Baltic as a model region for green ports.
Port reception facilities for sewage in Baltic ports.

10 October 2017
GreenPort2017, Amsterdam, Netherlands

BPO – who we are?

BPO – Baltic Ports Organization

established
October 10, 1991
Copenhagen

nearly 50 members
major ports in the 9 countries

registered in Estonia
Port of Tallinn headquarter

office in Gdynia
Poland

Go Baltic.

BPO – who we are?

BPO’s mission

The BPO's mission is to **contribute to sustainable development** of maritime transport and the port industry in the Baltic Sea Region, thereby **strengthening its global competitiveness**.

BPO 25th Anniversary

Go Baltic.

BPO
Tag Map

What we deal with?

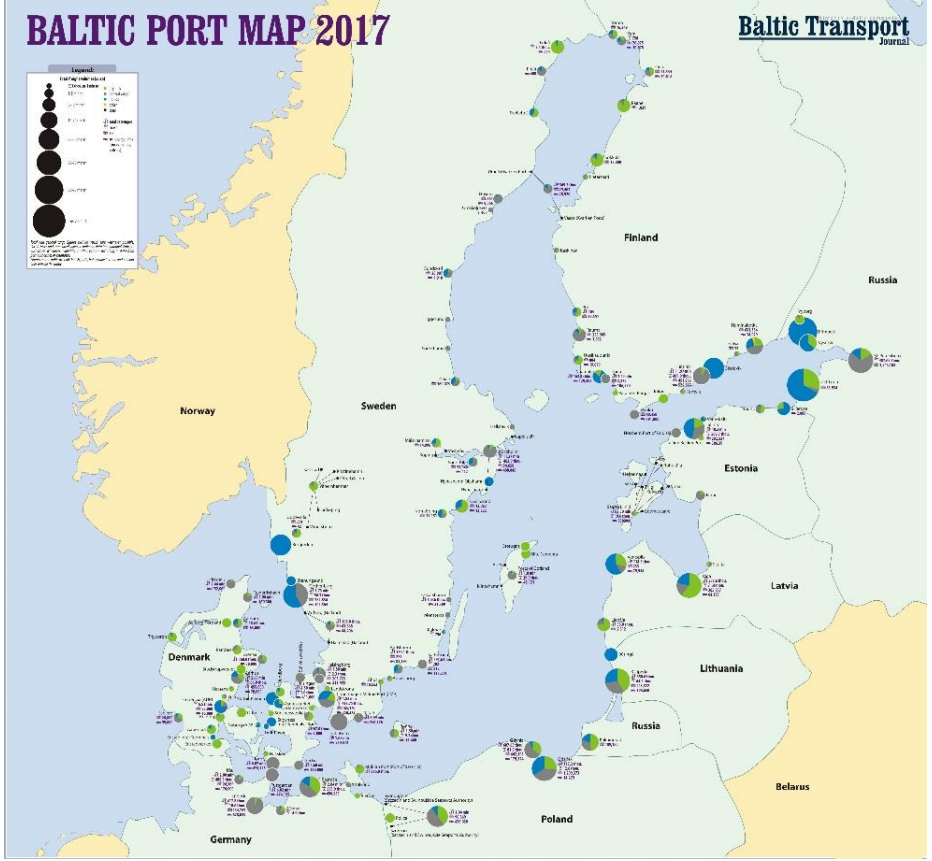
Content

- What is BPO?
- Baltic port market
- Environmental challenges
  - LNG as a new fuel
  - Onshore Power Supplies
- Sewage from passenger ships
- Challenges

Baltic port market

Total freight

2010 (mln t)	814.1
2016 (mln t)	881.2
2010/2016 (%)	**+8.24**



Baltic port market

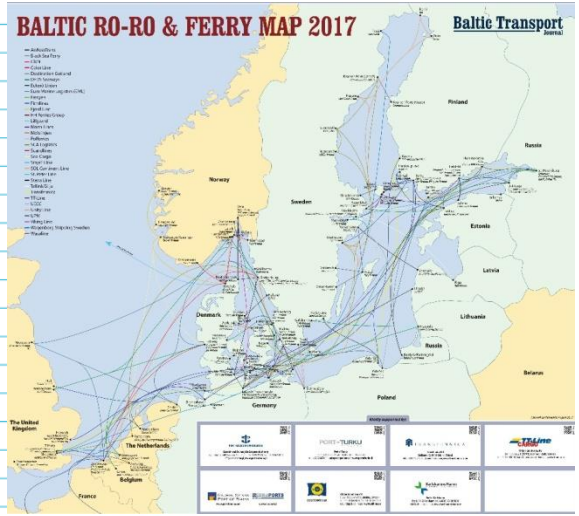
Tab. 7. Top 12 Baltic ports in 2016 [thou. tn]

№	Port	2015	2016	Yoy
1	Ust-Luga	87,868	93,323	+6.2%
2	Primorsk	59,606	64,429	+8.1%
3	St. Petersburg	51,514	48,624	-5.6%
4	Gothenburg	37,827	40,831	+7.9%
5	Klaipėda	37,070	40,139	+8.3%
6	Riga	40,056	37,070	-7.5%
7	Gdańsk	31,738	31,575	-0.5%
8	Sköldvik	20,631	24,832	+20.4%
9	Szczecin-Świnoujście	20,055	21,475	+7.1%
10	Brofjorden	22,000	21,000	-4.5%
11	Rostock	20,328	20,959	+3.1%
12	Tallinn	22,255	19,937	-10.4%
	Total	**450,928**	**464,194**	**+2.9%**

Baltic Pax market

Annex 4. Baltic Sea region's ferry passenger [thou.] and private cars serving ports in 2016-2015

