ENVIRONMENTAL REPORT 2022

Ports of Bremen/Bremerhaven

PUBLISHED BY

The Senator for Science and Ports

Freie Hansestadt Bremen

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0 GREENPORTS HIGHLIGHTS 2020/21

ZeroEmission@Berth

The large German seaports have published a joint position paper “Zero Emission at Berths” and endorse the introduction of a European limit for carbon emissions for all seagoing and inland waterway vessels at berth. At the same time, however, the responsible parties at the port management companies are sceptical as to whether the EU’s proposal to expand shore power is the right strategy to obtain a sustainable reduction in emissions by shipping. In addition to the 'ZeroEmission@Berth' position paper signed by all port companies, an innovation competition was announced to identify and learn more about suitable technologies and approaches. In doing so, they are jointly looking for alternatives to existing grid-connected shore power systems and for energy supply approaches for ships at berth that can also contribute to reducing emissions while ships are at sea.

Regulations for the treatment of waste water from ships

The Senator for Climate Protection, Environment, Mobility, Urban Development and Housing and the Senator for Science and Ports have issued binding regulations for the treatment of waste water from ships in consultation with Bremen Port Authority and river police. These regulations are intended to provide clarity for shipping as well as for the ports and authorities with regard to the specifications, as no procedure for this area has as yet been introduced on a national scale.

DBU – Spotlight Project “CLEAN”

The first German guidelines for issuing permits for inwater hull cleaning as a result of the CLEAN project, partly funded by the Deutsche Bundesstiftung Umwelt, now state binding regulations for hull cleaning with the aim of reducing the introduction of pollutants into the waters of the ports of Bremen. The project elaborated the fundamental requirements for obtaining approval for underwater cleaning at the port, leading to the publication of the first German guidelines for granting permits for underwater hull cleaning at the ports of Bremen. The guidelines provide the cleaning companies and shipowners with a basis for applying for and performing underwater hull cleaning at the ports of Bremen.

SHARC – Project was awarded the 2021 MCN Cup

The “SHARC – Smart Harbor Application Renewable Integration Concept” project was one of the sustainable ideas that was awarded the MCN Cup by the Maritime Cluster Northern Germany in 2021. The objective of the SHARC – project is to draw up a solution for the integration of renewable energy sources and carriers throughout the Überseehafen district in Bremerhaven. The award-winning SHARC project also illustrates in general how carbon-neutral port districts can be developed.

Nordwest Award 2020

bremenports won the NordWest Award 2020 presented by North-West Metropolitan Region for its project entitled “The carbon-neutral port of Bremen/Bremerhaven”. The prize money was used to finance a photovoltaic system for the Welcomes Club run by the Mission to Seafarers.

Environmental Report

CHAPTER 1

INTRODUCTION

1 INTRODUCTION

This Environmental Report, like its predecessors, is intended to inform interested readers about the environmental impact of the ports of Bremen in Bremen and Bremerhaven. It also provides information on the implemented environmental management measures that are intended to avoid, reduce or offset detrimental effects. The ports of Bremen/Bremerhaven were certified as the first German ports in 2011 based on the so-called PERS[1] standard of the Ecoport Network[2]. This Environmental Report also comprises the fifth recertification under the auspices of the Ministry for Economic Affairs, Labour and Ports, which has been applicated in September/October 2022. This documents again the successful environmental management which has been practised in the ports of Bremen for several years now.[3] PERS is an environmental management system developed specially for the demands in ports. It refers for example to voluntary instruments of preventive environmental protection for systematic registration and prevention of the environmental implications of a port. Accordingly, the report primarily addresses the demands that the certification process makes in terms of contents; it should be updated every two years and be available in the public domain.

With this reporting procedures, the aim is – also in the future – to illustrate the constant willingness of those responsible for the ports to work towards on-going improvements in the quality of the environment in and around the ports and to proceed with corresponding organisational improvements in their own sphere and in interaction with all players involved in the ports.

The comprehensive sustainability initiative “greenports”, which covers all areas of the ports of Bremen, has assumed pioneering role in the port business on a national and international scale. The “greenports” strategy develops economic, environmental and socially responsible policies to ensure the future viability of Bremen’s ports. The strategy was developed on the basis of the extensive environmental activities of the port location and published in 2009.

A milestone for the sustainability initiative “greenports” was the external verification of sustainability reporting in 2012 of both the bremenports GmbH & Co. KG and the ports as special assets according to the standards of the Global Reporting Initiative (GRI). bremenports has further successfully been reviewed the last time in 2022 for the reporting period 2021 according to the new advanced GRI standards by the new auditor TÜV Nord.

[1] Port Environmental Review System
[2] This network has been part of the European Sea Ports Organisation (ESPO) since 01.01.2011.
[3] The Environmental Reports 2010 until 2020 can be found at http://bremenports.de/unternehmen/en/mediathek/

Environmental Report

CHAPTER 2

THE PORTS OF BREMEN AND THEIR ACTIVITIES

2 THE PORTS OF BREMEN AND THEIR ACTIVITIES

Figure 1: The twin ports of Bremen/Bremerhaven in Europe

The ports of Bremen rank amongst the most important universal ports in Europe. Water depths that can accommodate seagoing vessels, optimum connections to overseas and hinterland destinations, pronounced logistics expertise, exceptional communications and IT skills, excellent infrastructure, a highly qualified and motivated workforce as well as numerous research institutes, education and training opportunities all guarantee the success of the twin ports.

Bremerhaven handles the latest generation of container vessels, car carriers and cruise liners. This location accounts for roughly 84 per cent (2020) of the total freight volume handled by the port group. Columbus Cruise Center Bremerhaven (CCCB) is a modern and efficient cruise terminal that has achieved a constant increase in the number of cruise ships calling there in recent years.

Bremen, 60 km further south, specialises in handling conventional general cargo and high & heavy, including project cargo, steel and steel products, wood and wood products, as well as bulk cargoes such as ores, coal and grain.

Figure 2: Geographical location of the Bremen twin ports in the so-called "Northwest Range"

Employment effects

The ports of Bremen are a central element of the marine economy and of outstanding importance for the Federal Land of Bremen, the whole of Germany and, as an international hub in hinterland and transhipment traffic, also for other European countries. In addition to this key role in international goods trade, the port-related industry in Bremen generates high added value, which in turn leads to a high number of highly qualified jobs both in the region and throughout Germany. The overall macroeconomic importance of the ports of Bremen is evident when one considers their function as gateway to the global markets for German export and import businesses. In 2019, this gateway function of the ports of Bremen accounted for 344,900 industrial jobs throughout Germany.

In 2019, the ports of Bremen safeguarded a total of 38,800 jobs in the Federal Land of Bremen. A total of 6400 persons were employed directly in port and terminal operations and complementary services and thus account for only a smaller share. The direct effects of port-related transport chains and industry account for 26,500 employees and play a key role in the overall figure. The impact of the Covid 19 pandemic on the number of jobs safeguarded by the ports of Bremen in the Federal Land of Bremen can only be estimated. The ISL assumes that jobs directly related to the ports in the Federal Land of Bremen decreased by approx. 3.3 per cent in 2020. As transhipment business gradually recovers in the course of 2021 and over the following years, it is assumed that the number of jobs will increase once again.

The Covid 19 pandemic had an adverse impact on the economy not only in Bremen, but throughout Germany. The ISL has calculated a decrease of around 2.5 per cent in the number of jobs in the manufacturing and processing industry sectors for the year 2020. The decrease for the automotive industry, which is of extreme significance for the ports of Bremen, amounted to 2.8 per cent.

Handling in the Bremen ports

In the year 2021, the Coronavirus pandemic once again played a central role and the ports of Bremen were also affected by the supply chain disruptions.

In 2021, the quays and terminals in Bremen and Bremerhaven handled 69.7 million tons of seaborne freight (plus 4.8 per cent). This marked a recovery from the downturn in seaborne freight throughput the previous year due to the pandemic, when the figure was 66.5 million tons.
Total throughput was slightly higher than the figure for 2019 (69.4 million tons). The provisional throughput figure for 2021 breaks down into 12.9 million tons of freight handled at the port facilities in Bremen-City (plus 23.6 per cent) and 56.8 million tons in Bremerhaven (plus 1.3 per cent). Both port locations were back up to the throughput figures for the year 2019 again, with Bremen-City even reporting a slight increase.

There was a significant year-on-year increase in the volume of freight handled at the ports of Bremen in 2021, with total throughput of 9.7 million tons (plus 12.5 per cent). The positive trend for bulk freight (9.1 million tons, plus 14.6 per cent) and general cargo (3.7 million tons, plus 52.9 per cent) in 2021 meant a significant increase in total throughput, which amounted to 12.9 million tons at the port facilities in Bremen-City (plus 23.6 per cent).
General cargo throughput rose by 3.7 per cent to just under 60 million tons. This growth in the figures for general cargo can be attributed to the sharp increase in the non-containerised segment, where throughput was up by 23.2 per cent to almost 8.4 million tons. However, there was also a slight increase of 1.1 per cent in container throughput, which rose to 51.6 million tons. Expressed in standard containers (TEU), growth was far higher and rose by 5.2

per cent to more than 5 million TEU. This also meant slight growth compared with the figure for 2019 (just under 4.9 million TEU).

Automobile throughput in Bremerhaven remained stagnant at just over 1.7 million vehicles (minus 0.8 per cent). According to Acea (European Automobile Manufacturers' Association) the number of newly registered vehicles in Europa in 2021 was around 20 per cent lower than in 2019, the year before the pandemic. This directly affects automobile throughput in Bremerhaven. The total figure for 2021 breaks down into roughly one third as inbound seaborne freight, two thirds referred to outbound seaborne freight.

A total of 5,945 ships called at the twin ports in Bremen and Bremerhaven in 2021. Container ships made up the largest share with 40 percent, followed by car transporters with 20 percent.
The United States remains the strongest trading partner of Bremen's ports. 6.0 million tons were exported to the United States. This puts the United States well ahead of China (2.7 million) and Oman.[4]

2.1 Own sphere

In the framework of this certification of environmental management, it is first necessary to describe the sphere of the public port authority. For the Free Hanseatic City of Bremen, the Senator for Science and Ports uses the operative organisations of bremenports and the Harbour Master Office (HBH) (cf. Fig. 3).

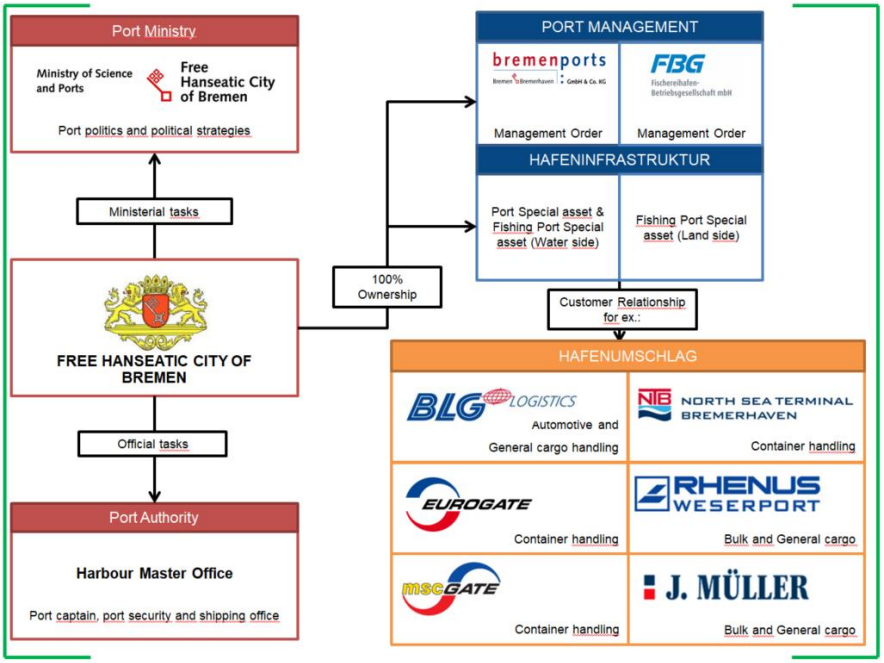

Figure 3: Role allocation in the twin ports of Bremen/Bremerhaven

While the Senator for Science and Ports performs the ministerial tasks (including port policy and political strategies), which also include responsibility for the ports as special assets, covering the whole area of the ports, bremenports as a wholly owned subsidiary of the Free Hanseatic City of Bremen manages these assets for the Ministry. bremenports also

[4] Facts and Figures 2021, p.13

manages the so-called port infrastructure. Furthermore, bremenports GmbH & Co. KG is responsible for the development, planning, expansion and maintenance of the ports and for marketing the twin ports.

Regulatory functions are performed by the Harbour Master Office (HBH), including the tasks of the port captain, port safety and averting any danger, together with the shipping office. For other public law permits the responsible other municipal and state authorities have to decide.

The port areas (ports as special assets) refer to both sites in Bremen and Bremerhaven. The Areas include a large number of compensation sites caused and managed by the port that today forms the green infrastructure of the ports. A closer look at the actual port areas encompassed in the special assets is provided in the Annex C – maps. These include the port areas in Bremen (and the international port area in Bremerhaven and the fishery port.

The municipality of Bremen and the state of Bremen in the case of the state fishery port in Bremerhaven are the owners of the municipal ports. The port infrastructure (see blue elements in Fig. 4) was financed by public funds and the port land areas were subsequently leased and/or sold to private users. From there on, the corresponding users are responsible for the so-called superstructure (see red elements in Fig. 4).

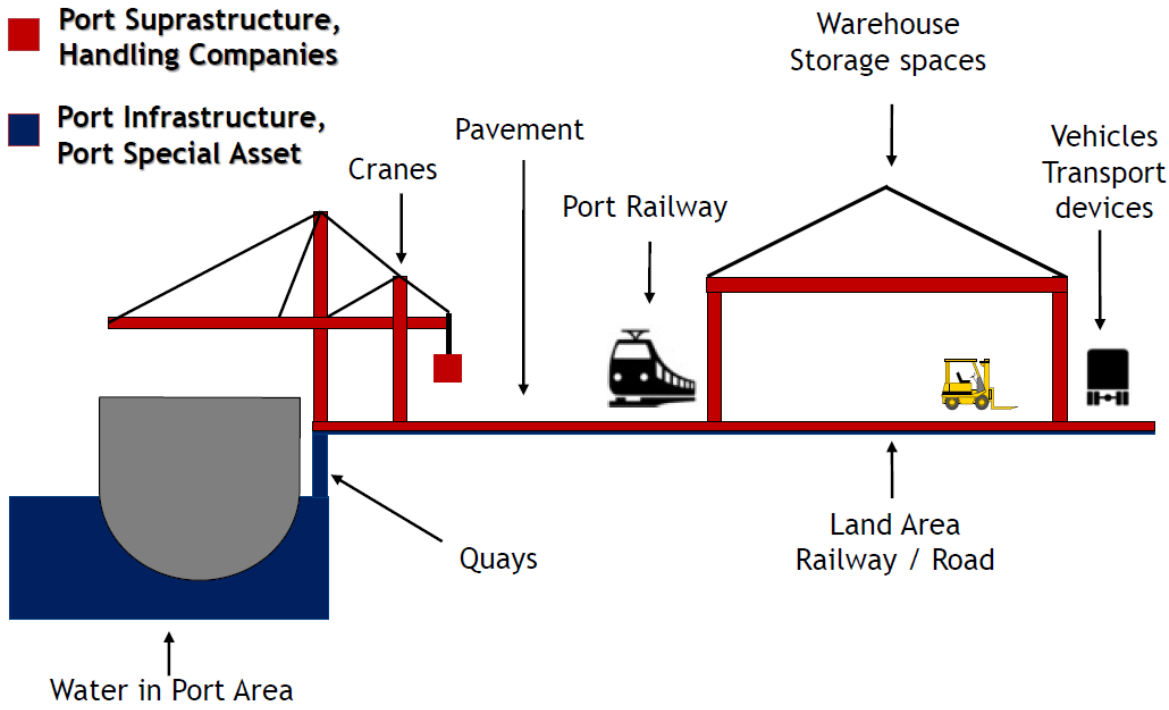

Figure 4: Task distribution in port infrastructure and port superstructure

Private companies are responsible for operating the terminals, for actual handling operations in the port and for warehousing activities.

2.2 Influence on other spheres

In addition to the direct sphere (see chapter 2.1), the municipality of Bremen respectively the state of Bremen act as land owners and lessors under private law. Any influence on the users is restricted to the contents of the contracts negotiated between the parties. Possibilities of influence no longer exist in those places where land has been sold to private users. This applies for example to certain parts of the city port areas in Bremen.

Compared to the port's own sphere, the port authority thus has very limited influence outside the activities described above (chapter 2.1). The actual public law permits for usage are issued by the competent municipal and state authorities (with the exception of the port authority).

2.3 Selected KPIs for the ports of Bremen

Bremerhaven

The ports in Bremerhaven are located at the estuary of the River Weser into the North Sea. Access to the port coming in from the North Sea extends for 32 nautical miles and takes for a ship about two and a half hours. The tidal range, i.e. the difference between high tide and low tide, averaged at 3.76 m[5] in the five-year period from 2017 to 2021. At the moment, the port can only be reached regularly regardless of the tide by ships with a draught of 12.8m (Panmax) respectively 12.5m (Post-Panmax). The vessel draught in the tidal part of the port is 14.5m.
The following two figures show the Überseehafen and the Fischereihafen which are both located in Bremerhaven:

Figure 5: Aerial picture of the Überseehafen

[5] WSA Weser-Jade-Nordsee, 02.12.2021, Information for Bremerhaven Alter Leuchtturm und Bremen Oslebshausen

Figure 6: Aerial picture of the "Fischereihafen"

The ports in Bremen City are connected to the North Sea by 72 nautical miles of the River Weser, a journey that takes five to six hours. The tidal range, i.e. the difference between high tide and low tide, averaged at 4.22m in the five-year period from 2017 to 2021. The maximum vessel draught in the tidal part of the port is outgoing 10.35m and incoming 10.7m. The following figures show the Industriehafen, the Neustädter Hafen and the Weserhafen Hemelingen which are all located in Bremen. The last one is used by barges.

Figure 7: Aerial picture of the “Industriehafen”

Figure 8: Aerial picture of the “Industriehafen” and the “Neustädter Hafen”

Figure 9: Aerial picture of the “Neustädter Hafen”

Figure 10: Aerial picture of the "Weserhafen Hemelingen" (only inland shipping)

Further details

Key KPIs for the ports of Bremen are constantly updated and published:

- Handling and port structure: Facts & Figures (issued every year Senator for Science and Ports; also as download at: https://bremenports.de/wp-content/uploads/2022/06/2021_Hafenspiegel-EN-1.pdf
- Shipping: Port information guides Bremen and Bremerhaven and information on ship's waste disposal and water ballast as download at: http://www.hbh.bremen.de/sixcms/detail.php?gsid=bremen138.c.1842.de

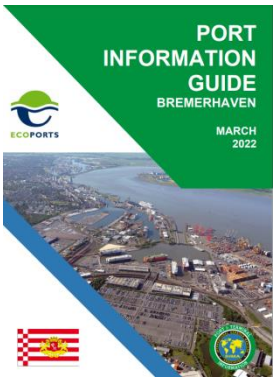

Table 1: Performance Indicators of the twin ports for 2021 at a glance

2021	Bremerhaven	Bremen	Total
Infrastructure:			
Area of port land[6]	**2,819 ha**	**1,837 ha**	**4,656 ha**
Navigable waters in the port[7]	**244 ha**	**302 ha**	**546 ha**
Total quayage[8]	**28 km**	**10 km**	**38 km**
Port business:			
Cargo handling in 1,000 tons[9]	**56,839**	**12,856**	**69,695**
Container handling in 1,000 TEU[10]	**5,014**	**5**	**5,019**
Passengers[11]	**52,069**	**-**	**52,069**

Cargo handling and main commercial activities [handling in 1,000 tons]:			
General cargo[12]			**60,016**
Containers[13]	**51,609**	**30**	**51,639**
Trade cars / number of vehicles[14]			**1,718**
Bulk[15]			**9,679**
Ore, stones, gravel[16]			**6,364**
Coal, oil, gas[17]			**680**

[6] Data source: internal data (port profile)
[7] Data source: internal data (port profile)
[8] Data source: Facts and Figures for the ports of Bremen and Bremerhaven 2021, p. 46
[9] Data source: Facts and Figures for the ports of Bremen and Bremerhaven 2021, p. 9,10, 11
[10] Data source: Facts and Figures for the ports of Bremen and Bremerhaven 2021, p. 22
[11] Data source: Facts and Figures for the ports of Bremen and Bremerhaven 2021, p. 32
[12] Data source: Facts and Figures for the ports of Bremen and Bremerhaven 2021, p. 9
[13] Data source: Facts and Figures for the ports of Bremen and Bremerhaven 2021, p. 22
[14] Data source: Facts and Figures for the ports of Bremen and Bremerhaven 2021, p. 28
[15] Data source: Facts and Figures for the ports of Bremen and Bremerhaven 2021, p. 9
[16] Data source: Facts and Figures for the ports of Bremen and Bremerhaven 2021, p. 16
[17] Data source: Facts and Figures for the ports of Bremen and Bremerhaven 2021, p. 16

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CHAPTER 3

ENVIRONMENTAL POLICY STATEMENT OF THE MINISTRY OF SCIENCE AND PORTS

3 ENVIRONMENTAL POLICY STATEMENT OF THE MINISTRY FOR SCIENCE AND PORTS

As the second-largest port location in Germany, the ports of Bremen handle functions which are of central economic importance at both national and regional level. The Senate of Bremen is fully aware of its responsibility for reconciling economic and environmental concerns in the interests of sustainability.

I herewith declare that the ports of Bremen

- take steps over and above the legally required environmental standards in order to develop and implement **innovative environmentally friendly technologies and processes** in respect of the ports and shipping. Sharing knowledge with the actors involved plays a key role in that connection;
- continue to pursue their target of achieving **carbon-neutral port infrastructure** by the year 2023. Top priority is given to avoiding carbon emissions by means of resource-saving and energy-efficient management. The ports of Bremen are furthermore endeavouring to change over their plant and equipment, fleet of motor vehicles and service vessels to emission-free drive systems and renewable energy supply. This will be achieved by developing new sources of energy and establishing appropriate energy storage systems;
- pursue the objective of making **the ports of Bremen a carbon-neutral and low-emission port location.** With that aim in mind, they support the endeavours of the port industry to evolve into a "green" hub within "green" transport corridors of a sustainable supply chain. They are investigating the development of suitable targets for reducing the emission of air pollutants;
- actively promote the generation, storage, use and processing of **green hydrogen** for both the port industry and shipping and will establish appropriate import and distribution structures for supplying the hinterland;
- contribute to the establishment of transport chains which are dedicated to the disposal and re-use of CO_2 from carbon capture processes and plant in the interests of climate change mitigation;
- take a holistic approach to **digitisation and the environment: p**rocess optimisation should also deliver benefits for the environment and the climate;
- are expanding their knowledge of the environment. The present **environmental monitoring activities** will be developed and expanded to enable better evaluation of change and target achievement;
- regard compliance with the demands of **water protection** (Marine Strategy Framework Directive, Water Framework Directive) **and nature conservation** (Natura 2000, Wadden Sea World Heritage Site) as a fundamental boundary condition and take these aspects into account in port operations and port development. It must be ensured that the environment is not impaired for man or nature to such an extent that the future of the port is in jeopardy;
- raise awareness of the demands of **a circular economy** in the port sector and endeavour to avoid waste which has a hazardous impact on the environment.

Dr. Claudia Schilling
Senatorin für Wissenschaft und Häfen
Freie Hansestadt Bremen

Bremen, Bremerhaven, June 2022

3.1 New environmental policies and legislation

Climate protection and GHG neutrality

22 countries from all over the world, including leading shipping nations such as Germany, signed the Clydebank Declaration at COP26 in Glasgow, which envisages the establishment of at least six green shipping corridors, each between two or more ports, by the year 2025. Wide consideration is to be given to environmental impacts in that connection. The Clydebank Declaration and corresponding measures are intended to make a voluntary contribution to the decarbonisation of transport. [18]

Activities at the ports of Bremen to mitigate the effects of climate change ultimately follow the explicit regional and local objectives and specifications for the implementation of international and national regulations. The Cooperation Agreement signed by the coalition government for the 2019-2023 term of office of Bremen's Parliament declares various objectives and initiatives that were agreed by the coalition parties.[19]

One of these objectives that apply to the ports of Bremen is the "greenports strategy", which envisages the systematic reduction of carbon emissions and the goal of achieving carbon-neutral port operations before the end of the above legislative session. The final report of the Select Committee, "Climate Protection Strategy for the Federal Land of Bremen", which was adopted in December 2021, contains ambitious targets and stipulates specific expectations of the ports.

According to the Coalition Agreement for the 20th legislative session of Bremen's Parliament, the objective for the port management company bremenports GmbH & Co. KG and the port infrastructure for which it is responsible is to achieve carbon-neutral operations by the ports by the year 2023, thus promoting achievement of the climate protection targets stipulated by the federal German government and in the Paris Agreement (COP 21).

Environmental Ship Index

The Environmental Ship Index (ESI) was developed by a working group of the main northwest European ports (including Bremen) on behalf of the World Port Climate Initiative (under the overall organisation of the IAPH) with the objective of enabling the comparison and assessment of emissions caused by shipping. It is a voluntary international rating system which allows ports to provide incentive programmes for environmentally friendly seagoing vessels. Ships can be registered voluntarily for the ESI and are allocated an individual ESI score calculated on the basis of various certificates and documentation and in accordance with the index formula.[2021] The ESI is continuously adapted in line with the latest statutory requirements (for example the use of fuel with the maximum sulphur content of 0.5%). In 2019, the ESI working group decided that in future, the ESI should also address the topic of noise pollution by vessels.

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[18] Policy paper COP 26: Clydebank Declaration for green shipping corridors, published 10 November 2021

[19] Environmental Report 2020" (cf. p. 48): https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_en.pdf

[20] The fundamental principle is to reward vessels whose emissions of air pollutants and carbon outperform the legal requirements (IMO Standard).

[21] Homepage Environmental Ship Index: https://www.environmentalshipindex.org/

A standard, coordinated specification for the collection and calculation of environmental ship data will enable ports all over the world to report on ship emissions in a comparable and transparent manner, to establish "green" corridors and to harmonise necessary port development measures with demands on shipping.

Future development of the Environmental Ship Index (ESI)

Since 2020, ESI administration has been fully integrated into the International Association of Ports and Harbors (IAPH) where administration and operational management are in the hands of the Green Award Foundation, which is domiciled in the Netherlands.

The proposed developments for the Environmental Ship Index, which will also impact on the ports, include a new and fully integrated calculation of the greenhouse gas emissions by ships in compliance with the assessment criteria used by the IMO: the Energy Efficiency Existing Ship Index (EEXI) and the Carbon Intensity Indicator (CII).[22] Other promising zero-emission technologies, such as batteries, fuel cells and sails, are also to be taken into account in the ESI.

In 2019 a project for a new ESI berth module was initiated by IAPH Cruise and Environment. The project is aimed at making data on the environmental performance of a vessel in terms of air pollutants and greenhouse gas emissions available on a global portal for users such as port operators. The portal uses data provided by the shipowners and operators on the vessel's emissions during a call at the port or when at berth. [23,24] This berth module is intended to facilitate decisions on appropriate measures to reduce emissions, such as the provision of shore power facilities, developing and adapting incentive systems or specifying "green" emission requirements during the time spent in port.

Further EU-Initiatives

In its Zero Pollution Action Plan which is part of the Green Deal, the EU demands that " air, water and soil pollution is reduced to levels no longer considered harmful to health and natural ecosystems […]." Amongst other things, this refers to targets for reducing the emission of air pollutants as well as the reduction of transport noise and plastic litter at sea.[25]
At European and national level, there are already various air quality directives, measures and plans to promote the reduction of air pollution.

