

# EXPERIENCES EXHAUST AFTERTREATMENT WITH SOOT FILTER AT RV "HEINCKE"





## Management

### **Briese Schifffahrts GmbH & Co. KG** Leer / Germany

- Owner / Manager of about 130 MPP/ general cargo vessels, heavy-lift vessels, project carrier vessels, container vessels, bulk carrier
- Commercial and Technical Ship Management
- Chartering
- Newbuilding Projects
- Sale & Purchase of second-hand-vessels
- Finance & Distribution
- Offshore Logistics

### **Briese Shipping BV** Scheemda / Netherlands

- Commercial / Technical Ship Management
- Consulting / Contracting

### **Ems-Leda Shipping GmbH & Co. KG / Germany**

- Commercial / Technical Ship Management
- Consulting / Contracting

### **Briese Research Forschungsschiffahrt** Leer / Germany

- Technical Management
- Crew Management
- Newbuilding Supervision

### **Ems Offshore Service GmbH & Co. KG** Leer/Germany

- Seagoing Tugs and Barges
- Towing Facilities
- Transport of exceptional loads and use of RoRo-Ramp

## Chartering

### **BBC Chartering GmbH** Leer / Germany

- Commercial Ship Management for more than 170 MPP/ heavylift vessels, bulk carrier
- Liner Services
- Worldwide Project Cargoes
- 34 branch offices worldwide on all continents

### **Briese Chartering GmbH & Co. KG** Leer / Germany

- Commercial Ship Management

### **BREB GmbH & Co. KG** Bremen, Cuxhaven / Germany

- Commercial Ship Management
- Agency Services

### **Peak Shipping AS** Bergen / Norway (jointly with others)

- Commercial Ship Management

### **AtoBatC Shipping AB** Ystad / Sweden (jointly with others)

- Commercial Ship Management

## Consulting/Engineering

### **Briese Agency Ltd. Spolka z.o.o.** Szczecin / Poland

- Agency
  - for repair / rebuilding
  - newbuilding
  - construction
  - general port services

### **China Supervision** Ruichang / China

- Supervision of Newbuilding projects

### **SEC GmbH & Co. Shipperservices KG** Leer / Germany

- Engineering
- Worldwide repairs

### **OWT - Offshore Wind Technologie GmbH** Leer / Germany (jointly with others)

- Offshore Engineering
- Project Management

## Crewing

### **Briese Crew Management GmbH** Leer / Germany

- Crewing Agency
- Crew Management

### **Briese Shipping** St. Petersburg, Archangelsk, Rostov on Don / Russia

- Crewing Agency

### **Heavylift Manila Inc.** Manila / Philippines (offices in own property)

- Crewing Agency

### **Briese Crewing Ukraine Ltd.** Odessa, Kherson / Ukraine

- Crewing Agency

## Port Logistics

### **EPAS Ems Ports Agency & Stevedoring Beteiligungs GmbH & Co. KG** Emden / Germany (jointly with others)

- Warehousing
- Stevedoring
- Agency incl. General Port Services and Customs Agency

