

## Maersk kills germs gently

**New ballast water treatment systems will combat invasive marine life using little energy and no chemicals.**

Devastation caused by invasive species in ships' ballast water is wreaking havoc more than ever, and the race is on to launch innovative solutions to fit new rules from IMO, the International Maritime Organization.

In this race, Maersk Maritime Technology and its partners in Desmi Ocean Guard have taken a leap at the March meeting of the IMO's Marine Environmental Protection Committee (MEPC).

The proposed solution gained basic approval at the meeting, which sets the stage for actual IMO testing by the end of April at a landbased pilot plant in Denmark.

A snapshot of the innovation race regarding ballast water tells all about the competition. IMO has granted about 20 such basic test approvals already, according to Rasmus Folsø, senior general manager at Maersk Maritime Technology.

But Desmi Ocean Guard hopes to present a unique appeal by neither using toxic chemicals, nor much energy to clean the ballast water tanks.



"In general, all other solutions fall under two approaches. Some use high amounts of energy to clean the ballast water. Others use chlorine or toxic chemicals to kill bacteria and organisms. Both approaches pose environmental and climate problems that must be handled," says Rasmus Folsø.

Maersk Maritime Technology hopes to have struck a middle way. Ozone gas, which is hazardous in large quantities, is added in one tank and acts caustically against all live organisms. In the next tank, however, the ozone and remaining live organisms are eliminated by ultra violet radiation beams within the ballast water. End result: Clean ballast water with no hazardous by-products.

The IMO mandate is that all ships by 2016 must be retrofitted to handle ballast water in a way that prevents human-caused spread of animals and bacteria from one eco zone to another.

For shipping this is in other words a potential billion dollar industry in a world with more than 60,000



### Devastation from invasiv

Great Lakes between the US/ Canada: Damage due to arrival of European Zebra Mussel costs billions of dollars in maintenance of unclogged structures.

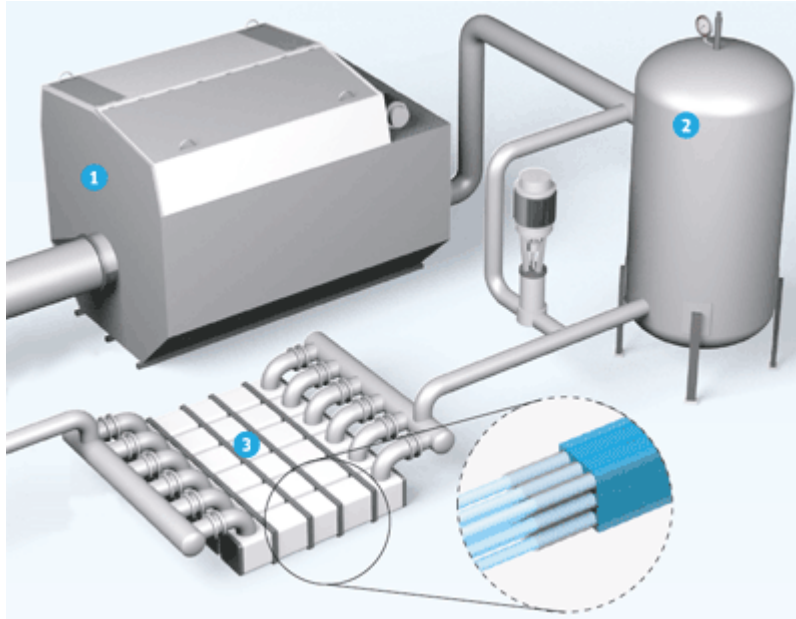
Black and Asov Seas: The Anchoa comb jelly causes near extinction of anchovy and sprat fisheries.



*Maersk Maritime Technology and its partners in Desmi Ocean Guard are testing the IMO testing by the end of April at a landbased pilot plant in Denmark.*

commercial vessels.

*By Erik Høgh-Sørensen, Group Relations*



*The seawater enters the filter (1) which cleanses the water of particles larger than 10 micro meters. The water is hereafter fed to a tank that adds ozone (2). The ozone makes both organic and inorganic material chemically unstable, i.e. it oxidises the material. Then the water is exposed to intense ultra-violet light which kills all microbes, bacteria etc. in a third tank (3). The water is hereafter clean to be carried out into the ballast water tanks.*

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