In September 2021, the World Health Organization (WHO) published new Air Quality Guidelines, which aim to ensure maximum health protection for all groups of the population. These new guidelines are significantly stricter and will provide the fundamental basis for the forthcoming review of the European Directive on Ambient Air Quality and the EU-wide limit and target values stated therein.[26]
As part of its Green Deal and Fit for 55 package the EU has also stipulated measures for marine shipping to reduce the emission of air pollutants and greenhouse gases.

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[22] DNV website https://www.dnv.com/maritime/insights/topics/CII-carbon-intensity-indicator/index.html
[23] IAPH website: https://sustainableworldports.org/iaph-wpsp-cruise-project/; retrieved on 02.12.2021
[24] IAPH WPSP - CRUISE EMISSIONS PROJECT: https://sustainableworldports.org/wp-content/uploads/IAPH-Cruise-Emissions-Working-Group-Implementation.pdf
[25] Pathway to a Healthy Planet for All EU Action Plan: "Towards Zero Pollution for Air, Water and Soil": https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12588-Schadstofffreiheit-von-Luft-Wasser-und-Boden-Aktionsplan-der-EU_de
[26] Federal Environmental Agency, Air Quality 2021, provisional evaluation, p.22

Another core item of the European Green Deal is the EU Biodiversity Strategy 2030. One of the EU targets is to enlarge existing Natura 2000 areas and ensure strict protection of areas of very high biodiversity and climate value.[27] Action plans, concrete commitments and measures are also being developed and put in place at national level to protect biodiversity.

Water quality – Initiatives of the ports of Bremen and Bremerhaven

As a maritime centre located on the North Sea and beside the Wadden Sea World Heritage Site, the ports of Bremen and their impact on local water quality play a key role. An assessment of the German North Sea waters in 2018 pursuant to the Marine Strategy Framework Directive (MSFD) revealed that the North Sea is fundamentally not in good condition and is subject to a high level of pollution. On adoption of the above Directive, the EU created a legally binding framework within which the Member States take the steps necessary to achieve or maintain a good environmental status in the marine environment. The ports of Bremen implement various measures which are intended to improve water quality.

Shipping generates various categories of waste water and different legal regulations apply to the discharge of the individual types, such as ballast water, scrubber wash water and ship sewage. To date, however, no uniform national procedure has been agreed for the enforcement of these requirements. The Federal Land of Bremen has therefore now drawn up regulations on its own initiative and published guidelines for the treatment of ship-generated waste water.[28] These are intended to provide clarity about the valid requirements, not only for shipping, but also for the ports and public authorities. [29]

In addition to the above measures, guidelines for granting permits for underwater hull cleaning at the ports of Bremen was published in November 2021.[30]

Furthermore the ports of Bremen have already supported sustainable measures to reduce nitrogen oxide: Nitrogen oxides and sulphur oxides in the exhaust gas of ships contribute to a certain extent to the eutrophication of bodies of water. An information campaign is currently being developed on the correct disposal of medicines, in particular for seagoing vessels. Other steps to implement the IMO biofouling recommendations are also being investigated. [31]

[27] Biodiversity Strategy for 2030: https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en

[28] https://www.senatspressestelle.bremen.de/pressemitteilungen/mehr-umweltschutz-in-bremischen-haefen-regelungen-zum-umgang-mit-schiffsabwaessern-veroeffentlicht-371908?asl=bremen02.c.732.de

[29] https://bremenports.de/wp-content/uploads/2021/11/Merkblatt_10_11_2021_englisch_zurVer%C3%B6ff.pdf

[30] https://bremenports.de/promoting-environmental-protection-at-the-ports-of-bremen/

[31] Marine environmental protection: Transposition of the EU Marine Strategy Framework Directive (MSFD) https://www.bauumwelt.bremen.de/umwelt/wasser/meeresumweltschutz-23546

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CHAPTER 4

ENVIRONMENTAL ASPECTS AND PERFORMANCE OF THE PORTS

4 ENVIRONMENTAL ASPECTS AND PERFORMANCE OF THE PORTS

Depending on the location and surroundings, the expansion and usage of a port have a wide range of implications for the environment. According to and stated in our greenports policy there is a willingness to reduce environmental impacts as far as possible. However the certification to PERS still requires a focus on environmental aspects. For this purpose, as part of the PERS certification, a systematic consideration of significant environmental aspects is carried out first which is presented in Annex A: Register of significant environmental aspects".

4.1 Significant environmental aspects

In accordance with the requirements[32], "*significant environmental aspects"* refer to those which are subject to

- statutory provisions or
- political aims.

Annex A shows the results of the analysis with a systematic description according to the spheres for the port administration:

A: own sphere of the port infrastructure;
B: sphere of the port users

- influencing factors (port activities)
- paths of influence
- responsible organizations
- main legislation and applicable programmes and strategies
- legal and other requirements (measures)
- control measures with responsible organisation and remarks

In terms of function, this register is used for self-analysis and for developing suitable control instruments, and in the end also for providing transparent information to those interested.

[32] PERS – Requirements and guidelines Version 5 (2016)

4.2 Environmental performance indicators (EPI)

In the framework of environmental management, relevant environmental performance indicators have to be developed to verify compliance with the statutory and environmental requirements and to document progress made in improving the quality of the environment in and around the ports. According to the requirements and guidelines[33] the levels of consideration are:

Table 2: Overview indicators

Operational performance Indicators (OPI)	Management performance Indicators (MPI)	Environmental conditions Indicators (EPI)
Amount of dredged material	Use of regenerative energy port infrastructure and port management	Air quality
Emitted air pollutants from vessels in the port area	Recycling/Disposal of dredged material	Habitat index fpr the total port area
Noise from container port operations	Share fo ship arrivals with Environmental Ship Index	TBT[34] contamination in the sediments from the port areas
CO_2 emissions of the container terminal	Detected deficiencies at ship inspections	
	Compliance with sulphur limit regulations	

For all of the twelve indicators, the necessary basic data and statistics are available (cf. Annex B); at the same time, the evaluation of these indicators supports to verify environmental improvements.

The indicators considered provide information on the environmental impacts of port operations and progress towards environmental objectives, even if the actual impact of the public port management (bremenports GmbH & Co. KG) is limited.

[33] PERS – Requirements and Guidelines Version 5 (2016)
[34] TBT: tributyltin

4.3 Monitoring of legal requirements

In the following, the monitoring of the legal requirements of relevant environmental aspects and, if applicable, the corresponding key figures are presented.

4.3.1 Air quality

The air quality in and around the ports is of great significance for the ports of Bremen. Emissions which can impair the air quality in the port and the surrounding area are generated primarily during the combustion of fuel by shipping and by feeder and hinterland traffic. In terms of volume, the emissions caused by maritime shipping at the ports play a key role. In addition to carbon emissions that have an adverse impact on the climate, large quantities of sulphur and nitrogen oxides and particulates occur, which have different negative effects on the eco-system and human health. A particular challenge when it comes to reducing these emissions is that ships operate almost exclusively with fossil fuels, are mobile and are distributed across diverse berths within the port area. Depending on the type of vessel, they behave differently when calling at the port and in some cases consume vast quantities of electricity on board.

There are various key figures and indicators for checking and monitoring air quality which are collected and tracked as part of the PERS environmental management system.

Monitoring of sulfur limits for marine fuels

The Harbour master office is responsible for monitoring the sulfur limits in ship fuels during the port stay. It is the aim to determine a 100% compliance with the sulphur limit. The inspections are carried out even if there are no grounds to suspect an infringement, although priority is given to vessels for which the European Maritime Safety Agency has issued an “alarm”. Vessels are inspected, for instance, if the last inspection was more than one year ago. Over the last few years, approx. 0.5 to 1% of all incoming vessels were inspected.

- ***No inspections / 2 inspections in Bremen were last carried out in 2021 owing to the pandemic. No infringements were established in 2020.***

The local authorities are also supported by the Federal Maritime and Hydrographic Agency (BSH) in prosecuting violations of the use of low-sulphur marine fuels (MARPOL Annex VI, EU Sulfur Directive 2012/33/EU). In July 2017 the Agency installed an air monitoring station for test purposes at the northern end of the container terminal at the port of Bremerhaven with the support of bremenports. Following successful test operations, the BSH officially put the system into regular operation in autumn 2018.

This project measures the chemical composition of the exhaust gas plumes of passing ships. The BSH has also installed an AIS receiver (Automatic Identification System) which records the AIS signals transmitted by vessels within a radius of 25 km to ensure that the measured exhaust gas plumes can be reliably allocated to the correct vessels. The measurements of the exhaust gas concentration take place in real time.

The measured values are analysed automatically. The analysis has to satisfy defined quality criteria and it has to be ensured that the measured values can be allocated unambiguously to a particular vessel. If all the criteria are satisfied and any conspicuously high sulphur content is clearly attributable to a particular vessel, this is normally reported automatically to the prosecuting authorities one or two hours after the ship has passed the control point.

If not all the criteria are satisfied, the measurement is evaluated by an operator at BSH on weekdays. In that case, it is decided on a case-by-case basis whether a report is to be forwarded or discarded. All the reports are sent to the Port State Control (PSC), the river police in Brake, Bremen and Bremerhaven. Reports for ships which are leaving the port are sent to the river police in Hamburg.
The fuel of ships entering the port is normally inspected by the river police, but it is not possible to carry out prompt inspection of the fuels of outbound vessels.

In 2021, the BSH measurement stations in Bremerhaven analysed a total of 2393 exhaust gas plumes from passing ships up to November. Severe technical problems occurred in December 2021, so that only 4 measurements were performed in that month. The problems were remedied in January 2022 and the facility now carries out measurements again.

The results of the measuring station in Bremerhaven are shown in Figure 11. The chart shows the number of analysed exhaust gas plumes and the share of suspicious vessels for each month since the measurements first began in Bremerhaven.

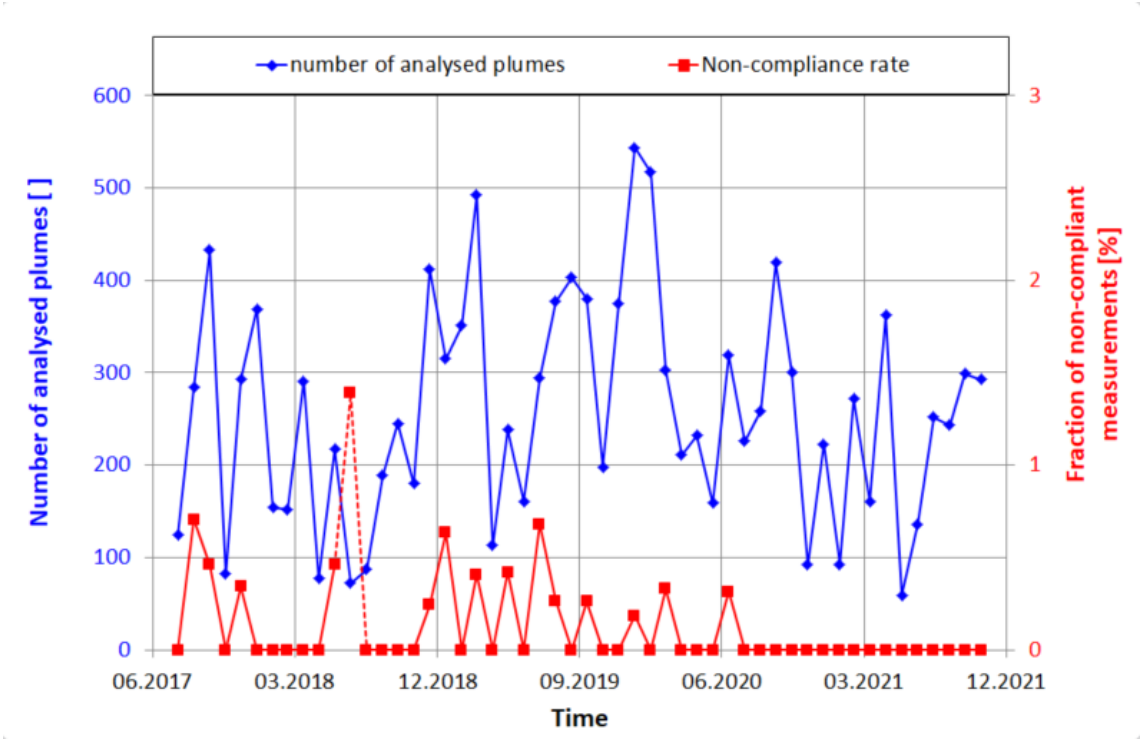

Figure 11: Results of the measuring station in Bremerhaven at the container terminal

- ***No suspicious exhaust plumes were measured in 2021 so that no prosecution was initiated. The observed compliance rate was 100%.***

Air quality monitoring

Air quality in Germany is monitored by the individual Federal Laender and the German Environment Agency. Evaluation and assessment of the air quality is based on the limit and target values defined in the Directive on Ambient Air Quality and Cleaner Air for Europe[35]. These values are in turn based on the figures recommended by the WHO (World Health Organisation) for the protection of human health.

[35] EU Directive 2008/50/EG, which was transposed into German law with 39th Federal Immission Control Ordinance

Monitoring the air quality in and around the ports is handled by the Senator for the Environment, Building and Transport on behalf of the Federal Land of Bremen. Since 1987, Bremen's air monitoring system (BUSY) has captured data to monitor the air quality at permanently installed measuring points in Bremen and Bremerhaven.[36]
The air monitoring station in Hansastrasse in Bremerhaven monitors the air quality in the urban background. This is within a radius of less than 500 m around the port (Kaiserhafen). The data for Bremen is captured at the station in Hasenbüren, which is also an air monitoring station for monitoring the urban background or assessing the air quality in the vicinity of the ports.

The figures for the average annual concentrations of air pollutants NO_2 and SO_2 [37] as well as the particulate matter concentration for the air monitoring station at Hansastrasse in Bremerhaven and in Bremen-Hasenbüren are shown in the Annex B.[38]

- ***The figures measured at the monitoring stations in the vicinity of the ports of Bremen have complied with the European ambient air quality limits for many years.***

- ***In terms of the WHO Air Quality Guidelines39 from the year 2021, the measurements at both stations exceeded the recommended figures for NO2, PM10 and PM2.540. WHO-benchmarks for annual averages: 10µg NO2/m3, 15µg PM10/m3 und 5µg PM2,5/m3 ( ).***[41]

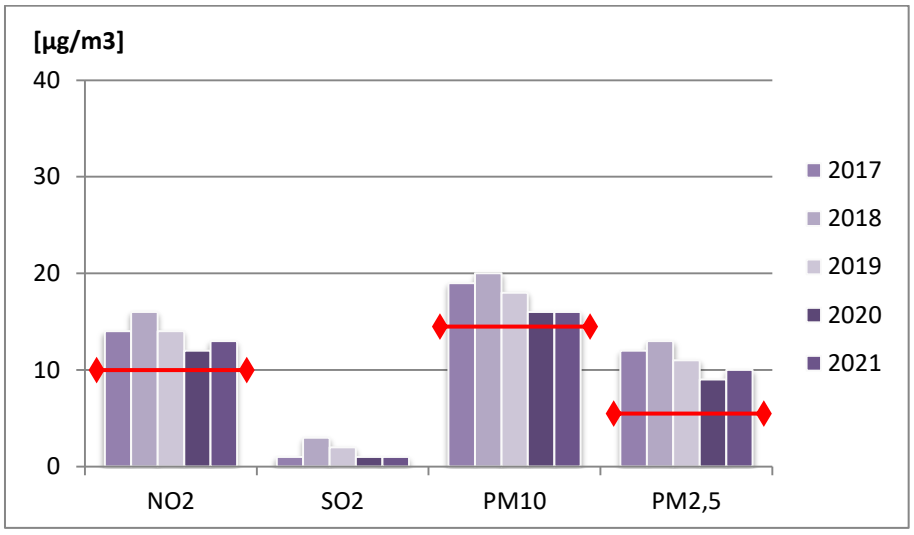

Figure 12: Annual average concentration values of air pollutants at "Bremen – Hasenbüren"

[36] Source: BUSY 2016 Annual Report
[37] NO_2: nitrogen dioxide, SO_2: sulfur dioxide, $PM_{10\ bzw.\ 2,5}$: particulate matter with an aerodynamic diameter less than 10 or 2.5 µm.
[38] There ist no limit value for sulfur dioxide definite.
[39] German Environment Agency: Air quality 2021, preliminary evaluation dated February 2022, p. 23
[40] NO_2: nitrogen dioxide, PM: particulate matter
[41] Should these WHO guideline values develop into limit values, reductions in pollutant emissions would be required.

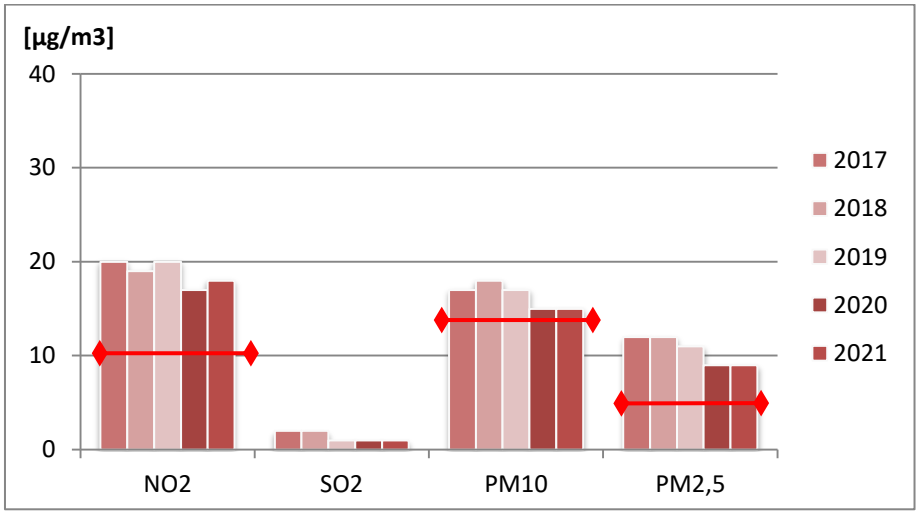

Figure 13: Annual average concentration values of air pollutants at "Bremerhaven – Hansastrasse",

Air pollutants emitted from vessels in the port areas (calculated)

The Institute of Shipping and Logistics has designed a simulation tool called Vessel Traffic and the analysis tool ECOPAW[42] which provide a basis for modelling and evaluating the emissions of the air pollutants nitrogen oxides, sulphur oxides and particulate matter as well as the greenhouse gas carbon dioxide generated by marine shipping, inland shipping and internal port shipping. These two tools were used to calculate the emissions for the port areas Bremerhaven and Bremen.
Since 2020, ship emissions have been calculated even more precisely at berth level by means of the IST list of vessels, i.e. with a detailed simulation of the vessel arrivals. This enables the emissions to be simulated and compared at berth level.

The first systematic classification of ship emissions by different types of vessel at the ports of Bremen was conducted with the help of ISL simulation calculations for the years 2012, 2015, 2018 and 2019. Because they have the same calculation basis, the year 2012 is comparable with 2015, the year 2018 with 2019. The significant reduction in sulphur oxide and particulate matter emissions as from 2015 in the simulation calculations is attributable to the introduction of a new limit value for the sulphur content of marine fuels.[43]

[42] ECOPAW: stands for "ecological pawprint"
[43] Since 2015, shipping has been obliged to use fuels with a maximum sulphur content of 0.1 % in Sulphur Emission Control Areas (SECA).

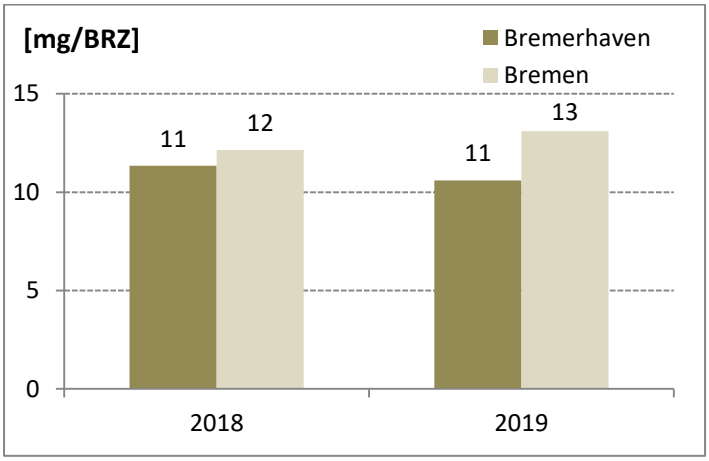

Figure 14: Calculated: Calculated Particulate Matter emitted from vessels in the port areas[44]

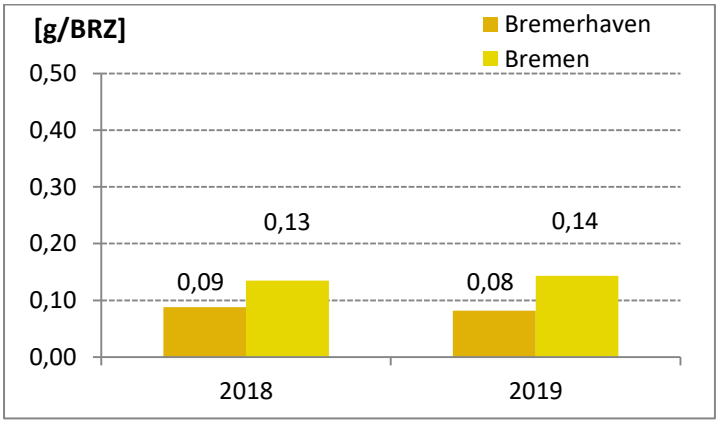

Figure 15: Calculated SOx emitted from vessels in the port areas

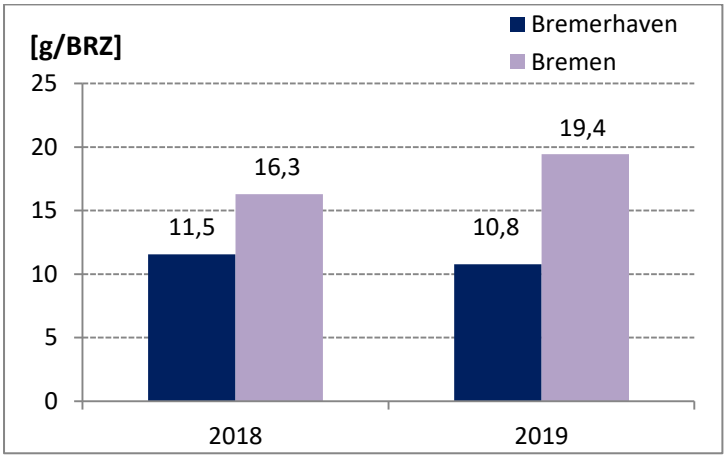

Figure 16: Calculated NOx emitted from vessels in the port areas

By creating an appropriate legal framework which prescribes limits for the emission of air pollutants and greenhouse gases by shipping and the use of alternative fuels and propulsion systems by shipping could lead to further significant reduction of actual and calculated air pollutants.

[44] Port area excluded transit an head for port

4.3.2 Water quality

As a maritime centre located on the North Sea and beside the Wadden Sea World Heritage Site, the ports of Bremen and their impact on local water quality play a key role. There is currently no systematic monitoring to classify the water quality at the ports in Bremerhaven and Bremen, but the use of these waters is monitored to check compliance with the permits granted by the water authorities.

Permission for the discharge of waste water into port water areas is granted in accordance with the requirements of the Waste Water Directive. The water authority then monitors compliance with the approved limit values. The waste water in these cases refers to cooling water or waste water from the shipyard docks.

- ***Monitoring the use of port waters has not revealed any cases in which the limit values were exceeded to an extent that would have led to action on the part of the environmental authority.***

As a rule, the environmental authority regularly takes samples of precipitation that is discharged into the ports. Only general recommended figures have been issued as no further requirements are imposed on the treatment of precipitation. The figures, however, reflect the pollution levels of these areas and are thus a reliable monitoring instrument for identifying the pollution of adjacent sites.

- ***Monitoring the direct discharge of precipitation confirms that the recommended values for precipitation are generally observed. Sporadic incidents of non-compliance are frequently a consequence of accidents.***

Infringements of legal regulations in connection with the treatment of waste water from ships is investigated, recorded and prosecuted by the Maritime Environmental Protection Division of Bremen's police force.

- ***In 2021 there were neither any complaints relating to MARPOL Annex IV with regard to the treatment of waste water from ships within the jurisdiction of the ports of Bremen nor any indication of infringements on the River Weser or in the North Sea.***

Sampling and chemical analysis of the water at selected areas of the port began at the end of 2020. The sampling locations were chosen in accordance with the sediment monitoring locations. Testing takes place during four campaigns per annum. The analysed parameters are defined in consultation with the environmental authority. It should be noted that the results of only two measuring campaigns are available to date.

- ***The available measurement data confirms that the concentrations of the examined substances in the port waters are lower than are similar to the concentrations in the River Weser. The only exception is TBT, which occurs in significantly higher concentrations in the port waters because of the use of TBT in ship paints.***

This substance has, however, meanwhile been banned. It can be assumed that the relatively high pollution levels in the port waters are attributable to the remobilisation of TBT from sediment and will therefore decrease over time.

4.3.3 Sediment quality

The sediment in Bremen and in the port areas behind the locks in Bremerhaven is analysed regularly in accordance with a defined monitoring framework as part of the dredging spoils management and PERS environmental management schemes. These analyses permit an assessment of the handling of dredging spoils.[45]
After analysis, dredging spoils from the port areas can either be relocated to other water areas or disposed of, depending on the results. The objective of transferring the sediment to another location in the marine environment is to leave the sediment within the system and consequently minimise any change in the sediment balance. This has both ecological as well as economic benefits, as the treatment and dumping of contaminated dredging spoils on shore is a far higher cost factor than relocation in water.

- ***Large volumes of sandy material from the ports of Bremen are already transferred to other locations; an improvement in the sediment quality of fine, silty dredging spoils is already noticeable in some port areas so that the option of relocation can meanwhile be considered.***

4.3.4. Resources and Closed Substance Cycle

The management of raw materials and resources also plays a key role at the ports of Bremen.[46] The efficient and careful management of natural reserves is a key competence for the future viability of business enterprises. Increasing resource efficiency reduces environmental impact and improves their ecological footprint.[47]
The German Closed Substance Cycle and Waste Management Act (KrWG) is a tool for saving natural resources. The objective is to establish a circular economy and ensure the protection of man and the environment in connection with waste generation and management.

Dredging spoils

The dredging spoils that occur during port maintenance to ensure sufficient water depths account for by far the highest mass flows at the ports of Bremen and are a decisive quantity in Bremen's waste management plan.[48]

[45] The assessment for Bremerhaven is conducted pursuant to the "Joint transitional regulations for the treatment of dredged material in coastal areas" (GÜBAK), whereas sediment at the port of Bremen is assessed pursuant to the "Practical instructions for the handling of dredged material in inland waterways" (HABAB). The objective of these regulations is to create harmonised standards and criteria for the treatment of dredging spoils and thus minimise negative impact on the environment as much as possible.
[46] Agreement to cooperate in a coalition government for the 20th term of office of Bremen's Parliament 2019-2023, p. 83
[47] Master's thesis of Steffen Wichern: Waste balance sheet for a port district based on the example of bremenports, Bremen University of Applied Sciences
[48] Master's thesis of Steffen Wichern: Waste balance sheet for a port district based on the example of bremenports, Bremen University of Applied Sciences, p. III, Abstract

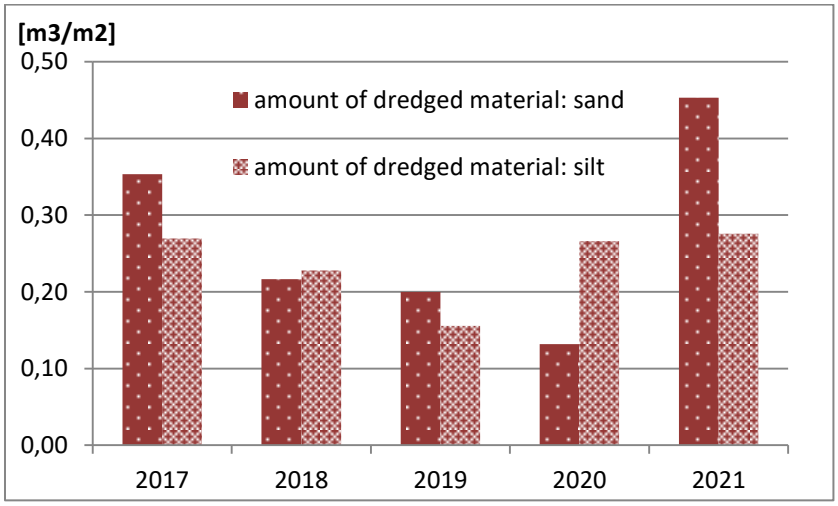

Figure 17: Amount of dredged material Überseehafen and Fishery Port (Silt) and Strom- and Columbuskaje (sand)

The aim is to minimise the need for conventional dredging work and sediment removal as far as possible. In Bremerhaven, however, substantial sedimentation from the Weser estuary enters and settles in the port areas of Überseehafen behind the lock. There is very little scope for influencing the occurrence of this sediment, which cannot be avoided or further reduced.

