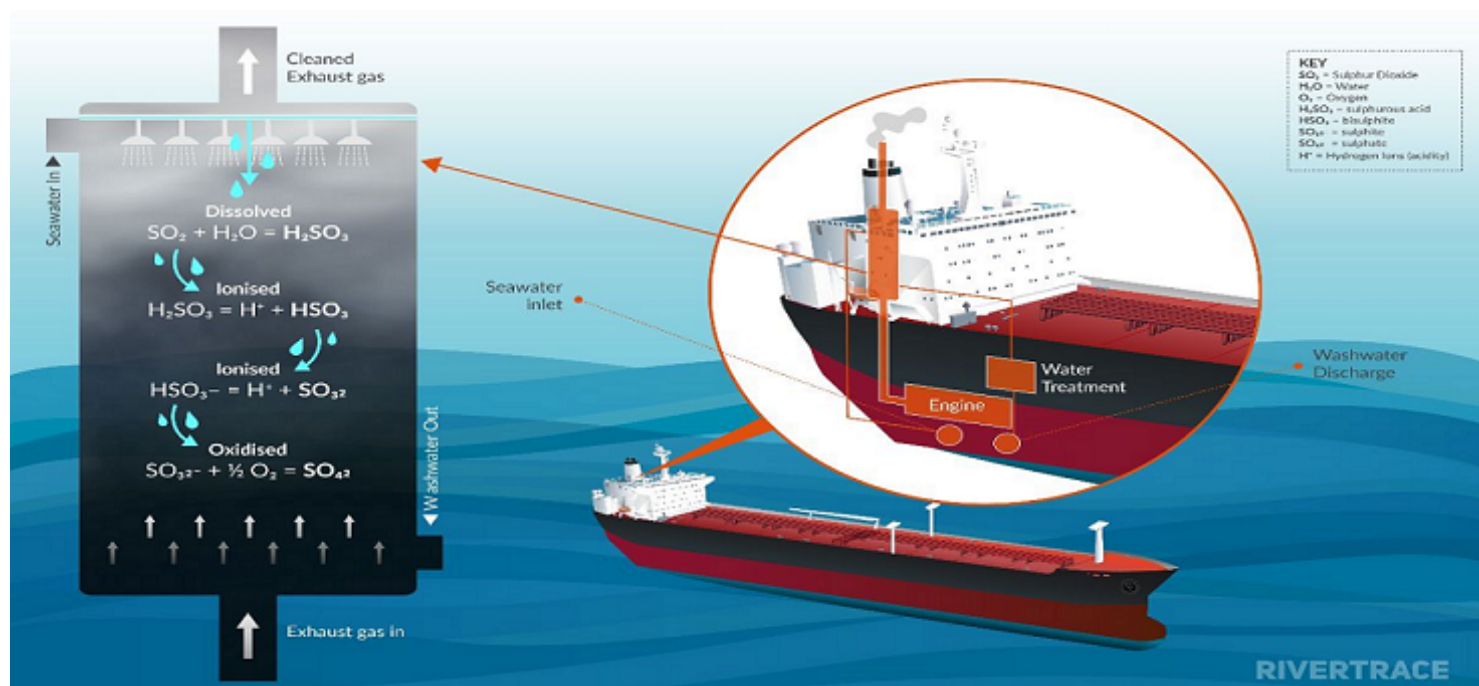




Evaluation, control and Mitigation of the EnviRonmental impacts of shipping Emissions



Source: Drydock Magazine, [Rivertrace publishes new white paper on scrubber technology and washwater monitoring](#), Jun 5, 2019

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PROJECT UPDATES

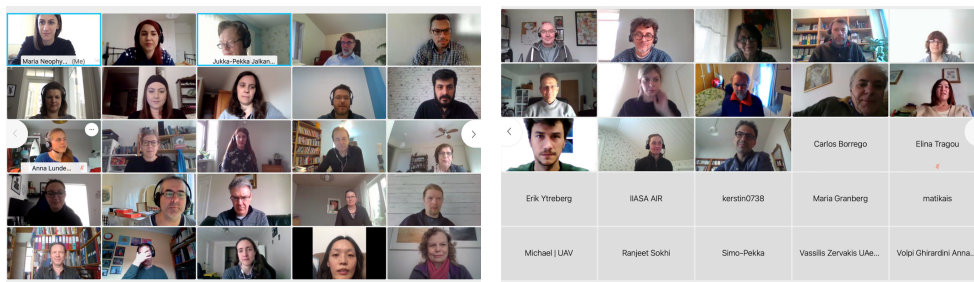
The project continues its smooth run despite the COVID-19 pandemic outbreak and its related confinement measures. All activities are on time so far, delays occurred due to the postponement of measurement campaigns.

