

The EFFORTS Demonstration Event on Clean Energy Management, on Water Quality and on Air Quality in Le Havre drew a large and interested audience



On September 22nd and 23rd, an interested international audience gathered in the Port of Le Havre to learn about the work done on clean energy management, water quality and air quality in ports within EFFORTS.

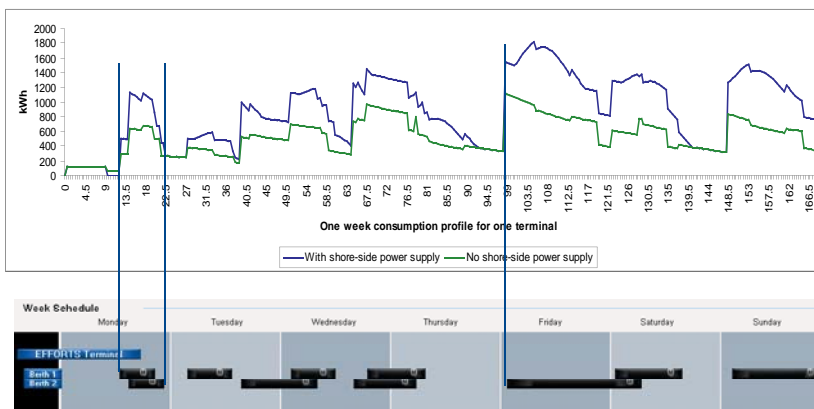
After a warm welcome from the GPMH Manager Mr Jean-Yves Le Ven and a project briefing from Yann Tréméac of TL&A, the delegates visited the Port of Le Havre and its surroundings.

Clean Energy Management in Ports



The afternoon of the 22nd was devoted to Clean Energy Management.

Jean-Francois Emery and Pascal Galichon of GMPH quite explicitly explained, why clean energy management should be a matter of concern to all ports.

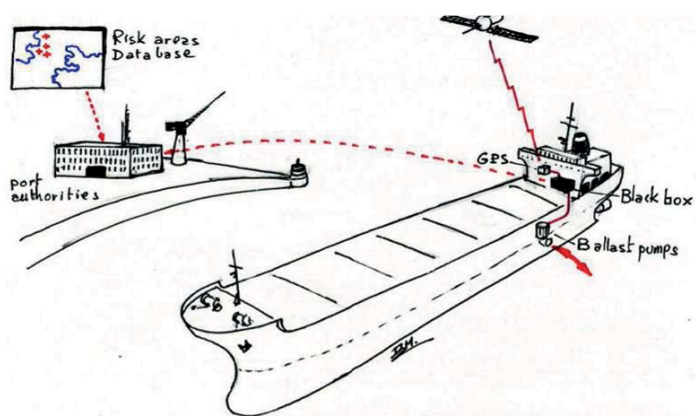


This lead over to the very elaborate presentation of Jonathan Roberts of AREVA, who prepared the study together with Olivier Harnois and Sylvain Mouillac of CORYS TESS.

After introducing the methodology and specifying the tools needed for the investigation, he showed by means of a simulation, how these tools can be used in practice. Jonathan concluded the presentation by specifying future research work.

EFFORTS NEWSFLASH

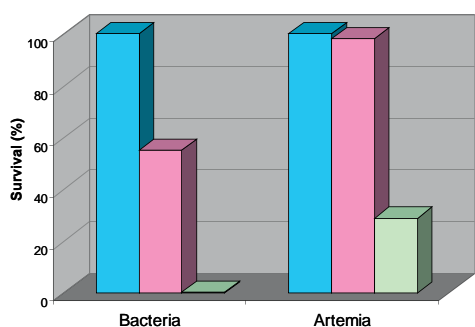
Water Quality in Ports



The following day was devoted to water and air quality in ports. Here, too, EFFORTS has done some landmark research.

Dr. Daniel Masson of IFREMER started off the morning with an introduction to the existing and upcoming regulations on ballast water management, in particular the new Ballast Water Convention. After talking briefly about the legal basis and the enforcement time scale, he explained what effects this convention will have on ports.

Pilot system scale assays: Ballastodrome



- T0
- T24h - Control
- T24h - Mexel 50 mg/L



Dr Masson's presentation was followed by Dr David Corroler of the University of Caen. David introduced the project work done on Ballast Water Quality during Ship Reception. He started with characterising the main harmful micro-organisms that can be carried in the ballast water of ships and explained the laboratory tests they developed to ascertain the efficiency of three selected substances against bacteria, phytoplankton and zooplankton, finding the best compromise between biocide efficiency and environmental acceptability. The selected biocide was first tested in a laboratory "ballast water" environment, before it was taken for real life investigations on different vessels with ballast water from different geographic regions.