Different legal regulations apply to the treatment of sandy and silty dredging spoils. As a rule, sandy dredging spoils can be relocated to other water areas subject to compliance with the legal requirements for relocation within the marine environment and by agreement with the competent approval authority. The same fundamentally also applies to silty dredged material. However, the silty dredging spoils from some areas behind the locks at the ports of Bremen still fail to satisfy the requirements for relocation within the marine environment, so that the material has to be disposed of on shore.

The German Closed Substance Cycle and Waste Management Act (KrWG) defines "disposal" as recovery or disposal. If the dredged material has to be disposed of on shore because of its contaminant properties, it first has to undergo treatment, i.e. dewatering.
In the case of bremenports, dredging spoils are disposed of or treated at the Integrated Disposal Facility for Dredged Material (IBE) in Bremen-Seehausen. Dealing with the mainly very fine dredged material at this facility includes treatment, recovery and disposal. If the dredging spoils do not satisfy the criteria for recovery, the dewatered dredged material is disposed of at the mono-landfill site[49] in Bremen-Seehausen in compliance with the legal regulations specified in the Landfill Ordinance (DepV).

If the treated dredging spoils satisfy the recovery requirements, various options are available for recovery and further use. These include, for instance, internal use for the construction of the mineral safety elements of the mono-landfill for dredging spoils (technical barrier, mineral sealant) or use in the construction of new, additional dewatering fields at the IBE (construction of peripheral barriers as well as safety elements). In addition to such internal use, some external recovery projects have also been successfully implemented in

[49] Landfill Ordinance (DepV) §2 Definition of terms: mono-landfill: landfill or landfill section in Landfill Class 0, I, II or III, in which specific bulk wastes which are similar in terms of type, contaminant content and reactivity and also mutually compatible, are deposited unmixed together with other wastes.

compliance with the legal requirements, for instance in the construction of dykes and landfills.

Within the framework of its sediment/dredging spoils management concept, bremenports endeavours to raise the share of material that can be recovered and to minimise the quantity that has to be disposed of. A high share of recovered material saves landfill volumes and thus means a longer life cycle for the dredged material mono-landfill. Moreover, using the dredged material as a substitute for constructing the safety elements of the mono-landfill in Bremen-Seehausen or as a substitute in external recovery projects saves resources on a significant scale as it eliminates the need to procure comparable material.

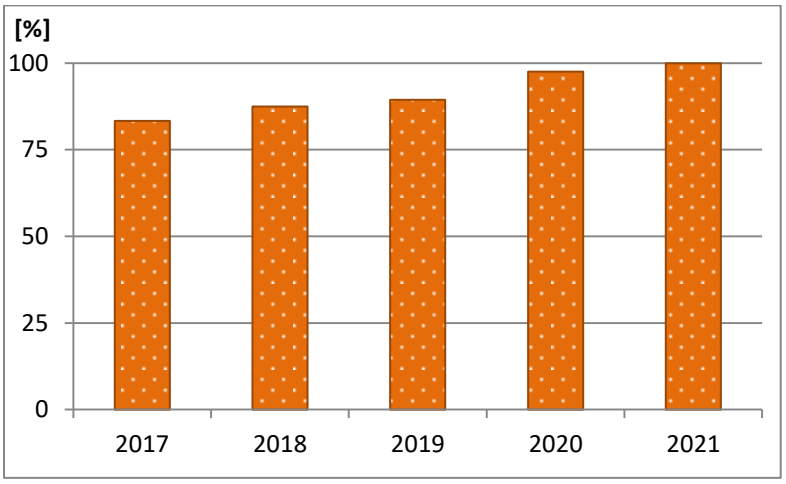

Figure 18: share of silt accepted at IBE[50] for recovery and/or disposal that was actually used in (internal) projects

- ***In recent years, a high share of previously silty dredging spoils from the ports of Bremen could be used for internal projects after suitable treatment.***

This can be attributed to a continuous improvement in sediment quality.

External use in dyke and landfill construction projects has also been achieved on a not insignificant scale. bremenports continues its endeavours to raise the share of external use over the long term and thus make a sustainable contribution to environmental and climate protection, to keep the landfill volume as low as possible and save resources.

Ship waste

Another major waste flow at the ports refers to ship-generated waste, such as the large quantities of bilge oil that have to be disposed of.[51] Monitoring notification of waste by the vessels pursuant to MARPOL is the responsibility of Bremen Port Authority (HBH).

The waste management plan for the ports of Bremen and Bremen's ordinance on port reception facilities specify the regulations for the treatment of ship-generated waste and cargo residues.[52,53] The provision and use of port reception facilities is intended to reduce in

[50] Integrated Disposal Facility for Dredged Material
[51] Master's thesis Steffen Wichern: Waste balance sheet for a port district using bremenports as an example, Bremen University of Applied Sciences, p. III, Abstract
[52] Waste management plan for the public ports of the Free Hanseatic City of Bremen: - Last updated

particular the illegal disposal of ship-generated waste and cargo residues at sea and thus counteract marine pollution with garbage and plastic.[54]

Pursuant to the law on the provision of port reception facilities for ship-generated waste and cargo residues, port owners are obliged to provide sufficient reception facilities for ship-generated waste and cargo residues. Moreover, skippers are obliged to hand over all on-board ship waste to a port reception facility for disposal before leaving the port.
The current Schedule of Port Charges for the Federal Land of Bremen[55] includes an obligation to pay a flat-rate charge, depending on gross tonnage, for the disposal of non-hazardous operating waste pursuant to Annex V of the Marpol Convention (such as cleaning rags), irrespective of whether or not such waste is actually disposed of at the port (no special fee system). Vessels which pay the above charge are provided with receptacles for the separation of waste. The disposal of ship-generated waste at the ports of Bremen is currently and will continue in future to be entrusted to certified waste disposal companies which have sufficient logistics and technical plant capacities to ensure the due and proper disposal or recovery of all quantities and categories of waste. These waste disposal companies are listed in the waste management plan.

Stastistics

Disposal of ship-generated oily waste pursuant to Annex I MARPOL Convention, including but not limited to oil sludge resulting from crude oil washing and bilge oils: In 2021 a total of 1246 vessels disposed of waste occurring during ship operations pursuant to Marpol I at the ports of Bremen, i.e. 21% of the total vessels that called at the ports of Bremen in 2021. Ships disposing of such waste in Bremerhaven account for a share of 25%, which is higher than in Bremen (6%). The average quantity per ship or gt is also higher in Bremerhaven. This can presumably be attributed to the larger average vessel size and the car carriers and container ships that call at the ports regularly (liner services).

Disposal of ship-generated garbage pursuant to Annex V MARPOL Convention: In 2021 a total of 4851 vessels disposed of garbage pursuant to Marpol V at the ports of Bremen, i.e. 81% of all vessels calling at the ports. The average disposal quantities per ship or gt are comparable for this category.

The willingness to hand over waste at the ports has generally increased in recent years. Many shipping companies that operate liner services seek detailed information about the waste charges of the individual ports and accordingly instruct their crews about which types of waste can be disposed of inexpensively at which ports. The crews thus develop waste disposal routines. The crews of tramp vessels, on the other hand, which make up a high

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2017: https://www.transparenz.bremen.de/metainformationen/bekanntmachung-des-abfallbewirtschaftungsplans-fuer-die-oeffentlichen-haefen-der-freien-hansestadt-bremen-stand-2017-153420?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

[53] Bremen act on port reception facilities for the discharge of ship-generated waste dated 24 November 2020 (Bremen law gazette 2020, p. 1584): https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-ueber-hafenauffangeinrichtungen-fuer-die-entladung-von-abfaellen-von-schiffen-bremisches-schiffsabfall-entsorgungsgesetz-bremsaeg-vom-24-november-2020-160043?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

[54] Agreement to cooperate in a coalition government for the 20th term of office of Bremen's Parliament 2019-2023, p. 82

[55] Hafengebührenordnung für die Bremischen Häfen in Bremen und Bremerhaven: https://bremenports.de/wp-content/uploads/2017/03/Hafengeb%C3%BChrenordnung_01012020_DEU.pdf

share of the vessels calling at the ports in Bremen-City, are frequently not informed about the waste disposal options (without additional costs).

- ***Increasing quantities of waste pursuant to Marpol V are now being handed over as a result of stricter monitoring at the ports of Bremen.***

The crews are increasingly aware that handing over ship-generated waste in accordance with European law is mandatory at every port and that this requirement can be waived only in very few exceptional cases. The objective of the ports of Bremen is that explicit or implicit disposal orders will no longer be the norm, but that exemption from the waste disposal obligation will be the exception.

In respect of the occurrence of waste on shore at the ports, priority is always given to the avoidance of waste rather than recycling or disposal. The business enterprises located at the ports, such as cargo handling companies and manufacturing industry, are urged to design their operating and production processes so as to ensure that they keep the generation of waste to a minimum.

4.3.4 Ship Inspections

Bremen Port Authority inspects incoming vessels not only as regards the sulphur contents of their fuel, but also for further irregularities. In previous years, it reported the total number of infringements in relation to the number of inspections that were carried out. The quality of the documented cases was and still is dependent on the individual inspector. Inspections are carried out on a random basis and based on assumptions of a higher probability of an irregularity. This indicator will therefore be reported in a different manner in future.

The example of “Waste”, which falls into the Environmental category, clearly shows how greatly the focus of the inspection varies according to inspector and “assumption”. As in previous years, Bremen will conduct strict inspections of the waste notifications The share of reported and prosecuted offences against the obligation to report waste amounted to 45% in relation to the total number of established infringements. The share in Bremerhaven is 0%.

In 2021, a total of 6% of all ocean-going vessels that called at the ports of Bremen were inspected. This figure is lower than in preceding years owing to the Covid pandemic. Whereas roughly a quarter of all incoming vessels were inspected in 2019, this figure had dropped to 16% by 2020.

An overview in Annex B shows the recorded infringements for the year 2021 as example.

4.3.5 Other key performance indicators

In future, the EU Commission will focus on better tackling noise at source, based on the evaluations of the Environmental Noise Directive and Outdoor Noise Directive. Implementation is to be achieved by improving the EU noise-related regulatory framework on tyres, road vehicles, railways and aircraft. The trend for the noise development indicator resulting from operation of the Container Terminal in Bremerhaven is shown in the list of KPIs in Annex B.

Habitat-Index for the total port area

The expansion of port infrastructure entails a number of adverse effects on the marine and coastal habitats at the Weser estuary and the neighbouring Wadden Sea. The objective is therefore to minimise land consumption for infrastructure projects. If it is impossible to avoid

land sealing and construction on natural sites, numerous legal requirements have to be observed before infrastructure projects can be approved and executed. Because the ports of Bremen are located at the mouth of the River Weser, directly adjacent to Lower Saxony Wadden Sea National Park, comparatively strict requirements have to be fulfilled when implementing compensatory mitigation measures.

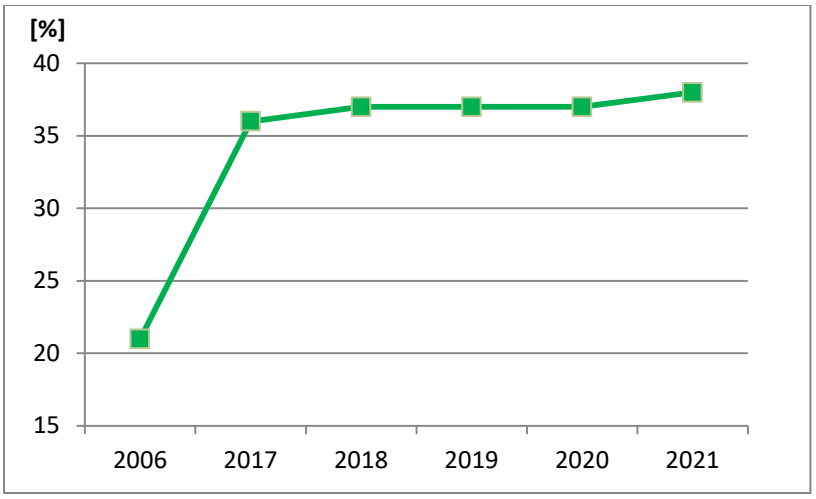

Figure 19: Habitat index for the total port area

The chart shows the habitat sites for which the ports of Bremen are responsible in relation to the total port area in hectares.[56]

- ***This share has almost doubled since this KPI was first recorded in 2006.***

[56]All areas which are the responsibility of the port infrastructure.

4.4 Monitoring of policy requirements

This section presents the procedures for monitoring of policy requirements as there is the the reduction of CO_2 and the environmental ship index (ESI).

4.4.1 Reducing CO_2

The ports of Bremen are ideally suited and excellently equipped to promote the establishment of green corridors for shipping. The port management company bremenports has been greenhouse gas-neutral since 2013 and, pursuant to the Coalition Agreement, climate-neutral port infrastructure, i.e. including the “special assets”, is to be achieved by the year 2030. Further reductions in carbon emissions, which will lead to a climate-neutral port location, are to be initiated with the help of alliances between the stakeholders at the ports. The target year for achieving a climate-neutral post location set by the senator for science and ports is the year 2035.

Port management company and port infrastructure

The electricity consumed by the port management company and the port infrastructure is procured directly as green power wherever possible (88 per cent in 2021, cf. Fig. 20).
Shown is the electricity from renewable energy in relation to the total electricity consumption. The decrease in 2018 is due to an increase of technical plants. In 2018, for example, the port pumping station in the industrial port in Bremen was considered for the first time. For technical reasons the station cannot be supplied with green electricity.

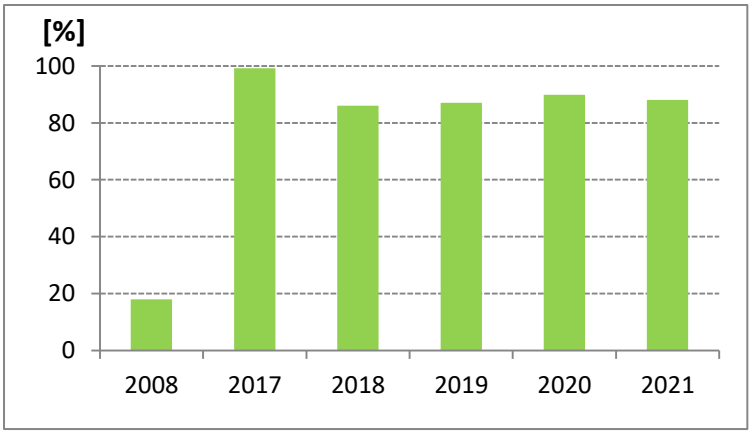

Figure 20: Use of regenerative energy

Since 2013, unavoidable emissions resulting from heat generation, the company fleet and business travel have been offset for bremenports GmbH & Co. KG by the purchase of certified emission reduction credits, so that the port management company has been greenhouse gas-neutral since the year 2013. A share of the emissions for the Special Assets has also been offset since 2017 in the form of certificates. bremenports energy management system also ensures that energy efficiency is continuously improved and total energy consumption reduced.

- ***In its efforts to achieve the objective of making the port infrastructure carbon-neutral by 2023, the company has already succeeded in reducing CO2 emissions from 7000 t CO2 in 2011 to 1,115 t CO2 in 2021, which is equivalent to a relative reduction of 84.1 %.***

Figure 21 shows the trend for residual emissions and the share of emissions reduced by the purchase of CER credits.

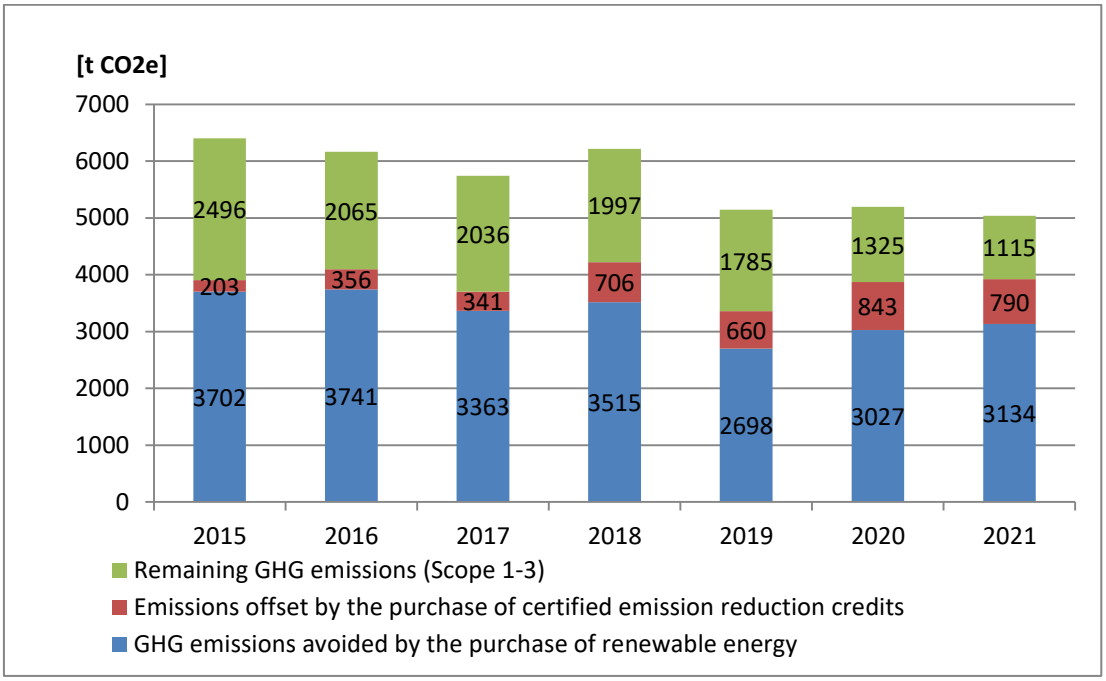

Figure 21: Trend for residual emissions and the share of emissions reduced by the purchase of CER credits for the port infrastructure

Ship operations accounted for the greatest share (nearly 59%) of real-world CO_2 emissions in the year 2021 (without CER credits). Another 25% are attributable to heat supply, 8 % to the company fleet. It should be noted that the evaluation for 2021 contains only estimated figures for heat supply. Owing to the Coronavirus pandemic, only one business trip was made by air, i.e. the Scope 3 emissions are not representative. Although these two uncertain factors in the data influence the proportions of the emissions to one another, the share is fundamentally similar to the figures in previous years.

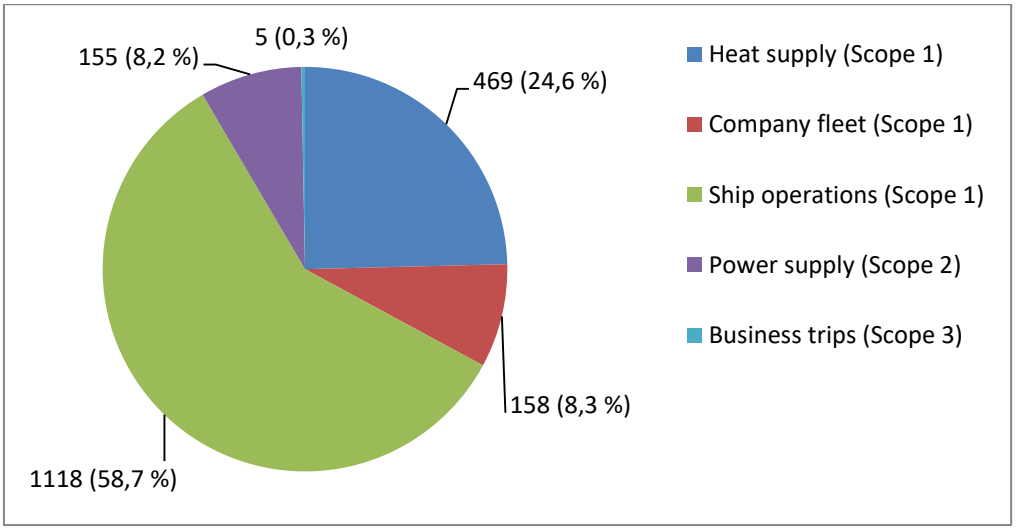

Figure 22: CO_2e-Emissionens in Tons CO2e

To address the current residual CO_2 emissions, it is necessary to promote the modernisation or renewal of our fleet of vessels with propulsion systems that use renewable fuel. The same applies to the company automobile fleet. We also have to make more use of the option of renewable energy sources for heat supply and, where possible, raise our own generation of renewable energy. For the time being, however, the subsequent purchase of Certified Emission Reductions will remain indispensable to offset unavoidable emissions.

- ***An initial goal to lower total energy consumption by port infrastructure by 10 per cent relative to basis year 2015 was already achieved in 2020.***

By 2025 total final energy consumption is to be reduced by 15 per cent relative to 2015.

Climate-neutral port location

The cooperation of the terminal operators, the transport business inclusive of marine shipping, and the other business enterprises at the port is necessary to help us achieve our objective of becoming a climate-neutral port location until 2035. bremenports endeavours to set a good example in this respect and supports initiatives that help to achieve significant reductions for the port location and the transport chains and simultaneously boost the competitiveness and attractiveness of the ports. These measures include, for instance, significantly increasing the local generation of renewable energy, improving efficiency with the help of digitisation as well as promoting sector coupling and innovation to a hydrogen economy inclusive of renewable electricity-based fuels. Together with the relevant stakeholders, the senator for science and ports together and bremenports aim to achieve GHG-neutrality for the port location by the year 2035.

It was in view of these objectives that bremenports conducted the **SHARC[57] research and development project** on behalf of the Free Hanseatic City of Bremen, in cooperation with partners from the scientific and industrial sectors. The aim was to prepare for a carbon-neutral port within the scope of the funding provided by what was then the Federal Ministry for Economic Affairs and Energy. Using independently operated simulation tools by two of the project partners, it could be proved that it would be possible to make the Überseehafen district in Bremerhaven carbon-free in terms of energy by the year 2030:

- ***SHARC has indicated the route to climate-neutral energy supply at the port and shown how this could already be implemented by the year 2030.***

On completion of the project, the partners will jointly continue to investigate the options revealed by SHARC for a cross-district operating model. Follow-up projects are to be developed in consultation with the business enterprises at the port for maximising local renewable energy generation, storage and use in the port district.

CO2 emissions of the container terminal

Data on carbon emissions in kg for each 12-foot container handled at the Container Terminal has been collected for the terminal operators Eurogate CTB, Eurogate TS, NTB and MSC Gate since 2008.

- ***The goal of reducing emissions by 25% in 2020 relative to 2008 was achieved.***

Since 2021 Eurogate has been setting up a new energy management system which will analyse energy consumption across all companies. New key performance indicators will be

[57] Smart Harbor Application Renewable Integration Concept

developed for that purpose. These have not yet been specified, but will be reported here in future[58].

One new and ambitious target has already been drawn up: the real carbon emissions of any given year are always to be achieve a year-on-year reduction. That target could not yet be achieved for 2021. Because of Covid 19, there was less total throughput and workload at the terminals in 2020, which meant a significant reduction in energy consumption and consequently lower carbon emissions. In 2021, however, container throughput recovered substantially, leading to an increase in energy consumption and therefore also an increase in carbon emissions.

4.4.2 Environmental ship index

The latest statistics published by the World Port Sustainability Program for the Environmental Ship Index (ESI) show that the number of ships in the global ESI database is rising again. By 1 April 2020, 6890 seagoing vessels, with an average ESI score of 29.1, and 62 incentive providers (primarily ports) were registered in the system. The number of ships fell from 8033 to 6875 after 01.01.2020.

The ESI is continuously adapted in line with the latest statutory requirements. As vessels have been permitted to use only fuel with a maximum sulphur content of 0.5% since the beginning of 2020, the ESI formula had to be modified accordingly. Vessels are now given bonus points only if they bunker compliant fuel, i.e. with less than 0.5% sulphur. A new formula to calculate the SOx subscore was also developed to reflect the current requirements (further details are provided on the ESI website)[59]. As a result, the average figures for the valid and reported ESIs were approx. 15.5 % lower.

Owing to the new calculation basis, the previous figures on the share of ships with an ESI score calling at the ports of Bremen are no longer comparable with the “new” figures. Moreover, a reporting charge, depending on the vessel size, was introduced on 01.01.2021. Both these measures led to a decrease in the total number of ships worldwide reporting an ESI score and also to a reduction in the number of ships with an ESI score calling at the ports of Bremen.

[58] Owing to a new calculation basis, the old key performance indicators up to 2020 are no longer comparable with the new key performance indicators as from 2021.
[59] https://www.environmentalshipindex.org/

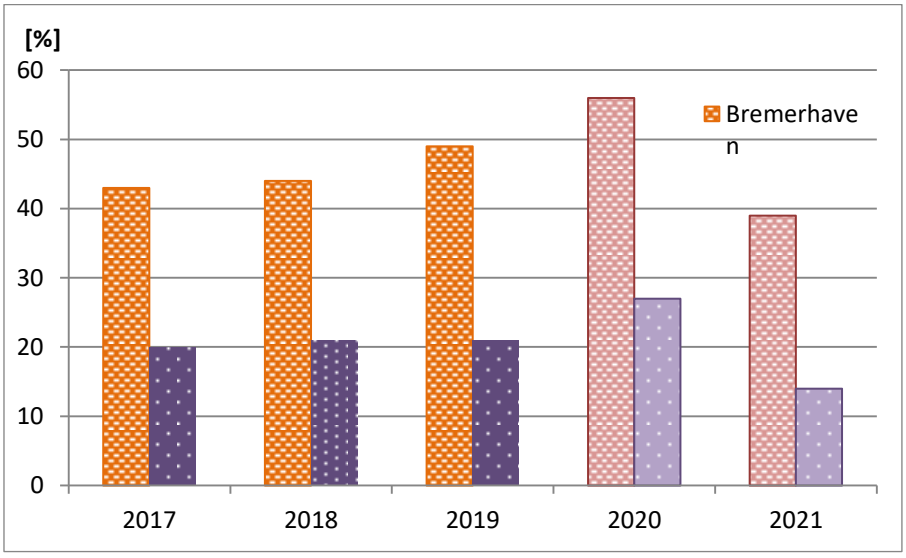

Figure 23: Share of vessels with an ESI Score calling at the port of Bremerhaven and Bremen

4.4.2 "greenports Award 2021"

This is the eighth time that bremenports has presented the greenports awards[60]: In 2021 both the greenports award for the category "Most eco-friendly vessel" and the award for the category "Most eco-friendly fleet" go to the shipping company Holwerda Shipmanagement with the MV Freya, achieving an ESI (Environmental Ship Index) score of 56.11 points in both categories.

MV Freya (IMO number 9219874, 5067 GT) was built in 2000 and sails under the flag of the Netherlands. The vessel has an SCR catalytic converter (SCR = selective catalytic reduction) which reduces the nitrogen oxide emissions in the exhaust gas, enabling the ESI score of 56.11. The hull design also helps to promote environmental protection.

A number of new criteria applied to the greenports awards this year due to the above mentioned changes: in 2020, the maximum permissible global limit for the sulphur content of marine fuel was reduced to 0.5 per cent. The total number of vessels calling at the ports of Bremen was around 10% lower than the previous year because of the Coronavirus crisis in 2020. The minimum number of port calls required to win the award was therefore lowered.

