



# ECO CUBE

innovative solution for collection of waste water and solid waste from vessels.

# PROJECT BACKGROUND

ECOcube

**IDENTIFIED PROBLEM.** The problem of discharging all types of waste into the sea due to the lack of suitable collection centers available to sailors has been identified.

The only solid waste collection centers are located in marinas or ports, which are overloaded and unable to handle wastewater.

**SOLUTION.** ECOcube; a floating collection station for solid waste and wastewater from vessels.

Patent pending no: P20230887A



MAIN PROBLEM

# PRODUCT | ECOcube

ECOCube

**DEFINITION.** ECOcube is a modular floating object intended for the collection of solid and liquid waste from vessels.

**DIMENSIONS.** Depending on the user's needs, surface designs from 6 x 2.5 meters to 12 x 5 meters are possible

**ASSEMBLY.** Simple assembly, the size of the parts adapted to standard transport.



ECOCube - model



BLACK & GRAY WATER  
VESSEL DISCHARGE

BOAT DISCHARGE

FRESH WATER  
SUPPLY

SOLID WASTE STATION

- GLASS
- PAPER
- PLASTIC
- METAL



BLACK & GRAY WATER  
VESSEL DISCHARGE

FRESH WATER  
SUPPLY

SOLID WASTE STATION

GLASS	PLASTIC	PAPER	GENERAL
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ECO  
CUBE



ECO  
CUBE

SOLID WASTE STATION

GLASS  
PLASTIC  
PAPER  
GENERAL

RECYCLE & REUSE  
WASTE IN CANADA

FRESH WATER  
TO FILL

# ADVANTAGES FOR SAILORS

ECOcube

- Easily accessible without the need to deviate from planned routes (no detours).
- Separate collection of all types of waste from vessels.
- Refilling vessels with desalinated water.



PRACTICAL

# ADVANTAGES FOR ENVIRONMENT

## ECOcube

- Made entirely out of biocomposite materials.
- Fully autonomous, with no need for fuel.
- A center for collecting all types of waste, significantly reducing environmental pollution.
- Construction material: biocomposite - natural fibers and bioepoxy resin  
- patent pending for the biocomposite manufacturing process number: **P20211881A**.
- The necessary energy for operation is obtained from 30 kWh installed battery packs supplemented by 7 kW photovoltaic panels.
- The construction materials and required energy sources place ECOcube in the group of products with a very low impact on the environment.



BIOCOMPOSITE MATERIAL

# MONITORING AND CONTROLLING

## ECOcube

- each ECOcube has built-in GPRS module for communication with the service provider and Wi-Fi module for communication with the user
- the service provider receives information about the amount of waste in each container, the state of the battery and, upon request, video camera records
- when necessary, the service provider empties the containers and transports the waste to the collection center on the coast



# STEPS OF USE

ECOcube

1

Sailors can find information about the location of the collection center on their MFD or mobile application via AIS system along with their planned route.

2

Easily dock alongside a floating pontoon that remains at the same level relative to tides.

3

Free disposal of solid waste in separate containers.

Separate collection of solid waste from vessels in the following categories: plastic, glass, metal, paper and mixed waste with a total capacity of 10m<sup>3</sup>.

4

A user-friendly interface for selecting services, such as emptying black water from the boat or refilling the boat with desalinated water.

Sailors can choose the service through a mobile application or a user screen located on ECOcube, and use contactless payment.

5

Using the services is simple. To pump out black water, you only need to connect a provided hose to the boat's onboard connection, which uses a vacuum system to remove black water.

Upon completion, the device automatically flushes the pipes, eliminating odors or any potential leaks. Refilling with desalinated water is done simply with a connecting hose into the vessel's water tank.

# CHARACTERISTICS

## ECOcube

- Black water tank: 8,000 liters
- Desalinated water tank: 4,000 liters + 120 liters per hour
- Solid waste containers: 10 containers, each holding 1,000 liters
- Built-in AIS transponder for easy locating
- Environmental sensors to monitor changes
- Tank and battery condition sensors
- Video surveillance system
- Wi-Fi system
- GPRS communication system with the operator





BLACK & GRAY WATER  
VESSEL DISCHARGE

BOAT DISCHARGE

FRESH WATER  
SUPPLY

SOLID WASTE STATION

GLASS

PLASTIC

PAPER

GENERAL



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