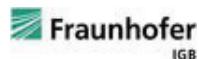


THE OILECLEAR CONSORTIUM CONSISTS OF THE FOLLOWING BENEFICIARIES

- Westmatic AB
- Coordinator & SME
- IMU-TEC OY
- SME
- Naval Consulting and Management AS
(NaCoM) - SME
- Stena Line - End User
- Teknologisk Institutt - RTD
- Fraunhofer Institute for Interfacial
Engineering and Biotechnology - RT



CONTACT INFORMATION

Coordinator of the Project -
Westmatic i Arvika Ab



Carl Olov Persson
Mobile:
+46 570 727 603
E-post:

Carl-Olov.Persson@westmatic.com

You can read more about OilEClear
and follow the progress on
the project web page:

www.oileclear.com



Photo by Tétine

OilEClear

Development of a safe, compact,
highly efficient, economic and fully
automatic electrolytic treatment system
for separation of emulsified oil
from wastewater of ships (bilge)
and oil rigs (slop)

OilEClear has received funding from the European Union's
7th Framework program managed by REA - Research and
Executive Agency (<http://ec.europa.eu/research/rea>
(FP7/2007-2013)) under grant agreement no 314958.

Official start date of project was November 15th, 2012.
Project duration is 24 months.



INTRODUCTION

The overriding goal of the SME partners is to enable ships and rigs - the primary target markets for the OilEClear system - to meet requirements of current and expected national regulations and international conventions regarding oil-in-water.

Bilge water is common to all ships and is produced from amongst other cleaning the engine rooms and bilge areas of the ship, deck areas of passenger ships, condensation of atmospheric humidity from the air-conditioning plants and small seepages through the hull. Bilge water consists of a varying assortment of oil and grease, oxygen-demanded substances, and organic and inorganic materials including volatile organic compounds, semi-volatile organic compounds, inorganic salts and metals.

Slop water is a general term for water contaminated with hydrocarbons as well as other chemicals and wastes produced on offshore oil and gas rigs for cleaning the pipe and drill deck. On rigs for exploration of oil and gas slop water volumes in the North Sea are estimated to 10.000 m³ / year per rig, in sum 100.000-300.000 m³ a year.

REGULATIONS MOTIVATING THE PROJECT

Regulations globally state that no oily water is to be discharged overboard without proper treatment leading to an acceptable concentration of contaminants. Release of oily wastewater to the sea is regulated by the International Maritime Organization (IMO)³, MARPOL, Annex 1, setting a limit to 15 ppm THC or lower at release into the sea, but a lowering to 5 ppm is proposed by the US and Australia. In the North Sea, OSPAR has set the discharge limit to 30 ppm oil in water in slop. Some countries practice stricter regulations in sensitive waters (<5ppm), i.e. US State regulations for rigs operating near shore, and Australian harbor authorities.

OBJECTIVE OF THE PROJECT

The partners in OilEClear have set an objective to develop an efficient bilge and slop water treatment system, for the shipping and oil industry, which will treat the water to below 5ppm. The OilEClear system will separate emulsified oil and water by use of a novel three-phase separator design, where the main features/components are:

- self-rinsing and adjustable electrolysis cell
- combined floatation and sedimentation sludge separation unit
- explosion proof design
- all-enclosed gas phase design
- total hydrocarbon monitor and alarm which cuts the effluent if the effluent level is too high

Effluent data and operation will be integrated with process control by use of optic light measurement of flow and particles together with automatic logging and monitoring of THC.



End user for OilEClear - Machine room on-board ship

PRELIMINARY RESULTS

In close cooperation with the SMEs, the RTDs in the project have accomplished a depth literature study and preliminary laboratory investigations that provides enhanced understanding on the characteristics of bilge and slope water and SOA treatment methods. The application of electrolysis for separation of oil from bilge and/ or slope water as a basis for the technical work in the development of the OileClear technology and therefore was specially investigated. Further to this, the scientific basis that has been established includes new knowledge on relevant parameters that impact on the electrochemical process, in global design criteria and analytical methods for estimation of hydrocarbon index in the water to be treated by OileClear. Additionally, the potential generation of explosive and toxic gases under electrolysis of bilge water was investigated. A prototype of the oil separation process has been designed and is under functionality tests. In parallel, the process control system and the safety enclosure of potentially explosive or toxic gases are under development for integration with the electrolytic and separation units.

The project is scheduled to be completed on November 14th, 2014.