In addition to the public award presentation ceremony, bremenports also symbolically offsets the carbon emissions of the winning vessel for one call at the ports of Bremen. This year, bremenports offset 2 tons of CO_2 for the MV Freya. The organisation "DER KLIMAFONDS" uses the climate protection payment to promote measures aimed at reducing carbon emissions in non-profit, social and cultural institutions.

[60] Since 2014, annual greenports awards have been presented in the categories "Ship with the lowest emissions" and "Shipowner/charterer of the fleet with the lowest emissions". The objective of the greenports awards is to honour particularly environmentally friendly ships or shipping companies. The Environmental Ship Index (ESI) score achieved the preceding year for the ports of Bremen serves as the basis for calculating the winners. A vessel has to call at the ports of Bremen several times during the reporting period to qualify for the greenports award: this condition was introduced as a token of our appreciation for regular users of the ports compared with vessels which call only once.

Figure 24: Presentation of the “greenports Award 2021” in Bremerhaven

4.5 Conformity review of environmental performance and legal requirements / Achievements and planned activities

As the port management company, bremenports satisfies the current legal requirements (also) with regard to the environment. However, the port management company is not responsible for compliance with the statutory requirements throughout the entire port location and by the port business community. At the ports of Bremen, this is the responsibility of Bremen Port Authority (HBH), the environmental authority, the licensing authorities, the trade and industry inspectorate, the harbour and river police and Bremen police force.

However, bremenports is in permanent contact with the responsible authorities, not only within the scope of the regular PERS certification process, but also endorses a dialogue amongst the various stakeholders in order to ensure compliance with the applicable legislation. bremenports also demands and promotes cooperation at the port in respect of environmental requirements, in particular as regards the goal of achieving a climate-neutral port location.

This environmental report demonstrates in chapter 3 with Annex A the detailed analysis of environmental impacts, the legal standards for port-related activities and environmental policies for the ports.
The EPI's in Chapter 3.2, the monitoring of legal requirements in chapter 3.3 and the monitoring of policy requirements in chapter 3.4 show the relevant indicators and aspects that are monitored for several years (cf. Annnex B). If not, explanations are given and it can be assumed that in the coming years the trends get better. So far, the public port administration has been able to meet the legal standards of environmental legislation.
Furthermore, according to the environmental policy, the ports of Bremen are taking steps over and beyond the legally required environmental standards and pursue with the greenports sustainability programme an ambitious continuous improvement policy.

Environmental priorities according to the "greenports"programme (2021):

Sustainable development in the port of Bremen and Bremerhaven is characterized by a process of continuous improvement. The social, ecological and economic goals which we have set ourselves en route to a sustainable port as well as the specific measures in place for achieving the former have been bundled in the "greenports" programme. This programme is regularly published in the sustainability report and on our Homepage.[61] The relevant management aspects are presented with a policy, a goal, the dedicated measures, the actual status, our timeline and the resulting performance. As this programme is published, all stakeholders and the public get transparent information about our former and planned activities.

Further measures are planned to improve our environmental performance as part of the process of updating our greenports programme:

- As from 2022: introduction of additional key performance indicators for the terminal operators (green power, share of renewable energy)
- Continuation of the CLEAN project for underwater hull cleaning: inclusion of our service vessels in that project with biocide-free coating
- Continue and expand our cooperation with schools in Bremerhaven as part of the "Jugend forscht" contest for young scientists (analysis of plastic waste in the port waters)

[61] https://sms.bremenports.de/storm2microsite/report/sustainability-report-2022

- Developing circular economy concepts for Überseehafen and Fischereihafen
- Expanding the present air monitoring activities at the port
- Extending the criteria for the greenports award to take social aspects of marine shipping into account
- Continuing water quality and sediment monitoring activities

Environmental Report

CHAPTER 5

BRIEF DESCRIPTION OF ENVIRONMENTAL MANAGEMENT STRUCTURES

5 BRIEF DESCRIPTION OF ENVIRONMENTAL MANAGEMENT STRUCTURES

The environmental tasks and duties of the ports of Bremen/Bremerhaven are shared between the three different institutions (Senator for Science and Ports, bremenports GmbH & Co. KG and Harbour Master Office) as shown in Fig. 3.

5.1 The Senator for Science and Ports

The Senator for Science and Ports is responsible for the ministerial tasks relating to the ports. She stipulates the port policies and strategies, commissions and monitors the operational institutions acting on her behalf (e.g. bremenports GmbH & Co. KG / Special Asset Ports). The Senator is the commissioning entity for bremenports and she or her representative is simultaneously chairperson of bremenports Supervisory Board.

The Senator's environmental tasks relating to the ports are concentrated in Section 32, Environmental and Climate Affairs, which forms part of the Ports and Logistics Department:

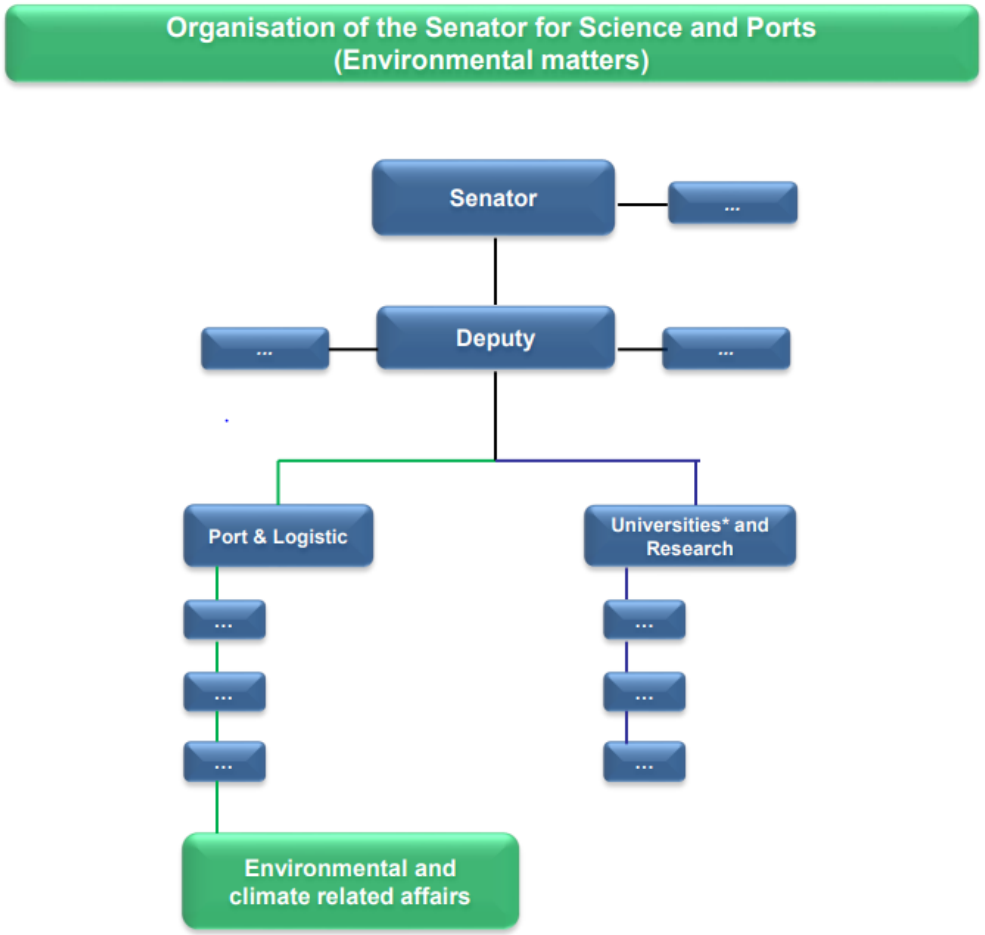

Figure 25: Organisation of environmental matters at the Senator for Science and Ports[62]

[62] See the complete organisation chart: https://www.wissenschaft-haefen.bremen.de/organisation-9775

One employee in the above section is responsible for environmental affairs at the ports; a staff increase has already been resolved. Mr Jochen Kress is in charge of this section. He reports to Dr Claudia Schilling, Senator for Science and Ports, and to State Councillor Tim Cordssen, through Jörg Peters, Head of Department. In urgent cases, Jochen Kress reports directly.
The section remit covers the entire field of port-related environmental affairs, including the evaluation of impact on the ports and the action to be taken, as well as supporting projects and initiatives. Section 32 also represents the ports of Bremen in various international and national working groups, committees and organisations as well as projects.

Shipping topics are allocated to the remit of Section 31, “Port Economy and Shipping”, which is headed by Professor Iven Krämer.

Legal environmental issues are the remit of Section 30 “Port regulatory policies, port charges and carriage of dangerous goods,” where Ms Iris Kretschmer is Acting Head of Section.

5.2 bremenports GmbH & Co. KG

bremenports GmbH & Co KG is entrusted by the Federal State of Bremen with management of the ports as special assets and port-related activities with the aim of managing, developing and maintaining the port infrastructure of the Free Hanseatic City of Bremen in Bremen und Bremerhaven in accordance with the principles of good business practice.

bremenports is organised as a company under private law to handle these tasks. The company is wholly owned by the Free Hanseatic City of Bremen.

In addition to special assets management, the remit of bremenports also includes the regular management activities relating to the port infrastructure (such as port infrastructure management and operation, resources management, maintenance, marketing, construction, planning, project approval and project management, the tasks of port infrastructure owner and building principal, location marketing, strategic port development).

Tasks occurring in the course of major investment projects, or tasks which are not regular tasks, are referred to as "special tasks". These are individually commissioned by the Free Hanseatic City of Bremen.

The tasks relating to sustainability and the environment are allocated to various HR levels at bremenports and handled by appropriately qualified experts. While the Director of Environmental and Sustainability Affairs deals with these tasks at strategic management level, two teams in the Port Development department are responsible for operational implementation. Furthermore an Environment Planning Department is responsible for the preparation of application documents and procedures as well as the construction and maintenance of compensation sites within the scope of project management. Additionally, there are representatives for waste management and a team for the management of dredged material.

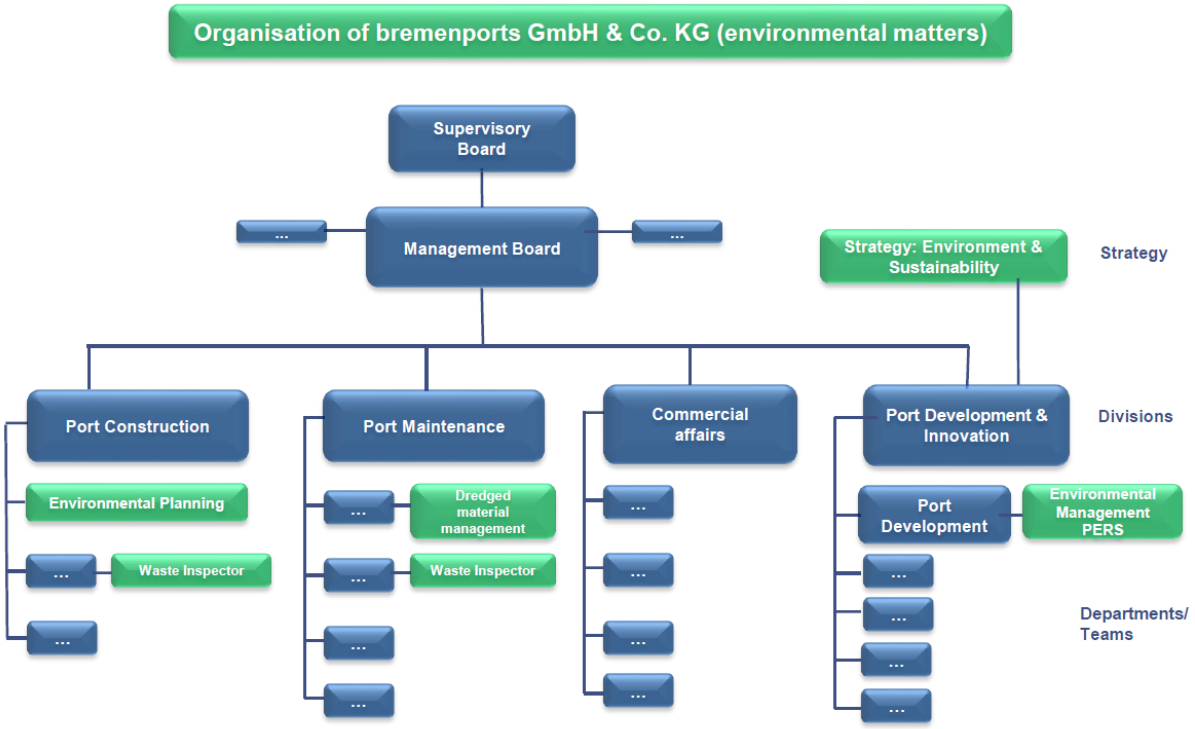

Figure 26: Organization of environmental matters at bremenports GmbH & Co. KG

As a staff department the Director of Environmental and Sustainability Affairs is organized as a management support unit which reports directly to the head of the division and to the Board of Management. He initiates and coordinates the port sustainability initiative "greenports" and thus the environmental aspects of the ports and assists the Board of Management in strategic decisions. He has a consulting and steering function throughout the entire company and at all locations, acts as a pacesetter and initiates appropriate measures and projects. The Director of Environmental and Sustainability Affairs holds a regular monthly meeting with the Managing Director and a continuous meeting with the Department of Environmental and Climate Affairs of our client, Bremen's Senator for Science and Ports. This position is held by Mr. Uwe von Bargen.
The Development Projects team is responsible for operational environmental management (pursuant to PERS). The team manager is Martina Wellbrock.

The Environment Planning Department deals with operational project management within the port construction division and consists of two teams, Project Approval Planning and Compensation Measures, with a total of 13 employees. Work focuses on the preparation of application documents or the planning and implementation of compensatory measures with respect to port development projects.
The department manager is responsible for the coordination of human resources deployment, offers, applications and special problems in connection with projects, as well as initiating and coordinating new projects. This position is held by Mrs. Anne Brüggen.
The Project Approval Planning and Compensation Measures team leaders coordinate the provision of services by their own teams, deal with special problems and prepare application documents and offers. The Project Approval Planning team is led by Mr. Ulrich Kraus, the Compensation Measures team by Mr. Thomas Wieland.

The waste inspectors, Mr. Wolfgang Arndt, Mr. Jens Zwirlein and Mrs. Susanne Baumann work on the operational level as well.

The team which manages the treatment of dredging material that occurs during maintaining water depth consists of three staff members and is led by Mr. Jens Arnold. Their duties also include the operation of the dump for treatment of contaminated soil in Bremen-Seehausen.

The management remit of bremenports does not include public administrative tasks.

The administrative functions of water protection, pollution control, soil protection, waste disposal and nature conservation authorities, for example, are the responsibility of the Ministry for the Environment or respectively the Department of Environmental Protection in Bremen and Bremerhaven.

5.3 Harbour Master Office (HBH)

Bremen Port Authority is responsible for vessel traffic management as well as the supervision of safety and security within the port areas. Environmental issues are concentrated in the "Port Safety" units in Bremen and Bremerhaven. These units supervise and control the safe handling of dangerous goods, occupational health and safety at the ports and ship waste disposal. The "Port Safety" and "Port Operations" units are also integrated into the disaster preparedness calendar published by the Environment Department.

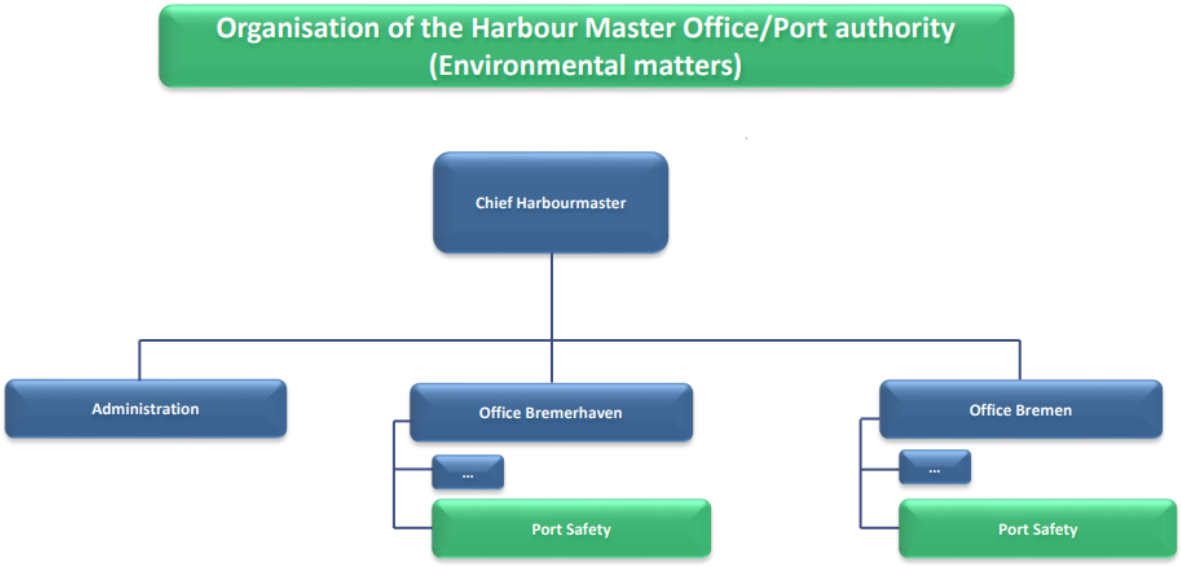

Figure 27: Organisation of environmental matters at the Harbour Master Office

Bremen Port Authority is the competent authority for the inspection of dangerous goods during handling, transit and intermediate storage in the port area with regard to applicable regulations. The main tasks are the inspection of dangerous cargo/containers, the authorisation of storage sites for dangerous cargo/containers and the enforcement of applicable law.

In the field of port inspection and environmental protection in connection with marine shipping, the main tasks are the inspection and supervision of compliance with safety regulations during cargo handling, the inspection of bunkering operations, controlling the sulphur content of fuels used and the disposal of ship generated waste and cargo residues.

The head of unit in Bremerhaven, Mr Raimond Claussen and in Bremen, Ms Nadja Köppen, are authorised to issue instructions to all staff in their units. These units consist of 11 employees in total. Both units are in direct contact with the harbour master on duty and with Stephan Berger, head of Bremen Port Authority.

5.4 Environmental responsibilities of key staff

The following list indicates those liabilities affecting the environment in the ports of Bremen, which are specified in the requirements of PERS certification. These are activities that may cause, control or minimize environmental impacts when managed, or may cause environmental impacts if control was lost, or may result in a breach of environmental policy guidelines or regulations.

Table 3: Environmental responsibilities of key staff on the operational level

Task	Job title or name	Department
Port operations (navigation)	Mr. Berger	Harbour Master
Port operations (shipping)	Mr. Berger	Harbour Master
Emergency planning	Mr. Claußen[63], Mrs. Köppen[64]	Harbour Master Office / Port Authority Bremerhaven resp. Bremen
Waste management (shipping)	Mr. Claußen, Mrs. Köppen	Harbour Master Office/ Port Authority Bremerhaven resp. Bremen
Port operations (dredging)	Mr. Behrends	bremenports / Division Manager Port Maintenance
Port railway operations	Mr. Behrends	bremenports / Division Manager Port Maintenance
Jetty/wharf management	Mr. Behrends	bremenports / Division Manager Port Maintenance
Port construction; incl. - Project approval management - Implementation of compensation measures	Mr. Plewa	bremenports / Division Manager Port Construction
Site management	Mr. Plewa	bremenports / Division Manager Port Construction
Waste management (port construction, maintenance)	Mr. Plewa	bremenports / Division Manager Port Construction
Operator licensing/permit[65]	Mr. Plewa, Mr. Behrends	bremenports / Division Manager Port Construction Division Manager Port Maintenance
On site[66] contractor[67] management	Mrs. Prang	bremenports / Division Manager Commercial Affairs

[63] For Bremerhaven
[64] For Bremen
[65] Operator: entity doing operational work with environmental relevance under the responsibility of the port
Operator licensing: with know-how and skills related to permit management of operators
[66] On site: in the port as a whole
[67] Contractors: all the companies performing environmentally relevant work for the port as a whole

Supplies acquisition	Mrs. Prang	bremenports / Division Manager Commercial Affairs
Port Development and Innovation	Mr. Färber	bremenports / Division Manager Port Development
Strategic planning: port development	Mr. Bartels	bremenports / Staff Division Manager Strategy
Strategic environmental and sustainability planning	Mr. von Bargen	bremenports / Director Environment & Sustainability
Ecological port infrastructure (incl. compensation sites)	Mrs. Brüggen	bremenports / Department Manager Environmental Planning
Port Development (operational)	Mr. Hein	bremenports / Department Manager Port Development
Environmental Management PERS with Monitoring, Measures and Projects	Mrs. von Bargen	bremenports / Environmental Management
Energy management port management and Infrastructure	Mrs. Müller	bremenports / Energy Management Commissioner
Sustainability controlling port management and Infrastructure	Mrs. Groth-von Wahl	bremenports Sustainability Management
Quality management port management and Infrastructure	Mrs. Wellbrock	bremenports / Quality Management Commissioner
Port operations (terminals)	Not within the competence of public port administration	
Cargo handling operations		
Vehicle management of terminal traffic		
Waste management (cargo handling)		
Marina/slipway management		

5.5 Resources allocated specifically to port environmental management

The three institutions described as sharing the environmental tasks and duties have the following human resources to fulfill those duties:

The Senator of Science and Ports and bremenports: 17,89 full-time staff (1 full-time staff with the senator, 1 full-time staff on the strategic level: environmental and sustainable affairs; 4,05 full-time staff on the operational project level: 4,05 for environmental and sustainable affairs, 7,52 for licensing planning, implementation of compensation measures; 1,32 on the waste management and 3 full-time staff on management of dredged material); annual costs: 1,485,941 €.
Harbour Master: 10.75 full-time staff are concerned with port and ship inspections and monitoring of dangerous cargo; annual costs: 800,000 €.

In addition to the human resources, financial resources are provided for projects like treatment and disposal of dredged material, the environmental ship index, compensation

measures, research and development projects etc. The total environment protection expenditures and investments by type in 2021 can be found in the sustainability report 2022 of bremenports GmbH & Co. KG and the special assets Port and Fishing Port (Waterside).[68]

5.6 Raising staff awareness at bremenports, public relations

The following table shows our endeavours to promote environmental awareness both at bremenports and with the stakeholders of the ports of Bremen:

Table 4: Measures to raise employee awareness at bremenports

Topic	Measure	bremenports	Timeline
Introduction to the topics of environment, energy and sustainability	Onboarding event	All new recruits	Once, on commencement of employment
	Individual talk	Selected new recruits	Once, on commencement of employment
In-depth look at the topics of environment, energy and sustainability	Project days for trainees	bremenports trainees	One full working day twice a year
	Energy scouts project work	bremenports trainees	One-off, 2017
Certification	Evaluation appraisals	Parties responsible for this process	Annual
Intranet	Posts		In response to specific events

Table 5: Public relations measures on environmentally relevant topics at the ports of Bremen (selected examples)

Topic	Measure	Timeline	URL
Public relations	Posts on bremenports.de, Youtube, Facebook, Twitter, Instagram, LinkedIn, Xing	In response to specific events	https://bremenports.de/
	Press releases	In response to specific events	https://bremenports.de/en/presse/
	Publication of PERS Environmental Report stating current environmental policies	Every two years	https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_en.pdf

[68] https://sms.bremenports.de/storm2microsite/report/sustainability-report-2022

	Information on environmental management at the ports of Bremen	Every two years	To be published soon
	As part of the relaunch of the ports of Bremen website: redesigning the environmental management section	September 2022	https://bremenports.de/
	Stakeholder dialogue	every three years	https://sms.bremenports.de/storm2microsite/report/sustainability-report-2022
	Cooperation between 'Jugend forscht' and bremenports	ongoing	https://bremenports.de/en/first-prize-for-cooperation-between-school-and-the-port/
Networking	Network meetings: North-West ports – efficient and innovative!	Twice a year[69]	
	Waddenseaports	Annual	https://waddenseaports.com/
	Environmental Management of the nine German seaports	Twice a year and in response to specific event	Current project: https://www.maritimes-cluster.de/en/topics-and-projects/zeroemissionberth/
Award presentation	greenports Award	Annual	https://bremenports.de/en/sustainable-shipping-is-the-goal-mv-freya-sets-the-course/

[69] Most recently, the meetings were held digitally once a year due to the corona pandemic.

Environmental Report

CHAPTER 6

SELECTED EXAMPLES OF BEST PRACTICE AND PLANNED ACTIVITIES

6 SELECTED EXAMPLES OF BEST PRACTICE

Examples of best practice are positive indications of the port management's ability to deliver environmental protection and sustainable development. They provide the reviewer with tangible evidence of achievement and contribute to the "Green Guide" by the ESPO that contains port-sector derived solutions for the mutual benefit of participating port members and to inform the public[70.]

The PERS applications 2011until 2020 described the

- sustainable water depth management and nature compensation management in the ports of Bremen
- noise management at the container terminal and Liquefied Natural Gas (LNG) as an alternative marine fuel
- environment-related port discount, the greenports Awards and from carbon-neutral ports management company to carbon-neutral port
- employee sensitization and the comparative study and pilot project using LED and LEP lighting at the ports in North-Western of the Metropolitan Region
- Special programme to monitor air quality at Kaiserschleuse lock, Überseehafen and Waste balance sheet for the Überseehafen port district as a basis for the development of recycling strategies

In the **environmental report 2022** the following best practice examples are presented:

- Binding regulations for the treatment of waste water from ships
- #Spotlightproject DBU: "CLEAN – In-water hull cleaning"

[70] See: www.ecoports.com

6.1 #Spotlightproject DBU: "CLEAN – In-water hull cleaning"

Port of : Bremen/ Bremerhaven
Country: Germany

Contact person: Dr. Burkard Watermann, Donna-Lee Garrick, Katja von Bargen
Position: Project Coordination: Limnomar, Senate Department for Climate Protection, Environment, Mobility, Urban Development and Housing and bremenports
Email: watermann@limnomar.de; donna-lee.garrick@umwelt.bremen.de; katja.von.bargen@bremenports.de

Environmental issue: 2 – Antifouling paints, 24 – Sediment contamination, 34 – Water quality

Relevance to the 5 Es framework of the ESPO Green Guide:

Exemplify / Enable / Encourage

Guidelines published for granting permission for inwater cleaning of ship hulls

First German guidelines for issuing permits for inwater hull cleaning as a result of the CLEAN project, partly funded by the Deutsche Bundesstiftung Umwelt, have been stated binding regulations for hull cleaning with the aim of reducing the introduction of pollutants into the waters of the ports of Bremen.

Underwater hull cleaning on faulty antifouling systems containing biocides, and even illegal cleaning operations, are unfortunately common practice in order to save costs, with the result that biocides are released into the water and the antifouling coating is frequently damaged or even abraded. Furthermore, failure to capture the abraded material properly leads to the introduction of biofouling, microplastics and contaminants (biocides) into the water.

To date there are no binding national or international regulations for granting a permit for underwater hull cleaning in ports.

The project elaborated the fundamental requirements for obtaining approval for underwater cleaning at the port, leading to the publication of the first German guidelines for granting permits for underwater hull cleaning at the ports of Bremen.

Drawing up and publishing these guidelines is intended to enable the use of

underwater cleaning systems at the ports of Bremen. This creates a sound legal basis for the development and use of innovative methods which satisfy the legal requirements and means that new cleaning techniques can be developed as part of proactive antifouling management.

For the ports of Bremen, this is the next logical step on its way to becoming a greenport as it will enable underwater hull cleaning on biocide-free hard coatings at the ports in future, in addition to the environmentally friendly services that are already available there.

This scheme is an important milestone in abandoning what has been to date largely uncontrolled underwater hull cleaning in other countries where no protective measures are in place in favour of establishing water-friendly cleaning processes which comply with legal requirements and meet high quality standards. It will simultaneously promote the use of biocide-free antifouling systems in the interests of preventive water protection.