### **BERA GmbH & Co. KG** Papenburg / Germany (jointly with others)

- Warehousing
- Stevedoring
- Agency
- Services and Customs Agency

### **Manchester Terminal** Houston / USA

- Dedicated project terminal

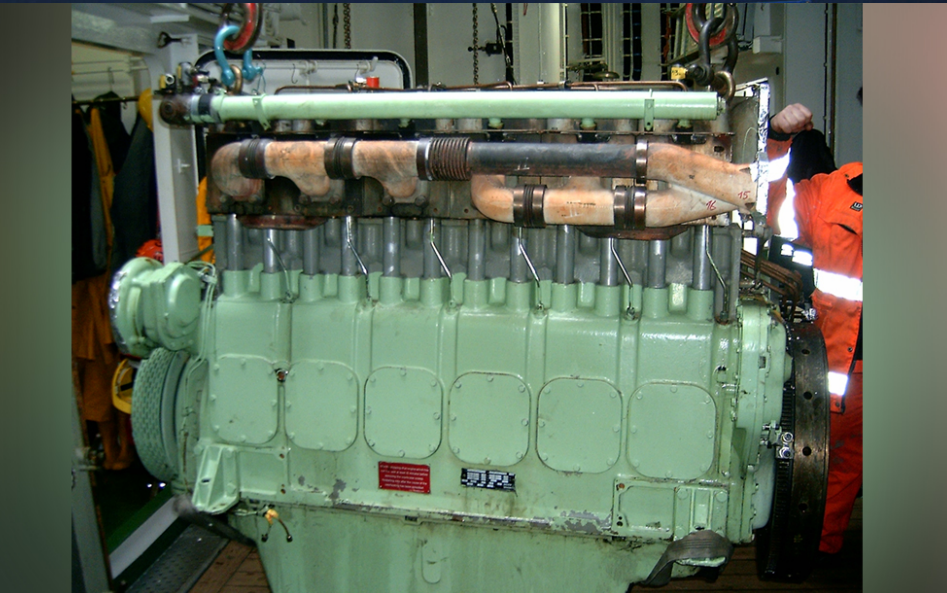
## Bunkering

### **UFS - United Fuel Services GmbH & Co. KG** Bremen / Germany

- Worldwide deliveries



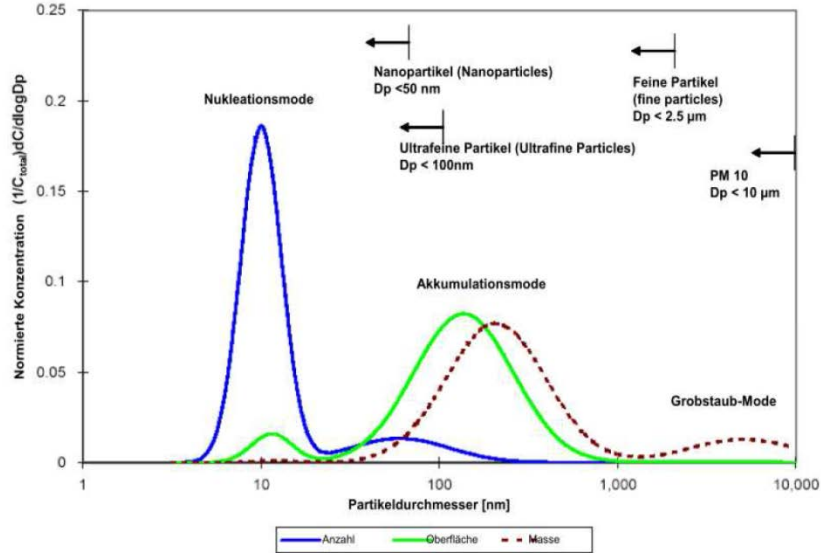




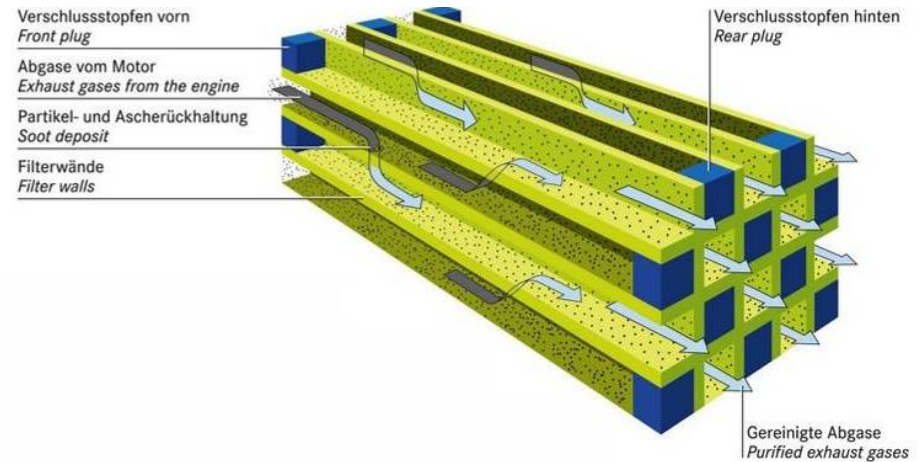
3 X DEUTZ KHD – MWM TDB – 604  
L6 WITH 525 KW EACH

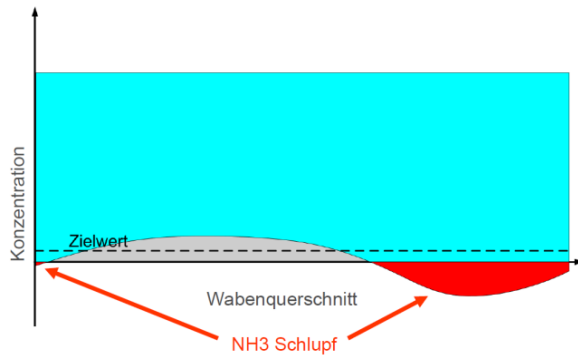


- POWER 525 UP TO 600 KW
- SIZE OF ENGINE – WORKING SPACE
- PARTIAL LOAD 40%
- GASOIL MGO (DMA) WITH 0,1 % SULPHUR
- EXHAUST BACKPRESSURE 50 TO 65 MBAR
- IMO/ MARPOL ANNEX VI TIER II
- DNVGL CLASSIFIED AS MAIN ENGINE (E2)
- DOUBLE ELASTIC MOUNTED
- CONNECTION TO EXISTING GENERATORS, COOLING SYSTEM POWER MANAGEMENT
- LOW CONSUMPTION OF LUBRICATING OIL



- ✓ MORE THAN 95 % OF REDUCTION OF PARTIKELS BLACK CARBON
- ✓ REDUCTION OF VERY SMALL PARTICLES

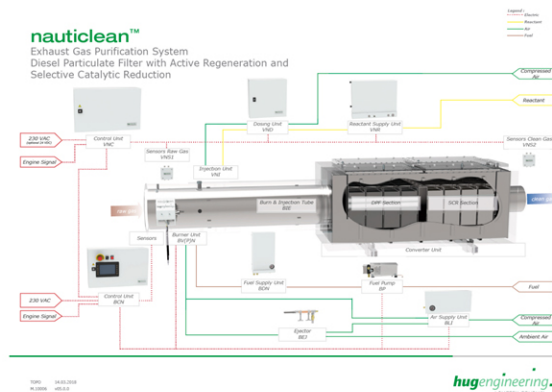




- IMO/ MARPOL ANNEX VI TIER III
- SCR SYSTEM WITH UREA
- AVOID OF OVERDOSE OF AMONIAK
- MEASUREMENT SYSTEM
- GASOIL MGO (DMA) WITH 0,1 % SULPHUR
- NO OXI CAT
- SICE AND WEIGHT OF FUNNEL
- SPACE FOR SERVICE
- SERVICE AFTER 1 YEAR (MAX 4000 RH)
- SAFETY MANAGEMENT



