.

Yakıt Türü	Miktar (metrik ton)	Filodaki Kullanım Yüzdesi
Heavy Fuel Oil (HFO) - ISO 8217 Grades RME through RMK	510606	70.82%
Diesel/Gas Oil (MDO/MGO) - ISO 8217 Grades DMX through DMB	125963	17.47%
Light Fuel Oil (LFO) - ISO 8217 Grades RMA through RMD	83753	11.62%
Blend	550	0.08%
BioDiesel	85	0.01%

Tablo 5: 2024 DCS verilerine göre 147 adet Türk bayraklı geminin kullandığı yakıt türleri ve sarfiyatları.

2024 IMO DCS verileri temel alınarak yapılan hesaplamaya göre, GFI düzenlemesinin Türk bayraklı filoya maliyeti aşağıdaki tablodaki gibidir*:

GFI Düzenlemesinin Türk Bayraklı Filoya (147) Maliyeti		
2028	$	(94,958,133.67)
2029	$	(115,761,728.48)
2030	$	(136,565,323.28)
2031	$	(182,333,231.86)
2032	$	(228,101,140.43)
2033	$	(273,869,049.01)
2034	$	(319,636,957.58)
2035	$	(365,404,866.16)

Tablo 6: GFI düzenlemesinin 2024 DCS verileri temelinde Türk bayraklı filoya yıllara göre maliyeti.

*: Henüz IMO'nun "Gemilerde Kullanılan Deniz Yakıtlarının Yaşam Döngüsü Sera Gazı Yoğunluğu Çerçevesi (Framework on Life Cycle GHG Intensity of Marine Fuels) rehberi geliştirilme aşamasında olduğu için kullanılan bazı yakıtların WtT ve TtW değerleri henüz belirlenmemiştir. Bu nedenle bazı değerler AB FuelEU Maritime direktifinden alınmıştır.

Tablo 5 incelendiğinde, fosil yakıtlara bağlı kalındığı sürece, GFI düzenlemesinin sadece Türk bayraklı filoya maliyetinin, düzenlemenin yürürlüğe girdiği ikinci yıldan itibaren 100 milyon doları aştığı görülmektedir. Filomuzun aynı zamanda AB ETS sistemine de tabi olduğu dikkate alındığında (Bknz. Tablo 6), Türk denizcilik sektöründeki karbon fiyatlandırma düzenlemelerinin Türk bayraklı filoya maliyeti 2030 yılı gelmeden 200 milyon ABD dolarına ulaşmaktadır. Öte yandan, gemilerimiz AB ETS'nin yanında AB'nin FuelEU Maritime düzenlemesine de uyum sağlamak zorundadır. Ancak, AB FuelEU Maritime düzenlemesi ile IMO GFI aynı metrik üzerinden fiyatlandırma yapması nedeniyle, AB'nin FuelEU Maritime uygulamasında geri adım atması beklenmektedir.

2024 AB MRV Verileri Temelinde AB ETS Türk Sahipli Filoya Maliyet Hesabı						
	Türk Bayraklı Filo (129)		Türk Sahipli Filo (710)		Tüm gemiler (13049)	
2025 (%40)	€	18.902.990	€	66.242.923	€	2.538.668.485
2026 (%70)	€	40.970.187	€	143.574.376	€	5.502.289.499
2027 (%100)	€	69.851.611	€	244.785.348	€	9.381.060.113
2028 (%100)	€	74.542.658	€	261.224.474	€	10.011.066.910
2029 (%100)	€	80.326.140	€	281.491.890	€	10.787.787.619
2030 (%100)	€	95.748.759	€	335.538.333	€	12.859.042.842

Tablo 6: 2024 AB MRV verileri temelinde AB ETS denizcilik düzenlemesinin Türk bayraklı, Türk sahipli ve küresel filoya olan maliyeti. **

**: AB ETS karbon fiyatı Bloomberg NEF'in 2030'a kadar olan projeksiyonundan alınmıştır.*

IMO, GFI düzenlemesinden elde edeceği gelirler ile IMO Net-Zero Fonu'nu kurmayı ve bu fonda toplanan gelirleri uluslararası deniz taşımacılığının karbonsuzlaştırılması sürecini desteklemek için üye devletlere dağıtmayı taahhüt etmektedir. IMO, bu gelirin dağıtımı için aşağıdaki kriterleri belirlemiştir:

- ZNZ yakıt kullanan gemilere ödül olarak verilmesi,
- ZNZ teknolojileri, yakıtları ve/veya enerji kaynaklarının araştırılması, geliştirilmesi, küresel erişime açılması ve uygulanması; deniz taşımacılığının enerji dönüşümünün desteklenmesi, gerekli denizcilik, kıyı ve limanla ilgili altyapı ve ekipmanın geliştirilmesi,
- Denizciler ve diğer denizcilik çalışanları için adil bir geçişin sağlanması,
- Bilgi paylaşımı, teknoloji transferi, kapasite geliştirme, eğitim ve bu bölüm kapsamındaki düzenlemelerin uygulanmasını destekleyen teknik iş birliğinin kolaylaştırılması,
- Ülkelerin Denizcilikte Karbonsuzlaştırmaya yönelik Ulusal Eylem Planlarının geliştirilmesi ve uygulanmasının desteklenmesi (filo yenileme ve modernizasyon dahil),
- Düzenlemelerin uygulanmasından kaynaklanan ülke ekonomilerine olan orantısız olumsuz etkilerin uygun şekilde ele alınması,
- Fonun ve Yönetişim Kurulu'nun idari ve operasyonel maliyetlerinin karşılanması,

olarak belirlemiştir.

Daha önce de belirtildiği üzere, yukarıda MARPOL Ek VI'da yapılması planlanan değişiklikler henüz kabul edilmemiştir. MEPC'nin 14-17 Ekim 2025 tarihinde yapılacak olağanüstü oturumunda, MARPOL'ün 16(2)(b), (c) ve (d) maddeleri uyarınca kabul edilmek üzere oylamaya sunulacaktır. Bu oylamada, MARPOL Ek VI'ya taraf üye devletlerin üçte iki çoğunluğunun düzenlemeler lehine oy kullanması gerekmektedir. Bu itibarla, "Draft Revised MARPOL Annex

** Bu çalışmada kullanılan filo verileri, IMO DCS ve EU MRV sistemleri kapsamında 2024 yılına ait doğrulanmış verilere dayanmaktadır. Ancak, IMO GHG Fuel Standard (GFI) ve EU Emisyon Ticareti Sistemi (EU ETS) kapsamında filoya yansıyacak maliyetler yaklaşık hesaplama niteliğindedir ve bağlayıcı gerçek maliyetleri kesin olarak yansıtmayabilir. Hesaplamalarda kullanılan tüm varsayımlar, alınan referanslar ve kullanılan değerler ilgili tabloların altında açıkça belirtilmiştir. Bu nedenle, çalışmada sunulan analizler tahmini ve bilgilendirme amaçlıdır, resmi veya kesin mali veriler olarak değerlendirilmemelidir.

VI 2025” dokümanı ülkemizde denizcilik sektörünün tüm paydaşları tarafından detaylı olarak incelenmeli ve Türk denizciliğinin rekabet gücünü korumak amacıyla sürece etkin ve koordineli bir şekilde müdahil olunmalıdır.

MARINE ENVIRONMENT PROTECTION COMMITTEE
2nd extraordinary session
Agenda item 1

MEPC/ES.2/1
16 April 2025
Original: ENGLISH
Pre-session public release: ☒

PROVISIONAL AGENDA

for the second extraordinary session of the Marine Environment Protection Committee, to be held from Tuesday, 14 October to Friday, 17 October 2025 at IMO Headquarters, 4 Albert Embankment, London SE1 7SR

Session commences at 09:30 (UTC+1) on Tuesday, 14 October 2025

Opening of the session

1 Adoption of the agenda

2 Consideration and adoption of amendments to mandatory instruments

3 Reduction of GHG emissions from ships[1]

4 Any other business

5 Consideration of the report of the Committee

Notes:

1 In accordance with the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.6):

.1 documents should be received by the Secretariat as follows:[2]

.1 documents (including information documents) containing more than six pages of text (bulky documents[3]), by **Monday, 14 July 2025 (13-week deadline)**;

[1] Submissions related to the development of a work plan for the implementation of the IMO Net-Zero Framework only.

[2] Documents other than information documents and reports from sub-committees, working, drafting, correspondence and other working groups and the Secretariat, which contain more than 20 pages, in line with paragraph 6.11 of the Committees' method of work, will not be translated in their entirety. Such documents should include, for translation purposes, a summary not longer than four pages, with the technical content submitted as an annex in the language needed by working groups (i.e. English).

[3] In the case of documents containing more than 50 pages, the provisions of paragraph 6.12.1 of the Committees' method of work are to be applied.

.2 non-bulky documents including information documents (six pages or fewer) and bulky information documents submitted in electronic format, by **Monday, 11 August 2025 (nine-week deadline)**; and

.3 documents (four pages or fewer) commenting on those referred to in sub-paragraphs .1 to .2 above, by **Monday, 25 August 2025 (seven-week deadline)**. These documents should start with a paragraph clearly indicating the document on which comments are made and stating that the document is submitted in accordance with the provisions of paragraph 6.12.5 of the Committees' method of work;

.2 for reasons of economy, documents should be submitted in single spacing, and be as concise as possible, and:

.1 all documents should include a brief summary prepared in accordance with the Committees' method of work;

.2 substantive documents should conclude with a summary of the action that the Committee is invited to take; and

.3 information documents should conclude with a summary of the information contained therein;

.3 the following word processing format should be observed in order to standardize the presentation of documents:

- font: Arial;
- font size: 11;
- justification: full;
- margins: 2 cm top, 2.5 cm bottom, left and right.

A template is available on the IMODOCS website for use in the preparation of documents.

To facilitate processing, documents should be submitted via the Meeting Document Submission Portal on IMODOCS (Submission Portal) (see Circular Letter No.4662). Should any problems be encountered that prevent submission of a document via the Submission Portal, submitters should contact the Secretariat at imodocs@imo.org and copy MED@imo.org without delay.

2 The Committees' method of work, inter alia, requests the Secretariat to strictly apply the rules concerning the submission of documents and not to accept late submissions from Governments or delegations.

3 In order to improve access to information and increase transparency, submitters of meeting documents are invited to give their consent for their documents to be released to the public prior to the meeting by checking the "opt-in box" at the top right corner of the new document template provided on IMODOCS (pre-session public release). In the absence of explicit consent, submissions will not be released to the public prior to the meeting.

MARINE ENVIRONMENT PROTECTION COMMITTEE
2nd extraordinary session
Agenda item 2

MEPC/ES.2/2
16 June 2025
Original: ENGLISH
Pre-session public release: ☒

CONSIDERATION AND ADOPTION OF AMENDMENTS TO MANDATORY INSTRUMENTS

Draft Revised MARPOL Annex VI 2025

Note by the Secretariat

SUMMARY

Executive summary:	The Committee is invited to consider, with a view to adoption, the draft Revised MARPOL Annex VI 2025.
Strategic direction:	3
Output:	3.2
Action to be taken:	Paragraph 7
Related documents:	MEPC 82/17, MEPC 82/17/Add.1; MEPC 83/17, MEPC 83/17/Add.1 and Circular Letter No.5005

1 The Committee will recall that MEPC 82 (30 September to 4 October 2024) considered and approved draft amendments to MARPOL Annex VI on the use of multiple engine operational profiles for a marine diesel engine and clarification of entries and data reporting required by regulations 27 and 28 (MEPC 82/17, paragraph 5.23); and agreed that these amendments should be circulated and included in the forthcoming revised MARPOL Annex VI, consolidating all amendments to Annex VI approved up until, and including, MEPC 83, with a view to adoption in autumn 2025 (MEPC 82/17, paragraph 5.24).

2 The Committee will also recall that MEPC 83 (7 to 11 April 2025) considered and approved draft amendments to MARPOL Annex VI concerning the IMO ship fuel oil consumption system (IMO DCS) data accessibility and the review of the short-term GHG reduction measures (MEPC 83/17, paragraphs 6.12 and 6.28.1), the designation of the North-East Atlantic as a new Emission Control Area for SO_x, PM and NO_x (MEPC 83/17, paragraph 12.11) and the IMO Net-Zero Framework (MEPC 83/17, paragraph 7.41); and instructed the Secretariat to prepare the draft amendments in the form of a draft revised MARPOL Annex VI, with a view to adoption at MEPC/ES.2 in October 2025 (MEPC 83/17, paragraph 7.45).

3 The aforementioned proposed amendments, in the form of the draft Revised MARPOL Annex VI 2025, were circulated by the Secretary-General, in accordance with article 16(2)(a) of MARPOL, under cover of Circular Letter No.5005 of 11 April 2025.

4 The Committee will also recall that MEPC 83 requested the Secretariat to effect any editorial corrections and to bring to its attention any errors or omissions which would require action by Parties to MARPOL Annex VI (MEPC 83/17, paragraph 7.45).

5 Accordingly, the Secretariat, having reviewed the text approved by MEPC 83 (MEPC 83/17/Add.1, annex 11), made the following corrections:

.1 In regulation 2:

.1 paragraphs 3.3 to 3.7 have been renumbered in order to replace the definition of "GFI compliance deficit" with the definition of "Compliance deficit", as there is no reference in the proposed amendments to a "GFI compliance deficit"; and

.2 paragraph 3.18 has been reworded in order to clarify that the "Target annual GHG fuel intensity" consists of the values of the two-tier target annual GFI.

.2 In regulations 3, 5 and 13, and in appendices I and II, references to the "revised NO_x Technical Code 2008" have been replaced by "NO_x Technical Code" to be consistent with regulation 1.27 which defines the Code; references to years in which amendments to the Code were adopted, e.g. "NO_x Technical Code 2008", appear in the adopting resolutions, but are not used in the regulations of MARPOL Annex VI.

.3 In regulation 5:

.1 in paragraph 1.5, the word "workmanship" has been replaced with "work quality" to be gender-neutral; and

.2 a reference to regulation 2.3.10 has been added in paragraph 5.1 to clarify to which "new ship" the initial survey requirements in this paragraph apply; and as paragraph 5 already specifies which surveys apply to ships falling under the scope of chapter 5, the reference in paragraph 5.2 to "for each ship to which chapter 5" has been deleted.

.4 In regulations 6.9, 6.10 and 26, cross-references to the new chapter 5 regulations have been corrected.

.5 In regulation 34, the first paragraph has been reworded to clarify that the GFI shall be calculated using GHG emission factors and also taking into account the relevant information documented in the Fuel Life Cycle Label (FLL).

.6 In regulation 35:

.1 in paragraph 2, the word "subscript" has been added to clarify that the definition applies to the term "subscript T", instead of just "T"; and

.2 in table 4, the percentage symbols have been removed to avoid possible confusion on the orders of magnitude of the values and the calculation of the target annual GHG fuel intensity, in alignment with similar presentations of reduction factors in table 1 (EEDI reduction factors) and table 3 (EEXI reduction factors).

.7 In regulation 36:

.1 paragraphs 5, 6 and 12 have been reworded to clarify that how the Tier 1 and Tier 2 compliance deficit is balanced and how the surplus units are used by the ship have to be recorded in the ship account statement; and

.2 paragraphs 13 and 15 have been reworded to clarify how a surplus unit can be used, within which time frame, and how it may be cancelled.

.8 In regulation 37:

.1 as "transfer" is used to refer to a change of Administration and "change" to a change of company, the text in paragraph 2 has been clarified by the insertion of "and/or change" after "transfer", to be more specific and encompass all cases of changes in Administration or company referred to and handled in this regulation; and

.2 in paragraph 7, the cross-reference to "regulation 33.1" has been replaced with a cross-reference to "appendix XII", as this appendix is more specific on the data to be reported than regulation 33.1.

.9 In regulation 38:

.1 in paragraph 2, it has been clarified that the obligation for a ship to have an account with the IMO GFI Registry by 1 October 2027 consists of the opening of an account;

.2 paragraph 3 has been redrafted to grammatically correct the sentence and to clarify that the Secretary-General of the Organization shall determine the annual administration fee that shall be paid by each ship to cover the administrative costs of the IMO GFI Registry;

.3 paragraph 4.4.2 has been divided into two sub-paragraphs to differentiate between cases in which a surplus unit is voluntarily cancelled at the request of the ship (regulation 38.4.4.2) and cases in which a surplus unit is cancelled by the IMO GFI Registry because it has expired (regulation 38.4.4.3); and

.4 paragraph 7 has been reworded to clarify that the Secretary-General of the Organization is the authority that grants access to the Administration of a ship, or any organization duly authorized by it, to a ship's account with the IMO GFI Registry.

.10 In regulation 40.4, in order to grammatically improve the sentence, "on which" has been replaced with "specifying which".

.11 In appendix VII, in order to streamline the wording within the appendix and for the sake of clarity, the abbreviations used for "North-East Atlantic Emission Control Area" (NE Atlantic ECA) and "exclusive economic zone" (EEZ) have been replaced with the full text of the terms they refer to.

.12 In appendix XIII:

.1 the reference to "MARPOL Annex VI" in the first paragraph of the form of the Statement of Compliance has been modified in order to use the short title of the MARPOL Protocol of 1997, as approved by MEPC 56, and consequential changes have been made throughout the appendix; and

.2 in paragraph 6.3, the word "recorded" has been replaced with "banked" in order to clarify what final amount of surplus units in the IMO GFI Registry ship account needs to be indicated in the Statement of Compliance, and a mirroring provision has been included following paragraph 7.2, for consistency.

.13 Throughout Annex VI, cross-references to regulations and paragraphs therein have been rectified and aligned with the renumbered definitions in regulation 2; the specification "of this Annex" following each regulation of MARPOL Annex VI referred to has been deleted as it is unnecessary; and in referring to guidelines, the words "to be" in the term "to be developed" have been deleted in order to prevent adopted text from becoming outdated by the entry into force of the provisions.

6 The text of the draft Revised MARPOL Annex VI 2025, together with an associated draft MEPC resolution for its adoption, as prepared by the Secretariat, is set out in the annex.

Action requested of the Committee

7 The Committee is invited to consider the draft Revised MARPOL Annex VI 2025, as set out in the annex, with a view to adoption in accordance with MARPOL articles 16(2)(a), (b), (c) and (d).

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ANNEX

DRAFT MEPC RESOLUTION

AMENDMENTS TO THE ANNEX OF THE PROTOCOL OF 1997 TO AMEND THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO

(Revised MARPOL Annex VI 2025)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO article 16 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto (MARPOL), which specifies the amendment procedure and confers upon the appropriate body of the Organization the function of considering amendments thereto for adoption by the Parties,

HAVING CONSIDERED, at its second extraordinary session, proposed amendments to MARPOL Annex VI concerning the use of multiple engine operational profiles for a marine diesel engine, clarification of entries in data reporting required by regulations 27 and 28, the IMO ship fuel oil consumption system (IMO DCS) data accessibility, the review of the short-term GHG reduction measure, the designation of the North-East Atlantic Ocean as an Emission Control Area for Sulphur Oxides, Particulate Matter and Nitrogen Oxides, and the IMO Net-Zero Framework, which were circulated as the draft Revised MARPOL Annex VI 2025, in accordance with article 16(2)(a) of MARPOL,

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, the 2025 revised MARPOL Annex VI, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(f)(ii) and (iii) of MARPOL, that the 2025 revised MARPOL Annex VI shall be deemed to have been accepted on [1 September 2026] unless prior to that date not less than one third of the Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the said 2025 revised MARPOL Annex VI shall enter into force on [1 March 2027] upon its acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General to transmit certified copies of the present resolution and the text of the revised MARPOL Annex VI 2025 contained in the annex to all Parties to MARPOL;

5 ALSO REQUESTS the Secretary-General to transmit copies of the present resolution and its annex to Members of the Organization which are not Parties to MARPOL.

ANNEX

MARPOL ANNEX VI

REGULATIONS FOR THE PREVENTION OF AIR POLLUTION FROM SHIPS

Chapter 1 – General

Regulation 1
Application

The provisions of this Annex shall apply to all ships, except where expressly provided otherwise.

Regulation 2
Definitions

1 For the purpose of this Annex:

.1 *Annex* means Annex VI to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, and as modified by the Protocol of 1997 (MARPOL), as amended by the Organization, provided that such amendments are adopted and brought into force in accordance with the provisions of article 16 of the present Convention.

.2 *A similar stage of construction* means the stage at which:

.1 construction identifiable with a specific ship begins; and

.2 assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less.

.3 *Anniversary date* means the day and the month of each year that will correspond to the date of expiry of the International Air Pollution Prevention Certificate.

.4 *Audit* means a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

.5 *Audit Scheme* means the IMO Member State Audit Scheme established by the Organization, taking into account the guidelines developed by the Organization.[1]

.6 *Audit Standard* means the Code for Implementation.

.7 *Auxiliary control device* means a system, function or control strategy installed on a marine diesel engine that is used to protect the engine and/or its ancillary equipment against operating conditions that could result in damage or failure, or that is used to facilitate the starting of the engine. An auxiliary control device may also be a strategy or measure that has been satisfactorily demonstrated not to be a defeat device.

[1] Refer to the *Framework and procedures for the IMO Member State Audit Scheme* (resolution A.1067(28)).

.8 *Calendar year* means the period from 1 January until 31 December inclusive.

.9 *Code for Implementation* means the IMO Instruments Implementation Code (III Code) adopted by the Organization by resolution A.1070(28).

.10 *Committee* means the Marine Environment Protection Committee of the Organization.

.11 *Company* means the owner of the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the owner of the ship and who on assuming such responsibility has agreed to take over all the duties and responsibilities imposed by the International Management Code for the Safe Operation of Ships and for Pollution Prevention.

.12 *Continuous feeding* is defined as the process whereby waste is fed into a combustion chamber without human assistance while the incinerator is in normal operating conditions with the combustion chamber operative temperature between 850°C and 1,200°C.

.13 *Defeat device* means a device that measures, senses or responds to operating variables (e.g. engine speed, temperature, intake pressure or any other parameter) for the purpose of activating, modulating, delaying or deactivating the operation of any component or the function of the emission control system such that the effectiveness of the emission control system is reduced under conditions encountered during normal operation, unless the use of such a device is substantially included in the applied emission certification test procedures.

.14 *Electronic Record Book* means a device or system, approved by the Administration, used to electronically record the required entries for discharges, transfers and other operations as required under this Annex in lieu of a hard copy record book.[2]

.15 *Emission* means any release of substances, subject to control by this Annex, from ships into the atmosphere or sea.

.16 *Emission control area* means an area where the adoption of special mandatory measures for emissions from ships is required to prevent, reduce and control air pollution from NO_x or SO_x and particulate matter or all three types of emissions and their attendant adverse impacts on human health and the environment. Emission control areas shall include those listed in, or designated under, regulations 13 and 14.

.17 *Fuel oil* means any fuel delivered to and intended for use on board a ship.

.18 *Gas fuel* means a fuel oil with a vapour pressure exceeding 0.28 MPa absolute at a temperature of 37.8°C.[3]

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2 Refer to the *Guidelines for the use of electronic record books under MARPOL* (resolution MEPC.312(74)).

3 Refer to paragraph 2.2.18 of the *International Code of Safety for Ships Using Gases or other Low-flashpoint Fuels (IGF Code).*

.19 *Gross tonnage* means the gross tonnage calculated in accordance with the tonnage measurement regulations contained in annex I to the International Convention on Tonnage Measurements of Ships, 1969, or any successor convention.

.20 *In-use sample* means a sample of fuel oil in use on a ship.

.21 *Installations* in relation to regulation 12 means the installation of systems, equipment, including portable fire-extinguishing units, insulation, or other material on a ship, but excludes the repair or recharge of previously installed systems, equipment, insulation or other material, or the recharge of portable fire-extinguishing units.

.22 *Installed* means a marine diesel engine that is or is intended to be fitted on a ship, including a portable auxiliary marine diesel engine, only if its fuelling, cooling or exhaust system is an integral part of the ship. A fuelling system is considered integral to the ship only if it is permanently affixed to the ship. This definition includes a marine diesel engine that is used to supplement or augment the installed power capacity of the ship and is intended to be an integral part of the ship.

.23 *Irrational emission control strategy* means any strategy or measure that, when a marine diesel engine is operated under normal conditions of use, reduces the effectiveness of an emission control system to a level below that expected from the applicable emission test procedures.

.24 *Low-flashpoint fuel* means gaseous or liquid fuel oil having a flashpoint lower than otherwise permitted under paragraph 2.1.1 of regulation 4 of chapter II-2 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended.

.25 *Marine diesel engine* means any reciprocating internal combustion engine operating on liquid or dual fuel to which regulation 13 applies, including booster/compound systems if applied. In addition, a gas-fuelled engine installed on a ship constructed on or after 1 March 2016 or a gas-fuelled additional or non-identical replacement engine installed on or after that date is also considered as a marine diesel engine.

.26 *MARPOL delivered sample* means the sample of fuel oil delivered in accordance with regulation 18.8.1.

.27 *NO_x Technical Code* means the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines adopted by resolution 2 of the 1997 MARPOL Conference, as amended by the Organization, provided that such amendments are adopted and brought into force in accordance with the provisions of article 16 of the present Convention.

.28 *Onboard sample* means a sample of fuel oil intended to be used or carried for use on board that ship.

.29 *Ozone-depleting substances* means controlled substances defined in paragraph (4) of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, listed in Annexes A, B, C or E to the said Protocol in force at the time of application or interpretation of this Annex.

Ozone-depleting substances that may be found on board a ship include, but are not limited to:

Halon 1211	Bromochlorodifluoromethane
Halon 1301	Bromotrifluoromethane
Halon 2402	1,2-Dibromo-1,1,2,2-tetrafluoroethane (also known as Halon 114B2)
CFC-11	Trichlorofluoromethane
CFC-12	Dichlorodifluoromethane
CFC-113	1,1,2-Trichloro-1,2,2-trifluoroethane
CFC-114	1,2-Dichloro-1,1,2,2-tetrafluoroethane
CFC-115	Chloropentafluoroethane

.30 *Shipboard incineration* means the incineration of wastes or other matter on board a ship, if such wastes or other matter were generated during the normal operation of that ship.

.31 *Shipboard incinerator* means a shipboard facility designed for the primary purpose of incineration.

.32 *Ships constructed* means ships the keels of which are laid or that are at a similar stage of construction.

.33 *Sludge oil* means sludge from the fuel oil or lubricating oil separators, waste lubricating oil from main or auxiliary machinery, or waste oil from bilge water separators, oil filtering equipment or drip trays.

.34 *Sulphur content of fuel oil* means the concentration of sulphur in a fuel oil, measured in % m/m as tested in accordance with a standard acceptable to the Organization.[4]

.35 *Tanker* in relation to regulation 15 means an oil tanker as defined in regulation 1 of Annex I to the present Convention or a chemical tanker as defined in regulation 1 of Annex II to the present Convention.

.36 *Unmanned non-self-propelled (UNSP) barge* means a barge that:

.1 is not propelled by mechanical means;

.2 has no system, equipment and/or machinery fitted that may generate emissions regulated by this Annex; and

.3 has neither persons nor living animals on board.

2 For the purpose of chapter 4:

.1 *A ship delivered on or after 1 September 2019* means a ship:

.1 for which the building contract is placed on or after 1 September 2015; or

[4] Refer to ISO 8754:2003 Petroleum products – Determination of sulphur content – Energy-dispersive X-ray fluorescence spectrometry.

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 March 2016; or

.3 the delivery of which is on or after 1 September 2019.

.2 *Attained annual operational CII* is the operational carbon intensity indicator value achieved by an individual ship in accordance with regulations 26 and 28.

.3 *Attained EEDI* is the EEDI value achieved by an individual ship in accordance with regulation 22.

.4 *Attained EEXI* is the EEXI value achieved by an individual ship in accordance with regulation 23.

.5 *Bulk carrier* means a ship which is intended primarily to carry dry cargo in bulk, including such types as ore carriers as defined in regulation 1 of chapter XII of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, but excluding combination carriers.

.6 *Combination carrier* means a ship designed to load 100% deadweight with both liquid and dry cargo in bulk.

.7 *Containership* means a ship designed exclusively for the carriage of containers in holds and on deck.

.8 *Conventional propulsion* means a method of propulsion where a main reciprocating internal combustion engine(s) is the prime mover and coupled to a propulsion shaft either directly or through a gear box.

.9 *Cruise passenger ship* means a passenger ship not having a cargo deck, designed exclusively for commercial transportation of passengers in overnight accommodations on a sea voyage.

.10 *Distance travelled* means distance travelled over ground.

.11 *Existing ship* means a ship which is not a new ship.

.12 *Gas carrier* means a cargo ship, other than an LNG carrier as defined in paragraph 2.14 of this regulation, constructed or adapted and used for the carriage in bulk of any liquefied gas.

.13 *General cargo ship* means a ship with a multi-deck or single deck hull designed primarily for the carriage of general cargo. This definition excludes specialized dry cargo ships, which are not included in the calculation of reference lines for general cargo ships, namely livestock carrier, barge carrier, heavy load carrier, yacht carrier, nuclear fuel carrier.

.14 *LNG carrier* means a cargo ship constructed or adapted and used for the carriage in bulk of liquefied natural gas (LNG).

.15 *Major conversion* means a conversion of a ship:

.1 which substantially alters the dimensions, carrying capacity or engine power of the ship; or

.2 which changes the type of the ship; or

.3 the intent of which in the opinion of the Administration is substantially to prolong the life of the ship; or

.4 which otherwise so alters the ship that, if it were a new ship, it would become subject to relevant provisions of the present Convention not applicable to it as an existing ship; or

.5 which substantially alters the energy efficiency of the ship and includes any modifications that could cause the ship to exceed the applicable required EEDI as set out in regulation 24 or the applicable required EEXI as set out in regulation 25.

.16 *New ship* means a ship:

.1 for which the building contract is placed on or after 1 January 2013; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2013; or

.3 the delivery of which is on or after 1 July 2015.

.17 *Non-conventional propulsion* means a method of propulsion other than conventional propulsion, including diesel-electric propulsion, turbine propulsion, and hybrid propulsion systems.

.18 *Passenger ship* means a ship which carries more than 12 passengers.

.19 *Polar Code* means the International Code for Ships Operating in Polar Waters, consisting of an introduction, parts I-A and II-A and parts I-B and II-B, as adopted by resolutions MSC.385(94) and MEPC.264(68), as may be amended, provided that:

.1 amendments to the environment-related provisions of the introduction and chapter 1 of part II-A of the Polar Code are adopted, brought into force and take effect in accordance with the provisions of article 16 of the present Convention concerning the amendment procedures applicable to an appendix to an annex; and

.2 amendments to part II-B of the Polar Code are adopted by the Marine Environment Protection Committee in accordance with its Rules of Procedure.

.20 *Refrigerated cargo carrier* means a ship designed exclusively for the carriage of refrigerated cargoes in holds.

.21 *Required annual operational CII* is the target value of attained annual operational CII in accordance with regulations 26 and 28 for the specific ship type and size.

.22 *Required EEDI* is the maximum value of attained EEDI that is allowed by regulation 24 for the specific ship type and size.

.23 *Required EEXI* is the maximum value of attained EEXI that is allowed by regulation 25 for the specific ship type and size.

.24 *Ro-ro cargo ship* means a ship designed for the carriage of roll-on roll-off cargo transportation units.

.25 *Ro-ro cargo ship (vehicle carrier)* means a multi-deck roll-on roll-off cargo ship designed for the carriage of empty cars and trucks.

.26 *Ro-ro passenger ship* means a passenger ship with roll-on roll-off cargo spaces.

.27 *Tanker* means an oil tanker as defined in regulation 1 of Annex I of the present Convention or a chemical tanker or an NLS tanker as defined in regulation 1 of Annex II to the present Convention.

3 For the purpose of chapter 5:

.1 *Attained annual GHG fuel intensity (attained annual GFI),* expressed in grams of CO_2eq per unit of energy (gCO_2eq/MJ), means the weighted average GHG intensity of all fuels used on board a ship in a given calendar year on a well-to-wake (WtW) basis, taking into account guidelines developed by the Organization in accordance with regulation 33.

.2 *CO_2 equivalent (CO_2eq)* means the metric measure used to aggregate the emissions of CO_2, CH_4 and N_2O on the basis of their 100 year global-warming potential (GWP), by converting the amounts of CH_4 and N_2O to the equivalent amount of CO_2 as given in the IPCC Fifth Assessment Report (AR5).

.3 *Compliance deficit*, expressed in tonnes of CO_2eq, means the amount of under-compliance by a ship with the target annual GFI as determined in accordance with regulation 36.

.4 *Existing ship* means a ship which is not a new ship.

.5 *Fuel* means any energy source or energy carrier used on board a ship for propulsion or for the operation of any equipment on board a ship.

.6 *Fuel Life Cycle Label* (FLL) means the technical tool to collect and convey information relevant for the life cycle GHG intensity assessment (LCA) of a fuel.

.7 *GFI compliance balance*, expressed in tonnes of CO_2eq, means the measurement of a ship's GFI compliance status against the target annual GHG fuel intensity in accordance with regulation 36.

.8 *GHG fuel intensity (GFI),* expressed in grams of CO_2eq per unit of energy (gCO_2eq/MJ), refers to the amount of life cycle GHG emissions per unit of energy used on board a ship on a well-to-wake basis, taking into account guidelines developed by the Organization.[5]

.9 *Greenhouse gas (GHG) emissions* means any release of carbon dioxide (CO_2), methane (CH_4) or nitrous oxide (N_2O) into the atmosphere.

