Green InfraPort: Port Reception Facilities in the Baltic Sea Ports

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Plan of the presentation

- Regulation concerning port reception facilities
- Passenger traffic in the Baltic Sea region
- PRF in the Baltic ports
- Challenging issues concerning PRF

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Regulation concerning port reception facilities

Amendments to IMO MARPOL Annex IV

In July 2011, IMO (after negotiations with HELCOM) designated the Baltic Sea as a special area for sewage from passenger ships by amending the Annex IV of the MARPOL Convention. The decision entered into force on 1 January 2013.

This means that all passenger ships sailing in the Baltic Sea will be obliged to treat the waste water on-board or discharge the waste in the ports to Port Reception Facilities.

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Regulation concerning port reception facilities

The effective application of this already existing legal status has been, according to the 2011 IMO decision, subject to sufficient notifications to IMO from the Parties bordering the Baltic Sea on the availability of **adequate sewage Port Reception Facilities (PRF)** in the region.

When do amendments to IMO MARPOL Annex IV take effect?

During the IMO meeting (MEPC 68) in May 2015, the committee agreed that sufficient notification had been received

During the IMO meeting (MEPC 69) in April 2016 the dates were confirmed:

- 1st June 2019 for new ships
- 1st June 2021 for existing ships
- 1st June 2023 for ships that directly pass between St. Petersburg and the North Sea (no other port calls within special area)

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Regulation concerning port reception facilities

Port Reception Facilities Directive (2000/59/EC) - under revision

Member States shall ensure the availability of port reception facilities adequate to meet the needs of the ships normally using the port without causing undue delay to ships.

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Passenger traffic in Baltic Sea region

Two segments of maritime passenger traffic within Baltic Sea region:

- Cruise traffic
- Ferry traffic

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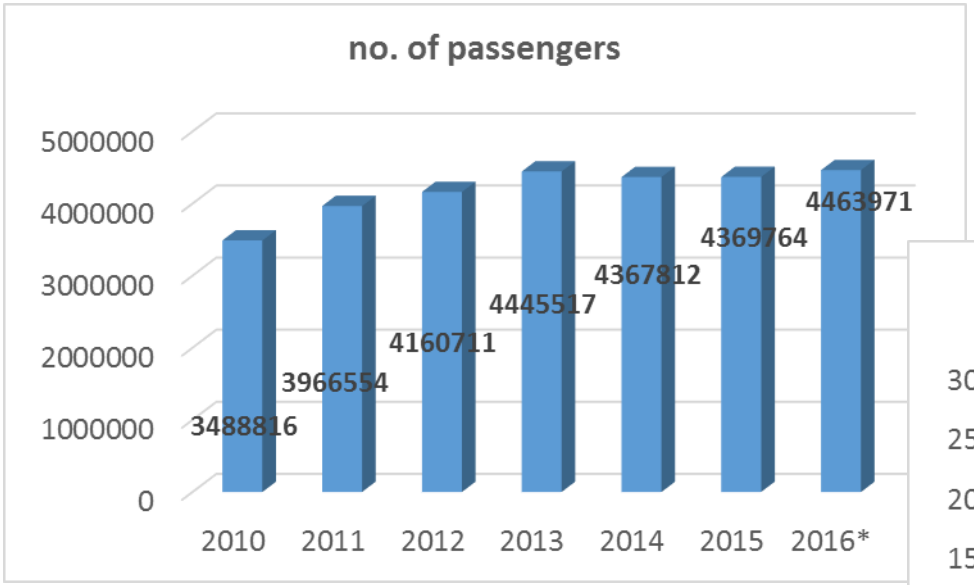
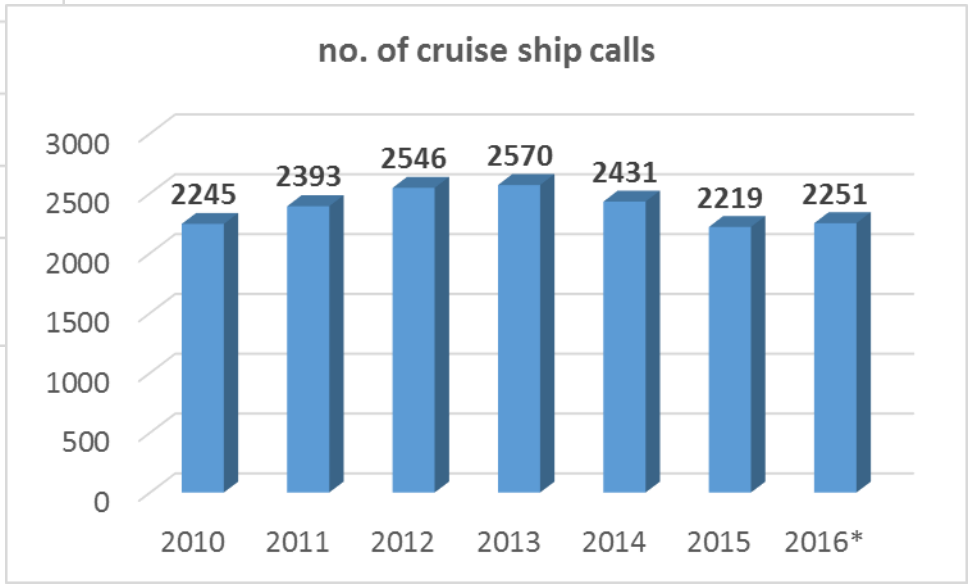
Passenger traffic in Baltic Sea region