Type D 2842 TE 301





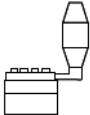


- **SUPPLY OF WORKING AIR:**
- Air Consumption 45 Ncbm/h
- Dry and clean ISO 8571-1:2010 class 4.4.4

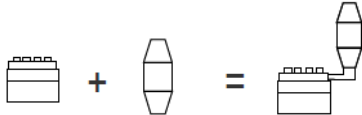
- **PROBLEMS WITH UREA**

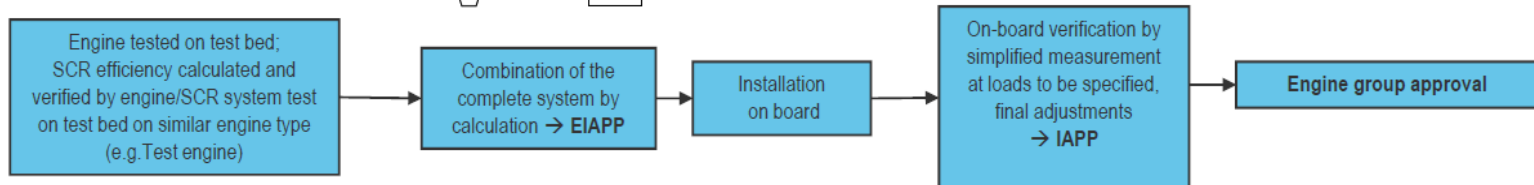
- Corrosions at steel an copper → stainless steel 1.4571
- Crystals if leakage take place
- Driptray
- Control of temperatur → frost free
- Connections for filling
- Level sensors and safety valves
- Tank ventilation on deck
- Manholes for cleaning and inspection

