

# Welcome to the "Scrubber Observatory Platform" An Exchange of Best Practice among scrubber technology stakeholders

12 October 2017

## Morning Session

- 09:00 Registration and Welcome, Per Stefenson, Stena Teknik
- 09:30 Overall presentation of the Scrubbers: Closing the Loop Project, Per Stefenson, Stena Teknik
- 10:00 Technical experience of the scrubber installation project, Björn Asplind, Stena Line
- 10:30 -12:00 Onboard visit, Stena Hollandica

## Workshop

- 13:00 Results - exhaust gas measurements, Hulda Winnes, IVL Swedish Environmental Research Institute
- 13:20 Presentation of scrubber waste management guidelines, Andy Wright, Lloyd's Register
- 13:40 Presentation of EU project: deployment of affordable scrubber retro fitting technology, Laura Langh, Langh Group
- 14:00 Wider discussion on experience of scrubbers and Port Reception Facilities, Ron van Gelder, Port of Rotterdam
- 14:30 Coffee
- 15:00 Experiences from participants: Discussion on challenges and results emerging from Motorways of the Sea projects, manufacturers and shipowners' experiences. All participants



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## Scubbers: Closing the loop

Activity number	Activity title	Indicative start date	Indicative end date	Milestone number
1	Installation of scrubber on Stena Britannica	01/09/2015	31/03/2018	1, 2, 18
2	Installation of scrubber of Stena Hollandica	01/03/2016	31/05/2018	3, 4, 19
3	Integrated Life Cycle Balance	24/08/2015	30/06/2018	5, 6
4	Development of guidelines on ship and on shore	01/09/2015	30/06/2018	7, 8
5	Scrubber observatory platform	15/09/2015	30/09/2018	9, 10
6	SME training (North and South of Europe)	01/01/2016	15/11/2018	11, 12
7	Single Window Port Reporting System	01/01/2015	30/12/2018	13, 14
8	Port Efficiency	21/04/2014	31/12/2017	15, 16
9	Horizontal activities	01/01/2015	31/12/2018	17



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## Activity 1 and 2; Installation of closed loop scrubbers on Stena Britannica and Hollandica



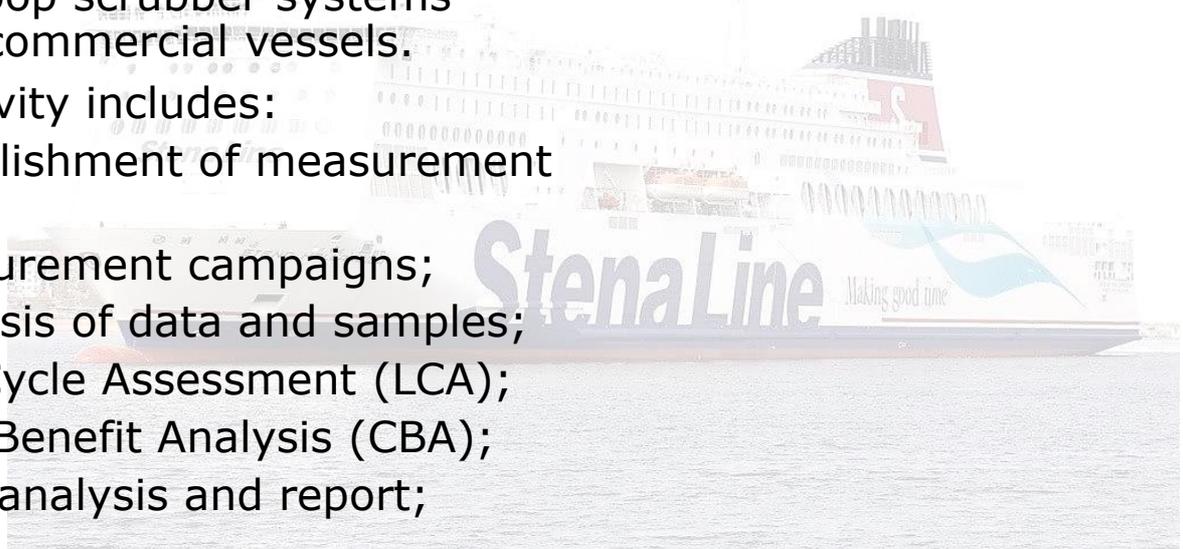
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### **Activity 3; Integrated Life Cycle Balance**

