CSHIPP - Clean Shipping Project Platform

PA Ship Steering Committee Meeting
10 November 2020

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University of Turku

Interreg Baltic Sea Region
EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND
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Clean Shipping Project Platform

CSHIPP – partners of the project platform

- 14 Project partners from 7 countries: Finland, Estonia, Sweden, Norway, Poland, Germany, Denmark, Russia
- 13 Associated Partners
- Project time: 10/2018 **- 03/2021**
- Total budget: 1.1 million €

Priority area: Sustainable transport

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CSHIPP – synergy and synthesis

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EnviSuM

SHEBA

ECOPRODIGI

BSR ELECTRIC

WP2 Research-to-Policy Clean Shipping Activities

WP3 Online Dissemination of the Clean Shipping Data

WP4 Business Potential in Clean Shipping Technology

WP5 Platform Influence

Baltic LINes
Coherent Linear Infrastructures in Baltic Maritime Spatial Plans

smartup accelerator

GoLNG

Policy guidance for clean shipping in the Baltic Sea Region

- Priority policy options identified in CSHIPP Policy workshop held on 4 September 2019 in Gothenburg
  - Discharge of scrubber wash water
  - Shore power
- Submitted for HELCOM Green team 4-2020 and MARITIME WG 20-2020

Policy guidance on scrubber wash water

To comply with the recent international regulations on ship emissions, such as the implementations of Sulphur Emission Control Areas (SECA) regulations and IMO 2020 global low sulphur cap for marine fuel, some ships limit their emissions by installing exhaust gas cleaning systems. These systems are called scrubbers.

A scrubber will literally wash the exhaust gases with water. The SO2 in the exhaust originating from sulphur in the fuel will be together with some other gaseous and particulate pollutants removed by the scrubber. The wash waters will collect these harmful compounds. If the wash waters are released directly to sea, the system is called "open loop". When the wash waters are treated, recirculated in the system and the waste sludge is stored onboard the ship to be disposed to a treatment reception facility in a port, it is a "closed loop" system. This method also releases part of the treated wash waters, the so-called bleed-off, to the sea, the volume is however, much lower while the concentration of pollutants is higher than in case of the open-loop scrubber.

The so-called open loop scrubbers pump sea water into the scrubbers and release acidified water polluted with metals, nitrates and toxic organic compounds, such as polyaromatic hydrocarbons, into the sensitive coastal marine environment. In essence it just transforms pollution from one form to another.

owners is known to be driven by a strong economic incentive: installing a
costs as dirtier (but cheaper) fuel oil can be used while still complying with
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posed to IMO Marine Environment Protection Committee (MEPC) 74 to work
en-loop scrubbers.

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Workshop held on 4
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Policy guidance on the development of shore power at ports

When ships are at berth they can stop their main engine(s) since the propulsion is not needed anymore. But some basic functions still need to be supported and require the production of (energy such as) electricity. Therefore, auxiliary engines are still commonly used when ships are in ports.

The use of shore-side electricity allows the ship to reduce as much as possible the use of auxiliary engines and thus to reduce air emissions of CO2, NOx and SOx as well as particulate matter. The use of shore power would limit the negative effects of such emissions on the human health and environment surrounding the berthing areas. If electricity originates from clean and renewable sources use of the use of shore power will also reduce air pollution in wider region and the climate impact.

The use of shore power electricity, also called cold ironing, has been developed in several ports on the global scale. Few Baltic Sea ports have implemented the regular use of shore power for the berthing ships.

The development of shore power in ports was identified as a priority policy option by CSHIPP. During the Policy Workshop held on 4 September 2019 in Gothenburg, experts from different Baltic Sea Countries and also from countries outside the Region and the EU helped to define the next steps to produce guidance for this policy option in the Baltic Sea Region.

Main recommendations:

The use of shore power in the Baltic Sea Region is still limited to a few cases. The main guidance identified for this policy option are to:

- Increase the research on **international standards** for electrical power distribution common for different countries and continents;
- Increase the research on the **operational and technical aspects** of shore power onboard ships;
- **Promote shore power** in the shipping, port and energy sectors

Policy guidance for the use of scrubbers in the Baltic Sea Region

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Impacts on marine life and environment	Impacts of local regulations	Economic aspects
• Research is needed on the **impacts** on marine life and environment of the use of scrubbers (open and closed loop systems) • E.g. the **monitoring** of the use of scrubbers on board ships in the BSR: to have a better understanding of the release of scrubber wash waters and their impact in the ports and coastal area visited.	• The use of open loop scrubbers is banned in some ports or coastal areas in the EU • Increase knowledge on the **compliance** and **impacts of local regulations** on sensitive areas, support to translate the same motivation and regulations to the Baltic Sea area.	• Increase knowledge on the economic aspects; the economic incentives on installing and using scrubbers while using high sulphur fuel instead of using clean fuels is needed.