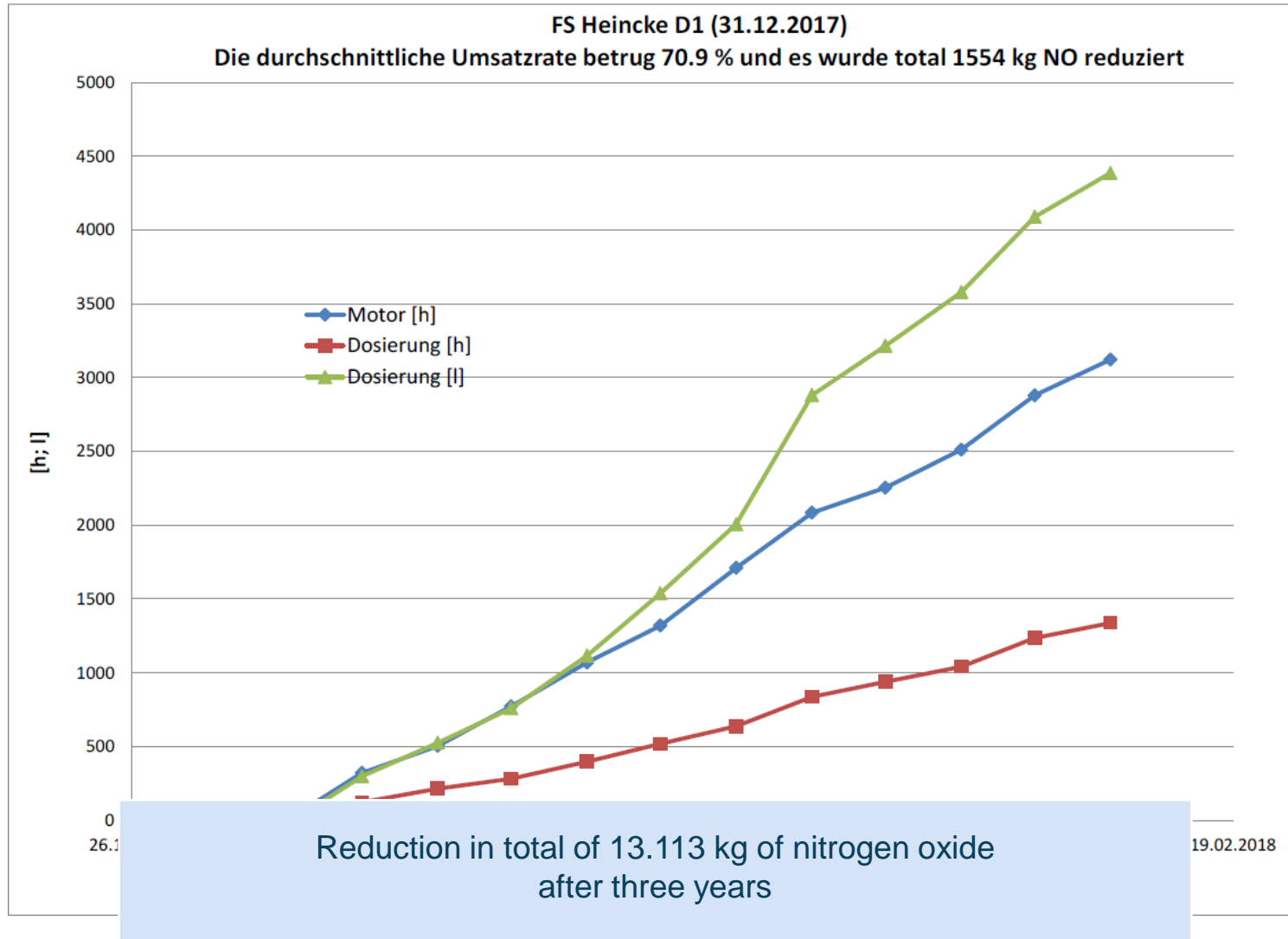


„Scheme A“: 