- Cruise traffic





*estimation
Source: cruisebaltic.com, Port of Gdynia

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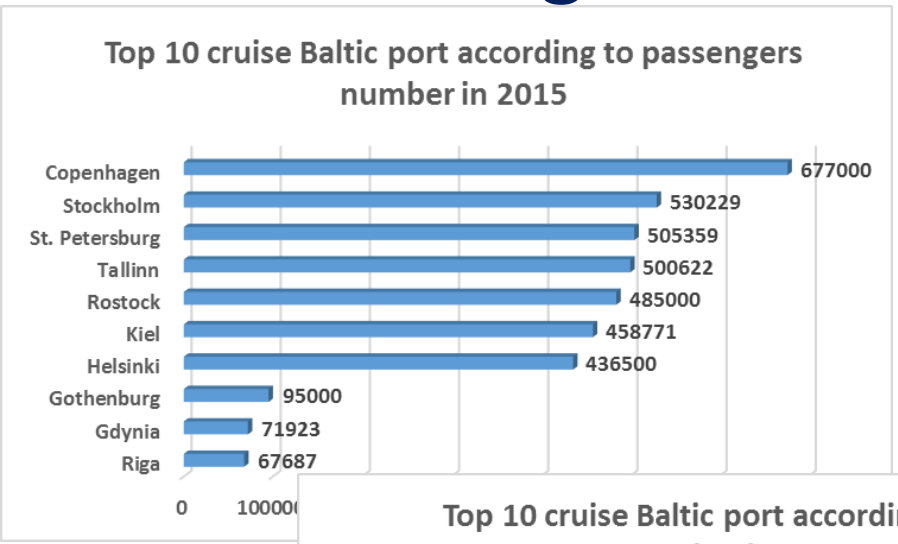
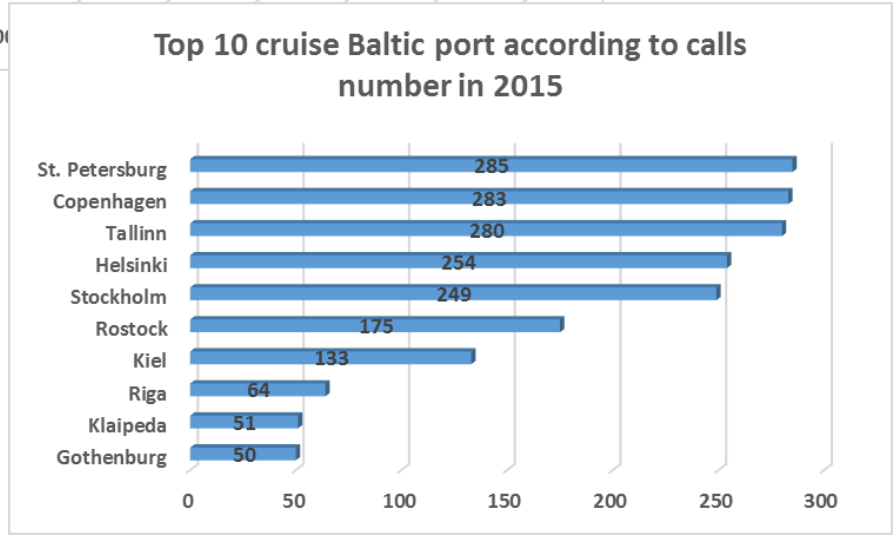
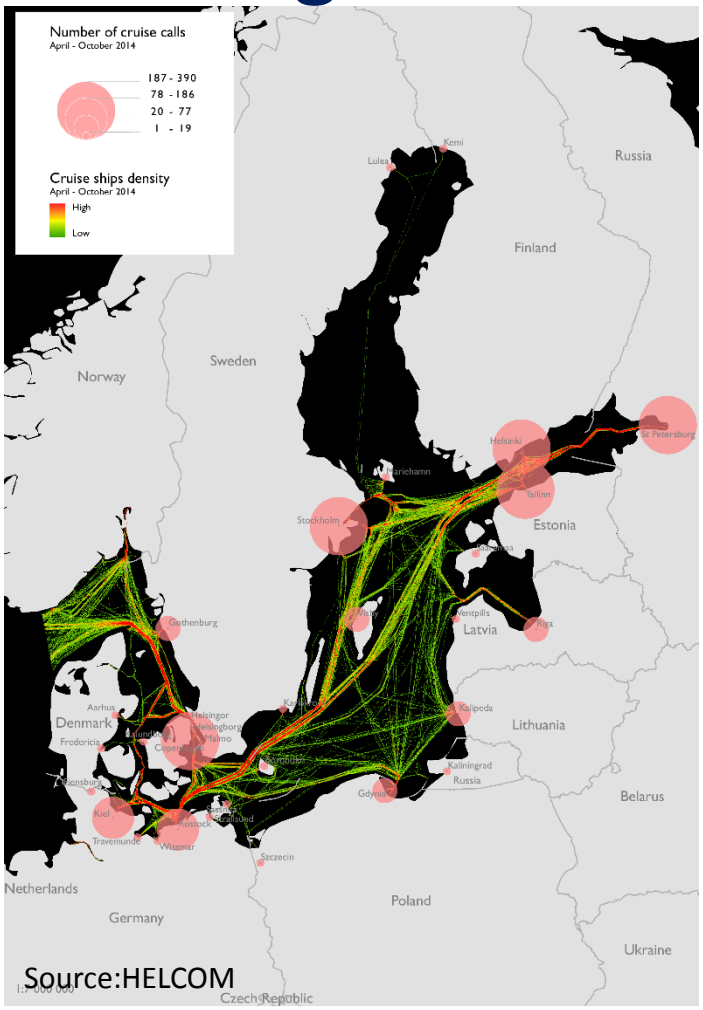
Passenger traffic in Baltic Sea region





Source: cruisebaltic.com, Port of Gdynia



Source:HELCOM

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Passenger traffic in Baltic Sea region

Cruise traffic - main findings form HELCOM Overview 2014 *Baltic Sea Sewage Port Reception Facilities*:

- Around 77 different cruise ships owned by 37 operators sailed in the Baltic Sea during the cruising season 2014.
- 80% of the cruise ships had a maximum capacity of 3000 persons or less, 7,5% were very large ships which (capacity more than 4000 persons), 30% were small ships which can carry at most 1000 persons.
- Cruise ships operating in the region had an average fullness ratio of 90,38 %.
- In 2014 international cruise ship voyages involved 7,15 million person days in the Baltic Sea region
- 70% of cruise ship voyages between two ports in the Baltic Sea lasted from 8 to 20 hours at sea in 2014