- The purpose is to establish the commercial and environmental impact of the installation of closed loop scrubber systems aboard commercial vessels.
- The Activity includes:
  - Establishment of measurement plan;
  - Measurement campaigns;
  - Analysis of data and samples;
  - Life Cycle Assessment (LCA);
  - Cost Benefit Analysis (CBA);
  - Final analysis and report;

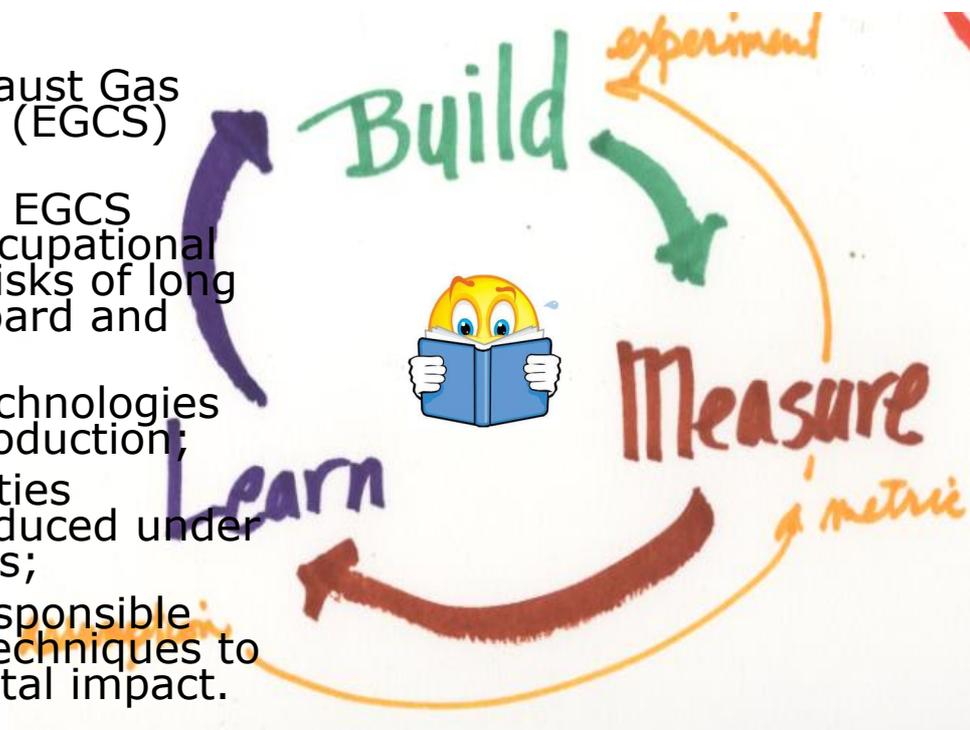


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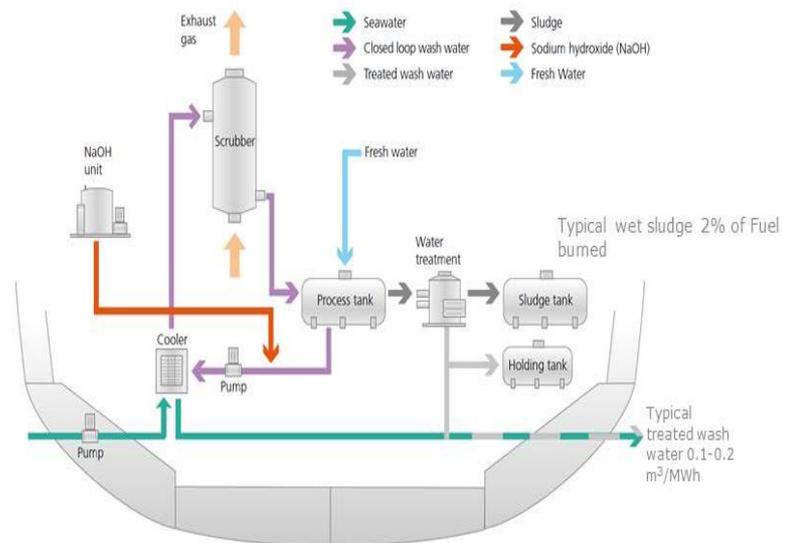
## Activity 4; Development of guidelines on ship and on shore