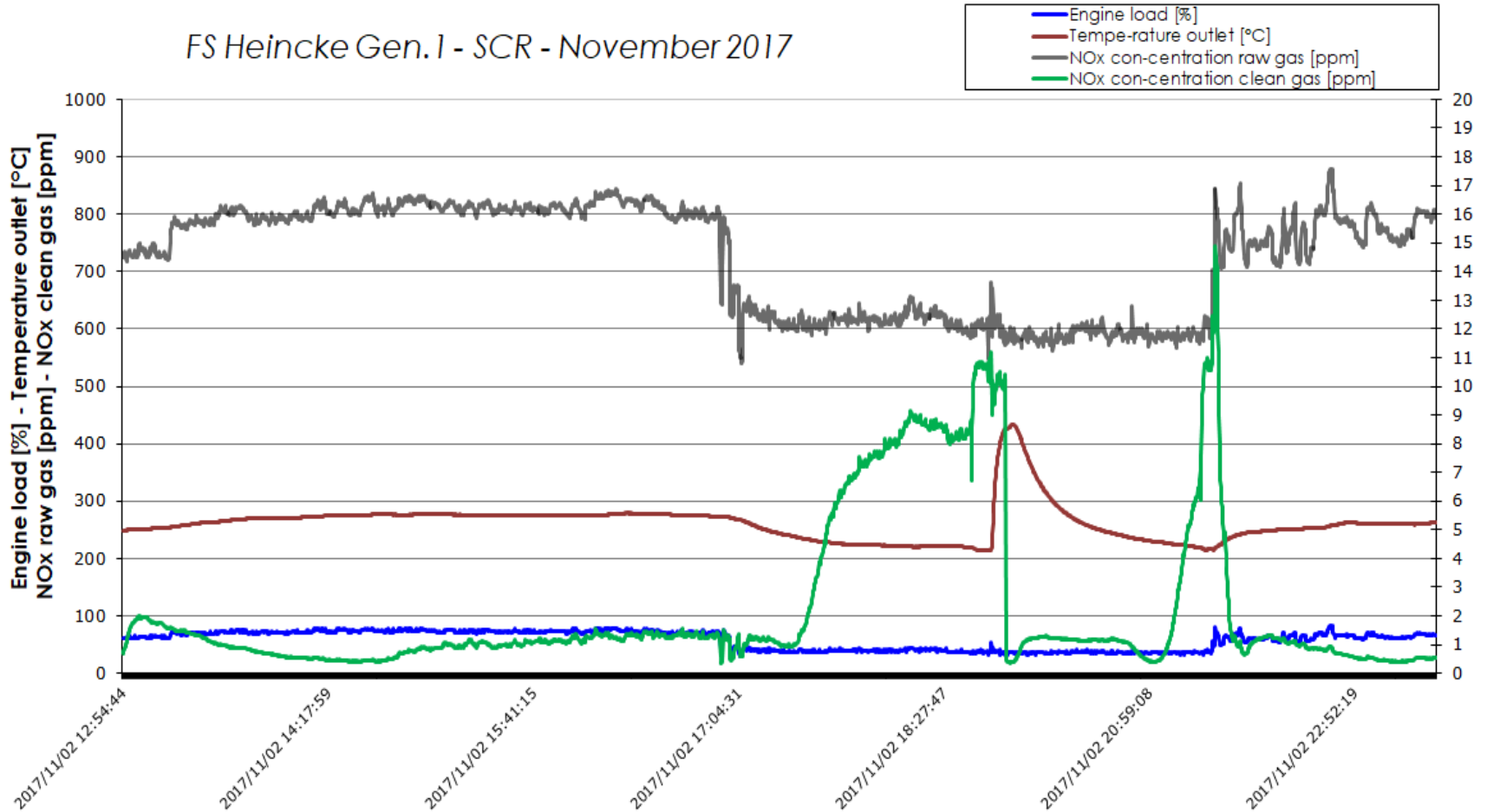


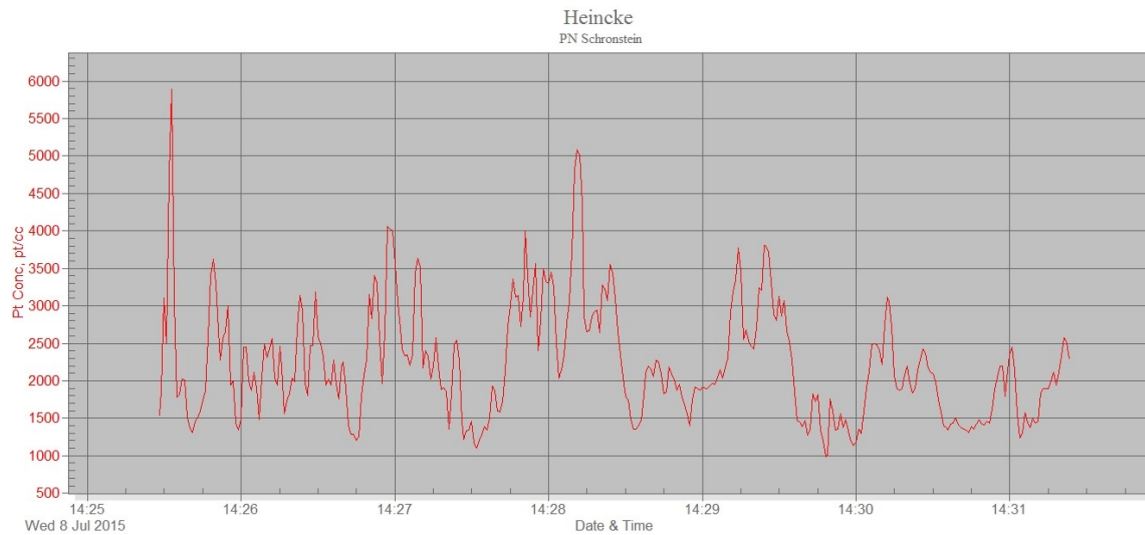
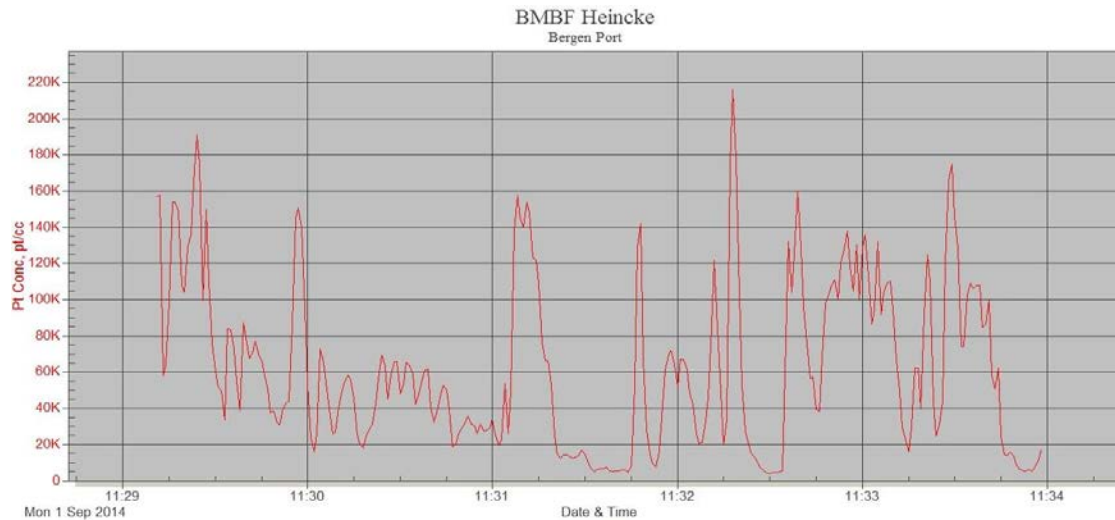
„Scheme B“: 