.10 *New ship* means a ship:

.1 for which the building contract is placed on or after 1 January 2028; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2028; or

.3 the delivery of which is on or after 1 July 2030.

.11 *Remedial unit (RU)*, expressed in tonnes of CO_2eq, is a non-transferable unit acquired by means of GHG emissions pricing contributions to the IMO Net-Zero Fund, for use by the ship to balance its compliance deficit in accordance with regulation 36.

.12 *Reward* means an annual compensation provided by the IMO Net-Zero Fund for used ZNZs in accordance with regulation 39.

.13 *Semi-submersible vessel* is a type of ship that is designed to carry ships, marine facilities and large loads, generally installed with high superstructure or deck room or floating tank at tow or stern, and is able to partially submerge in cargo handling.

.14 *Ship account* means a mandatory account for a ship to which chapter 5 applies within the IMO GFI Registry in accordance with regulation 38.

.15 *Ship account statement* means the annual ship account statement issued by the IMO GFI Registry reflecting the transactions recorded in that account in accordance with regulation 38.

.16 *Surplus unit (SU),* expressed in tonnes of CO_2eq, means a transferable unit a ship in direct compliance is eligible to receive in accordance with regulation 36.

.17 *Sustainable fuel certification scheme (SFCS)* is a scheme, administered by a legal entity, which certifies that a fuel is compliant with the requirements set out in chapter 5 and its associated guidelines.

.18 *Target annual GHG fuel intensity (target annual GFI)*, expressed in grams of CO_2eq per unit of energy (gCO_2eq/MJ), consists of the values of the two-tier target annual GFI (base target and direct compliance target) in accordance with regulation 35.

[5] Refer to the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)), as may be amended.

.19 *Zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs)* means the type of ZNZs that qualify for the annual fuel reward in accordance with regulation 39.

Regulation 3
Exceptions and exemptions

General

1 Regulations of this Annex shall not apply to:

.1 any emission necessary for the purpose of securing the safety of a ship or saving life at sea; or

.2 any emission resulting from damage to a ship or its equipment:

.1 provided that all reasonable precautions have been taken after the occurrence of the damage or discovery of the emission for the purpose of preventing or minimizing the emission; and

.2 except if the owner or the master acted either with intent to cause damage, or recklessly and with knowledge that damage would probably result.

Trials for ship emission reduction and control technology research

2 The Administration of a Party may, in cooperation with other Administrations as appropriate, issue an exemption from specific provisions for a ship to conduct trials for the development of ship emission reduction and control technologies and engine design programmes. Such an exemption shall only be provided if the applications of specific provisions of the Annex or the NO_x Technical Code could impede research into the development of such technologies or programmes. A permit issued under this regulation shall not exempt a ship from the reporting requirement under regulation 27 and regulation 37, and shall not alter the type and scope of data required to be reported under regulation 27 and regulation 37. A permit for such an exemption shall only be provided to the minimum number of ships necessary and be subject to the following provisions:

.1 For marine diesel engines with a per cylinder displacement up to 30 L, the duration of the sea trial shall not exceed 18 months. If additional time is required, a permitting Administration or Administrations may permit a renewal for one additional 18-month period.

.2 For marine diesel engines with a per cylinder displacement at or above 30 L, the duration of the ship trial shall not exceed five years and shall require a progress review by the permitting Administration or Administrations at each intermediate survey. A permit may be withdrawn based on this review if the testing has not adhered to the conditions of the permit or if it is determined that the technology or programme is not likely to produce effective results in the reduction and control of ship emissions. If the reviewing Administration or Administrations determine that additional time is required to conduct a test of a particular technology or programme, a permit may be renewed for an additional time period not to exceed five years.

Emissions from seabed mineral activities

3.1 Emissions directly arising from the exploration, exploitation and associated offshore processing of seabed mineral resources are, consistent with article 2(3)(b)(ii) of the present Convention, exempt from the provisions of this Annex. Such emissions include the following:

.1 emissions resulting from the incineration of substances that are solely and directly the result of exploration, exploitation and associated offshore processing of seabed mineral resources, including but not limited to the flaring of hydrocarbons and the burning of cuttings, muds, and/or stimulation fluids during well completion and testing operations, and flaring arising from upset conditions;

.2 the release of gases and volatile compounds entrained in drilling fluids and cuttings;

.3 emissions associated solely and directly with the treatment, handling or storage of seabed minerals; and

.4 emissions from marine diesel engines that are solely dedicated to the exploration, exploitation and associated offshore processing of seabed mineral resources.

3.2 The requirements of regulation 18 shall not apply to the use of hydrocarbons that are produced and subsequently used on-site as fuel, when approved by the Administration.

Unmanned non-self-propelled barges

4 The Administration may exempt an unmanned non-self-propelled (UNSP) barge[6] from the requirements of regulations 5.1 and 6.1 by means of an International Air Pollution Prevention Exemption Certificate for Unmanned Non-self-propelled (UNSP) Barges, for a period not exceeding five years provided that the barge has undergone a survey to confirm that conditions referred to in regulations 2.1.32.1 to 2.1.32.3 are met.

Regulation 4
Equivalents

1 The Administration of a Party may allow any fitting, material, appliance or apparatus to be fitted in a ship or other procedures, alternative fuel oils, or compliance methods used as an alternative to those required by this Annex if such fitting, material, appliance or apparatus or other procedures, alternative fuel oils, or compliance methods are at least as effective in terms of emissions reductions as those required by this Annex, including any of the standards set forth in regulations 13 and 14.

2 The Administration of a Party that allows a fitting, material, appliance or apparatus or other procedures, alternative fuel oils, or compliance methods used as an alternative to those required by this Annex shall communicate to the Organization for circulation to the Parties particulars thereof, for their information and appropriate action, if any.

[6] Refer to the *Guidelines for exemption of unmanned non-self-propelled* (UNSP) *barges from certain survey and certification requirements under the MARPOL Convention* (MEPC.1/Circ.892).

3 The Administration of a Party should take into account any relevant guidelines developed by the Organization[7] pertaining to the equivalents provided for in this regulation.

4 The Administration of a Party that allows the use of an equivalent as set forth in paragraph 1 of this regulation shall endeavour not to impair or damage its environment, human health, property or resources or those of other States.

Chapter 2 – Survey, certification and means of control

Regulation 5
Surveys

1 Every ship of 400 gross tonnage and above and every fixed and floating drilling rig or other platform shall, to ensure compliance with the requirements of chapter 3, be subject to the surveys specified below:

.1 An initial survey before the ship is put into service or before the certificate required under regulation 6 is issued for the first time. This survey shall be such as to ensure that the equipment, systems, fittings, arrangements and material fully comply with the applicable requirements of chapter 3.

.2 A renewal survey at intervals specified by the Administration, but not exceeding five years, except where regulation 9.2, 9.5, 9.6 or 9.7 is applicable. The renewal survey shall be such as to ensure that the equipment, systems, fittings, arrangements and material fully comply with applicable requirements of chapter 3.

.3 An intermediate survey within three months before or after the second anniversary date or within three months before or after the third anniversary date of the certificate which shall take the place of one of the annual surveys specified in paragraph 1.4 of this regulation. The intermediate survey shall be such as to ensure that the equipment and arrangements fully comply with the applicable requirements of chapter 3 and are in good working order. Such intermediate surveys shall be endorsed on the IAPP Certificate issued under regulation 6 or 7.

.4 An annual survey within three months before or after each anniversary date of the certificate, including a general inspection of the equipment, systems, fittings, arrangements and material referred to in paragraph 1.1 of this regulation to ensure that they have been maintained in accordance with paragraph 5 of this regulation and that they remain satisfactory for the service for which the ship is intended. Such annual surveys shall be endorsed on the IAPP Certificate issued under regulation 6 or 7.

.5 An additional survey either general or partial, according to the circumstances, shall be made whenever any important repairs or renewals are made as prescribed in paragraph 5 of this regulation or after a repair resulting from investigations prescribed in paragraph 6 of this regulation. The survey shall be such as to ensure that the necessary repairs or renewals have been effectively made, that the material and work quality of such repairs or renewals are in all respects satisfactory and that the ship complies in all respects with the requirements of chapter 3.

[7] Refer to the *2021 Guidelines for exhaust gas cleaning systems* (resolution MEPC.340(77)) and its corrigendum, and to the *2023 Guidelines for thermal waste treatment devices (TWTD)* (resolution MEPC.373(80)).

2 In the case of ships of less than 400 gross tonnage, the Administration may establish appropriate measures in order to ensure that the applicable provisions of chapter 3 are complied with.

3 Surveys of ships as regards the enforcement of the provisions of this Annex shall be carried out by officers of the Administration.

.1 The Administration may, however, entrust the surveys either to surveyors nominated for the purpose or to organizations recognized by it. Such organizations shall comply with the guidelines adopted by the Organization.[8]

.2 The survey of marine diesel engines and equipment for compliance with regulation 13 shall be conducted in accordance with the NO_x Technical Code.

.3 When a nominated surveyor or recognized organization determines that the condition of the equipment does not correspond substantially with the particulars of the certificate, it shall ensure that corrective action is taken and shall in due course notify the Administration. If such corrective action is not taken, the certificate shall be withdrawn by the Administration. If the ship is in a port of another Party, the appropriate authorities of the port State shall also be notified immediately. When an officer of the Administration, a nominated surveyor or recognized organization has notified the appropriate authorities of the port State, the Government of the port State concerned shall give such officer, surveyor or organization any necessary assistance to carry out their obligations under this regulation.

.4 In every case, the Administration concerned shall fully guarantee the completeness and efficiency of the survey and shall undertake to ensure the necessary arrangements to satisfy this obligation.

4 Ships to which chapter 4 applies shall also be subject to the surveys specified below, taking into account the guidelines adopted by the Organization:[9]

.1 An initial survey carried out before a new ship is put in service and before the International Energy Efficiency Certificate is issued. The survey shall verify that the ship's attained EEDI is in accordance with the requirements in chapter 4, and that the SEEMP required by regulation 26 is on board.

.2 A general or partial survey, according to the circumstances, carried out after a major conversion of a new ship to which this regulation applies. The survey shall ensure that the attained EEDI is recalculated as necessary and meets the requirement of regulation 24, with the reduction factor applicable to the ship type and size of the converted ship in the phase corresponding to the date of contract or keel laying or delivery determined for the original ship in accordance with regulation 2.2.16.

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8 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)). Refer also to the *Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2023* (resolution A.1186(33)), as may be amended.

9 Refer to the *2022 Guidelines on survey and certification of the Energy Efficiency Design Index* (resolution MEPC.365(79), as amended by resolutions MEPC.374(80) and MEPC.403(83) and the *2022 Guidelines on survey and certification of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.351(78)).

.3 In cases where the major conversion of a new or existing ship is so extensive that the ship is regarded by the Administration as a newly constructed ship, the Administration shall determine the necessity of an initial survey on the attained EEDI. Such a survey, if determined necessary, shall ensure that the attained EEDI is calculated and meets the requirement of regulation 24, with the reduction factor applicable corresponding to the ship type and size of the converted ship at the date of the contract of the conversion, or in the absence of a contract, the commencement date of the conversion. The survey shall also verify that the SEEMP required by regulation 26 is on board and, for a ship to which regulation 27 applies, has been revised appropriately to reflect a major conversion in those cases where the major conversion affects data-collection methodology and/or reporting processes.

.4 For existing ships, the verification of the requirement to have a SEEMP on board according to regulation 26 shall take place at the first intermediate or renewal survey identified in paragraph 1 of this regulation, whichever is the first, on or after 1 January 2013.

.5 The Administration shall ensure that for each ship to which regulation 27 applies, the SEEMP complies with regulation 26.2. This shall be done prior to collecting data under regulation 27 in order to ensure the methodology and processes are in place prior to the beginning of the ship's first reporting period. Confirmation of compliance shall be provided to, and retained on board, the ship.

.6 The Administration shall ensure that, for each ship to which regulation 28 applies, the SEEMP complies with regulation 26.3.1. This shall be done prior to 1 January 2023. Confirmation of compliance shall be provided to, and retained on board, the ship.

.7 The verification that the ship's attained EEXI is in accordance with the requirements in regulations 23 and 25 shall take place at the first annual, intermediate or renewal survey identified in paragraph 1 of this regulation or the initial survey identified in paragraphs 4.1 and 4.3 of this regulation, whichever is the first, on or after 1 January 2023.

.8 Notwithstanding paragraph 4.7 of this regulation, a general or partial survey, according to the circumstances, carried out after a major conversion of a ship to which regulation 23 applies. The survey shall ensure that the attained EEXI is recalculated as necessary and meets the requirement of regulation 25.

5 Ships to which chapter 5 applies shall also be subject to the survey specified below, taking into account the guidelines adopted by the Organization:[10]

.1 An initial survey carried out before a new ship, as defined in regulation 2.3.10, is put in service and before the International Energy Efficiency Certificate is issued. The survey shall verify that the SEEMP required by regulation 26 is on board.

[10] Refer to the *2022 Guidelines on survey and certification of the Energy Efficiency Design Index* (resolution MEPC.365(79), as amended by resolution MEPC.374(80), as may be further amended; and the *2022 Guidelines on survey and certification of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.351(78)).

.2 For existing ships, the Administration shall ensure that the SEEMP complies with regulation 26.4. This shall be done prior to 1 January 2028. Confirmation of compliance shall be provided to, and retained on board, the ship.

6 The equipment shall be maintained to conform with the provisions of this Annex and no changes shall be made in the equipment, systems, fittings, arrangements or material covered by the survey, without the express approval of the Administration. The direct replacement of such equipment and fittings with equipment and fittings that conform with the provisions of this Annex is permitted.

7 Whenever an accident occurs to a ship or a defect is discovered that substantially affects the efficiency or completeness of its equipment covered by this Annex, the master or owner of the ship shall report at the earliest opportunity to the Administration, a nominated surveyor or recognized organization responsible for issuing the relevant certificate.

Regulation 6
Issue or endorsement of Certificates and Statements of Compliance related to fuel oil consumption reporting, operational carbon intensity rating, and annual GHG fuel intensity

International Air Pollution Prevention Certificate

1 An International Air Pollution Prevention (IAPP) Certificate shall be issued, after an initial or renewal survey in accordance with the provisions of regulation 5, to:

.1 any ship of 400 gross tonnage and above engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties; and

.2 platforms and drilling rigs engaged in voyages to waters under the sovereignty or jurisdiction of other Parties.

2 A ship constructed before the date this Annex enters into force for that particular ship's Administration shall be issued with an IAPP Certificate in accordance with paragraph 1 of this regulation no later than the first scheduled dry-docking after the date of such entry into force, but in no case later than three years after this date.

3 Such certificate shall be issued or endorsed either by the Administration or by any person or organization duly authorized by it.[11] In every case, the Administration assumes full responsibility for the certificate.

International Energy Efficiency Certificate

4 An International Energy Efficiency Certificate for the ship shall be issued after a survey in accordance with the provisions of regulation 5.4 to any ship of 400 gross tonnage and above before that ship may engage in voyages to ports or offshore terminals under the jurisdiction of other Parties.

5 The certificate shall be issued or endorsed either by the Administration or any organization duly authorized by it.[12] In every case, the Administration assumes full responsibility for the certificate.

[11] Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

[12] Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating

6 Upon receipt of reported data pursuant to regulation 27.3 and attained annual operational CII pursuant to regulation 28.2, the Administration or any organization duly authorized by it[13] shall:

.1 determine whether the data has been reported in accordance with regulation 27;

.2 verify that the attained annual operational CII reported is based on the data submitted in accordance with regulation 27;

.3 based on the verified attained annual operational CII, determine the operational carbon intensity rating of the ship in accordance with regulation 28.6; and

.4 issue a Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating to the ship no later than five months from the beginning of the calendar year, upon determination and verification pursuant to regulations 6.6.1 to 6.6.3; in every case, the Administration assumes full responsibility for this Statement of Compliance.

7 Upon receipt of reported data pursuant to regulations 27.4, 27.5 or 27.6, the Administration or any organization duly authorized by it[14] shall promptly determine whether the data has been reported in accordance with regulation 27 and, if so, issue a Statement of Compliance to the ship. In every case, the Administration assumes full responsibility for this Statement of Compliance.

8 Notwithstanding paragraph 6 of this regulation, a ship rated as D for three consecutive years or rated as E in accordance with regulation 28 shall not be issued a Statement of Compliance unless a plan of corrective actions is duly developed and reflected in the SEEMP and verified by the Administration or any organization duly authorized by it[15] in accordance with regulations 28.7 and 28.8.

Statement of Compliance related to the annual GHG fuel intensity

9 Upon receipt of reported data pursuant to regulation 37 on attained annual GFI, target annual GFI and GFI compliance balance, the Administration, or any organization duly authorized by it,[16] shall:

.1 verify whether the data has been reported in accordance with regulation 37.1;

.2 verify that the attained annual GFI was calculated in accordance with regulation 33;

.3 verify that the target annual GFI was calculated in accordance with regulation 35;

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13 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

14 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

15 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

16 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

.4 verify that the GFI compliance balance was determined in accordance with regulation 36;

.5 report the verified data to the IMO GFI Registry in accordance with regulation 37;

.6 verify, upon receipt from the IMO GFI Registry of the annual ship account statement, that the ship complies with chapter 5 and has paid the annual administrative fee to the IMO GFI Registry in accordance with regulation 38;

.7 verify for a ship eligible for rewards the total amount of GHG emissions avoided through the use of ZNZs in accordance with regulation 39; and

.8 issue a Statement of Compliance related to annual GHG fuel intensity to the ship no later than nine months after the beginning of the calendar year, upon verification pursuant to regulations 6.9.1 to 6.9.7. In every case, the Administration assumes full responsibility for this Statement of Compliance.

10 Upon receipt of reported data pursuant to regulation 37.7, the Administration or any organization duly authorized by it[17] shall promptly verify and determine whether the data has been reported in accordance with that paragraph and, if so, issue a Statement of Compliance to the ship taking into account guidelines developed by the Organization.[18] In every case, the Administration assumes full responsibility for this Statement of Compliance.

Regulation 7
Issue of a Certificate by another Party

1 A Party may, at the request of the Administration, cause a ship to be surveyed and, if satisfied that the provisions of this Annex are complied with, shall issue or authorize the issue of an IAPP Certificate or an International Energy Efficiency Certificate to the ship, and where appropriate, endorse or authorize the endorsement of such certificates on the ship, in accordance with this Annex.

2 A copy of the certificate and a copy of the survey report shall be transmitted as soon as possible to the requesting Administration.

3 A certificate so issued shall contain a statement to the effect that it has been issued at the request of the Administration and it shall have the same force and receive the same recognition as a certificate issued under regulation 6.

4 No IAPP Certificate, International Energy Efficiency Certificate or UNSP Exemption Certificate shall be issued to a ship which is entitled to fly the flag of a State which is not a Party.

[17] Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

[18] Refer to guidelines to be developed by the Organization.

Regulation 8
Form of Certificates and Statements of Compliance related to fuel oil consumption reporting, operational carbon intensity rating and annual GHG fuel intensity

International Air Pollution Prevention Certificate

1 The IAPP Certificate shall be drawn up in a form corresponding to the model given in appendix I and shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.

International Energy Efficiency Certificate

2 The International Energy Efficiency Certificate shall be drawn up in a form corresponding to the model given in appendix VIII and shall be at least in English, French or Spanish. If an official language of the issuing Party is also used, this shall prevail in case of a dispute or discrepancy.

Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating

3 The Statement of Compliance pursuant to regulations 6.6 and 6.7 shall be drawn up in a form corresponding to the model given in appendix X and shall be at least in English, French or Spanish. If an official language of the issuing Party is also used, this shall prevail in case of a dispute or discrepancy.

International Air Pollution Prevention Exemption Certificate for Unmanned Non-self-propelled Barges

4 In accordance with regulation 3.4, the International Air Pollution Prevention Exemption Certificate for Unmanned Non-self-propelled Barges shall be drawn up in the form corresponding to the model given in appendix XI and shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in the event of a dispute or discrepancy.

Statement of Compliance related to the annual GHG fuel intensity

5 The Statement of Compliance issued pursuant to regulations 6.9 and 6.10 shall be drawn up in a form corresponding to the model given in appendix XIII and shall be at least in English, French or Spanish. If an official language of the issuing Party is also used, this shall prevail in case of a dispute or discrepancy.

Regulation 9
Duration and validity of Certificates and Statements of Compliance related to fuel oil consumption reporting, operational carbon intensity rating, and the annual GHG fuel intensity

International Air Pollution Prevention Certificate

1 An IAPP Certificate shall be issued for a period specified by the Administration, which shall not exceed five years.

2 Notwithstanding the requirements of paragraph 1 of this regulation:

.1 when the renewal survey is completed within three months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing certificate;

.2 when the renewal survey is completed after the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing certificate; and

.3 when the renewal survey is completed more than three months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of completion of the renewal survey.

3 If a certificate is issued for a period of less than five years, the Administration may extend the validity of the certificate beyond the expiry date to the maximum period specified in paragraph 1 of this regulation, provided that the surveys referred to in regulations 5.1.3 and 5.1.4 applicable when a certificate is issued for a period of five years are carried out as appropriate.

4 If a renewal survey has been completed and a new certificate cannot be issued or placed on board the ship before the expiry date of the existing certificate, the person or organization authorized by the Administration may endorse the existing certificate and such a certificate shall be accepted as valid for a further period that shall not exceed five months from the expiry date.

5 If a ship, at the time when a certificate expires, is not in a port in which it is to be surveyed, the Administration may extend the period of validity of the certificate, but this extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so. No certificate shall be extended for a period longer than three months, and a ship to which an extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such extension to leave that port without having a new certificate. When the renewal survey is completed, the new certificate shall be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

6 A certificate issued to a ship engaged on short voyages that has not been extended under the foregoing provisions of this regulation may be extended by the Administration for a period of grace of up to one month from the date of expiry stated on it. When the renewal survey is completed, the new certificate shall be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

7 In special circumstances, as determined by the Administration, a new certificate need not be dated from the date of expiry of the existing certificate as required by paragraph 2.1, 5 or 6 of this regulation. In these special circumstances, the new certificate shall be valid to a date not exceeding five years from the date of completion of the renewal survey.

8 If an annual or intermediate survey is completed before the period specified in regulation 5, then:

.1 the anniversary date shown on the certificate shall be amended by endorsement to a date that shall not be more than three months later than the date on which the survey was completed;

.2 the subsequent annual or intermediate survey required by regulation 5 shall be completed at the intervals prescribed by that regulation using the new anniversary date; and

.3 the expiry date may remain unchanged, provided one or more annual or intermediate surveys, as appropriate, are carried out so that the maximum intervals between the surveys prescribed by regulation 5 are not exceeded.

9 A certificate issued under regulation 6 or 7 shall cease to be valid in any of the following cases:

.1 If the relevant surveys are not completed within the periods specified under regulation 5.1.

.2 If the certificate is not endorsed in accordance with regulation 5.1.3 or 5.1.4.

.3 Upon transfer of the ship to the flag of another State. A new certificate shall only be issued when the Government issuing the new certificate is fully satisfied that the ship is in compliance with the requirements of regulation 5.5. In the case of a transfer between Parties, if requested within three months after the transfer has taken place, the Government of the Party whose flag the ship was formerly entitled to fly shall, as soon as possible, transmit to the Administration copies of the certificate carried by the ship before the transfer and, if available, copies of the relevant survey reports.

International Energy Efficiency Certificate

10 The International Energy Efficiency Certificate shall be valid throughout the life of the ship subject to the provisions of paragraph 11 below.

11 An International Energy Efficiency Certificate issued under this Annex shall cease to be valid in any of the following cases:

.1 If the ship is withdrawn from service or if a new certificate is issued following major conversion of the ship.

.2 Upon transfer of the ship to the flag of another State. A new certificate shall only be issued when the Government issuing the new certificate is fully satisfied that the ship is in compliance with the requirements of chapter 4. In the case of a transfer between Parties, if requested within three months after the transfer has taken place, the Government of the Party whose flag the ship was formerly entitled to fly shall, as soon as possible, transmit to the Administration copies of the certificate carried by the ship before the transfer and, if available, copies of the relevant survey reports.

.3 If the ship's equipment, systems, fittings, arrangements, or material covered by the survey were changed without the express approval of the Administration, as provided for in regulation 5.5, unless regulation 3 applies.

Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating

12 The Statement of Compliance issued pursuant to regulation 6.6 shall be valid for the calendar year in which it is issued and for the first five months of the following calendar year. The Statement of Compliance issued pursuant to regulation 6.7 shall be valid for the calendar year in which it is issued, for the following calendar year, and for the first five months of the subsequent calendar year. All Statements of Compliance shall be kept on board for at least five years.

Statement of Compliance related to the annual GHG fuel intensity

13 The Statement of Compliance issued pursuant to regulation 6.9 shall be valid for the calendar year in which it is issued and for the first nine months of the following calendar year. The Statement of Compliance issued pursuant to regulation 6.10 shall be valid until for the calendar year in which it is issued, for the following calendar year, and for the first nine months of the subsequent calendar year. All Statements of Compliance shall be kept on board for at least five years.

Regulation 10
Port State control on operational requirements

1 A ship, when in a port or an offshore terminal under the jurisdiction of another Party, is subject to inspection by officers duly authorized by such Party concerning operational requirements under this Annex,[19] where there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of air pollution from ships.

2 In the circumstances given in paragraph 1 of this regulation, the Party shall take steps to ensure that the ship shall not sail until the situation has been brought to order in accordance with the requirements of this Annex.

3 Procedures relating to the port State control prescribed in article 5 of the present Convention shall apply to this regulation.

4 Nothing in this regulation shall be construed to limit the rights and obligations of a Party carrying out control over operational requirements specifically provided for in the present Convention.

5 In relation to chapters 4 and 5, any port State inspection may verify, when appropriate, that there are valid Statements of Compliance related to fuel oil consumption reporting and operational carbon intensity rating and to annual GHG fuel intensity, an International Energy Efficiency Certificate and a Ship Energy Efficiency Management Plan on board, in accordance with article 5 of the present Convention.

6 Notwithstanding the requirements in paragraph 5 of this regulation, any port State inspection may inspect whether the Ship Energy Efficiency Management Plan is duly implemented by the ship in accordance with regulation 28.

Regulation 11
Detection of violations and enforcement

1 Parties shall cooperate in the detection of violations and the enforcement of the provisions of this Annex, using all appropriate and practicable measures of detection and environmental monitoring, and adequate procedures for reporting and accumulation of evidence.

2 A ship to which this Annex applies may, in any port or offshore terminal of a Party, be subject to inspection by officers appointed or authorized by that Party for the purpose of verifying whether the ship has emitted any of the substances covered by this Annex in violation of the provision of this Annex. If an inspection indicates a violation of this Annex, a report shall be forwarded to the Administration for any appropriate action.

[19] Refer to the *Procedures for port State control, 2023* (resolution A.1185(33)), as may be amended.

3 Any Party shall furnish to the Administration evidence, if any, that the ship has emitted any of the substances covered by this Annex in violation of the provisions of this Annex. If it is practicable to do so, the competent authority of the former Party shall notify the master of the ship of the alleged violation.

4 Upon receiving such evidence, the Administration shall investigate the matter and may request the other Party to furnish further or better evidence of the alleged contravention. If the Administration is satisfied that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, it shall cause such proceedings to be taken in accordance with its law as soon as possible. The Administration shall promptly inform the Party that has reported the alleged violation, as well as the Organization, of the action taken.

5 A Party may also inspect a ship to which this Annex applies when it enters the ports or offshore terminals under its jurisdiction, if a request for an investigation is received from any Party together with sufficient evidence that the ship has emitted any of the substances covered by the Annex in any place in violation of this Annex. The report of such investigation shall be sent to the Party requesting it and to the Administration so that the appropriate action may be taken under the present Convention.

6 The international law concerning the prevention, reduction and control of pollution of the marine environment from ships, including that law relating to enforcement and safeguards, in force at the time of application or interpretation of this Annex, applies, mutatis mutandis, to the rules and standards set forth in this Annex.

Chapter 3 – Requirements for control of emissions from ships

Regulation 12
Ozone-depleting substances

1 This regulation does not apply to permanently sealed equipment where there are no refrigerant charging connections or potentially removable components containing ozone-depleting substances.

2 Subject to the provisions of regulation 3.1, any deliberate emissions of ozone-depleting substances shall be prohibited. Deliberate emissions include emissions occurring in the course of maintaining, servicing, repairing or disposing of systems or equipment, except that deliberate emissions do not include minimal releases associated with the recapture or recycling of an ozone-depleting substance. Emissions arising from leaks of an ozone-depleting substance, whether or not the leaks are deliberate, may be regulated by Parties.

3.1 Installations that contain ozone-depleting substances, other than hydrochlorofluorocarbons, shall be prohibited:

.1 on ships constructed on or after 19 May 2005; or

.2 in the case of ships constructed before 19 May 2005 which have a contractual delivery date of the equipment to the ship on or after 19 May 2005 or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after 19 May 2005.

3.2 Installations that contain hydrochlorofluorocarbons shall be prohibited:

.1 on ships constructed on or after 1 January 2020; or

.2 in the case of ships constructed before 1 January 2020 which have a contractual delivery date of the equipment to the ship on or after 1 January 2020 or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after 1 January 2020.

4 The substances referred to in this regulation, and equipment containing such substances, shall be delivered to appropriate reception facilities when removed from ships.

5 Each ship subject to regulation 6.1 shall maintain a list of equipment containing ozone-depleting substances.[20]

6 Each ship subject to regulation 6.1 that has rechargeable systems that contain ozone-depleting substances shall maintain an ozone-depleting substances record book. This record book may form part of an existing logbook or electronic record book[21] as approved by the Administration. An electronic recording system referred to in regulation 12.6, as adopted by resolution MEPC.176(58), shall be considered an electronic record book, provided the electronic recording system is approved by the Administration on or before the first IAPP Certificate renewal survey carried out on or after 1 October 2020, but not later than 1 October 2025, taking into account the guidelines developed by the Organization.

7 Entries in the ozone-depleting substances record book shall be recorded in terms of mass (kg) of substance and shall be completed without delay on each occasion, in respect of the following:

.1 recharge, full or partial, of equipment containing ozone-depleting substances;

.2 repair or maintenance of equipment containing ozone-depleting substances;

.3 discharge of ozone-depleting substances to the atmosphere:

.1 deliberate; and

.2 non-deliberate;

.4 discharge of ozone-depleting substances to land-based reception facilities; and

.5 supply of ozone-depleting substances to the ship.

[20] See appendix I, Supplement to International Air Pollution Prevention Certificate (IAPP Certificate), section 2.1.

[21] Refer to the *Guidelines for the use of electronic record books under MARPOL* (resolution MEPC.312(74)).

Regulation 13
Nitrogen oxides (NO_x)

Application

1.1 This regulation shall apply to:

.1 each marine diesel engine with a power output of more than 130 kW installed on a ship; and

.2 each marine diesel engine with a power output of more than 130 kW that undergoes a major conversion on or after 1 January 2000 except when demonstrated to the satisfaction of the Administration that such engine is an identical replacement to the engine that it is replacing and is otherwise not covered under paragraph 1.1.1 of this regulation.

1.2 This regulation does not apply to:

.1 a marine diesel engine intended to be used solely for emergencies or solely to power any device or equipment intended to be used solely for emergencies on the ship on which it is installed, or a marine diesel engine installed in lifeboats intended to be used solely for emergencies; and

.2 a marine diesel engine installed on a ship solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly, provided that such engine is subject to an alternative NO_x control measure established by the Administration.

1.3 Notwithstanding the provisions of paragraph 1.1 of this regulation, the Administration may provide an exclusion from the application of this regulation for any marine diesel engine that is installed on a ship constructed, or for any marine diesel engine that undergoes a major conversion, before 19 May 2005, provided that the ship on which the engine is installed is solely engaged in voyages to ports or offshore terminals within the State the flag of which the ship is entitled to fly.

Major conversion

2.1 For the purpose of this regulation, *major conversion* means a modification on or after 1 January 2000 of a marine diesel engine that has not already been certified to the standards set forth in paragraph 3, 4 or 5.1.1 of this regulation where:

.1 the engine is replaced by a marine diesel engine or an additional marine diesel engine is installed, or

.2 any substantial modification, as defined in the NO_x Technical Code , is made to the engine, or

.3 the maximum continuous rating of the engine is increased by more than 10% compared to the maximum continuous rating of the original certification of the engine.

2.2 For a major conversion involving the replacement of a marine diesel engine with a non-identical marine diesel engine, or the installation of an additional marine diesel engine, the standards in this regulation at the time of the replacement or addition of the engine shall apply. For the purpose of this regulation, the installation of a marine diesel engine replacing a steam system shall be considered a replacement engine. In the case of replacement engines only, if it is not possible for such a replacement engine to meet the standards set forth in paragraph 5.1.1 of this regulation (Tier III, as applicable), then that replacement engine shall meet the standards set forth in paragraph 4 of this regulation (Tier II), taking into account the guidelines developed by the Organization.[22] The Administration shall notify the Organization in those instances where a Tier II rather than a Tier III replacement engine has been installed on or after 1 August 2025 in accordance with the provisions of this paragraph.