Nº	COUNTRY	PORT	PAX 2016	PAX 2015	2016/2015 [%]	PAX CARS 2016	PAX CARS 2015	2016/2015 [%]
1	FI	Helsinki	11,565	11,212	+3.1%	1,473,622	1,387,446	+6.2%
2	SE	Stockholm (Stockholm, Nynäshamn, Kapellskär)	10,767	10,657	+1.0%	1,127,670	1,112,464	+1.4%
3	EE	Tallinn	9,660	9,295	+3.9%	n/a	1,350,000	–
4	DK	Helsingør	7,525	7,643	-1.5%	1,369,986	1,369,986	+/-0%
5	SE	Helsingborg	7,525	7,670	-1.9%	1,336,986	1,369,986	-2.4%
6-7	DE	Puttgarden	6,024	6,139	-1.9%	1,531,754	1,542,330	-0.7%
6-7	DK	Rødby	6,024	6,139	-1.9%	1,531,754	1,542,330	-0.7%
8	FI	Turku	3,290	3,301	-0.3%	226,970	231,091	-1.8%
9	FI	Mariehamn	3,053	3,098	-1.5%	181,619	173,592	+4.6%
10	DK	Odden	2,780	2,690	+3.3%	1,178,613	1,083,773	+8.8%
11	DK	Aarhus	2,629	2,532	+3.8%	1,124,962	1,031,319	+9.1%
12	DK	Hirtshals	2,559	2,568	-0.4%	686,535	679,787	+1.0%
13	DE	Rostock	2,288	2,183	+4.8%	457,000	447,350	+2.2%
14	SE	Ystad	2,087	1,983	+5.2%	552,430	520,067	+6.2%
15	SE	Visby	1,772	1,653	+7.2%	533,947	499,663	+6.9%
16	DK	Frederikshavn	1,679	1,687	-0.5%	269,164	262,386	+2.6%
17	SE	Gothenburg	1,670	1,642	+1.7%	339,874	314,097	+8.2%
18	SE	Trelleborg	1,653	1,713	-3.5%	362,548	366,747	-1.1%
19	DE	Kiel	1,599	1,557	+2.7%	n/a	181,025	–
20	DK	Rønne	1,551	1,491	+4.0%	374,966	356,632	+5.1%



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Baltic cruise market

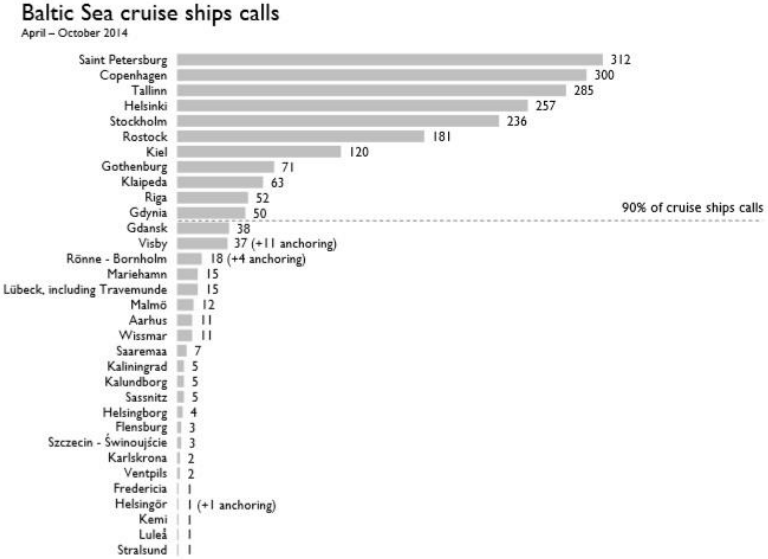


Figure 4 Ports visited by cruise ships in 2014, sorted according to number of ship calls[1]. Figures in parentheses indicate additional visits by anchoring.