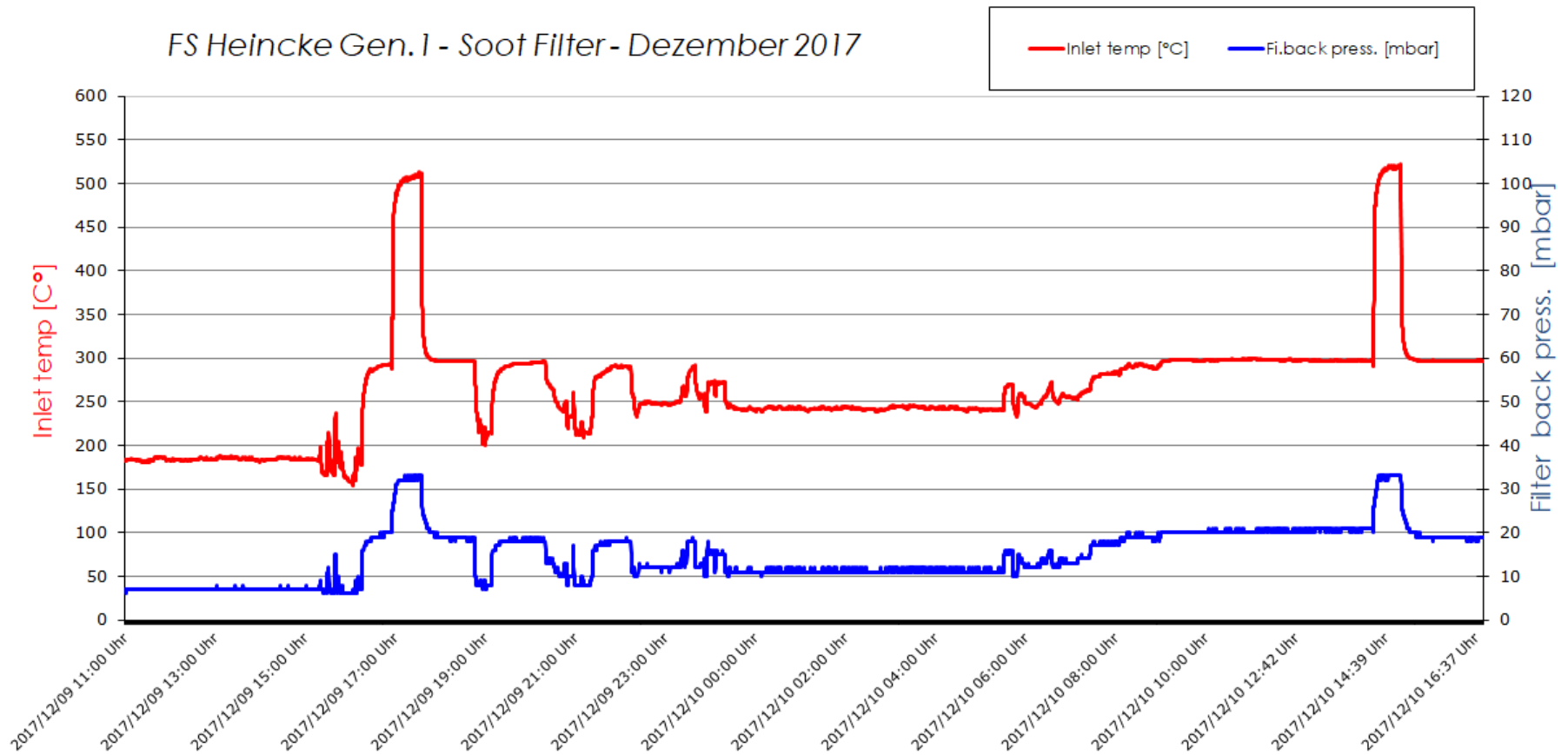




FS Heincke Gen.1 - SCR - November 2017







## SUMMARY

- Three years of operation with a combined filter SCR and Soot was successful
- More than 13 to of nitrogen oxide was reduced
- Black carbon was filtered nearly 100 %
- The soot filter was never blocked
- The exhaust system is a significant extra work for crew
- Materials and leakage check in relation of Urea is important
- Supply of working air should not under dimensioned
- Manufactures of engines and exhaust treatments have to work close together
- Certification in scheme B could be a bigger problem
- Next generation of research vessels will be constructed within soot filters

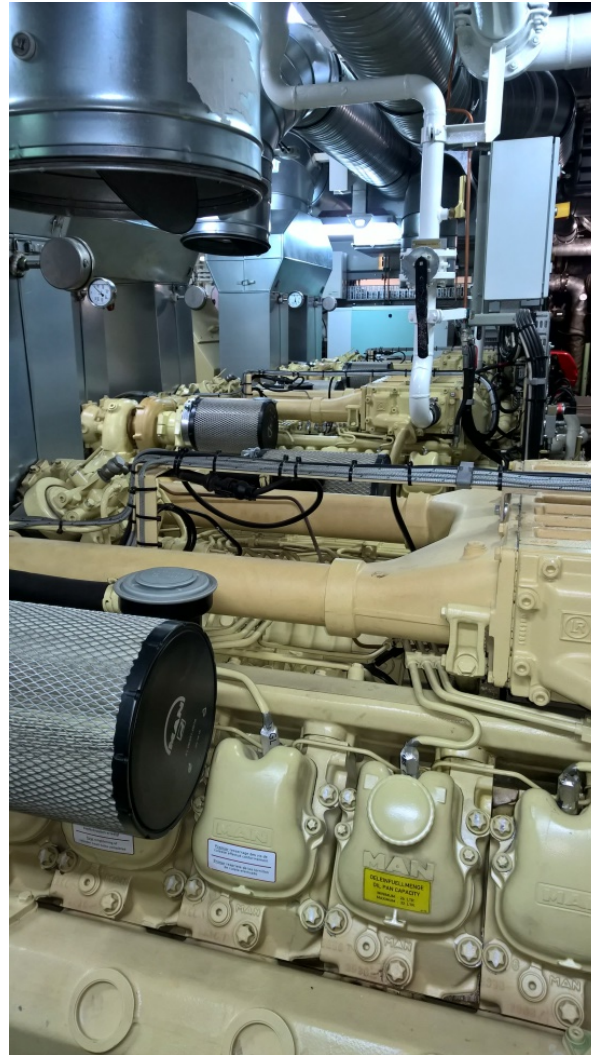
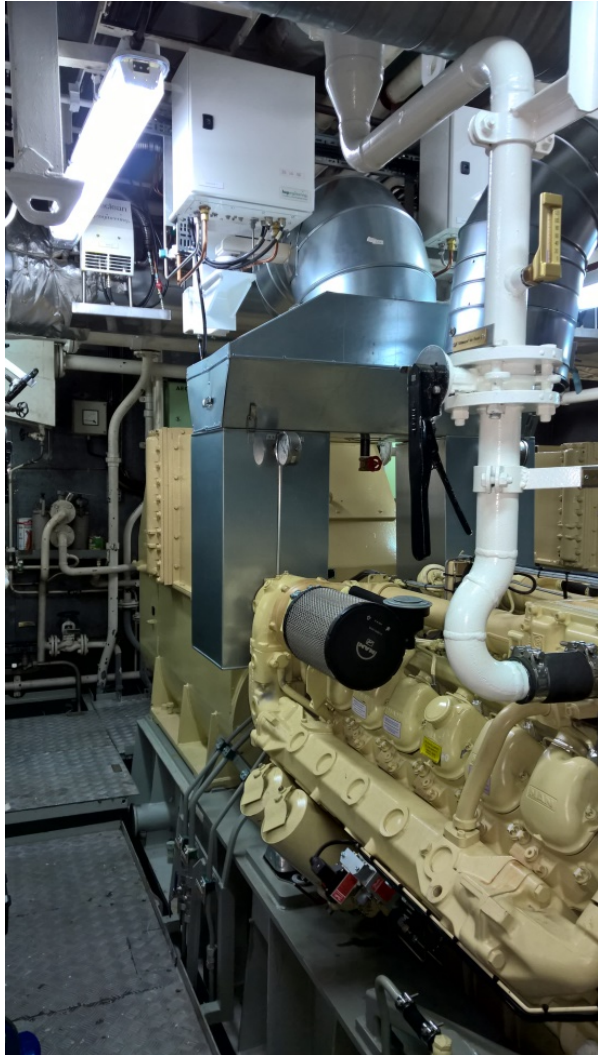


