

Your turn-key partner for BWMS retrofit

OceanGuard™ - Ballast Water Management System (BWMS)

Advanced water treatment solutions

Enwa design and deliver water treatment solutions for offshore installations and maritime vessels where water quality is of importance. Depending on the needs and requirements of our customers we deliver standard products as well as customised turnkey solutions.

Enwa represents the OceanGuard™ Ballast Water Management System (BWMS). OceanGuard™ is researched and developed by Headway Technology Co., Ltd. Close to 500 ship sets of various sizes of the system have been contracted so far for both newbuilds and retrofits. And with USCG Type Approval in progress (land-based test passed at DHI in Denmark) OceanGuard is one of the preferred BWTS on the market today.

Advantages of OceanGuard™ BWMS

High sterilization efficiency,

Complied to Highest Requirement IMO D-2 Regulation, California Requirement and USCG Standard.

Single way treatment

Single way treatment, suitable for all kinds of ballast water drainage system

Small size

Small footprint and compact design makes the installation easy and flexible.

Low power consumption

Low operation costs. Energy consumption is only appr. 17kwh for the treatment of 1000m3 of ballast water.

We deliver turn-key solutions

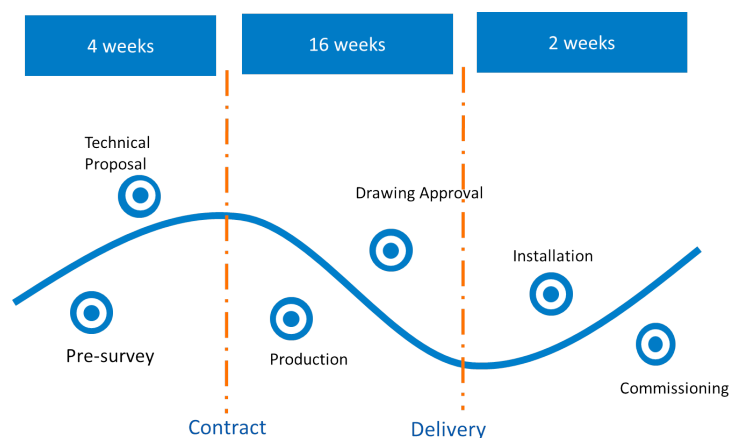
Being the distributor of OceanGuard Ballast Water Treatment System Enwa can offer turn-key solutions or any combination the ship owner prefers.



Retrofit procedure

We work with selected preferred suppliers in order for us to be able to deliver a complete retrofit solution.

- Pre-survey including 3D laser scanning
- Modelling
- Technical proposal
- Detailed engineering
- Drawing approval
- System delivery
- Prefabrication of pipes and parts
- Supervision during installation
- Installation teams
- Update of ballast water management plan
- Service and spare parts



Worldwide service and support

Enwa/Headway offers a worldwide service network

Contact us

We have sales representatives in Norway, Germany and Sweden. Please don't hesitate to contact us for a meeting or a proposal.

Ballast Water Management System (BWMS)

Treatment Process of OceanGuard™ BWMS

Step 1 - Filtration

50 microns precision filtration; Automatic backflush and filtration at the same time.

Step 2 - Advanced Electro-catalysis Oxidation Process (AEOP)

Electro-Catalysis in the EUT Unit produces (\bullet OH) radicals with perfect sterilization performance; the final products of reaction are CO₂, H₂O, and traces of inorganic salt without any hazardous residuals - zero -pollution emissions.

AEOP Technology of EUT Unit

OceanGuard™ BWMS adopts Advanced Electrocatalysis Oxidation Process (AEOP) to kill microbes, bacteria, viruses and dormant ovum in water by using special semiconductor materials under electron excitation and the hydroxyl radicals (\bullet OH) formed by water molecules.

Hydroxyl radical (\bullet OH) is one of the most active substances with very strong oxidizability, extremely fast reaction rate and strong negative charge affinities. The final products of reaction are CO₂, H₂O and traces of inorganic salt, zero-pollution emissions. The generating and existing time of hydroxyl radicals is less than 10^{-12} s, and the reaction rate with organics is over 109 L/(mol.s), guaranteeing the high efficiency and effectiveness of OceanGuard BWMS.



Advantages of OceanGuard™

- High sterilization efficiency
- Single way treatment
- Small size, skid installation
- Low power consumption
- Works in all kinds of water

Some of our references

AIDA CRUISES 3 ships 200m³ and 300m³

BOA 5 ships 600-1200m³/hr

GOLDEN OCEAN 6 ships 2 x 1000m³

HAFNIA TANKERS 8 ships 2 x 800m³+300m³

KLAVENESS 11 ships 1500m³+300m³

NORDIC AMERICAN TANKERS 2 ships 2x2000m³EX +300m³

STENA 10 ships 2x800m³+300m³

Approvals

IMO Basic Approval, MEPC 60, March, 2010 • IMO Final Approval, MEPC 61, October, 2010
 • CCS Type Approval, March, 2011 • DNV GL Type Approval, January 2020 • California report, 2011 • AMS (USCG), April 2013 • BV Type Approval, November 2013 • Rina Type Approval, May 2013 • NK Type Approval, January 2014 • LR, July 2014 • USCG Type Approval, Land based testing completed, June 2015 • USCG Type Approval, May 2020

Model	Capacity Range (m ³ /h)	Power (kw)	Dimension (mm)
HMT-50E	10~85	0.8	386*411*1041
HMT-100E	10~150	1.5	386*555*1041
HMT-200E	10~250	3	386*555*1376
HMT-300E	50~350	4.5	386*555*1701
HMT-450E	50~500	6.8	416*601*1821
HMT-600E	50~700	9	465*631*1957
HMT-800E	50~900	13	465*781*1957
HMT-1000E	50~1100	17	565*676*2123
HMT-1200E	100~1400	21	565*786*2123
HMT-1500E	100~1700	25	625*786*2123
HMT-2000E	100~2200	34	625*926*2208
HMT-2500E	100~2700	42	655*1054*2212
HMT-3000E	100~3500	52	655*1054*2222

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