Links:

https://bremenports.de/en/promoting-environmental-protection-at-the-ports-of-bremen/

https://www.bauumwelt.bremen.de/umwelt/wasser/meeresumweltschutz-23546

https://limnomar.de/en/fouling-management/foulings-management_projects/project-clean-underwater-cleaning-for-professional-shipping/

https://www.dbu.de/2985ibook84441_38668_.html

https://www.youtube.com/watch?v=BMp6j0WUlt0

Illustration:

Figure 28: Preparations for inwater-cleaning on a biocide-free hard coating

6.2 The Seabin and plastik: a student-project

Port of: Bremen/Bremerhaven

Country: Deutschland

Contact Person: Dr. Silke Wrieden-Burfeindt und Katja von Bargen
Position: Jugend forscht Regionalleitung Bremerhaven, bremenports
Email: katja.von.bargen@bremenports.de

Environmental Issue: 12 – Abfall im Hafen, 34 – Wasserqualität

Relevanz to the 5 E`s framework of the ESPO Green Guide:

Enable / **Encourage** / **Engange**

Pollution of the water at the port in Bremerhaven (Überseehafen) with micro and macroplastic

Three pupils of Geschwister Scholl School in Bremerhaven investigated the issue of "Pollution of the harbour basin in Bremerhaven with micro and macroplastic as part of a project for "Jugend forscht", a contest for young scientists.
This involved taking a closer look at the waste collected from Überseehafen by a Seabin. The waste was collected and documented by staff from the port maintenance department of bremenports. All the samples were then taken to a lab where the pupils sorted, filtered and cleaned them ready for further examination. In addition to the waste from the Seabin, the pupils also used a net to fish plastic out of the harbour basin. A sampling device was constructed and used to take samples of the water at different depths and samples of the silt in Überseehafen were provided for the pupils to test for macro- and microplastic. The pupils classified the waste and proved that a large proportion of the pollution was caused by people in the immediate vicinity of the port, as most of the waste referred to plastic bags and plastic packaging.

The three pupils from Geschwister Scholl School in Bremerhaven, Danny Dolinski, Mohannad Sarha and Rebal Issa, were awarded first prize for this project in the regional round of "Jugend forscht" in the Earth & Space Science sector as well as the special award "Reset Plastic". 69 pupils had entered a total of 34 projects in six subject areas for the contest.

bremenports launched the "Seabin" project a year ago. This marine "litterbin" has a capacity of 20 litres, removes up to four kilos of plastic a day and filters particles with a size of 2mm or more out of the water. To achieve a plastic-free port, however, requires the cooperation of all stakeholders.

Links:

https://bremenports.de/en/first-prize-for-cooperation-between-school-and-the-port/

https://www.youtube.com/watch?v=x15OYiSdOeQ

https://seabinproject.com/

Illustration:

Figure 29 : Danny Dolinski, Rebal Issa und Mohannad Sarha

Figure 30: Seabin at work

Environmental Report

CHAPTER 7

CONTACT INFORMATION, PUBLISHERS & PICTURE CREDITS

7 CONTACT INFORMATION, PUBLISHERS AND PICTURE CREDITS

Published by

The Senator for Science and Ports
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bremenports GmbH & Co. KG:
Jens Arnold, Elena Eden, Cornelia Katzer, Frieda Schneider, Mareke Stehle and Uwe von Bargen

Federal Maritime and Hydrographic Agency
Andreas Weigelt

The Senator for Climate Protection, Environment, Mobility, Urban Development and Housing:
Johannes Budde, Donna-Lee Garrick, Britta Giebelhausen, Dr. Stephan Pannek and Andrea Schemmel

Eurogate TS:
Martin Steffen

Harbour Master Office:
Joachim Bothe, Markus Habeck, Mark Reysen and Rike Schettler

Gardaí Bremen:
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Figure 8, 10: © GeoBasis-DE / GeoInformation Bremen 2021
Figure 26: Danny Dolinski, Rebal Issa and Mohannad Sarha

Bremen, Bremerhaven, July 2022

ABOUT THIS REPORT

In this environmental report, the port management company bremenports GmbH &Co. KG GmbH & Co. KG publishes financial and non-financial information on the company itself and the port infrastructure which it manages in the capacity of trustee [the “Special Asset Ports”” and the “Special Asset Fischereihafen (Waterside)”] as well as the Senator for Science and Ports, the Harbour Master Office, the Senator for Climate protection, Environment, Mobility, Urban Development and Housing and the Port Community.

Scope of reporting
To facilitate comparison of the contents on an international scale, this presentation of our environmental performance systematically adheres to the guidelines of the Port Environmental Review System. In 2022, we are reporting in accordance with Version 5, published in December 2016. The contents of the report comply with the requirements of Sections 1.1 to 1.6. of the guidelines.

Data quality
We constantly endeavour to improve the quality of our data. To ensure that all key performance indicators are comparable, we have defined regulations for the retrospective adjustment of data. Retrospective adjustments due to changes in methods and error rectification are made if the aggregate effect on previously reported figures differs by more than 5 %.

Time frame and profile
Our environmental management covers annual key performance indicators which we use to review, compare and assess our environmental performance. We publish these KPIs every two years.

Audits
In 2022, we will subject our environmental performance to an external audit in order to ensure the credibility and quality of reporting. The management endorses this procedure and provides the necessary budget. The audit will be conducted in accordance with the Port Environmental Review System by Lloyds Register, Amsterdam (LRQA).

Annex A:
Register of significant environmental aspects

Register of significant environmental aspects			Twin-Ports of Bremen/Bremerhaven					
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: state regulations		Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)								
A.0	Sustainable port management	All aspects of the environment	bremenports GmbH &Co. KG , Director Environment & Sustainability ; Division Manager Port Construction	RL 2014/95/EU from 22.10.2014 last modified 24.12.2014	Directive 2014/95/EU amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups Text with EEA relevance			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02014L0095-20141205&from=EN
				CSR-Instrument directive from 11.04.2017	Act to strengthen non-financial reporting by business enterprises in their management reports and group management reports			https://www.bgbl.de/xaver/bgbl/start.xav?start=%2F%2F*%5B%40attr_id%3D%27bgbl117s0802.pdf%27%5D#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl117s0802.pdf%27%5D__1589178531517
				Strategies/ Certifications/ Partnerships	Port's own greenports strategy (incl. greenports programme), Global Reporting Initiative, PERS, Environ- mental Partnership Network Bremen (PUU)	greenports-Programm	yearly	https://bremenports.de/greenports/mediathek/
						GRI-Reporting	yearly	https://bremenports.de/greenports/mediathek/
						PERS-Reporting	every two years	https://bremenports.de/greenports/mediathek/
A.1	Port development planning	All aspects of the environment	bremenports GmbH &Co. KG, Division Manager Port Construction	RL 92/43/EWG from 21.05.1992 last modified 13.05.2013	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora - Habitats Directive -	Prevention, mitigation & compensation concepts to avoid negative effects on the environment by port planning, targets sustainability as objective Protection of designated nature areas	Legal assessment in planning procedures and trial monitoring of compensation measures	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:01992L0043-20130701&from=EN
				RL 2009/147/EG from 30.11.2019 last modified 05.06.2019	Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds - Birds Directive -			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02009L0147-20190626&from=EN
				RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN

Register of significant environmental aspects			Twin-Ports of Bremen/Bremerhaven					
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: Landesvorschriften)		Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)								
A.1	Port development planning	All aspects of the envir	bremenports GmbH &Co. KG, Division Manager Port Construction	WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources	Prevention, mitigation & compensation concepts to avoid negative effects on the environment by port planning, targets sustainability as objective Protection of designated nature areas	Legal assessment in planning procedures and trial monitoring of compensation measures	http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BNatSchG from 29.07.2009 last modified 04.03.2020	Act on the Conservation of Nature and of Landscapes			https://www.gesetze-im-internet.de/bnatschg_2009/BJNR254210009.html
				BremNatG from 27.04.2010 last modified 18.12.2018	Bremen's Act on the Conservation of Nature and of Landscapes			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-ueber-naturschutz-und-landschaftspflege-bremnatg-vom-27-april-2010-165892?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				Protection Areas	Weserportsee nature reserve			https://www.transparenz.bremen.de/metainformationen/verordnung-ueber-das-naturschutzgebiet-weserportsee-im-stadtbremischen-ueberseehafengebiet-bremerhaven-vom-21-maerz-1997-72203?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
					Luneplate nature reserve (large areas of Weser Special Area of Conservation [DE2417-370] and Luneplate Bird Protection Area [DE 2417-401] have been designated as Luneplate nature reserve since 17.02.2015			https://www.transparenz.bremen.de/metainformationen/verordnung-ueber-das-naturschutzgebiet-luneplate-in-der-stadtgemeinde-bremerhaven-vom-17-februar-2015-157944?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
					Weser Special Area of Conservation near Bremerhaven [DE2417-370]			https://www.bauumwelt.bremen.de/umwelt/natur/ffh-gebiete-24146
					Lower Saxony Wadden Seas National Park Special Protection Area for Birds [DE2210-401]; Special Area of Conservation [DE2306-301] ; World Heritage Site			https://www.nlwkn.niedersachsen.de/natura2000/eu_vogelschutzrichtlinie_und_eu_vogelschutzgebiete/eu_vogelschutzgebiete_in_niedersachsen/eu-vogelschutzgebiet-v01-niedersaechsisches-wattenmeer-und-angrenzendes-kuestenmeer-132472.html
					Nature reserve flood polder			https://www.transparenz.bremen.de/metainformationen/verordnung-ueber-das-naturschutzgebiet-hochwasserschutzpolder-zwischen-senator-apelt-strasse-und-neustaedter-hafen-in-der-stadtgemeinde-bremen-vom-25-maerz-2014-157970?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
					Weser Special Area of Conservation between Ochtum estuary and Rekum [DE2817-370]			https://www.bauumwelt.bremen.de/umwelt/natur/ffh-gebiete-24146
					Niedervieland Special Protection Area for Birds [DE2918-401]			https://www.transparenz.bremen.de/metainformationen/verordnung-ueber-das-landschaftsschutzgebiet-niedervieland-wiedbrok-stromer-feldmark-in-der-stadtgemeinde-bremen-vom-1-august-2006-68903?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

Register of significant environmental aspects				Twin-Ports of Bremen/Bremerhaven				
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: state regulations		Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)								
A.1	Port development planning	All aspects of the environment	bremenports GmbH &Co. KG, Division Manager Port Construction	Planning Schemes/Programms	Master Development and Town Planning Scheme Bremen	Planungsrahmen		https://www.bauleitplan.bremen.de/fnp_index.php
					Master Development and Town Planning Scheme Bremerhaven (2006)			https://www.bremerhaven.de/de/verwaltung-politik/stadtplanungsamt/flaechennutzungsplan-2006.72536.html
					Bremerhaven zoning plan, amendments			https://www.bremerhaven.de/de/verwaltung-politik/stadtplanungsamt/flaechennutzungsplan-2006-aenderungen.72557.html
					Landscape Programme Bremen			https://www.lapro-bremen.de/downloads/#10/53.0965/8.7904/featureGroups=ZMF!Plan1_S!Plan1_F/selectedContent=open
					Reorganisation of zoning plan No. 10 A			https://www.bremerhaven.de/sixcms/media.php/94/fnp2006-ch-10a-begr.pdf
					Municipal Town Planning Scheme No. 441 (Westlicher Fischereihafen)			https://weboffice21.bremerhaven.de/WebOffice_Stadtplan/synserver?project=Stadtplan&client=core&language=de&view=Bauleitplanung&query_preset=Bauleitplanung&X=472470&Y=5932530&scale=10000&client_app_referer=bremerhaven_de
					Municipal Town Planning Scheme No. 445 (Offshore Terminal Bremerhaven)			https://weboffice21.bremerhaven.de/WebOffice_Stadtplan/synserver?project=Stadtplan&client=core&language=de&view=Bauleitplanung&query_preset=Bauleitplanung&X=472470&Y=5932530&scale=10000&client_app_referer=bremerhaven_de
					Draft municipal town planning scheme No. 494 (Lune Delta Green Economy Area)			https://www.bremerhaven.de/sixcms/media.php/94/01_210414_BP494_Scoping-Papier.pdf
					Regional Planning Scheme Cuxhaven (2012)			https://www.landkreis-cuxhaven.de/media/custom/1779_2095_1.PDF?1340852943
					Traffic Development Scheme Bremen Agreement of the governmental parties of the Federal State of Bremen (2025)			https://www.bauumwelt.bremen.de/verkehr/verkehrsentwicklungsplan-5586
					Integrated Management Plan Weser (2012)			https://www.nlwkn.niedersachsen.de/naturschutz/natura_2000/integrierte_bewirtschaftungsplane_astuare/weser/ibp_weser_februar_2012/integrierter-bewirtschaftungsplan-ibp-weser-97504.html
				Strategy	greenports strategy (incl. greenports programme)	Mission statement and programme to develop a sustainable port	Yearly reported in Sustainability report	https://bremenports.de/greenports/
				Port Master plan	Port development concept 2020/25	Description of the future development of the port	10 Years	https://bremenports.de/wp-content/uploads/2017/11/Hafenkonzept_2020-2025.pdf
					Thematic Master plans • Port railway			https://bremenports.de/wp-content/uploads/2017/03/Masterplan_Hafeneisenbahn_Bremerhaven.pdf

Register of significant environmental aspects			Twin-Ports of Bremen/Bremerhaven				
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: state regulations		Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)								
A.2	Noise of the port area	Air, neighbouring popul	Senator for Climate Protection, Environment, Mobility, Urban Development and Housing, Bremen Trade and Industry Inspectorate, Senator for Science and Ports, bremenports GmbH & Co. KG, Port Development and Innovation Division Manager	RL 2002/49/EG from 25.06.2002 last modified 04.03.2020	Directive 2002/49/EG relating to the assessment and management of environmental noise - Declaration by the Commission in the Conciliation Committee on the Directive relating to the assessment and management of environmental noise	Containment and reduction of industrial port noise, relevant assessment values (court decision (OVG 1 D 299/01): 60 dB(A) day and 45 db(A) night and limit value of 35 dB (A) indoor at night	Monitoring of port noise via state of the art monitoring system, in case of violation relevant noise values: quick responses to reduce the port noise	https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:02002L0049-20210729&from=EN
				BImSchG from 17.05.2013 last modified 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena			https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
					BImSchG §§ 47 a-f			
					BImSchG §§ 22, 50			
				BremImSchG from 14. Mai 2019 (Brem.GBl. 2019)	Bremen Act on Protection against Harmful Impact on the Environment and Incidents (Bremen Immission Control Act - BremImSchG)			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-vor-schaedlichen-umwelteinwirkungen-und-stoerfaellen-bremisches-immissionsschutzgesetz-bremimschg-vom-14-mai-2019-130986?template=20_gp_ifg_meta_detail_d
				Plan/ Permits/ Judgements	Strategic Noise Mapping Bremerhaven			https://www.bremerhaven.de/sixcms/media.php/94/Bericht_L%C3%A4rmkartierung+Stufe+3.pdf
					Action plan for noise reduction Bremerhaven (2014)			https://www.bauumwelt.bremen.de/umwelt/laerm/umgebungslaerm_im_land_bremen-24080
					Strategic Noise Mapping Bremen (2007)			https://www.bremerhaven.de/sixcms/media.php/94/lap-oa-final.pdf
					Action plan for noise reduction Bremen (2009)			https://www.bauumwelt.bremen.de/umwelt/laerm/umgebungslaerm-im-land-bremen-24080
					Authorizations - in particular extensions of CT 4, CT IIIa, CT III			
					Court judgement as regards the extension of CT 4 (OVG 1 D 224/04) and CT IIIa (OVG 1 D 299/01)			
					Settlement in court as regards the determination of constitutionality of the development plans CT II and III (OVG 1 N 7/89)			
				Strategy	greenports strategy	PERS-MPI: Noise at the container terminal	Monitoring by the port	https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_de.pdf

Register of significant environmental aspects			Twin-Ports of Bremen/Bremerhaven					
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: state regulations		Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)								
A.3	Air pollution	Air, neighbouring population, animals, plants	bremenports GmbH &Co. KG, Director Environment & Sustainability; bremenports GmbH &Co. KG, Division Manager Port Construction Ministry of Scientific Affairs and Ports, units 02&32	RL 2008/50/EG from 21.05.2008 last modified 28.08.2015	Directive 2008/50/EG on ambient air quality and cleaner air for Europe	Containment and reduction of air pollution; relevant limit values: see Directive 2008/50/EG and 39th Federal Immission Control Act	Monitoring by environmental protection agency (SKUMS)	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0050-20150918&from=EN
				BImSchG from 17.05.2013 last modified 08.04.2019	Ordinance on Air Quality Standards und Maximum Emission Levels - Thirty-Ninth Ordinance for Implementation of the Federal Immission Control Act, in particular Section 22			https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				39. BImSchV from 02.08.2010 last modified 18.07.2018	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena			https://www.gesetze-im-internet.de/bimschv_39/BJNR106510010.html
				Programm	Environmental Shipping Index (since 2012 in the ports of Bremen/Bremerhaven)	The best ships are rewarded (ESI Score)	Assessments, Audits of self-declaration	https://www.environmentalshipindex.org/
			Harbour Master Office, units 21&31	RL 2016/802/EU from 21.05.2016	Directive 2016/802 / EU on reducing the sulfur content of certain liquid fuels	Sulphur content of ship fuel < 0,1 % PERS-MPI: Compliance of sulphur limit regulations	Monitoring by the Harbour Master Office	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:32016L0802&from=DE
								https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_de.pdf
				BrHafenO from 24.04.2001 last modified 25.10.2018	Bremen Port Regulations			https://www.transparenz.bremen.de/metainformationen/bremische-hafenordnung-vom-24-april-2001-172507?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BrHafenbetrG from 24.11.2000	Bremen Port Operations Act			https://www.transparenz.bremen.de/metainformationen/bremisches-hafenbetriebsgesetz-vom-21-november-2000-172505?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
			bremenports GmbH &Co. KG, Director Environment & Sustainability; bremenports GmbH &Co.	Strategy	greenports-strategy	PERS-ECI: Air quality PERS-OPI: Calculated air pollutants from vessels in the port area	Monitoring by the port	https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_de.pdf

Register of significant environmental aspects			Twin-Ports of Bremen/Bremerhaven					
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: state regulations		Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)								
A.4	Climate protection/ energy efficiency	Climate & all aspects of the environment	bremenports GmbH &Co. KG, Director Environment & Sustainability; bremenports GmbH &Co. KG, Division Manager Port Construction	EDL-G from 04.11.2010 last modified 20.11.2019	Act on Energy Services and Further Energy Efficiency Measures (EDL-G)	Energy Audits or Energy Management (DIN ISO 50001); CO2-Reduction by 40% compared to 1990 until 2020	Monitoring by environmental protection agency (SKUMS)	https://www.gesetze-im-internet.de/edl-g/BJNR148310010.html
				BremKEG from 24.03.2015	Bremen's Act on Climate Protection and Energy (BremKEG)			https://www.transparenz.bremen.de/metainformationen/bremisches-klimaschutz-und-energiegesetz-bremkeg-vom-24-maerz-2015-157918?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				Federal climate protection law (KSG) from 12.12.2019	Law to introduce a federal climate protection law and to change further regulations			https://www.gesetze-im-internet.de/eeg_2014/BJNR106610014.html
				EEG 2017	Renewable Energy Sources Act - Act on the Promotion of Renewable Energy Sources			http://www.gesetze-im-internet.de/ksg/BJNR251310019.html
				Programms	World Port Sustainability Programme (WPSP)	World Port Climate Declaration (2008), Green logistics, promotion of renewable energies/ increase or maximization of energy efficiency	Monitoring (KEP2020) Audits (ESI)	https://www.bauumwelt.bremen.de/klimaschutz/klimaenergie/klimaschutz-und-energieprogramm-2020-24317https://sustainableworldports.org/environmenta
					Climate protection and energy saving programme 2020 for the Free Hanseatic City of Bremen (KEP2020)			https://www.bauumwelt.bremen.de/umwelt/klima_und_energie/klimaschutz__und_energieprogramm_2020-24317
					Environmental Shipping Index (since 2012 in ports of Bremen/Bremerhaven)			https://www.environmentalshipindex.org/
					Environmental Partnership Network Bremen (PUU)			https://www.umwelt-unternehmen.bremen.de/dabei-sein-1469
				Strategy	greenports-strategy	PERS-MPI: Use of regenerative energy	Monitoring by bremenports GmbH &Co. KG	https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_de.pdf
A.5	Climate change adaptation	Climate, water, port, infrastructure, neighbouring population	bremenports GmbH &Co. KG, Director Environment & Sustainability; bremenports GmbH &Co. KG, Division Manager Port Construction	Strategies/ Programs/ Projects	Climate adaptation strategy for the cities of Bremen and Bremerhaven (2018)	Key measures: adaptation concepts for the port areas in Bremen and Bremerhaven	Monitoring of climate change by the port; Monitoring of coastal defense requirements by SKUMS	http://www.klimaanpassung-bremen.de/Klimaanpassungsstrategie_HB_BHV_2018_DRUCKVERSION.pdf
					Coastal Protection Plan (2017)			https://www.bauumwelt.bremen.de/umwelt/wasserwirtschaft__hochwasser__und_kuestenschutz/generalplan_kuestenschutz-23596
					R+D-Project Nordwest 2050 (2009-2013)			https://www.umweltbundesamt.de/themen/klima-energie/klimafolgen-anpassung/werkzeuge-der-anpassung/projektkatalog/nordwest2050-perspektiven-fuer-klimaangepasste
					R+D-Project "Tidepolder Dreptenniederung" (2013)			
					greenports-strategy	Port development, port construction and compensation measures have to integrate climate adaptation requirements	Monitoring of climate change risks by internal risk management	https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_de.pdf

Register of significant environmental aspects			Twin-Ports of Bremen/Bremerhaven					
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: state regulations		Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)								
A.6	Warranty of service capability of nature and landscape (negative influences on nature and land consumption)	All environmental aspects	bremenports GmbH &Co. KG, Division Manager Port Construction & Port Maintenance	RL 92/43/EWG from 21.05.1992 last modified 13.05.2013	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora - Habitats Directive -	Ecological sustainability and safeguarding of "green infra- structure" (support for the greenports strategy), conservation of nature and landscape, safeguarding nature capacity	Monitoring of Natura2000 sites; implemented compensation measures by SKUMS	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:01992L0043-20130701&from=EN
				RL 2009/147/EG from 30.11.2009 last modified 05.06.2019	Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds - Birds Directive -			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02009L0147-20190626&from=EN
				VO (EU) 1143/2014 from 22.10.2014 last modified 26.10.2016	Regulation (EU) No. 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02014R1143-20191214&from=EN
				BNatSchG from 26.07.2009 last modified 04.03.2020	Act on the Conservation of Nature and of Landscapes			https://www.gesetze-im-internet.de/bnatschg_2009/BJNR254210009.html
				UVPG from 24.02.2010 last modified 12.12.2019	Environmental Impact Assessment Act			https://www.gesetze-im-internet.de/uvpg/BJNR102050990.html
				BremUVPG from 05.02.2008 last modified 04.09.2018	Environmental Impact Assessment Act of Bremen (2008)			https://www.transparenz.bremen.de/metainformationen/bremisches-landesgesetz-ueber-die-umweltvertraeglichkeitspruefung-bremuvpg-in-der-fassung-der-bekanntmachung-vom-5-februar-2008-157989?asl=bremen203_tpgesetz.c.55340.de&templ
				BremNatG from 27.04.2010 last modified 18.12.2018	Bremen's Act on the Conservation of Nature and of Landscapes			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-ueber-naturschutz-und-landschaftspflege-bremnatg-vom-27-april-2010-165892?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				Baumschutzverordnung from 05.12.2002 last modified 27.05.2014	Tree preservation bye-laws of Bremen (2002)			https://www.transparenz.bremen.de/metainformationen/verordnung-zum-schutze-des-baumbestandes-im-lande-bremen-baumschutzverordnung-vom-5-dezember-2002-65663?asl=bremen203_tpgesetz.c.55340.de&templa
				Further regulations	Nature reserve bye-laws (e.g. Weserportsee (1994))			https://www.bauumwelt.bremen.de/umwelt/natur/naturschutzgebiete-23904
				Programs	Landscape Programme Bremen			https://www.lapro-bremen.de/downloads/#10/53.0965/8.7904/featureGroups=ZMF!Plan1_S!Plan1_F/selectedContent=open
				Strategy	greenports-strategy	PERS-ECI: Habitat Index	Monitoring by bremenports GmbH &Co. KG	https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_de.pdf

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A. Port own aspects (Infrastructure)								
A.7	Port construction (environment -friendly project design)	All environmental aspects	bremenports GmbH &Co. KG, Division Manager Port Construction & Port Maintenance	RL 92/43/EWG from 21.05.1992 last modified 13.05.2013	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora - Habitats Directive -	Prevention, mitigation & compensation of negative effects on the environment by construction projects (design and execution)	Project Management in design and construction phase; Building inspection	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:01992L0043-20130701&from=EN
				RL 2009/147/EG from 30.11.2009 last modified 05.06.2019	Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds - Birds Directive -			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02009L0147-20190626&from=EN
				BNatSchG from 26.07.2009 last modified 04.03.2020	Act on the Conservation of Nature and of Landscapes			https://www.gesetze-im-internet.de/bnatschg_2009/BJNR254210009.html
				BremNatG from 27.04.2010 last modified 18.12.2018	Bremen's Act on the Conservation of Nature and of Landscapes			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-ueber-naturschutz-und-landschaftspflege-bremnatg-vom-27-april-2010-165892?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				UVPG from 24.02.2010 last modified 12.12.2019	Gesetz über die Umweltverträglichkeitsprüfung			https://www.gesetze-im-internet.de/uvpg/BJNR102050990.html
				BremUVPG from 05.02.2008 last modified 04.09.2018	Environmental Impact Assessment Act of Bremen (2008)			https://www.transparenz.bremen.de/metainformationen/bremisches-landesgesetz-ueber-die-umweltvertraeglichkeitspruefung-bremuvpg-in-der-fassung-der-bekanntmachung-vom-5-februar-2008-
				RL 2008/98/EG - Abfallrahmen-Richtlinie from 19.11.2008 last modifed 30.05.2018	Directive 2008/98/EG on waste and repealing certain Directives			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0098-20180705&from=EN
				AbfBeauftrV from 02.12.2016 last modified 05.07.2017	Waste Management Officer Ordinance - Ordinance on Company Officers for Waste			https://www.gesetze-im-internet.de/abfbeauftrv_2017/BJNR278900016.html
				RL 2008/50/EG from 21.05.2008 last modified 28.08.2015	Directive 2008/50/EG on ambient air quality and cleaner air for Europe			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0050-20150918&from=EN

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Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: state regulations		Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)								
A.7	Port construction (environment -friendly project design)	All environmental aspects	bremenports GmbH &Co. KG, Division Manager Port Construction & Port Maintenance	BImSchG from 17.05.2013 last modifed 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena	Prevention, mitigation & compensation of negative effects on the environment by construction projects (design and execution)	Project Management in design and construction phase; Building inspection	https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				BBodSchG from 17.03.1998 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			https://www.gesetze-im-internet.de/bbodschg/BJNR050210998.html
				BBodschV from 12.07.1999 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			http://www.gesetze-im-internet.de/bbodschv/BJNR155400999.html
				BremImSchG from 14. Mai 2019 (Brem.GBl. 2019)	Bremen Act on Protection against Harmful Impact on the Environment and Incidents (Bremen Immission Control Act - BremImSchG)			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-vor-schaedlichen-umwelteinwirkungen-und-stoerfaellen-bremisches-immissionsschutzgesetz-bremimschg-vom-14-mai-2019-130986?template=20_gp_ifg_meta_detail_d
				BremBodSchG from 27.08.2002, last modified 20.10.2020	Bremen Act of Soil Protection			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-des-bodens-bremisches-bodenschutzgesetz-brembodschg-vom-27-august-2002-157828?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

