



YOUR ANSWER TO SO_x SCRUBBER TECHNOLOGY

Presentation by Marcel Clephas



HISTORY

AEC SYSTEMS

1994

EXPERIENCE IN AIR EMISSION REDUCTION

1994-2013

PIONEER AND MARKET LEADER IN
AIR EMISSION CONTROL FOR LIVESTOCK FARMING

1999

SPECIALISATION IN ODOUR AND EMISSION CONTROL
FOR INDUSTRIAL PURPOSES

2008

START DEVELOPMENT SO_x SCRUBBER
TECHNOLOGY FOR MARITIME INDUSTRY → PATENT
PENDING

> **2300**

LANDBASED
INSTALLATIONS
WORLD WIDE



12 SEPTEMBER 2012

The European Parliament's 'rapporteur' on sulphur limits for marine fuel has welcomed moves to finalise plans for sulphur regulations in European waters. "The uncertainties are now gone," said Satu Hassi, a Finnish member of European Parliament and a representative of Finland's Green Party.

Parliamentarians voted overwhelmingly on Tuesday for a limit of 0,5% sulphur in marine fuels to be applied in the EU waters by 2020. They also confirmed a sulphur limit of 0,1% from 2015 in Emission Control Areas (ECAs).

The vote gave EU backing to moves already agreed at the International Maritime Organization (IMO).

"Tightened rules will have a big improvement in protecting health," claimed Hassi. She said the next step would be to have the 0,1% limit, so far planned only for ECAs, to applied in all EU waters.

