EMERGE - Update

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ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
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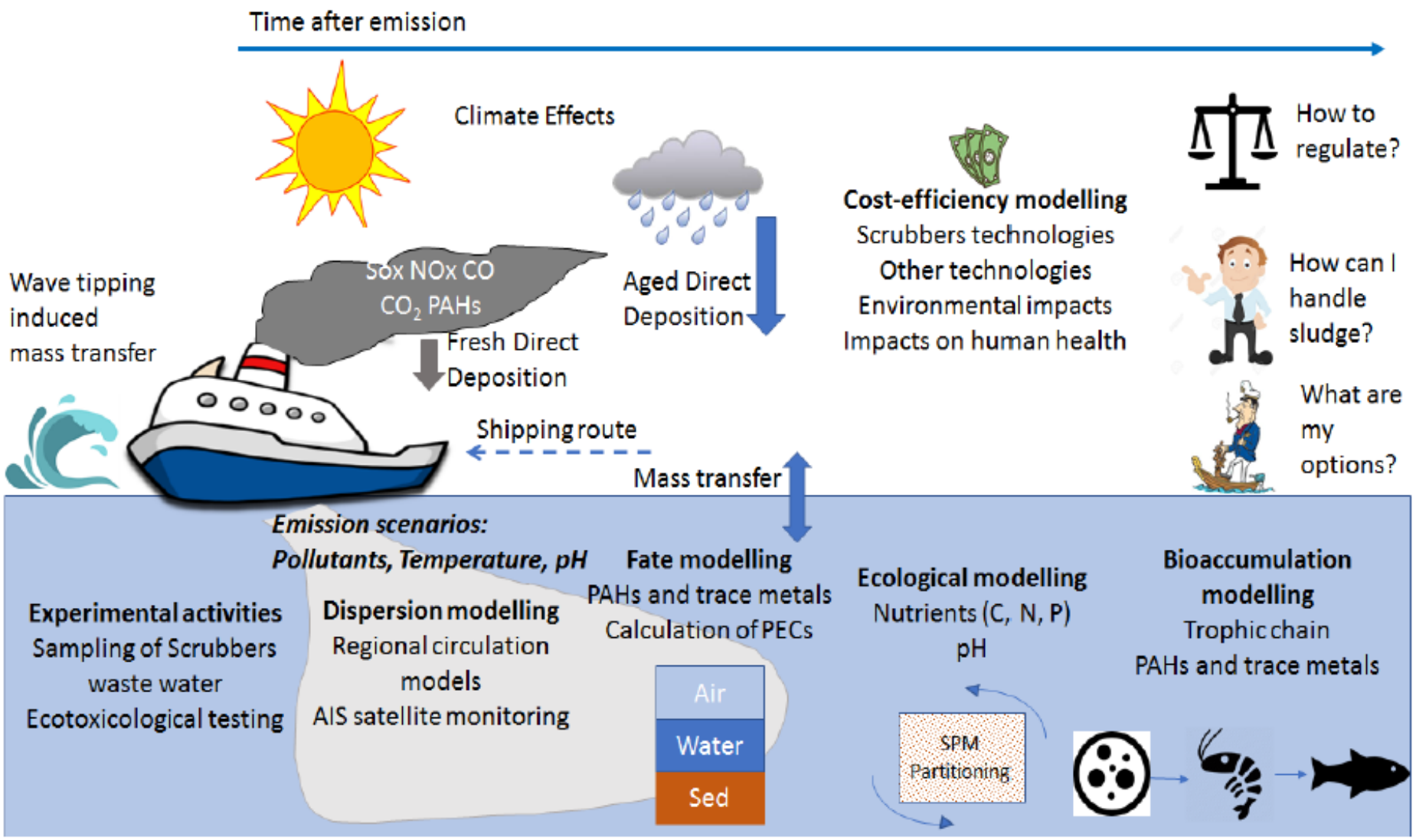
EMERGE | THE EMERGE PROJECT