continuation on page 3

EFFORTS NEWSFLASH

continuation from page 2

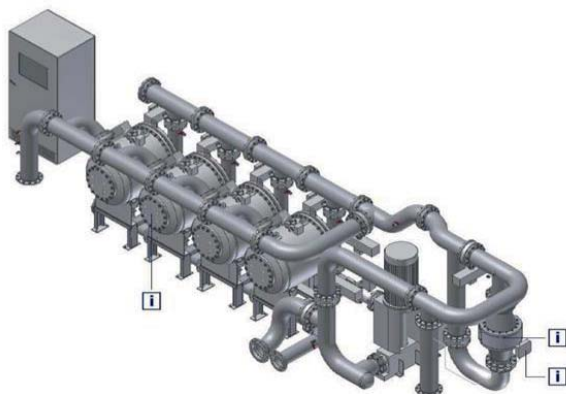
Ballast Water Management – Impacts on vessels (7/7)

Baujahr	BW [m ³]	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
< 2009	1500 ~ 5000	D1/D2								D2			
< 2009	<1500 >5000	D1/D2								D2			
> 2009	< 5000					D2							
≥ 2009 < 2012	> 5000	D1/D2								D2			
≥ 2012	> 5000									D2			



Jukka Sassi from VTT Finland picked up the thread by introducing the Requirements for Ballast Water Treatment Technologies on Vessels and stated five prerequisites that treatment technologies must fulfil to be acceptable. They must be safe for the ship and for the involved personnel, they must not harm the environment or public health, they must be practicable and fit in with shipboard operations, they must be biologically effective, and they must incur as little as possible costs. He underpinned these points with illustrious examples.

CleanBallast



Turning from the ship to the port, Dr Daniel Masson reported on Ballast Water Management in Ports. By using very vivid real world examples, he illustrated the necessity for proper ballast water management in ports and outlined the basic features of such management scheme. In the essence, control of compliance must be fast, simple and reliable. Any necessary treatment must be efficient and the costs must be covered according to the “polluter pays” principle.

The second part of the morning was devoted to Aluminium toxicity in ports and was introduced by Christophe Gautier of GPMH. In ports, there are many steel structures that are prone to heavy corrosion through the aggressive environment. As this corrosion occurs mainly through galvanic currents, aluminium anodes are used to divert the negative effects of the galvanic current away from the steel structure and onto the anode. In the process, metal of the sacrifice anode goes into solution with the water. The task was to find out, if this process poses a health risk to people and other living species.



continuation on page 4

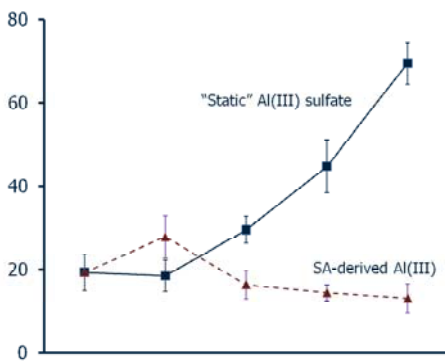
EFFORTS NEWSFLASH

continuation from page 4

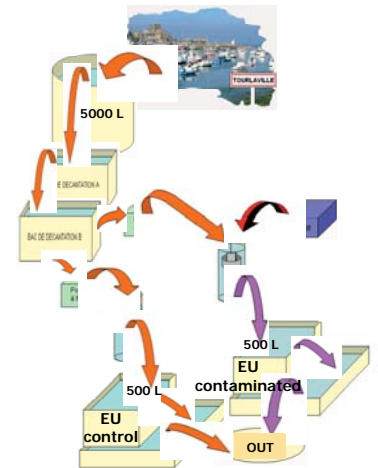
In order to set the scene and to provide the audience with the necessary background knowledge, Professor Giovanni Pagano of the Naples Federico II University presented a learned paper on Aluminium Toxicity in Environmental Health. In the paper, he briefly reported the results of 80 years of research on aluminium toxicity, that were the starting points of the research the university's team conducted. By assessing the effects of aluminium on sea urchins' early development the team observed that toxicity was present, when the metal came into the water by dissolving the metal's sulphate salts, but not, when the metal came into the water through sacrificial anode solution, as it is the case in ports.