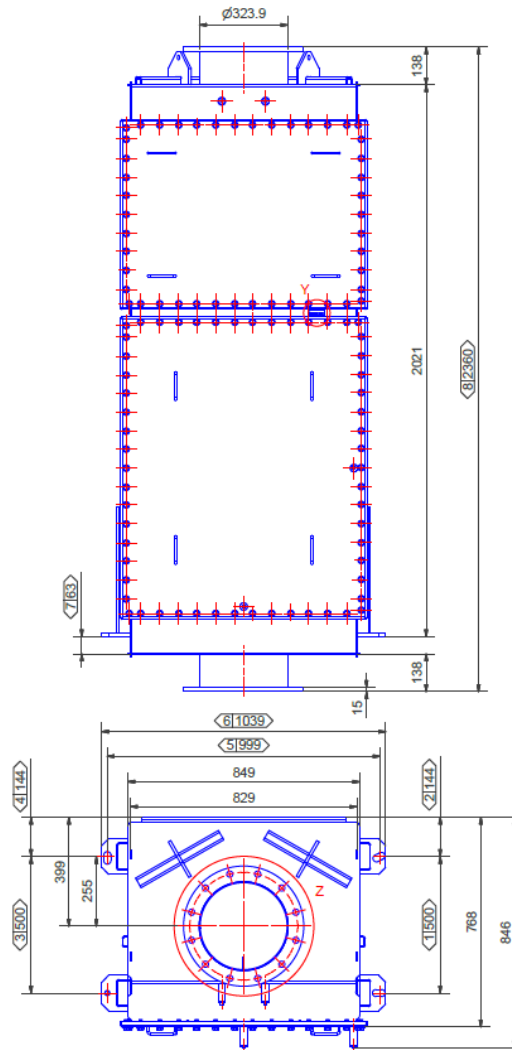
**MANUFACTURER OF MEDIUM SPEED ENGINES  
SHOULD BE MOTIVATED FOR FURTHER DEVELOPMENTS**

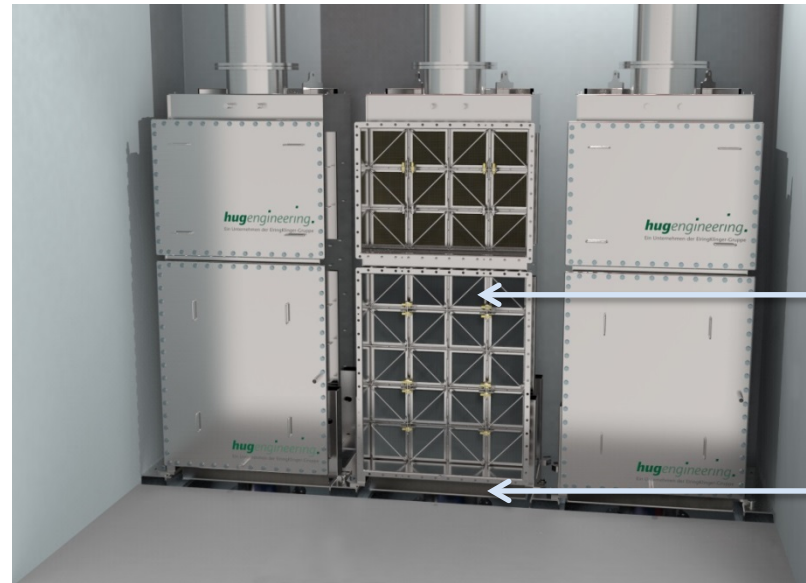


THANK YOU FOR YOUR ATTENTIONT

Questions?