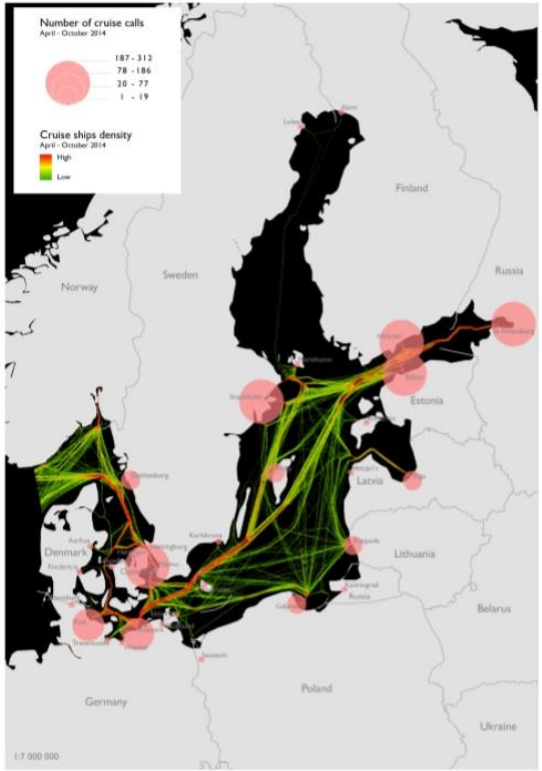


Figure 3 Routes and destination ports of cruise ships 2014

BPO policy

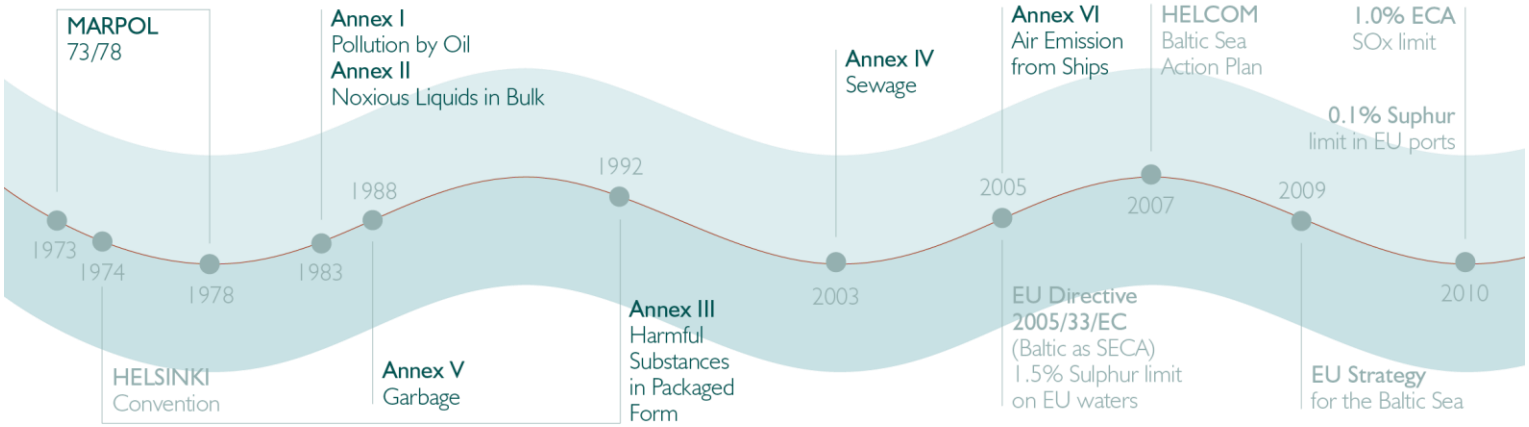
The Baltic Sea as a model region for green ports and maritime transport

—

Adopted at BPO General Assembly, Helsinki, September 2016

Go Baltic.

Regulating maritime transport in the Baltic Sea Region



Part I

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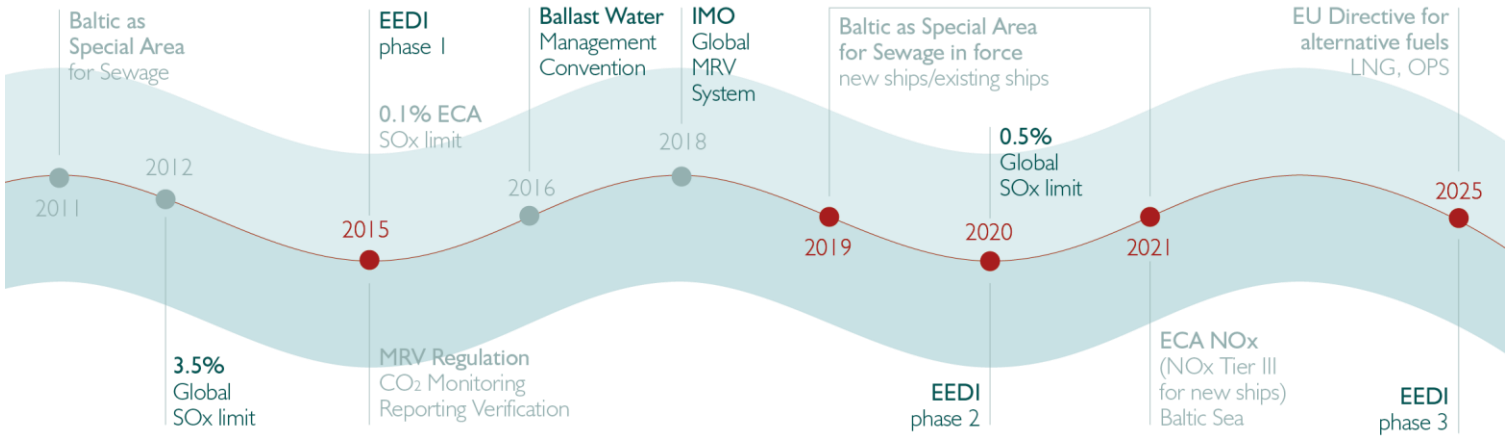
Regulating maritime transport in the Baltic Sea Region



Part II

Go Baltic.

Policy - EU Strategy for the Baltic

EUSBSR
EU STRATEGY
FOR THE BALTIC
SEA REGION

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Policy Area on Clean Shipping (PA Ship), Danish Maritime Authority

The overall goal of the Policy Area on Clean Shipping (PA Ship) is for the Baltic Sea Region “to become a model region for clean shipping”.

—

PA Ship focuses on achieving:

- To create an infrastructure for alternative fuels in the BSR
- To support measures reducing emissions from ships
- To develop shore-side facilities to foster clean shipping measures

Baltic as a model region for green ports

Focus on:

- Compliance with SECA
- Onshore Power Supply
- **Sewage from passenger ships**

Compliance with SECA

BPO Report: EU Sulphur Directive

—

One year after its entry into force

June 2016

Go Baltic.

Compliance with SECA

Fleet operating exclusively or mostly within SECA

600* bulk carriers

300* tankers

240 ferries

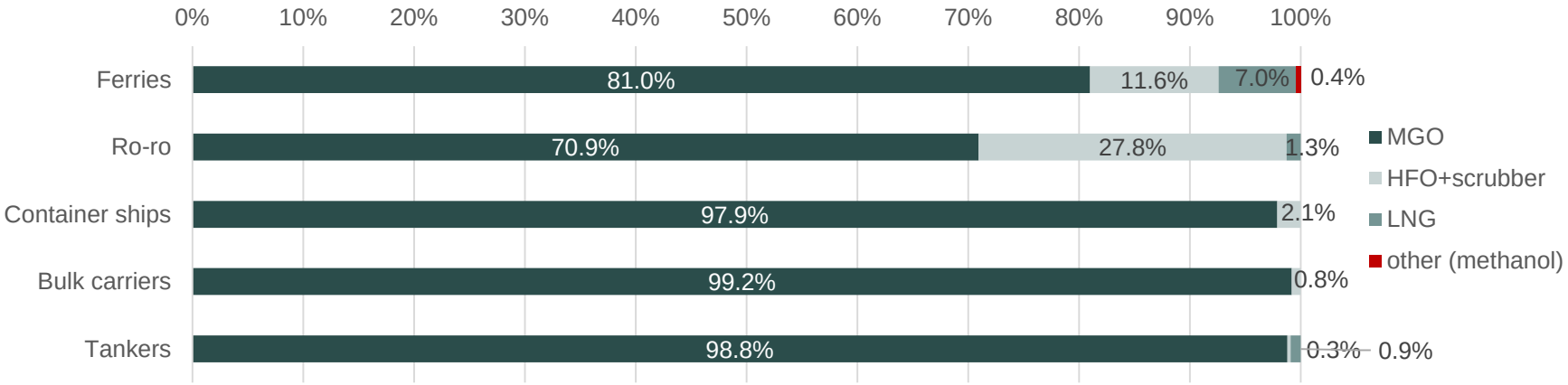
237 container ships

147 ro-ro vessels

Range of operation:
Ferries, ro-ro, container ships – exclusively in SECA
Bulk carrier and tankers – exclusively or mostly in SECA

