

# RETROFIT PROJECTS BWTS AND SCRUBBER INSTALLATIONS



Viktor Lenac Shipyard performed its first BWTS retrofit installation in 2015 on board the vessel *Cable Enterprise*, during its conversion from a cable laying barge into a DP2 cable laying barge, when Pan-Asia's BWTS solution was successfully retrofitted.

The expertise gained in these projects places Viktor Lenac Shipyard in a narrow circle of the world's top shipyards able to deliver complex BWTS retrofit projects with a top quality, in a safe way and on time. Recognizing our top performance, *Wärtsilä* signed a BWTS cooperation agreement with us in 2017.



## **DELIVERED PROJECTS**

- 2015 Cable Enterprise / Pan-Asia's BWTS
- 2016 NS Stream; NS Power / Ecochlor's BWTS
- 2017 Tavrichesky Bridge; SCF Amur; SCF Pechora / Ecochlor's BWTS
- 2018 Louisa Schulte / Wärtsilä's BWTS
- 2018 Bordeira / Coldharbour Marine's BWTS

## SHIPREPAIR



Ballast Water Treatment System installations are not straightforward as it may seem and even sister ships can differ quite enough to demand a very different approach. Understanding the complexity, preparing diligently and being flexible enough to address technical challenges as they arise are the keys to success.

# **BWTS INSTALLATIONS**



#### **1. BIDDING PHASE**

- Detailed review of technical specification and drawings provided by the shipowner
- Reporting inconsistencies or errors noticed with regard to the Bill of Materials and Scope of Work
- Providing detailed cost structure

#### 2. PREFABRICATION PHASE

- Manufacturing of steel elements and pipes (black steel, CuNiFe, SS, Alloy20, GRE/GRP), including anticorrosive treatment
- Manufacturing and pre-assembly of deck-houses and outfitting

#### **3. BWTS INSTALLATION ONBOARD THE VESSEL**

- Fitting of pipes, electrical cables and steel works (foundation and deck-houses)
- Design/redesign in situ together with the shipowner/ class society
- Procurement of any additional materials required
- Installation of BWTS equipment delivered by the shipowner

### 4. COMMISSIONING

 Full assistance during the BWTS commissioning phase





# Viktor Lenac Shipyard has performed BWT system installations on vessels of different sizes from 124 to 274m (9,000GRT - 80,000GRT). The following material quantities were installed:

- Up to 12,000m of Electrical Cables
- Up to 80,000kg of Steel (deck houses, foundations, supports)
- Up to 20,000kg of various Steel Pipes (black steel and stainless steel)
- Up to 500m of GRE Pipes (Bordeira 3,500m of GRE Pipes installed by Seatec)
- Up to 3,000m of Pneumatic Lines for remote control of valves
- Up to 1,000m2 of Insulation
- Up to 200m of GRE Pipe Heating Coils and Insulation for *Ice* 1A classified vessel

## **OUR ADVANTAGES**

- Proven BWTS retrofit track record
- Hands-on experience
- Dedicated project management team
- Skilled and experienced workforce
- Procurement and prefabrication services
- Docking and berthing facilities
- BWTS retrofits in parallel with scheduled maintenance
- All mayor class societies offices located in the Shipyard
- Warehouse for safe keeping of BWTS equipment before installation



# **SCRUBBER INSTALLATIONS**

Viktor Lenac Shipyard installed its first scrubber in 2012. The retrofit involved installation of a *Clean Marine Scrubber System* on board the bulk carrier *Balder*. Next year, another project followed, which involved installation of a Saacke's scrubber on board the Aframax tanker *Kornati*. The Shipyard done all steel, pipe and electrical works and provided assistance to makers technicians during commissioning of the system.





The Shipyard is ready to inspect the vessel at no additional cost for the Owners, together with the scrubber makers, after receipt of technical specifications and drawings. During the quotation phase, we make a detailed review of the received specifications/ drawings, report if there is any error and suggest possible solutions as per our experience and good shipbuilding practice. During the installation phase, we work together with representatives of the Owners, scrubber makers and Class to overcome any difficulties that may arise during execution of the project.

### **TYPICAL SHIPYARD ACTIVITIES INCLUDE:**

- Fabrication and installation of new sea chest or modification of existing sea chests
- Retrofit installation of various types of scrubber systems and auxiliary equipment such as open-loop, closed-loop, hybrid and hybrid-ready systems.
- Fabrication and installation of various tanks as per system design
- Funnel steel works and exhaust pipe modification
- Piping and Electrical works
- Providing assistance to makers technician



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