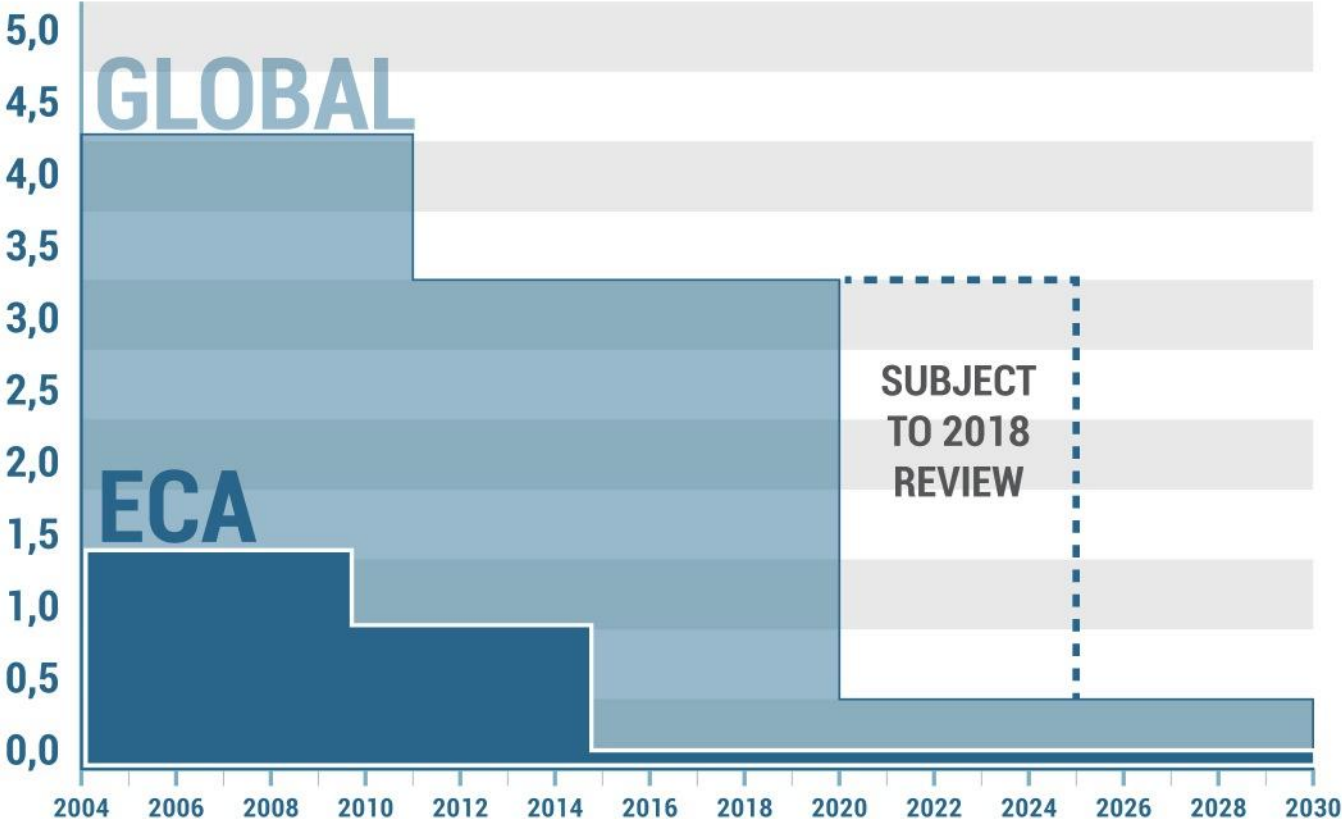


SECA COUNTRIES



IMO MARPOL ANNEX VI

SULPHUR IN %



SOLUTIONS AEC MARITIME

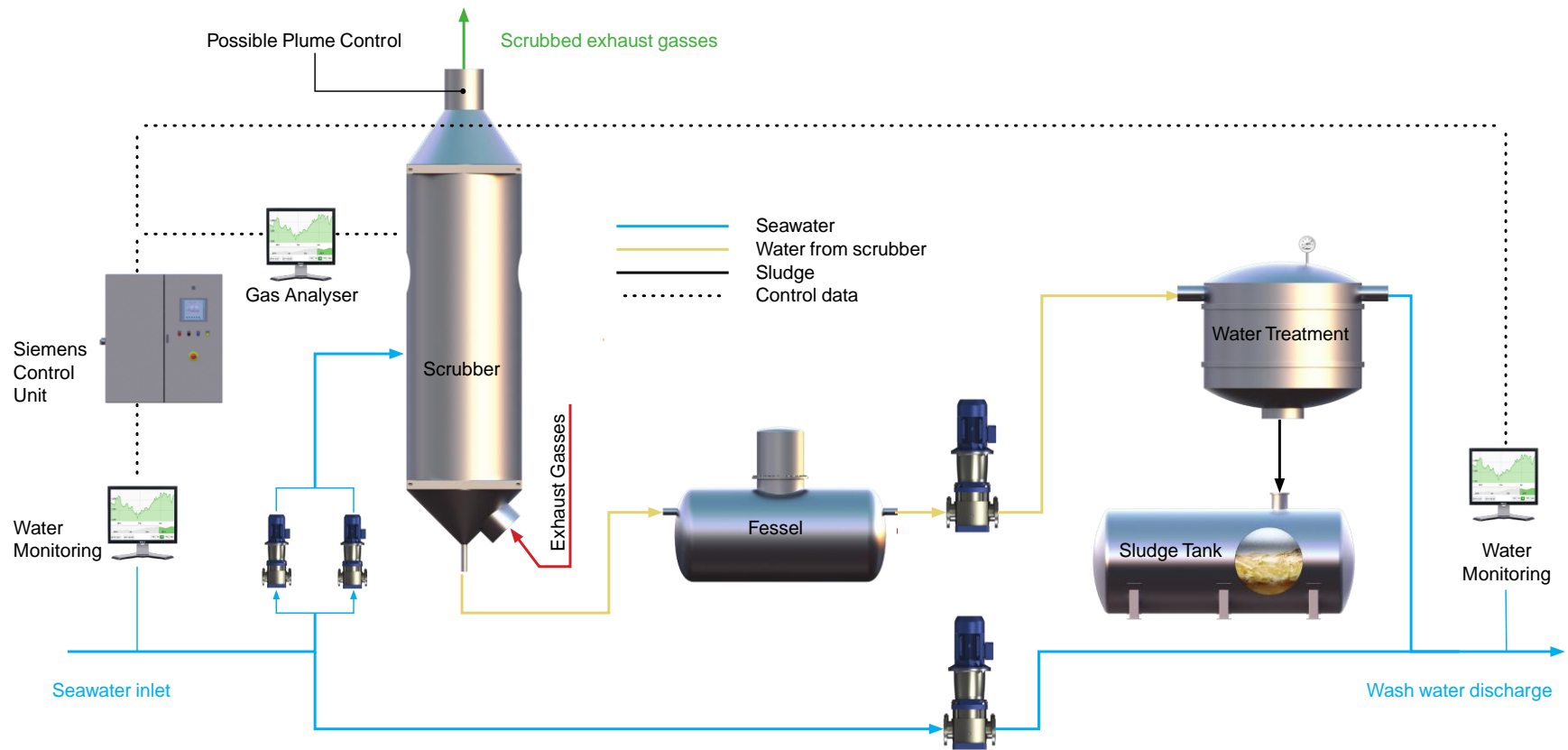