2.3 A marine diesel engine referred to in paragraph 2.1.2 or 2.1.3 of this regulation shall meet the following standards:

.1 for ships constructed prior to 1 January 2000, the standards set forth in paragraph 3 of this regulation shall apply; and

.2 for ships constructed on or after 1 January 2000, the standards in force at the time the ship was constructed shall apply.

Tier I[23]

3 Subject to regulation 3, the operation of a marine diesel engine that is installed on a ship constructed on or after 1 January 2000 and prior to 1 January 2011 is prohibited, except when the emission of nitrogen oxides (calculated as the total weighted emission of NO_2) from the engine is within the following limits, where *n* = rated engine speed (crankshaft revolutions per minute):

.1 17.0 g/kWh when *n* is less than 130 rpm;

.2 45 $n^{(-0.2)}$ g/kWh when *n* is 130 or more but less than 2,000 rpm; and

.3 9.8 g/kWh when *n* is 2,000 rpm or more.

Tier II

4 Subject to regulation 3, the operation of a marine diesel engine that is installed on a ship constructed on or after 1 January 2011 is prohibited, except when the emission of nitrogen oxides (calculated as the total weighted emission of NO_2) from the engine is within the following limits, where *n* = rated engine speed (crankshaft revolutions per minute):

.1 14.4 g/kWh when *n* is less than 130 rpm;

.2 44 $n^{(-0.23)}$ g/kWh when *n* is 130 or more but less than 2,000 rpm; and

.3 7.7 g/kWh when *n* is 2,000 rpm or more.

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22 Refer to the *2024 Guidelines as required by regulation 13.2.2 of MARPOL Annex VI in respect of non-identical replacement engines not required to meet the Tier III limit* (resolution MEPC.386(81)).

23 Refer to the *Guidelines for the application of the NO_x Technical Code relative to certification and amendments of Tier I engines* (MEPC.1/Circ.679).

Tier III

5.1 Subject to regulation 3, in an emission control area designated for Tier III NO_x control under paragraph 6 of this regulation (NO_x Tier III emission control area), the operation of a marine diesel engine that is installed on a ship is prohibited:

.1 except when the emission of nitrogen oxides (calculated as the total weighted emission of NO_2) from the engine is within the following limits, where n = rated engine speed (crankshaft revolutions per minute):

.1 3.4 g/kWh when n is less than 130 rpm;

.2 $9\ n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2,000 rpm; and

.3 2.0 g/kWh when n is 2,000 rpm or more;

when

.2 that ship is constructed on or after:

.1 1 January 2016 and is operating in the North American Emission Control Area or the United States Caribbean Sea Emission Control Area.

.2 1 January 2021 and is operating in the Baltic Sea Emission Control Area or the North Sea Emission Control Area.

.3 1 March 2026 and is operating in the Norwegian Sea Emission Control Area; for the Norwegian Sea Emission Control Area, "ship constructed on or after 1 March 2026" means a ship:

.1 for which the building contract is placed on or after 1 March 2026; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 September 2026; or

.3 the delivery of which is on or after 1 March 2030.

when

.3 that ship is operating in a NO_x Tier III emission control area other than an emission control area described in paragraph 5.1.2 of this regulation, and is constructed on or after the date of adoption of such an emission control area, or a later date as may be specified in the amendment designating the NO_x Tier III emission control area, whichever is later:

.1 That ship is constructed on or after 1 January 2025 and is operating in the Canadian Arctic Emission Control Area.

.2 That ship is constructed on or after 1 January 2027 and is operating in the North-East Atlantic Emission Control Area. For the North-East Atlantic Emission Control Area, "ship constructed on or after 1 January 2027" means a ship:

.1 for which the building contract is placed on or after 1 January 2027; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2027; or

.3 the delivery of which is on or after 1 January 2031.

5.2 The standards set forth in paragraph 5.1.1 of this regulation shall not apply to:

.1 a marine diesel engine installed on a ship with a length (*L*), as defined in regulation 1.19 of Annex I to the present Convention, of less than 24 metres when it has been specifically designed, and is used solely, for recreational purposes; or

.2 a marine diesel engine installed on a ship with a combined nameplate diesel engine propulsion power of less than 750 kW if it is demonstrated, to the satisfaction of the Administration, that the ship cannot comply with the standards set forth in paragraph 5.1.1 of this regulation because of design or construction limitations of the ship; or

.3 a marine diesel engine installed on a ship constructed prior to 1 January 2021 of less than 500 gross tonnage, with a length (*L*), as defined in regulation 1.19 of Annex I to the present Convention, of 24 metres or over when it has been specifically designed, and is used solely, for recreational purposes.

5.3 The tier and on/off status of marine diesel engines installed on board a ship to which paragraph 5.1 of this regulation applies which are certified to both Tier II and Tier III or which are certified to Tier II only shall be recorded in such logbook or electronic record book[24] as prescribed by the Administration at entry into and exit from a NO_x Tier III emission control area, or when the on/off status changes within such an area, together with the date, time and position of the ship.

5.4 Emissions of nitrogen oxides from a marine diesel engine subject to paragraph 5.1 of this regulation that occur immediately following building and sea trials of a newly constructed ship, or before and following converting, repairing, and/or maintaining the ship, or maintenance or repair of a Tier II engine or a dual fuel engine when the ship is required to not have gas fuel or gas cargo on board due to safety requirements, for which activities take place in a shipyard or other repair facility located in a NO_x Tier III emission control area, are temporarily exempted provided the following conditions are met:

.1 the engine meets the Tier II NO_x limits; and

[24] Refer to the *Guidelines for the use of electronic record books under MARPOL* (resolution MEPC.312(74)).

.2 the ship sails directly to or from the shipyard or other repair facility, does not load or unload cargo during the duration of the exemption, and follows any additional specific routeing requirements indicated by the port State in which the shipyard or other repair facility is located, if applicable.

5.5 The exemption described in paragraph 5.4 of this regulation applies only for the following period:

.1 for a newly constructed ship, the period beginning at the time the ship is delivered from the shipyard, including sea trials, and ending at the time the ship directly exits the NO_x Tier III emission control area(s) or, with regard to a ship fitted with a dual fuel engine, the ship directly exits the NO_x Tier III emission control area(s) or proceeds directly to the nearest gas fuel bunkering facility appropriate to the ship located in the NO_x Tier III emission control area(s);

.2 for a ship with a Tier II engine undergoing conversion, maintenance or repair, the period beginning at the time the ship enters the NO_x Tier III emission control area(s) and proceeds directly to the shipyard or other repair facility, and ending at the time the ship is released from the shipyard or other repair facility and directly exits the NO_x Tier III emission control area (s) after performing sea trials, if applicable; or

.3 for a ship with a dual fuel engine undergoing conversion, maintenance or repair, when the ship is required to not have gas fuel or gas cargo on board due to safety requirements, the period beginning at the time the ship enters the NO_x Tier III emission control area(s) or when it is degassed in the NO_x Tier III emission control area(s) and proceeds directly to the shipyard or other repair facility, and ending at the time when the ship is released from the shipyard or other repair facility and directly exits the NO_x Tier III emission control area(s) or proceeds directly to the nearest gas fuel bunkering facility appropriate to the ship located in the NO_x Tier III emission control area(s).

Emission control area

6 For the purposes of this regulation, a NO_x Tier III emission control area shall be any sea area, including any port area, designated by the Organization in accordance with the criteria and procedures set forth in appendix III. The NO_x Tier III emission control areas are:

.1 the North American Emission Control Area, which means the area described by the coordinates provided in appendix VII;

.2 the United States Caribbean Sea Emission Control Area, which means the area described by the coordinates provided in appendix VII;

.3 the Baltic Sea area as defined in regulation 1.11.2 of Annex I of the present Convention;

.4 the North Sea area as defined in regulation 1.14.6 of Annex V of the present Convention;

.5 the Canadian Arctic Emission Control Area, which means the area described by the coordinates provided in appendix VII;

.6 the Norwegian Sea as defined in regulation 13.9.4 of Annex II of the present Convention; and

.7 the North-East Atlantic Emission Control Area, which means the area described by the coordinates provided in appendix VII.

Marine diesel engines installed on a ship constructed prior to 1 January 2000

7.1 Notwithstanding paragraph 1.1.1 of this regulation, a marine diesel engine with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 L installed on a ship constructed on or after 1 January 1990 but prior to 1 January 2000 shall comply with the emission limits set forth in paragraph 7.4 of this regulation, provided that an approved method[25] for that engine has been certified by an Administration of a Party and notification of such certification has been submitted to the Organization by the certifying Administration.[26] Compliance with this paragraph shall be demonstrated through one of the following:

.1 installation of the certified approved method, as confirmed by a survey using the verification procedure specified in the approved method file, including appropriate notation on the ship's IAPP Certificate of the presence of the approved method; or

.2 certification of the engine confirming that it operates within the limits set forth in paragraph 3, 4, or 5.1.1 of this regulation and an appropriate notation of the engine certification on the ship's IAPP Certificate.

7.2 Paragraph 7.1 of this regulation shall apply no later than the first renewal survey that occurs 12 months or more after deposit of the notification in paragraph 7.1. If a shipowner of a ship on which an approved method is to be installed can demonstrate to the satisfaction of the Administration that the approved method was not commercially available despite best efforts to obtain it, then that approved method shall be installed on the ship no later than the next annual survey of that ship that falls after the approved method is commercially available.

7.3 With regard to a marine diesel engine with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 L installed on a ship constructed on or after 1 January 1990, but prior to 1 January 2000, the IAPP Certificate shall, for a marine diesel engine to which paragraph 7.1 of this regulation applies, indicate one of the following:

.1 an approved method has been applied pursuant to paragraph 7.1.1 of this regulation;

.2 the engine has been certified pursuant to paragraph 7.1.2 of this regulation;

.3 an approved method is not yet commercially available as described in paragraph 7.2 of this regulation; or

.4 an approved method is not applicable.

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25 Refer to the *2014 Guidelines on the approved method process* (resolution MEPC.243(66)).

26 Refer to the *2014 Guidelines in respect of the information to be submitted by an Administration to the Organization covering the certification of an approved method as required under regulation 13.7.1 of MARPOL Annex VI* (resolution MEPC.242(66)).

7.4 Subject to regulation 3, the operation of a marine diesel engine described in paragraph 7.1 of this regulation is prohibited, except when the emission of nitrogen oxides (calculated as the total weighted emission of NO_2) from the engine is within the following limits, where *n* = rated engine speed (crankshaft revolutions per minute):

.1 17.0 g/kWh when *n* is less than 130 rpm;

.2 45 $n^{(-0.2)}$ g/kWh when *n* is 130 or more but less than 2,000 rpm; and

.3 9.8 g/kWh when *n* is 2,000 rpm or more.

7.5 Certification of an approved method shall be in accordance with chapter 7 of the NO_x Technical Code and shall include verification:

.1 by the designer of the base marine diesel engine to which the approved method applies that the calculated effect of the approved method will not decrease engine rating by more than 1.0%, increase fuel consumption by more than 2.0% as measured according to the appropriate test cycle set forth in the NO_x Technical Code, or adversely affect engine durability or reliability; and

.2 that the cost of the approved method is not excessive, which is determined by a comparison of the amount of NO_x reduced by the approved method to achieve the standard set forth in paragraph 7.4 of this regulation and the cost of purchasing and installing such approved method.[27]

Certification

8 The NO_x Technical Code shall be applied in the certification, testing and measurement procedures for the standards set forth in this regulation.

9 The procedures for determining NO_x emissions set out in the NO_x Technical Code are intended to be representative of the normal operation of the engine. Defeat devices and irrational emission control strategies undermine this intention and shall not be allowed. This regulation shall not prevent the use of auxiliary control devices that are used to protect the engine and/or its ancillary equipment against operating conditions that could result in damage or failure or that are used to facilitate the starting of the engine.

Regulation 14
Sulphur oxides (SO_X) and particulate matter

General requirements

1 The sulphur content of fuel oil used or carried for use on board a ship shall not exceed 0.50% m/m.

[27] The cost of an approved method shall not exceed 375 special drawing rights/metric tonne NO_X calculated in accordance with the cost-effectiveness (*Ce*) formula below:

$$Ce = \frac{Cost\ of\ approved\ method \cdot 10^6}{Power\ (kW) \cdot 0.768 \cdot 6{,}000\ (hours/year) \cdot 5\ (years) \cdot \Delta NO_x\ (g/kWh)}$$

Refer to *Definitions for the cost-effectiveness formula in regulation 13.7.5 of the revised MARPOL Annex VI* (MEPC.1/Circ.678).

2 The worldwide average sulphur content of residual fuel oil supplied for use on board ships shall be monitored taking into account the guidelines developed by the Organization.[28]

Requirements within emission control areas

3 For the purpose of this regulation, an emission control area shall be any sea area, including any port area, designated by the Organization in accordance with the criteria and procedures set forth in appendix III. The emission control areas under this regulation are:

.1 the Baltic Sea area as defined in regulation 1.11.2 of Annex I of the present Convention;

.2 the North Sea area as defined in regulation 1.14.6 of Annex V of the present Convention;

.3 the North American Emission Control Area, which means the area described by the coordinates provided in appendix VII;

.4 the United States Caribbean Sea Emission Control Area, which means the area described by the coordinates provided in appendix VII;

.5 the Mediterranean Sea Emission Control Area, which means the area described by the coordinates provided in appendix VII;

.6 the Canadian Arctic Emission Control Area, which means the area described by the coordinates provided in appendix VII;

.7 the Norwegian Sea as defined in regulation 13.9.4 of Annex II of the present Convention; and

.8 the North-East Atlantic Emission Control Area, which means the area described by the coordinates provided in appendix VII.

4 While a ship is operating within an emission control area, the sulphur content of fuel oil used on board that ship shall not exceed 0.10% m/m.

5 The sulphur content of fuel oil referred to in paragraph 1 and paragraph 4 of this regulation shall be documented by its supplier as required by regulation 18.

6 Those ships using separate fuel oils to comply with paragraph 4 of this regulation and entering or leaving an emission control area set forth in paragraph 3 of this regulation shall carry a written procedure showing how the fuel oil changeover is to be done, allowing sufficient time for the fuel oil service system to be fully flushed of all fuel oils exceeding the applicable sulphur content specified in paragraph 4 of this regulation prior to entry into an emission control area. The volume of low sulphur fuel oils in each tank as well as the date, time and position of the ship when any fuel oil changeover operation is completed prior to the entry into an emission control area or commenced after exit from such an area shall be recorded in such logbook or electronic record book[29] as prescribed by the Administration.

[28] Refer to the *2020 Guidelines for monitoring the worldwide average sulphur content of fuel oils supplied for use on board ships* (resolution MEPC.326(75)).

[29] Refer to *Guidelines for the use of electronic record books under MARPOL* (resolution MEPC.312(74)).

7 During the first 12 months immediately following entry into force of an amendment designating a specific emission control area under paragraph 3 of this regulation, ships operating in that emission control area are exempt from the requirements in paragraphs 4 and 6 of this regulation and from the requirements of paragraph 5 of this regulation insofar as they relate to paragraph 4 of this regulation.

In-use and onboard fuel oil sampling and testing

8 If the competent authority of a Party requires the in-use or onboard sample to be analysed, it shall be done in accordance with the verification procedure set forth in appendix VI to determine whether the fuel oil being used or carried for use on board meets the requirements in paragraph 1 or paragraph 4 of this regulation. The in-use sample shall be drawn taking into account the guidelines developed by the Organization.[30] The onboard sample shall be drawn taking into account the guidelines developed by the Organization.[31]

9 The sample shall be sealed by the representative of the competent authority with a unique means of identification installed in the presence of the ship's representative. The ship shall be given the option of retaining a duplicate sample.

In-use fuel oil sampling point

10 For each ship subject to regulations 5 and 6, sampling point(s) shall be fitted or designated for the purpose of taking representative samples of the fuel oil being used on board the ship taking into account the guidelines developed by the Organization.[32]

11 For a ship constructed before 1 April 2022, the sampling point(s) referred to in paragraph 10 shall be fitted or designated not later than the first renewal survey as identified in regulation 5.1.2 on or after 1 April 2023.

12 The requirements of paragraphs 10 and 11 above are not applicable to a fuel oil service system used for a low-flashpoint fuel or a gas fuel.

13 The competent authority of a Party shall, as appropriate, utilize the sampling point(s) which is(are) fitted or designated for the purpose of taking representative sample(s) of the fuel oil being used on board in order to verify that the fuel oil complies with this regulation. Taking fuel oil samples by the competent authority of the Party shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

Regulation 15
Volatile organic compounds

1 If the emissions of volatile organic compounds (VOCs) from a tanker are to be regulated in a port or ports or a terminal or terminals under the jurisdiction of a Party, they shall be regulated in accordance with the provisions of this regulation.

30 Refer to the *2019 Guidelines for on board sampling for the verification of the sulphur content of the fuel oil used on board ships* (MEPC.1/Circ.864/Rev.1).

31 Refer to the *2020 Guidelines for on board sampling of fuel oil intended to be used or carried for use on board a ship* (MEPC.1/Circ.889).

32 Refer to the *2019 Guidelines for on board sampling for the verification of the sulphur content of the fuel oil used on board ships* (MEPC.1/Circ.864/Rev.1).

2 A Party regulating tankers for VOC emissions shall submit a notification to the Organization.[33] This notification shall include information on the size of tankers to be controlled, the cargoes requiring vapour emission control systems and the effective date of such control. The notification shall be submitted at least six months before the effective date.

3 A Party that designates ports or terminals at which VOC emissions from tankers are to be regulated shall ensure that vapour emission control systems, approved by that Party taking into account the safety standards for such systems developed by the Organization,[34] are provided in any designated port and terminal and are operated safely and in a manner so as to avoid undue delay to a ship.

4 The Organization shall circulate a list of the ports and terminals designated by Parties to other Parties and Member States of the Organization for their information.

5 A tanker to which paragraph 1 of this regulation applies shall be provided with a vapour emission collection system approved by the Administration taking into account the safety standards for such systems developed by the Organization,[35] and shall use this system during the loading of relevant cargoes. A port or terminal that has installed vapour emission control systems in accordance with this regulation may accept tankers that are not fitted with vapour collection systems for a period of three years after the effective date identified in paragraph 2 of this regulation.

6 A tanker carrying crude oil shall have on board and implement a VOC management plan approved by the Administration. Such a plan shall be prepared taking into account the guidelines developed by the Organization.[36] The plan shall be specific to each ship and shall at least:

.1 provide written procedures for minimizing VOC emissions during the loading, sea passage and discharge of cargo;

.2 give consideration to the additional VOC generated by crude oil washing;

.3 identify a person responsible for implementing the plan; and

.4 for ships on international voyages, be written in the working language of the master and officers and, if the working language of the master and officers is not English, French or Spanish, include a translation into one of these languages.

7 This regulation shall also apply to gas carriers only if the types of loading and containment systems allow safe retention of non-methane VOCs on board or their safe return ashore.[37]

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33 Refer to *Notification to the Organization on ports or terminals where volatile organic compounds (VOCs) emissions are to be regulated* (MEPC.1/Circ.509).

34 Refer to *Standards for vapour emission control systems (MSC/Circ.585)*.

35 Refer to *Standards for vapour emission control systems (MSC/Circ.585)*.

36 Refer to the *Guidelines for the development of a VOC management plan* (resolution MEPC.185(59)). Refer also to *Technical information on systems and operation to assist development of VOC management plans* (MEPC.1/Circ.680), and *Technical information on a vapour pressure control system in order to facilitate the development and the update of VOC management plans* (MEPC.1/Circ.719).

37 Refer to the *International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk* (IGC Code) (resolution MSC.5(48), as amended).

Regulation 16
Shipboard incineration

1 Except as provided in paragraph 4 of this regulation, shipboard incineration shall be allowed only in a shipboard incinerator.

2 Shipboard incineration of the following substances shall be prohibited:

.1 residues of cargoes subject to Annex I, II or III or related contaminated packing materials;

.2 polychlorinated biphenyls (PCBs);

.3 garbage, as defined by Annex V, containing more than traces of heavy metals;

.4 refined petroleum products containing halogen compounds;

.5 sewage sludge and sludge oil neither of which is generated on board the ship; and

.6 exhaust gas cleaning system residues.

3 Shipboard incineration of polyvinyl chlorides (PVCs) shall be prohibited, except in shipboard incinerators for which IMO Type Approval Certificates[38] have been issued.

4 Shipboard incineration of sewage sludge and sludge oil generated during normal operation of a ship may also take place in the main or auxiliary power plant or boilers, but in those cases shall not take place inside ports, harbours or estuaries.

5 Nothing in this regulation either:

.1 affects the incineration at sea prohibitions of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, as amended, and the 1996 Protocol thereto, or other requirements thereof,

or

.2 precludes the development, installation and operation of alternative design shipboard thermal waste treatment devices that meet or exceed the requirements of this regulation.

6.1 Except as provided in paragraph 6.2 of this regulation, each incinerator on a ship constructed on or after 1 January 2000 or incinerator that is installed on board a ship on or after 1 January 2000 shall meet the requirements contained in appendix IV. Each incinerator subject to this paragraph shall be approved by the Administration taking into account the standard specification for shipboard incinerators developed by the Organization.[39]

[38] Type Approval Certificates issued taking into account the *Revised guidelines for the implementation of Annex V of MARPOL* (resolution MEPC.59(33), as amended by resolution MEPC.92(45)), or *Standard specification for shipboard incinerators* (resolution MEPC.76(40), as amended by resolution MEPC.93(45)), or the *2014 Standard specification for shipboard incinerators* (resolution MEPC.244(66), as amended by resolution MEPC.368(79)).

[39] Refer to the *2014 Standard specification for shipboard incinerators* (resolution MEPC.244(66), as amended by resolution MEPC.368(79)), or *Standard specification for shipboard incinerators* (resolution MEPC.76(40), as amended by resolution MEPC.93(45)), and *Type approval of shipboard incinerators* (MEPC.1/Circ.793).

6.2 The Administration may allow exclusion from the application of paragraph 6.1 of this regulation to any incinerator installed on board a ship before 19 May 2005, provided that the ship is solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly.

7 Incinerators installed in accordance with the requirements of paragraph 6.1 of this regulation shall be provided with a manufacturer's operating manual, which is to be retained with the unit and which shall specify how to operate the incinerator within the limits described in paragraph 2 of appendix IV.

8 Personnel responsible for the operation of an incinerator installed in accordance with the requirements of paragraph 6.1 of this regulation shall be trained to implement the guidance provided in the manufacturer's operating manual as required by paragraph 7 of this regulation.

9 For incinerators installed in accordance with the requirements of paragraph 6.1 of this regulation the combustion chamber gas outlet temperature shall be monitored at all times the unit is in operation. Where that incinerator is of the continuous-feed type, waste shall not be fed into the unit when the combustion chamber gas outlet temperature is below 850°C. Where that incinerator is of the batch-loaded type, the unit shall be designed so that the combustion chamber gas outlet temperature shall reach 600°C within five minutes after start-up and will thereafter stabilize at a temperature not less than 850°C.

Regulation 17
Reception facilities

1 Each Party undertakes to ensure the provision of facilities adequate to meet:

.1 the needs of ships using its repair ports for the reception of ozone-depleting substances and equipment containing such substances when removed from ships;

.2 the needs of ships using its ports, terminals or repair ports for the reception of exhaust gas cleaning residues from an exhaust gas cleaning system;

without causing undue delay to ships, and

.3 the needs in ship-breaking facilities for the reception of ozone-depleting substances and equipment containing such substances when removed from ships.

2 The following States may satisfy the requirements in paragraph 1 of this regulation through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements:

.1 small island developing States; and

.2 States the coastline of which borders on Arctic waters, provided that regional arrangements shall cover only ports within Arctic waters of those States.

3 Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization.[40] The Government of each Party participating in the arrangement shall consult with the Organization, for circulation to the Parties of the present Convention, on:

.1 how the Regional Reception Facilities Plan takes into account the guidelines developed by the Organization;[41]

.2 particulars of the identified Regional Ships Waste Reception Centres taking into account the guidelines developed by the Organization;[42] and

.3 particulars of those ports with only limited facilities.

4 If a particular port or terminal of a Party is, taking into account the guidelines developed by the Organization,[43] remotely located from, or lacking in, the industrial infrastructure necessary to manage and process those substances referred to in paragraph 1 of this regulation and therefore cannot accept such substances, then the Party shall inform the Organization of any such port or terminal so that this information may be circulated to all Parties and Member States of the Organization for their information and any appropriate action. Each Party that has provided the Organization with such information shall also notify the Organization of its ports and terminals where reception facilities are available to manage and process such substances.

5 Each Party shall notify the Organization for circulation to the Members of the Organization of all cases where the facilities provided under this regulation are unavailable or alleged to be inadequate.

Regulation 18
Fuel oil availability and quality

Fuel oil availability

1 Each Party shall take all reasonable steps to promote the availability of fuel oils that comply with this Annex and inform the Organization of the availability of compliant fuel oils in its ports and terminals.

2.1 If a ship is found by a Party not to be in compliance with the standards for compliant fuel oils set forth in this Annex, the competent authority of the Party is entitled to require the ship to:

.1 present a record of the actions taken to attempt to achieve compliance; and

.2 provide evidence that it attempted to purchase compliant fuel oil in accordance with its voyage plan and, if it was not made available where planned, that attempts were made to locate alternative sources for such fuel oil and that despite best efforts to obtain compliant fuel oil, no such fuel oil was made available for purchase.

[40] Refer to the 2012 *Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63), as amended by resolution MEPC.363(79)).

[41] Refer to the 2012 *Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63), as amended by resolution MEPC.363(79)).

[42] Refer to the 2012 *Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63), as amended by resolution MEPC.363(79)).

[43] Refer to the *2011 Guidelines for reception facilities under MARPOL Annex VI* (resolution MEPC.199(62)).

2.2 The ship should not be required to deviate from its intended voyage or to delay unduly the voyage in order to achieve compliance.

2.3 If a ship provides the information set forth in paragraph 2.1 of this regulation, a Party shall take into account all relevant circumstances and the evidence presented to determine the appropriate action to take, including not taking control measures.

2.4 A ship shall notify its Administration and the competent authority of the relevant port of destination when it cannot purchase compliant fuel oil.

2.5 A Party shall notify the Organization when a ship has presented evidence of the non-availability of compliant fuel oil.

Fuel oil quality

3 Fuel oil delivered to and used on board a ship to which this Annex applies shall meet the following requirements:

.1 except as provided in paragraph 3.2 of this regulation:

.1 the fuel oil shall be blends of hydrocarbons derived from petroleum refining; this shall not preclude the incorporation of small amounts of additives intended to improve some aspects of performance;

.2 the fuel oil shall be free from inorganic acid; and

.3 the fuel oil shall not include any added substance or chemical waste that:

.1 jeopardizes the safety of ships or adversely affects the performance of the machinery, or

.2 is harmful to personnel, or

.3 contributes overall to additional air pollution;

.2 fuel oil derived by methods other than petroleum refining shall not:

.1 exceed the applicable sulphur content set forth in regulation 14;

.2 cause an engine to exceed the applicable NO_x emission limit set forth in paragraphs 3, 4, 5.1.1 and 7.4 of regulation 13;

.3 contain inorganic acid; or

.4.1 jeopardize the safety of ships or adversely affect the performance of the machinery, or

.4.2 be harmful to personnel, or

.4.3 contribute overall to additional air pollution.

4 This regulation does not apply to coal in its solid form or nuclear fuels. Paragraphs 5.1, 8.1 and 8.2 of this regulation do not apply to a low-flashpoint fuel or a gas fuel.

5.1 For each ship subject to regulations 5 and 6, details of fuel oil delivered to and used on board that ship shall be recorded by means of a bunker delivery note that shall contain at least the information specified in appendix V.

5.2 For each ship subject to regulations 5 and 6, details of low-flashpoint fuel or gas fuel delivered to and used on board that ship shall be recorded by means of a bunker delivery note that shall include at least the information specified in items 1 to 6 of appendix V, the density as determined by a test method appropriate to the fuel type together with the associated temperature and a declaration signed and certified by the fuel oil supplier's representative that the fuel oil is in conformity with paragraph 3 of this regulation. In addition the sulphur content of a low-flashpoint fuel or a gas fuel delivered to a ship specifically for use on board that ship shall be documented on the bunker delivery note by the supplier in terms of either the actual value as determined by a test method appropriate to the fuel type or, with the agreement of the appropriate authority at the port of supply, a statement that the sulphur content, when tested by such a method, is less than 0.001% m/m.

6 The bunker delivery note shall be kept on board the ship in such a place as to be readily available for inspection at all reasonable times. It shall be retained for a period of three years after the fuel oil has been delivered on board.

7.1 The competent authority of a Party may inspect the bunker delivery notes on board any ship to which this Annex applies while the ship is in its port or offshore terminal, may make a copy of each delivery note, and may require the master or person in charge of the ship to certify that each copy is a true copy of such bunker delivery note. The competent authority may also verify the contents of each note through consultations with the port where the note was issued.

7.2 The inspection of the bunker delivery notes and the taking of certified copies by the competent authority under paragraph 7.1 of this regulation shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

8.1 The bunker delivery note shall be accompanied by a representative sample of the fuel oil delivered taking into account the guidelines developed by the Organization.[44] The sample is to be sealed and signed by the supplier's representative and the master or officer in charge of the bunker operation on completion of bunkering operations and retained under the ship's control until the fuel oil is substantially consumed, but in any case for a period of not less than 12 months from the time of delivery.

8.2 If a Party requires the representative sample to be analysed, it shall be done in accordance with the verification procedure set forth in appendix VI to determine whether the fuel oil meets the requirements of this Annex.

9 Parties undertake to ensure that appropriate authorities designated by them:

.1 maintain a register of local suppliers of fuel oil;

.2 require local suppliers to provide the bunker delivery note and, if applicable, the MARPOL delivered sample as required by this regulation, certified by the fuel oil supplier that the fuel oil meets the requirements of regulations 14 and 18;

[44] Refer to the *Guidelines for the sampling of fuel oil for determination of compliance with MARPOL Annex VI and SOLAS chapter II-2* (MSC-MEPC.2/Circ.18).

.3 require local suppliers to retain a copy of the bunker delivery note for at least three years for inspection and verification by the port State as necessary;

.4 take action as appropriate against fuel oil suppliers that have been found to deliver fuel oil that does not comply with that stated on the bunker delivery note;

.5 inform the Administration of any ship receiving fuel oil found to be non-compliant with the requirements of regulation 14 or 18; and

.6 inform the Organization for circulation to Parties and Member States of the Organization of all cases where fuel oil suppliers have failed to meet the requirements specified in regulations 14 or 18.

10 In connection with port State inspections carried out by Parties, the Parties further undertake to:

.1 inform the Party or non-Party under whose jurisdiction a bunker delivery note was issued of cases of delivery of non-compliant fuel oil, giving all relevant information; and

.2 ensure that remedial action as appropriate is taken to bring non-compliant fuel oil discovered into compliance.

11 For every ship of 400 gross tonnage and above on scheduled services with frequent and regular port calls, an Administration may decide after application and consultation with affected States that compliance with paragraph 6 of this regulation may be documented in an alternative manner that gives similar certainty of compliance with regulations 14 and 18.

Chapter 4 – Regulations on the carbon intensity of international shipping

Regulation 19
Application

1 This chapter shall apply to all ships of 400 gross tonnage and above.

2 Notwithstanding paragraph 1 of this regulation, the provisions of this chapter shall not apply to:

.1 ships solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly; however, each Party should ensure, by the adoption of appropriate measures, that such ships are constructed and act in a manner consistent with the requirements of chapter 4, so far as is reasonable and practicable;

.2 ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs, regardless of their propulsion.

3 Regulations 22, 23, 24 and 25 shall not apply to ships which have non-conventional propulsion, except that regulations 22 and 24 shall apply to cruise passenger ships having non-conventional propulsion and LNG carriers having conventional or non-conventional propulsion, delivered on or after 1 September 2019, as defined in regulation 2.2.1, and regulations 23 and 25 shall apply to cruise passenger ships having non-conventional propulsion and LNG carriers having conventional or non-conventional propulsion.

Regulations 22, 23, 24, 25 and 28 shall not apply to category A ships as defined in the Polar Code.

4 Notwithstanding the provisions of paragraph 1 of this regulation, the Administration may waive the requirement for a ship of 400 gross tonnage and above to comply with regulations 22 and 24.

5 The provision of paragraph 4 of this regulation shall not apply to ships of 400 gross tonnage and above:

.1 for which the building contract is placed on or after 1 January 2017; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2017; or

.3 the delivery of which is on or after 1 July 2019; or

.4 in cases of a major conversion of a new or existing ship, as defined in regulation 2.2.15, on or after 1 January 2017, and in which regulations 5.4.2 and 5.4.3 apply.

6 The Administration of a Party to the present Convention which allows the application of paragraph 4, or suspends, withdraws or declines the application of that paragraph, to a ship entitled to fly its flag shall forthwith communicate to the Organization for circulation to the Parties to the present Protocol particulars thereof, for their information.

Regulation 20
Goal

The goal of this chapter is to reduce the carbon intensity of international shipping, working towards the levels of ambition set out in the 2023 IMO Strategy on Reduction of GHG Emissions from Ships.[45]

Regulation 21
Functional requirements

In order to achieve the goal set out in regulation 20, a ship to which this chapter applies shall comply, as applicable, with the following functional requirements to reduce its carbon intensity:

.1 the technical carbon intensity requirements in accordance with regulations 22, 23, 24 and 25; and

.2 the operational carbon intensity requirements in accordance with regulations 26, 27 and 28.