- Assessment of Exhaust Gas Cleaning System's (EGCS) waste composition;
- Risk assessment of EGCS waste, including occupational health and safety risks of long term storage on-board and pollution risks;
- Consideration of technologies to reduce waste production;
- EGCS waste quantities expected to be produced under a range of scenarios;
- Environmentally responsible waste processing techniques to reduce environmental impact.



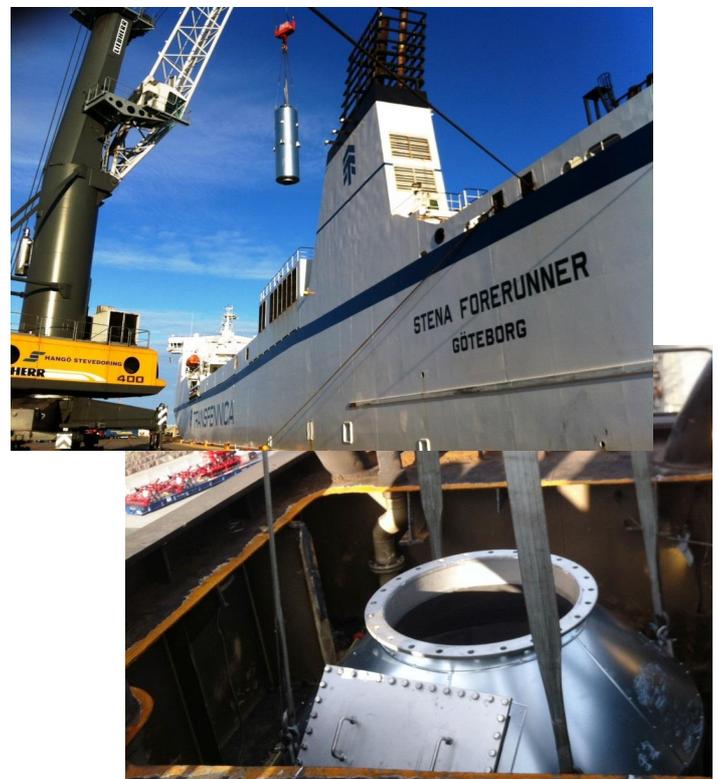
## Activity 5; Scrubber observatory platform

- The objective is to allow interested stakeholders (manufacturers, ports, operators, etc.) to share best practices and exchange information on the purchase, installation and operation of scrubbers.
- Identify challenges hindering the uptake of scrubbers. The aim is to include all stakeholders also those who are involved in other Motorways of the Sea projects concerning scrubber installation and use.
- The overall scope of this platform is to ensure that ongoing initiatives on scrubbers share know-how and identify knowledge gaps.



## Activity 6; SME training (North and South of Europe)

- The aim is to share the knowledge and experience on sulphur compliance gained, with small and medium size enterprises (SMEs) in the shipping sector to help them make informed decisions on alternative compliance methods.
- The project will also ensure sharing of knowledge and experience from the North of Europe, with SMEs in the South of Europe. With the sulphur limits decreasing to 0.5% in 2020, ship owners in the EU waters of the Mediterranean will also have to plan compliance with the new rules.



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- **Activity 7; Single Window Port Reporting System**
- **Activity 8; Port Efficiency**
- **Activity 9; Horizontal Activities**