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Passenger traffic in Baltic Sea region

Ferry traffic -main facts:

- Over 60 regular international ro-pax services within BSR (passengers + cars and/or cargo) served by over 110 ro-pax vessels and 20 operators.
- Travel time ranges from below one hour up to two or more days.
- Passenger capacity of ro-pax vessels ranges from around 60 passengers up to 2500 (29,7% of fleet up to 500 passengers, 19,8% form 501-1000 passengers, 30,6% 1001-2000, 19,8% over 2000 passengers).
- Based on port data that serve ro-pax services the international ferry traffic can be estimated at over 45 mln passengers per year (embarkment+disembarkment divided by two).

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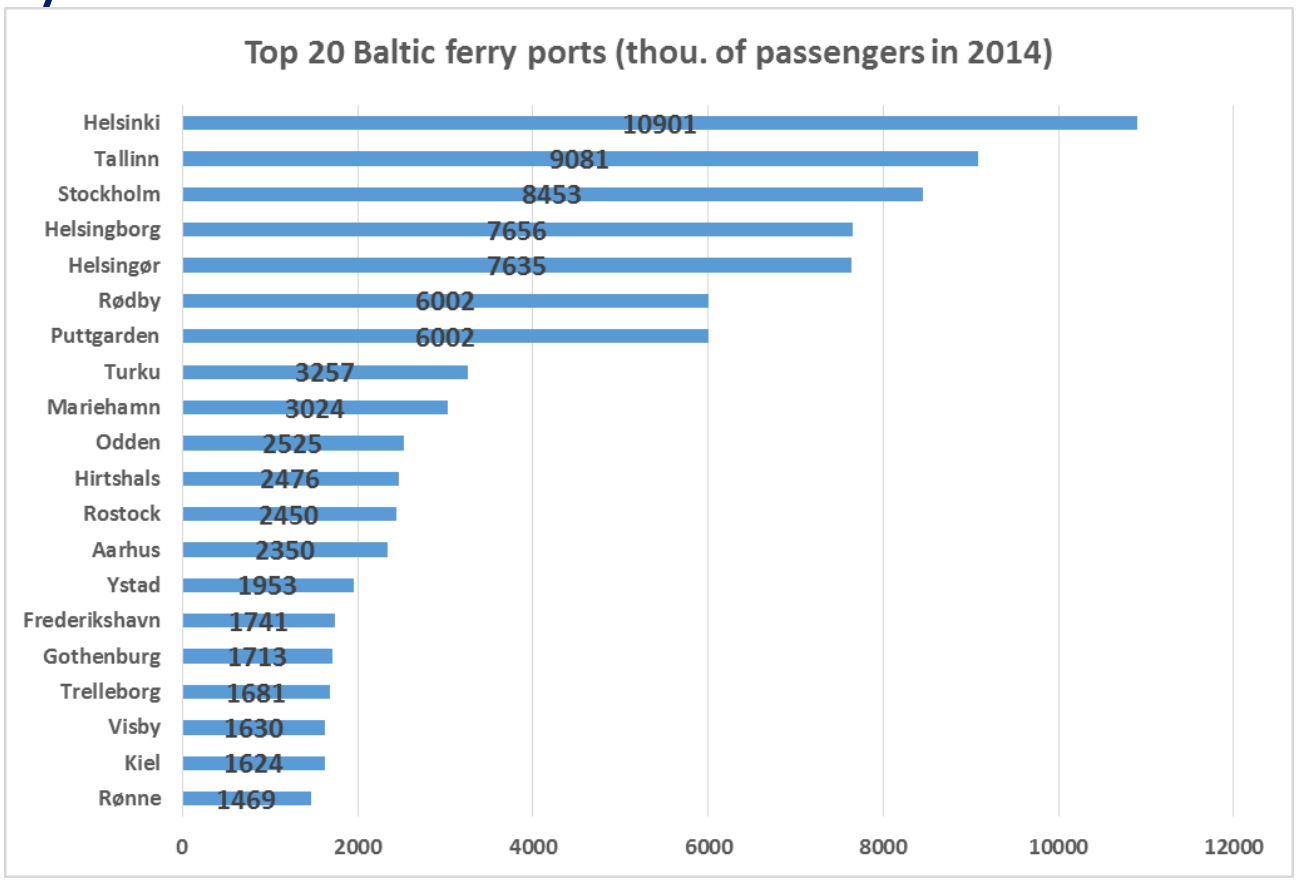
Passenger traffic in Baltic Sea region

