



# The market for Scrubbers

prepared for: Transport & Environment

**Brief report**  
Delft, March 2015

**Author(s):**  
CE Delft



## 1 Introduction

The introduction of IMO and EU policies aiming at the reduction of sulphur emissions require ship operators to take action. Since January of this year, ship operators need to choose one of the following options to comply with the new SECA limits, including:

- Marine gas oil (MGO);
- LNG;
- HFO + scrubber (different types).

Since marine gas oil is more expensive than heavy fuel oil, the market has shown interest in the installation of scrubbers onboard ships. However, the overall number of scrubbers installed is yet relatively limited and the recent drop in price differences between MGO and HFO resulted in postponing of investment decisions. This can be explained by various related factors like uncertainty about future global limits, large investment costs and limited experience with the technology and 'acceptance' of the technology within the maritime industry.

The maritime industry stakeholders industry and the European Commission are discussing the increased use of scrubbers and the related impacts on the environment.

To inform the discussion, T&E asked CE Delft to analyse available data regarding the number of scrubbers installed on vessels and the number of orders.

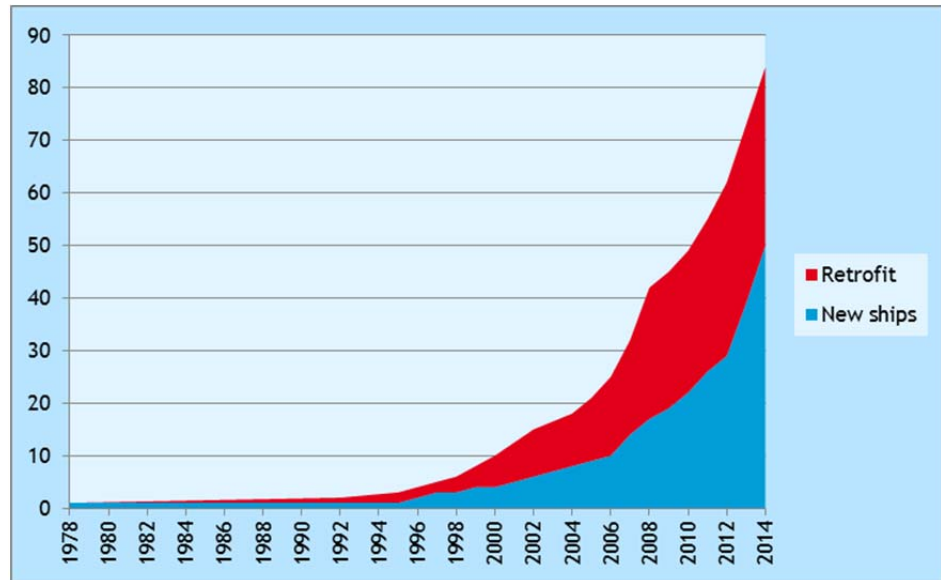
In this note, we provide an overview of the current scrubber market and future expectation.

## 2 The scrubber market

Figure 1 provides an overview of the number of scrubbers installed on ships since 1978. The figure shows that scrubbers are installed both on new ships, as well as retrofitted afterwards. For marine use, wet scrubbers are dominating the market. As of beginning of 2011, only two dry scrubbers have been installed.



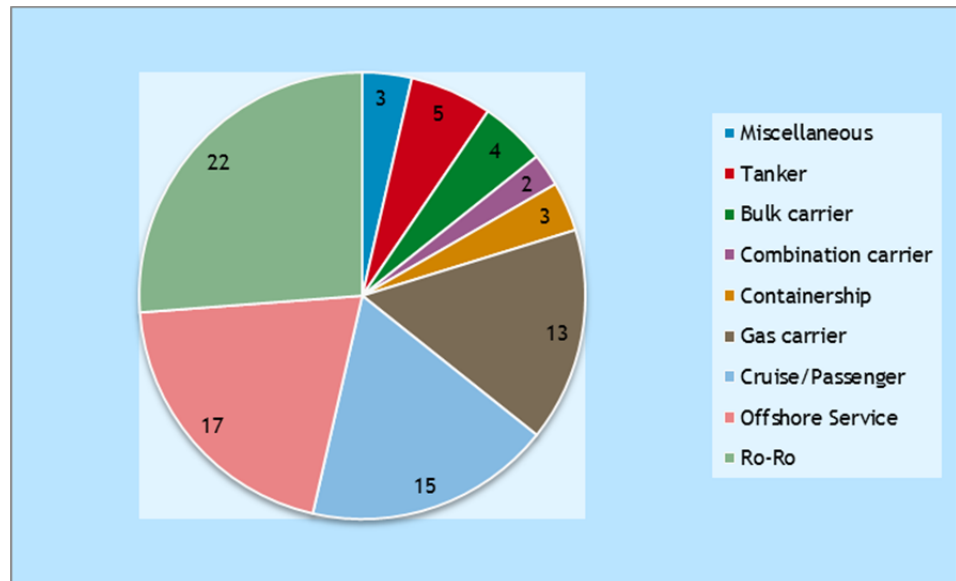
Figure 1 Development of the world fleet with scrubbers installed