Compliance with SECA

Technology applied in order to meet sulphur regulations by ships operators in short sea shipping in European SECA.



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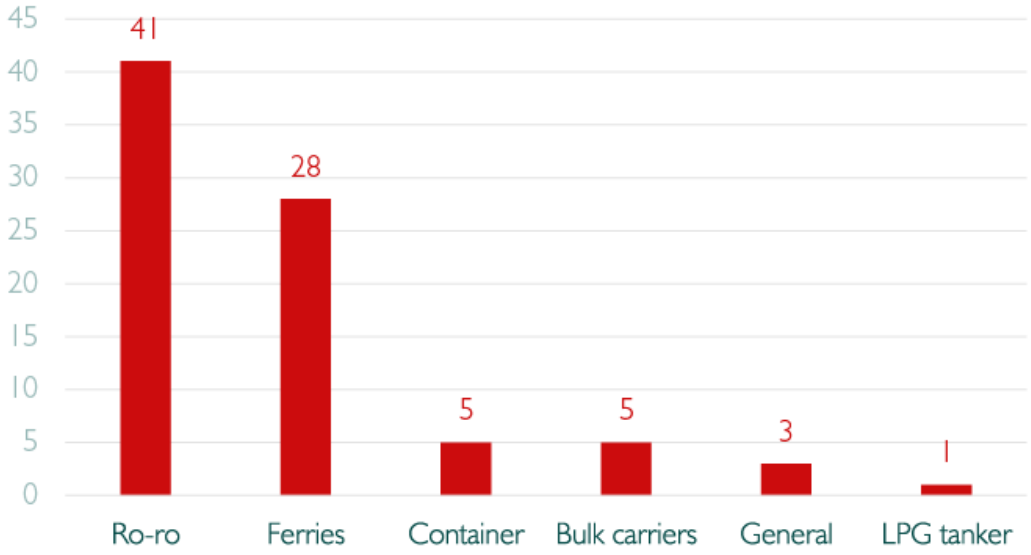
Compliance with SECA



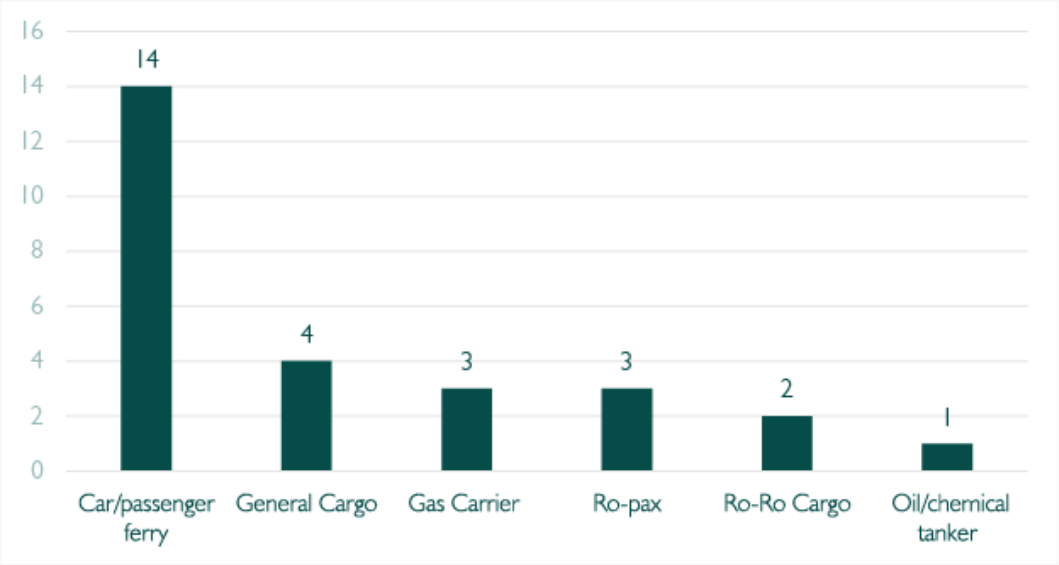
Number of ships operating in the North Sea, Baltic Sea and English Channel that has installed scrubbers (up to June 2016)

Compliance with SECA

Shipowner	Number of ships equipped with scrubbers	% of total shipowners' ro-ro and ferry fleet operating within SECA
DFDS	21	60.0%
Finnlines2	15	68.2%
Brittany Ferries	6	85.7%
Transfennica	6	60.0%
Color Line	4	66.7%
KESS	4	40.0%
Scandlines	4	33.3%
Condor Ferries	2	50.0%
Wagenborg Shipping Sweden	2	100.0%
Stena Line	2	8.0%
Bore/P&O Ferries	1	7.1%
SOL Continent Line	1	14.3%
TT-Line	1	16.7%
Total	69	43.1%

Number of ships operating in the North Sea, Baltic Sea and English Channel that has installed scrubbers (up to June 2016)