- Ferry traffic



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PRF in Baltic ports

Port	Direct shore connections (max flow rate cubm/h)	Tunk trucks (max capacity cubm)	Barges (max capacity cubm)
Aalborg	No	Yes (40)	possible to arrange
Copenhagen	Yes (300)	Yes (120)	No
Fredericia	No	Yes (10)	No
Gdańsk	No	Yes (30cubm/h)	No
Gdynia	No	Yes (20-40 cubm/h)	No
Gothenburg	Yes (45)	Yes (12-14)	No
Helsingborg	No	Yes (30cubm/h)	No
Helsinki	Yes (60-100)	Yes (5cubm/h)	No
Karlskrona	Yes	Yes	Yes
Klaipeda	No	Yes(on demand)	Yes (2700)
Kotka	No	Yes	No
Lubeck	No	Yes	No
Malmo	No	Yes (75)	No
Riga	No	Yes (30)	No
Ronne	No	Yes (25)	No
Rostock	Yes (80-120)	Yes	No
Saaremaa	No	Yes (18 cubm/day)	No
St. Petersburg	Yes	Yes	No
Stockholm	Yes (200-300)	Yes	Yes (300)
Szczecin	No	Yes (6)	No
Tallinn	Yes (60-100)	Yes (7-17)	No
Turku	No	Yes (50)	No
Ventspils	No	No	Yes (86)
Visby	Yes (18)	Yes (9cubm/truck/h)	No

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PRF in Baltic ports

Copenhagen

- direct shore connection on one quay-300cubm/h
- Tank track used on two quays –max capacity 120 cubm

There is a possibility to utilize three tankers per delivery. After collection, the sewage is pumped via a pump station and sewer system to the municipal sewage treatment plant

- No special fee implemented

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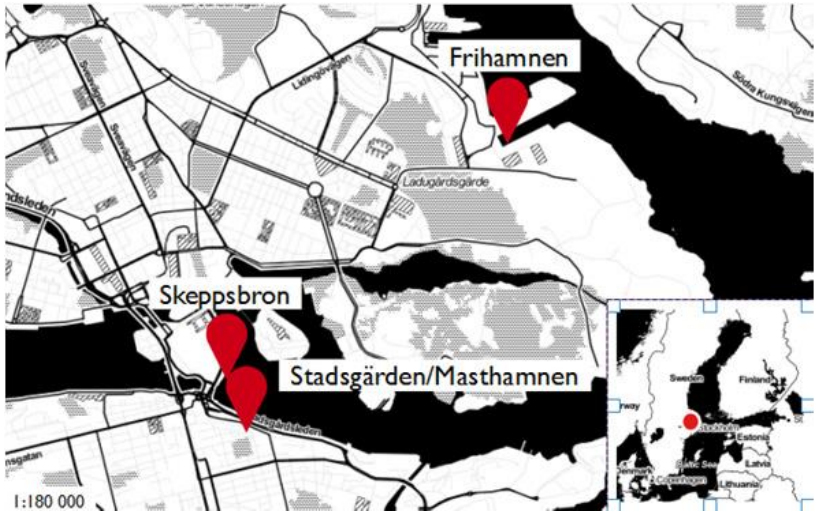
PRF in Baltic ports

<u>Stockholm</u>

- Fixed reception points for black and grey water are available at all piers used by cruise ships (max capacity 200-300 cubm/h)



- Where stationary reception facilities are not available, the Port can provide tank trucks or a barge with a capacity of 550 m3 to collect waste water if needed.
- Barges are also availabe (max capacity 300 cubm)
- No special fee implemented

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PRF in Baltic ports

Tallinn

- No of piers with fixed reception facilities — 8
- Capacity: varies 60-100 m3/h

(depends how many ships are discharging at the same time)

