Global Regulations

2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 China Regulations

NOx

Euro: Vessels built on or after January 1, 2021 must comply with NOx Tier III standards when operating in the North Sea or Baltic Sea NECA.

Tier II Europe Tier II North America

N.A.: Vessels built on or after January 1, 2016, must comply with NOx Tier III standards when operating in the North American, Hawaii or the U.S. Caribbean Sea NECA.

Vessels blt after 1/1/21 Vessels blt after 1/1/16 ier III Europe Tier III North America

CO₂

Each vessel will also have to have a certified Ship Energy Efficiency Management Plan outlining its methods for collecting and reporting the data. Each year, the shipowner will collect data for a fleet, aggregate it into annual values and report it to the appropriate flag administration or recognized organization. The IMO will collect this annualized data from the flag states.

IMO CO2 strategy not finalized until 2023, when data on fleet fuel consumption will be available.

From 2019 vessels over 5,000 gt on international voyages must record:

Fuel consumption for each type of fuel used. Distance travelled and hours under way.

The BWM treaty enters into force on 8 Sept. 2017. From the date of entry into force, ships will be required to manage their ballast water to avoid the transfer of potentially invasive species. All ships will be required to have a ballast water management plan and keep a ballast water record book. Ships will be required to manage their ballast water to meet the so-called D-1 standard or D-2 standard.

The D-1 standard requires ships to conduct the exchange of ballast water such that at least 95% of water by volume is exchanged far away from the coast where it would be released. The D-2 standard requires ballast water management to restrict to a specified maximum the amount of viable organisms allowed to be discharged and to limit the discharge of specified indicator microbes harmful to human health. (Install approved BWTS).

D-1 = Ballast Water Exchange (95% volumetric exchange) or pumping through three times the volume of each tank.

1) At least 200 nm from the nearest land and in 200m water depth; 2) At least 50 nm from the nearest land and in 200 m water depth; or 3) In the event throughout the intended route the sea area does not afford the above characteristics, in a sea area designated by the port State.

MEPC D-2 Application '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 All dates basis Sept 8 Newbuilding:

Ships constructed on or after 8 Sept. 2017, shall conduct ballast water management that at least meets the D-2 standard from the date they are put into service.

@1st IOPP Renewal:

This applies when that the first renewal survey takes place on or after 8 Sept. 2019 or a renewal survey has been completed on or after 8 Sept. 2014 but prior to 8 Sept. 2017.

@2nd IOPP Renewal:

This applies if the first renewal survey after 8 Sept. 2017 takes place before 8 Sept. 2019. In this case, compliance must be by the second renewal survey (provided that the previous renewal survey has not been completed in the period between 8 Sept. 2014 and 8 Sept. 2017).

USCG Regulations

All ships calling at US ports and planning to discharge ballast water must carry out ballast water exchange or treatment in addition to sediment management. However, ballast water exchange will only be allowed until the implementation dates for treatment systems.

Newbuilding: Built on or after 1 Dec. 2013 **Existing Vsl:** Ballast cap. 1,500-5,000 m3 **Existing Vsl:** Ballast cap. 5,000 m3 +

Built before 1 Dec. 2013

Compliance: On delivery Compliance: First scheduled drydocking after 1 Jan. 2014 Compliance: First scheduled drydocking after 1 Jan. 2016

BWM D1 compliance from Sept. 8, 2017 - D2 compliance at the ship's first/second five-year IOPP survey after Sept. 8, 2019

First/Second five-year IOPP survey

SOx 5.0 Oct 2016 decision for 4.5 enforcement from 2020 3.5% S 3.5 3.0 graphic) 2.5

ports within ECA zones ports within ECA zones zones (see ECA:

2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 North Sea, Baltic Sea, USA + Territories, Canada, Hong Kong

0.5% S

Yangtze River Delta **Emission Control Area**

Inland water areas: navigable waters under the administrative jurisdiction of 15 cities including Nanjing, Zhenjiang, Yangzhou, Taizhou, Nantong, Changzhou, Wuxi, Suzhou, Shanghai, Jiaxing, Huzhou, Hangzhou, Shaoxing, Ningbo, Zhoushan and Taizhou.

Key ports: Shanghai, Ningbo-Zhoushan, Suzhou,



China ECA Zones

Bohai-rim **Emission Control Area**

*(S)ECA CAP: 0.1%

2.0

1.5

1.0

Inland water areas: navigable inland waters under the administrative jurisdiction of 13 cities including Dalian, Yingkou, Panjin, Jinzhou, Huludao, Qinghuangdao, Tangshan, Tianjin, Cangzhou, Binzhou, Dongying, Weifang,

Key ports: Tianjin, Qinhuangdao, Tangshan and Huanghua.

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Year January 1	Sulfur Content	Area Applicable
2016	Current standard as stipulated in international conventions. Domestic laws remain unchanged.*	All areas. Local ports in ECAs may in view of its own situation exercise its discretion to raise higher requirements than current standard, such as requiring ships to use fuel with sulfur content of, 0.5% during berthing.**
2017	≤0.5%m/m	Geographical area: key ports in ECAs Time period: berthing period excluding 1 hour after berthing and 1 hour before departure
2018	≤0.5%m/m	Geographical area: all ports in ECAs Time period: whole berthing period
2019	≤0.5%m/m	Geographical area: whole area of ECAs Time period: whole period when the ship is in the ECAs

*China is a contracting state to Marpol 73/78 and Annex VI came into effect from 23 Aug 2006 in China. The current Marpol limit in terms of

(1) outside ECAs: 3.5%m/m since 01 Jan 2012; (2) within

**We understand that most of the port authorities don't have the intention to adopt higher requirement than the current standard in 2016, except Shanghai. We understand that it is likely Shanghai MSA will start to require the calling ships to use fuel with sulfur content of 0.5%m/m while at berth excluding 1 hour after berthing and 1 hour before departure in 2016, however an accurate timetable is still under consideration now

Pearl River Delta **Emission Control Area**

Inland water areas: navigable inland waters under administrative jurisdiction of 9 cities including Guangzhou, Dongguan, Huizhou, Shenzhen, Zhuhai, Zhongshan, Foshan, Jiangmen and Zhaoqing.
Key ports: Shenzhen, Guangzhou and Zhuhai



Before 31 Dec 2019, the government will evaluate the effect of the above requirements in order to determine whether to take the following steps in the future:

(i) When entering the ECAs, ship shall be required to use fuel with a sulfur content of no more than 0.1% m/m;

(ii) Enlarge the geographical scope of ECAs;

(iii) Other further measures.

According to the regulation, MSA shall enhance inspection of IAPP certificate, oil record book, fuel supply document and check of fuel quality, etc. to ensure implementation of the relevant requirements.