Field campaigns in the Oresund region (Sweden) will be organised by the end of August-beginning of September and the onboard campaign by the end of October 2021. At the same time, the Piraeus port campaign is scheduled to take place early or middle of Autumn 2021.

NEWS

EMERGE ANNUAL GENERAL ASSEMBLY

The project partners gathered for the annual general assembly which was held online due to pandemic restrictions, on 11th and 12th of March 2021. After an overview of the project by the coordinator Prof. Kukkonen, FMI, each work package leader presented the current status of its work package and the plans for the next period. Also the challenges faced so far were discussed. On the second day the project partners responsible for the case studies and the modelling and impact assessment, reported their progress and difficulties faced during the first year of the project. The general assembly closed with the summaries of the main decisions and future plans.



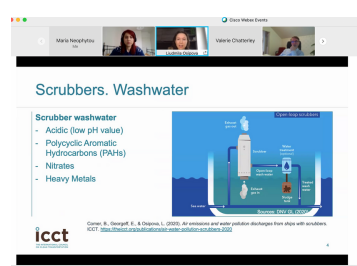
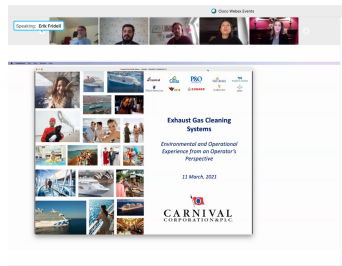
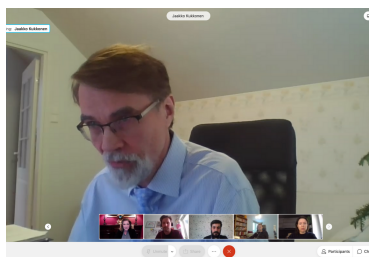
Group photo during the EMERGE annual general assembly

FIRST STAKEHOLDER WORKSHOP

The first Stakeholder Workshop of the EMERGE project entitled 'Abatement of the emissions and discharges of shipping' was held online on the 11th of March 2021 between 09.00-11.00 (CET). The event proved very popular and attracted about 140 attendees from around the world. Ms. Valerie Chatterley, consultant at Carnival Corp & plc. delivered a presentation titled 'Exhaust Gas Cleaning Systems an Environmental and Operational Experience from an Operator's Perspective'. Dr. Liudmila Osipova, researcher at The International Council on Clean Transportation presented on 'Global scrubber washwater discharges under IMO's 2020 fuel sulphur limit' and shared her views. Prof. Jaakko Kukkonen from the Finnish Meteorological Institute, and coordinator of the EMERGE, provided an overview of the project, the achievements to date and perspectives for the future. In addition, Ass. Prof. Erik Ytreberg at the Chalmers University of Technology (project partner) delivered a presentation on the potential impacts of scrubber discharges on the marine environments.

The workshop was the first in a series that aims to facilitate industry input to the project to enable the strongest possible and most authoritative, evidence-based outcomes for the maritime sector from the EMERGE project.

You can also follow the [link](#) for the recorded workshop, published on EMERGE's YouTube channel.



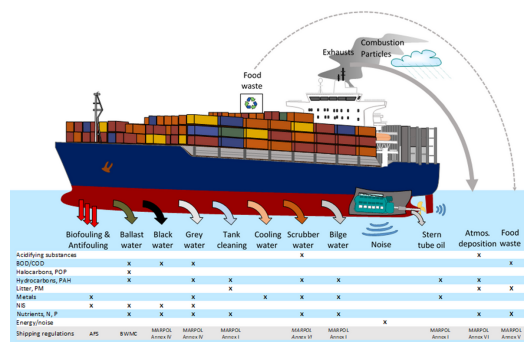
First Stakeholder Workshop of the EMERGE project entitled 'Abatement of the emissions and discharges of shipping'

PUBLICATIONS

- **Jalkanen et al., 2021. Modelling of discharges from Baltic Sea shipping. Ocean Sci., 17, 699–728, 2021.**

Read [here](#).

