

The Senator for Climate Protection, Environment, Mobility, Urban Development and Housing

bremenports

Bremen Port Authority [Hansestadt Bremisches Hafenamt]

Promoting environmental protection at the ports of Bremen – Guidelines published for granting permission for inwater cleaning of ship hulls

First German guidelines for issuing permits for inwater hull cleaning as a result of the CLEAN project, partly funded by the Deutsche Bundesstiftung Umwelt, have been stated binding regulations for hull cleaning with the aim of reducing the introduction of pollutants into the waters of the ports of Bremen.

Biofouling refers to the growth of microorganisms, plants, algae and animals on all structures that are under water. Every ship always has a biofilm or even macrofouling if the antifouling coating is impaired because of prolonged lay times, low sailing speeds or operations in unforeseen trade areas. This growth has various negative effects on the environment. For shipowners, it is important to remove macrofouling as well as the biofilm in order to avoid excessive fuel consumption and thus minimise the cost of ship operations.

It is essential to ensure that biofouling is removed in a controlled environment, whether in the dock or during underwater cleaning. The aim is to reduce the environmental impact of marine shipping and avoid potential water pollution as a result of inexpert cleaning operations.

Underwater hull cleaning on faulty antifouling systems containing biocides, and even illegal cleaning operations, are unfortunately common practice in order to save costs, with the result that biocides are released into the water and the antifouling coating is frequently damaged or even abraded. Furthermore, failure to capture the abraded material properly leads to the introduction of biofouling, microplastics and contaminants (biocides) into the water.

To date there are no binding national or international regulations for granting a permit for underwater hull cleaning in ports.

Testing innovative antifouling strategies at the ports of Bremen

The latest research therefore pursues a strategy which envisages dispensing entirely with the use of antifouling systems (AFS) that contain biocides by instead establishing effective antifouling management in the form of proactive cleaning on suitable, i.e. abrasion-resistant, biocide-free antifouling coatings.

The ports of Bremen are also investigating the issue of compulsory permits for underwater hull cleaning. A number of business enterprises and institutions, under the overall coordination of the Senator for Climate Protection, Environment, Mobility, Urban Development and Housing, have joined forces in a project entitled “CLEAN”, which aims to promote “freedom from hull fouling thanks to proactive cleaning on abrasion-resistant, biocide-free coatings for the shipping business”.

The participants included for example the port management company bremenports, Bremen’s Port Authority, Lower Saxony’s river police, the Federal Maritime and Hydrography Agency, antifouling manufacturers, the Alfred Wegener Institute, Laeisz shipping company, the diving contractor Nordseetaucher and the LimnoMar institute.

The project elaborated the fundamental requirements for obtaining approval for underwater cleaning at the port, leading to the publication of the first German guidelines for granting permits for

underwater hull cleaning at the ports of Bremen. ([Die Senatorin für Klimaschutz, Umwelt, Mobilität, Stadtentwicklung und Wohnungsbau - Meeresumweltschutz \(bremen.de\)](#))

Drawing up and publishing these guidelines is intended to enable the use of underwater cleaning systems at the ports of Bremen. This creates a sound legal basis for the development and use of innovative methods which satisfy the legal requirements and means that new cleaning techniques can be developed as part of proactive antifouling management.

The guidelines provide the cleaning companies and shipowners with a basis for applying for and performing underwater hull cleaning at the ports of Bremen.

For the ports of Bremen, this is the next logical step on its way to becoming a green port as it will enable underwater hull cleaning on biocide-free hard coatings at the ports in future, in addition to the environmentally friendly services that are already available there. The scope for further optimisation and improvements will be evaluated regularly as part of the project.

This scheme is an important milestone in abandoning what has been to date largely uncontrolled underwater hull cleaning in other countries where no protective measures are in place in favour of establishing water-friendly cleaning processes which comply with legal requirements and meet high quality standards. It will simultaneously promote the use of biocide-free antifouling systems in the interests of preventive water protection.

Information online:

[Die Senatorin für Klimaschutz, Umwelt, Mobilität, Stadtentwicklung und Wohnungsbau - Meeresumweltschutz \(bremen.de\)](#)

[bremenports - Häfen mit weltweiten Verbindungen](#)

[Hansestadt Bremisches Hafenamt - Startseite \(bremen.de\)](#)

Detailed information about the project can be downloaded at ([Projekt "CLEAN" – Unterwasserreinigung in der professionellen Schifffahrt – Limnomar](#)).

A summary of the "CLEAN" project is also available on YouTube: <https://youtu.be/QjXlVb46jA> (German) <https://youtu.be/BMp6j0WUlt0> (English) and also here: https://www.dbu.de/2985ibook84441_38668_.html