1. OPEN SCRUBBER SYSTEM

2. CLOSED LOOP SCRUBBER SYSTEM

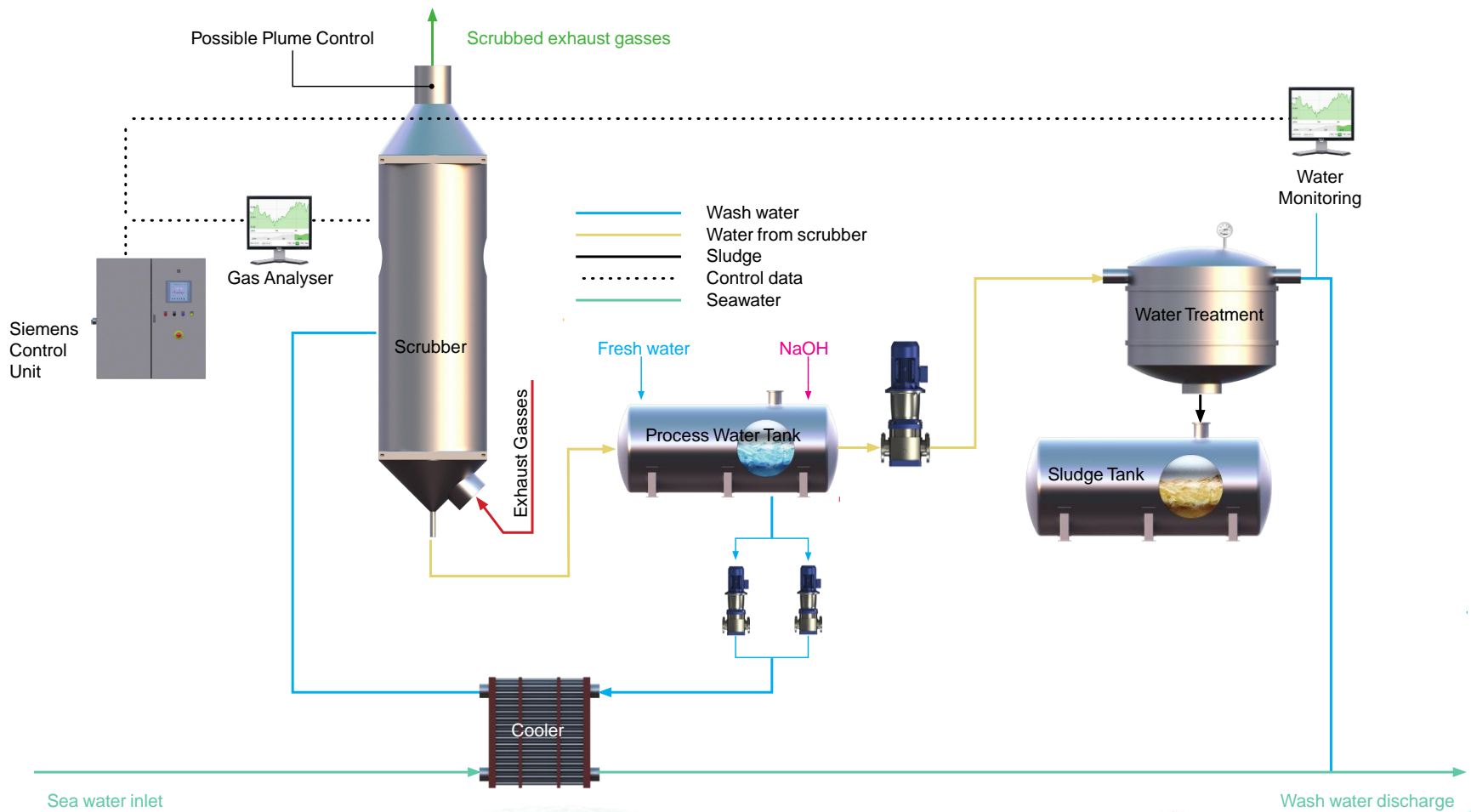
3. HYBRID SCRUBBER SYSTEM



OPEN SCRUBBER SYSTEM



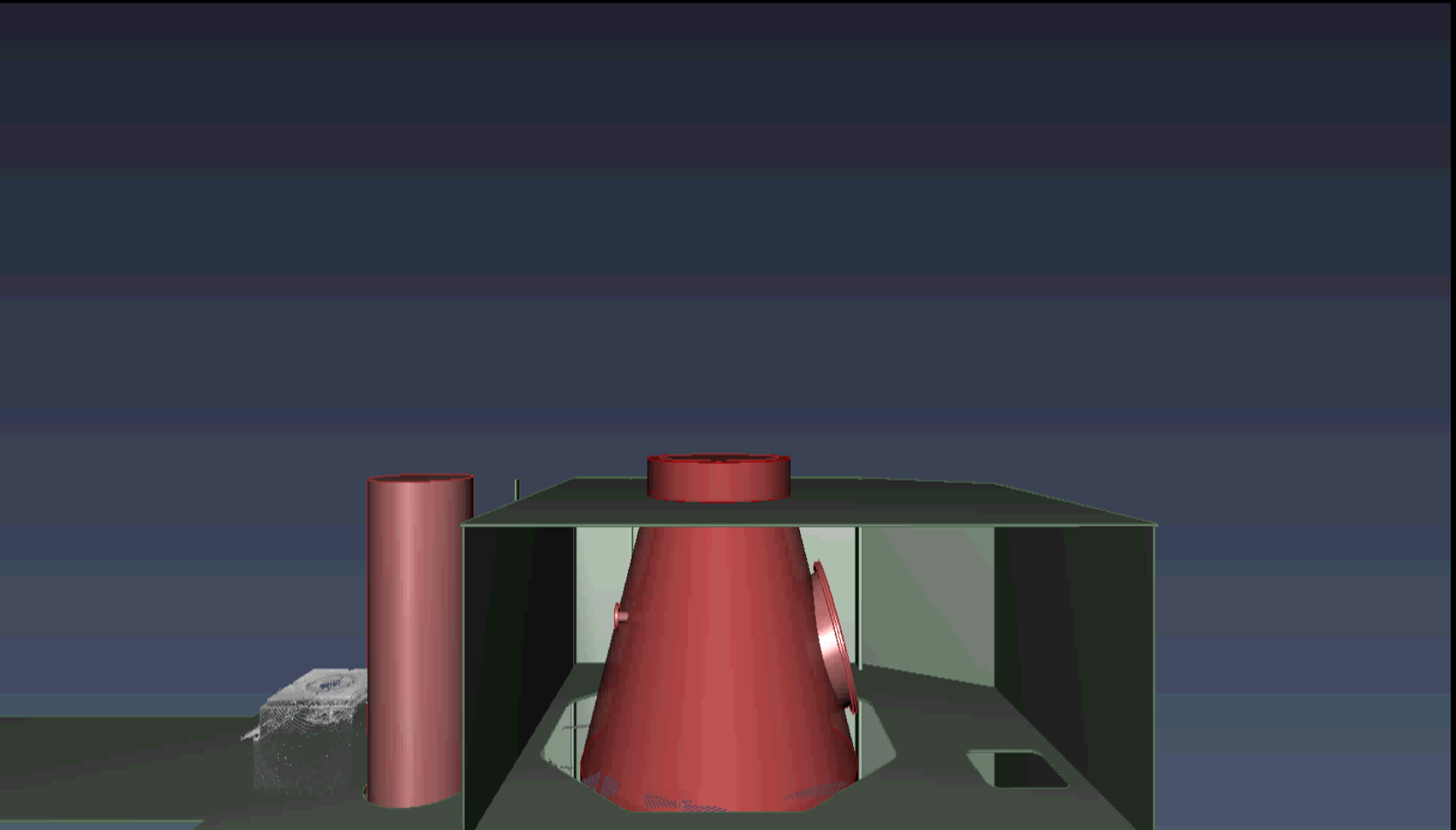
