BALLAST WATER TREATMENT SYSTEMS:

TO WAIT OR NOT TO WAIT

THE $30B RETROFIT CHALLENGE
CHALLENGE

BY GOLTENS

INSTALLATION

POSTPONEMENT

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Management Convention is at the first intermediate or

The final deadline for compliance with the Ballast Water

ACCORDING TO GOLTENS

OF BWT SYSTEM INSTALLATION

MAXIMUM POSTPONEMENT

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SOURCES:

- BWT Technology Guide, Lloyds Register, June 2011
- Ballast Water Advisory, ABS, April 2011
- Cellular Fleet, Alphaliner, December 2010
- The World Merchant Fleet, Equasis, 2010

MAXIMUM POSTPONEMENT

OF BWT SYSTEM INSTALLATION

ACCORDING TO GOLTENS

THE $30B RETROFIT CHALLENGE

8,920 BULK CARRIERS

13,722 TANKERS

4,869 CONTAINER VESSELS

50,257 OTHER VESSELS

77,768 VESSELS IN TOTAL

THE 7-STEP INSTALLATION PROCESS BY GOLTENS

1 Selection of the BWT system

Although Goltens will not advocate one vendor over another, Goltens Green Technologies will provide shipowners with the decision support they need when selecting a system.

2 Onboard survey and a 3D laser scanning

Goltens Green Technologies experts conduct a visual inspection of where to tie-in the system, take measurements and make a 3D laser scan of the installation space.

3 Pre-engineering

Pre-engineering work is carried out to identify the key design issues, check load balance, modify ballast diagrams and prepare a detailed quote.

4 Detailed design

A detailed design phase includes preparation of the isometric drawings of piping and the construction drawings to meet class requirements.

5 Purchasing and prefabrication

Purchasing of prefabricated foundations is the thorough research already developed.
**POSTPONEMENT**

**CHALLENGE**

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**MYTHS and FACTS ABOUT BWT SYSTEMS**

**MYTH:** It only takes a couple of months to install a BWT system.

**FACT:** At least nine months of total preparations are needed for delivering the system and getting the installation class approved.

**MYTH:** Installing a BWT system is easy.

**FACT:** Some BWT system suppliers make it seem simple during sales pitches. As a result, many shipowners underestimate the complexity of the process.

**MYTH:** Prices of BWT systems will soon go down as more players are entering the market.

**FACT:** The demand will increase significantly in a few years, and the suppliers will feel no need to lower the prices.

**MYTH:** The vessel always needs to be in dry-dock for a BWT system retrofit.

**FACT:** In some cases, BWT systems can be installed during normal operation.

**MYTH:** If most of the shipowners miss the deadlines, Port State Authorities will not just fine every single one of them.

**FACT:** There are no indications at the moment that Port State Authorities will not proceed with fines.

**MYTH:** It is too late to do anything about the environment anyway.

**FACT:** Every nine weeks an alien invasive species gets successfully introduced somewhere in the marine environment. It is vital to address the problem.

**SUITABILITY OF A BWTS TYPE TO VESSEL TYPE**

- Chlorine Generate: except large Capesize
- Chemical Apply
- Filter and Radiate: except large Capesize
- De-oxygenate
- Ozone Generate

- Chlorine Generate: some systems, not for VLCCs and ULCCs
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**3D SCANNING PROCESS**

See how Goltens Green Technologies experts make a 3D laser scan and prepare a detailed design for the BWT system installation.

**Goltens’ estimation is that there will be a need for up to 45 retrofits per day.**

**Installation and commissioning**

Goltens can provide installation, commissioning and crew training services worldwide.

**Service**

Possibly the most critical step long-term, Goltens provides ongoing support and service worldwide.

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Getting Ready For The Deadline

Goltens Green Technologies has defined a seven-step guide plan for undertaking a ballast water treatment (BWT) system installation. Business Development Manager Jurrien Baretta comments on each of the steps.

1. Selection of the BWT system
Looking at the ballasting capacity would be one of the key considerations, as well as other factors, such as availability of power and installation space. Another thing to take into account is whether the vessel will sail in salt or fresh water, as some BWT systems have issues with the latter. The system should be type approved; otherwise it will not receive class approval.

2. Onboard survey and 3D laser scan
After a shipowner has shortlisted a number of BWT systems, Goltens Green Technologies experts go onboard the vessel to evaluate the space and perform a 3D laser scan to find the best way to fit the system. A laser scan will reveal any obstacles in the way of piping installation and help us determine the most feasible solution.

3. Pre-engineering
At this stage the shortlist of the BWT systems will be further refined. Some systems may be dropped off the list because they will not fit or because it might be too complicated to get the piping in. When the owner makes a final choice of system, the detailed engineering work begins.

4. Detailed design
The next step is preparing the detailed production drawing of the piping, foundations and any constructions that may be needed. Goltens Green Technologies will get the drawings approved by class prior to moving further. This can take a few months.

5. Purchasing and prefabrication
It is important to bear in mind that purchasing a BWT system includes a lead time of six months or more. Assorted ancillary materials are included in the purchasing to ensure there are no delays once installation commences.

6. Installation and commissioning
The supplier will need to come onboard and complete the commissioning of the system, and the classification society will need to survey the system for the final approval. We have found that it is not always necessary to dry-dock a ship for an installation. Often installations can be done without adding new overboard connections – which would require dry-docking.

7. Service
The last step is probably the most critical one long-term. Goltens’ service stations provide ongoing support and service worldwide.

Jurrien Baretta, Goltens Green Technologies Business Development Manager

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Green Technologies
Independent advice and coordinated implementation

To meet new environmental regulations, Goltens plans and installs green technology solutions that prolong the lifetime of valuable assets.

As a leading independent global provider of ship repair services, Goltens has constantly been presented with new problems by shipowners with one main objective – keep the vessel in operation. Installing a new BWT system is just another one in a long row of challenges.

Protecting the environment and safeguarding oceanic ecology is only possible if the existing fleet can be effectively upgraded. Our experience in critical repairs, our global footprint and close relationship to yards and OEMs gives us a unique position towards this challenge.

Goltens Green Technologies has chosen to take an independent role towards the equipment makers and side with the owners to be part of the well-planned and swift upgrade of the existing fleet to meet the upcoming regulations.

www.goltens.com