Regulation 22
Attained Energy Efficiency Design Index (attained EEDI)

1 The attained EEDI shall be calculated for:

.1 each new ship;

.2 each new ship which has undergone a major conversion; and

[45] Refer to the *2023 IMO Strategy on Reduction of GHG Emissions from Ships* (resolution MEPC.377(80)).

.3 each new or existing ship which has undergone a major conversion that is so extensive that the ship is regarded by the Administration as a newly constructed ship

which falls into one or more of the categories in regulations 2.2.5 to 2.2.7, 2.2.9, 2.2.12 to 2.2.14, 2.2.18, 2.2.20, and 2.2.24 to 2.2.27. The attained EEDI shall be specific to each ship and shall indicate the estimated performance of the ship in terms of energy efficiency, and be accompanied by the EEDI technical file that contains the information necessary for the calculation of the attained EEDI and that shows the process of calculation. The attained EEDI shall be verified, based on the EEDI technical file, either by the Administration or by any organization duly authorized by it.[46]

2 The attained EEDI shall be calculated taking into account the guidelines developed by the Organization.[47]

3 For each ship subject to regulation 24, the Administration or any organization duly authorized by it[48] shall report to the Organization the required and attained EEDI values and relevant information, taking into account the guidelines developed by the Organization,[49] via electronic communication:

.1 within seven months of completing the survey required under regulation 5.4; or

.2 within seven months following 1 April 2022 for a ship delivered prior to 1 April 2022.

Regulation 23
Attained Energy Efficiency Existing Ship Index (attained EEXI)

1 The attained EEXI shall be calculated for:

.1 each ship; and

.2 each ship which has undergone a major conversion

which falls into one or more of the categories in regulations 2.2.5 to 2.2.7, 2.2.9, 2.2.12 to 2.2.14, 2.2.20, and 2.2.24 to 2.2.27. The attained EEXI shall be specific to each ship and shall indicate the estimated performance of the ship in terms of energy efficiency, and be accompanied by the EEXI technical file, which contains the information necessary for the calculation of the attained EEXI and which shows the process of the calculation. The attained EEXI shall be verified, based on the EEXI technical file, either by the Administration or by any organization duly authorized by it.[50]

46 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

47 Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships (*resolution MEPC.364(79)).

48 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

49 Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.364(79)).

50 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

2 The attained EEXI shall be calculated taking into account the guidelines developed by the Organization.[51]

3 Notwithstanding paragraph 1 of this regulation, for each ship to which regulation 22 applies, the attained EEDI verified by the Administration or by any organization duly authorized by it[52] in accordance with regulation 22.1 may be taken as the attained EEXI if the value of the attained EEDI is equal to or less than that of the required EEXI as required by regulation 25. In this case, the attained EEXI shall be verified based on the EEDI technical file.

Regulation 24
Required EEDI

1 For each:

.1 new ship,

.2 new ship which has undergone a major conversion, and

.3 new or existing ship which has undergone a major conversion that is so extensive that the ship is regarded by the Administration as a newly constructed ship

which falls into one of the categories in regulations 2.2.5 to 2.2.7, 2.2.9, 2.2.12 to 2.2.14, 2.2.20, and 2.2.24 to 2.2.27 and to which this chapter is applicable, the attained EEDI shall be as follows:

$$\text{Attained EEDI} \leq \text{Required EEDI} = \left(1 - \frac{X}{100}\right) \cdot \text{Reference line value}$$

where X is the reduction factor specified in table 1 for the required EEDI compared to the EEDI reference line.

2 For each new and existing ship that has undergone a major conversion which is so extensive that the ship is regarded by the Administration as a newly constructed ship, the attained EEDI shall be calculated and meet the requirement of paragraph 1 of this regulation with the reduction factor applicable corresponding to the ship type and size of the converted ship at the date of the contract of the conversion, or in the absence of a contract, the commencement date of the conversion.

Table 1 – Reduction factors (in percentage) for the EEDI relative to the EEDI reference line

Ship type	Size	Phase 0 1 Jan 2013 – 31 Dec 2014	Phase 1 1 Jan 2015 – 31 Dec 2019	Phase 2 1 Jan 2020 – 31 Mar 2022	Phase 2 1 Jan 2020 – 31 Dec 2024	Phase 3 1 Apr 2022 and onwards	Phase 3 1 Jan 2025 and onwards
Bulk carrier	20,000 DWT and above	0	10		20		30

[51] Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.350(78)).

[52] Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

Ship type	Size	Phase 0 1 Jan 2013 – 31 Dec 2014	Phase 1 1 Jan 2015 – 31 Dec 2019	Phase 2 1 Jan 2020 – 31 Mar 2022	Phase 2 1 Jan 2020 – 31 Dec 2024	Phase 3 1 Apr 2022 and onwards	Phase 3 1 Jan 2025 and onwards
	10,000 and above but less than 20,000 DWT	n/a	0-10*		0-20*		0-30*
Gas carrier	15,000 DWT and above	0	10	20		30	
	10,000 and above but less than 15,000 DWT	0	10		20		30
	2,000 and above but less than 10,000 DWT	n/a	0-10*		0-20*		0-30*
Tanker	20,000 DWT and above	0	10		20		30
	4,000 and above but less than 20,000 DWT	n/a	0-10*		0-20*		0-30*
Containership	200,000 DWT and above	0	10	20		50	
	120,000 and above but less than 200,000 DWT	0	10	20		45	
	80,000 and above but less than 120,000 DWT	0	10	20		40	
	40,000 and above but less than 80,000 DWT	0	10	20		35	
	15,000 and above but less than 40,000 DWT	0	10	20		30	
	10,000 and above but less than 15,000 DWT	n/a	0-10*	0-20*		15-30*	
General Cargo ships	15,000 DWT and above	0	10	15		30	
	3,000 and above but less than 15,000 DWT	n/a	0-10*	0-15*		0-30*	

Ship type	Size	Phase 0 1 Jan 2013 – 31 Dec 2014	Phase 1 1 Jan 2015 – 31 Dec 2019	Phase 2 1 Jan 2020 – 31 Mar 2022	Phase 2 1 Jan 2020 – 31 Dec 2024	Phase 3 1 Apr 2022 and onwards	Phase 3 1 Jan 2025 and onwards
Refrigerated cargo carrier	5,000 DWT and above	0	10		15		30
	3,000 and above but less than 5,000 DWT	n/a	0-10*		0-15*		0-30*
Combination carrier	20,000 DWT and above	0	10		20		30
	4,000 and above but less than 20,000 DWT	n/a	0-10*		0-20*		0-30*
LNG carrier***	10,000 DWT and above	n/a	10**	20		30	
Ro-ro cargo ship (vehicle carrier)***	10,000 DWT and above	n/a	5**		15		30
Ro-ro cargo ship***	2,000 DWT and above	n/a	5**		20		30
	1,000 and above but less than 2,000 DWT	n/a	0-5*,**		0-20*		0-30*
Ro-ro passenger ship***	1,000 DWT and above	n/a	5**		20		30
	250 and above but less than 1,000 DWT	n/a	0-5*,**		0-20*		0-30*
Cruise passenger ship*** having non-conventional propulsion	85,000 GT and above	n/a	5**	20		30	
	25,000 and above but less than 85,000 GT	n/a	0-5*,**	0-20*		0-30*	

* Reduction factor to be linearly interpolated between the two values dependent upon ship size. The lower value of the reduction factor is to be applied to the smaller ship size.

** Phase 1 commences for those ships on 1 September 2015.

*** Reduction factor applies to those ships delivered on or after 1 September 2019, as defined in paragraph 2.1 of regulation 2.

Note: n/a means that no required EEDI applies.

3 The reference line values shall be calculated as follows:

$$\text{Reference line value} = a \cdot b^{-c}$$

where a, b and c are the parameters given in table 2.

Table 2 – Parameters for the determination of reference values for the different ship types

Ship type defined in regulation 2	a	b	c
2.2.5 Bulk carrier	961.79	DWT of the ship where DWT≤279,000 279,000 where DWT > 279,000	0.477
2.2.6 Combination carrier	1,219.00	DWT of the ship	0.488
2.2.7 Containership	174.22	DWT of the ship	0.201
2.2.9 Cruise passenger ship having non-conventional propulsion	170.84	GT of the ship	0.214
2.2.12 Gas carrier	1,120.00	DWT of the ship	0.456
2.2.13 General cargo ship	107.48	DWT of the ship	0.216
2.2.14 LNG carrier	2,253.7	DWT of the ship	0.474
2.2.20 Refrigerated cargo carrier	227.01	DWT of the ship	0.244
2.2.24 Ro-ro cargo ship	1405.15	DWT of the ship	0.498
	1686.17*	DWT of the ship where DWT≤17,000* 17,000 where DWT > 17,000*	
2.2.25 Ro-ro cargo ship (vehicle carrier)	$(DWT/GT)^{-0.7}$ · 780.36 where DWT/GT < 0.3 1,812.63 where DWT/GT ≥ 0.3	DWT of the ship	0.471
2.2.26 Ro-ro passenger ship	752.16	DWT of the ship	0.381
	902.59*	DWT of the ship where DWT≤10,000* 10,000 where DWT > 10,000*	
2.2.27 Tanker	1,218.80	DWT of the ship	0.488

* to be used from phase 2 and thereafter.

4 If the design of a ship allows it to fall into more than one of the ship type definitions specified in table 2, the required EEDI for the ship shall be the most stringent (the lowest) required EEDI.

5 For each ship to which this regulation applies, the installed propulsion power shall not be less than the propulsion power needed to maintain the manoeuvrability of the ship under adverse conditions as defined in the guidelines developed by the Organization.[53]

[53] Refer to the *Guidelines for determining minimum propulsion power to maintain the manoeuvrability of ships in adverse conditions* (MEPC.1/Circ.850/Rev.3).

6 At the beginning of phase 1 and at the midpoint of phase 2, the Organization shall review the status of technological developments and, if proven necessary, amend the time periods, the EEDI reference line parameters for relevant ship types and reduction rates set out in this regulation.

Regulation 25
Required EEXI

1 For:

.1 each ship; and

.2 each ship which has undergone a major conversion

which falls into one of the categories in regulations 2.2.5 to 2.2.7, 2.2.9, 2.2.12 to 2.2.14, 2.2.20, and 2.2.24 to 2.2.27 and to which this chapter is applicable, the attained EEXI shall be as follows:

$$\text{Attained EEXI} \leq \text{Required EEXI} = \left(1 - \frac{\text{Y}}{100}\right) \bullet \text{EEDI reference line value}$$

where Y is the reduction factor specified in Table 3 for the required EEXI compared to the EEDI reference line.

Table 3 – Reduction factors (in percentage) for the EEXI relative to the EEDI reference line

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
	120,000 and above but less than 200,000 DWT	45
	80,000 and above but less than 120,000 DWT	35

Ship type	Size	Reduction factor
	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*

* Reduction factor to be linearly interpolated between the two values dependent upon ship size. The lower value of the reduction factor is to be applied to the smaller ship size.

2 The EEDI reference line values shall be calculated in accordance with regulations 24.3 and 24.4. For ro-ro cargo ships and ro-ro passenger ships, the reference line value to be used from phase 2 and thereafter under regulation 24.3 shall be referred to.

3 This regulation shall be kept under review in light of its implementation, taking into account the 2023 IMO Strategy on Reduction of GHG Emissions from Ships.[54]

[54] Refer to the *2023 IMO Strategy on Reduction of GHG Emissions from Ships* (resolution MEPC.377(80)).

Regulation 26
Ship Energy Efficiency Management Plan (SEEMP)

1 Each ship shall keep on board a ship specific Ship Energy Efficiency Management Plan (SEEMP). This may form part of the ship's safety management system (SMS). The SEEMP shall be developed and reviewed, taking into account the guidelines adopted by the Organization.[55]

2 In the case of a ship of 5,000 gross tonnage and above, the SEEMP shall include a description of the methodology that will be used to collect the data required by regulation 27.1 and the processes that will be used to report the data to the ship's Administration.

3 In the case of a ship of 5,000 gross tonnage and above which falls into one or more of the categories in regulations 2.2.5 to 2.2.7, 2.2.9, 2.2.12 to 2.2.14, 2.2.20, and 2.2.24 to 2.2.27:

.1 on or before 1 January 2023 the SEEMP shall include:

.1 a description of the methodology that will be used to calculate the ship's attained annual operational CII required by regulation 28 and the processes that will be used to report this value to the ship's Administration;

.2 the required annual operational CII, as specified in regulation 28, for the next three years;

.3 an implementation plan documenting how the required annual operational CII will be achieved during the next three years; and

.4 a procedure for self-evaluation and improvement;

.2 for a ship rated as D for three consecutive years or rated as E in accordance with regulation 28, the SEEMP shall be reviewed in accordance with regulation 28.8 to include a plan of corrective actions to achieve the required annual operational CII.

4 In the case of a ship to which chapter 5 applies:

.1 on or before 1 January 2028, the SEEMP shall include:

.1 a description of the methodology that will be used to collect the data required by regulation 37 to calculate the ship's attained annual GFI, target annual GFI and GFI compliance balance; and

.2 the processes that will be used to report the data required by regulation 37 to the ship's Administration.

[55] Refer to the *2024 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)* (resolution MEPC.395(82), as amended by resolution MEPC.401(83)).

5 For ships to which paragraphs 3 and 4 of this regulation apply, the SEEMP shall be subject to verification and company audits taking into account guidelines developed by the Organization.[56]

Regulation 27
Collection and reporting of ship fuel oil consumption data

1 From calendar year 2019, each ship of 5,000 gross tonnage and above shall collect the data specified in appendix IX, for that and each subsequent calendar year or portion thereof, as appropriate according to the methodology included in the SEEMP.

2 Except as provided for in paragraphs 4, 5 and 6 of this regulation, at the end of each calendar year, the ship shall aggregate the data collected in that calendar year or portion thereof, as appropriate.

3 Except as provided for in paragraphs 4, 5 and 6 of this regulation, within three months after the end of each calendar year the ship shall report to its Administration or any organization duly authorized by it[57] the aggregated value for each datum specified in appendix IX, via electronic communication and using a standardized format developed by the Organization.[58]

4 In the event of the transfer of a ship from one Administration to another, the ship shall on the day of completion of the transfer or as close as practical thereto report to the losing Administration or any organization duly authorized by it[59] the aggregated data for the period of the calendar year corresponding to that Administration, as specified in appendix IX and, upon prior request of that Administration, the disaggregated data.

5 In the event of a change from one company to another, the ship shall on the day of completion of the change or as close as practical thereto report to its Administration or any organization duly authorized by it[60] the aggregated data for the portion of the calendar year corresponding to the company, as specified in appendix IX and, upon request of its Administration, the disaggregated data.

6 In the event of change from one Administration to another and from one company to another concurrently, paragraph 4 of this regulation shall apply.

7 The data shall be verified according to procedures established by the Administration, taking into account the guidelines developed by the Organization.[61]

8 Except as provided for in paragraphs 4, 5 and 6 of this regulation, the disaggregated data that underlies the reported data noted in appendix IX for the previous calendar year shall be readily accessible for a period of not less than 12 months from the end of that calendar year and be made available to the Administration upon request.

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56 Refer to the *Guidelines for the verification and company audits by the Administration of part III of the Ship Energy Efficiency Management Plan (SEEMP)* (resolution MEPC.347(78)).

57 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

58 Refer to the *2024 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)* (resolution MEPC.395(82), as amended by resolution MEPC.401(83)).

59 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

60 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

61 Refer to the *2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity* (resolution MEPC.348(78)), as amended by resolution MEPC.389(81).

9 The Administration shall ensure that the reported data noted in appendix IX by its registered ships of 5,000 gross tonnage and above are transferred to the IMO Ship Fuel Oil Consumption Database via electronic communication and using a standardized format developed by the Organization[62] not later than one month after issuing the Statements of Compliance of these ships.

10 On the basis of the reported data submitted to the IMO Ship Fuel Oil Consumption Database, the Secretary-General of the Organization shall produce an annual report to the Committee summarizing the data collected, the status of missing data, and such other relevant information as may be requested by the Committee.

11 The Secretary-General of the Organization shall grant the Administration of a ship or any organization duly authorized by it[63] access to all the reported data for all the preceding calendar years in the IMO Ship Fuel Oil Consumption Database for that ship.

12 Parties shall have access to a non-anonymized database containing data for all ships to which this regulation applies strictly for their analysis and consideration.

13 The Secretary-General of the Organization shall maintain an anonymized database such that identification of a specific ship will not be possible, and facilitate access to public user accounts.

14 The IMO Ship Fuel Oil Consumption Database shall be undertaken and managed by the Secretary-General of the Organization, pursuant to guidelines developed by the Organization.[64]

15 On an ad hoc basis, the Secretary-General of the Organization may share data with analytical consultancies and research entities, under strict confidentiality rules.

16 The Secretary-General of the Organization, on the request of a company, shall grant access to the fuel oil consumption reports of the company's owned ship(s) in a non-anonymized form to the general public.

Regulation 28
Operational carbon intensity

Attained annual operational carbon intensity indicator (attained annual operational CII)

1 After the end of calendar year 2023 and after the end of each following calendar year, each ship of 5,000 gross tonnage and above which falls into one or more of the categories in regulations 2.2.5 to 2.2.7, 2.2.9, 2.2.12 to 2.2.14, 2.2.20, and 2.2.24 to 2.2.27 shall calculate the attained annual operational CII over a 12-month period from 1 January to 31 December for the preceding calendar year, using the data collected in accordance with regulation 27, taking into account the guidelines developed by the Organization.[65]

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62 Refer to the *2024 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)* (resolution MEPC.395(82), as amended by resolution MEPC.401(83)).

63 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

64 Refer to the *2022 Guidelines for the development and management of the IMO Ship Fuel Oil Consumption Database* (resolution MEPC.349(78)).

65 Refer to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)), and the *2022 Interim guidelines on correction factors and voyage adjustments for CII calculations (CII guidelines, G5)* (resolution MEPC.355(78)).

2 Within three months after the end of each calendar year, the ship shall report to its Administration, or any organization duly authorized by it,[66] the attained annual operational CII via electronic communication and using a standardized format developed by the Organization.[67]

3 Notwithstanding 1 and 2 of this regulation, in the event of any transfer of a ship addressed in regulations 27.4, 27.5 or 27.6 completed after 1 January 2023, a ship shall, after the end of the calendar year in which the transfer takes place, calculate and report the attained annual operational CII for the full 12-month period from 1 January to 31 December in the calendar year during which the transfer took place, in accordance with regulations 28.1 and 28.2, for verification in accordance with regulation 6.6, taking into account guidelines developed by the Organization.[68] Nothing in this regulation relieves any ship of its reporting obligations under regulation 27 or this regulation.

Required annual operational carbon intensity indicator (required annual operational CII)

4 For each ship of 5,000 gross tonnage and above which falls into one or more of the categories in regulations 2.2.5 to 2.2.7, 2.2.9, 2.2.12 to 2.2.14, 2.2.20, and 2.2.24 to 2.2.27, the required annual operational CII shall be determined as follows:

$$\text{Required annual operational CII} = \left(1 - \frac{Z}{100}\right) \times \text{CII}_R$$

where:

Z is the annual reduction factor to ensure continuous improvement of the ship's operational carbon intensity within a specific rating level; and

CII_R is the reference value.

5 The annual reduction factor Z[69] and the reference value CII_R shall be the values defined taking into account the guidelines developed by the Organization.[70]

Operational carbon intensity rating

6 The *attained annual operational CII* shall be documented and verified against the required annual operational CII to determine operational carbon intensity rating A, B, C, D or E, indicating a major superior, minor superior, moderate, minor inferior, or inferior performance level, either by the Administration or by any organization duly authorized by it,[71] taking into

66 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

67 Refer to the *2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity* (resolution MEPC.348(78), as amended by resolution MEPC.389(81)).

68 Refer to the *2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity* (resolution MEPC.348(78), as amended by resolution MEPC.389(81)).

69 The annual reduction factor is specific to each category of ship.

70 Refer to the *2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factor guidelines, G3)* (resolution MEPC.338(76), as amended by resolution MEPC.400(83)) and the *2022 Guidelines on the reference lines for use with operational carbon intensity indicators (CII reference lines guidelines, G2)* (resolution MEPC.353(78)).

71 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

account the guidelines developed by the Organization.[72] The middle point of rating level C shall be the value equivalent to the required annual operational CII set out in paragraph 4 of this regulation.

Corrective actions and incentives

7 A ship rated as D for three consecutive years or rated as E shall develop a plan of corrective actions to achieve the required annual operational CII.

8 The SEEMP shall be reviewed to include the plan of corrective actions accordingly, taking into account the guidelines developed by the Organization.[73] The revised SEEMP shall be submitted to the Administration or any organization duly authorized by it[74] for verification, preferably together with, but in no case later than 1 month after reporting, the attained annual operational CII in accordance with paragraph 2 of this regulation.

9 A ship rated as D for three consecutive years or rated as E shall duly undertake the planned corrective actions in accordance with the revised SEEMP.

10 Administrations, port authorities and other stakeholders as appropriate, are encouraged to provide incentives to ships rated as A or B.

Review

11 This regulation shall be kept under review in light of its implementation, taking into account the 2023 IMO Strategy on Reduction of GHG Emissions from Ships.[75]

Regulation 29
Promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships[76]

1 Administrations shall, in cooperation with the Organization and other international bodies, promote and provide support, as appropriate, directly or through the Organization to States that request technical assistance, especially developing States.

2 The Administration of a Party shall cooperate actively with other Parties, subject to its national laws, regulations and policies, to promote the development and transfer of technology and exchange of information to States which request technical assistance, particularly developing States, in respect of the implementation of measures to fulfil the requirements of chapter 4, in particular regulations 19.4 to 19.6.

72 Refer to the *2022 Guidelines on the operational carbon intensity rating of ships (CII rating guidelines, G4)* (resolution MEPC.354(78)).

73 Refer to the *2024 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)* (resolution MEPC.395(82), as amended by resolution MEPC.401(83)).

74 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

75 Refer to the *2023 IMO Strategy on Reduction of GHG Emissions from Ships* (resolution MEPC.377(80)).

76 Refer to *Promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships* (resolution MEPC.229(65)), and the *Model agreement between governments on technological cooperation for the implementation of the regulations in chapter 4 of MARPOL Annex VI* (MEPC.1/Circ.861).

Chapter 5 – Regulations on the IMO Net-Zero Framework

Regulation 30
Application

1 This chapter shall apply to all ships of 5,000 gross tonnage and above.

2 Notwithstanding paragraph 1 of this regulation, the provisions of this chapter shall not apply to:

.1 ships solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly; however, each Party should ensure, by the adoption of appropriate measures, that such ships act in a manner consistent with the requirements of chapter 5, so far as is reasonable and practicable;

.2 ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs, regardless of their propulsion; and

.3 semi-submersible vessels until further review of the application of this chapter.

Regulation 31
Goal

The goal of this chapter is to reduce greenhouse gas (GHG) emissions from international shipping as soon as possible, delivering on the reduction targets set out in the 2023 IMO Strategy on Reduction of GHG Emissions from Ships,[77] effectively promoting the energy transition of shipping and providing the world fleet with a needed incentive while contributing to a level playing field and a just and equitable transition.

Regulation 32
Functional requirements

In order to achieve the goal set out in regulation 31, a ship to which this chapter applies shall comply with the following functional requirements:

.1 requirements on the continuous improvement of the ship's GHG fuel intensity in accordance with regulation 35; and

.2 requirements on GHG emissions pricing contributions for excess emissions and on rewards for the uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs) in accordance with regulations 36 and 39.

[77] Refer to the *2023 IMO Strategy on Reduction of GHG Emissions from Ships* (resolution MEPC.377(80)).

Regulation 33
Attained annual GHG fuel intensity (attained annual GFI)

1 After the end of calendar year 2028 and after the end of each calendar year thereafter, each ship to which this chapter applies shall calculate the attained annual GFI over a 12-month period from 1 January to 31 December for the preceding calendar year (reporting period), using the data collected in accordance with regulations 27 and 37 and specified in appendix XII, taking into account the guidelines developed by the Organization.[78]

2 The attained annual GFI of a ship in a given year (denoted as $GFI_{attained}$) shall be calculated as follows, taking into account the guidelines developed by the Organization:[79]

$$GFI_{attained} = \frac{\sum_{j=1}^{J} EI_j \times Energy_j}{Energy_{total}}$$

where:

$GFI_{attained}$ is the attained annual GFI of a ship in a given year;

j is the fuel type;

J is the total number of fuels used during the reporting period, as reported to the IMO Ship Fuel Oil Consumption Database;

EI_j, expressed in gCO_2eq/MJ, is the GHG intensity, expressed on a well-to-wake basis of a fuel type j, calculated taking into account the guidelines developed by the Organization;[80]

$Energy_j$, expressed in MJ, refers to the energy consumption of fuel type j by the ship in the reporting period; and

$Energy_{total}$ expressed in MJ, refers to the total amount of energy used by the ship in the reporting period, including but not limited to fuel oil, electricity delivered from shore power, and zero-emission energy sources, such as wind propulsion and solar power.

Regulation 34
Sustainable fuels certification schemes

1 The GHG intensity of a fuel shall be calculated using GHG emission factors and also taking into account all relevant metrics and indicators for each sustainability theme or aspect of a fuel as documented on the Fuel Life Cycle Label(s) (FLL).

78 Refer to the guidelines to be developed on the calculation of the attained annual greenhouse gas fuel intensity (GFI Calculation Guidelines).

79 Refer to the guidelines to be developed on the calculation of the attained annual greenhouse gas fuel intensity (GFI Calculation Guidelines).

80 Refer to the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)), as may be amended.

2 GHG emission factors and sustainability themes or aspects of a fuel as documented on the FLL shall be certified, as appropriate, by a recognized Sustainable Fuels Certification Scheme (SFCS) taking into account guidelines developed by the Organization.[81]

3 The certified information in the FLL may accompany the bunker delivery note referred to in regulation 18, taking into account guidelines developed by the Organization.[82]

4 An SFCS shall be recognized by the Committee taking into account the recognition process(es) and criteria specified in guidelines developed by the Organization.[83] The recognition of an SFCS shall be subject to renewal every five years and periodic review, taking into account guidelines developed by the Organization.[84]

5 No later than 1 March 2027, the Secretary-General of the Organization shall publish a list of recognized SFCSs, and shall update the list periodically thereafter.

6 Within three months after the end of calendar year 2027, and within three months after the end of each following calendar year, the Organization shall ensure that the legal entity administering the recognized SFCS reports data relevant to their activity for that calendar year or portion thereof to ensure transparency, traceability, and environmental integrity in the certification process, taking into account guidelines developed by the Organization.[85] On the basis of the reported data, the Secretary-General of the Organization shall produce an annual report to the Committee.

Regulation 35
Target annual GHG fuel intensity (target annual GFI)

1 The target annual GFI (GFI_T) of a ship shall consist of the following two tiers:

.1 a Base target annual GFI (base target); and

.2 a Direct compliance target annual GFI (direct compliance target).

2 The GFI_T for each ship to which this regulation applies shall be determined/calculated as follows:

$$GFI_T = (1 – Z_T/100) \times GFI_{2008}$$

where:

subscript T is the calendar year referred to in Table 4;

81 Refer to guidelines to be developed/amend the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)) (LCA guidelines), as appropriate.

82 Refer to guidelines to be developed/amend the *2024 Guidelines on life cycle GHG intensity of marine fuels (*resolution MEPC.391(81)) (LCA guidelines), as appropriate.

83 Refer to guidelines to be developed/amend the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)) (LCA guidelines), as appropriate.

84 Refer to guidelines to be developed/amend the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)) (LCA guidelines), as appropriate.

85 Refer to guidelines to be developed/amend the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)) (LCA guidelines), as appropriate.

GFI_{2008} is the GFI reference value equivalent to 93.3 gCO_2eq/MJ (well-to-wake), representing the average GFI of international shipping in year 2008; and

Z_T is the annual GFI reduction factor to ensure continuous improvement of the ship's GHG fuel intensity, consisting of both an annual reduction factor for the base target and for the direct compliance target, the values of which are specified in Table 4, as compared to the GFI reference value.

Table 4 – Annual GFI reduction factors (in percentage) for the target annual GFI relative to the GFI reference value

$Year_T$	Z_T for Base target	Z_T for Direct compliance target
2028	4.0	17.0
2029	6.0	19.0
2030	8.0	21.0
2031	12.4	25.4
2032	16.8	29.8
2033	21.2	34.2
2034	25.6	38.6
2035	30.0	43.0

3 By 1 January 2032, the Committee shall determine the Z-factor (Z_T) for the Base target and Direct compliance target for the years 2036 to 2040. The 2040 Z_T for the Base target shall be set at 65%.

Regulation 36
Annual GFI compliance approaches

1 At the end of each reporting period as defined in regulation 33, each ship shall determine its GFI compliance balance, as follows, taking into account guidelines developed by the Organization:[86]

GFI compliance balance (expressed in tonnes of CO_2eq) =
(Direct compliance target annual GFI – Attained annual GFI) × $Energy_{total}$

2 If the GFI compliance balance is equal to or greater than zero, the ship shall be considered in direct compliance and be eligible to receive surplus units for its positive compliance balance in accordance with paragraph 11 of this regulation.

3 If the GFI compliance balance is less than zero, the ship shall determine its compliance deficit in accordance with paragraph 4 of this regulation and shall achieve compliance by balancing its deficit in accordance with the GFI compliance approaches in paragraphs 5 and/or 6, as applicable, of this regulation.

[86] Refer to the guidelines to be developed on the calculation of the attained annual greenhouse gas fuel intensity (GFI Calculation Guidelines).

Assessment of the compliance deficit

4 A ship's compliance deficit comprises the quantification of emissions in excess of the tier(s) of the target annual GFI and shall be determined as follows, taking into account guidelines developed by the Organization:[87]

.1 for ships whose attained annual GFI is equal to or less than the base target but greater than the direct compliance target:

$$\text{Tier 1 compliance deficit} = (\text{Direct compliance target annual GFI} - \text{Attained annual GFI}) \times \text{Energy}_{\text{total}},$$

or

.2 for ships whose attained annual GFI is greater than the base target:

$$\text{Tier 1 compliance deficit} = (\text{Direct compliance target annual GFI} - \text{Base target annual GFI}) \times \text{Energy}_{\text{total}}$$

and

$$\text{Tier 2 compliance deficit} = (\text{Base target annual GFI} - \text{Attained annual GFI}) \times \text{Energy}_{\text{total}}$$

Balance of the compliance deficit

5 A ship shall balance its Tier 1 compliance deficit through remedial units acquired by means of GHG emissions pricing contributions to the IMO Net-Zero Fund, priced at Tier 1 benchmark rates in accordance with paragraph 8 of this regulation, which shall be recorded on the ship account statement issued by the IMO GFI Registry in accordance with regulation 38.

6 A ship shall balance its Tier 2 compliance deficit through one or more of the following GFI compliance approaches, which shall be recorded on the ship account statement issued by the IMO GFI Registry in accordance with regulation 38.5, taking into account the guidelines developed by the Organization:[88]

.1 surplus units transferred from other ships;

.2 surplus units banked from previous reporting periods; and/or

.3 remedial units acquired by means of GHG emissions pricing contributions to the IMO Net-Zero Fund priced at Tier 2 benchmark rates in accordance with paragraph 9 of this regulation.

[87] Refer to the guidelines to be developed on the calculation of the attained annual greenhouse gas fuel intensity (GFI Calculation Guidelines).

[88] Refer to guidelines to be developed by the Organization.

7 A ship that has fully balanced its compliance deficit in accordance with paragraphs 5 and 6 of this regulation, as applicable, shall be considered as being compliant with its target annual GFI, without prejudice to the ship to recover any costs incurred in the application of this regulation that relate to the operational responsibility of the ship. For the purpose of this regulation, operational responsibility of the ship means determining the fuel used or the cargo carried or the route or the speed of the ship.

Remedial Units

8 For the reporting periods 2028 to 2030, the initial price of a Tier 1 remedial unit shall be US$100 per tonne of CO_2eq on a well-to-wake basis.

9 For the reporting periods 2028 to 2030, the initial price of a Tier 2 remedial unit shall be US$380 per tonne of CO_2eq on a well-to-wake basis.

10 By 1 January 2028, the Committee shall determine the mechanism for reviewing and defining the price of a Tier 1 and Tier 2 remedial unit for the reporting periods from 2031 and onwards.

Surplus Units

11 The amount of surplus units a ship in direct compliance is eligible to receive shall be equal to its positive compliance balance, expressed in tonnes of CO_2eq, taking into account guidelines developed by the Organization.[89]

12 A surplus unit, subject to paragraphs 6 and 15 of this regulation, credited to the ship account in the IMO GFI Registry may be used once for one of the following purposes, which shall be recorded in the IMO GFI Registry, taking into account guidelines developed by the Organization:[90]

.1 transfer to another ship to balance that ship's Tier 2 compliance deficit;

.2 banked for use in the subsequent reporting periods; or

.3 voluntarily cancelled as a mitigation contribution.

13 A surplus unit shall only be transferred or cancelled once, but each one of a ship's surplus units may be used for any of the purposes provided for in paragraph 12 of this regulation.

14 An unassigned surplus unit shall be automatically banked.

15 A surplus unit shall have a validity of two calendar years following the calendar year of its issuance from the IMO GFI Registry. A surplus unit not used by the ship in whose account it has been credited by its expiry date shall be cancelled by the IMO GFI Registry as a mitigation contribution.