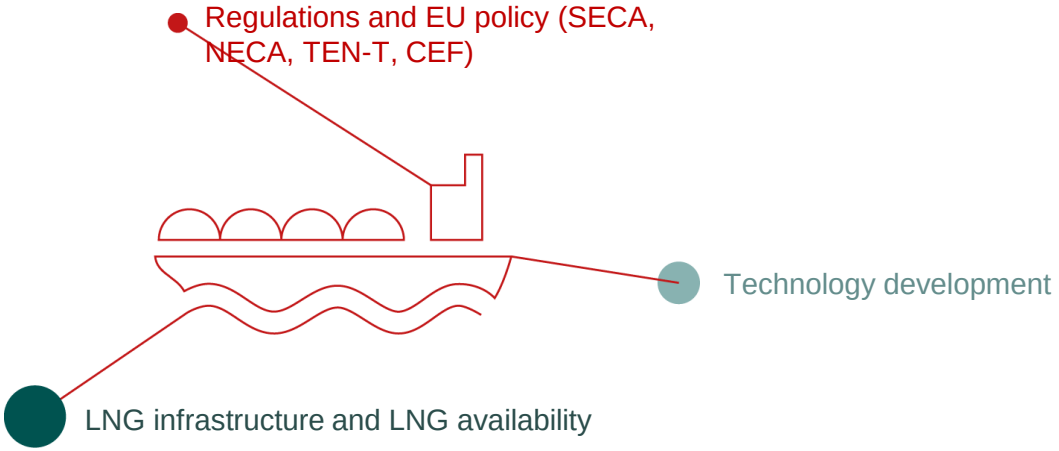
Compliance with SECA



Number of cargo and passenger ships powered by LNG operating in SECA (domestic and international traffic)

Number of LNG fueled vessels grows

Driving forces:



LNG in the Baltic Sea Ports project I

BPO initiated two EU founded projects with 11 ports involved

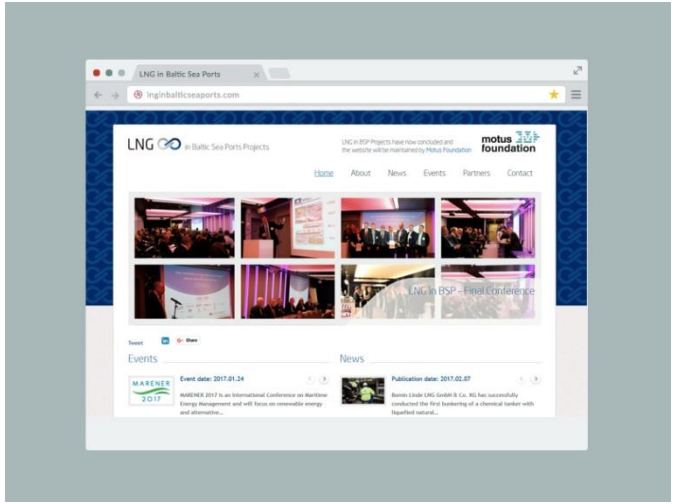
Pre-investment studies such as EIA, feasibility analyses for LNG terminals or bunkering vessels, project designs, regional market studies, safety manuals, etc.

Stakeholder platform that facilitated discussions among port authorities, shipowners, gas infrastructure providers, energy traders and bunkering companies.

Project budget – appr. € 3.5 mln. / Jan. 2012-Dec. 2014

LNG in the Baltic Sea Ports projects

Check website and reports



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LNG in the Baltic Sea Ports Projects

Port of Stokholm

—

Ro-pax Viking Grace 1200 plus bunkering operations

Case studies

Port of Helsinki

Turva – coastal guard vessel
Polaris - the first ever
LNG-fueled icebreaker

Case studies

Port of Oulu

LNG-fueled icebreaker Polaris

Case studies

Port of Gothenburg (offshore)

—

LNG ship to ship bunkering

Skangas together with Anthony Veder

Case studies

Port of Rostock

Bunkering of Greenland

LNG fueled ships in the Baltic

Ro-pax Tallink Megastar

Onshore Power Supply

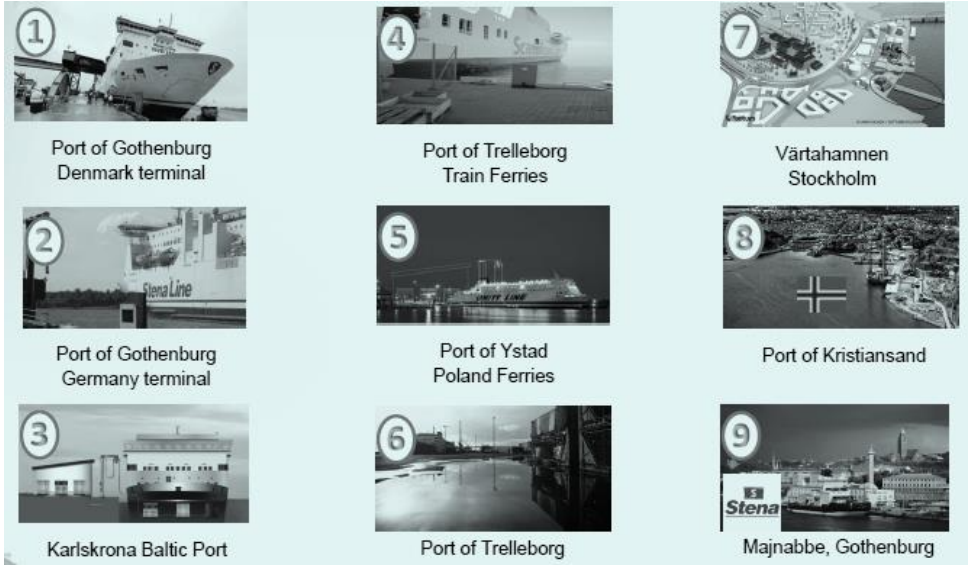
A plug in the ship leads to:

- Less emissions
- Less noise
- Improved working environment on board

Source: www.ops.wpci.nl

Year of introduction	Port name	Country	Capacity (MW)
2000-2010	Gothenburg	Sweden	1.25-2.5
2000	Zeebrugge	Belgium	1.25
2001	Juneau	U.S.A.	7-9
2004	Los Angeles	U.S.A.	7.5-60
2004	Piteå	Sweden	1.0
2005-2006	Seattle	U.S.A.	12.8
2006	Kemi	Finland	
2006	Kotka	Finland	
2006	Oulu	Finland	
2008	Antwerp	Belgium	0.8
2008	Lübeck	Germany	2.2
2009	Vancouver	Canada	16
2010	San Diego	U.S.A.	16
2010	San Francisco	U.S.A.	16
2010	Karlskrona	Sweden	2.5
2011	Long Beach	U.S.A.	16
2011	Oslo	Norway	4.5
2011	Prince Rupert	Canada	7.5
2012	Rotterdam	Netherlands	2.8
2012	Ystad	Sweden	6.25
2013	Trelleborg	Sweden	3.5-4.6
2015	Hamburg	Germany	12

Onshore Power Supply



Source: Actemium

Onshore Power Supply

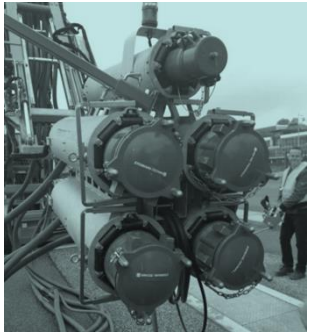
Case study

Port of Ystad

Onshore Power Supply

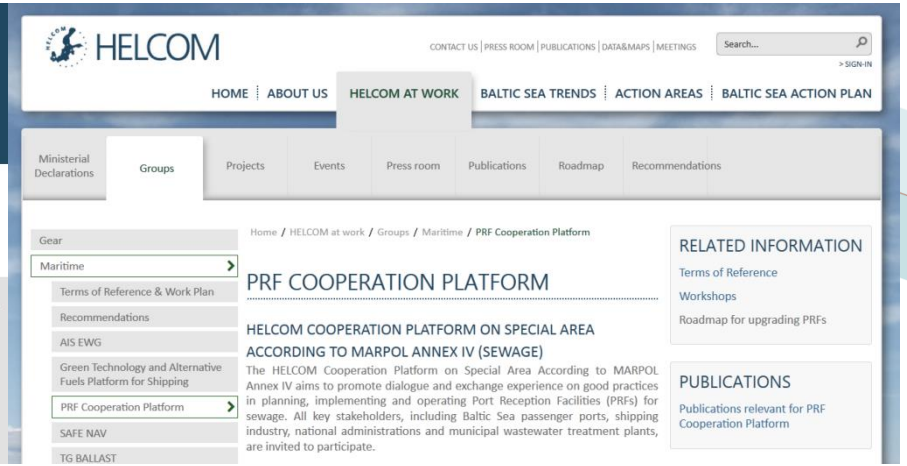
Case study

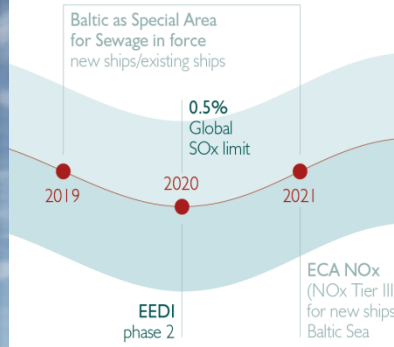
Port of Hamburg (landside power)



Sewage from passenger ships

BPO is a part of PRF Cooperation Platform at HELCOM





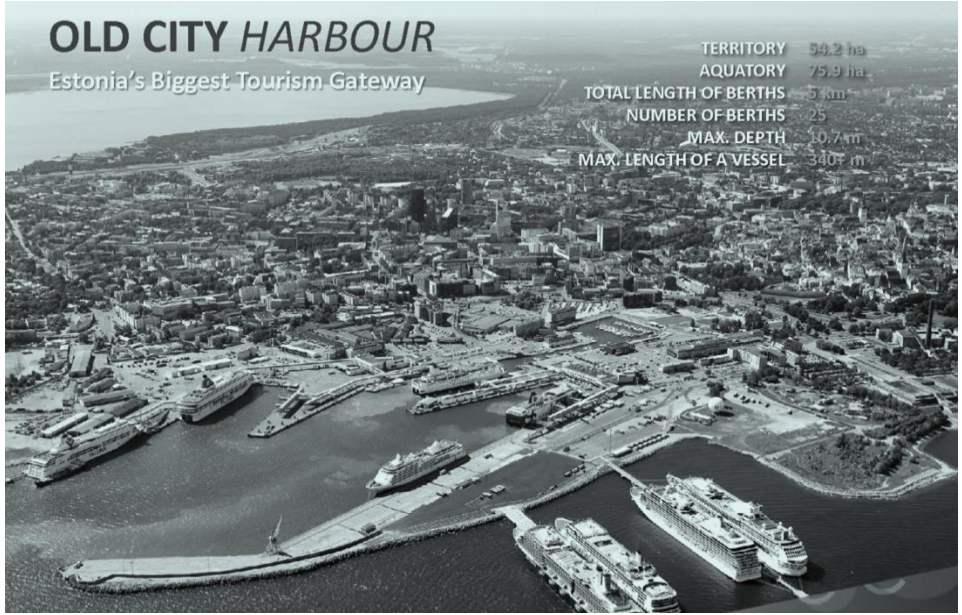
Go Baltic.