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A. Port own aspects (Infrastructure)							
A.7	Port construction (environment -friendly project design)	All environmental aspects	bremenports GmbH &Co. KG, Division Manager Port Construction & Port Maintenance	Further regulations/ Permits/ Judgements: GÜBAK 2009 Transitional instruction on dredged material handling in coastal areas (former HABAK-WSV)	Prevention, mitigation & compensation of negative effects on the environment by construction projects (design and execution)	Project Management in design and construction phase; Building inspection	https://izw.baw.de/wsv/umwelt/handbuch?highlight=Regelungen%2C%C3%BCbergreifende%2Cregelungen
				HABAB-WSV 2017 Instruction on dredged material handling in inland areas			https://izw.baw.de/wsv/umwelt/handbuch?highlight=Regelungen%2C%C3%BCbergreifende%2Cregelungen
				Authorizations with environmental regulations - in particular extensions of CT 4, CT IIIa, CT ...			
				Court judgement as regards the extension of CT 4 (OVG 1 D 224/04) and CT IIIa (OVG 1 D 299/01)			
				Settlement in court as regards the determination of constitutionality of the development plans CT II and III (OVG 1 N 7/08)			
				Planning schemes: Master Development and Town Planning Scheme Bremen (2015)			https://www.bauleitplan.bremen.de/fnp_index.php
				Master Development and Town Planning Scheme Bremerhaven (2006)			https://www.bremerhaven.de/de/verwaltung-politik-sicherheit/stadtplanungsamt/flaechennutzungsplan-2006.72536.html
				Landscape Programme Bremen (2015)			https://www.lapro-bremen.de/#10/53.0965/8.7904/featureGroups=ZMF!Plan1_S!Plan1_F/selectedContent=open
				Integrated Management Plan Weser (2012)			https://www.bauumwelt.bremen.de/umwelt/natur/integrierter-bewirtschaftungsplan-weser-24358
				Strategy und Programm: greenports-strategy	greenports programme gives general guidelines for sustainable projects; PERS – OPI: Amount of dredged material	Monitoring by bremenports GmbH &Co. KG	
				Environmental Partnership Network Bremen (PUU)	Energy efficient and sustainable projects		https://www.umwelt-unternehmen.bremen.de/dabei-sein-1469

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A. Port own aspects (Infrastructure)								
A.8	Warranty of water depth by prevention of sedimentation and dredging of sediments	Water habitat/ water quality (e.g. pollutants, turbidity)	bremenports GmbH &Co. KG, Division Manager Port Maintenance	Further regulations	Joint Notice to Shipping from the Contracting Parties of HELCOM and OSPAR	Ecological sediment management, environmental- friendly methods for the maintenance of water depths TBT guidance level: 100 microgram per litre, other limit values see GÜBAK (2009)	Monitoring by bremenports GmbH &Co. KG	https://www.bsh.de/DE/THEMEN/Schifffahrt/Nautische_Informationen/Weitere_Informationen/Schifffahrtsvorschriften/Downloads_Schifffahrtsvorschriften/Internationale_Schifffahrtsvorschriften/Beilage_2010-27.pdf;jsessionid=AD3F7A2340DEB096796604E7C4067349.live11293?__blob=publicationFile&v=1
					GÜBAK 2009 Transitional instruction on dredged material handling in coastal areas (former HABAK-WSV)			https://izw.baw.de/wsv/umwelt/handbuch?highlight=Regelungen%2C%C3%BCbergreifende%2Cregelungen
					HABAB-WSV 2017 Instruction on dredged material handling in inland areas			https://izw.baw.de/wsv/umwelt/handbuch?highlight=Regelungen%2C%C3%BCbergreifende%2Cregelungen
				RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				WaStrG from 23.05.2007	Federal Waterways Act			https://www.gesetze-im-internet.de/wastrg/BJNR201730968.html
				Regulations	Regulations as regards maintenance dredging in resp. development authorizations in particular extensions of CT III, CT IIIa, CT 4, port related turning area for ships (use of accredited methods)			
				Planning Schemes	Integrated Management Plan Weser (2012)	Planning frame		https://www.nlwkn.niedersachsen.de/natura2000/integrierte_bewirtschaftungsplane_astuare/weser/integrierter-bewirtschaftungsplan-weser-45641.html
				Strategy	greenports-strategy	PERS-OPI: Amount of dredged material	Monitoring by bremenports GmbH &Co. KG	https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_de.pdf

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A. Port own aspects (Infrastructure)								
A.9	Relocation of dredged material in open water, recycling or disposal	Water habitat/ water quality, hydrology & morphology, soil	bremenports GmbH &Co. KG, Division Manager Port Maintenance	Further regulations	Joint Notice to Shipping from the Contracting Parties of HELCOM and OSPAR	Relocation of dredged material in the first place, recycling instead of disposal of dredged material, reduction of negative effects on environment, involvement of polluters on dredging with water-sanitation-effect	Monitoring by bremenports GmbH &Co. KG	https://www.bsh.de/DE/THEMEN/Schifffahrt/Nautische_Informationen/Weitere_Informationen/Schifffahrtsvorschriften/Downloads_Schifffahrtsvorschriften/Internationale_Schifffahrtsvorschriften/Beilage_2010-27.pdf;jsessionid=AD3F7A2340DEB096796604E7C4067349.live11293?__blob=publicationFile&v=1
					GÜBAK 2009 Transitional instruction on dredged material handling in coastal areas (former HABAK-WSV)			https://izw.baw.de/wsv/umwelt/handbuch?highlight=Regelungen%2C%C3%BCbergreifende%2Cregelungen
					HABAB-WSV 2017 Instruction on dredged material handling in inland areas			https://izw.baw.de/wsv/umwelt/handbuch?highlight=Regelungen%2C%C3%BCbergreifende%2Cregelungen
				WaStrG from 23.05.2007 last modified 29.11.2018	Federal Waterways Act			https://www.gesetze-im-internet.de/wastrg/BJNR201730968.html
				RL 2010/75/EU - Industrieemissions-RL from 24.11.2010	Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) - IE Directive -			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02010L0075-20110106&from=EN
				RL 1999/31/EG - Deponie-Richtlinie from 26.04.1999 last modified 30.05.2018	Directive 1999/31/EC of the Council of 26 April 1999 on the landfill of waste			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:01999L0031-20180704&from=EN
				DepV from 27.04.2009 last modified 27.09.2017	Landfill Ordinance - Ordinance on Waste Landfill Sites and Long-Term Disposal			http://www.gesetze-im-internet.de/depv_2009/BJNR090010009.html
				LAGA M20 from 06.11.2003	Specifications for the recycling of mineral residues/waste			https://www.laga-online.de/Publikationen-50-Mitteilungen.html
				RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

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Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: state regulations		Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)								
A.9	Relocation of dredged material in open water, recycling or disposal	Water habitat/ water quality, hydrology & morphology, soil	bremenports GmbH &Co. KG, Division Manager Port Maintenance	BBodSchG from 17.03.1998 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites	Relocation of dredged material in the first place, recycling instead of disposal of dredged material, reduction of negative effects on environment, involvement of polluters on dredging with water-sanitation-effect	Monitoring by bremenports GmbH &Co. KG	https://www.gesetze-im-internet.de/bbodschg/BJNR050210998.html
				BBodSchV from 12.07.1999 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			http://www.gesetze-im-internet.de/bbodschv/BJNR155400999.html
				BremBodSchG from 27.08.2002 last modified 15.12.2015	Bremen Soil Protection Act - Bremen's Act on the Protection of Soil			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-des-bodens-bremisches-bodenschutzgesetz-brembodschg-vom-27-august-2002-157828?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				VO (EG) 1013/2006 - Abfall-Verbringungsverordnung from 14.06.2006	Regulation (EC) No. 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02006R1013-20210111&from=DE
				AbfVerbrG from 19.07.2007 last modified 20.11.2019	Waste Shipment Act - Act on the Implementation of Regulation (EC) No. 1013/2006 on shipments of waste and the Basel Convention of 22 March 1989 on the Control of Transboundary Movements of Hazardous Waste and their Disposal			https://www.gesetze-im-internet.de/abfverbrg_2007/BJNR146210007.html
				RL 2008/98/EG - Abfallrahmen-Richtlinie from 19.11.2008 last modified 30.05.2018	Directive 2008/98/EC on waste and repealing certain Directives			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0098-20180705&from=EN

Register of significant environmental aspects				Twin-Ports of Bremen/Bremerhaven			
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: state regulations	Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)							
A.9	Relocation of dredged material in open water, recycling or disposal	Water habitat/ water quality, hydrology & morphology, soil	bremenports GmbH &Co. KG, Division Manager Port Maintenance	KrWG from 24.02.2012 last modified 20.07.2017	Closed Substance Cycle and Waste Management Act - Act to promote recycling and to ensure environmentally compatible waste management	Relocation of dredged material in the first place, recycling instead of disposal of dredged material, reduction of negative effects on environment, involvement of polluters on dredging with water-sanitation-effect	Monitoring by bremenports GmbH &Co. KG	https://www.gesetze-im-internet.de/krwg/BJNR021210012.html
				BremAGKrW-/AbfG from 23.11.1998 last modified 02.02.2010	Bremen's Act for Implementation of the Closed Substance Cycle and Waste Management Act			https://www.transparenz.bremen.de/sixcms/detail.php?gsid=bremen2014_tp.c.68287.de&asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				Regulations	Regulations as regards maintenance dredging in development authorizations in particular extensions of CT III, CT IIIa, CT 4, port related turning area for ships (use of accredited methods)			
				Planning Schemes	Integrated Management Plan Weser (2012)	Planning frame; Sediment management concept		https://www.nlwkn.niedersachsen.de/natura2000/integrierte_bewirtschaftungsplane_astuare/weser/integrierter-bewirtschaftungsplan-weser-45641.html
				Strategy	greenports-strategy	PERS-MPI: Disposal of dredged material PERS-ECI: Sediment quality	Monitoring by bremenports GmbH &Co. KG	https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_de.pdf

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Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: state regulations		Legal and other requirements	Control measures	URL
A. Port own aspects (Infrastructure)								
A.10	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites	Air, soil, water, noise	bremenports GmbH &Co. KG, Division Manager Port Maintenance	RL 2008/98/EG - Abfallrahmen-Richtlinie from 19.11.2008 last modified 30.05.2018	Directive 2008/98/EC on waste and repealing certain Directives	Aim: prevention, mitigation & compensation of negative effects on the environment (Oil spills, noise, waste, transport of dangerous cargo)	Monitoring by GAA (trade supervisory office)	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0098-20180705&from=EN
				KrWG from 24.02.2012 last modified 20.07.2017	Closed Substance Cycle and Waste Management Act - Act to promote recycling and to ensure environmentally compatible waste management			https://www.gesetze-im-internet.de/krwg/BJNR021210012.html
				BremAGKrW-/AbfG from 23.11.1998 last modified 02.02.2010	Bremen's Act for Implementation of the Closed Substance Cycle and Waste Management Act			https://www.transparenz.bremen.de/sixcms/detail.php?gsid=bremen2014_tp.c.68287.de&asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BBodSchG from 17.03.1998 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			https://www.gesetze-im-internet.de/bbodschg/BJNR050210998.html
				BBodSchV from 12.07.1999 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			http://www.gesetze-im-internet.de/bbodschv/BJNR155400999.html
				BremBodSchG from 27.08.2002 last modified 15.12.2015	Bremen Soil Protection Act - Bremen's Act on the Protection of Soil			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-des-bodens-bremisches-bodenschutzgesetz-brembodschg-vom-27-august-2002-157828?asl=bremen203_tpgesetz.c.55340.de&templ

Register of significant environmental aspects			Twin-Ports of Bremen/Bremerhaven					
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A. Port own aspects (Infrastructure)								
A.10	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites	Air, soil, water, noise	bremenports GmbH &Co. KG, Division Manager Port Maintenance	RL 2008/50/EG from 21.05.2008 last modified 28.08.2015	Directive 2008/50/EG on ambient air quality and cleaner air for Europe	Aim: prevention, mitigation	Monitoring by GAA (trade supervisory office)	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0050-20150918&from=EN
				BImSchG from 17.05.2013 last modified 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena			https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				16. BImSchV from 12.06.1990 last modified 18.12.2014	Traffic Noise Protection Ordinance - Sixteenth Ordinance for Implementation of the Federal Immission Control Act			https://www.gesetze-im-internet.de/bimschv_16/BJNR010360990.html
				AltölV from 16.04.2002 last modified 24.02.2012	Bye-laws concerning waste oil (2002)			http://www.gesetze-im-internet.de/alt_lv/BJNR023350987.html
				AltholzV from 15.08.2002 last modified 29.03.2017	Ordinance on the management of waste wood (2002)			http://www.gesetze-im-internet.de/altholzv/BJNR330210002.html
				GGBefG from 07.07.2009 last modidied 12.12.2019	Law on the Transport of Dangerous Goods (2009)			https://www.gesetze-im-internet.de/gefahrgutg/BJNR021210975.html
				GGVSEB from 11.03.2019	Dangerous Goods Ordinance - Road, Rail and Inland Waterway - Regulation on the national and international transport of dangerous goods by road, rail and inland waterway			http://www.gesetze-im-internet.de/ggvseb/BJNR138900009.html
				GefStoffV from 26.11.2010 last modified 29.03.2017	Hazardous Substances Ordinance - Ordinance on Protection from Hazardous Substances			https://www.gesetze-im-internet.de/gefstoffv_2010/BJNR164400010.html
				Regulations	Bremen bye-law on the allocation of responsibility for implementation of statutory regulations pursuant to the Act on the transport of dangerous goods and the Convention for Safe Containers from 14.06.2016			https://www.transparenz.bremen.de/metainformationen/bremische-verordnung-ueber-zustaendigkeiten-fuer-die-ausfuehrung-von-rechtsvorschriften-nach-dem-gesetz-ueber-die-befoerderung-gefaehrlicher-gueter-und-dem-gesetz-zu-dem-uebereinkommen-ueber-sichere-container-vom-14-juni-2016-157860?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				Bremen Port Operations Act	Bremen Port Operations Act of 21 November 2000, last amended by Article 4 of the Act on 19.10.2021			https://www.transparenz.bremen.de/metainformationen/bremisches-hafenbetriebsgesetz-vom-21-november-2000-172505?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BrHafenO from 24.04.2001 last modified 25.10.2018	Bremen Port Regulations from 24.04.2001			https://www.transparenz.bremen.de/metainformationen/bremische-hafenordnung-vom-24-april-2001-172507?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

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A. Port own aspects (Infrastructure)								
A.11	Contamination of water and soils by the use of port's own facilities (technical facilities and ships)	Dangerous goods, waste, water, soil, air	bremenports GmbH &Co. KG, General Manager	RL 2008/98/EG - Abfallrahmen-Richtlinie from 19.11.2008 last modified 30.05.2018	Directive 2008/98/EC on waste and repealing certain Directives	Aim: prevention, mitigation & compensation of negative effects on the environment	Waste monitoring by waste inspector; Dangerous goods monitoring by GAA ; Water, soil and air monitoring by environmental agency	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0098-20180705&from=EN
				KrWG from 24.02.2012 last modified 20.07.2017	Closed Substance Cycle and Waste Management Act - Act to promote recycling and to ensure environmentally compatible waste management			https://www.gesetze-im-internet.de/krwg/BJNR021210012.html
				AbfBeauftrV from 02.12.2016 last modified 05.07.2017	Waste Management Officer Ordinance - Ordinance on Company Officers for Waste			https://www.gesetze-im-internet.de/abfbeauftrv_2017/BJNR278900016.html
				LAGA M20	Specifications for the recycling of mineral residues/waste			https://www.laga-online.de/Publikationen-50-Mitteilungen.html
				BremAGKrW-/AbfG from 23.11.1998 last modified 02.02.2010	Bremen's Act for Implementation of the Closed Substance Cycle and Waste Management Act			https://www.transparenz.bremen.de/sixcms/detail.php?gsid=bremen2014_tp.c.68287.de&asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				Plans	Waste Management Plan for the Public Ports of the Free Hanseatic City of Bremen			https://www.transparenz.bremen.de/metainformationen/bekanntmachung-des-abfallbewirtschaftungsplans-fuer-die-oeffentlichen-haefen-der-freien-hansestadt-bremen-stand-2017-153420?asl=bremen203_tpgesetz.c.55340.de&templ
				RL (EU) 2019/883 from 17.04.2019	Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EG			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:32019L0883&from=DE
				RL 2007/71/EG from 13.12.2007 gültig bis 26.06.2019	Directive 2007/71/EC amending Annex II of Directive 2000/59/EC on port reception facilities for ship-generated waste and cargo residues			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:32007L0071&from=DE
				BremSAEG of 24.11.2020	Bremen Act on Ship Waste Disposal - Bremen Act on port reception facilities for ship-generated waste and discharging waste from ships			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-ueber-hafenauffangeinrichtungen-fuer-die-entladung-von-abfaellen-von-schiffen-bremisches-schiffsabfall-entsorgungsgesetz-bremsaeg-vom-24-november-2020-160043?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

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A. Port own aspects (Infrastructure)								
A.11	Contamination of water and soils by the use of port's own facilities (technical facilities and ships)	Dangerous goods, waste, water, soil, air	bremenports GmbH &Co. KG, General Manager	BBodSchG from 17.03.1998 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites	Aim: prevention, mitigation & compensation of negative effects on the environment	Waste monitoring by waste inspector; Dangerous goods monitoring by GAA ; Water, soil and air monitoring by environmental agency	https://www.gesetze-im-internet.de/bbodschg/BJNR050210998.html
				BBodSchV from 12.07.1999 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			http://www.gesetze-im-internet.de/bbodschv/BJNR155400999.html
				BremBodSchG from 27.08.2002 last modified 15.12.2015	Bremen Soil Protection Act - Bremen's Act on the Protection of Soil			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-des-bodens-bremisches-bodenschutzgesetz-brembodschg-vom-27-august-2002-
				BImSchG from 17.05.2013 last modified 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena			https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				16. BImSchV from 12.06.1990 last modified 18.12.2014	Traffic Noise Protection Ordinance - Sixteenth Ordinance for Implementation of the Federal Immission Control Act			https://www.gesetze-im-internet.de/bimschv_16/BJNR010360990.html
				AltölV from 16.04.2002 last modified 24.02.2012	Bye-laws concerning waste oil (2002)			http://www.gesetze-im-internet.de/alt_lv/BJNR023350987.html
				GGBefG from 07.07.2009 last modified 12.12.2019	Dangerous Goods Transport Act - Act on the Transport of Dangerous Goods			https://www.gesetze-im-internet.de/gefahrgutg/BJNR021210975.html
				Regulations	Bremen bye-law on the allocation of responsibility for implementation of statutory regulations pursuant to the Act on the transport of dangerous goods and the Convention for Safe Containers from 14.06.2016			https://www.transparenz.bremen.de/metainformationen/bremische-verordnung-ueber-zustaendigkeiten-fuer-die-ausfuehrung-von-rechtsvorschriften-nach-dem-gesetz-ueber-die-befoerderung-gefaehrlicher-gueter-und-dem-gesetz-zu-dem-uebereinkommen-ueber-sichere-container-vom-14-juni-2016-157860?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BrHafenO from 24.04.2001 last modified 25.10.2018	Bremen Port Regulations			https://www.transparenz.bremen.de/metainformationen/bremische-verordnung-ueber-zustaendigkeiten-fuer-die-ausfuehrung-von-rechtsvorschriften-nach-dem-gesetz-ueber-die-befoerderung-gefaehrlicher-
				BrHafenbetrG from 24.11.2000	Bremen Port Operations Act			https://www.transparenz.bremen.de/metainformationen/bremisches-hafenbetriebsgesetz-vom-21-november-2000-172505?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

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A. Port own aspects (Infrastructure)								
A.12	Contamination of water and soils by ships and cargo operation	Dangerous goods, waste, water, soil, air	Harbour Master Office, units 21&31	MARPOL 73/78 from the year 1973	International Convention for the Prevention of Marine Pollution from Ships (1973)	Prevention of soil, air and water contamination	Inspections on ships and in terminals by Harbour Master Office	https://www.gesetze-im-internet.de/intmeersch_bk1973g/BJNR200020982.html
				VO (EU) 1143/2014 from 22.10.2014 last modified 26.10.2016	Regulation (EU) No. 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02014R1143-20191214&from=EN
				RL (EU) 2019/883 from 17.04.2019	Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EG			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:32019L0883&from=DE
				CDNI: BinSchAbfÜbkAG of 27 January 2021	Act implementing the Convention of 9 September 1996 concerning the collection, transfer and acceptance of waste from the Rhine and inland shipping			https://www.gesetze-im-internet.de/binschabf_bkag/BJNR013000021.html
				BremSAEG of 24.11.2020	Bremen Act on Ship Waste Disposal - Bremen Act on port reception facilities for ship-generated waste and discharging waste from ships			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-ueber-hafenauffangeinrichtungen-fuer-die-entladung-von-abfaellen-von-schiffen-bremisches-schiffsabfall-entsorgungsgesetz-bremsaeg-vom-24-november-2020-160043?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				RL 2008/98/EG - Abfallrahmen-Richtlinie from 19.11.2008 last modified 30.05.2018	Directive 2008/98/EC on waste and repealing certain Directives			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0098-20180705&from=EN
				KrWG from 24.02.2012 last modified 20.07.2017	Closed Substance Cycle and Waste Management Act - Act to promote recycling and to ensure environmentally compatible waste management			https://www.gesetze-im-internet.de/krwg/BJNR021210012.html
				Plans	Waste Management Plan for the Public Ports of the Free Hanseatic City of Bremen (2015)			https://www.transparenz.bremen.de/metainformationen/bekanntmachung-des-abfallbewirtschaftungsplans-fuer-die-oeffentlichen-haefen-der-freien-hansestadt-bremen-stand-2017-153420?asl=bremen203_tpgesetz.c.55340.de&templ

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A. Port own aspects (Infrastructure)								
A.12	Contamination of water and soils by ships and cargo operation	Dangerous goods, waste, water, soil, air	Harbour Master Office, units 21&31	RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)	Prevention of soil, air and water contamination	Inspections on ships and in terminals by Harbour Master Office	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				GGBefG from 07.07.2009 last modified 12.12.2019	Law on the Transport of Dangerous Goods (2009)			https://www.gesetze-im-internet.de/gefahrgutg/BJNR021210975.html
				SprengG from 10.09.2002 last modified 17.02.2020	Federal Explosives Act - Act on Explosive Substances			http://www.gesetze-im-internet.de/sprengg_1976/BJNR027370976.html
				GGVSEB - revised and promulgated on 26.3.2021 I 481; last amended by Art. 3 (5) G of 2.6.2021 I 1295	Regulation on the national and international transport of dangerous goods by road, rail and inland waterway*)			https://www.gesetze-im-internet.de/ggvseb/BJNR138900009.html
				GefStoffV of 26.11.2010, last amended by Article 2 of the Regulation of 21.07.2021	Ordinance on Protection from Hazardous Substances*) (Hazardous Substances Ordinance - GefStoffV)			https://www.gesetze-im-internet.de/gefstoffv_2010/BJNR164400010.html
				Regulations	Bremen bye-law on the allocation of responsibilities for implementation of statutory regulations pursuant to the Act on the Transport of Dangerous Goods and the Act on the Convention for Safe Containers			https://www.transparenz.bremen.de/metainformationen/bremische-verordnung-ueber-zustaendigkeiten-fuer-die-ausfuehrung-von-rechtsvorschriften-nach-dem-gesetz-ueber-die-befoerderung-gefaehrlicher-gueter-und-dem-gesetz-zu-dem-uebereinkommen-ueber-sichere-container-vom-14-juni-2016-157860?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BrHafenO from 24.04.2001 last modified 25.10.2018	Bremen Port Regulations			https://www.transparenz.bremen.de/metainformationen/bremische-verordnung-ueber-zustaendigkeiten-fuer-die-ausfuehrung-von-rechtsvorschriften-nach-dem-gesetz-ueber-die-befoerderung-gefaehrlicher-
				BrHafenbetrG from 24.11.2000	Bremen Port Operations Act			https://www.transparenz.bremen.de/metainformationen/bremisches-hafenbetriebsgesetz-vom-21-november-2000-172505?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				Strategy	greenports-strategy	PERS-MPI: Detected deficiencies at ship inspections	Monitoring by the Harbour Master Office	https://bremenports.de/greenports/wp-content/uploads/sites/3/2020/10/PERS-Rezertifizierung_Report_2020_de.pdf

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B. Port User Aspects (Superstructur)								
B. I. Terminal Operators								
B.I.1	Noise emissions from handling	Neighbouring population	e.g. EUROGATE (CTB), MSC Gate, NTB, BLG Logistics Group, Weserport	BImSchG from 17.05.2013 last modified 04.03.2020	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena	All legal standards transferred to the operator agreements	CT 4-Noise Monitoring: noise reduction action as regards loud events	https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				Permits/ Judgements	Authorizations - in particular extensions of CT 4, CT IIIa, CT III			
					Court judgement as regards the extension of CT 4			
					Settlement in court as regards the determination of constitutionality of the development plans CT II and III			
B.I.2	Contamination of water, soil and air (oil, pesticides, gases)	Dangerous goods, air, water, soil, workers, neighbouring population	e.g. EUROGATE (CTB), MSC Gate, NTB, BLG Logistics Group, Weserport	GGBefG from 07.07.2009 last modified 12.12.2019	Law on the Transport of Dangerous Goods (2009)	Prevention of soil and water contamination accidents, Emergency plans	Monitoring by environmental agency (SKUMS)	https://www.gesetze-im-internet.de/gefahrgutg/BJNR021210975.html
				GGVSEB - revised and promulgated on 26.3.2021 I 481; last amended by Art. 3 (5) G of 2.6.2021 I 1295	Regulation on the national and international transport of dangerous goods by road, rail and inland waterway*)			https://www.gesetze-im-internet.de/ggvseb/BJNR138900009.html
				GefStoffV of 26.11.2010, last amended by Article 2 of the Regulation of 21.07.2021	Ordinance on Protection from Hazardous Substances*) (Hazardous Substances Ordinance - GefStoffV)			https://www.gesetze-im-internet.de/gefstoffv_2010/BJNR164400010.html
				Regulations	Bremen bye-law on the allocation of responsibilities for implementation of statutory regulations pursuant to the Act on the Transport of Dangerous Goods and the Act on the Convention for Safe Containers from 14.06.2016			https://www.transparenz.bremen.de/metainformationen/bremische-verordnung-ueber-zustaendigkeiten-fuer-die-ausfuehrung-von-rechtsvorschriften-nach-dem-gesetz-ueber-die-befoerderung-gefaehrlicher-gueter-und-dem-gesetz-zu-dem-uebereinkommen-ueber-sichere-container-vom-14-juni-2016-157860?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				Bremen Port Regulations from 24.04.2001 last modified 25.10.2018	Bremen Port Regulations			https://www.transparenz.bremen.de/metainformationen/bremische-hafenordnung-vom-24-april-2001-172507?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				Permits	Approval of installations, particularly authorizations in relation to CT 4, CT IIIa, CT III			
B.I.3	Light emissions through cargo handling facilities	Air, neighbouring population/ animals	e.g. EUROGATE (CTB), MSC Gate, NTB, BLG Logistics Group, Weserport	BImSchG from 17.05.2013 last modified 04.03.2020	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena	Prevention and mitigation of light emissions; Keep facilities state of the art		https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				Permits	Approval of installations, particularly authorizations in relation to CT 4, CT IIIa, CT III			