Al(III)-induced developmental toxicity to sea urchin embryogenesis

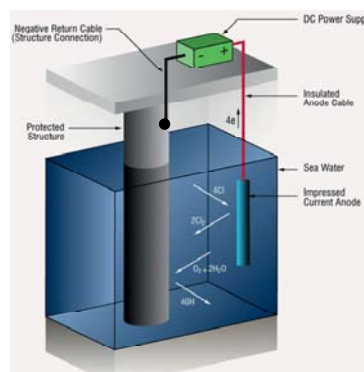


* p = 0.007



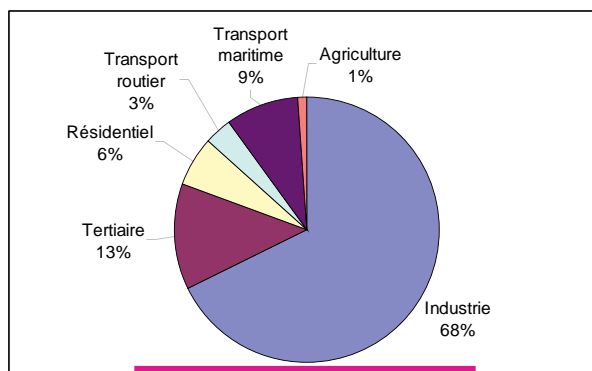
Dr Christelle Caplat and Cedric Gabelle of the University of Caen continued with a very interesting and depictive presentation of Aluminium Pollution related to the Protection of Ports Infrastructures. They explained how they first assessed the aluminium concentration in water, sediment and living organisms in the port environment and how they then assessed the aluminium toxicity on marine organisms and the potential environmental impacts of the use of sacrificial aluminium anodes. They concluded their presentation with a plea for active bio-monitoring in ports to gain more knowledge and experience in this matter.

Laurent Walle of TL&A picked up the idea and presented Recommendations and Tools to Help Ports to Assess Impacts of Quay Protection with aluminium anodes. He started by introducing corrosion issues and rehabilitation techniques, gave an assessment of these techniques and introduced some interesting tools, before giving his recommendations. His plea was to think first, before starting to build installations and to consider other technical feasibilities, costs and the environment. There might be better choices than anodic protection.



EFFORTS NEWSFLASH

Air Quality in Ports



Fine particles (PM10)

The afternoon of the day was devoted to Air Quality in Ports.

Jean-Paul Raffini of GPMH started off with a brief introduction of work the Port of Le Havre is doing to reduce air pollution in the port through the implementation of an Air Protection Plan.

He talked about ships' emissions, that account for 9% of emissions in the port, and of emissions attributed to port handling, that account for 80% of the port's emissions.



Jérôme Taranto of Biowind introduced an innovative system for the treatment of pollutants generated by port operations. The new system is based on photo catalysis and employs an advance oxidation process that allows a near complete removal of cancer-causing volatile organic compounds. After laboratory tests, a prototype "air cleaner" was developed and tested in the field on diesel engine exhaust fumes and on fuel vapours during fuel loading. The tests showed that photo catalysis treatment of fumes and vapours is more effective and less costly than treatment with activated carbon.

continuation on page 8

EFFORTS NEWSFLASH

continuation from page 7



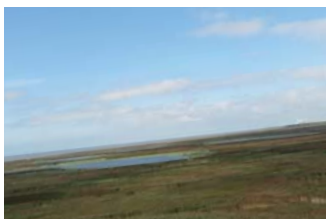
In a very interesting presentation Steve Labeyrie reported that the photo catalysis systems was evaluated further by testing it on fuel vapours during fuel loading and discharging on inland tank vessels. As the efficiency of the photo catalysis treatment had been established in the earlier tests, Steve's report focused on the practicalities of using the equipment in actual operations for preventing volatile organic compounds polluting the atmosphere. It emerged that the dimensioning and the designing of the equipment posed a lesser challenge but that quite a few administrative and regulatory hurdles must be overcome, before tankers and bunker vessels can be equipped with this new system.



Steve's paper marked the end of the demonstration event. Yann Tréméac of TL&A concluded the meeting by thanking the presenters and the EFFORTS team members for the tremendous work they had put into their projects and their presentations, by thanking the audience for their interest and support, by thanking the organisers for a perfect and highly appreciated arrangement, and, last but not least, by thanking the European Commission for having made EFFORTS possible.



EFFORTS NEWSFLASH



A SINCERE THANK YOU VERY MUCH TO ALL THAT MADE THIS EVENT SUCH A GREAT SUCCESS

GRAND PORT MARITIME DU HAVRE

Contact:

Administrative Coordinator
 Dr. Valerio Recagno
 D` Appolonia S.p.A
 Via San Nazaro 19
 I-16145 Genova,
 Tel.: +39 010 3628148
 Fax: +39 010 3621078
 www.dappolonia.it

Leader Technical Coordination Team (TCT)
 Prof. Jens Froese
 University of Technology Hamburg
 Maritime Logistics/ISSUS
 Schwarzenbergstrasse 95c
 D-21073 Hamburg
 Tel.: +49 40 42878-6133
 Fax: +49 40 42878-6135
 www.maritime-logistics.de

Further members of TCT:
 ICES International Consulting Environment Services, France
 TL&A TL&Associés

Editing Team:
 Dr. Svenja Töter, TUHH/ISSUS
 Helga Wagner, HPTI
 Jan Prahm, TuTech Innovation GmbH

Layout:
 TuTech Innovation GmbH
 Harburger Schloßstrasse 6-12
 21079 Hamburg, Germany



Project is part-financed by the European Union

www.efforts-project.org