Port of Tallinn – Old City Harbour

Estonia's biggest tourism gateway

Passengers
- ferries
- cruises
- yachts

Ro-Ro



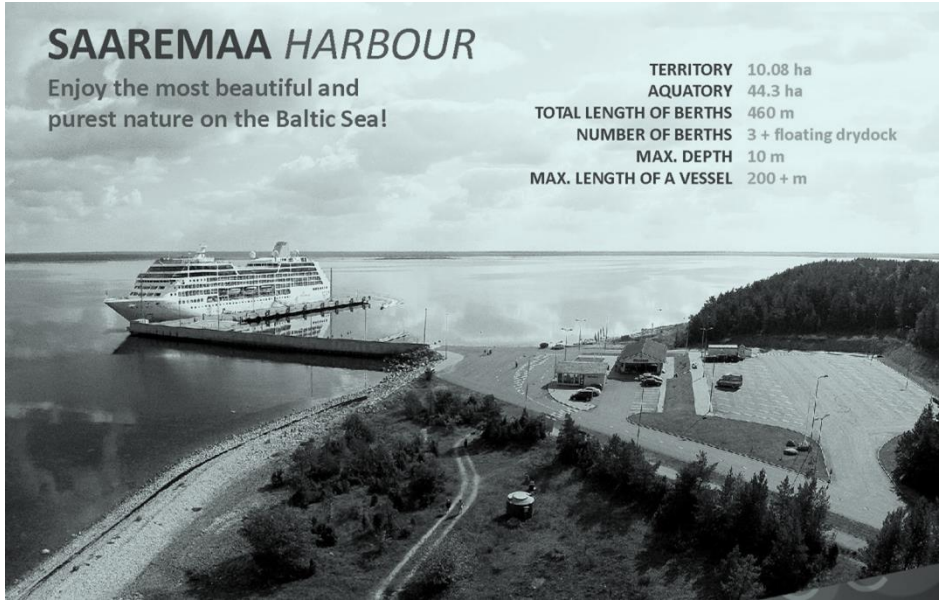
Source: Port of Tallinn

Port of Tallinn – Saaremaa Harbour

The most beautiful and purest nature on the Baltic Sea!

—

Passengers
• yachts & cruises
Cargo



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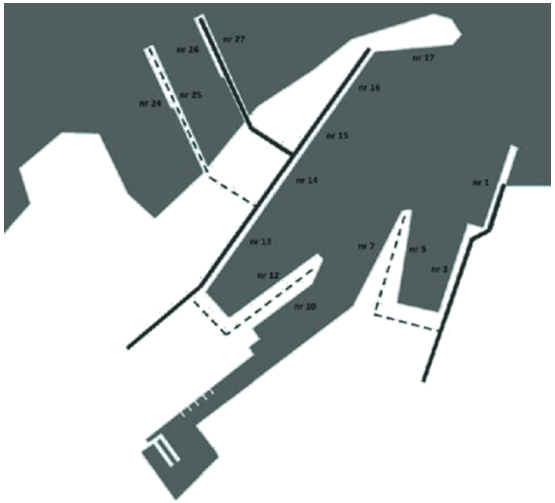
Source: Port of Tallinn

PRF investments

In Old City Harbour

- 2016 – construction of micro-tunnel (EUR 1,8 M – co-financed by EU project TWIN-PORT2)
- Connects the sewage pipeline with the deep sewer system of the city
- Total reception capacity of sewage will increase from 100 m^3 to 1000 m^3 per hour.



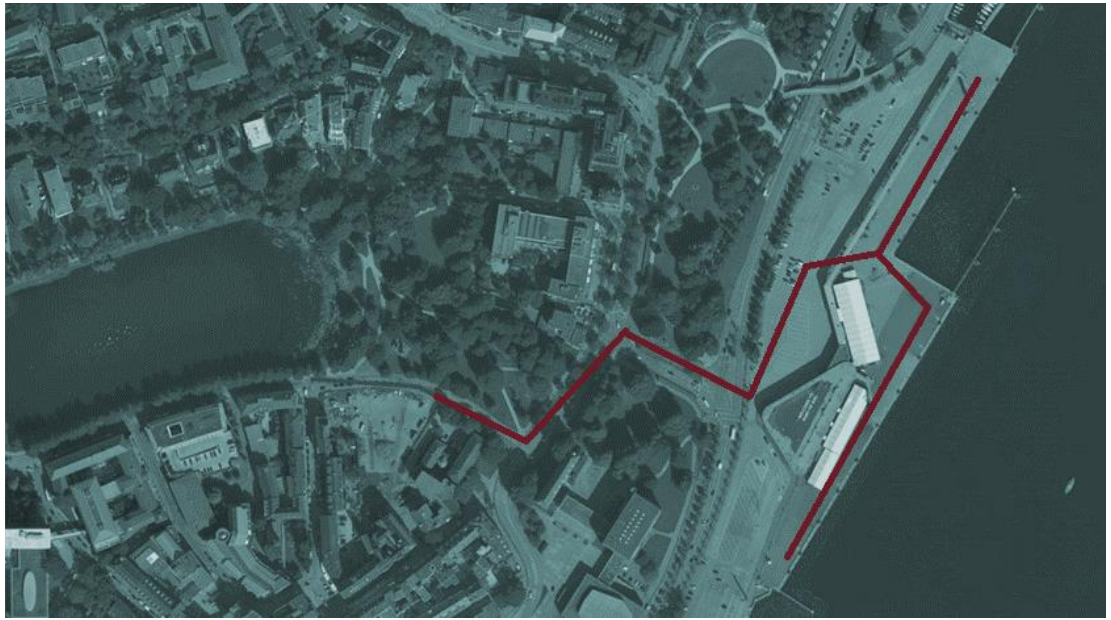
Source: Port of Tallinn

Port of Kiel

Overview

Source: Port of Kiel

Port of Kiel: Ostseekai



Source: Port of Kiel

Port of Kiel

PRF for sewage

Basis for planning: Sewage quality

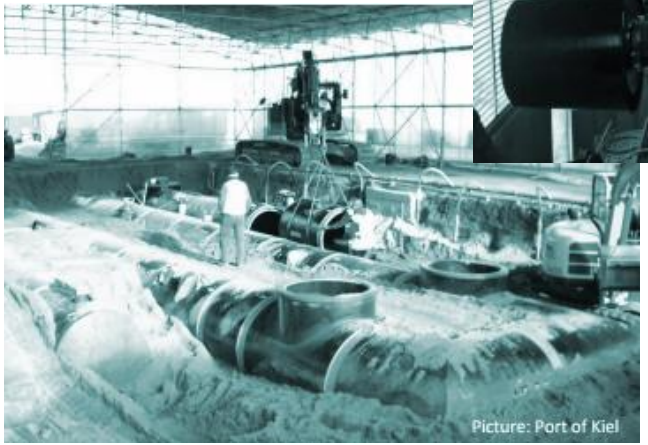
- Opening a Black Box…
- Measuring temperature, Hydrogene Sulphur (H2S), pH-value,…