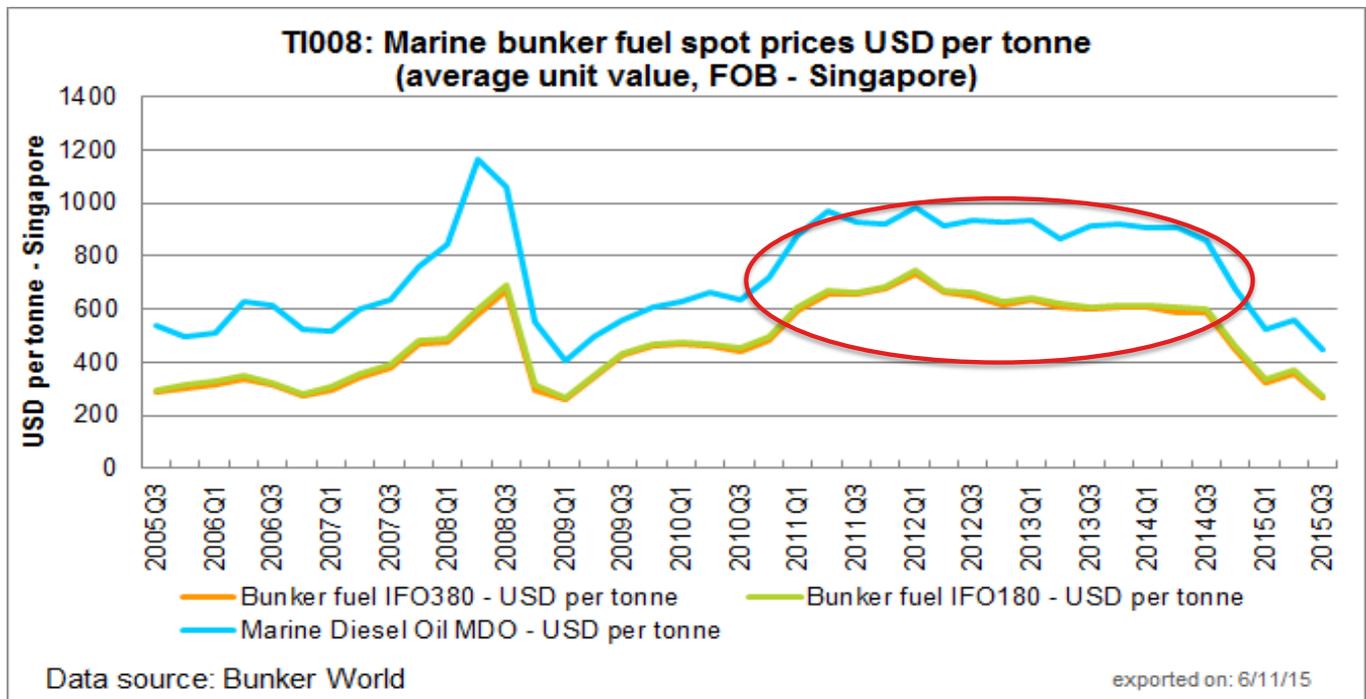


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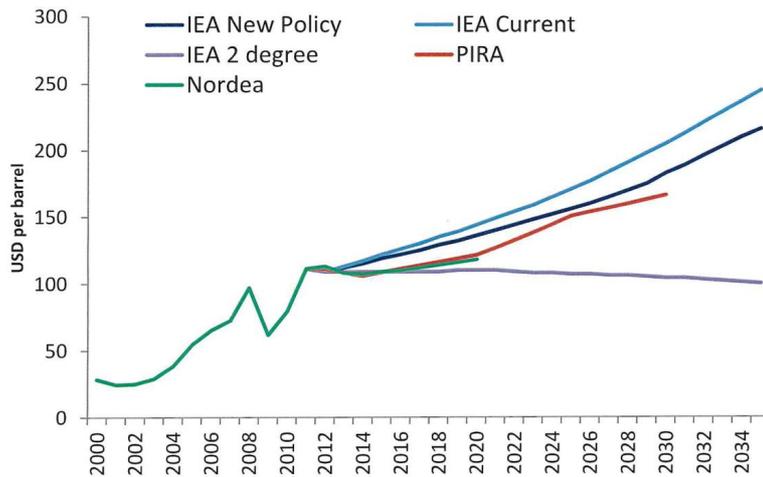
**Technology is great but cost is always an incentive...**



## ...but who knows where we are going? Forecast 2013

The triple digit barrel is here to stay

	Q1	Q2	Q3	Q4	Year
2012	118	109	109	110	112
2013E	113	104	108	110	<b>109</b>
2014E	108	104	108	109	<b>107</b>
2015E	107	103	106	108	<b>106</b>



Source: IEA