- Other modes – tank trucks,
- Max/min per cruise ship – 868/7 m3 – via direct
- Total 2015 – 37757 m3, incl.

cruise ships – 8267 m3 – via direct,

sewage system – 5442 m3,

by trucks – 2155 m3,

by barge – 670 m3

- No special fee system implemented

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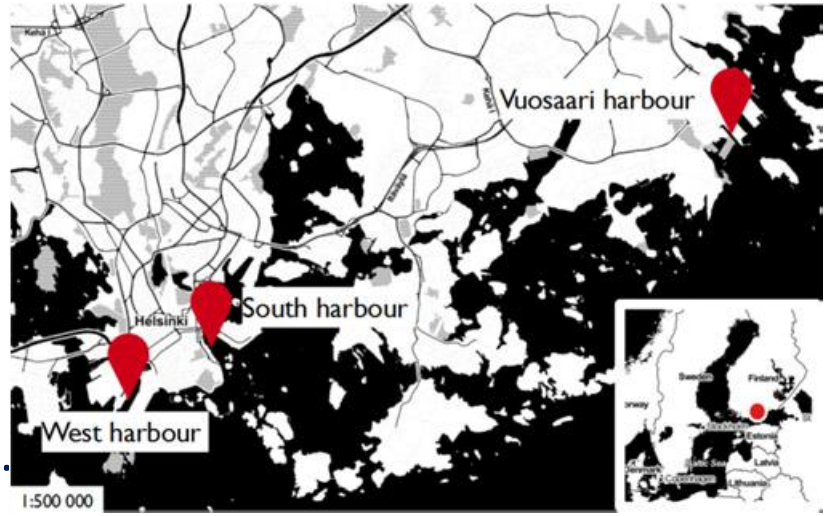
PRF in Baltic ports

Helsinki



- At all three ports grey and black water is discharged from the vessels directly to the city waste water system.
- West Harbour: 11 berths Discharge points are located every 40-60m. Capacity of the PRF: 100 m3/h
- South Harbour: 12 berths Discharge points are located every 40-60m. Capacity of the PRF: 100 m3/h
- Vuosaari cargo port: 17 quays for roro ships and 1500m of container pier. Waste water discharge points are every 40-60m. A pre-treatment facility for waste water has also been installed in this port area.
- No special fee implemented

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PRF in Baltic ports

Rostock

- The cruise port of Rostock-Warnemünde

is equipped with a direct connection
of the berths to the municipal sewer system
(max flow rate 80-120 cubm/h)

- Tank trucks are available
- Sewage from cruise ships (incl. grey water) is accepted only within

the defined and published sewage quality parameters. The sewage quality is monitored during the sewage transfer process. In case of a divergence from the published sewage quality the transfer process will be interrupted.

- No special fee implemented

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PRF in Baltic ports

- Examples of PRF investment

Port	Recent and planned Investment
Port of Tallinn	In 2016 Port of Tallinn completed construction of micro-tunnel in Old City Harbour. It connects of the sewage pipeline with the municipal deep sewer system. Total reception capacity of sewage increased from 100 m^3 to 1,000 m^3 per hour.
Port of Kiel	Port of Kiel plan to construction of a wastewater reception facility at Ostseekai for the two berths. Project includes: Construction wastewater sewer and storage capacity, Construction pumping facility, Construction pressure pipeline to the next local wastewater collector junction. Total cost of the investment amounts to approx. 1.3 million Euro.
Port of Gdynia	Port of Gdynia plans improvement on French Quay where cruisers berth at. The maximum capacity in planned to be 200 m3/h. At the new ferry terminal which is planned to be open in 2019, the maximum capacity of the port reception facilities is planned to be 105 m3/h. Upgrading works on other quays are going to be done gradually.

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Challenging issues

- Quality of sewage
- PRF costs for the port
- Need for open dialogue between local sewage companies and ports in order to find the most sustainable solution.
- System of fees
- Need to improve the information flow between port authorities and shipping companies

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Thank you for attention

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