Policy guidance on the development of shore power at ports

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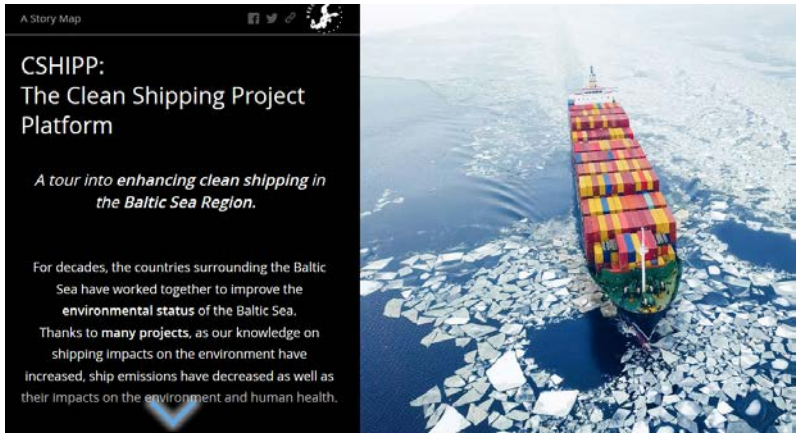
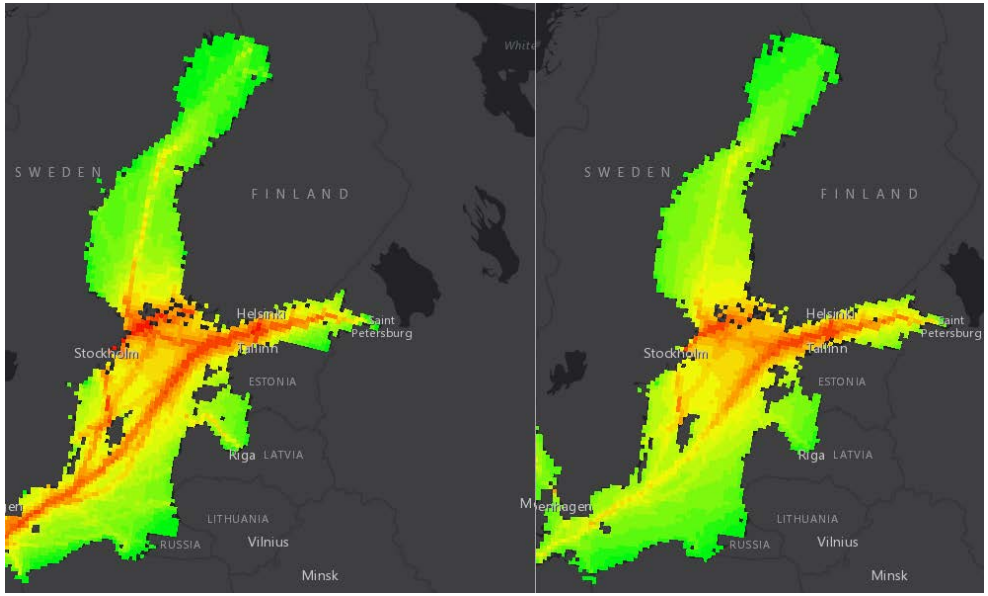
International standards	Operational and technical aspects onboard the ships	Promotion of shore power
• Definition of international standards for electrical power distribution: connection to national grid, power conversion (frequency) between the grid and the ships, etc. • Research on international standards; different countries and continents	• Research needed on operational aspects, e.g. on the different patterns of port calls • Time at berth depending of the ship type, cutting line to use shore power, reduction of emissions, etc. • Some technical aspects onboard the ships should also be investigated more: plug-in capabilities type and position, etc.	• Shipping, ports as well as energy sectors are among the stakeholders that should be involved in promoting shore power • Choice of source of energy to be used between fossil or renewable, positive insight of shore power • Identification and promotion current and future pilot projects

Clean Shipping Story Map online





- Clean shipping topics, results of CSHIPP and partner projects
- Ship emissions and discharges
- New clean shipping technologies, alternative fuels and propulsion
- Eco-efficiency and digitalisation

