



**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**POLICY DEPARTMENT B: STRUCTURAL AND COHESION POLICIES**

**TRANSPORT AND TOURISM**

# **THE IMPACT OF A POSSIBLE EXTENSION AT EU LEVEL OF SECAS TO THE ENTIRE EUROPEAN COASTLINE**

## **EXECUTIVE SUMMARY**

### **Abstract**

This briefing note provides an in-depth analysis of the impact of a political decision on Sulphur Emission Control Areas (SECA) in general and their further expansion in all sea areas around the EU coastline. To this end, it includes appropriate background information and research results that will serve to further the parliamentary debate on the opportunity of extending SECAs around the littoral EU regions. Beyond the goal of supporting the evolution of policies, the findings of the current briefing note also include up-to-date information about relevant facts and figures as well as other scientific opinion, based on the findings of the extended survey of this topic.

This document was requested by the European Parliament's Committee on Transport and Tourism.

## **AUTHORS**

*HSBA* - Prof. Dr. Orestis Schinas  
*I3 Group* - Jian Bani

## **RESPONSIBLE ADMINISTRATOR**

Piero Soave  
Policy Department B : Structural and Cohesion Policies  
European Parliament  
B-1047 Brussels  
E-mail: [poldep-cohesion@europarl.europa.eu](mailto:poldep-cohesion@europarl.europa.eu)

## **EDITORIAL ASSISTANCE**

Nóra Révész

## **LINGUISTIC VERSIONS**

Original: EN.  
Translations: DE, FR.

## **ABOUT THE EDITOR**

To contact the Policy Department or to subscribe to its monthly newsletter please write to:  
[poldep-cohesion@europarl.europa.eu](mailto:poldep-cohesion@europarl.europa.eu)

Manuscript completed in May, 2012.  
Brussels, © European Union, 2012.

This document is available on the Internet at:  
<http://www.europarl.europa.eu/studies>

## **DISCLAIMER**

The opinions expressed in this document are the sole responsibility of the author and do not necessarily represent the official position of the European Parliament.

Reproduction and translation for non-commercial purposes are authorized, provided the source is acknowledged and the publisher is given prior notice and sent a copy.

## EXECUTIVE SUMMARY

This briefing note is concerned with the strict limits of sulphur in marine fuels, especially in the selected marine protected areas that are particularly sensitive to air pollution, the so-called Sulphur Emission Control Areas (SECA). It also aims to explore the risks associated with the expansion of the current SECAs in the European Union (EU), and considers the introduction of new areas of sulphur emission control, including the possibility of a SECA expansion along the entire coastline of the EU.

Air pollution from ship sources, including Sulphur oxides (SO<sub>x</sub>), impact on health and the environment. The topic attracts a high political priority, both at European and International levels. It is a complicated topic both scientifically and politically with conflicting stakeholder interests.

### Legislative background

The International Maritime Organisation (IMO) is responsible for the prevention of marine pollution from ships, mainly through the MARPOL convention. MARPOL Annex VI addresses the issue of SO<sub>x</sub> emissions and also introduces the concept of SECAs, e.g. sea areas where strict sulphur limits apply.

- Currently, Annex VI set the limits of 3.5% sulphur content, by mass outside a SECA and 1.0% inside a SECA.
- These limits will be reduced to 0.5% outside a SECA in 2020, (subject to an interim assessment in 2018) and to 0.1% inside a SECA in 2015.

European Union Directive 2005/33/EC aligns in principle with the IMO provisions and regulations on sulphur content of fuel and compliance methods. From the 1st January 2010, Member States are required to take all necessary measures to ensure that ships do not use marine fuels with a sulphur content exceeding 0.1 % by mass, when at berth in a Community port.

### Traffic analysis

The decision on whether to extend the SECAs should be taken in the context of changes in traffic volume. The main sea area of concern for this note is the Mediterranean. Traffic and trade are expected to grow and although emission levels *per se* will be reduced, the increased traffic could lead to a greater pressure on the environment. The extension of SECAs around European waters should be considered as a measure to reduce the environmental burden.

### Technical Challenges

The introduction of the sulphur limits in ship fuel has prompted technological research in the areas of abatement and alternative fuels. The following points summarise the main issues:

- Scrubbing technology is available and addresses most of the technical challenges; the cost of installation varies considerably per ship type, age and size.

- LNG as a marine fuel is a promising alternative if only a substantial network of bunkering spots is developed along the European coastline.
- Further research work is needed in the areas of hybrid scrubbers and in the development of LNG shore side infrastructure.
- A stable regulatory framework will enhance the effort of manufacturers towards addressing all technical challenges.

### **Lessons learned**

The Impact of the existing SECAs in the North and Baltic Seas has been studied. The studies indicate that:

- There is currently a culture of compliance, however the level of compliance cannot be estimated.
- There are issues, in terms of policing and enforcement that need addressing. The enforcement of the EU directive could be better if it were encompassed within Paris MoU protocols.
- Regulatory avoidance could be linked to the high price of compliant fuel.
- The benefits of a reduction in SOx emissions outweigh the costs.
- Non-compliant tonnage should be phased out or new technology should be implemented the soonest possible.
- Realistic scenarios should be developed for the proper assessment of the cost of the new regulation and the allocation of costs.

### **Fuel Issues**

Prediction of future prices of marine bunker is a complex issues. However it evident those fuels with low sulphur content are significantly more expensive than currently used high sulphur content fuels. Given Rotterdam as the "base-market port" fuel prices are expected to be higher in other bunkering ports, particularly in Southern Europe.

Issues regarding the availability of LS fuel and its price do not appear to be being addressed.

A substantial financial burden will be imposed on the ship-owners and operators. However, the sharp reduction of the limits increases the societal benefits.

### **Conclusions and Recommendations**

- Shipping traffic is expected to grow and associated SOx emissions will also increase.
- Shipping is the single largest source of acidification in many European states.
- Any reduction in the environmental burden will have wider societal benefits.
- Scrubbing technology is already available.
- The decrease in permissible SOx limits and any extension of European SECAs would be a stimulus to technical research in the area of abatement and alternative fuels.

- Technical innovation and the fostering of related business clusters are expected. The declaration of new SECA areas, as per the IMO framework, enables efficient enforcement of the regulations under the existing Port State Control (PSC) regime.
- The combination of SECA limits and CAFE<sup>1</sup> requirements intensifies the expected air quality improvement.
- Modal shift to more polluting logistics chains or alternatives is possible, yet no quantification is available and it will practically affect some intra-EU trades.

On the basis of the above findings, the policy recommendations are summarized as follows:

- The extension of a SECA around the EU would level the playing field for all stakeholders and enhance the technical compatibility of the SSS-fleet servicing European ports.
- Adjacent third countries should also adopt strict environmental rules; therefore political understanding and cooperation are required.
- The decision of non-extension will maintain technical incompatibilities and competition issues as well as retain the high levels of externalities.
- Further research on the estimation of the impact of sulphur emissions on open sea on global warming is required.
- A thorough assessment of the number and capacity of the required LNG bunkering spots is necessary.
- Financial sources and EU funding is available; focused adjustment to the terms of funding might be required.

---

<sup>1</sup> The aim of the Clean Air for Europe (CAFE) Programme of the European Commission is to establish a long-term, integrated strategy to tackle air pollution and to protect against its effects on human health and the environment. The European Commission has recently launched a comprehensive review of its air policy building on the 2005 Thematic Strategy on Air Pollution and CAFE initiatives.