



## AMENDMENTS TO MARPOL – ANNEX VI – MEDITERRANEAN SO<sub>x</sub> ECA, 2024 (RESOLUTION MEPC.361(79))

*Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter to Enter into force 1 May 2024.*

### BACKGROUND

The Mediterranean Sea has long been a vital waterway, serving as a hub for trade, cultural exchange and tourism. However, the increased shipping activities in the region have taken a toll on its ecosystem. The Mediterranean Sea is particularly susceptible to pollution due to its semi-enclosed nature, limited water exchange and high population density along its coasts. The shipping industry, while essential for global trade, contributes to air pollution through emissions of sulfur oxides (SO<sub>x</sub>) and particulate matter.

In response to the growing concern over maritime pollution, the International Maritime Organization (IMO) has been developing regulations to mitigate the environmental impact of shipping activities. The concept of Emission Control Areas (ECAs) was introduced to designate specific regions where stricter emissions standards are enforced. These areas aim to reduce air pollution, protect marine ecosystems and improve the overall sustainability of the shipping industry, typically by targeting harmful sulfur and nitrous oxides.

The implementation of ECAs has been successful in various parts of the world, including the Baltic Sea, the North Sea, and the North American ECA. These regions have witnessed a significant reduction in harmful emissions and have become models for environmental protection in the maritime sector. Building on this success, the IMO has extended the ECA designation to the Mediterranean Sea, acknowledging the urgent need to address pollution in this ecologically diverse and culturally significant area. This would make the Mediterranean the fifth recognized ECA worldwide.

### KEY NOTES

#### Application

The MEPC.361(79) Resolution applies to:

- *All ships entering any areas of the Mediterranean defined by the coasts of Europe, Asia, and North Africa.*
- *Currently, the ECA only applies to SO<sub>x</sub> and Particulate Matter, there are no updates to the NO<sub>x</sub> limits.*

#### Requirements for Compliance

For compliance with this regulation, ship operators should:

- *Reduce the sulfur content of marine fuels, from the current global ceiling of 0.5% m/m to 0.1% m/m while in this new ECA*
- *Train crew on handling of low-sulfur and alternative fuels*

By designating the Mediterranean Sea as an ECA, the IMO aims to enforce stricter emissions standards on ships operating within the region. The new regulation, set to take effect on 1 May 2024, will require vessels to comply with lower limits for sulfur oxides (SOx). These measures will contribute to the reduction of air pollutants and their adverse effects on human health, marine life and the overall environmental quality of the Mediterranean Sea.

The designation of the Mediterranean Sea as an ECA (colloquially the “Med SOx ECA”) represents a significant step forward in addressing the environmental challenges faced by this vital waterway. It serves as a call to action for shipowners, operators and the maritime industry to adopt sustainable practices, invest in emission reduction technologies and prioritize the preservation of the Mediterranean Sea's ecosystem. Through collective efforts and adherence to these new regulations, the shipping industry can play a pivotal role in safeguarding the future of the Mediterranean Sea and setting a precedent for sustainable maritime operations worldwide.



Figure 1. Sulfur limits since 2000

The ultimate goal of the creation of new ECAs is to reduce the amount of SOx in historically significant, largely populated or geologically important regions. Figure 1 illustrates the decreasing caps on the sulfur content of marine fuels over the past two decades within ECAs and globally. ECA regulations have tightened considerably, with the allowable sulfur content falling from 1.5% m/m to the current limit of 0.1% m/m. In parallel, worldwide restrictions over this period have gradually reduced and were most recently set at 0.5% m/m. These limits will now be enforced for the entire Mediterranean Sea.

## KEY CHANGES

Resolution MEPC.361(79) was brought before the IMO in December 2021 and adopted 16 December 2022. MEPC.361(79) aims to update MARPOL Annex VI, which lays out the requirements for reduction of air pollution from ships. Specifically, Regulation 14 of this annex, which sets the parameters for SOx and particulate matter reduction globally. The following changes to MARPOL Annex VI are set to take place according to the conclusions of the MEPC 79<sup>th</sup> session:

1. Designation of the Mediterranean Sea as an ECA to take effect 1 May 2024, with a one-year grace period on enforcement, set to ensure a smooth transition
2. Update of Regulation 14 paragraph 4(a) from 1.5% m/m to 0.1% m/m
3. Final SOx limit of 0.1% m/m to be fully enforced starting 1 May 2025

An outline of the progression of the amendment is provided in Figure 2. The initial proposal to the MEPC for a new ECA from session 78 desired a full enforcement date of 1 January 2025. Despite this, the final amendment will enter into force on 1 May 2024, and fully enforced starting 1 May 2025.