Register of significant environmental aspects				Twin-Ports of Bremen/Bremerhaven				
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B. Port User Aspects (Superstructur)								
B. II. Ocean Carrier/Shipping Lines/Cruise Liner								
B.II.1	Ship noise emissions	Air, neighbouring population	e.g.: Maersk Line, MSC, CMA CGM, Hapag Lloyd, WWL, Eukor Car Carriers, NYK Line, K-Line, Yang Ming, Glovis, , UECC	There are no IMO-, EU-, Federal- or State-legal requirements for the design and operation of ships so far.			Prevention and mitigation of light emissions; Keep facilities state of the art	
B.II.2	Handling/stowing of dangerous cargo, oil, pesticides, gases (particularly by accidents)	water, soil, air, workers, neighboring population	e.g.: Maersk Line, MSC, CMA CGM, Hapag Lloyd, WWL, Eukor Car Carriers, NYK Line, K-Line, Yang Ming, Glovis, , UECC	MARPOL 73/78 from the year 1973	International Convention for the Prevention of Marine Pollution from Ships (1973)	Prevention of water, soil and air contamination, Emergency plans	Event-related Monitoring by the Harbour Master Office	https://www.gesetze-im-internet.de/intmeersch_bk1973g/BJNR200020982.html
				UVV See / DGUV Vorschrift 84 from 01.04.2018	Accident Prevention Regulations for Shipping Enterprises			https://www.bg-verkehr.de/redaktion/medien-und-downloads/informationen/die-bg-verkehr/uvv-seeschifffahrt-genehmigungsfassung-052017.pdf
				GGBefG from 07.07.2009 last modified 12.12.2019	Law on the Transport of Dangerous Goods			https://www.gesetze-im-internet.de/gefahrgutg/BJNR021210975.html
				GGVSee from 21.10.2019 last modified 12.12.2019	Dangerous Goods Ordinance Sea - Ordinance on the Transport of Dangerous Goods by Marine Shipping			http://www.gesetze-im-internet.de/ggvsee_2015/GGVSee.pdf
				Regulations	Bremen bye-law on the allocation of responsibilities for implementation of statutory regulations pursuant to the Act on the Transport of Dangerous Goods and the Act on the Convention for Safe Containers from 14.06.2016.			https://www.transparenz.bremen.de/metainformationen/bremische-verordnung-ueber-zustaendigkeiten-fuer-die-ausfuehrung-von-rechtsvorschriften-nach-dem-gesetz-ueber-die-befoerderung-gefaehrlicher-gueter-und-dem-gesetz-zu-dem-uebereinkommen-ueber-sichere-container-vom-14-juni-2016-157860?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BrHafenO from 24.04.2001 last modified 25.10.2018	Bremen Port Regulations			https://www.transparenz.bremen.de/metainformationen/bremische-hafenordnung-vom-24-april-2001-172507?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

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B. Port User Aspects (Superstructur)								
B. II. Ocean Carrier/Shipping Lines/Cruise Liner								
B.II.3	Air pollution	Air, neighboring population, animals, plants	e.g.: Maersk Line, MSC, CMA CGM, Hapag Lloyd, WWL, Eukor Car Carriers, NYK Line, K-Line, Yang Ming, Glovis, UECC	MARPOL 73/78 from the year 1973	International Convention for the Prevention of Marine Pollution from Ships (1973)	Prevention of air contamination	Monitoring by environmental agency (SKUMS); Air measurement station Bremerhaven: monitoring by the Federal Maritime and Hydrographic Agency (BSH)	https://www.gesetze-im-internet.de/intmeersch_bk1973g/BJNR200020982.html
				RL 2016/802/EU from 21.05.2016	Directive 2016/802 / EU on reducing the sulfur content of certain liquid fuels			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:32016L0802&from=DE
				SeeUmwVerhV from 13.08.2014 last modified 13.12.2019	Maritime Environmental Performance Ordinance - Ordinance on Environmentally Compatible Conduct in Marine Shipping			https://www.gesetze-im-internet.de/seeumwverhv/BJNR137110014.html
				BrHafenO from 24.04.2001 last modified 25.10.2018	Bremen Port Regulations			https://www.transparenz.bremen.de/metainformationen/bremische-hafenordnung-vom-24-april-2001-172507?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BrHafenbetrG from 24.11.2000 last modified 01.03.2016	Bremen Port Operations Act			https://www.transparenz.bremen.de/metainformationen/bremisches-hafenbetriebsgesetz-vom-21-november-2000-172505?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				ESI	Environmental Ship Index (ESI)	The best ships are rewarded (ESI Score)	Assessments, Audits of self-declaration	https://sustainableworldports.org/environmental-ship-index-esi/; https://bremenports.de/hafengebuehrenordnung/

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B. Port User Aspects (Superstructur)								
B. II. Ocean Carrier/Shipping Lines/Cruise Liner								
B.II.4	Ship waste	Water	Shipowners/ charterer: e.g. e.g.: Maersk Line, MSC, CMA CGM, Hapag Lloyd, WWL, Eukor Car Carriers, NYK Line, K-Line, Yang Ming, Glovis, UECC	MARPOL 73/78 from the year 1973	International Convention for the Prevention of Marine Pollution from Ships (1973)	No special fee system for reasonable amounts of garbage (no dangerous goods) and sludge	Monitoring by the Harbour Master Office	https://www.gesetze-im-internet.de/intmeersch_bk1973g/BJNR200020982.html
				RL (EU) 2019/883 from 17.04.2019	Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EG			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:32019L0883&from=DE
				BremHSLG from 19.11.2002 last modified 11.04.2017	Bremen Law on Reception Facilities for Ship Generated Waste and Cargo Residues			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-ueber-hafenauffangeinrichtungen-fuer-die-entladung-von-abfaellen-von-schiffen-bremisches-schiffsabfall-entsorgungsgesetz-bremsaeg-vom-24-november-
				RL 2008/98/EG - Abfallrahmen-Richtlinie from 19.11.2008 last modified 30.05.2018	Directive 2008/98/EC on waste and repealing certain Directives			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0098-20180705&from=EN
				KrWG from 24.02.2012 last modified 20.07.2017	Closed Substance Cycle and Waste Management Act - Act to promote recycling and to ensure environmentally compatible waste management			https://www.gesetze-im-internet.de/krwg/BJNR021210012.html
				BremAGKrW-/AbfG from 23.11.1998 last modified 02.02.2010	Bremen's Act for Implementation of the Closed Substance Cycle and Waste Management Act			https://www.transparenz.bremen.de/sixcms/detail.php?gsid=bremen2014_tp.c.68287.de&asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				Plans	Waste Management Plan for the Public Ports of the Free Hanseatic City of Bremen (2017)			https://www.transparenz.bremen.de/metainformationen/bekanntmachung-des-abfallbewirtschaftungsplans-fuer-die-oeffentlichen-haefen-der-freien-hansestadt-bremen-stand-2017-153420?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				SeeUmwVerhV from 13.08.2014 last modified 13.12.2019	Maritime Environmental Performance Ordinance - Ordinance on Environmentally Compatible Conduct in Marine Shipping			https://www.gesetze-im-internet.de/seeumwverhv/BJNR137110014.html
				CDNI-Gesetz from 13.12.2003 last modified 24.05.2016	Act on the Convention of 9 September 1996 on the collection, deposit and reception of waste produced during navigation on the Rhine and inland waterways			https://www.gesetze-im-internet.de/binschabf_bkag/BJNR013000021.html
				RL (EU) 2019/904 from 05.06.2019	Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:32019L0904&from=DE

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B. Port User Aspects (Superstructur)								
B. II. Ocean Carrier/Shipping Lines/Cruise Liner								
B.II.5	Water pollution	Water, Animals, Plants	Shipowners/ charterer: e.g. e.g.: Maersk Line, MSC, CMA CGM, Hapag Lloyd, WWL, Eukor Car Carriers, NYK Line, K-Line, Yang Ming, Glovis, UECC	MARPOL 73/78 from the year 1973	International Convention for the Prevention of Marine Pollution from Ships (1973)	No special fee system for reasonable amounts of garbage (no dangerous goods) and sludge	Monitoring by the Harbour Master Office	https://www.gesetze-im-internet.de/intmeersch_bk1973g/BJNR200020982.html
				VO (EU) 1143/2014 from 22.10.2014 last modified 26.10.2016	Regulation (EU) No. 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02014R1143-20191214&from=EN
				Convention	International Convention of 13.02.2004 for the Control and Management of Ships' Ballast Water and Sediments			https://www.deutsche-flagge.de/de/redaktion/dokumente/dokumente-sonstige/g-ballastwasser.pdf
				Ballastwasser-Gesetz from 05.02.2013	Law on the International Convention on the Control and Treatment of Ballast Water and Sediment from Ships 2004 (Ballast Water Act)			https://www.bsh.de/DE/THEMEN/Schifffahrt/Nautische_Informationen/Weitere_Informationen/Schifffahrtsvorschriften/Downloads_Schifffahrtsvorschriften/Internationale_Schifffahrtsvorschriften/Beilage_2013-12.pdf?__blob=publicationFile&v=1
				AFSÜbk from 02.06.2008	AFS - International Convention of 5 October 2001 on the Control of Harmful Anti-fouling Systems on Ships			https://www.bgbl.de/xaver/bgbl/start.xav#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl208s0520.pdf%27%5D__1644341007890
				AFS-Gesetz from 02.06.2008 last 23.07.2013	Law on the International Convention of 2001 on the Control of Harmful Anti-fouling Systems on Ships			https://www.gesetze-im-internet.de/afsg/AFSG.pdf
				SeeUmwVerhV from 13.08.2014 last modified 13.12.2019	Maritime Environmental Performance Ordinance - Ordinance on Environmentally Compatible Conduct in Marine Shipping			https://www.gesetze-im-internet.de/seeumwverhv/BJNR137110014.html

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B. Port User Aspects (Superstructur)								
B. III. Shipyards/Dockyards								
B.III.1	Noise emissions	Neighboring population	e.g. Lloyd Werft, MWB, Bredo, GERMAN DRY DOCKS	BImSchG from 17.05.2013 last modified 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena		Monitoring by GAA	https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				BremImSchG of 14 May 2019 (Bremen law gazette 2019, p. 316)	Bremen Act on Protection against Harmful Impact on the Environment and Incidents (Bremen Immission Control Act - BremImSchG)			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-vor-schaedlichen-umwelteinwirkungen-und-stoerfaellen-bremisches-immissionsschutzgesetz-bremimschg-vom-14-mai-2019-130986?template=20_gp_ifg_meta_detail_d
				Permits	Approval of installations			
				Plans	Development plans			
B.III.2	Contamination of air, water and soil especially by dangerous substances	Air/water, soil, workers, neighboring population	e.g. Lloyd Werft, MWB, Bredo, GERMAN DRY DOCKS	BBodSchG from 17.03.1998 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites	Prevention of water and air contamination, Oil water separator required, cleaning of waste water	Monitoring by environmental agency (SKUMS)	https://www.gesetze-im-internet.de/bbodschg/BJNR050210998.html
				BremBodSchG from 27.08.2002 last modified 15.12.2015	Bremen Soil Protection Act - Bremen's Act on the Protection of Soil			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-des-bodens-bremisches-bodenschutzgesetz-brembodschg-vom-27-august-2002-157828?asl=bremen203_tpgesetz.c.55340.de&temp
				BBodSchV from 12.07.1999 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			http://www.gesetze-im-internet.de/bbodschv/BJNR155400999.html
				AwSV from 18.04.2017	Ordinance on installations for handling of substances hazardous to waters			https://www.gesetze-im-internet.de/awsv/BJNR090500017.html
				ArbSchG from 07.08.1996 last modified 20.11.2019	Labour Protection Act - Act on the Implementation of Measures of Occupational Health and Safety to Encourage Improvements in the Safety and Health Protection of Workers at Work			https://www.gesetze-im-internet.de/arbschg/BJNR124610996.html
				BImSchG from 17.05.2013 last modified 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena			https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				Permits	Approval of installations			

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B. Port User Aspects (Superstructur)							
B. III. Shipyards/Dockyards							
B.III.3	Risk of explosion and fire	Air, environment, workers, neighboring population	e.g. Lloyd Werft, MWB, Bredo, GERMAN DRY DOCKS	ArbSchG from 07.08.1996 last modified 20.11.2019	Labour Protection Act - Act on the Implementation of Measures of Occupational Health and Safety to Encourage Improvements in the Safety and Health Protection of Workers at Work	Emergency plans	Local Fire brigades	https://www.gesetze-im-internet.de/arbschg/BJNR124610996.html
				AwSV from 18.04.2017	Ordinance on installations for handling of substances hazardous to waters			https://www.gesetze-im-internet.de/awsv/BJNR090500017.html
				SprengG from 10.09.2002 last modified 17.02.2020	Federal Explosives Act - Act on Explosive Substances			http://www.gesetze-im-internet.de/sprengg_1976/BJNR027370976.html
				Permits	Approval of installations			

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B. Port User Aspects (Superstructur)								
B. III. Shipyards/Dockyards								
B.III.4	Dockyard waste water	Water	e.g. Lloyd Werft, MWB, Bredo, GERMAN DRY DOCKS	Conventions	International Convention of 13.02.2004 for the Control and Management of Ships' Ballast Water and Sediments	Technical cleaning	Monitoring by environmental Agency (SKUMS)	https://www.deutsche-flagge.de/de/redaktion/dokumente/dokumente-sonstige/g-ballastwasser.pdf
				Ballastwasser-Gesetz from 05.02.2013	Law on the International Convention on the Control and Treatment of Ballast Water and Sediment from Ships 2004 (Ballast Water Act)			https://www.deutsche-flagge.de/de/redaktion/dokumente/dokumente-sonstige/ballastwasser-gesetz.pdf/view
				VO (EU) 1143/2014 from 22.10.2014 last modified 26.10.2016	Regulation (EU) No. 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02014R1143-20191214&from=EN
				AFSÜbk from 02.06.2008	AFS - International Convention of 5 October 2001 on the Control of Harmful Anti-fouling Systems on Ships			https://www.bgbl.de/xaver/bgbl/start.xav#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl208s0520.pdf%27%5D__1644341007890
				AFS-Gesetz from 02.06.2008 last modified 23.07.2013	Law on the International Convention of 2001 on the Control of Harmful Anti-fouling Systems on Ships			https://www.gesetze-im-internet.de/afsg/AFSG.pdf
				RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BremAbwAG from 01.05.1989 last modified 24.01.2012	Wastewater Charges Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-abwasserabgabengesetz-bremabwag-in-der-fassung-der-bekanntmachung-vom-1-mai-1989-157811?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

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B. Port User Aspects (Superstructur)								
B. III. Shipyards/Dockyards								
B.III.5	Dockyard waste	Soil, water	e.g. Lloyd Werft, MWB, Bredo, GERMAN DRY DOCKS	RL 2008/98/EG - Abfallrahmen-Richtlinie from 19.11.2008 last modified 30.05.2018	Directive 2008/98/EC on waste and repealing certain Directives	Reduction of waste	Monitoring by environmental agency (SKUMS)	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0098-20180705&from=EN
				KrWG from 24.02.2012 last modified 20.07.2017	Closed Substance Cycle and Waste Management Act - Act to promote recycling and to ensure environmentally compatible waste management			https://www.gesetze-im-internet.de/krwg/BJNR021210012.html
				BremAGKrW-/AbfG from 23.11.1998 last modified 02.02.2010	Bremen's Act for Implementation of the Closed Substance Cycle and Waste Management Act			https://www.transparenz.bremen.de/sixcms/detail.php?gsid=bremen2014_tp.c.68287.de&asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				AltölV from 16.04.2002 last modified 24.02.2012	Bye-laws concerning waste oil			http://www.gesetze-im-internet.de/alt_lv/BJNR023350987.html

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B. Port User Aspects (Superstructur)								
B. IV. Storage and distribution (logistics) e.g.: storage of oils, fuels, metals, wood, coal, pet food, cereals and other bulk cargo								
B.IV.1	Noise emissions particularly • Cargo traffic • Company operation	Air, neighboring population	e.g. BLG Logistics (PKW, H&H) BLG Coldstore, Heuer, HGM, Diersch & Schröder, Hellmann, Glomb, Oiltanking (Tanklager BHV), Großmarkt	BImSchG from 17.05.2013 last modified 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena	Containment and reduction of industrial port noise	Monitoring by GAA	https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				BremImSchG of 14 May 2019 (Bremen law gazette 2019, p. 316)	Bremen Act on Protection against Harmful Impact on the Environment and Incidents (Bremen Immission Control Act - BremImSchG)			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-vor-schaedlichen-umwelteinwirkungen-und-stoerfaellen-bremisches-immissionsschutzgesetz-bremimschg-vom-14-mai-2019-130986?template=20_gp_ifg_meta_detail_d
				Permits	Approval of installations			
				Plans	Development plans			
B.IV.2	Contamination of air, water and soil especially by dangerous goods	Air, water, soil, workers, neighboring population	e.g. BLG Logistics (PKW, H&H) BLG Coldstore, Heuer, HGM, Diersch & Schröder, Hellmann, Glomb, Oiltanking (Tanklager BHV), Großmarkt	RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)	Prevention of soil, water and air contamination, Emergency plans	Monitoring by environmental agency (SKUMS)	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				AwSV from 18.04.2017	Ordinance on installations for handling of substances hazardous to waters			https://www.gesetze-im-internet.de/awsv/BJNR090500017.html
				BBodSchG from 17.03.1998 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			https://www.gesetze-im-internet.de/bbodschg/BJNR050210998.html
				BremBodSchG from 27.08.2002 last modified 15.12.2015	Bremen Soil Protection Act - Bremen's Act on the Protection of Soil			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-des-bodens-bremisches-bodenschutzgesetz-brembodschg-vom-27-august-2002-157828?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BBodSchV from 12.07.1999 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			http://www.gesetze-im-internet.de/bbodschv/BJNR155400999.html
				Permits	Approval of installations			

Register of significant environmental aspects				Twin-Ports of Bremen/Bremerhaven			
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: State legislation)	Legal and other requirements	Control measures	URL
B. Port User Aspects (Superstructur)							
B. IV. Storage and distribution (logistics) e.g.: storage of oils, fuels, metals, wood, coal, pet food, cereals and other bulk cargo							
B.IV.3	Bulk product dust	Air/area, smell nuisance, neighboring population	e.g. BLG Logistics (PKW, H&H) BLG Coldstore, Heuer, HGM, Diersch & Schröder, Hellmann, Glomb, Oiltanking (Tanklager BHV), Großmarkt	ArbSchG from 07.08.1996 last modified 20.11.2019	Labour Protection Act - Act on the Implementation of Measures of Occupational Health and Safety to Encourage Improvements in the Safety and Health Protection of Workers at Work	Reduction of dust and smell emission	Monitoring by GAA	https://www.gesetze-im-internet.de/arbschg/BJNR124610996.html
				BImSchG from 17.05.2013 last modified 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena			https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				Permits	Approval of installations			

Register of significant environmental aspects				Twin-Ports of Bremen/Bremerhaven			
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: State legislation)	Legal and other requirements	Control measures	URL
B. Port User Aspects (Superstructur)							
B. IV. Storage and distribution (logistics) e.g.: storage of oils, fuels, metals, wood, coal, pet food, cereals and other bulk cargo							
B.IV.4	Waste	Soil, water	e.g. BLG Logistics (PKW, H&H) BLG Coldstore, Heuer, HGM, Diersch & Schröder, Hellmann, Glomb, Oiltanking (Tanklager BHV), Großmarkt	RL 2008/98/EG - Abfallrahmen-Richtlinie from 19.11.2008 last modified 30.05.2018	Directive 2008/98/EC on waste and repealing certain Directives	Reduction of waste, safe waste removal	Monitoring by environmental agency (SKUMS)	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0098-20180705&from=EN
				KrWG from 24.02.2012 last modified 20.07.2017	Closed Substance Cycle and Waste Management Act - Act to promote recycling and to ensure environmentally compatible			https://www.gesetze-im-internet.de/krwg/BJNR021210012.html
				BremAGKrW-/AbfG from 23.11.1998 last modified 02.02.2010	Bremen's Act for Implementation of the Closed Substance Cycle and Waste Management Act			https://www.transparenz.bremen.de/sixcms/detail.php?gsid=bremen2014_tp.c.68287.de&asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				VO (EG) 1013/2006 - Abfall-Verbringungsverordnung from 14.06.2006	Regulation (EG) No. 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02006R1013-20210111&from=DE
				Plans	Waste Management Plan for the Public Ports of the Free Hanseatic City of Bremen			https://www.transparenz.bremen.de/metainformationen/bekanntmachung-des-abfallbewirtschaftungsplans-fuer-die-oeffentlichen-haefen-der-freien-hansestadt-bremen-stand-2017-153420?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				AbfVerbrG from 19.07.2007 last modified 20.11.2019	Waste Shipment Act - Act on the Implementation of Regulation (EC) No. 1013/2006 on shipments of waste and the Basel Convention of 22 March 1989 on the Control of Transboundary Movements of Hazardous Waste and their Disposal			https://www.gesetze-im-internet.de/abfverbrg_2007/BJNR146210007.html
				LAGA M25 Mai 2017	Guide to implementation of Regulation (EG) No. 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste and the Waste Shipment Act of 19 July 2007			https://www.laga-online.de/Publikationen-50-Mitteilungen.html
				VerpackG from 17.07.2017	Packaging Act - Act on the Marketing, Recovery and Recycling of Packaging			https://www.gesetze-im-internet.de/verpackg/BJNR223410017.html
				AltölV from 16.04.2002 last modified 24.02.2012	Bye-laws concerning waste oil			http://www.gesetze-im-internet.de/alt_lv/BJNR023350987.html
				Permits	Approval of installations			

Register of significant environmental aspects			Twin-Ports of Bremen/Bremerhaven					
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: State legislation)		Legal and other requirements	Control measures	URL
B. Port User Aspects (Superstructur)								
B. IV. Storage and distribution (logistics) e.g.: storage of oils, fuels, metals, wood, coal, pet food, cereals and other bulk cargo								
B.IV.5	Risk of explosion and fire	Air/ environment, workers, neighboring population	e.g. BLG Logistics (PKW, H&H) BLG Coldstore, Heuer, HGM, Diersch & Schröder, Hellmann, Glomb, Oiltanking (Tanklager BHV), Großmarkt	ArbSchG from 07.08.1996 last modified 20.11.2019	Labour Protection Act - Act on the Implementation of Measures of Occupational Health and Safety to Encourage Improvements in the Safety and Health Protection of Workers at Work	Emergency plans	Local fire brigade	https://www.gesetze-im-internet.de/arbschg/BJNR124610996.html
				AwSV from 18.04.2017	Ordinance on installations for handling of substances hazardous to waters			https://www.gesetze-im-internet.de/awsv/BJNR090500017.html
				BetrSichV from 03.02.2015	Industrial Safety Ordinance - Ordinance on Safety and Health Production in connection with the Use of Work Equipment			https://www.gesetze-im-internet.de/betrsichv_2015/BJNR004910015.html
				GefStoffV from 26.11.2010 last modified 29.03.2017	Hazardous Substances Ordinance - Ordinance on Protection from Hazardous Substances			https://www.gesetze-im-internet.de/gefstoffv_2010/BJNR164400010.html
				SprengG from 10.09.2002 last modified 17.02.2020	Federal Explosives Act - Act on Explosive Substances			http://www.gesetze-im-internet.de/sprengg_1976/BJNR027370976.html
				Permits	Genehmigungen von Anlagen			

Register of significant environmental aspects				Twin-Ports of Bremen/Bremerhaven				
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: State legislation)		Legal and other requirements	Control measures	URL
B. Port User Aspects (Superstructur)								
B. IV. Storage and distribution (logistics) e.g.: storage of oils, fuels, metals, wood, coal, pet food, cereals and other bulk cargo								
B.IV.6	Operation of port railway facilities	Air, soil, water, noise	Railway operation companies, transport companies	RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)	Prevention, mitigation & compensation of negative effects on the environment	Monitoring by environmental agency (SKUMS) and GAA	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BBodSchG from 17.03.1998 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			https://www.gesetze-im-internet.de/bbodschg/BJNR050210998.html
				BremBodSchG from 27.08.2002 last modified 15.12.2015	Bremen Soil Protection Act - Bremen's Act on the Protection of Soil			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-des-bodens-bremisches-bodenschutzgesetz-brembodschg-vom-27-august-2002-157828?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BBodSchV from 12.07.1999 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			http://www.gesetze-im-internet.de/bbodschv/BJNR155400999.html
				RL 2008/98/EG - Abfallrahmen-Richtlinie from 19.11.2008 last modified 30.05.2018	Directive 2008/98/EC on waste and repealing certain Directives			https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0098-20180705&from=EN
				KrWG from 24.02.2012 last modified 20.07.2017	Closed Substance Cycle and Waste Management Act - Act to promote recycling and to ensure environmentally compatible waste management			https://www.gesetze-im-internet.de/krwg/BJNR021210012.html
				BremAGKrW-/AbfG from 23.11.1998 last modified 02.02.2010	Bremen's Act for Implementation of the Closed Substance Cycle and Waste Management Act			https://www.transparenz.bremen.de/sixcms/detail.php?gsid=bremen2014_tp.c.68287.de&asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

Register of significant environmental aspects				Twin-Ports of Bremen/Bremerhaven				
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: State legislation)		Legal and other requirements	Control measures	URL
B. Port User Aspects (Superstructur)								
B. IV. Storage and distribution (logistics) e.g.: storage of oils, fuels, metals, wood, coal, pet food, cereals and other bulk cargo								
B.IV.6	Operation of port railway facilities	Air, soil, water, noise	Railway operation companies, transport companies	BImSchG from 17.05.2013 last modified 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena	Prevention, mitigation & compensation of negative effects on the environment	Monitoring by environmental agency (SKUMS) and GAA	https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				16. BImSchV from 12.06.1990 last modified 18.12.2014	Traffic Noise Protection Ordinance - Sixteenth Ordinance for Implementation of the Federal Immission Control Act			https://www.gesetze-im-internet.de/bimschv_16/BJNR010360990.html
				AltölV from 16.04.2002 last modified 24.02.2012	Bye-laws concerning waste oil			http://www.gesetze-im-internet.de/alt_lv/BJNR023350987.html
				AltholzV from 15.08.2002 last modified 29.03.2017	Ordinance on the management of waste wood			http://www.gesetze-im-internet.de/altholzv/BJNR330210002.html
				BremGGBefVO from 14.06.2016 last modified 20.10.2020	Bremen bye-law on the allocation of responsibilities for implementation of statutory regulations pursuant to the Act on the Transport of Dangerous Goods and the Act on the Convention for Safe Containers			https://www.transparenz.bremen.de/metainformationen/bremische-verordnung-ueber-zustaendigkeiten-fuer-die-ausfuehrung-von-rechtsvorschriften-nach-dem-gesetz-ueber-die-befoerderung-gefaehrlicher-gueter-und-dem-gesetz-zu-dem-uebereinkommen-ueber-sichere-container-vom-14-juni-2016-157860?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				GGBefG from 07.07.2009 last modified 12.12.2019	Law on the Transport of Dangerous Goods			https://www.gesetze-im-internet.de/gefahrgutg/BJNR021210975.html
				BrHafenO from 24.04.2001 last modified 25.10.2018	Bremen Port Regulations			https://www.transparenz.bremen.de/metainformationen/bremische-verordnung-ueber-zustaendigkeiten-fuer-die-ausfuehrung-von-rechtsvorschriften-nach-dem-gesetz-ueber-die-befoerderung-gefaehrlicher-gueter-und-dem-gesetz-zu-dem-uebereinkommen-ueber-sichere-container-vom-14-juni-2016-157860?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d