Source: Port of Kiel

Port of Kiel

PRF for sewage

Port of Kiel



Port of Kiel

PRF for sewage

PORT OF KIEL

1.48 m/s, 260° | 13°C SAILING LIST SHIP TICKER LOGIN IMPRINT PRINT DEUTSCH

HOME PORT OF KIEL CRUISE & FERRY CARGO & STEVEDORING REAL ESTATE & PARKING CONTACT & PR

CONTACT PERSONS PRESS RELEASES PICTURE GALLERY VIDEO GALLERY TERMINAL GALLERY DOWNLOADS

Previous 9 of 24 Next

14/06/2017 11:00 by Ulf Jahnke

PORT OF KIEL INVESTS IN A CLEANER BALTIC

EUROPE'S MOST MODERN WASTE WATER RECEPTION FACILITY OPENS

Kiel, June 14th, 2017: Europe's most modern ship waste-water reception facility went into operation at Kiel's Ostseekai on June 14th. During an inauguration ceremony the new plant's valves were symbolically opened by Kiel's Lord Mayor Dr Ulf Kämpfer, Construction chief Doris Grondke, the head of the Water Management and Marine and Coastal Protection Department in the Schleswig-Holstein Environment Ministry Dietmar Wienholdt, Port chief Dr Dirk Claus and Captain Kjell Holm of TUI Cruises. The new facility, which cost well over € 1.8 million, serves as a model and increases current waste-water reception capability tenfold to as much as 300 m³ an hour. Dr Dirk Claus, Managing Director of the PORT OF KIEL (SEEHAFEN KIEL GmbH & Co. KG) said: "We are investing in a cleaner Baltic. This capacity increase is Kiel's contribution to marine protection and meets regulatory demands which are not even due to take effect until 2021." The first ships to take advantage of the new waste-water reception facility were "Mein Schiff 3" and "Mein Schiff 6"which called this morning. All the countries on the Baltic have agreed that from the year 2021 all cruise ships – indeed new ships from as early as 2019 - must dispose of all their waste-water in port and can only do so on board ship when regulatory standards are adhered to.

Port invests in a cleaner Baltic

Source: Port of Kiel

Port of Kiel

PRF for sewage

Port of Kiel

Source: Port of Kiel

HELCOM Cooperation Platform on PRF

Hamburg, 13 September 2017

Finalising HELCOM Overview 2017

Introductory chapters &
Ferry traffic to be included

Next week Submission to
HELCOM MARITIME 17-
2017
10-12 October in
St.Petersburg

Release Dec 2017/Jan 2018

Corrections and updates are
still welcome!

HELCOM

Go Baltic.

HELCOM Cooperation Platform on PRF

Best Practice Guidance

PRÜF- UND ENTWICKLUNGSINSTITUT FÜR ABWASSERTECHNIK AN DER RWTH AACHEN E.V.

DEVELOPMENT AND ASSESSMENT INSTITUTE IN WASTE WATER TECHNOLOGY AT RWTH AACHEN UNIVERSITY

Project:

Development of a "Best Practice Guidance" for the handling of wastewater in Ports for the Special Area Baltic Sea

on behalf of:

BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

Federal Republic of Germany,
represented by the Bundesministerium für Verkehr und digitale Infrastruktur (Federal Ministry of Transport and Digital Infrastructure),
itself represented by the Bundesamt für Seeschifffahrt und Hydrographie (Federal Maritime and Hydrographic Agency),
represented by the President,
Bernhard-Nocht-Straße 78, 20359 Hamburg, Germany

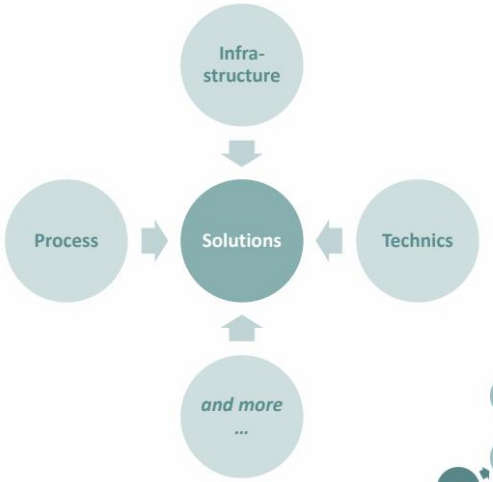
(Order number 10037877)

Prüf- und Entwicklungsinstitut für Abwassertechnik an der RWTH Aachen e.V.
Mies-van-der-Rohe-Str. 1, 52074 Aachen, Germany

Source: PIA

HELCOM Cooperation Platform on PRF

Chapter 3: Solutions



Go Baltic.

HELCOM Cooperation Platform on PRF

Timeline

July 2017
table of content

October 2017
Helcom Maritime

June 2018
Draft

October 2018
Helcom Maritime

Source: PIA

Go Baltic.

PRF for sewage

Challenges

- Dialogue with **local wastewater companies** and **municipalities**
- Definition of **adequacy of PRF** (incl. small ports)
- **Quality of sewage**
- **Investment costs** of PRF is high
- Fee system
- Time (deadline is approaching)

Baltic ports

We are paving the way.

Go Baltic.

Go Baltic!

Follow us:

- Twitter
- e-shots
- website
- events.

—

Bogdan Ołdakowski
Secretary General
Baltic Ports Organization

bpo.sg@actiaforum.pl
www.bpoports.com

Go Baltic.