Source: Clarksons world fleet register

Scrubbers are most widely installed on Ro-Ro, offshore service ships, cruise/passenger ships and gas carriers, see Figure 2. Especially Ro-Ro ships and offshore service ships typically operate in the SECA. The relatively large numbers of scrubbers fitted onto RoRo ships can be explained by the fierce competition with truck transport within this sector.

Figure 2 Distribution of exhaust scrubbers over ship types

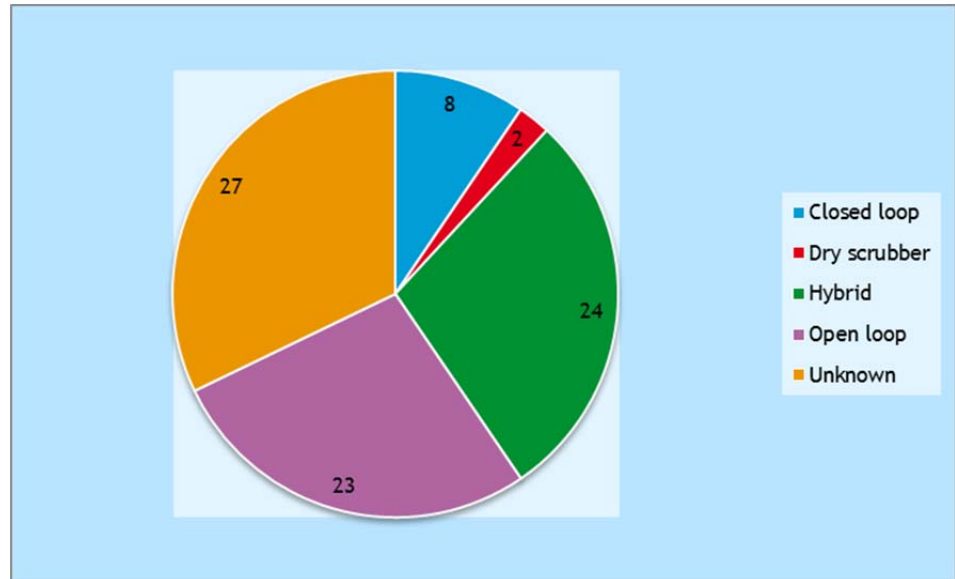


Source: Clarksons world fleet register

Hybrid scrubbers and open loop scrubbers are most widely installed on ships currently. In the year 2014, 14 hybrid and 11 open loop scrubbers were installed on ships, while the number of installed closed loop scrubber amounted only to 2. See Figure 3 for an overview of the different scrubber types.



Figure 3 Different scrubber types in the fleet



Note: Unknown scrubbers are mainly installed on offshore service vessels  
Source: Clarksons world fleet register.

Most of the scrubbers are installed on smaller ships. 56 of the 84 scrubbers in use are installed on ships with a dead weight tonnage (DWT) of below 20,000 tonnes, illustrating the dominance of these ships in the world fleet and the SECAs. Larger ships (e.g. big container vessels) are not frequently equipped with scrubbers now, due to the limited share of their time sailing in a SECA. Open loop and hybrid scrubbers are distributed evenly over the different ship types, while closed loop scrubbers are only implemented on ships with a DWT under 40,000 tonnes.

### 3 Outlook

The Exhaust Gas Cleaning Systems Association (EGCSA) estimates there are now some 300 (member and non-member) exhaust cleaning gas systems installed or on order, with Carnival Corporation announcing a very significant investment. Halfway 2014, the number of installations and orders was 122, showing the sharp increase of interest by the maritime industry for scrubbers.