89 Refer to guidelines to be developed by the Organization.

90 Refer to guidelines to be developed by the Organization.

Regulation 37
Reporting and verification of the annual GFI

1 Within three months after the end of calendar year 2028 and by 31 March after each reporting period thereafter, the ship shall report to its Administration, or any organization duly authorized by it,[91] the attained annual GFI, the target annual GFI and the GFI compliance balance of the ship for that reporting period, respectively calculated in accordance with regulations 33, 35 and 36, together with the data collected as specified in appendix XII via electronic communication and using the standardized format developed by the Organization[92] for the purpose of verifying the compliance of each ship with this chapter, taking into account guidelines developed by the Organization.[93]

2 In the event of any transfer of a ship from one Administration to another and/or a change from one company to another completed after 1 January 2028, a ship shall, after the end of the calendar year in which the transfer and/or change takes place, comply with paragraph 1 of this regulation for the 12-month period from 1 January to 31 December of the calendar year during which the transfer and/or change took place.

3 Within six months after the end of 2028 and by 30 June after each following reporting period, the Administration, or any organization duly authorized by it,[94] shall verify the reported data pursuant to paragraph 1 of this regulation and report the verified data to the IMO GFI Registry, taking into account the guidelines developed by the Organization.[95]

4 Within one month after the ship's verified data has been reported to the IMO GFI Registry pursuant to paragraph 3 of this regulation or on the 31 July at the latest, the ship shall determine and record in the IMO GFI Registry its selected GFI compliance approach(es) in accordance with regulation 36.

5 By 31 August after each reporting period, the IMO GFI Registry shall issue, for each ship account and reporting period, a ship account statement reflecting the transactions recorded in accordance with regulation 38.4. The ship account statement shall be made available to the ship, its Administration, or any organization duly authorized by it,[96] taking into account guidelines developed by the Organization.[97]

6 By 30 September after each reporting period, the Administration, or any organization duly authorized by it,[98] shall on the basis of the reported data and selected GFI compliance approach(es) as recorded on the ship account statement in the IMO GFI Registry issue a Statement of Compliance related to the annual GFI in accordance with regulation 6.9. The Administration, or any organization duly authorized by it,[99] shall report that Statement of Compliance in the IMO GFI Registry ship account by 31 October after each reporting period.

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91 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

92 Refer to the *2022 Guidelines for the development of a ship energy efficiency management plan (SEEMP)* (resolution MEPC.346(78), as amended by resolution MEPC.388(81).

93 Refer to guidelines to be developed by the Organization.

94 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

95 Refer to guidelines to be developed by the Organization.

96 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

97 Refer to guidelines to be developed by the Organization.

98 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

99 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

7 In the event of a transfer of a ship from one Administration to another and/or a change from one company to another as referred to in paragraph 2 of this regulation, the ship shall, on the day of completion of the transfer and/or change or as close as practical thereto, report the data specified in appendix XII for the portion of the calendar year corresponding to that Administration and/or company to the losing Administration, or any organization duly authorized by it,[100] in the case of a transfer of Administration or to its Administration, or any organization duly authorized by it,[101] in the case of a change of company. The Administration or any organization duly authorized by it[102] shall verify the data pursuant to paragraph 1 of this regulation and issue a Statement of Compliance pursuant to 6.10. Within one month following the issuance of the Statement of Compliance, the Administration shall report the verified data and that Statement of Compliance to the IMO GFI Registry, taking into account guidelines developed by the Organization.[103]

8 From 1 January 2028, if a ship is permanently withdrawn from service during a reporting period, the ship shall fulfil its reporting duties for the time during which the ship was operational within that period and comply with the requirements of this chapter on the day of completion of the withdrawal or as close as practical thereto, taking into account guidelines developed by the Organization.[104]

Regulation 38
IMO GFI Registry

Establishment

1 The Secretary-General of the Organization shall establish and administer the IMO GFI Registry to facilitate the implementation of regulation 36, taking into account the guidelines developed by the Organization.[105]

Ship specific obligations

2 Each ship to which this chapter applies shall open by 1 October 2027 an account with the IMO GFI Registry and shall pay by 30 June 2028, and by 30 June of each year thereafter, the annual administration fee to the IMO GFI Registry.

3 The Secretary-General of the Organization shall determine the annual administration fee to cover the administrative costs of the IMO GFI Registry, taking into guidelines developed by the Organization.[106]

Functionalities

4 In accordance with regulation 36, the IMO GFI Registry shall in each ship account, as applicable:

100 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

101 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

102 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

103 Refer to guidelines to be developed by the Organization.

104 Refer to guidelines to be developed by the Organization.

105 Refer to guidelines to be developed by the Organization.

106 Refer to guidelines to be developed by the Organization.

.1 credit the amount of surplus units a ship in direct compliance is eligible to receive;

.2 record banked surplus units between reporting periods;

.3 record all transferred surplus units from one ship account to another ship account;

.4 cancel surplus units when:

.1 used by a ship to balance its Tier 2 compliance deficit for a reporting period;

.2 voluntarily cancelled at the request of the ship; and/or

.3 expired; and

.5 credit remedial units to a ship account, equal to the amount and the tier type of remedial units acquired by means of GHG emissions pricing contributions to the IMO Net-Zero Fund, and cancel the remedial unit following proof of payment.

5 By 31 August after the end of each reporting period, the IMO GFI Registry shall issue for each ship account and reporting period a ship account statement reflecting all the transactions recorded in accordance with paragraph 4 of this regulation and the GFI compliance balance.

6 The IMO GFI Registry shall record for each ship account for each reporting period the following information:

.1 the ship account statement;

.2 the verified attained annual GFI;

.3 the total energy consumption;

.4 the total energy consumption of each ZNZ;

.5 the GHG emissions avoided by the uptake of ZNZs;

.6 the Statement of Compliance related to the annual GHG fuel intensity; and

.7 any other information, taking into account guidelines developed by the Organization.[107]

[107] Refer to guidelines to be developed by the Organization.

Access to the IMO GFI Registry

7 The Secretary-General of the Organization shall grant access to the Administration of a ship, or any organization duly authorized by that Administration,[108] to all recorded data in the ship's account in order to verify and report the ship's data in accordance with regulation 37 taking into account guidelines developed by the Organization.[109]

8 The Secretary-General of the Organization shall maintain the IMO GFI Registry and grant access to users, taking into account guidelines developed by the Organization.[110]

Reporting to the Marine Environment Protection Committee

9 On the basis of the information maintained in accordance with this regulation, the Secretary-General of the Organization shall produce an annual report to the Committee summarizing the data collected, specifying the ships with an active ship account, transaction patterns in the issuance, transferring, usage and cancellation of surplus units and remedial units, share of zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs) used by ships in IMO GFI Registry and other relevant information as may be requested by the Committee.

Regulation 39
Uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs)

1 ZNZs shall include technologies, fuels and energy sources and shall be evaluated on a well-to-wake basis, taking into account guidelines developed by the Organization.[111] The GFI threshold for ZNZs shall be set at not greater than 19.0 gCO_2eq/MJ for an initial period until 31 December 2034, and from 1 January 2035 the threshold shall be set at not greater than 14.0 gCO_2eq/MJ taking into account guidelines developed[112] and to be developed by the Organization.[113] Notwithstanding, the Committee may approve additional ZNZs taking into account guidelines developed by the Organization.[114]

2 Ships may receive rewards from the IMO Net-Zero Fund for the ZNZs used, taking into account guidelines developed by the Organization.[115]

3 No later than 1 March 2027 and every five years thereafter the Committee shall define the reward referred to in paragraph 2 of this regulation, and the methodology to determine such reward, taking into account guidelines developed by the Organization.[116]

4 The Organization shall monitor and publish the share of ZNZs in the total annual energy used on board by ships falling under the scope of chapter 5.

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108 Refer to the *Code for Recognized Organizations (RO Code)* (resolutions MSC.349(92) and MEPC.237(65)).

109 Refer to guidelines to be developed by the Organization.

110 Refer to guidelines to be developed by the Organization.

111 Refer to guidelines to be developed by the Organization.

112 Refer to the *2024 Guidelines on life cycle GHG intensity of marine fuels* (resolution MEPC.391(81)).

113 Refer to guidelines to be developed by the Organization.

114 Refer to guidelines to be developed by the Organization.

115 Refer to guidelines to be developed by the Organization.

116 Refer to guidelines to be developed by the Organization.

Regulation 40
The IMO Net-Zero Fund

1 The Secretary-General of the Organization shall establish the IMO Net-Zero Fund to support the implementation of this chapter and achieve its goal as set out in regulation 31. Any costs associated with the operation of the Fund and its Governing Board shall be borne by the Fund.

2 The IMO Net-Zero Fund shall receive and manage GHG emissions pricing contributions made by ships pursuant to regulation 36, and disburse collected revenue in accordance with regulation 41.

3 The Committee shall adopt the governing provisions for the IMO Net-Zero Fund and appoint a Governing Board to oversee the day-to-day operations of the Fund on its behalf in accordance with the governing provisions.

4 The governing provisions, referred to in paragraph 3 of this regulation, shall include provisions specifying which entities may be eligible to receive funds from the IMO Net-Zero Fund; the types of financing mechanisms by which funds may be disbursed; the operating procedures of the IMO Net-Zero Fund and its Governing Board; which entities and organizations the IMO Net-Zero Fund may cooperate with in the disbursement of revenue; and allocations of revenue to the different purposes set out in regulation 41 including those that promote a just and equitable transition in the context of this measure.

5 The Governing Board shall have a gender and geographically balanced composition, ensuring adequate representation of developing countries, in particular of small island developing States (SIDS) and least developed countries (LDCs).

6 The Governing Board shall produce an annual report to the Committee containing an overview of its operations, including total contributions received, commitments and disbursement of revenue for the different purposes set out in regulation 41, and other relevant information as may be requested by the Committee.

7 On the basis of the Governing Board's annual report referred to in paragraph 6 of this regulation, the Committee shall periodically review the allocation of revenue to the different purposes set out in regulation 41.

8 The Fund shall be subject to audits.

Regulation 41
Disbursement of revenue

1 The IMO Net-Zero Fund shall disburse collected revenue for the following purposes, as shall be specified in its governing provisions:

.1 rewards for the use of ZNZs, in accordance with regulation 39;

.2 in the context of the implementation of this chapter and, promoting a just and equitable transition in States by facilitating environmental and climate protection, adaptation and resilience building within the boundaries of the energy transition in shipping, paying particular attention to the needs of developing countries, in particular least developed countries (LDCs) and small island developing States (SIDS), allocating sufficient revenue, for:

.1 researching, developing and making globally available and deploying zero and near-zero GHG emission technologies, fuels and/or energy sources, supporting the energy transition of shipping, and developing the necessary maritime, coastal and port-related infrastructure and equipment;

.2 enabling a just transition for seafarers and other maritime workforce;

.3 facilitating information-sharing, technology transfer, capacity-building, training and technical cooperation supporting the implementation of the regulations in this chapter;

.4 supporting the development and implementation of National Action Plans (NAPs),[117] including fleet renewal and upgrade; and

.5 addressing, as appropriate, disproportionately negative impacts on States, including on food security, resulting from the implementation of the regulations in this chapter;[118] and

.3 cover the administration and operational costs of the Fund and its Governing Board.

Regulation 42
Promotion of technical cooperation and transfer of technology relating to the continuous improvement of the ship's GHG fuel intensity

1 Administrations shall, in cooperation with the Organization and other international bodies, promote and provide support, as appropriate, directly or through the Organization to States that request technical assistance, especially developing States.

2 The Administration of a Party shall cooperate actively with other Parties, subject to its national laws, regulations and policies, to promote the development and transfer of technology and exchange of information to States which request technical assistance, particularly developing States, in respect of the implementation of measures to fulfil the requirements of chapter 5.

3 The Organization shall promote information-sharing, technology transfer, capacity-building and technical cooperation to enable the development of the necessary maritime, coastal and port-related infrastructure and equipment to support supply of zero or near-zero GHG emission fuels and/or energy sources in developing States.

Regulation 43
Food security

The Committee shall:

.1 address, including avoiding, remedying and mitigating, the disproportionately negative impacts of this chapter on food security, paying particular attention to countries exposed to food insecurity; and

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117 Refer to resolution MEPC.367(79) on *Encouragement of Member States to develop and submit voluntary national action plans to address GHG emissions from ships*.

118 Refer to the *2023 IMO Strategy on Reduction of GHG Emissions from Ships* (resolution MEPC.377(80)) and MEPC.1/Circ.885/Rev.1 on the *Revised procedure for assessing impacts on States of candidate measures*.

.2 keep the potential impacts of this chapter on food security under continuous review.

Regulation 44
Review of the chapter

To ensure the continued achievement of the goal of this chapter, a review shall be completed by the Organization every five years to assess the effectiveness of this chapter in achieving its goal as set out in regulation 31, on the basis of which it shall consider:

.1 amending the annual GFI reduction factor (base target and direct compliance target) in regulation 35;

.2 amending the threshold values for ZNZs as defined in regulation 39; and

.3 the possible application of this chapter to ships of 400 gross tonnage and above.

Chapter 6 – Verification of compliance with the provisions of this annex

Regulation 45
Application

Parties shall use the provisions of the Code for Implementation in the execution of their obligations and responsibilities contained in this Annex.

Regulation 46
Verification of compliance

1 Every Party shall be subject to periodic audits by the Organization in accordance with the audit standard to verify compliance with and implementation of this Annex.

2 The Secretary-General of the Organization shall have responsibility for administering the Audit Scheme, based on the guidelines developed by the Organization.[119]

3 Every Party shall have responsibility for facilitating the conduct of the audit and implementation of a programme of actions to address the findings, based on the guidelines developed by the Organization.[120]

4 The audits of all Parties shall be:

.1 based on an overall schedule developed by the Secretary-General of the Organization, taking into account the guidelines developed by the Organization;[121] and

.2 conducted at periodic intervals, taking into account the guidelines developed by the Organization.[122]

[119] Refer to the *Framework and procedures for the IMO Member State Audit Scheme* (resolution A.1067(28)).

[120] Refer to the *Framework and procedures for the IMO Member State Audit Scheme* (resolution A.1067(28)).

[121] Refer to the *Framework and procedures for the IMO Member State Audit Scheme* (resolution A.1067(28)).

[122] Refer to the *Framework and procedures for the IMO Member State Audit Scheme* (resolution A.1067(28)).

Appendix I

Form of International Air Pollution Prevention (IAPP) Certificate (regulation 8)

INTERNATIONAL AIR POLLUTION PREVENTION 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 relating 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[1]

Name of ship ……..……..…….

Distinctive number or letters ……..…….……..

IMO number[2] ……..

Port of registry ……..……..……

Gross tonnage ……..……..…….

THIS IS TO CERTIFY:

1 that the ship has been surveyed in accordance with regulation 5 of Annex VI of the Convention; and

2 that the survey shows that the equipment, systems, fittings, arrangements and materials fully comply with the applicable requirements of Annex VI of the Convention.

This Certificate is valid until (dd/mm/yyyy)[3] ……..…….. subject to surveys in accordance with regulation 5 of Annex VI of the Convention.

Completion date of the survey on which this Certificate is based (dd/mm/yyyy)……

Issued at ……..…….

(place of issue of Certificate)

Date (dd/mm/yyyy) ……..……. ……

(date of issue) *(signature of duly authorized official issuing the Certificate)*

(seal or stamp of the authority, as appropriate)

---

1 Alternatively, the particulars of the ship may be placed horizontally in boxes.

2 In accordance with the *IMO Ship Identification Number Scheme* (resolution A.1117(30)).

3 Insert the date of expiry as specified by the Administration in accordance with regulation 9.1 of Annex VI of the Convention. The day and the month of this date correspond to the anniversary date as defined in regulation 2.1.3 of Annex VI of the Convention, unless amended in accordance with regulation 9.8 of Annex VI of the Convention.

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that, at a survey required by regulation 5 of Annex VI of the Convention, the ship was found to comply with the relevant provisions of that Annex:

Annual survey

Signed. …….
(signature of duly authorized official)

Place . ……..

Date (dd/mm/yyyy) ……
(seal or stamp of the authority, as appropriate)

Annual/Intermediate[4] survey

Signed……
(signature of duly authorized official)

Place ……..

Date (dd/mm/yyyy) ……..
(seal or stamp of the authority, as appropriate)

Annual/Intermediate[4] survey

Signed……
(signature of duly authorized official)

Place ……..

Date (dd/mm/yyyy) ……
(seal or stamp of the authority, as appropriate)

Annual survey

Signed. …….
(signature of duly authorized official)

Place……..

Date (dd/mm/yyyy) ……
(seal or stamp of the authority, as appropriate)

ANNUAL/INTERMEDIATE SURVEY IN ACCORDANCE WITH REGULATION 9.8.3

THIS IS TO CERTIFY that, at an annual/intermediate[4] survey in accordance with regulation 9.8.3 of Annex VI of the Convention, the ship was found to comply with the relevant provisions of that Annex:

Signed……
(signature of duly authorized official)

Place ……..

Date (dd/mm/yyyy) ……..
(seal or stamp of the authority, as appropriate)

[4] Delete as appropriate.

ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID FOR LESS THAN FIVE YEARS WHERE REGULATION 9.3 APPLIES

The ship complies with the relevant provisions of the Annex, and this Certificate shall, in accordance with regulation 9.3 of Annex VI of the Convention, be accepted as valid until (dd/mm/yyyy) ……...

Signed. ……
(signature of duly authorized official)

Place ……..

Date (dd/mm/yyyy) ……

(seal or stamp of the authority, as appropriate)

ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN COMPLETED AND REGULATION 9.4 APPLIES

The ship complies with the relevant provisions of the Annex, and this Certificate shall, in accordance with regulation 9.4 of Annex VI of the Convention, be accepted as valid until (dd/mm/yyyy) ……

Signed. ……
(signature of duly authorized official)

Place ……

Date (dd/mm/yyyy) ……

(seal or stamp of the authority, as appropriate)

ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF SURVEY OR FOR A PERIOD OF GRACE WHERE REGULATION 9.5 OR 9.6 APPLIES

This Certificate shall, in accordance with regulation 9.5 or 9.6[4] of Annex VI of the Convention, be accepted as valid until (dd/mm/yyyy)…….

Signed. ……...
(signature of duly authorized official)

Place ……

Date (dd/mm/yyyy) ……

(seal or stamp of the authority, as appropriate)

[4] Delete as appropriate.

ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE
WHERE REGULATION 9.8 APPLIES

In accordance with regulation 9.8 of Annex VI of the Convention, the new anniversary date is (dd/mm/yyyy)……

Signed. …….
(signature of duly authorized official)

Place ……

Date (dd/mm/yyyy) …….

(seal or stamp of the authority, as appropriate)

In accordance with regulation 9.8 of Annex VI of the Convention, the new anniversary date is (dd/mm/yyyy)……..…….

Signed……..
(signature of duly authorized official)

Place …….

Date (dd/mm/yyyy) ……

(seal or stamp of the authority, as appropriate)

SUPPLEMENT TO
INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE (IAPP CERTIFICATE)

RECORD OF CONSTRUCTION AND EQUIPMENT

Notes

1 This Record shall be permanently attached to the IAPP Certificate. The IAPP Certificate shall be available on board the ship at all times.

2 The Record shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.

3 Entries in boxes shall be made by inserting either: a cross (x) for the answers "yes" and "applicable"; or a dash (–) for the answers "no" and "not applicable", as appropriate.

4 Unless otherwise stated, regulations mentioned in this Record refer to regulations of Annex VI of the Convention and resolutions or circulars refer to those adopted by the International Maritime Organization.

1 Particulars of ship

1.1 Name of ship…….....…….....…….....

1.2 IMO number…….....…….....…….....

1.3 Date of build:

.1 Date of building contract *(dd/mm/yyyy)*……..

.2 Date on which keel was laid or ship was at a similar stage of construction *(dd/mm/yyyy)*……

.3 Date of delivery *(dd/mm/yyyy)*:…….

1.4 Length *(L)*[5] metres …….....…….....…….....

2 Control of emissions from ships

2.1 *Ozone-depleting substances* (regulation 12)

2.1.1 The following fire-extinguishing systems, other systems and equipment containing ozone-depleting substances, other than hydrochlorofluorocarbons (HCFCs), installed before 19 May 2005 may continue in service:

System or equipment	Location on board	Substance

[5] Completed only in respect of ships constructed on or after 1 January 2016 that are specially designed and used solely for recreational purposes and to which, in accordance with regulation 13.5.2.1 or regulation 13.5.2.3, the NO_X emission limit as given by regulation 13.5.1.1 will not apply.

2.1.2 The following systems containing HCFCs installed before 1 January 2020 may continue in service:

System or equipment	Location on board	Substance

2.2 *Nitrogen oxides (NO_x) (regulation 13)*

2.2.1 The following marine diesel engines installed on this ship are in accordance with the requirements of regulation 13, as indicated:

Applicable regulation of MARPOL Annex VI (NTC = NO_x Technical Code) (AM = approved method)			Engine #1	Engine #2	Engine #3	Engine #4	Engine #5
1	Manufacturer and model						
2	Serial number						
3	Use (applicable application cycle(s) – NTC 3.2)						
4	Rated power (kW) (NTC 1.3.11)						
5	Rated speed (rpm) (NTC 1.3.12)						
6	Identical engine installed ≥ 1/1/2000 exempted by 13.1.1.2		□	□	□	□	□
7	Identical engine installation date (dd/mm/yyyy) as per 13.1.1.2						
8 a	Major conversion (dd/mm/yyyy)	13.2.1.1 & 13.2.2					
8b		13.2.1.2 & 13.2.3					
8c		13.2.1.3 & 13.2.3					
9 a	Tier I	13.3	□	□	□	□	□
9b		13.2.2	□	□	□	□	□
9c		13.2.3.1	□	□	□	□	□
9 d		13.2.3.2	□	□	□	□	□
9e		13.7.1.2	□	□	□	□	□
9f	Tier I	NTC 8 (Multiple Engine Operational Profiles)	□	□	□	□	□
10 a	Tier II	13.4	□	□	□	□	□
10b		13.2.2	□	□	□	□	□
10c		13.2.2 (Tier III not possible)	□	□	□	□	□
10 d		13.2.3.2	□	□	□	□	□
10e		13.5.2 (Exemptions)	□	□	□	□	□
10f		13.7.1.2	□	□	□	□	□
10 g	Tier II	NTC 8 (Multiple Engine Operational Profiles)	□	□	□	□	□

Applicable regulation of MARPOL Annex VI (NTC = NO_x Technical Code) (AM = approved method)			Engine #1	Engine #2	Engine #3	Engine #4	Engine #5
11 a	NO_x Tier III Emission Control Areas	13.5.1.1	□	□	□	□	□
11b		13.2.2	□	□	□	□	□
11c		13.2.3.2	□	□	□	□	□
11 d		13.7.1.2	□	□	□	□	□
11e	Tier III	NTC 8 (Multiple Engine Operational Profiles)	□	□	□	□	□
12	AM[6]	installed	□	□	□	□	□
13		not commercially available at this survey	□	□	□	□	□
14		not applicable	□	□	□	□	□

2.3 *Sulphur oxides (SO_x) and particulate matter* (regulation 14)

2.3.1 When the ship operates outside of an emission control area specified in regulation 14.3, the ship uses:

.1 fuel oil with a sulphur content as documented by bunker delivery notes that does not exceed the limit value of 0.50% m/m, and/or ….....□

.2 an equivalent arrangement approved in accordance with regulation 4.1 as listed in paragraph 2.6 that is at least as effective in terms of SO_x emission reductions as compared to using a fuel oil with a sulphur content limit value of 0.50% m/m …….....…….....□

2.3.2 When the ship operates inside an emission control area specified in regulation 14.3, the ship uses:

.1 fuel oil with a sulphur content as documented by bunker delivery notes that does not exceed the limit value of 0.10% m/m, and/or
…… □

.2 an equivalent arrangement approved in accordance with regulation 4.1 as listed in paragraph 2.6 that is at least as effective in terms of SO_x emission reductions as compared to using a fuel oil with a sulphur content limit value of 0.10% m/m ……..……□

2.3.3 For a ship without an equivalent arrangement approved in accordance with regulation 4.1 as listed in paragraph 2.6, the sulphur content of fuel oil carried for use on board the ship shall not exceed 0.50% m/m as documented by bunker delivery notes ……..…….□

2.3.4 The ship is fitted with designated sampling point(s) in accordance with regulation 14.10 or 14.11.....□

[6] Refer to the *2014 Guidelines on the approved method process* (resolution MEPC.243(66)).

2.3.5 In accordance with regulation 14.12, the requirement for fitting or designating sampling point(s) in accordance with regulation 14.10 or 14.11 is not applicable for a fuel oil service system used for a low-flashpoint fuel or a gas fuel........................□

2.4 *Volatile organic compounds (VOCs)* (regulation 15)

2.4.1 The tanker has a vapour collection system installed and approved in accordance with MSC/Circ.585…………………...............………………...……...……....................□

2.4.2.1 For a tanker carrying crude oil, there is an approved VOC management plan …...□

2.4.2.2 VOC management plan approval reference …………...……..................……...…

2.5 *Shipboard incineration* (regulation 16)

The ship has an incinerator:

.1 installed on or after 1 January 2000 that complies with:

.1 resolution MEPC.76(40), as amended[7] ...……...............………..…□

.2 resolution MEPC.244(66), as amended[8] …………………………..□

.2 installed before 1 January 2000 that complies with:

.1 resolution MEPC.59(33), as amended[9] ....……….....□

.2 resolution MEPC.76(40), as amended[7] ....………………......□

2.6 *Equivalents* (regulation 4)

The ship has been allowed to use the following fitting, material, appliance or apparatus to be fitted in a ship or other procedures, alternative fuel oils, or compliance methods used as an alternative to that required by this Annex:

System or equipment	Equivalent used	Approval reference

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at . . . .
(place of issue of the Record)

Date (dd/mm/yyyy) . . . . *(date of issue)*

. . . . *(signature of duly authorized official issuing the Record)*

(seal or stamp of the authority, as appropriate)

7 As amended by resolution MEPC.93(45).

8 As amended by resolution MEPC.368(79).

9 As amended by resolution MEPC.92(45).

Appendix II

Test cycles and weighting factors (regulation 13)

The following test cycles and weighting factors shall be applied for verification of compliance of marine diesel engines with the applicable NO_x limit in accordance with regulation 13 of MARPOL Annex VI using the test procedure and calculation method as specified in the NO_x Technical Code.

.1 For a fixed pitch propeller propulsion engine or a propeller-law operated non-propulsion engine, test cycle E3 shall be applied in accordance with table 1.

.2 For a propulsion engine that does not operate with a fixed pitch propeller, including an engine fitted as part of a diesel-electric installation or an engine operated with a controllable-pitch propeller, test cycle E2 shall be applied in accordance with table 2.

.3 For a non-propulsion engine that is a constant-speed engine, test cycle D2 shall be applied in accordance with table 3.

.4 For a non-propulsion engine that operates as a variable-speed engine, not included above, test cycle C1 shall be applied in accordance with table 4.

Table 1 – Test cycle for a marine diesel engine as given by .1 above

Test cycle E3	Speed	100%	91%	80%	63%
	Power	100%	75%	50%	25%
	Weighting factor	0.2	0.5	0.15	0.15

Table 2 – Test cycle for a marine diesel engine as given by .2 above

Test cycle E2	Speed	100%	100%	100%	100%
	Power	100%	75%	50%	25%
	Weighting factor	0.2	0.5	0.15	0.15

Table 3 – Test cycle for a marine diesel engine as given by .3 above

Test cycle D2	Speed	100%	100%	100%	100%	100%
	Power	100%	75%	50%	25%	10%
	Weighting factor	0.05	0.25	0.3	0.3	0.1

Table 4 – Test cycle for a marine diesel engine as given by .4 above

Test cycle C1	Speed	Rated				Intermediate			Idle
	Torque	100%	75%	50%	10%	100%	75%	50%	0%
	Weighting factor	0.15	0.15	0.15	0.1	0.1	0.1	0.1	0.15

In the case of marine diesel engine to be certified in accordance with paragraph 5.1.1 of regulation 13, the specific emission at each individual mode point shall not exceed the applicable NO_x emission limit value by more than 50% except as follows:

.1 The 10% mode point in the D2 test cycle.

.2 The 10% mode point in the C1 test cycle.

.3 The idle mode point in the C1 test cycle.

Appendix III

Criteria and procedures for the designation of emission control areas (regulations 13.6 and 14.3)

1 Objectives

1.1 The purpose of this appendix is to provide Parties with the criteria and procedures for formulating and submitting proposals for the designation of emission control areas and to set forth the factors to be considered in the assessment of such proposals by the Organization.

1.2 Emissions of NO_x, SO_x and particulate matter from ocean-going ships contribute to ambient concentrations of air pollution in cities and coastal areas around the world. Adverse public health and environmental effects associated with air pollution include premature mortality, cardiopulmonary disease, lung cancer, chronic respiratory ailments, acidification and eutrophication.

1.3 An emission control area should be considered for adoption by the Organization if supported by a demonstrated need to prevent, reduce and control emissions of NO_x or SO_x and particulate matter or all three types of emissions (hereinafter emissions) from ships.

2 Process for the designation of emission control areas

2.1 A proposal to the Organization for the designation of an emission control area for NO_x or SO_x and particulate matter or all three types of emissions may be submitted only by Parties. Where two or more Parties have a common interest in a particular area, they should formulate a coordinated proposal.

2.2 A proposal to designate a given area as an emission control area should be submitted to the Organization in accordance with the rules and procedures established by the Organization.

3 Criteria for designation of an emission control area

3.1 The proposal shall include:

.1 a clear delineation of the proposed area of application, along with a reference chart on which the area is marked;

.2 the type or types of emission(s) that is or are being proposed for control (i.e. NO_x or SO_x and particulate matter or all three types of emissions);

.3 a description of the human populations and environmental areas at risk from the impacts of ship emissions;

.4 an assessment that emissions from ships operating in the proposed area of application are contributing to ambient concentrations of air pollution or to adverse environmental impacts; such assessment shall include a description of the impacts of the relevant emissions on human health and the environment, such as adverse impacts on terrestrial and aquatic ecosystems, areas of natural productivity, critical habitats, water quality, human health, and areas of cultural and scientific significance, if applicable; the sources of relevant data including methodologies used shall be identified;

.5 relevant information pertaining to the meteorological conditions in the proposed area of application, to the human populations and environmental areas at risk, in particular prevailing wind patterns, or to topographical, geological, oceanographic, morphological or other conditions that contribute to ambient concentrations of air pollution or adverse environmental impacts;

.6 the nature of the ship traffic in the proposed emission control area, including the patterns and density of such traffic;

.7 a description of the control measures taken by the proposing Party or Parties addressing land-based sources of NO_x, SO_x and particulate matter emissions affecting the human populations and environmental areas at risk that are in place and operating concurrently with the consideration of measures to be adopted in relation to provisions of regulations 13 and 14 of Annex VI; and

.8 the relative costs of reducing emissions from ships when compared with land-based controls, and the economic impacts on shipping engaged in international trade.

3.2 The geographical limits of an emission control area will be based on the relevant criteria outlined above, including emissions and deposition from ships navigating in the proposed area, traffic patterns and density, and wind conditions.

4 Procedures for the assessment and adoption of emission control areas by the Organization

4.1 The Organization shall consider each proposal submitted to it by a Party or Parties.

4.2 In assessing the proposal, the Organization shall take into account the criteria that are to be included in each proposal for adoption as set forth in section 3 above.

4.3 An emission control area shall be designated by means of an amendment to this Annex, and considered, adopted and brought into force in accordance with article 16 of the present Convention.

5 Operation of emission control areas

5.1 Parties that have ships navigating in the area are encouraged to bring to the Organization any concerns regarding the operation of the area.

Appendix IV

Type approval and operating limits for shipboard incinerators (regulation 16)

1 Shipboard incinerators described in regulation 16.6.1 shall possess an IMO Type Approval Certificate for each incinerator. In order to obtain such certificate, the incinerator shall be designed and built to an approved standard as described in regulation 16.6.1. Each model shall be subject to a specified type approval test operation at the factory or an approved test facility, and under the responsibility of the Administration, using the following standard fuel/waste specification for the type approval test for determining whether the incinerator operates within the limits specified in paragraph 2 of this appendix:

Sludge oil consisting of:	75% sludge oil from heavy fuel oil (HFO); 5% waste lubricating oil; and 20% emulsified water.
Solid waste consisting of:	50% food waste; 50% rubbish containing: approx. 30% paper, " 40% cardboard, " 10% rags, " 20% plastic. The mixture will have up to 50% moisture and 7% incombustible solids.