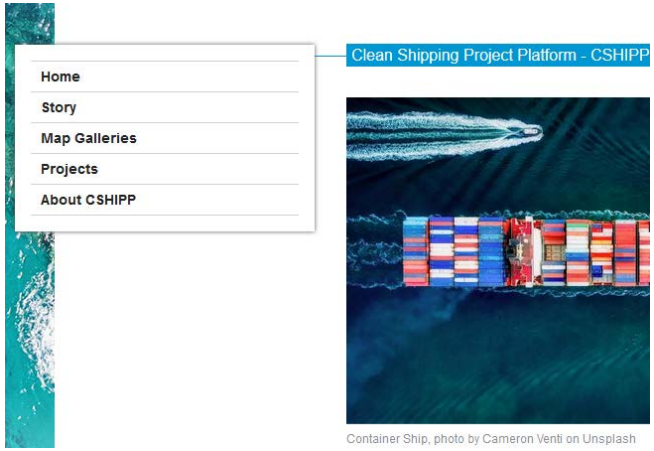
- Targeted to general public, students and youth, maritime students and onboard staff shipping experts, both in decision making and in industry.

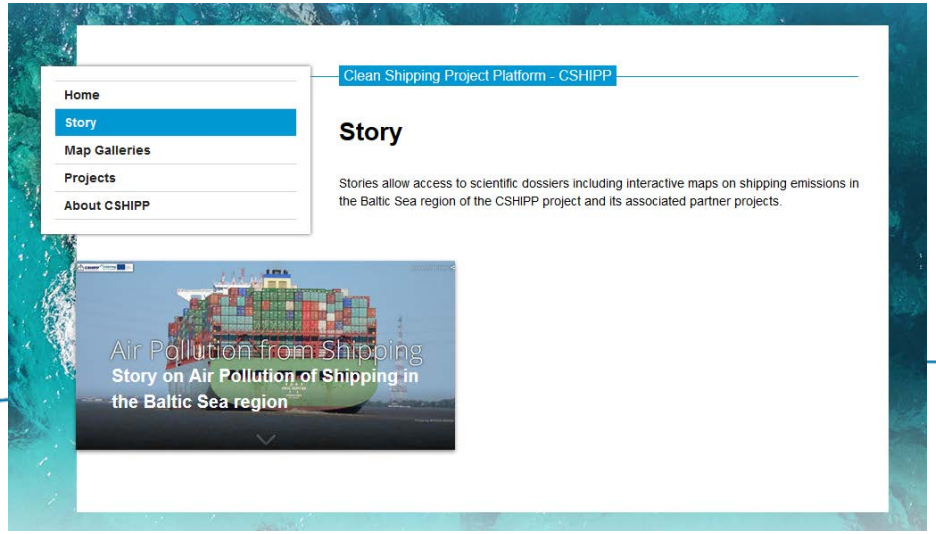
- E. g. Benefits on air quality regulation
  - Maps on sulphur (SO2) and particulate matter (PM)
  - Change in % between 2014 and 2016

- *CSHIPP Story map is hosted at HELCOM website*
- *The St. Petersburg Cleantech Cluster –translation into Russian and dissemination among Russian users*

Website on effects of shipping on air and water quality: maps, scenarios, modeling methods

- Website demonstrating effects of shipping on air and water quality has been opened at https://www.shipemissions.eu/.
- Hosted by coastMap web site of HZG
- Emission scenario maps (to be published in Map Gallery)





CROSS-SECTORAL COLLABORATION IN CLEAN SHIPPING PROJECTS

- **Report**: Best Practices to Utilise the Research-to-Business Network - collaboration between research organisations and industry end-users in the sector of Clean Shipping

- Published end October 2020

BENEFITS

CHALLENGES

Webinar: Clean Shipping International Policies - *Implementation, enforcement and environmental consequences*

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- Recent and upcoming IMO legislation targeting reduction of emissions of pollutants and climate impact from international shipping.
- **Three sessions** with discussion on impacts of the selected policies, assessment of technical options available for the shipping sector to comply with their targets, options to enforce the legislation, benefits of these environmental measures for air quality, water quality, and climate, including human health and well-being.
- Identification of major knowledge gaps and discussion on potential solutions.

Webinar on Friday 27 November 2020, 9:00 - 12:00 CET

Registration open at https://cshipp.eu/event/cshipp-webinar-on-international-clean-shipping-policies

Input to the final synthesis report and a policy brief on clean shipping policies prepared by CSHIPP.

Read the latest news and publications, and watch CSHIPP animation at www.cshipp.eu

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Thank you for your attention!

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