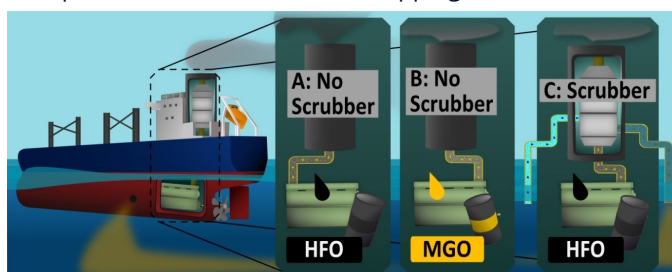
This paper describes the methodology used in ship discharge modeling. There are a lot of environmental regulations which define what, where, when and how ships are allowed to discharge water from emission abatement equipment, toilets, washing basins and many other sources. This paper is the starting point of the work we do in EMERGE, because it describes the various pollution sources from ships. With this approach, the quantities of various discharges and their chemical composition can be included in consecutive steps of environmental impact assessments.



- **Hermansson et al., 2021. Comparing emissions of polyaromatic hydrocarbons and metals from marine fuels and scrubbers. Transportation Research Part D: Transport and Environment, Volume 97, 102912**

Read [here](#).

In this paper scrubber discharge water characterization showed that the acidified water also becomes enriched with contaminants, and large quantities of metals and polyaromatic hydrocarbons (PAHs) are thus being discharged directly to the marine environment. When emissions of contaminants to the atmosphere and the marine environment are evaluated simultaneously, the results show that HFO, with scrubbers installed, generates higher emission factors of both metals and PAHs compared to MGO. The use of an open loop scrubber is not reducing the emissions from shipping, only changing the primary recipient from air to water, moving the problem below the water surface. The evaluation of scrubbers as potential abatement methods highlights the importance of applying a holistic approach, considering both the marine environment and the atmospheric processes, when comparing environmental loads and impact of contaminants from shipping.



FUTURE EVENTS

ITM | 18-22 October 2021

38th International Technical Meeting on Air Pollution Modelling and its Application- Barcelona, Spain

Air Quality Conference | 28 March 2022

13th International Conference on Air Quality Science and Application- Thessaloniki, Greece

RELATED ARTICLES

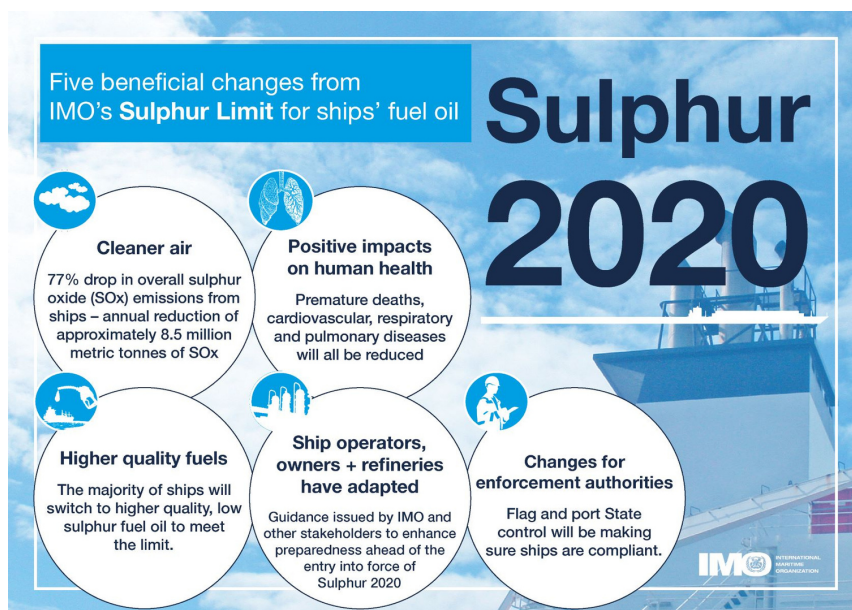
Global scrubber washwater discharges under IMO's 2020 fuel sulfur limit

This is first global assessment of the mass of washwater discharges from ships using scrubbers to remove sulfur from exhaust, by Osipova et. al.

Read the full article [here](#).

Five beneficial changes from IMO's Sulphur Limit for ships' fuel oil

Read more [here](#).



Source: IMO 2020 – cutting sulphur oxide emissions.

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EMERGE project under the Policy Area Ship was granted a Flagship status



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 874990

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