2 Incinerators described in regulation 16.6.1 shall operate within the following limits:

O_2 in combustion chamber:	6 to 12%
CO in flue gas maximum average:	200 mg/MJ
Soot number maximum average:	Bacharach 3 or Ringelmann 1 (20% opacity) (a higher soot number is acceptable only during very short periods such as starting up)
Unburned components in ash residues:	Maximum 10% by weight
Combustion chamber flue gas outlet temperature range:	850 to 1,200°C

Appendix V

Information to be included in the bunker delivery note (regulation 18.5)

1 Name and IMO number of receiving ship

2 Port

3 Date of commencement of delivery

4 Name, address and telephone number of marine fuel oil supplier

5 Product name(s)

6 Quantity in metric tonnes

7 Density at 15°C (kg/m^3)[1]

8 Sulphur content (% m/m)[2]

9 The flashpoint (°C) specified in accordance with standards acceptable to the Organization,[3] or a statement that the flashpoint has been measured at or above 70°C

10 A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with regulation 18.3 of MARPOL Annex VI and that the sulphur content of the fuel oil supplied does not exceed:

□ the limit value given by regulation 14.1 of MARPOL Annex VI;

□ the limit value given by regulation 14.4 of MARPOL Annex VI; or

□ the purchaser's specified limit value of _____ (% m/m), as completed by the fuel oil supplier's representative and on the basis of the purchaser's notification that the fuel oil:

.1 is intended to be used in combination with an equivalent means of compliance in accordance with regulation 4 of MARPOL Annex VI; or

.2 is subject to a relevant exemption for a ship to conduct trials for sulphur oxides emission reduction and control technology research in accordance with regulation 3.2 of MARPOL Annex VI.

The declaration shall be completed by the fuel oil supplier's representative by marking the applicable box(es) with a cross (x).

---

1 Fuel oil shall be tested in accordance with ISO 3675:1998 or ISO 12185:1996.

2 Fuel oil shall be tested in accordance with ISO 8754:2003.

3 ISO 2719:2016, Determination of flash point – Pensky-Martens closed cup method, Procedure A (for Distillate Fuels) or Procedure B (for Residual Fuels).

Appendix VI

Verification procedures for a MARPOL Annex VI fuel oil sample (regulation 18.8.2 or regulation 14.8)

The following relevant verification procedure shall be used to determine whether the fuel oil delivered to, in use or carried for use on board a ship has met the applicable sulphur limit of regulation 14 of MARPOL Annex VI.

This appendix refers to the following representative MARPOL Annex VI fuel oil samples:

Part 1 – sample of fuel oil delivered[1] in accordance with regulation 18.8.1, hereafter referred to as the "MARPOL delivered sample" as defined in regulation 2.1.22.

Part 2 – sample of fuel oil in use,[2] intended to be used or carried for use on board in accordance with regulation 14.8, hereafter referred to as the "in-use sample" as defined in regulation 2.1.16 and "onboard sample"[3] as defined in regulation 2.1.24.

Part 1 – MARPOL delivered sample

1 *General requirements*

1.1 The representative sample of the fuel oil, which is required by regulation 18.8.1 (the MARPOL delivered sample), shall be used to verify the sulphur content of the fuel oil delivered to a ship.

1.2 A Party, through its competent authority, shall manage the verification procedure.

1.3 A laboratory undertaking the sulphur testing procedure given in this appendix shall have valid accreditation[4] in respect of the test method to be used.

2 *Verification procedure Part 1*

2.1 The MARPOL delivered sample shall be conveyed by the competent authority to the laboratory.

2.2 The laboratory shall:

.1 record the details of the seal number and the sample label on the test record;

.2 record the condition of the seal of the sample as received on the test record; and

.3 reject any sample where the seal has been broken prior to receipt and record that rejection on the test record.

---

1 Samples taken in accordance with the *Guidelines for the sampling of fuel oil for determination of compliance with MARPOL Annex VI and SOLAS chapter II-2* (circular MSC-MEPC.2/Circ.18).

2 Samples taken in accordance with the *2019 Guidelines for on board sampling for the verification of the sulphur content of the fuel oil used on board ships* (MEPC.1/Circ.864/Rev.1).

3 Refer to the *2020 Guidelines for on board sampling of fuel oil intended to be used or carried for use on board a ship* (MEPC.1/Circ.889).

4 The laboratory is to be accredited to ISO/IEC 17025:2017 or an equivalent standard for the performance of the given sulphur content test ISO 8754:2003.

2.3 If the seal of the sample as received has not been broken, the laboratory shall proceed with the verification procedure and shall:

.1 unseal the sample;

.2 ensure that the sample is thoroughly homogenized;

.3 draw two subsamples from the sample; and

.4 reseal the sample and record the new reseal details on the test record.

2.4 The two subsamples shall be tested in succession, in accordance with the specified test method referred to in regulation 2.1.30. For the purposes of this Part 1 verification procedure, the results of the test analysis shall be referred to as "1 A" and "1B":

.1 Results 1 A and 1B shall be recorded on the test record in accordance with the requirements of the test method.

.2 If the results of 1 A and 1B are within the repeatability (r)[5] of the test method, the results shall be considered valid.

.3 If the results 1 A and 1B are not within the repeatability (r) of the test method, both results shall be rejected and two new subsamples shall be taken by the laboratory and tested. The sample bottle shall be resealed in accordance with paragraph 2.3.4 after the new subsamples have been taken.

.4 In the case of two failures to achieve repeatability between 1 A and 1B, the cause of that failure shall be investigated by the laboratory and resolved before further testing of the sample is undertaken. On resolution of that repeatability issue, two new subsamples shall be taken in accordance with paragraph 2.3. The sample shall be resealed in accordance with paragraph 2.3.4 after the new subsamples have been taken.

2.5 If the test results of 1 A and 1B are valid, an average of these two results shall be calculated. The average value shall be referred to as "X" and shall be recorded on the test record:

.1 if the result X is equal to or less than the applicable limit required by regulation 14, the fuel oil shall be considered to have met the requirement; or

.2 if the result X is greater than the applicable limit required by regulation 14, the fuel oil shall be considered to have not met the requirement.

[5] Repeatability (r) calculation taking into account ISO 4259-2:2017 and as defined in the test method used.

Table 1 - Summary of Part 1 MARPOL delivered sample procedure

On the basis of the test method referred to in regulation 2.1.30		
Applicable limit % m/m: V	Result 2.5.1: X ≤ V	Result 2.5.2: X > V
0.10	Met the requirement	Not met the requirement
0.50		
	Result X reported to 2 decimal places	

2.6 The final results obtained from this verification procedure shall be evaluated by the competent authority.

2.7 The laboratory shall provide a copy of the test record to the competent authority managing the verification procedure.

Part 2 – In-use and onboard samples

3 *General requirements*

3.1 The in-use or onboard sample, as appropriate, shall be used to verify the sulphur content of the fuel oil as represented by that sample of fuel oil at the point of sampling.

3.2 A Party, through its competent authority, shall manage the verification procedure.

3.3 A laboratory undertaking the sulphur testing procedure given in this appendix shall have valid accreditation[6] in respect of the test method to be used.

4 *Verification procedure Part 2*

4.1 The in-use or onboard sample shall be conveyed by the competent authority to the laboratory.

4.2 The laboratory shall:

.1 record the details of the seal number and the sample label on the test record;

.2 record the condition of the seal of the sample as received on the test record; and

.3 reject any sample where the seal has been broken prior to receipt and record that rejection on the test record.

4.3 If the seal of the sample as received has not been broken, the laboratory shall proceed with the verification procedure and shall:

.1 unseal the sample;

.2 ensure that the sample is thoroughly homogenized;

[6] The laboratory is to be accredited to ISO/IEC 17025:2017 or an equivalent standard for the performance of the given sulphur content test ISO 8754:2003.

.3 draw two subsamples from the sample; and

.4 reseal the sample and record the new reseal details on the test record.

4.4 The two subsamples shall be tested in succession, in accordance with the specified test method referred to in regulation 2.1.30. For the purposes of this Part 2 verification procedure, the results obtained shall be referred to as "2 A" and "2B":

.1 Results 2 A and 2B shall be recorded on the test record in accordance with the requirements of the test method.

.2 If the results of 2 A and 2B are within the repeatability (r)[7] of the test method, the results shall be considered valid.

.3 If the results of 2 A and 2B are not within the repeatability (r) of the test method, both results shall be rejected and two new subsamples shall be taken by the laboratory and tested. The sample bottle shall be resealed in accordance with paragraph 4.3.4 after the new subsamples have been taken.

.4 In the case of two failures to achieve repeatability between 2 A and 2B, the cause of that failure shall be investigated by the laboratory and resolved before further testing of the sample is undertaken. On resolution of that repeatability issue, two new subsamples shall be taken in accordance with paragraph 4.3. The sample shall be resealed in accordance with paragraph 4.3.4 after the new subsamples have been taken.

4.5 If the test results of 2 A and 2B are valid, an average of these two results shall be calculated. That average value shall be referred to as 'Z' and shall be recorded on the test record:

.1 if Z is equal to or less than the applicable limit required by regulation 14, the sulphur content of the fuel oil as represented by the tested sample shall be considered to have met the requirement;

.2 if Z is greater than the applicable limit required by regulation 14 but less than or equal to that applicable limit + 0.59R (where R is the reproducibility of the test method),[8] the sulphur content of the fuel oil as represented by the tested sample shall be considered to have met the requirement;

.3 if Z is greater than the applicable limit required by regulation 14 + 0.59R, the sulphur content of the fuel oil as represented by the tested sample shall be considered to have not met the requirement.

[7] Repeatability (r) calculation taking into account ISO 4259-2:2017 and as defined in the test method used.

[8] Reproducibility (R) calculation taking into account ISO 4259-2:2017 and as defined in the test method used.

Table 2 - Summary of in-use or onboard sample procedure[9]

On the basis of the test method referred to in regulation 2.1.30				
Applicable limit %m/m: V	Test margin value: W	Result 4.5.1: Z ≤ V	Result 4.5.2: V < Z ≤ W	Result 4.5.3: Z > W
0.10	0.11	Met the requirement	Met the requirement	Not met the requirement
0.50	0.53			
		Result Z reported to 2 decimal places		

4.6 The final results obtained from this verification procedure shall be evaluated by the competent authority.

4.7 The laboratory shall provide a copy of the test record to the competent authority managing the verification procedure.

[9] Results of testing undertaken by the company or other entities are outside the MARPOL process and hence should be considered within the approach given by ISO 4259:2017-2 regarding recipient drawn samples.

Appendix VII

Emission control areas (regulations 13.6 and 14.3)

1 The boundaries of emission control areas designated under regulations 13.6 and 14.3, other than the Baltic Sea, the North Sea, and the Norwegian Sea areas, are set forth in this appendix.

2 The North American area comprises:

.1 the sea area located off the Pacific coasts of the United States and Canada, enclosed by geodesic lines connecting the following coordinates:

Point	Latitude	Longitude
1	32°32′.10 N	117°06′.11 W
2	32°32′.04 N	117°07′.29 W
3	32°31′.39 N	117°14′.20 W
4	32°33′.13 N	117°15′.50 W
5	32°34′.21 N	117°22′.01 W
6	32°35′.23 N	117°27′.53 W
7	32°37′.38 N	117°49′.34 W
8	31°07′.59 N	118°36′.21 W
9	30°33′.25 N	121°47′.29 W
10	31°46′.11 N	123°17′.22 W
11	32°21′.58 N	123°50′.44 W
12	32°56′.39 N	124°11′.47 W
13	33°40′.12 N	124°27′.15 W
14	34°31′.28 N	125°16′.52 W
15	35°14′.38 N	125°43′.23 W
16	35°44′.00 N	126°18′.53 W
17	36°16′.25 N	126°45′.30 W
18	37°01′.35 N	127°07′.18 W
19	37°45′.39 N	127°38′.02 W
20	38°25′.08 N	127°53′.00 W
21	39°25′.05 N	128°31′.23 W
22	40°18′.47 N	128°45′.46 W
23	41°13′.39 N	128°40′.22 W
24	42°12′.49 N	129°00′.38 W
25	42°47′.34 N	129°05′.42 W
26	43°26′.22 N	129°01′.26 W
27	44°24′.43 N	128°41′.23 W
28	45°30′.43 N	128°40′.02 W
29	46°11′.01 N	128°49′.01 W
30	46°33′.55 N	129°04′.29 W
31	47°39′.55 N	131°15′.41 W
32	48°32′.32 N	132°41′.00 W

Point	Latitude	Longitude
33	48°57′.47 N	133°14′.47 W
34	49°22′.39 N	134°15′.51 W
35	50°01′.52 N	135°19′.01 W
36	51°03′.18 N	136°45′.45 W
37	51°54′.04 N	137°41′.54 W
38	52°45′.12 N	138°20′.14 W
39	53°29′.20 N	138°40′.36 W
40	53°40′.39 N	138°48′.53 W
41	54°13′.45 N	139°32′.38 W
42	54°39′.25 N	139°56′.19 W
43	55°20′.18 N	140°55′.45 W
44	56°07′.12 N	141°36′.18 W
45	56°28′.32 N	142°17′.19 W
46	56°37′.19 N	142°48′.57 W
47	58°51′.04 N	153°15′.03 W

.2 the sea areas located off the Atlantic coasts of the United States, Canada and France (Saint-Pierre-et-Miquelon), and the Gulf of Mexico coast of the United States enclosed by geodesic lines connecting the following coordinates:

Point	Latitude	Longitude
1	60°00′.00 N	64°09′.36 W
2	60°00′.00 N	56°43′.00 W
3	58°54′.01 N	55°38′.05 W
4	57°50′.52 N	55°03′.47 W
5	57°35′.13 N	54°00′.59 W
6	57°14′.20 N	53°07′.58 W
7	56°48′.09 N	52°23′.29 W
8	56°18′.13 N	51°49′.42 W
9	54°23′.21 N	50°17′.44 W
10	53°44′.54 N	50°07′.17 W
11	53°04′.59 N	50°10′.05 W
12	52°20′.06 N	49°57′.09 W
13	51°34′.20 N	48°52′.45 W
14	50°40′.15 N	48°16′.04 W
15	50°02′.28 N	48°07′.03 W
16	49°24′.03 N	48°09′.35 W
17	48°39′.22 N	47°55′.17 W
18	47°24′.25 N	47°46′.56 W
19	46°35′.12 N	48°00′.54 W
20	45°19′.45 N	48°43′.28 W

Point	Latitude	Longitude
21	44°43′.38 N	49°16′.50 W
22	44°16′.38 N	49°51′.23 W
23	43°53′.15 N	50°34′.01 W
24	43°36′.06 N	51°20′.41 W
25	43°23′.59 N	52°17′.22 W
26	43°19′.50 N	53°20′.13 W
27	43°21′.14 N	54°09′.20 W
28	43°29′.41 N	55°07′.41 W
29	42°40′.12 N	55°31′.44 W
30	41°58′.19 N	56°09′.34 W
31	41°20′.21 N	57°05′.13 W
32	40°55′.34 N	58°02′.55 W
33	40°41′.38 N	59°05′.18 W
34	40°38′.33 N	60°12′.20 W
35	40°45′.46 N	61°14′.03 W
36	41°04′.52 N	62°17′.49 W
37	40°36′.55 N	63°10′.49 W
38	40°17′.32 N	64°08′.37 W
39	40°07′.46 N	64°59′.31 W
40	40°05′.44 N	65°53′.07 W
41	39°58′.05 N	65°59′.51 W
42	39°28′.24 N	66°21′.14 W
43	39°01′.54 N	66°48′.33 W
44	38°39′.16 N	67°20′.59 W
45	38°19′.20 N	68°02′.01 W
46	38°05′.29 N	68°46′.55 W
47	37°58′.14 N	69°34′.07 W
48	37°57′.47 N	70°24′.09 W
49	37°52′.46 N	70°37′.50 W
50	37°18′.37 N	71°08′.33 W
51	36°32′.25 N	71°33′.59 W
52	35°34′.58 N	71°26′.02 W
53	34°33′.10 N	71°37′.04 W
54	33°54′.49 N	71°52′.35 W
55	33°19′.23 N	72°17′.12 W
56	32°45′.31 N	72°54′.05 W
57	31°55′.13 N	74°12′.02 W
58	31°27′.14 N	75°15′.20 W
59	31°03′.16 N	75°51′.18 W
60	30°45′.42 N	76°31′.38 W
61	30°12′.48 N	77°18′.29 W

Point	Latitude	Longitude
62	29°25′.17 N	76°56′.42 W
63	28°36′.59 N	76°48′.00 W
64	28°17′.13 N	76°40′.10 W
65	28°17′.12 N	79°11′.23 W
66	27°52′.56 N	79°28′.35 W
67	27°26′.01 N	79°31′.38 W
68	27°16′.13 N	79°34′.18 W
69	27°11′.54 N	79°34′.56 W
70	27°05′.59 N	79°35′.19 W
71	27°00′.28 N	79°35′.17 W
72	26°55′.16 N	79°34′.39 W
73	26°53′.58 N	79°34′.27 W
74	26°45′.46 N	79°32′.41 W
75	26°44′.30 N	79°32′.23 W
76	26°43′.40 N	79°32′.20 W
77	26°41′.12 N	79°32′.01 W
78	26°38′.13 N	79°31′.32 W
79	26°36′.30 N	79°31′.06 W
80	26°35′.21 N	79°30′.50 W
81	26°34′.51 N	79°30′.46 W
82	26°34′.11 N	79°30′.38 W
83	26°31′.12 N	79°30′.15 W
84	26°29′.05 N	79°29′.53 W
85	26°25′.31 N	79°29′.58 W
86	26°23′.29 N	79°29′.55 W
87	26°23′.21 N	79°29′.54 W
88	26°18′.57 N	79°31′.55 W
89	26°15′.26 N	79°33′.17 W
90	26°15′.13 N	79°33′.23 W
91	26°08′.09 N	79°35′.53 W
92	26°07′.47 N	79°36′.09 W
93	26°06′.59 N	79°36′.35 W
94	26°02′.52 N	79°38′.22 W
95	25°59′.30 N	79°40′.03 W
96	25°59′.16 N	79°40′.08 W
97	25°57′.48 N	79°40′.38 W
98	25°56′.18 N	79°41′.06 W
99	25°54′.04 N	79°41′.38 W
100	25°53′.24 N	79°41′.46 W
101	25°51′.54 N	79°41′.59 W
102	25°49′.33 N	79°42′.16 W

Point	Latitude	Longitude
103	25°48′.24 N	79°42′.23 W
104	25°48′.20 N	79°42′.24 W
105	25°46′.26 N	79°42′.44 W
106	25°46′.16 N	79°42′.45 W
107	25°43′.40 N	79°42′.59 W
108	25°42′.31 N	79°42′.48 W
109	25°40′.37 N	79°42′.27 W
110	25°37′.24 N	79°42′.27 W
111	25°37′.08 N	79°42′.27 W
112	25°31′.03 N	79°42′.12 W
113	25°27′.59 N	79°42′.11 W
114	25°24′.04 N	79°42′.12 W
115	25°22′.21 N	79°42′.20 W
116	25°21′.29 N	79°42′.08 W
117	25°16′.52 N	79°41′.24 W
118	25°15′.57 N	79°41′.31 W
119	25°10′.39 N	79°41′.31 W
120	25°09′.51 N	79°41′.36 W
121	25°09′.03 N	79°41′.45 W
122	25°03′.55 N	79°42′.29 W
123	25°03′.00 N	79°42′.56 W
124	25°00′.30 N	79°44′.05 W
125	24°59′.03 N	79°44′.48 W
126	24°55′.28 N	79°45′.57 W
127	24°44′.18 N	79°49′.24 W
128	24°43′.04 N	79°49′.38 W
129	24°42′.36 N	79°50′.50 W
130	24°41′.47 N	79°52′.57 W
131	24°38′.32 N	79°59′.58 W
132	24°36′.27 N	80°03′.51 W
133	24°33′.18 N	80°12′.43 W
134	24°33′.05 N	80°13′.21 W
135	24°32′.13 N	80°15′.16 W
136	24°31′.27 N	80°16′.55 W
137	24°30′.57 N	80°17′.47 W
138	24°30′.14 N	80°19′.21 W
139	24°30′.06 N	80°19′.44 W
140	24°29′.38 N	80°21′.05 W
141	24°28′.18 N	80°24′.35 W
142	24°28′.06 N	80°25′.10 W
143	24°27′.23 N	80°27′.20 W

Point	Latitude	Longitude
144	24°26′.30 N	80°29′.30 W
145	24°25′.07 N	80°32′.22 W
146	24°23′.30 N	80°36′.09 W
147	24°22′.33 N	80°38′.56 W
148	24°22′.07 N	80°39′.51 W
149	24°19′.31 N	80°45′.21 W
150	24°19′.16 N	80°45′.47 W
151	24°18′.38 N	80°46′.49 W
152	24°18′.35 N	80°46′.54 W
153	24°09′.51 N	80°59′.47 W
154	24°09′.48 N	80°59′.51 W
155	24°08′.58 N	81°01′.07 W
156	24°08′.30 N	81°01′.51 W
157	24°08′.26 N	81°01′.57 W
158	24°07′.28 N	81°03′.06 W
159	24°02′.20 N	81°09′.05 W
160	24°00′.00 N	81°11′.16 W
161	23°55′.32 N	81°12′.55 W
162	23°53′.52 N	81°19′.43 W
163	23°50′.52 N	81°29′.59 W
164	23°50′.02 N	81°39′.59 W
165	23°49′.05 N	81°49′.59 W
166	23°49′.05 N	82°00′.11 W
167	23°49′.42 N	82°09′.59 W
168	23°51′.14 N	82°24′.59 W
169	23°51′.14 N	82°39′.59 W
170	23°49′.42 N	82°48′.53 W
171	23°49′.32 N	82°51′.11 W
172	23°49′.24 N	82°59′.59 W
173	23°49′.52 N	83°14′.59 W
174	23°51′.22 N	83°25′.49 W
175	23°52′.27 N	83°33′.01 W
176	23°54′.04 N	83°41′.35 W
177	23°55′.47 N	83°48′.11 W
178	23°58′.38 N	83°59′.59 W
179	24°09′.37 N	84°29′.27 W
180	24°13′.20 N	84°38′.39 W
181	24°16′.41 N	84°46′.07 W
182	24°23′.30 N	84°59′.59 W
183	24°26′.37 N	85°06′.19 W
184	24°38′.57 N	85°31′.54 W

Point	Latitude	Longitude
185	24°44′.17 N	85°43′.11 W
186	24°53′.57 N	85°59′.59 W
187	25°10′.44 N	86°30′.07 W
188	25°43′.15 N	86°21′.14 W
189	26°13′.13 N	86°06′.45 W
190	26°27′.22 N	86°13′.15 W
191	26°33′.46 N	86°37′.07 W
192	26°01′.24 N	87°29′.35 W
193	25°42′.25 N	88°33′.00 W
194	25°46′.54 N	90°29′.41 W
195	25°44′.39 N	90°47′.05 W
196	25°51′.43 N	91°52′.50 W
197	26°17′.44 N	93°03′.59 W
198	25°59′.55 N	93°33′.52 W
199	26°00′.32 N	95°39′.27 W
200	26°00′.33 N	96°48′.30 W
201	25°58′.32 N	96°55′.28 W
202	25°58′.15 N	96°58′.41 W
203	25°57′.58 N	97°01′.54 W
204	25°57′.41 N	97°05′.08 W
205	25°57′.24 N	97°08′.21 W
206	25°57′.24 N	97°08′.47 W

.3 the sea area located off the coasts of the Hawaiian Islands of Hawai'i, Maui, Oahu, Moloka'i, Ni'ihau, Kaua'i, Lana'i and Kaho'olawe, enclosed by geodesic lines connecting the following coordinates:

Point	Latitude	Longitude
1	22°32′.54 N	153°00′.33 W
2	23°06′.05 N	153°28′.36 W
3	23°32′.11 N	154°02′.12 W
4	23°51′.47 N	154°36′.48 W
5	24°21′.49 N	155°51′.13 W
6	24°41′.47 N	156°27′.27 W
7	24°57′.33 N	157°22′.17 W
8	25°13′.41 N	157°54′.13 W
9	25°25′.31 N	158°30′.36 W
10	25°31′.19 N	159°09′.47 W
11	25°30′.31 N	159°54′.21 W
12	25°21′.53 N	160°39′.53 W
13	25°00′.06 N	161°38′.33 W
14	24°40′.49 N	162°13′.13 W

Point	Latitude	Longitude
15	24°15′.53 N	162°43′.08 W
16	23°40′.50 N	163°13′.00 W
17	23°03′.20 N	163°32′.58 W
18	22°20′.09 N	163°44′.41 W
19	21°36′.45 N	163°46′.03 W
20	20°55′.26 N	163°37′.44 W
21	20°13′.34 N	163°19′.13 W
22	19°39′.03 N	162°53′.48 W
23	19°09′.43 N	162°20′.35 W
24	18°39′.16 N	161°19′.14 W
25	18°30′.31 N	160°38′.30 W
26	18°29′.31 N	159°56′.17 W
27	18°10′.41 N	159°14′.08 W
28	17°31′.17 N	158°56′.55 W
29	16°54′.06 N	158°30′.29 W
30	16°25′.49 N	157°59′.25 W
31	15°59′.57 N	157°17′.35 W
32	15°40′.37 N	156°21′.06 W
33	15°37′.36 N	155°22′.16 W
34	15°43′.46 N	154°46′.37 W
35	15°55′.32 N	154°13′.05 W
36	16°46′.27 N	152°49′.11 W
37	17°33′.42 N	152°00′.32 W
38	18°30′.16 N	151°30′.24 W
39	19°02′.47 N	151°22′.17 W
40	19°34′.46 N	151°19′.47 W
41	20°07′.42 N	151°22′.58 W
42	20°38′.43 N	151°31′.36 W
43	21°29′.09 N	151°59′.50 W
44	22°06′.58 N	152°31′.25 W
45	22°32′.54 N	153°00′.33 W

3 The United States Caribbean Sea area includes:

.1 the sea area located off the Atlantic and Caribbean coasts of the Commonwealth of Puerto Rico and the United States Virgin Islands, enclosed by geodesic lines connecting the following coordinates:

Point	Latitude	Longitude
1	17°18′.37 N	67°32′.14 W
2	19°11′.14 N	67°26′.45 W
3	19°30′.28 N	65°16′.48 W
4	19°12′.25 N	65°06′.08 W

Point	Latitude	Longitude
5	18°45′.13 N	65°00′.22 W
6	18°41′.14 N	64°59′.33 W
7	18°29′.22 N	64°53′.51 W
8	18°27′.35 N	64°53′.22 W
9	18°25′.21 N	64°52′.39 W
10	18°24′.30 N	64°52′.19 W
11	18°23′.51 N	64°51′.50 W
12	18°23′.42 N	64°51′.23 W
13	18°23′.36 N	64°50′.17 W
14	18°23′.48 N	64°49′.41 W
15	18°24′.11 N	64°49′.00 W
16	18°24′.28 N	64°47′.57 W
17	18°24′.18 N	64°47′.01 W
18	18°23′.13 N	64°46′.37 W
19	18°22′.37 N	64°45′.20 W
20	18°22′.39 N	64°44′.42 W
21	18°22′.42 N	64°44′.36 W
22	18°22′.37 N	64°44′.24 W
23	18°22′.39 N	64°43′.42 W
24	18°22′.30 N	64°43′.36 W
25	18°22′.25 N	64°42′.58 W
26	18°22′.26 N	64°42′.28 W
27	18°22′.15 N	64°42′.03 W
28	18°22′.22 N	64°40′.60 W
29	18°21′.57 N	64°40′.15 W
30	18°21′.51 N	64°38′.23 W
31	18°21′.22 N	64°38′.16 W
32	18°20′.39 N	64°38′.33 W
33	18°19′.15 N	64°38′.14 W
34	18°19′.07 N	64°38′.16 W
35	18°17′.23 N	64°39′.38 W
36	18°16′.43 N	64°39′.41 W
37	18°11′.33 N	64°38′.58 W
38	18°03′.02 N	64°38′.03 W
39	18°02′.56 N	64°29′.35 W
40	18°02′.51 N	64°27′.02 W
41	18°02′.30 N	64°21′.08 W
42	18°02′.31 N	64°20′.08 W
43	18°02′.03 N	64°15′.57 W
44	18°00′.12 N	64°02′.29 W
45	17°59′.58 N	64°01′.04 W
46	17°58′.47 N	63°57′.01 W
47	17°57′.51 N	63°53′.54 W

Point	Latitude	Longitude
48	17°56′.38 N	63°53′.21 W
49	17°39′.40 N	63°54′.53 W
50	17°37′.08 N	63°55′.10 W
51	17°30′.21 N	63°55′.56 W
52	17°11′.36 N	63°57′.57 W
53	17°05′.00 N	63°58′.41 W
54	16°59′.49 N	63°59′.18 W
55	17°18′.37 N	67°32′.14 W

4 In respect of the application of regulation 14.4, the Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter includes all waters bounded by the coasts of Europe, Africa and Asia, and is described by the following coordinates:

.1 the western entrance of the Straits of Gibraltar, defined as a line joining the extremities of Cape Trafalgar, Spain (36°11'.00 N, 6°02'.00 W) and Cape Spartel, Morocco (35°48'.00 N, 5°55'.00 W);

.2 the Strait of Canakkale, defined as a line joining Mehmetcik Burnu (40°03'.00 N, 26°11'.00 E) and Kumkale Burnu (40°01'.00 N, 26°12'.00 E); and

.3 the northern entrance to the Suez Canal excluding the area enclosed by geodesic lines connecting points 1-4 with the following coordinates:

Point	Latitude	Longitude
1	31˚29'.00 N	32°16'.00 E
2	31˚29'.00 N	32°28'.48 E
3	31˚14'.00 N	32°32'.62 E
4	31˚14'.00 N	32°16'.00 E

5 The Canadian Arctic area comprises two segments:

.1 starting at the Yukon mainland at 68°54'.00 N, 137°0'.00 W; following the coordinates listed below and ending at the north coast of Hans Island at 80°49'.91 N, 66°27'.40 W, connected by geodesic lines connecting the following coordinates in World Geodetic System 1984 (WGS84) datum:

Point	Latitude	Longitude
1	68°54'.00 N	137°00'.00 W
2	72°56'.58 N	137°00'.00 W
3	73°00'.42 N	136°21'.72 W
4	73°21'.72 N	136°20'.46 W
5	73°56'.34 N	136°57'.60 W
6	74°30'.18 N	137°13'.08 W
7	75°03'.42 N	137°07'.20 W
8	75°49'.26 N	136°32'.04 W
9	76°42'.18 N	136°57'.06 W

Point	Latitude	Longitude
10	77°28'.26 N	136°34'.74 W
11	78°07'.26 N	135°28'.50 W
12	78°39'.72 N	133°44'.88 W
13	79°29'.58 N	131°24'.96 W
14	79°53'.16 N	129°32'.22 W
15	80°31'.44 N	127°33'.48 W
16	81°54'.36 N	118°36'.24 W
17	82°16'.32 N	116°28'.98 W
18	82°52'.86 N	115°29'.46 W
19	83°54'.54 N	112°07'.20 W
20	85°46'.14 N	97°16'.86 W
21	86°09'.78 N	89°14'.46 W
22	86°22'.56 N	78°59'.58 W
23	86°19'.18 N	60°10'.17 W
24	85°38'.92 N	58°10'.58 W
25	85°22'.29 N	57°59'.22 W
26	85°12'.04 N	57°54'.68 W
27	84°49'.56 N	57°13'.28 W
28	84°22'.15 N	56°43'.09 W
29	84°17'.32 N	56°35'.78 W
30	84°11'.05 N	56°29'.53 W
31	83°10'.79 N	57°00'.21 W
32	83°04'.29 N	57°27'.78 W
33	83°00'.95 N	57°32'.72 W
34	82°44'.71 N	58°00'.38 W
35	82°42'.57 N	58°06'.78 W
36	82°40'.69 N	58°11'.74 W
37	82°34'.95 N	58°25'.30 W
38	82°31'.25 N	58°38'.56 W
39	82°27'.52 N	58°50'.12 W
40	82°22'.87 N	59°02'.00 W
41	82°20'.26 N	59°21'.38 W
42	82°18'.54 N	59°32'.25 W
43	82°17'.22 N	59°41'.31 W
44	82°14'.41 N	59°56'.06 W
45	82°12'.06 N	60°02'.23 W
46	81°51'.67 N	62°09'.60 W
47	81°17'.89 N	64°08'.73 W
48	80°50'.48 N	66°15'.33 W
49	80°50'.10 N	66°26'.97 W
50	80°49'.91 N	66°27'.40 W

.2 continuing from the south coast of Hans Island at 80°49'.29 N, 66°27'.04 W, following the coordinates listed below, and ending at the coast of Newfoundland and Labrador at 60°0'.00 N, 64°9'.60 W, connected by geodesic lines connecting the following coordinates in World Geodetic System 1984 (WGS84) datum:

Point	Latitude	Longitude
51	80°49'.29 N	66°27'.04 W
52	80°49'.19 N	66°26'.57 W
53	80°45'.43 N	67°03'.99 W
54	80°26'.16 N	68°14'.39 W
55	80°01'.79 N	68°46'.99 W
56	79°40'.38 N	69°04'.68 W
57	78°48'.09 N	72°52'.36 W
58	78°25'.05 N	73°45'.66 W
59	77°30'.83 N	74°38'.24 W
60	76°43'.47 N	74°56'.49 W
61	75°00'.00 N	73°16'.07 W
62	74°50'.67 N	73°02'.71 W
63	74°44'.20 N	72°52'.86 W
64	74°28'.67 N	71°45'.72 W
65	74°24'.02 N	71°25'.67 W
66	74°12'.42 N	70°33'.06 W
67	74°10'.03 N	70°23'.12 W
68	74°07'.50 N	70°12'.16 W
69	74°06'.15 N	70°06'.69 W
70	74°02'.53 N	69°51'.43 W
71	74°02'.25 N	69°50'.33 W
72	73°57'.54 N	69°31'.02 W
73	73°52'.27 N	69°10'.88 W
74	73°46'.73 N	68°51'.14 W
75	73°46'.17 N	68°48'.81 W
76	73°41'.77 N	68°29'.65 W
77	73°37'.91 N	68°12'.34 W
78	73°36'.51 N	68°05'.42 W
79	73°31'.14 N	67°15'.52 W
80	73°25'.90 N	66°24'.99 W
81	73°18'.48 N	66°07'.91 W
82	72°50'.89 N	65°07'.52 W
83	72°47'.70 N	65°00'.63 W
84	72°45'.76 N	64°58'.22 W
85	72°43'.78 N	64°54'.27 W
86	72°36'.40 N	64°38'.74 W
87	72°30'.58 N	64°26'.04 W
88	72°24'.89 N	64°13'.11 W
89	72°10'.96 N	63°40'.55 W
90	72°06'.33 N	63°30'.42 W
91	72°01'.65 N	63°20'.73 W