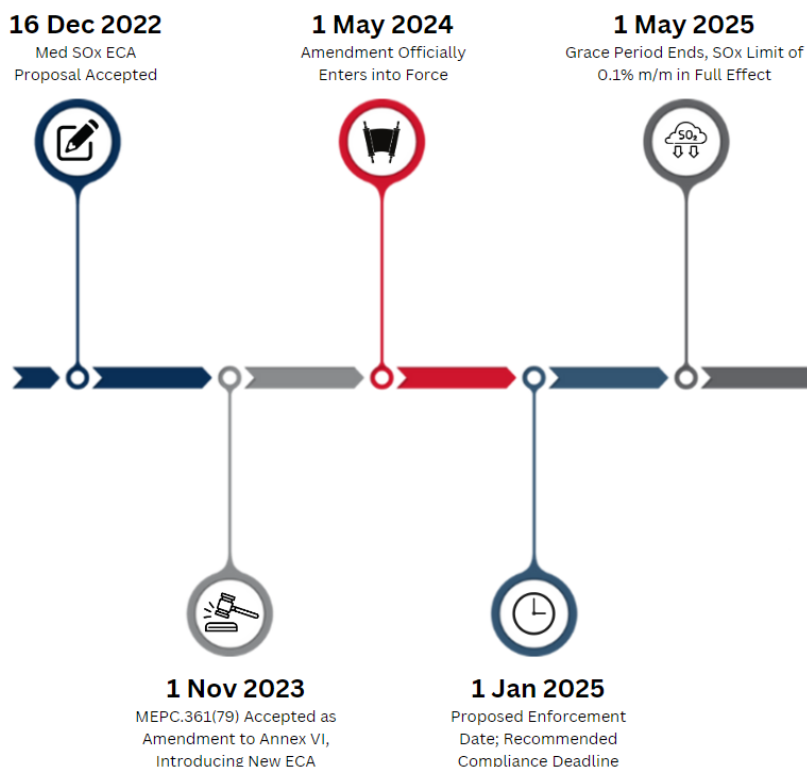


Figure 2. Progression of regulation timeline

## Cost of Fuel

The new SOx regulations expect vessels to consider the use of new fuels that have lower sulfur content for shipping within the Mediterranean Sea. These new fuels, although experiencing a decrease in price in recent years, are still more expensive on average than fuels previously used. Therefore, it is expected that the implementation of these regulations will result in higher shipping costs. However, according to research done in the initial MEPC proposal, there is sufficient refinery capacity and production to meet the demand for the required lower sulfur fuels within the Mediterranean region. Alternative compliance measures, such as exhaust gas cleaning systems and alternative fuels, may also help to balance increased demands for compliant fuel types.

## Further Changes

At its 81<sup>st</sup> session, held from March 18 to 22, 2024, the MEPC considered a proposal to designate two new ECAs, the Canadian Arctic and Norwegian Sea. After reviewing supporting scientific evidence on sulfur dioxide levels and impacts in these northern regions, the MEPC approved the addition of these areas as the world's sixth and seventh ECAs. With this decision, the 0.1% m/m sulfur limit on marine fuel will now apply within the boundaries of the Canadian Arctic and Norwegian Sea ECAs. The expansion of stringent IMO sulfur emissions regulations demonstrates the organization's ongoing efforts to systematically reduce the health and environmental effects of sulfur oxide pollution from ships across the globe. Owners and operators are strongly advised to monitor upcoming guidance from the IMO closely to remain compliant with these new regulations.

## ACTIONS FOR COMPLIANCE

The following actions are recommended to be implemented by 1 May 2025 at the latest:

1. Shipowners should assess their vessels' fuel options and switch to low-sulfur fuels compliant with the 0.1% m/m sulfur content requirement. This may involve negotiating fuel supply contracts, ensuring adequate storage capacity and educating crew members on the proper handling and usage of low-sulfur fuels.
2. Ships that utilize separate fuel oils with sulfur contents above 0.1% m/m must allow adequate time for their fuel oil service systems to be completely flushed of non-compliant fuels prior to entering the Med SOx ECA. Vessels must log details of their low-sulfur fuel oils (defined as 0.1% sulfur content or below), including tank volumes, as well as the date, time and position where any fuel changeover operation is finished. This ensures compliant fuels are in use within ECA boundaries and maintains accurate records as required by maritime authorities.
3. For ships opting to continue using higher sulfur content fuel, the installation of exhaust gas cleaning systems can help reduce sulfur emissions. Shipowners should evaluate the feasibility, cost and operational implications of installing scrubbers on their vessels.
4. Exploring the use of alternative fuels, such as liquefied natural gas (LNG), biofuels or hydrogen, can significantly reduce emissions within the ECA. Ship owners should assess the availability, infrastructure and compatibility of these fuels with their vessels' engines to ensure a smooth transition.
5. Shipowners should invest in crew training programs to enhance awareness of the new emission requirements, fuel handling procedures and emission control technologies. Educating crew members about the environmental benefits, operational procedures and maintenance requirements will facilitate seamless adherence to the regulation.

## REFERENCES

Document	Title
<a href="#">MEPC 78/11</a>	Proposal to Designate the Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides. (Med SOx ECA Full Proposal)
<a href="#">Resolution MEPC.361(79)</a>	Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter, 2022
<a href="#">ABS MEPC 79 Brief</a>	Marine Environment Protection Committee (MEPC) – 79th session summary, 12-16 December 2022
<a href="#">ABS Advisory</a>	ABS Marine Fuel Oil Advisory
<a href="#">Fuel Oil Management Plan</a>	Fuel Oil Management Plan Template
<a href="#">2020 Sulfur Cap Resources</a>	Practical Considerations for the Transition to 2020 Compliant Fuel

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