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

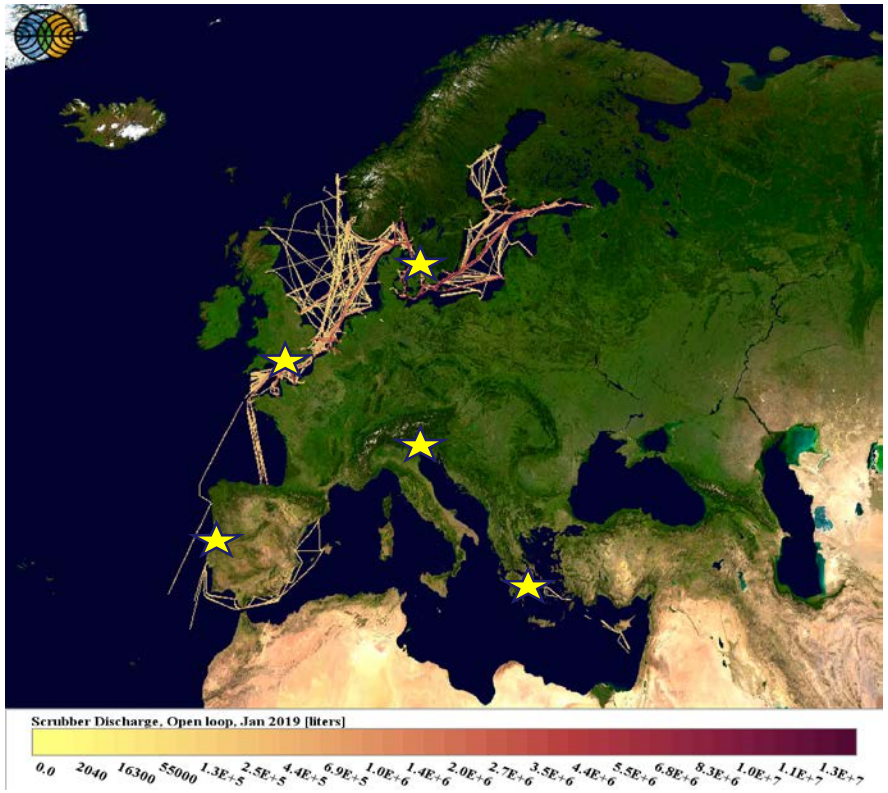
EMERGE in a nutshell



Currently at Month 9/48

Experimental work

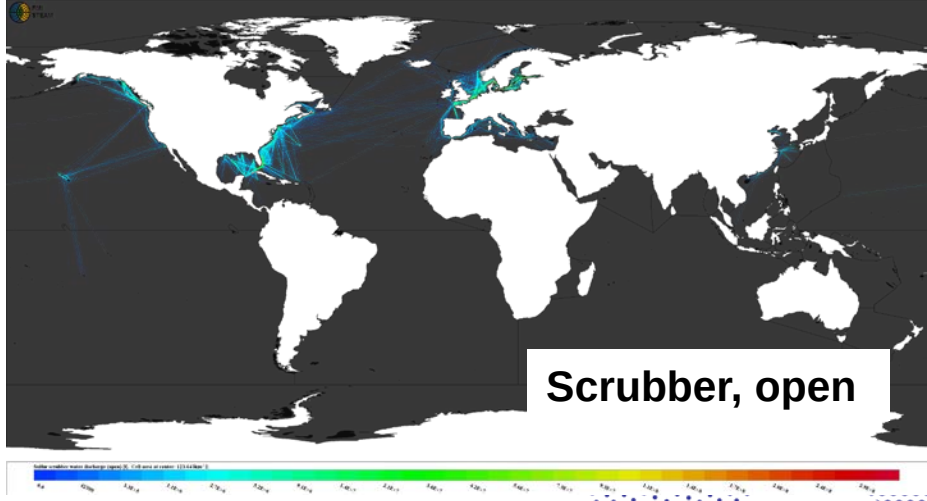
- Six case studies
  - Öresund, SE
  - Solent Strait, UK
  - Aveiro Lagoon, PT
  - North Adriatic, IT
  - Piraeus, GR
  - Onboard
- Contacting owners of scrubber vessels visiting each site
  - Onboard work delayed, travel restrictions
  - Plan A: Project partners do the sampling
  - Plan B: Vessel crew is trained to do sampling
  - Plan C: Use laboratory scrubber
  - Plan D: Use existing data
- Sampling protocols developed
  - Details of sampling, storing, logistics, measurements
- Background water sampling, data collection



Open loop scrubber discharge, Jan 2019 [liters], Fixed case study sampling sites indicated by stars

Modeling

- Baseline year 2015
  - Marine, air quality data available for comparison
- Scenarios for 2020, 2030, 2050
  - Busines As Usual (BAU) + others
- Setup for local/regional air/water models
  - Combination of physics and chemistry/biology in ocean models
  - Example datasets provided, development of interfaces
- Impact assessments
  - Development of new capability for IIASA GAINS model
- Global modeling of air emissions, discharges and underwater noise are possible



Outreach activities

- Contact established with **ICES** Working Group SHIP
  - Hassellöv (co-chair), Jalkanen
- Introduction of EMERGE in **OSPAR** WG MIME (Monitoring and on Trends and Effects of Substances in the Marine Environment)
- Support for **EMSA/ECMWF/EEA** shipping environment report
  - To be published in 2021
- **HELCOM** reporting of ship emissions to air, discharge and underwater noise
  - Maritime20 meeting
- Scientific paper of discharge modeling
  - Jalkanen et al, Ocean Science Discusssions, 2020, in review
- Stakeholder survey on SOx scrubber experiences/costs
  - Delayed because of low response rate, will switch to interviews

Thank you

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