CLOSED LOOP SCRUBBER SYSTEM



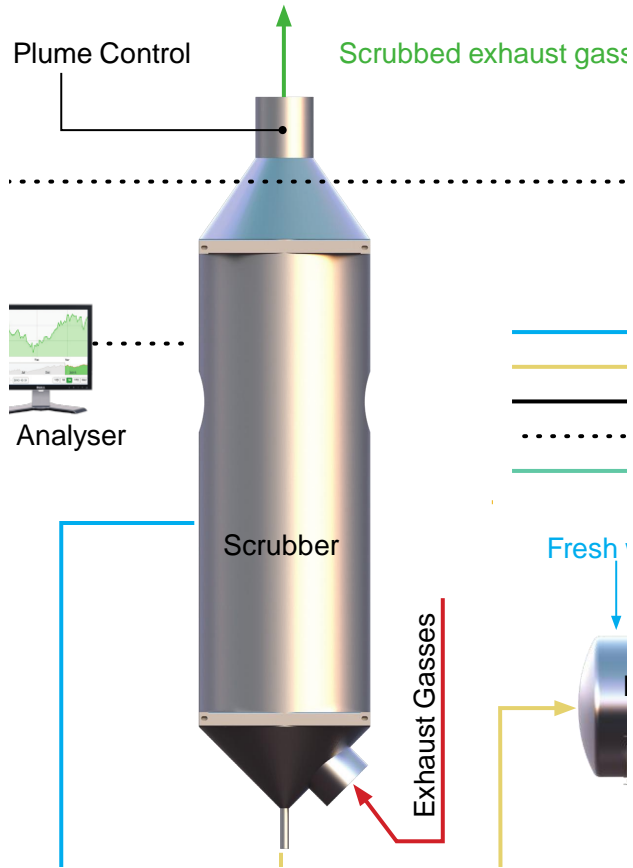
HYBRID SCRUBBER SYSTEM

Hybrid solution with the flexibility to operate in both open and closed loop





AEC MARITIME SO_x SCRUBBERS



**CAN BE INSTALLED IN COMBINATION WITH ALL
ENGINE BRANDS**
TOTAL SOLUTION
TAILOR-MADE TO YOUR VESSELS
LIGHT WEIGHT 'STABILITY'



