



Exhaust gas cleaning system installed on tanker MT Levana

SAACKE EGCS-HM scrubber for sulfur reduction impresses the Carl Büttner ship management company

Reducing sulfur content in ship exhaust gases is the clear goal of the International Maritime Organization (IMO). For example, since 2015, limits of 0.1 percent have applied in the North and Baltic Seas, and other limits will gradually be lowered across the globe to 0.5 percent by 2020. These guidelines cannot be satisfied using unfiltered heavy fuel oil emissions. This was also recognized by the Bremen-based Carl Büttner ship management company, which specializes in the operation of oil and chemical tankers. It commissioned SAACKE GmbH with the implementation of an efficient exhaust gas cleaning system on the four-year-old, 140-meter-long tanker MT Levana. The SAACKE EGCS-HM scrubber system impressed Büttner with its improved environmental performance as well as its excellent economy – the system paid off after just a few years.

Clear compliance with the emission limit values

As a result, the SAACKE scrubber was a worthwhile alternative to complex and costly fuel conversion for the Büttner ship management company. The values of the system fall far below the required limits, and its compact design enabled the installation of a sulfur wash tower directly behind the stack.



“The same applies for all ECA ships: calculate – then act! The SAACKE scrubber is a clean solution.”

Lars Bremer – CEO of Carl Büttner Shipmanagement GmbH

Carl Büttner ship management company

Oil and chemical tankers

SAACKE EGCS-HM scrubber

Task

Reduce sulfur content in the ship exhaust gas in compliance with the IMO regulations while continuing to use heavy fuel oil as the fuel.

Solution

Exhaust gas cleaning system with a short ROI phase and an integrated, innovative emission control system.

The SAACKE solution in detail

The SAACKE multistream exhaust gas cleaning system can be connected to boilers as well as auxiliary and main engines. In view of the required performance and existing infrastructure, the ship management company decided on the SAACKE 1-tower solution, type S, with a total output of 6 MW. 99 percent of the sulfur particles in the exhaust gas are filtered by a spray nozzle wash tower using an atomized water spray and a water cascade. The internally developed EGCS monitor, which was installed on the Levana for the very first time, also makes it possible to transmit all relevant system data onshore. The evaluation of the data enables the optimization of the ship's operation as well as the identification of associated savings potentials.

Conclusion

In terms of current and future emission regulations, operators of older ships in particular are facing great challenges. New ships are expensive, and fuel conversion is extremely complicated. The alternative: the SAACKE EGCS-HM scrubber. The compact system can be implemented in existing infrastructure, emits well below the limit values and quickly pays off. The first system installed on the MT Levana received the DNV GL classification shortly after commissioning and has generated an effective saving for the customer since the introduction of the IMO guideline.

Technical data: MT Levana

Year of construction	2009
Fields of application	Chemical tanker / double-hulled vessel
Length / width / depth	140 m / 21 m / 8 m
Speed	Max. 14 knots
Gross tonnage	Approx. 15,000 gt
Scrubber output	6 MW on the main engine, 3 on the ancillary diesel engine, and 2 on the boiler
Dimensions and weight Sulfur wash tower	Diameter 2.60 m; height 8.42 m; 7.5 t
SO _x removal rate	Up to 99 percent
Emissions	Limit values of 0.1 percent sulfur emissions up to one-tenth below the limit
Modes of operation	Open-Loop and hybrid operation
Water flow rate	300 m ³ per hour

All benefits at a glance

- ✔ The system design allows existing ships to be upgraded
- ✔ Exhaust gas cleaning system pays off after a few years
- ✔ Continued use of heavy fuel oil instead of fuel conversion
- ✔ Satisfies IMO emission requirement MEPC.259(68)
- ✔ Satisfies the requirements of ship classification societies
- ✔ Open-Loop and hybrid operation
- ✔ Emission control system for live data monitoring, including from onshore
- ✔ Commissioning and construction supervision by experienced SAACKE personnel



The Wash Tower in the assembly hall

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