Point	Latitude	Longitude
92	71°52'.98 N	63°03'.86 W
93	71°47'.21 N	62°52'.67 W
94	71°44'.71 N	62°49'.41 W
95	71°32'.90 N	62°33'.35 W
96	71°31'.73 N	62°31'.66 W
97	71°29'.39 N	62°28'.99 W
98	71°25'.93 N	62°25'.37 W
99	71°18'.98 N	62°17'.45 W
100	71°12'.10 N	62°08'.98 W
101	70°51'.84 N	61°42'.53 W
102	70°48'.17 N	61°37'.62 W
103	70°35'.55 N	61°20'.28 W
104	70°33'.07 N	61°17'.10 W
105	70°13'.48 N	61°10'.49 W
106	70°08'.83 N	61°08'.67 W
107	70°07'.55 N	61°07'.92 W
108	70°01'.68 N	61°04'.08 W
109	69°55'.82 N	60°59'.85 W
110	69°55'.27 N	60°59'.41 W
111	69°49'.82 N	60°57'.99 W
112	69°29'.41 N	60°51'.36 W
113	69°12'.82 N	60°27'.40 W
114	69°10'.24 N	60°23'.47 W
115	69°06'.79 N	60°18'.33 W
116	69°00'.88 N	60°08'.99 W
117	68°56'.83 N	60°02'.21 W
118	68°38'.02 N	59°14'.43 W
119	68°37'.86 N	59°14'.01 W
120	68°34'.02 N	59°04'.46 W
121	68°32'.88 N	59°01'.49 W
122	68°25'.25 N	58°42'.06 W
123	68°21'.67 N	58°38'.64 W
124	68°16'.07 N	58°33'.75 W
125	68°07'.40 N	58°26'.93 W
126	68°06'.87 N	58°26'.58 W
127	68°04'.26 N	58°24'.69 W
128	68°01'.89 N	58°23'.15 W
129	67°56'.94 N	58°19'.62 W
130	67°44'.25 N	58°9'.79 W
131	67°39'.77 N	58°06'.05 W
132	67°35'.33 N	58°02'.07 W
133	67°30'.76 N	57°57'.66 W
134	67°29'.16 N	57°56'.00 W
135	67°28'.21 N	57°55'.01 W

Point	Latitude	Longitude
136	67°27'.27 N	57°54'.57 W
137	67°21'.52 N	57°52'.35 W
138	66°49'.47 N	57°42'.84 W
139	66°41'.71 N	57°40'.35 W
140	66°37'.88 N	57°39'.45 W
141	66°36'.02 N	57°38'.99 W
142	66°30'.27 N	57°38'.04 W
143	66°24'.50 N	57°37'.56 W
144	66°18'.68 N	57°37'.55 W
145	66°12'.84 N	57°38'.01 W
146	66°03'.50 N	57°39'.45 W
147	65°57'.62 N	57°39'.93 W
148	65°57'.50 N	57°39'.93 W
149	65°51'.75 N	57°40'.44 W
150	65°50'.81 N	57°40'.46 W
151	65°37'.59 N	57°41'.74 W
152	65°34'.74 N	57°42'.18 W
153	65°23'.33 N	57°44'.83 W
154	65°18'.08 N	57°45'.70 W
155	65°14'.52 N	57°44'.99 W
156	65°11'.49 N	57°44'.22 W
157	65°08'.79 N	57°43'.69 W
158	65°06'.04 N	57°43'.95 W
159	64°12'.06 N	57°48'.09 W
160	64°04'.20 N	57°49'.01 W
161	63°57'.36 N	57°53'.40 W
162	63°52'.57 N	57°56'.46 W
163	63°50'.05 N	57°57'.01 W
164	63°43'.99 N	57°58'.60 W
165	63°37'.16 N	58°01'.00 W
166	63°35'.02 N	58°01'.86 W
167	63°28'.62 N	57°59'.62 W
168	63°22'.86 N	57°57'.29 W
169	62°47'.14 N	57°40'.83 W
170	62°11'.35 N	57°25'.12 W
171	62°03'.47 N	57°22'.15 W
172	62°02'.23 N	57°21'.62 W
173	62°00'.39 N	57°20'.92 W
174	61°24'.74 N	57°16'.16 W
175	61°10'.14 N	57°38'.70 W
176	60°43'.56 N	57°17'.64 W
177	60°15'.36 N	57°04'.56 W
178	60°00'.00 N	56°43'.02 W
179	60°00'.00 N	64°09'.60 W

6 The North-East Atlantic Emission Control Area encompasses the exclusive economic zones and territorial seas, extending up to 200 nautical miles from the baselines of Greenland, Iceland, the Faroes, Ireland, the mainlands of the United Kingdom, France, Spain and Portugal. This designation excludes the seas bounded by the North Sea area, as defined in regulation 1.14.6 of Annex V of the present Convention.

7 The geographic outer boundaries of the North-East Atlantic Emission Control Area are delineated by a series of geodetic lines connecting specified coordinates of latitude and longitude. These coordinates are referenced to the World Geodetic System 1984 (WGS 1984) datum and are presented in a clockwise order, as outlined below:

.1 the northernmost outer boundary of the North-East Atlantic Emission Control Area begins at the point of intersection of the exclusive economic zones of Greenland and the Canadian Arctic area, as outlined in regulation 14.3 and appendix VII of MARPOL Annex VI, at the coordinate **86°19'.18 N, 60°10'.17 W**. From this point, the boundary extends eastward, following the outer boundaries of the exclusive economic zones of Iceland, the Faroes, and the eastern part of the mainland of the United Kingdom, until reaching the coordinate **62°00'.00 N, 01°22'.27 E**, where it intersects with the northern boundary of the North Sea area. The boundary of this section is defined by connecting the following coordinates in sequential order:

Point	Latitude	Longitude
1	86°19'.30 N	60°10'.28 W
2	86°57'.80 N	37°45'.68 W
3	86°39'.87 N	12°26'.95 W
4	85°37'.64 N	01°00'.60 E
5	83°42'.56 N	07°58'.17 E
6	82°20'.92 N	05°51'.60 E
7	79°52'.93 N	01°38'.37 W
8	78°19'.00 N	03°20'.63 W
9	76°59'.35 N	02°49'.70 W
10	76°03'.97 N	04°27'.87 W
11	75°18'.13 N	04°17'.90 W
12	74°30'.64 N	04°50'.57 W
13	72°49'.62 N	11°28'.77 W

Point	Latitude	Longitude
14	71°52'.99 N	12°46'.03 W
15	69°54'.98 N	13°37'.77 W
16	69°35'.00 N	13°16'.00 W
17	69°34'.77 N	12°24'.42 W
18	69°09'.46 N	09°42'.43 W
19	68°20'.93 N	07°34'.34 W
20	67°30'.09 N	06°32'.60 W
21	66°24'.66 N	05°45'.14 W
22	65°41'.60 N	05°34'.40 W
23	65°15'.62 N	02°38'.26 W
24	64°26'.05 N	00°29'.18 W
25	63°53'.25 N	00°29'.33 W
26	62°00'.00 N	01°22'.27 E

.2 continuing from the coordinate 62°00'.00 N, 01°22'.27 E, the boundary proceeds along the northwestern outer limits of the North Sea area, as defined in regulation 1.14.6 of Annex V of the present Convention. The boundary excludes the area south of latitude 62°00'.00 N and east of longitude 04°00'.00 W, connecting the following coordinates:

Point	Latitude	Longitude
26	62°00'.00 N	01°22'.27 E
27	62°00'.00 N	04°00'.00 W
28	58°33'.94 N	04°00'.00 W

.3 continuing southward, the boundary follows the southwestern outer limits of the North Sea area, as defined in regulation 1.14.6 of Annex V of the present Convention, excluding the English Channel and its approaches eastward of longitude 05°00'.00 W and northward of latitude 48°30'.00 N, until the boundary reaches its southernmost coordinate at 48°30'.00 N, 05°00'.00 W.

Point	Latitude	Longitude
29	48°30'.00 N	05°00'.00 W

.4 the following section of the North-East Atlantic Emission Control Area extends southward from the coordinate 48°30'.00 N, 05°00'.00 W, until it reaches the intersection of two boundaries: the line joining Cape Trafalgar, Spain (36°11'.00 N, 06°02'.00 W), and Cape Spartel, Morocco (35°48'.00 N, 05°55'.00 W), as outlined in regulation 14.3 and this appendix; and the eastern outer limit of Spain's mainland exclusive economic zone at the coordinate 35°57'.59 N, 05°58'.27 W. This section of the North-East Atlantic Emission Control Area encompasses the waters within the exclusive economic zones and territorial seas of the mainland territories of France, Portugal, and Spain. The area is bounded to the east by the coasts of these countries and to the west by the outer limits of their respective exclusive economic zones. The coordinates defining the outer limits, extending from the southernmost points northward, are as follows:

Point	Latitude	Longitude
30	35°57'.59 N	05°58'.27 W
31	35°57'.88 N	06°02'.14 W
32	35°57'.94 N	06°03'.00 W
33	35°57'.98 N	06°03'.48 W
34	35°58'.09 N	06°04'.90 W
35	35°55'.91 N	06°16'.72 W
36	35°54'.85 N	06°22'.58 W
37	35°54'.63 N	06°23'.83 W
38	35°53'.50 N	06°30'.25 W
39	35°53'.34 N	06°31'.23 W
40	35°52'.13 N	06°38'.74 W
41	35°51'.94 N	06°39'.54 W
42	35°49'.70 N	06°48'.66 W
43	35°49'.60 N	06°49'.22 W
44	35°49'.18 N	06°51'.55 W
45	35°48'.61 N	06°59'.14 W
46	35°48'.51 N	06°59'.81 W
47	35°47'.62 N	07°06'.03 W
48	35°46'.01 N	07°31'.75 W
49	35°46'.00 N	07°32'.00 W
50	35°26'.00 N	08°05'.00 W
51	35°19'.00 N	08°21'.00 W

Point	Latitude	Longitude
52	35°11'.00 N	08°53'.00 W
53	35°07'.00 N	09°13'.00 W
54	35°01'.00 N	10°30'.00 W
55	34°55'.00 N	11°40'.00 W
56	34°57'.00 N	12°17'.00 W
57	37°00'.00 N	13°09'.00 W
58	38°10'.00 N	13°42'.00 W
59	38°43'.00 N	13°46'.00 W
60	41°09'.00 N	13°16'.00 W
61	41°23'.77 N	13°18'.00 W
62	41°24'.03 N	13°17'.61 W
63	41°24'.04 N	13°17'.61 W
64	41°28'.00 N	13°18'.00 W
65	41°29'.12 N	13°19'.54 W
66	41°30'.12 N	13°20'.50 W
67	41°30'.99 N	13°21'.34 W
68	41°35'.55 N	13°25'.32 W
69	41°44'.00 N	13°30'.10 W
70	41°54'.17 N	13°35'.21 W
71	42°04'.57 N	13°39'.38 W
72	42°15'.70 N	13°43'.28 W
73	42°24'.69 N	13°45'.77 W

Point	Latitude	Longitude
74	42°31'.79 N	13°47'.34 W
75	42°39'.44 N	13°48'.60 W
76	42°52'.53 N	13°50'.12 W
77	43°00'.67 N	13°50'.66 W
78	43°09'.85 N	13°50'.86 W
79	43°18'.03 N	13°50'.54 W
80	43°27'.44 N	13°49'.62 W
81	43°41'.45 N	13°47'.12 W
82	43°57'.73 N	13°42'.42 W
83	44°10'.36 N	13°37'.36 W
84	44°20'.93 N	13°32'.09 W
85	44°25'.70 N	13°29'.41 W
86	44°33'.99 N	13°24'.15 W
87	44°43'.13 N	13°17'.74 W
88	44°55'.81 N	13°08'.03 W
89	45°01'.23 N	13°03'.33 W
90	45°01'.37 N	13°03'.21 W
91	45°07'.52 N	12°57'.42 W
92	45°14'.79 N	12°49'.94 W
93	45°22'.20 N	12°41'.48 W
94	45°29'.33 N	12°32'.60 W
95	45°35'.60 N	12°23'.73 W
96	45°43'.59 N	12°11'.30 W
97	45°50'.60 N	11°59'.37 W
98	46°02'.77 N	11°37'.11 W
99	46°08'.97 N	11°24'.71 W
100	46°15'.55 N	11°09'.69 W
101	46°21'.12 N	10°55'.44 W
102	46°25'.27 N	10°47'.40 W
103	46°29'.31 N	10°39'.08 W
104	46°32'.75 N	10°31'.66 W
105	46°37'.94 N	10°19'.19 W
106	46°42'.62 N	10°06'.98 W
107	46°45'.83 N	09°58'.26 W
108	46°48'.86 N	09°48'.96 W
109	46°52'.16 N	09°37'.92 W
110	46°52'.73 N	09°35'.99 W

.5 continuing from the coordinate 46°52'.73 N, 09°35'.99 W, the boundary proceeds in a northern direction, following the western outer limits of the exclusive economic zones of the mainland of the United Kingdom, Ireland, Iceland, the Faroes, and Greenland, until it reaches the southernmost intersection of the exclusive economic zone of Greenland and the Canadian Arctic Emission Control Area, at the coordinate 61°24'.74 N, 57°16'.16 W, as detailed in regulation 14.3 and this appendix. The coordinates for this section are as follows:

Point	Latitude	Longitude
111	48°10'.49 N	10°48'.56 W
112	48° 10.811' N	10° 48.562' W
113	48° 36.377' N	12° 36.484' W
114	49° 12.414' N	13° 56.755' W
115	49° 41.425' N	14° 39.118' W
116	50° 07.692' N	15° 08.259' W
117	50° 34.072' N	15° 29.322' W
118	51° 17.55' N	15° 54.73' W
119	51° 43.994' N	16° 02.877' W
120	52° 11.469' N	16° 05.45' W
121	52° 41.538' N	16° 01.852' W
122	53° 10.974' N	15° 50.662' W
123	54° 05.164' N	16° 00.588' W
124	54° 45.403' N	15° 55.823' W
125	55° 13.087' N	15° 43.866' W
126	55° 38.987' N	15° 25.217' W
127	56° 12.209' N	14° 50.963' W
128	56° 34.631' N	14° 19.862' W
129	56°57'.19 N	14°36'.16 W
130	57°25'.36 N	14°48'.11 W
131	57°46'.48 N	14°52'.42 W
132	58°10'.58 N	14°52'.18 W
133	58°37'.54 N	14°47'.13 W

Point	Latitude	Longitude
134	59°08'.50 N	14°29'.17 W
135	59°36'.59 N	14°03'.25 W
136	59°55'.59 N	13°37'.56 W
137	60°09'.13 N	13°16'.39 W
138	60°42'.23 N	14°00'.03 W
139	60°09'.28 N	17°03'.21 W
140	59°58'.44 N	20°22'.34 W
141	60°03'.00 N	22°08'.29 W
142	60°31'.10 N	25°30'.33 W
143	60°55'.19 N	27°17'.15 W
144	61°31'.52 N	28°48'.06 W
145	62°14'.11 N	29°52'.18 W
146	63°18'.12 N	30°52'.05 W
147	62°30'.13 N	33°39'.15 W
148	61°24'.86 N	35°02'.45 W
149	58°10'.71 N	37°39'.21 W
150	57°12'.46 N	39°29'.13 W
151	56°31'.75 N	42°11'.97 W
152	56°23'.72 N	44°27'.68 W
153	56°42'.83 N	47°08'.20 W
154	57°52'.48 N	51°48'.36 W
155	58°41'.66 N	53°40'.40 W
156	61°24'.74 N	57°16'.16 W

6 continuing along the common points between the exclusive economic zone of Greenland and the Canadian Arctic Emission Control Area until reaching the northernmost outer boundary of the North-East Atlantic Emission Control Area at the intersection of the exclusive economic zone of Greenland and the Canadian Arctic Emission Control Area (Point 1), at the coordinates 86°19'.18 N, 60°10'.17 W. The coordinates for this section are as follows:

Point	Latitude	Longitude
157	63°35'.00 N	58°02'.00 W
158	66°37'.15 N	57°39'.10 W
159	67°27'.05 N	57°54'.15 W
160	68°25'.05 N	58°42'.07 W
161	69°29'.06 N	60°51'.10 W
162	70°33'.02 N	61°17'.06 W
163	72°06'.07 N	63°30'.15 W
164	73°25'.15 N	66°25'.05 W
165	74°44'.03 N	72°53'.00 W
166	76°41'.06 N	75°00'.00 W
167	77°30'.00 N	74°46'.00 W
168	78°48'.08 N	73°00'.00 W
169	79°39'.00 N	69°20'.00 W
170	80°25'.00 N	68°20'.00 W
171	80°45'.00 N	67°07'.12 W
172	82°24'.83 N	58°59'.72 W
173	83°35'.80 N	56°51'.48 W
174	84°21'.79 N	56°28'.88 W
175	85°50'.08 N	57°57'.22 W

Appendix VIII

Form of International Energy Efficiency (IEE) Certificate (regulation 8.2)

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 relating 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[1]

Name of ship .....

Distinctive number or letters .....

Port of registry .....

Gross tonnage .....

IMO number[2] .....

THIS IS TO CERTIFY:

1 that the ship has been surveyed in accordance with regulation 5.4 of Annex VI to the Convention; and

2 that the survey shows that the ship complies with the applicable requirements in regulations 22, 23, 24, 25 and 26.

Completion date of survey on which this Certificate is based: ..... (dd/mm/yyyy)

Issued at .....
(place of issue of certificate)

(dd/mm/yyyy): ....
(date of issue) *(signature of duly authorized official issuing the certificate)*

(seal or stamp of the authority, as appropriate)

1 Alternatively, the particulars of the ship may be placed horizontally in boxes.

2 In accordance with the *IMO Ship Identification Number Scheme* (resolution A.1117(30)).

Supplement to the International Energy Efficiency Certificate (IEE Certificate)

RECORD OF CONSTRUCTION RELATING TO ENERGY EFFICIENCY

Notes:

1 This Record shall be permanently attached to the IEE Certificate. The IEE Certificate shall be available on board the ship at all times.

2 The Record shall be at least in English, French or Spanish. If an official language of the issuing Party is also used, this shall prevail in case of a dispute or discrepancy.

3 Entries in boxes shall be made by inserting either: a cross (x) for the answers "yes" and "applicable"; or a dash (-) for the answers "no" and "not applicable", as appropriate.

4 Unless otherwise stated, regulations mentioned in this Record refer to regulations in Annex VI of the Convention, and resolutions or circulars refer to those adopted by the International Maritime Organization.

1 Particulars of ship

1.1 Name of ship .....

1.2 IMO number .....

1.3 Date of building contract .....

1.4 Date of major conversion (if applicable).....

1.5 Gross tonnage .....

1.6 Deadweight .....

1.7 Type of ship[3] .....

2 Propulsion system

2.1 Diesel propulsion ..... □

2.2 Diesel-electric propulsion ..... □

2.3 Turbine propulsion ..... □

2.4 Hybrid propulsion ..... □

2.5 Propulsion system other than any of the above ..... □

[3] Insert ship type in accordance with definitions specified in regulation 2.2. Ships falling into more than one of the ship types defined in regulation 2.2 should be considered as being the ship type with the most stringent (the lowest) required EEDI. If the ship does not fall into the ship types defined in regulation 2.2, insert "Ship other than ship types defined in regulation 2.2".

3 Attained Energy Efficiency Design Index (EEDI)

3.1 The attained EEDI in accordance with regulation 22.1 is calculated based on the information contained in the EEDI technical file, which also shows the process of calculating the attained EEDI..... □

The attained EEDI is: ..... grams-CO_2/tonne-nautical mile

3.2 The attained EEDI is not calculated, as:

3.2.1 the ship is exempt under regulation 22.1, as it is not a new ship as defined in regulation 2.2.16 ..... □

3.2.2 the type of propulsion system is exempt in accordance with regulation 19.3 …..... □

3.2.3 the requirement of regulation 22 is waived by the ship's Administration in accordance with regulation 19.4..... □

3.2.4 the type of ship is exempt in accordance with regulation 22.1..... □

4 Required EEDI

4.1 Required EEDI is: ..... grams-CO_2/tonne-mile

4.2 The required EEDI is not applicable, as:

4.2.1 the ship is exempt under regulation 24.1, as it is not a new ship as defined in regulation 2.2.16..... □

4.2.2 the type of propulsion system is exempt in accordance with regulation 19.3...…..... □

4.2.3 the requirement of regulation 24 is waived by the ship's Administration in accordance with regulation 19.4 ..... □

4.2.4 the type of ship is exempt in accordance with regulation 24.1 …..... □

4.2.5 the ship's capacity is below the minimum capacity threshold in table 1 of regulation 24.2..... □

5 Attained Energy Efficiency Existing Ship Index (EEXI)

5.1 The attained EEXI in accordance with regulation 23.1 is calculated taking into account the guidelines[4] developed by the Organization…….. □

The attained EEXI is:……..grams-CO_2/tonne-mile

5.2 The attained EEXI is not calculated, as:

5.2.1 the type of propulsion system is exempt in accordance with regulation 19.3……. □

[4] Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.350(78)).

5.2.2 the type of ship is exempt in accordance with regulation 23.1…… □

6 Required EEXI

6.1 The required EEXI is:…….grams-CO_2/tonne-mile in accordance with regulation 25

6.2 The required EEXI is not applicable, as:

6.2.1 the type of propulsion system is exempt in accordance with regulation 19.3…….. □

6.2.2 the type of ship is exempt in accordance with regulation 25.1…… □

6.2.3 the ship's capacity is below the minimum capacity threshold in table 3 of regulation 25.1……. □

7 Ship Energy Efficiency Management Plan

7.1 The ship is provided with a Ship Energy Efficiency Management Plan (SEEMP) in compliance with regulation 26……..……..……. □

8 EEDI technical file

8.1 The IEE Certificate is accompanied by the EEDI technical file in compliance with regulation 22.1…….…….. □

8.1.1 The EEDI technical file identification/verification number……..……

8.1.2 The EEDI technical file verification date……..……....

9 EEXI technical file

9.1 The IEE Certificate is accompanied by the EEXI technical file in compliance with regulation 23.1…… □

9.1.1 The EEXI technical file identification/verification number..……

9.1.2 The EEXI technical file verification date...…….....

9.2 The IEE Certificate is not accompanied by the EEXI technical file, as the attained EEDI is used as an alternative to the attained EEXI……..□

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at .....
(place of issue of the Record)

(dd/mm/yyyy): ....
(date of issue) *(signature of duly authorized official issuing the Record)*

(seal or stamp of the authority, as appropriate)

Appendix IX

Information to be submitted to the IMO Ship Fuel Oil Consumption Database (regulation 27)

Identity of the ship

IMO number . . . . . .

Period of calendar year for which the data is submitted……

For the purpose of regulation 27:

Start date (dd/mm/yyyy) ……..

End date (dd/mm/yyyy).…….

For the purpose of regulation 28:

Start date (dd/mm/yyyy) ……..

End date (dd/mm/yyyy).…….

Technical characteristics of the ship

Year of delivery……

Ship type, as defined in regulation 2.2 of MARPOL Annex VI or other (to be stated) ……

Gross tonnage (GT)[1]
……...

Net tonnage (NT)[2] ……...

Deadweight tonnage (DWT)[3]

……

Power output (rated power)[4] of main and auxiliary reciprocating internal combustion engines over 130 kW (to be stated in kW) ……..

[1] Gross tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969.

[2] Net tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969. If not applicable, note "N/A".

[3] DWT means the difference in tonnes between the displacement of a ship in water of relative density of 1,025 kg/m^3 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. If not applicable, note "N/A".

[4] Rated power means the maximum continuous rated power as specified on the nameplate of the engine.

Attained EEDI[5] (if applicable)……..…….

Attained EEX[6] (if applicable)……..……

Ice class[7] . ……..

Fuel oil consumption data

Total fuel oil consumption by fuel oil type[8] in metric tonnes and methods used for collecting fuel oil consumption data:…….

Total fuel oil consumption by fuel oil type[8] per consumer type in metric tonnes and methods used for collecting fuel oil consumption data…….

Main Engine(s) …….

Auxiliary Engine(s)/Generator(s) ……

Fired Boiler(s)……

Others (specify) ……

Fuel oil consumption while the ship is not under way by fuel oil type[8] per consumer type in metric tonnes and methods used for collecting fuel oil consumption data:

Main Engine(s) …….

Auxiliary Engine(s)/Generator(s) ……

Fired Boiler(s) ……..

Others (specify) ……

Total distance travelled (nm)……..

Laden distance travelled (nm) (on a voluntary basis)……

Hours under way……

Total amount of onshore power supplied (kWh)……..

5. Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.364(79)).

6 Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.350(78)).

7 Ice class should be consistent with the definition set out in the International Code for Ships Operating in Polar Waters (Polar Code) (resolutions MEPC.264(68) and MSC.385(94)). If not applicable, note "N/A".

For ships to which regulation 28 of MARPOL Annex VI applies:

Total transport work …….

Applicable CII:[8] □AER □cgDIST

Required annual operational CII[9]……

Attained annual operational CII before any correction[10]……..

Attained annual operational CII[11] …….

Installation of innovative technology,[12] if applicable: □A □B-1 □B-2 □C-1 □C-2

Operational carbon intensity rating:[13] □A □B □C □D □E

CII for trial purpose (on voluntary basis):[14]

- □ EEPI (gCO_2/t/nm): ……
- □ cbDIST (gCO_2/berth/nm): ……
- □ clDIST (gCO_2/m/nm): ……
- □ EEOI (gCO_2/t/nm):[15] ……

8 Refer to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)).

9 Refer to the *2022 Guidelines on the reference lines for use with operational carbon intensity indicators (CII reference lines guidelines, G2)* (resolution MEPC.353(78)) and *2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factors guidelines, G3)* (resolution MEPC.338(76)).

10 As calculated taking into account *the 2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)) before any correction using *Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

11 As calculated taking into account the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)) and having been corrected taking into account *Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

12 Refer to the *2021 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI and EEXI* (MEPC.1/Circ.896).

13 Refer to the *2022 Guidelines on the operational carbon intensity rating of ships (CII rating guidelines, G4)* (resolution MEPC.354(78)).

14 Refer to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)).

15 Refer to the *Guidelines for voluntary use of the ship energy efficiency operational indicator (EEOI)* (MEPC.1/Circ.684).

Appendix X

Form of Statement of Compliance – Fuel Oil Consumption Reporting and Operational Carbon Intensity rating (regulation 8.3)

STATEMENT OF COMPLIANCE – FUEL OIL CONSUMPTION REPORTING AND OPERATIONAL CARBON INTENSITY RATING

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 relating 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[1]

Name of ship……

Distinctive number or letters……..……

IMO number[2]…….

Port of registry…….……..

Gross tonnage……..……..

Deadweight……..……

Type of ship……

THIS IS TO DECLARE THAT:

1 the ship has submitted to this Administration the data required by regulation 27 of Annex VI to the Convention, covering ship operations from (dd/mm/yyyy) to (dd/mm/yyyy);

2 the data was collected and reported in accordance with the methodology and processes set out in the ship's SEEMP that was in effect over the period from (dd/mm/yyyy) to (dd/mm/yyyy);

[1] Alternatively, the particulars of the ship may be placed horizontally in boxes.

[2] In accordance with the *IMO Ship Identification Number Scheme* (resolution A.1117(30)).

3 the attained annual operational CII of the ship from (dd/mm/yyyy) to (dd/mm/yyyy) was …… pursuant to regulations 28.1 and 28.2 of Annex VI of the Convention, for ships to which regulation 28 applies;[3]

4 the annual operational carbon intensity of the ship in this period is rated as
□A □B □C □D □E

in accordance with regulation 28 of Annex VI to the Convention, for a ship to which regulation 28 applies;[4] and

5 a corrective action plan has been developed and included in the SEEMP (for a ship to which regulation 28 applies, rated as D for three consecutive years or rated as E)[4]

This Statement of Compliance is valid until (dd/mm/yyyy) .....

Issued at……...
(place of issue of the Statement)

(dd/mm/yyyy): ....
(date of issue) *(signature of duly authorized official issuing the Statement)*

(seal or stamp of the authority, as appropriate)

[3] In the event of any transfer of a ship addressed in regulations 27.4, 27.5 or 27.6, these sections should be completed consistent with regulation 28.3 of MARPOL Annex VI.

[4] Ice class should be consistent with the definition set out in the International Code for Ships Operating in Polar Waters (Polar Code) (resolutions MEPC.264(68) and MSC.385(94)). If not applicable, note "N/A".

Appendix XI

Form of Exemption Certificate for UNSP Barges (regulation 8.4)

INTERNATIONAL AIR POLLUTION PREVENTION EXEMPTION CERTIFICATE FOR UNMANNED NON-SELF-PROPELLED (UNSP) BARGES

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 relating 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[1]

Name of ship……

Distinctive number or letters……..……

IMO number[2]…….

Port of registry…….…….

Gross tonnage……..…..

THIS IS TO CERTIFY THAT:

1 the UNSP barge has been surveyed in accordance with regulation 3.4 of Annex VI to the Convention;

2 the survey shows that the UNSP barge:

.1 is not propelled by mechanical means;

.2 has no system, equipment and/or machinery fitted that may generate emissions controlled by Annex VI to the Convention; and

.3 has neither persons nor living animals on board; and

3 the UNSP barge is exempted, under regulation 3.4 of Annex VI to the Convention from the certification and related survey requirements of regulations 5.1 and 6.1 of Annex VI to the Convention.

[1] Alternatively, the particulars of the ship may be placed horizontally in boxes.

[2] In accordance with the *IMO Ship Identification Number Scheme* (resolution A.1117(30)).

This Certificate is valid until (dd/mm/yyyy) …….

subject to the exemption conditions being maintained.

Completion date of the survey on which this Certificate is based (dd/mm/yyyy)

Issued at ……
(place of issue of certificate)

(dd/mm/yyyy): ....
(date of issue) *(signature of duly authorized official issuing the certificate)*

(seal or stamp of the authority, as appropriate)

Appendix XII

Information to be submitted on the annual GHG fuel intensity (regulation 33)

Identity of the ship

Name of the ship……...

IMO number……..

Port of registry……..

Company name……

Company contact details……

Period of calendar year for which the data is submitted:

Start date (dd/mm/yyyy) ……..

End date (dd/mm/yyyy).……..

Technical characteristics of the ship

Year of delivery……

Ship type, as defined in regulation 2.2 of MARPOL Annex VI or other (to be stated) ……

Gross tonnage (GT)[1] ……..

Net tonnage (NT)[2] …….....

Deadweight tonnage (DWT)[3]……..

Power output (rated power)[4] of main and auxiliary reciprocating internal combustion engines over 130 kW (to be stated in kW) ……..

[1] Gross tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969

[2] Net tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969. If not applicable, note "N/A".

[3] DWT means the difference in tonnes between the displacement of a ship in water of relative density of 1,025 kg/m^3 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. If not applicable, note "N/A".

[4] Rated power means the maximum continuous rated power as specified on the nameplate of the engine.

Information related to the annual GHG fuel intensity

Fuel use, by fuel type *j,* as referred to in regulation 33 of Annex VI of the MARPOL Convention, in metric tonnes and methods used for collecting fuel consumption data:

Main Engine(s) …….

Auxiliary Engine(s)/Generator(s) ……...

Fired Boiler(s)……

Others (specify) ……

Power capacity of other energy conversion systems installed on board, expressed in MJ, and methods used for collecting data, if applicable:

☐ Fuel cell:…….

☐ Electric battery:……..

☐ Wind assisted propulsion system…….....

☐ Photovoltaic power generation system……..

☐ Other:……..

Total amount of onshore power supplied (kWh)……..

Reference of the Fuel Life Cycle Label (FLL) by fuel or energy source type used:……..

Attained annual GHG fuel intensity

EI_j, the GHG intensity, expressed on a well-to-wake basis of each fuel type used, expressed in gCO_2eq/MJ:……..

$Energy_j$, amount of energy used by fuel or energy source type, expressed in MJ……
…..

$Energy_{total}$, total amount of energy used by the ship, expressed in MJ……..

Attained annual greenhouse gas fuel intensity (attained annual GFI), expressed in gCO_2eq/MJ
…….....

Target annual GHG fuel intensity

Target annual GHG fuel intensity of the ship for the reporting period, expressed in gCO_2eq/MJ:

Base target annual GFI:……...

Direct compliance target annual GFI:…….

GFI compliance balance

GFI compliance balance, expressed in tCO_2eq:……...

For a ship in direct compliance, amount of surplus units the ship is eligible to receive, expressed in tCO_2eq:……

For a ship with a compliance deficit, the compliance deficit expressed in tCO_2eq, as follows:

Tier 1 compliance deficit:…….