GAS ANALYSER



24/7 MONITORING
MONITORES 15 MONTHS BACK
CLASS APPROVED



PARTNERS AEC MARITIME



SALES AND ENGINEERING



PRODUCT DEVELOPMENT



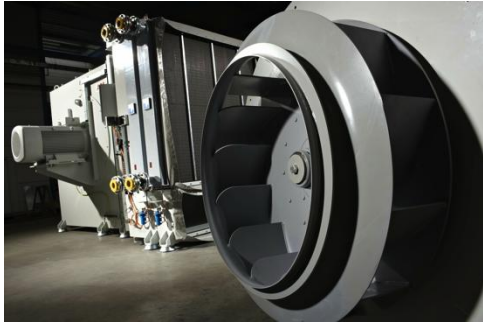
PRODUCTION



DRAIN WATER TREATMENT



VDL GROUP



POD COOLER



- **82 OPERATING COUNTRIES SPREAD OVER 18 COUNTRIES**
- **MUTUAL COOPERATION**
- **EXTENSIVE PRODUCT RANGE IN VARIOUS MARKET SECTORS**
- **SMART COLLABORATION BETWEEN ENGINEERING AND PRODUCTION**
- **IN ACCORDANCE WITH THE MOST DEMANDING QUALITY STANDARDS**



VDL KLIMARINE BOX COOLER



GEA WESTFALIA



SEPARATOR



- LEADING IN THE FIELD OF MECHANICAL SEPARATION
- INTERNATIONALLY CERTIFIED QUALITY MANAGEMENT
- DIN EN ISO 9001:2008 DIN EN ISO 14001:2004



CURRENT PROJECTS

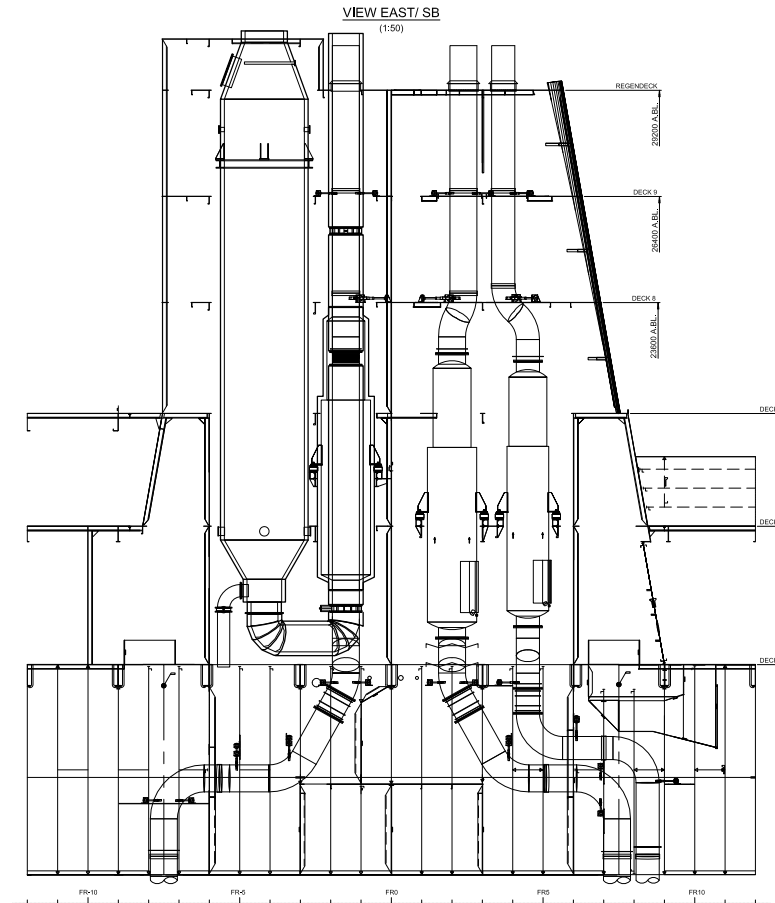


CLOSED LOOP SCRUBBER FOR FOUR VESSELS

FIRST SYSTEM IN OPERATION DECEMBER 2013



PROJECT SCANDLINES



KEY BENEFITS OF OUR SO_x SCRUBBER

Scrubber can be installed in combination with all engine brands

Durable and reliable design tailor made to your vessels in close co-operation with your engineering staff

Cost-efficient production

Low energy consumption

Focus on meeting all IMO, SECA, EPA regulations





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