Register of significant environmental aspects				Twin-Ports of Bremen/Bremerhaven			
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: State legislation)	Legal and other requirements	Control measures	URL
B. Port User Aspects (Superstructur)							
B. V. Other port business (particularly A: conditioning facilities e.g. cars, food, fish...B: port service)							
B.V.1	Noise emissions, particularly • Lorries • Production processes	Air, neighbouring population	A: e.g. BLG Autotec, Deutsche See, Weserport, Frozen Fish B: e.g. Graue, Oiltanking (Tanklager BHV), Nehlsen, Protectis	BImSchG from 17.05.2013 last modified 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena	Containment and reduction of noise	Monitoring by GAA	https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
				BremImSchG of 14 May 2019 (Bremen law gazette 2019, p. 316)	Bremen Act on Protection against Harmful Impact on the Environment and Incidents (Bremen Immission Control Act - BremImSchG)		https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-vor-schaedlichen-umwelteinwirkungen-und-stoerfaellen-bremisches-immissionsschutzgesetz-bremimschg-vom-14-mai-2019-130986?template=20_gp_ifg_meta_detail_d
					Approval of installations		
					Development plans		
B.V.2	Verunreinigungen von Wasser und Boden	Water, soil	A: e.g. BLG Autotec, Deutsche See, Weserport, Frozen Fish B: e.g. Graue, Oiltanking (Tanklager BHV), Nehlsen, Protectis	RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)	Prevention of water and soil contamination, Emergency plans	Monitoring by environmental agency (SKUMS)	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources			http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen			https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				AwSV from 18.04.2017	Ordinance on Facilities for Handling Substances that are Hazardous to Water			https://www.gesetze-im-internet.de/awsv/BJNR090500017.html
				BBodSchG from 17.03.1998 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			https://www.gesetze-im-internet.de/bbodschg/BJNR050210998.html
				BremBodSchG from 27.08.2002 last modified 15.12.2015	Bremen Soil Protection Act - Bremen's Act on the Protection of Soil			https://www.transparenz.bremen.de/metainformationen/bremisches-gesetz-zum-schutz-des-bodens-bremisches-bodenschutzgesetz-brembodschg-vom-27-august-2002-157828?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BBodSchV from 12.07.1999 last modified 27.09.2017	Federal Soil Protection Act - Act for the Protection of Harmful Changes to the Soil and for the Remediation of Contaminated Sites			http://www.gesetze-im-internet.de/bbodschv/BJNR155400999.html
					Approval of installations			

Register of significant environmental aspects			Twin-Ports of Bremen/Bremerhaven				
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: State legislation)	Legal and other requirements	Control measures	URL
B. Port User Aspects (Superstructur)							
B. V. Other port business (particularly A: conditioning facilities e.g. cars, food, fish...B: port service)							
B.V.3	Wastewater	Water	A: e.g. BLG Autotec, Deutsche See, Weserport, Frozen Fish B: e.g. Graue, Oiltanking (Tanklager BHV), Nehlsen, Protectis	RL 2000/60/EG - WRRL from 23.10.2000 last modified 30.10.2014	Directive 2000/60/EC establishing a framework for Community action in the field of water policy - Water Framework Directive (WFD)	Municipal sewage plant		https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02000L0060-20141120&from=EN
				WHG from 31.07.2009 last modified 04.12.2018	Federal Water Act - Act on Managing Water Resources		http://www.gesetze-im-internet.de/whg_2009/BJNR258510009.html
				BremWG from 12.04.2011 last modified 18.12.2018	Water Act of Bremen		https://www.transparenz.bremen.de/metainformationen/bremisches-wassergesetz-bremwg-vom-12-april-2011-160048?asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				BremAbwAG from 01.05.1989 last modified 24.01.2012	Wastewater Charges Act of Bremen		https://www.transparenz.bremen.de/metainformationen/bremisches-abwasserabgabengesetz-bremabwag-in-der-fassung-der-bekanntmachung-vom-1-mai-1989-157811?asl=bremen203_tpgesetz.c.55340.de&temp
					Approval of installations		
B.V.4	Bulk product dust	Air/area, smell nuisance, neighboring population	A: e.g. BLG Autotec, Deutsche See, Weserport, Frozen Fish B: e.g. Graue, Oiltanking (Tanklager BHV), Nehlsen, Protectis	ArbSchG from 07.08.1996 last modified 20.11.2019	Labour Protection Act - Act on the Implementation of Measures of Occupational Health and Safety to Encourage Improvements in the Safety and Health Protection of Workers at Work	Reduction of dust and smell emission	Monitoring by GAA	https://www.gesetze-im-internet.de/arbschg/BJNR124610996.html
				BImSchG from 17.05.2013 last modified 08.04.2019	Federal Immission Control Act - Act on the Prevention of Harmful Effects on the Environment caused by Air Pollution, Noise, Vibrations and Similar Phenomena		https://www.gesetze-im-internet.de/bimschg/BJNR007210974.html
					Approval of installations		

Register of significant environmental aspects				Twin-Ports of Bremen/Bremerhaven			
Ref. No.	Environmental impact by port activities	Exposure path-way / Impact on	Responsible organisation	Applicable legislation / strategies / programmes (green: international legislation, red: European legislation, blue: Federal legislation, black: State legislation)	Legal and other requirements	Control measures	URL
B. Port User Aspects (Superstructur)							
B. V. Other port business (particularly A: conditioning facilities e.g. cars, food, fish...B: port service)							
B.V.5	Risk of explosion and fire	Air, environment, workers, neighboring population	A: e.g. BLG Autotec, Deutsche See, Weserport, Frozen Fish B: e.g. Graue, Oiltanking (Tanklager BHV), Nehlsen, Protectis	ArbSchG from 07.08.1996 last modified 20.11.2019	Bye-laws concerning the minimum safety and health requirements for the use of work equipment by workers at work, the safety with regard to the operation of facilities requiring special supervision, the organisation of safety at work	Emergency plans	Local fire brigades	https://www.gesetze-im-internet.de/arbschg/BJNR124610996.html
				AwSV from 18.04.2017	Ordinance on installations for handling of substances hazardous to waters			https://www.gesetze-im-internet.de/awsv/BJNR090500017.html
				BetrSichV from 03.02.2015 last modified 30.0.2019	Industrial Safety Ordinance - Ordinance on Safety and Health Production in connection with the Use of Work Equipment			https://www.gesetze-im-internet.de/betrsichv_2015/BJNR004910015.html
				GefStoffV from 26.11.2010 last modified 29.03.2017	Hazardous Substances Ordinance - Ordinance on Protection from Hazardous Substances			https://www.gesetze-im-internet.de/gefstoffv_2010/BJNR164400010.html
B.V.6	Waste	Soil, Water	A: e.g. BLG Autotec, Deutsche See, Weserport, Frozen Fish B: e.g. Graue, Oiltanking (Tanklager BHV), Nehlsen, Protectis	RL 2008/98/EG - Abfallrahmen-Richtlinie from 19.11.2008 last modified 30.05.2018	Directive 2008/98/EC on waste and repealing certain Directives	Reduction of waste, safe waste removal	Monitoring by environmental agency (SKUMS)	https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:02008L0098-20180705&from=EN
				KrWG from 24.02.2012 last modified 20.07.2017	Closed Substance Cycle and Waste Management Act - Act to promote recycling and to ensure environmentally compatible waste management			https://www.gesetze-im-internet.de/krwg/BJNR021210012.html
				BremAGKrW-/AbfG from 23.11.1998 last modified 02.02.2010	Bremen's Act for Implementation of the Closed Substance Cycle and Waste Management Act			https://www.transparenz.bremen.de/sixcms/detail.php?gsid=bremen2014_tp.c.68287.de&asl=bremen203_tpgesetz.c.55340.de&template=20_gp_ifg_meta_detail_d
				AltölV from 16.04.2002 last modified 24.02.2012	Bye-laws concerning waste oil			http://www.gesetze-im-internet.de/alt_lv/BJNR023350987.html

BBG und Partner
Rechtsanwälte

BBG und Partner Contrescarpe 75 A D-28195 Bremen

To whom it may concern

Bremerhaven Ports/ Bremen Ports: Port Environmental Review System (PERS) Recertifcation 2022 / Annex A

To whom it may concern:

I certify that Annex A of the Environmental Report 2022 („Environmental Aspects Register“ / „Register der signifikanten Umwelteinflüsse“ – as finalized on March 14th, 2022) identifies legal and other environmental requirements, which are applicable to the significant environmental aspects. It is suitable and relevant for the main environmental aspects of the ports of Bremerhaven and Bremen.

Sincerely

Prof. Dr. Peter Schütte
Rechtsanwalt

Bremen, 06.04.2022

Aktenzeichen: 3/20/20
Ihr Zeichen:

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Sparkasse Bremen
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BIC SBREDE22XXX
USt. ID DE168156931

Annex B:
Environmental Performance Indicators

	Available since	Responsible	Unit	2021	2020	2019	2018	2017
Operational Performance Indicators								
Amount of dredged material: Sand	2017	bremenports: Port maintenance and environmental management	m^3/m^2	0,45	0,13	0,20	0,22	0,35
Amount of dredged material: Silt	2017	bremenports: Port maintenance and environmental management	m^3/m^2	0,28	0,27	0,16	0,23	0,27
Calculated air pollutants emitted from vessels in the port areas	2015	Institute of Shipping and Logistics (ISL / bremenports)						
Bremen			gCO_2/BRZ	n.a.[1]		1290	1135	n.a.
			mgSOx/ BRZ			140	130	n.a.
			mgPM/ BRZ			13	12	n.a.
			gNOx/ BRZ			19,4	16,3	n.a.
Bremerhaven			gCO_2/BRZ			639	678	n.a.
			mgSOx/ BRZ			80	90	n.a.
			mgPM/ BRZ			11	11	n.a.
			gNOx/ BRZ			10,8	11,5	n.a.
Noise from container port operations	2008	bremenports, Port development department	db(A)/1 m TEU	49,4	48,5	49	49,4	48,9
CO2 emissions of the container terminal[2]	2008	Eurogate	kg/Box[3]	n.a.	13,2	12,8	13,3	13,4

[1] n.a. not available
[2] EUROGATE Container Terminal Bremerhaven GmbH, EUROGATE Technical Services GmbH, NTB North Sea Terminal Bremerhaven GmbH & Co. KG, MSC Gate Bremerhaven GmbH & Co. KG and RTB Railway Terminal Bremerhaven
[3] Carbon emissions in kg per 12-foot container handled

	Available since	Responsible	Unit	2021	2020	2019	2018	2017
Management Performance Indicator								
Use of regenerative energy port infrastructure and port management	2008	bremenports, Energy management	%	88	90	87	86	99
Share of silt accepted at IBE for recovery and/or disposal	2017	bremenports, Port maintenance and environmental Management	%	43	71	85	81	30
of which with recovery option			%	80	76	74	69	77
share that was actually used in (internal) projects			%	100	98	89	87	83
Share of ship arrivals with Environmental Ship Index	2012	bremenports, Port charges und environmental management	%	34[4]	50	43	40	38
Bremerhaven			%	39	56	49	44	43
Bremen			%	14	27	21	21	20
Infringements detected during ship inspections	2008	Harbour master office	%	n.a.[5]	5,1	12,4	12,3	11,7
Share of ship inspections in relation to total arrivals	2021	Harbour master office						
		Bremen	%	5,3	n.a.[6]			
		Bremerhaven	%	4,2				

[4] The ESI values from 2021 are not comparable with the other years due to new legal requirements.
[5] New KPIs cf. 4.3.4
[6] The figures have been broken down for Bremen and Bremerhaven since 2021.

Number of infringements	2021	Harbour master office						
		Category: Environment[7]	Number	29/2[8]	n.a.[9]			
		Category: Environmental, occupational and operating safety	Number	2/2				
		Category: Occupational and operating safety	Numberl	29/10				
Compliance with sulphur limit regulations	2010	Harbour master office	%	n.a.[10]	100	97	100	90
		Bremen	%	n.a.[11]	n.a.[12]			
		Bremerhaven	%	n.a.[13]				

[7] The Environment category includes infringements relating to ship-generated waste
[8] Bremen/Bremerhaven
[9] The figures have been broken down for Bremen and Bremerhaven since 2021.
[10] Inspections were not carried out / were not representative owing to the Coronavirus pandemic.
[11] Aufgrund der Corona-Pandemie wurden keine Kontrollen durchgeführt bzw. sind nicht repräsentativ
[12] The figures have been broken down for Bremen and Bremerhaven since 2021.
[13] Inspections were not carried out / were not representative owing to the Coronavirus pandemic.

	Available since	Responsible	Unit	2021	2020	2019	2018	2017
Environmental quality indicators								
Air quality	since 1987	SKUMS[14]						
Bremerhaven - Hansastrasse			$\mu gNO_2/m^3$	18	17	20	19	20
			$\mu gSO_2/m^3$	1	1	1	2	2
			$\mu gPM_{10}/m^3$	15	15	17	18	17
			$\mu gPM_{2,5}/m^3$	9	9	11	12	12
Bremen – Hasenbüren			$\mu gNO_2/m^3$	13	12	14	16	14
			$\mu gSO_2/m^3$	1	1	2	3	1
			$\mu gPM_{10}/m^3$	16	16	18	20	19
			$\mu gPM_{2,5}/m^3$	10	9	11	13	12
Habitat Index for the total port area	2006	bremenports, environmental management	%	38	37	37	37	36
TBT contamination in the sediments from the port areas	2002 / 2007	bremenports, environmental management						
Bremen			% of Index*[15]	n.a.[16]	26	23	20	51
Bremerhaven/Überseehafen			% of Index*	n.a.	30	19	13	22
Bremerhaven/Fischereihafen			% of Index*	n.a.	13	26	22	n.a.

[14] The Senator for Climate Protection, Environment, Mobility, Urban Development and Housing
[15] * Index-Values: Bremen-Stadt 299µg/kg TBT, Überseehafen 4246µg/kg TBT, Fischereihafen 4758µg/kg TBT
[16] No sediment samples were analyzed in 2021.

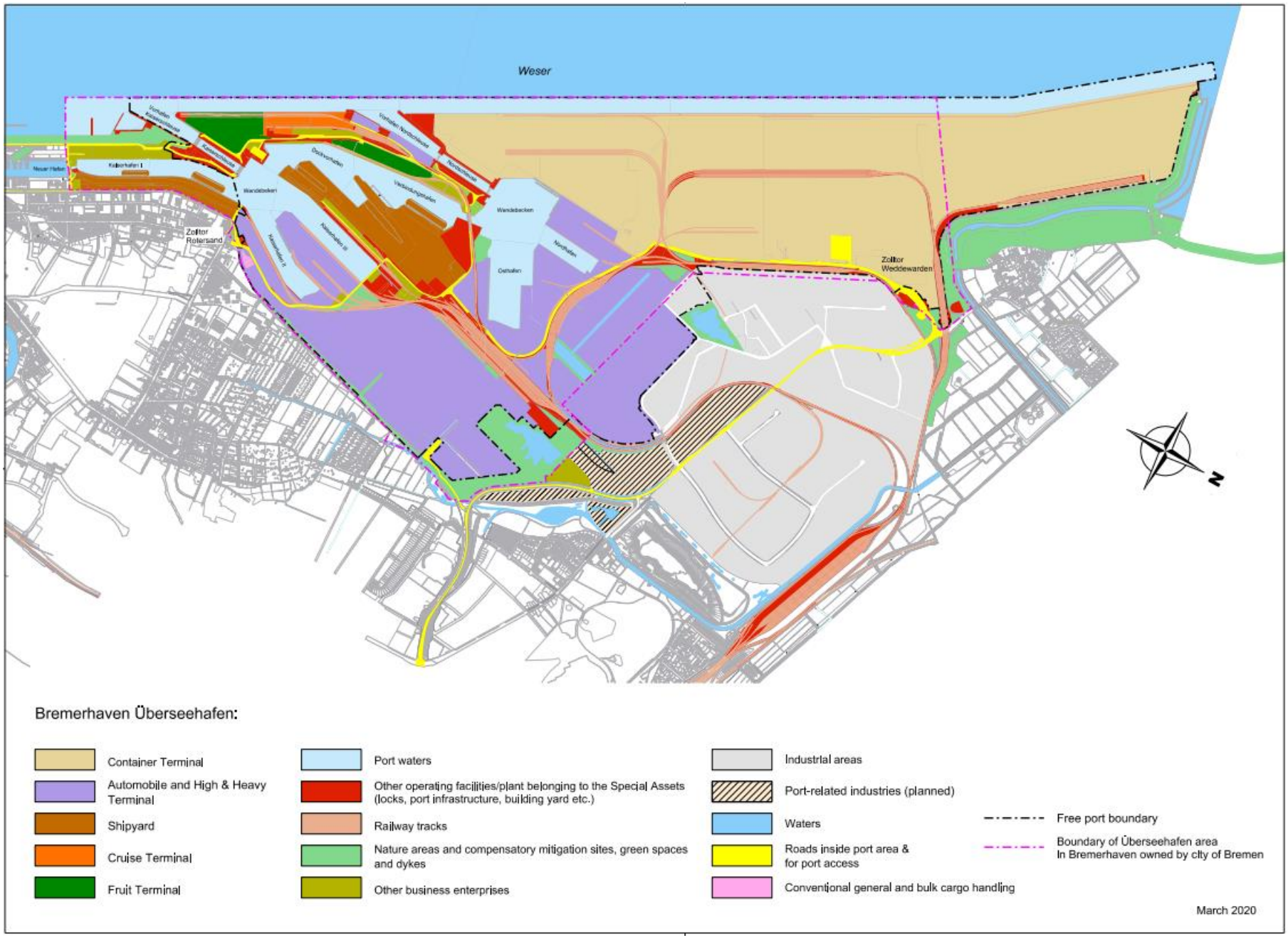
Port Area Bremerhaven 2021	Infringements			
	sea going vessels	barges	land facilities	sum
personal protective clothing and gear	6	0	1	7
Hatches, jetties and accesses	1	0	0	1
Lighting	0	0	0	0
Labor inspection	0	0	0	0
Pollution	2	0	0	2
Hoist	1	0	0	1
Have the load stowed or secured	0	0	0	0
noise abatement	0	0	0	0
Fire permit violation	0	0	0	0
Violation of the smoking ban	1		1	2
life-saving appliances on shore installations	x	x	1	1
structural condition of land facilities	x	x	0	0
ISPS facilities on shore installations	x	x	0	0
Sum	11	0	3	14

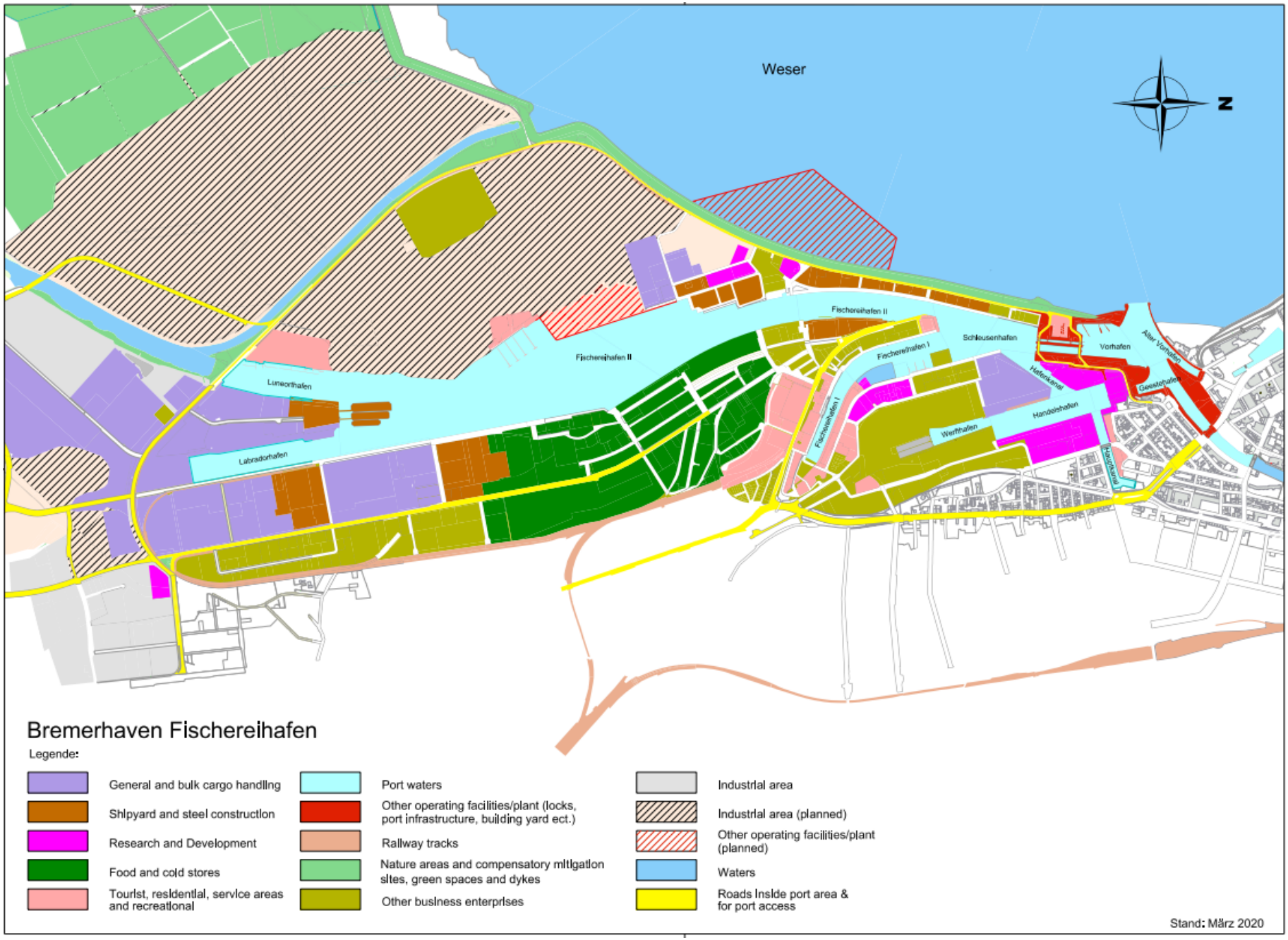
Example ship inspections (Chapter 4.3.4)

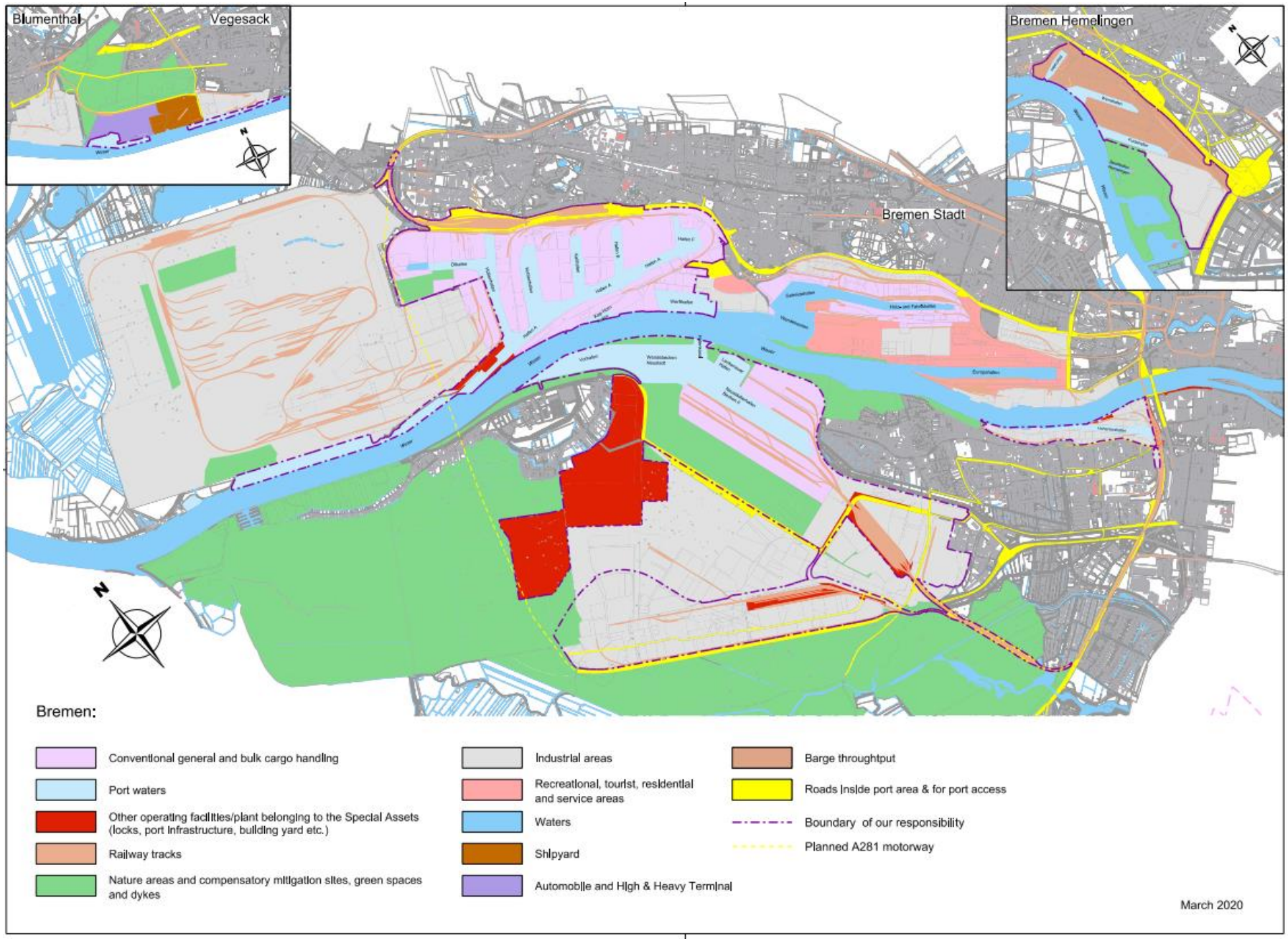
Port Area Bremen 2021	Infringements			
	sea going vessels	barges	land facilities	sum
personal protective clothing and gear	0	0	0	0
Hatches, jetties and accesses	2	0	8	10
Lighting	0	0	0	0
Labor inspection	10	0	4	14
Pollution	27	0	2	29
Hoist	0	0	0	0
Have the load stowed or secured	1	0	0	1
noise abatement	0	0	0	0
Fire permit violation	1	0	0	1
Violation of the smoking ban	0	0	0	0
life-saving appliances on shore installations	X	X	1	1
structural condition of land facilities	X	X	4	4
ISPS facilities on shore installations	X	X	0	0
Sum	41	0	19	60

Example ship inspections (Chapter 4.3.4)

Annex C:
Maps


Weser
Zollhafen Kaiserschleuse
Kaiserschleuse
Kaiserhafen I
Neuer Hafen
Zollhafen Nordschleuse
Nordschleuse
Dockvorhafen
Wendebecken
Verbindungshafen
Nordhafen II
Kaiserhafen II
Zollhafen
Wendebecken
Nordhafen
Zollhafen
Zollhafen Rotersand
Zollhafen Weddewarden
N
Bremerhaven Überseehafen:
Container Terminal
Automobile and High & Heavy Terminal
Shipyard
Cruise Terminal
Fruit Terminal
Port waters
Other operating facilities/plant belonging to the Special Assets (locks, port infrastructure, building yard etc.)
Railway tracks
Nature areas and compensatory mitigation sites, green spaces and dykes
Other business enterprises
Industrial areas
Port-related industries (planned)
Waters
Roads inside port area & for port access
Conventional general and bulk cargo handling
Free port boundary
Boundary of Überseehafen area In Bremerhaven owned by city of Bremen
March 2020


Weser
N
Fischereihafen II
Fischereihafen II
Schleusenhafen
Fischereihafen I
Vorhafen
Alter Vorhafen
Hafenkanal
Geestehafen
Fischereihafen I
Handelshafen
Werfthafen
Hauptkanal
Lunehafen
Labradorhafen
Bremerhaven Fischereihafen
Legende:
General and bulk cargo handling
Shipyard and steel construction
Research and Development
Food and cold stores
Tourist, residential, service areas and recreational
Port waters
Other operating facilities/plant (locks, port infrastructure, building yard ect.)
Railway tracks
Nature areas and compensatory mitigation sites, green spaces and dykes
Other business enterprises
Industrial area
Industrial area (planned)
Other operating facilities/plant (planned)
Waters
Roads Inside port area & for port access
Stand: März 2020


Blumenthal
Vegesack
Bremen Hemelingen
Bremen Stadt
Bremen:
Conventional general and bulk cargo handling
Port waters
Other operating facilities/plant belonging to the Special Assets (locks, port infrastructure, building yard etc.)
Railway tracks
Nature areas and compensatory mitigation sites, green spaces and dykes
Industrial areas
Recreational, tourist, residential and service areas
Waters
Shipyard
Automobile and High & Heavy Terminal
Barge throughtput
Roads inside port area & for port access
Boundary of our responsibility
Planned A281 motorway
March 2020

greenports

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