Tier 2 compliance deficit:…….

Amount of surplus units banked from previous reporting periods, expressed in tCO_2eq:……...

Information related to the uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs)

The different ZNZs used, and the total amount per ZNZ, in tCO_2eq:……

Appendix XIII

Form of Statement of Compliance – Annual GHG Fuel Intensity (regulation 8.5)

STATEMENT OF COMPLIANCE – Annual GHG Fuel Intensity

Issued under the provisions of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL Annex VI) 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)

Reporting period:

from (dd/mm/yyyy) to (dd/mm/yyyy)

Particulars of ship

Name of ship. . . . .

Distinctive number or letters . . . . . .

IMO number[1]. . . . . .

Port of registry. . . . . .

Gross tonnage. . . . . .

THIS IS TO DECLARE THAT:

1 the ship has submitted to this Administration the data required by regulation 37 of MARPOL Annex VI, covering ship operations from (dd/mm/yyy) to (dd/mm/yy);

2 the data was collected and reported to this Administration in accordance with the methodology and the processes set out in the ship's SEEMP that was in effect over the period from (dd/mm/yyy) to (dd/mm/yy);

3 the attained annual GHG fuel intensity of the ship for the reporting period was . . . . . gCO_2eq/MJ, pursuant to regulation 33 of MARPOL Annex VI;

4 the GHG fuel intensity compliance balance of the ship for the reporting period was . . . . . tCO_2eq, pursuant to regulation 36 of MARPOL Annex VI;

5 the amount of surplus units banked in the IMO GFI Registry ship account from previous reporting periods was . . . . . tCO_2eq, pursuant to chapter 5 of MARPOL Annex VI;

[1] In accordance with the *IMO Ship Identification Number Scheme* (resolution A.1117(30)).

6 for a ship in direct compliance for the reporting period, pursuant to regulation 36 of MARPOL Annex VI:

.1 the amount of surplus units the ship was eligible to receive was . . . . . tCO$_2$eq;

.2 the following selected GHG fuel intensity compliance approach(es) was/were recorded by the IMO GFI Registry:

☐ transfer …….tCO$_2$eq surplus units to other ships;

☐ bank …….tCO$_2$eq surplus units for use in future reporting periods; and/or

☐ cancel……. tCO$_2$eq surplus units on a voluntary basis;

.3 the final amount of surplus units banked in the IMO GFI Registry ship account was . . . . . tCO$_2$eq;

7 for a ship with a compliance deficit for the reporting period, pursuant to regulation 36 of MARPOL Annex VI:

.1 the compliance deficit comprised:

☐ Tier 1 compliance deficit:……...tCO$_2$eq; and

☐ Tier 2 compliance deficit:……...tCO$_2$eq.

.2 the following selected GHG fuel intensity compliance approach(es) was/were recorded by the IMO GFI Registry to balance the compliance deficit:

☐ use……. surplus units (in tCO$_2$eq) banked;

☐ obtain……. surplus units (in tCO$_2$eq) transferred from other ships;

☐ acquire remedial units through making contributions to the IMO Net-Zero Fund:

☐ Tier 1 remedial units:…….. tCO$_2$eq;

☐ Tier 2 remedial units:…….. tCO$_2$eq).

.3 the final amount of surplus units banked in the IMO GFI Registry ship account was . . . . . tCO$_2$eq;

8 the annual administration fee was paid to the IMO GFI Registry, pursuant to regulation 38 of MARPOL Annex VI;

9 for a ship eligible to receive rewards from the IMO Net-Zero Fund, the total amount of GHGs reduced by the uptake of ZNZs was…… in tCO$_2$eq, pursuant to regulation 39 of MARPOL Annex VI; and

10 the ship is compliant with its target annual GFI, pursuant to regulation 36 of MARPOL Annex VI.

This Statement of Compliance is valid until (dd/mm/yyyy) . . . . . .

Issued at . . . . . .
(place of issue of the Statement)

(dd/mm/yyyy) . . . . . .

(date of issue) (signature of duly authorized official issuing the Statement)

(seal or stamp of the authority, as appropriate)

MARINE ENVIRONMENT PROTECTION COMMITTEE
2nd extraordinary session
Agenda item 3

MEPC/ES.2/3
2 June 2025
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REDUCTION OF GHG EMISSIONS FROM SHIPS

Draft work plan to prepare for the entry into force of the IMO Net-Zero Framework

Note by the Secretariat

SUMMARY

Executive summary:	This document presents a draft work plan to prepare for the entry into force of the IMO Net-Zero Framework, developed by the Secretariat, as requested by MEPC 83.
Strategic direction, if applicable:	3
Output:	3.2
Action to be taken:	Paragraph 41
Related documents:	MEPC 83/7, MEPC 83/17; MEPC/ES.2/1 and Circular Letter No.5005

Introduction

1 MEPC 83, having considered and approved draft amendments to MARPOL Annex VI on the IMO Net-Zero Framework (MEPC 83/17, paragraphs 7.41, 7.45 and annex 11), noted an indicative list of guidelines, governing provisions and other guidance, to be developed or to be amended, accompanying the draft amendments (MEPC 83/17, paragraph 7.46); and requested the Secretariat to develop a draft work plan to prepare for the entry into force of the IMO Net-Zero Framework for consideration at MEPC/ES.2 (MEPC 83/17, paragraph 7.47).

2 The draft Revised MARPOL Annex VI 2025, incorporating all amendments approved by MEPC 83, including those on the IMO Net-Zero Framework, disseminated by Circular Letter No.5005 of 11 April 2025, was prepared for consideration by the Committee, with a view to adoption at this session.

Draft work plan

3 The draft work plan, set out in the annex to this document, is intended as a planning tool for the work of the Committee and its subsidiary bodies in preparing for the entry into force of the IMO Net-Zero Framework. In order to provide a complete overview of the GHG-related workload of the Committee in its upcoming sessions, the plan also contains other related GHG work streams, as well as expected time frames.

4 The draft work plan includes both GHG work streams which are ongoing and for which the Committee has already agreed on (provisional) timelines, as well as those which are subject to the adoption of amendments to MARPOL Annex VI by MEPC/ES.2. The plan does not prejudge the adoption of any future amendments or Committee decisions on other possible GHG work streams needed to prepare for the entry into force of the IMO Net-Zero Framework, as well as any decisions on GHG working arrangements, including on intersessional work.

5 The draft work plan includes the following 13 GHG work streams:

.1 Guidelines related to the GHG Fuel Intensity (GFI) and GFI compliance approaches;

.2 Guidelines related to zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs);

.3 IMO GFI Registry;

.4 Further development of the IMO LCA Framework:

.1 Future amendments to the 2024 LCA Guidelines;

.2 Sustainable Fuels Certification Schemes (SFCS)/FLL; and

.3 Development of default GHG emission factors;

.5 IMO Net-Zero Fund;

.6 Further development of the IMO Net-Zero Framework, including determining the pricing mechanism for the reporting periods starting 2031 and onwards;

.7 Amendments to existing guidelines and procedures for the implementation of the IMO Net-Zero Framework;

.8 Food security;

.9 Further development of the IMO energy efficiency framework:

.1 Phase 2 of the review of the short-term GHG reduction measure; and

.2 Annual analysis and aggregated reporting of IMO Fuel Consumption Reporting (IMO DCS) and monitoring of carbon intensity developments;

.10 Development of a regulatory framework for the use of onboard carbon capture and storage (OCCS);

.11 Measurement and verification of non-CO_2 GHG emissions;

.12 Fifth IMO GHG Study; and

.13 Review of the 2023 IMO GHG Strategy and development of the 2028 IMO GHG Strategy.

6 The draft work plan covers GHG-related activities considered by the Committee and its subsidiary bodies. Other aspects of the work of the Organization related to the reduction of GHG emissions from ships, e.g. safety, human element, technical cooperation or liability, are to be considered by other relevant IMO organs.

7 More detailed information and timelines for the different work streams are provided below and in the annex. This does not prejudge any future changes to the anticipated work under each GHG work stream and/or to the prioritization of workstreams and associated timelines.

Guidelines related to the GHG Fuel Intensity (GFI) and GFI compliance approaches

8 The draft regulations in the IMO Net-Zero Framework on the Attained annual GFI (regulation 33)[*], Target annual GFI (regulation 35), Annual GFI compliance approaches (regulation 36), and on Reporting and verification of the annual GFI (regulation 37) foresee a number of implementing provisions (guidelines, guidance and mechanism) to be developed to ensure the continuous improvement of the ship's GFI, as outlined in the draft work plan in the annex. For a number of these implementing provisions, drafts had already been submitted to previous sessions of the Committee (see also MEPC 83/WP.11, annex 2), which means work could start immediately following adoption of the draft Revised MARPOL Annex VI 2025.

Guidelines related to zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs)

9 With regard to ZNZs, important follow-up work is required, notably to support the implementation of draft regulation 39 on the uptake of ZNZs. In particular, draft regulation 39.3 states that no later than 1 March 2027 (and every five years thereafter), the Committee shall define the reward for the use of ZNZs. Furthermore, draft regulation 39.4 foresees that the Organization monitors and publishes the share of ZNZs in the total annual energy used on board ships. To satisfactorily fulfil this obligation, the Secretariat may require guidance by the Committee in this respect.

IMO GFI Registry

10 Draft regulation 38 of the IMO Net-Zero Framework provides a clear description of the functionalities of the IMO GFI Registry, as well as ship specific obligations and access to the Registry. Draft regulation 38.1 requires the Secretary-General to establish and administer the IMO GFI Registry to facilitate the implementation of draft regulation 36 on Annual GFI compliance approaches.

11 Draft regulation 38.2 states that ships shall have by 1 October 2027 an account with the IMO GFI Registry and shall pay by 30 June 2028 their first annual administration fee to the Registry.

12 Draft regulation 38 also foresees the development of guidelines on the development, management and operation of the IMO GFI Registry, while, in parallel, the Secretariat will have to undertake concrete steps to develop, test and implement the necessary IT systems and related back office and support procedures as well as associated staff/consultants support.

[*] For the purpose of this document, reference is made to the regulation numbers in the draft Revised MARPOL Annex VI 2025 (see Circular Letter No.5005).

13 In document MEPC 83/7, the Secretariat provided initial information on the possible resource implications of the establishment of the IMO GFI Registry, both in terms of financial and human resource implications. Notwithstanding the fact that more detailed requirements still need to be developed, the draft regulations already clearly outline the basic functionalities of the Registry, allowing the Secretariat to further assess possible IT solutions.

14 Taking into account the technical complexity of the IMO GFI Registry, particularly the need to receive and verify data, track the transfer of surplus units from one ship account to another ship account, and ensure high-level cybersecurity for both reported data and financial transaction information, it is likely that an external IT solution will need to be procured to support the functioning of the Registry, along with the necessary Secretariat capability to provide day-to-day support for users. The exact costs of establishing and operating such a system will only become clear once the procurement process is complete and the support infrastructure defined – nevertheless, as also outlined in document MEPC 83/7, the annual operational costs of a commercial solution are estimated to be in the region of several million USD, based on comparable systems and structures.

15 Draft regulation 38.3 provides that the annual administrative fee to be paid by ships would cover the Registry's annual costs, so that it operates on a self-funding non-profit basis. However, as noted in paragraph 11 above, the first receipt of administrative fees by the Registry will likely be June 2028, while there will be initial set-up costs to have the mechanism up and running by 1 October 2027 at the latest. A short-term 'loan' facility to meet the initial establishment and operating costs of the Registry will therefore be necessary, which will then be repaid from the first annual administrative fee. At the same time, the Secretariat will seek to minimize those initial costs to the extent possible, for example through the use of in-kind contributions and support from Member States and other international organizations with relevant expertise in this area, and through seeking appropriate commercial terms with any potential provider. In considering how best to establish such a 'loan' facility, the Secretary-General is determined that no additional funding for this purpose will be provided through the regular budget, that the measure will be short-term and time-bound, and that all costs of the Registry will ultimately be borne by the administrative fee. Proposals in this regard will be submitted by the Secretary-General to a future session of the Council.

16 Notwithstanding the above, any set-up costs could potentially be reduced by means of in-kind contributions by Member States and/or international organizations with relevant expertise in this area.

Further development of the IMO LCA Framework

17 The IMO framework on life cycle GHG intensity of marine fuels (IMO LCA framework), in particular the *2024 Guidelines on life cycle GHG intensity of marine fuels* (2024 LCA Guidelines), will not only play a crucial role in the implementation of the IMO Net-Zero Framework, but is also of relevance to the IMO carbon intensity/energy efficiency framework.

18 In this regard, the GESAMP-LCA Working Group will continue to provide scientific advice on methodological issues related to the 2024 LCA Guidelines and to review proposed default GHG emission factors in accordance with the *Methodology for submission, scientific review and recommendation of proposed default emission factors by GESAMP-LCA WG* (MEPC.1/Circ.916) approved by MEPC 83.

19 In accordance with the approved draft amendments on the IMO Net-Zero Framework, substantial further work will have to be undertaken by the Committee in relation to the sustainable fuels certification schemes. The development of associated guidelines on requirements and procedures for recognition of certification schemes, as well as on the fuel lifecycle label (FLL), could also be considered under this work stream.

IMO Net-Zero Fund

20 In accordance with Financial Regulation 6.7(a) of Article VI of IMO's Financial Regulations and Financial Rules, the Secretary-General may establish trust, reserve and special funds. Regulation 40 of the draft Revised MARPOL Annex VI 2025 explicitly instructs the Secretary-General to establish the IMO Net-Zero Fund. Accordingly, the establishment and general management principles of the IMO Net-Zero Fund will be subject to all relevant IMO Financial Regulations and Financial Rules, including those relating to internal oversight, external audit, internal control and procurement arrangements.

21 The Financial Regulations, which provide an overall framework for the Organization's financial management, are high level and may not require amendment, but it is possible that the more detailed Financial Rules may require revision to meet specific requirements for the operation of the IMO Net-Zero Fund. The Secretary-General will review this once the Fund's governing provisions have been developed in more detail by the Committee.

22 The GHG pricing contributions to the IMO Net-Zero Fund for acquiring Remedial Units in accordance with draft regulations 36.5 and 36.6 would be considered as 'extrabudgetary contributions' in accordance with Financial Regulation 7.1. Accordingly, the biennial budgetary process set out in Financial Regulations 3.1 to 3.6 would not apply to the IMO Net-Zero Fund, as it does not apply to extrabudgetary resources or funds, and only applies to funds established by the Assembly and the scope of work set out in the biennial "list of outputs". Budget-setting procedures for the IMO Net-Zero Fund should therefore be defined in the Fund's governing provisions and, as such, can be developed in a manner suitable for a fund of this type.

23 In accordance with the provisions of the draft IMO Net-Zero Framework, the IMO Net-Zero Fund is expected to receive the first GHG pricing contributions for Remedial Units in 2029 to balance a ship's compliance deficit in the 2028 reporting period. Following the adoption of the IMO Net-Zero Framework, and in parallel with the Committee's consideration of the Fund's governing provisions, the Secretariat will initiate the necessary administrative arrangements to ensure that the Fund will be fully operational by 2029. The Fund will have to be established in close alignment with the GFI Registry from an administrative perspective, as the payments for Remedial Units and the disbursement of reward payments should be linked to the ship's account in the Registry.

24 Draft regulation 40.1 establishes that any costs associated with the operation of the IMO Net-Zero Fund and its Governing Board shall be borne by the Fund. As with the GFI Registry, there will be some initial costs associated with the set-up phase of the Fund before any revenue will be received. The scale of these initial costs will depend to some extent on the modalities established in the governing provisions, but it is likely that the initial costs associated with the Fund would be lower than for the Registry, as the main operational costs of the Fund would only commence once funds are received. Expenditures will be necessary to establish the required policies and procedures and to ensure that financial management systems are in place and that the infrastructure is ready to commence operations in a timely manner, once funds are available. Similar to the Registry, these costs will be borne by the Fund in due course, but an initial 'loan' facility will be necessary in the short-term, for which the Secretary-General will make proposals to an upcoming session of the Council (see also paragraph 15).

Governing provisions

25 Draft regulation 40.4 states that the IMO Net-Zero Fund's governing provisions shall include provisions regarding the following issues:

.1 which entities may be eligible to receive funds from the Fund;

.2 the types of financing mechanisms by which funds may be disbursed;

.3 the operating procedures of the Fund and its Governing Board;

.4 which entities and organizations the Fund may cooperate with in the disbursement of revenue; and

.5 allocations of revenue for the different purposes set out in draft regulation 41, including those that promote a just and equitable transition in the context of this measure.

26 In addition to the above, the governing provisions could also cover, inter alia:

.1 specific budget-setting processes beyond those set out in IMO's Financial Regulations and Financial Rules;

.2 specific provisions on the investment of surplus of funds, in accordance with Financial Regulations 9.1 to 9.3; and

.3 specific policies and procedures for disbursement of funds where these are not already covered by the Organization's existing Financial Rules.

27 The Secretariat is planning to carry out a comparative analysis of existing practices of similar funds, including, inter alia, the composition of their governing board, their operating procedures, specific financing mechanisms that could maximize the return in addition to grants and/or concessional loans, including by leveraging private sector capital (e.g. fuel offtake agreements, guarantee mechanism, loans to multi-lateral development/commercial banks to de-risk specific financial transactions, reverse auctions, etc.), and possible contractual arrangements with other entities/organizations in the disbursement of revenue, taking into account the outcome of Committee's development on the governing provisions, and to present the outcome of this analysis to a future session.

Further development of the IMO Net-Zero Framework

28 The draft IMO Net-Zero Framework establishes a review mechanism to assess the effectiveness of the Framework in achieving its goal and to improve it. Draft regulation 36.10 states that by 1 January 2028 the Committee shall determine the mechanism for reviewing and defining the price of a Tier 1 and Tier 2 remedial unit for the reporting periods starting from 2031 and onwards.

Amendments to existing guidelines and procedures for the implementation of the IMO Net-Zero Framework

29 The implementation of the IMO Net-Zero Framework will also require amendments to several existing guidelines, as also outlined in the indicative list set out in annex 2 of document MEPC 83/WP.11, in particular those related to the SEEMP, Port State Control and Survey and Certification (HSSC), as further outlined in the draft work plan set out in the annex.

Food security

30 In accordance with draft regulation 43, the Committee shall address, including avoiding, remedying and mitigating, disproportionately negative impacts of new chapter 5 of MARPOL Annex VI on food security, paying particular attention to countries exposed to food insecurity, and keep the potential impacts of the chapter on food security under continuous review.

31 MEPC 83 also agreed that in the period between the adoption of the IMO Net-Zero Framework and its entry into force, further assessment (qualitative and quantitative, as appropriate) of the potential impacts of an increase in maritime transport costs on food security resulting from the adopted framework should be conducted (MEPC 83/17, paragraph 7.5).

32 Building on the outcome of the further work on assessing the potential impacts of the policy combinations of the basket of candidate mid-term measures on food security carried out by the Secretariat (see MEPC 83/7/20), the Committee may request the Secretariat to prepare draft terms of reference for 'further assessment of the potential impacts of an increase in maritime transport costs on food security', for consideration at the next session. As was the case for the initial assessment, this further assessment may be subject to voluntary donations to the IMO GHG TC Trust Fund.

Further development of the IMO energy efficiency framework

33 MEPC 83 approved the Work plan for Phase 2 of the review of the short-term GHG reduction measure (MEPC 83/17, annex 5), outlining scope and timelines for the review.

34 In accordance with regulation 27 of MARPOL Annex VI, the Secretariat will continue to carry out its annual analysis and aggregated reporting of data submitted to the IMO Fuel Consumption Reporting (IMO DCS) and propose its annual report on the monitoring of carbon intensity developments of international shipping.

Development of a regulatory framework for OCCS

35 MEPC 83 approved the Work plan on the development of a regulatory framework for the use of onboard carbon capture and stora*ge (OCCS)* (MEPC 83/17, annex 8), which does not include matters relating to the accounting of CO_2 captured on board ships. This would have to be addressed under the further development of the LCA framework.

Measurement and verification of non-CO_2 GHG emissions

36 MEPC 83 adopted *Guidelines for test-bed and onboard measurements of methane (CH_4) and/or nitrous oxide (N_2O) emissions from marine diesel engines* (resolution MEPC.402(83)) (MEPC 83/17, annex 7); and re-established the Correspondence Group on Measurement and Verification of Non-CO_2 GHG Emissions and Onboard Carbon Capture and Storage, under the coordination of Norway, instructing it to further develop the framework for the measurement and verification of actual tank-to-wake methane (CH_4) and/or nitrous oxide (N_2O) emission factors and C_{slip} value for marine diesel engines.

Fifth IMO GHG Study

37 MEPC 83 noted a revised proposal by the Secretariat on possible terms of reference, suggested timelines, logistics and administrative arrangements for the conduct of the Fifth IMO GHG Study (MEPC 83/7/2), together with a number of commenting documents. Having noted that the finalization of the terms of reference for the Study would require detailed technical deliberation in the GHG Working Group, the Committee deferred the consideration of these documents to ISWG-GHG 20.

38 As also outlined in the Secretariat's proposal, and following the practice of previous IMO GHG Studies, the conduct of the Fifth IMO GHG Study is likely to involve the establishment of a Steering Committee.

39 MEPC 83 recalled with appreciation the contribution of £100,000 by the United Kingdom to the IMO GHG TC Trust Fund to help fund the delivery of the Fifth IMO GHG Study; and also noted with appreciation the pledge by the United Arab Emirates to contribute $10,000 for the same purpose. Additional funds may be required for the procurement of the Study.

Review of the 2023 IMO GHG Strategy and development of the 2028 IMO GHG Strategy

40 At the adoption of the 2023 IMO GHG Strategy, the Committee already agreed that the Strategy would be revised by the autumn of 2028.

Action requested of the Committee

41 The Committee is invited to consider the information set out in this document on various GHG related work streams and the draft work plan in the annex and, in particular, to:

.1 approve the work plan set out in the annex to this document;

.2 note that the Secretary-General will present options to future sessions of the Committee and Council on how to provide for the expenditure related to the initial costs for the set-up of the GFI Registry and the IMO Net-Zero Fund taking into account that those costs should in due course be reimbursed by the administrative fee of the Registry and the resources available in the Fund;

.3 invite Member States and international organizations to make voluntary donations to IMO GHG Trust Fund to support certain workstreams, including the holding of GESAMP-LCA WG meetings and the conduct of the Fifth IMO GHG Study; and

.4 take any further action as deemed appropriate.

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ANNEX

INDICATIVE WORK PLAN AND TIMELINES TO PREPARE FOR THE ENTRY INTO FORCE OF THE IMO NET-ZERO FRAMEWORK AND OTHER RELATED GHG WORK STREAMS

	2025	2026		2027	2028	
Work streams	**MEPC/ES.2/ ISWG-GHG 20 (Autumn)**	**MEPC 84 (Spring)**	**MEPC 85 (Autumn)**	**MEPC 86 (Summer)**	**MEPC 87 (Spring)**	**MEPC 88 (Autumn)**
Entry into force of the IMO Net-Zero Framework						
Amendments to MARPOL Annex VI on the IMO Net-Zero Framework	Adoption of Revised MARPOL Annex VI 2025			1 March: Entry into force	1 January – 31 December 2028: First GFI reporting period	
Guidelines related to the GHG Fuel Intensity (GFI) and GFI compliance approaches						
Guidelines for the calculation of the attained annual GFI (regulation 33)	Consideration and development of draft guidelines		Adoption of Guidelines			
Guidelines on the annual GFI compliance approaches (regulation 36)	Consideration and development of draft guidelines		Adoption of Guidelines			
Guidelines on reporting and verification of the annual GFI (regulation 37)	Consideration and development of draft guidelines		Adoption of Guidelines			
Guidance for submission of data related to the annual GFI of ships from a State not Party to MARPOL Annex VI (chapter 5)	Consideration and development of draft guidance		Adoption of Guidance			

	2025	2026		2027	2028	
Work streams	**MEPC/ES.2/ ISWG-GHG 20 (Autumn)**	**MEPC 84 (Spring)**	**MEPC 85 (Autumn)**	**MEPC 86 (Summer)**	**MEPC 87 (Spring)**	**MEPC 88 (Autumn)**
Mechanism for reviewing and defining RUs prices after 2031 (regulation 36.6)	Consideration and development of proposals			By 1 January 2028: Determination of the mechanism for reviewing and defining the price of RUs for reporting periods starting 2031 and onwards		
Zero or near-zero GHG emission technologies, fuels and/or energy sources (ZNZs)						
Guidelines on the evaluation, approval and monitoring of uptake of ZNZs (regulations 39.1 and 39.4)	Consideration and development of draft guidelines		Adoption of Guidelines	Secretariat to monitor and publish the share of ZNZs in the total annual energy used on board ships		
Guidelines on definition of ZNZs rewards and the methodology to determine such rewards (regulation 39.3)	Consideration and development of draft guidelines		Adoption of Guidelines	By 1 March: Definition of reward and methodology to determine such reward		

	2025	2026		2027	2028	
Work streams	**MEPC/ES.2/ ISWG-GHG 20 (Autumn)**	**MEPC 84 (Spring)**	**MEPC 85 (Autumn)**	**MEPC 86 (Summer)**	**MEPC 87 (Spring)**	**MEPC 88 (Autumn)**
IMO GFI Registry						
Guidelines on the development, management and operation of the IMO GFI Registry (regulation 38.1)	Consideration and development of draft guidelines		Adoption of Guidelines	By 1 March: Establishment and operation of the IMO GFI Registry By 1 October: All ships shall have an account with the IMO GFI Registry		
	Development of IMO GFI Registry system					
Guidelines on the determination of the annual IMO GFI Registry administration fee (regulation 38.3)		Consideration of initial assessment by the Secretariat	Consideration and development of draft guidelines	Adoption of Guidelines	By 30 June: Deadline for payment of 1st annual administration fee to IMO GFI Registry	
Guidelines on functioning of and access to the IMO GFI Registry (regulation 38)	Consideration and development of draft guidelines		Adoption of Guidelines			
Further development of the IMO LCA framework						
Amendments to the LCA Guidelines	Consideration and development of draft amendments to guidelines	Adoption of revised LCA Guidelines	Consideration and development of draft amendments to guidelines	Adoption of revised LCA Guidelines		

	2025	2026		2027	2028	
Work streams	**MEPC/ES.2/ ISWG-GHG 20 (Autumn)**	**MEPC 84 (Spring)**	**MEPC 85 (Autumn)**	**MEPC 86 (Summer)**	**MEPC 87 (Spring)**	**MEPC 88 (Autumn)**
Development of default GHG emission factors		Approval of 1st set of default emission factors	Approval of 2nd set of default emission factors	Approval of 3rd set of default emission factors	Approval of 4th set of default emission factors	Approval of 5th set of default emission factors
	Review and recommendation of proposed default emission factors by GESAMP-LCA WG for approval by the Committee					
Guidelines on requirements and procedures for recognition of certification schemes and reporting of certification activities to the Organization (regulations 34.4 and 34.6)	Consideration and development of draft guidelines	Adoption of Guidelines	Recognition of SFCSs, as appropriate	Recognition of SFCSs, as appropriate <u>No later than 1 March</u>: Secretariat publishes a list of recognized SFCSs	Recognition of SFCSs, as appropriate <u>By 31 March</u>: SFCSs report data to IMO	Recognition of SFCSs, as appropriate Consideration of annual report on SFCSs (year 2027)
Guidelines on certification and circulation of information in the fuel lifecycle label (FLL) (regulations 34.2 and 34.3)	Consideration and development of draft guidelines		Adoption of Guidelines			
IMO Net-Zero Fund						
Governing provisions (regulations 40, 41 and 39.2)	Consideration and development of draft governing provisions				Adoption of governing provisions and appointment of Governing Board	
Internal set-up of Fund	Secretariat to undertake internal preparatory work to set-up of IMO Net-Zero Fund					

	2025	2026		2027	2028	
Work streams	**MEPC/ES.2/ ISWG-GHG 20 (Autumn)**	**MEPC 84 (Spring)**	**MEPC 85 (Autumn)**	**MEPC 86 (Summer)**	**MEPC 87 (Spring)**	**MEPC 88 (Autumn)**
Further development of the IMO Net-Zero Framework, including determining the pricing mechanism for the reporting periods starting 2031 and onwards						
Further development of the IMO Net-Zero Framework, including determining the pricing mechanism for the reporting periods starting 2031 and onwards (regulation 36.10)			Consideration and development of draft pricing mechanism	By 1 January 2028: Determination of mechanism for reviewing and defining price of Tier 1 and Tier 2 remedial units for reporting periods starting 2031 and onwards		
Amendments to existing guidelines and procedures for the implementation of the IMO Net-Zero Framework						
2024 SEEMP Guidelines (regulation 26)	Consideration and development of draft amendments to guidelines		Adoption of amended guidelines	On or before 1 January 2028: SEEMPs to be updated		
Guidelines for the verification and company audits by the Administration of part III of the SEEMP	Consideration and development of draft amendments to guidelines		Adoption of amended guidelines			
Procedures for Port State Control, 2023	Consideration of amendments by the III Sub-Committee					
Framework and procedures for the IMO Member State Audit Scheme	Consideration of amendments by the III Sub-Committee					
HSSC Guidelines	Consideration of amendments by the III Sub-Committee					

	2025	2026		2027	2028	
Work streams	**MEPC/ES.2/ ISWG-GHG 20 (Autumn)**	**MEPC 84 (Spring)**	**MEPC 85 (Autumn)**	**MEPC 86 (Summer)**	**MEPC 87 (Spring)**	**MEPC 88 (Autumn)**
Food security						
Adress disproportionately negative impacts on food security and continuous review of potential impacts (regulation 43)	Proposals for draft terms of reference	Approval of terms of reference	Continuous review of the potential impacts on food security and assess and address possible disproportionately negative impacts			
Further development of the IMO energy efficiency framework						
.1 Phase 2 of the review of the short-term GHG reduction measure						

	2025	2026		2027	2028	
Work streams	**MEPC/ES.2/ ISWG-GHG 20 (Autumn)**	**MEPC 84 (Spring)**	**MEPC 85 (Autumn)**	**MEPC 86 (Summer)**	**MEPC 87 (Spring)**	**MEPC 88 (Autumn)**
Enhancement of the SEEMP framework		Further consideration and finalization				
Development of the cgHRS metric for cruise passenger ships		Further consideration and finalization				
Ensure synergies between the IMO carbon intensity/energy efficiency framework and the IMO Net-Zero Framework		Consideration of proposals	Further consideration of proposals	Further consideration of proposals	Further consideration of proposals with a view to finalization	
Other CII metrics			Further consideration	Further consideration	Further consideration	
CII correction factors and/or reference line adjustments, if any				Consideration of further concrete proposals	Consideration of further concrete proposals	
.2 Analysis and aggregated report of annual IMO Fuel Consumption Reporting (IMO DCS) and monitoring of carbon intensity developments						
Annual reporting by the Secretariat (regulation 27.10 and 2022 Guidelines for the development and management of the IMO Ship fuel oil consumption database (resolution MEPC.349(78))		Annual analysis and reporting by the Secretariat				

	2025	2026		2027	2028	
Work streams	**MEPC/ES.2/ ISWG-GHG 20 (Autumn)**	**MEPC 84 (Spring)**	**MEPC 85 (Autumn)**	**MEPC 86 (Summer)**	**MEPC 87 (Spring)**	**MEPC 88 (Autumn)**
Development of a regulatory framework for the use of onboard carbon capture and storage (OCCS)						
Development of a regulatory framework for the use of onboard carbon capture and storage (OCCS) in accordance with the Work plan approved by MEPC 83 (MEPC 83/17/Add.1, annex 8)		*Avoiding emissions to air and discharges to sea that are harmful to the environment and ensuring traceability of the captured carbon*				
		Consideration and development of guidelines on testing, survey, and certification of OCCS	Adoption of guidelines	*Develop provisions for enforcement*		
			Consideration of legal barriers that may hinder the use of OCCS and transportation and transfer of the captured carbon to safe permanent storage or utilization			
			Facilitate access to certified reception facilities for the value chain for permanent storage or utilization of captured carbon			
			Enable recording and reporting of relevant data			
			Develop options that take into account GHG emission reductions from onboard carbon capture in the IMO GHG regulatory framework			

	2025	2026		2027	2028	
Work streams	**MEPC/ES.2/ ISWG-GHG 20 (Autumn)**	**MEPC 84 (Spring)**	**MEPC 85 (Autumn)**	**MEPC 86 (Summer)**	**MEPC 87 (Spring)**	**MEPC 88 (Autumn)**
Measurement and verification of non-CO_2 GHG emissions						
Guidelines for test-bed and onboard measurements of methane (CH_4) and/or nitrous oxide (N_2O) emissions from marine diesel engines	Gaining of experience with the implementation of the guidelines					
	Further development of the framework	Adoption of revised guidelines	*Further development of the framework, including mandatory instruments, as appropriate*			
Fifth IMO GHG Study						
Preparation of the Study	Consideration of draft terms of reference	Approval of terms of reference	Establishment of the Steering Committee and conduct of the Study	Consideration of interim report	Consideration of final report with a view to approval	
Review of the 2023 IMO GHG Strategy and development of the 2028 IMO GHG Strategy						
Review of the 2023 IMO GHG Strategy and development of the 2028 IMO GHG Strategy				Initiation of review		Finalization of review with a view to adoption of the 2028 IMO GHG Strategy