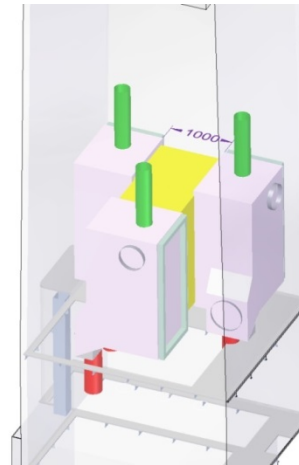






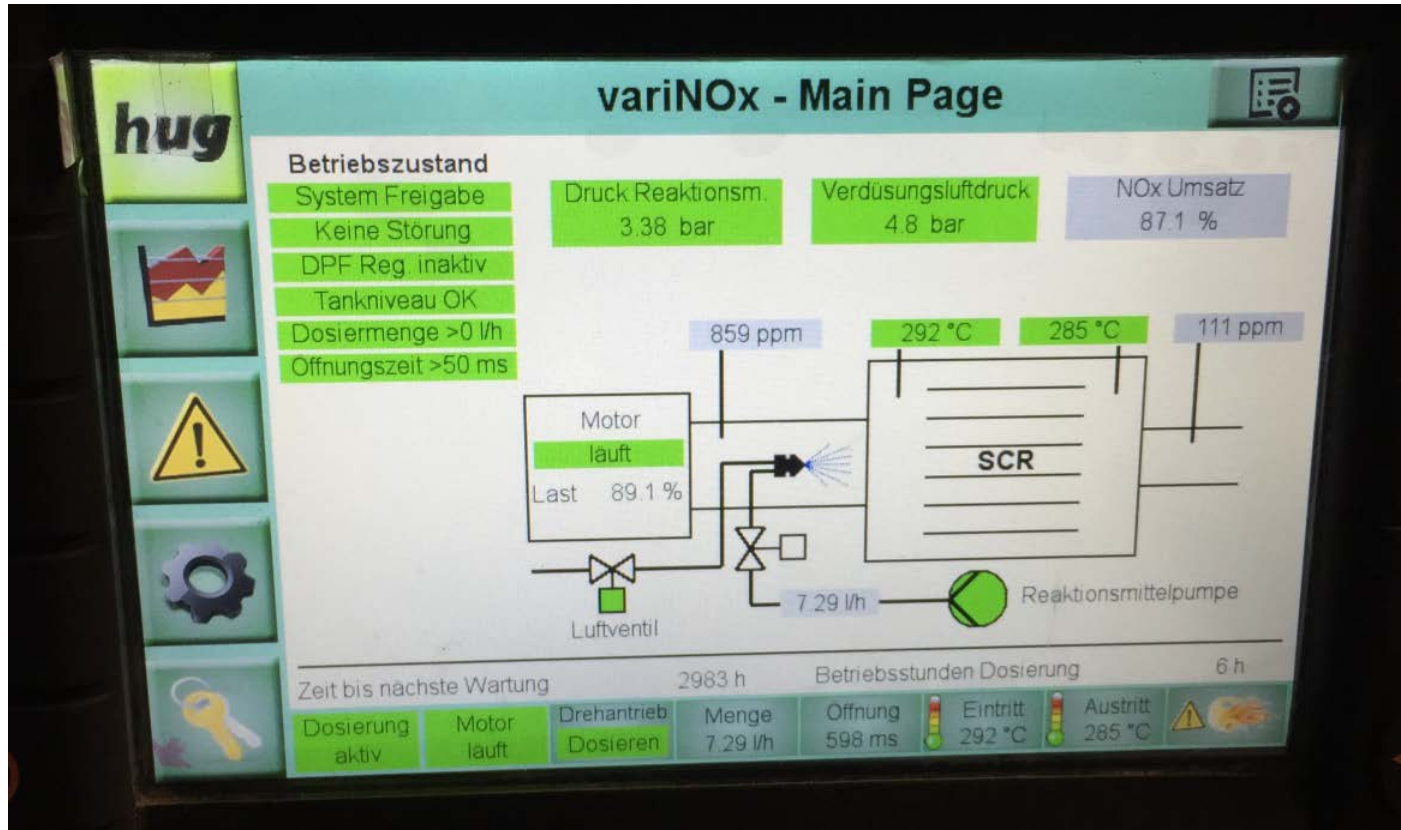
SCR-Catalyst

Soot filter





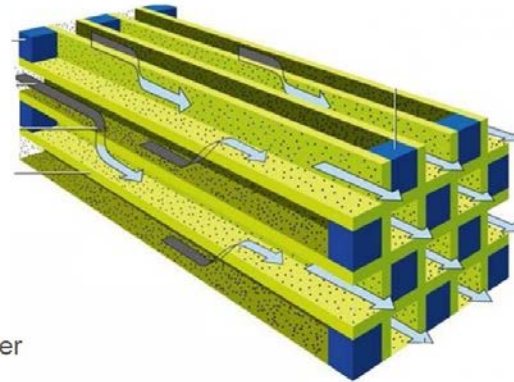




Ablagerung und Abbrand der Partikel in der durchströmten Filterwand

Abscheidegrad > 97%  
unabhängig vom  
Beladungszustand und  
Strömungsbedingungen

Starker Anstieg des  
Gegendrucks bei ungenügender  
Regeneration oder  
Aschebelastung



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