



ENVIRONMENTAL & ENERGY REPORT

2019





ENVIRONMENTAL POLICY

Together with operating safety, the averting of risks and dangers, economic efficiency, reliability and customer satisfaction, protecting the environment is also one of the main priorities of our Shipping Company's corporate strategy.

Our company has introduced an Environmental Protection Management System (EMS) in accordance with ISO14001 to implement its environmental protection strategy. This system forms an integral part of our Safety Management Systems (SMS), which is based on many years of experience as well as the following provisions and regulations:

- ISM Code (International Safety Management Code),
- ISPS Code (International Ship & Port Facility Security Code) und
- ISO 9001 (Quality Management System).

Documents originally drawn up for our SMS are likewise part of our EMS in accordance with ISO 14001. Our EMS documentation sets out procedures for:

- the safe, environmentally friendly operation of our ships,
- environmentally friendly working at our on-shore facilities, as well as
- a "Zero spill" operation, the avoidance of environmental damage, especially to the marine environment.

We guarantee that:

- our EMS is appropriate and supports our Shipping Company's strategy,
- our EMS is subjected to regular improvement and is constantly in accord with the relevant legislation and regulations in force,
- our environmental objectives are regularly and specifically reviewed with regard to their suitability and appropriateness,
- our environmental objectives are conveyed to all our staff both at sea and on shore,
- there are measures applying to emergency precautions and the averting of risks and dangers,
- the environmental policy and environmental report are accessible in the public domain.

All the staff members of our company know how important their individual performance is within the EMS. They are obliged to familiarise themselves with the system documents relevant to their areas of responsibility, implement the contents of such documentation in their daily work and cooperate creatively in the monitoring and continual improvement of the system.

The Masters of our vessels and the Heads of Department on shore have co-responsibility for the planning, monitoring, correction, improvement, maintenance and updating of our EMS. They have the duty and the authority to identify relevant problems, obtain information from staff in relation to deviations or improvements, as well as propose and implement measures and monitor the effectiveness of the same.

Our EMS is reviewed annually by way of internal management audits and evaluated with regard to its effectiveness and possible improvement.

Our EMS is binding on the company's operations in Rostock, Hamburg and Bremerhaven, as well as for all vessels under our management.

Rostock, 01.02.2016

N.H. Schües

Speaker of the Board of Directors



Energy policy of the shipping company F. Laeisz G.m.b.H.

We, the shipping company F. Laeisz G.m.b.H., are a globally operating shipping company. The economical use of marine fuels of any kind is an essential prerequisite for our economic success. Moreover, we feel obliged to preserve our natural environment and to observe the principles of sustainability.

In our energy policy, which provides the compulsory frame for our energy policy objectives, we combine economic and ecological aspects.

Our objectives

- We want to procure our marine fuels at economical and competitive prices.
- On our ships, we want to use marine fuel as efficiently and economically as possible.
- We want to continuously reduce the specific fuel consumption for cargo transportation. This equally applies to the general energy consumption in the shipping company's onshore facilities.
- We want to promote fuel-saving, energy efficient, and energy-conscious behaviour in all processes and at all levels of our entrepreneurial activity and attribute an important role to it.
- With our economical and efficient use of energy we make a major contribution to the protection of our environment at the same time.

Our way

- To meet our objectives we avail ourselves of an operational energy management system in accordance with DIN EN ISO 50001:2011.
- We will not stop trying to detect new saving measures. Identifying them requires knowledge about fuel consumption and costs. Therefore, we are going to measure them in a suitable manner and inform about them transparently which will enable us to influence them systematically.
- We shall promote the awareness of and knowledge about energy-saving behaviour among the whole crew.
- We will apply new fuel-saving technologies and make appropriate investments whenever they are economically justifiable.
- As before, we shall comply with all relevant legal provisions relating to our energy aspects.
- To comply with our objectives and implement the energy management action plans an energy efficiency team was established. The energy efficiency team includes several responsible persons from the departments NTA, (Operating, Purchasing), and Quality Assurance. It is led by the energy management representative. Regular meetings of the energy efficiency team serve for energy planning and thus the coordination to improve energy related performance.

Rostock, 01.02.2016

N.H. Schües

Speaker of the Board of Directors



High environmental standards and conscious energy management are an integral part of our shipping activity, which is certified according to ISO 14001 and ISO 50001.

DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No:
203684-2016-AE-NOR-NA

Initial certification date:
15 May 2014

Valid:
06 July 2016 - 22 May 2021

This is to certify that the management system of

Reederei F. Laeisz GmbH

Lange Strasse 1a, 18055 Rostock, Germany

and the Branch Office as mentioned in the appendix accompanying this certificate

have been found to conform to the Environmental Management System standard:
ISO 14001:2015

This certificate is also valid for all ships that hold a valid Safety Management Certificate issued to the shipping company.

This certificate is valid for the following scope:

**Ship Management including technical management, crewing and operation.
Commercial Management including marketing, chartering and operation.
Administration.**

Place and date:
Høvik, 14 July 2017



For the issuing office:
DNV GL – Business Assurance
Veritasveien 1, 1363 Høvik, Norway

Jøran Laukholm
Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV GL Business Assurance Norway AS, Veritasveien 1, 1363 Høvik, Norway, TEL: +47 67 57 99 00, <http://assurance.dnvgl.com>



DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No:
245774-2017-AE-NOR-NA

Initial certification date:
31 August 2017

Valid:
31 August 2017 - 22 May 2021

This is to certify that the management system of

Reederei F. Laeisz G.m.b.H

Lange Strasse 1a, 18055 Rostock, Germany
and the Branch Office as mentioned in the appendix accompanying this certificate

have been found to conform to the Energy Management System standard:

ISO 5001:2011

This certificate is also valid for all ships that hold a valid Safety Management Certificate issued to the shipping company.

This certificate is valid for the following scope:

**Ship Management including technical management, crewing and operation;
Commercial Management including marketing, chartering and operation;
Administration.**

Place and date:
Høvik, 07 September 2017



For the issuing office:
**DNV GL – Business Assurance
Veritasveien 1, 1363 Høvik, Norway**

Jøran Laukholm
Management Representative

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Table of content

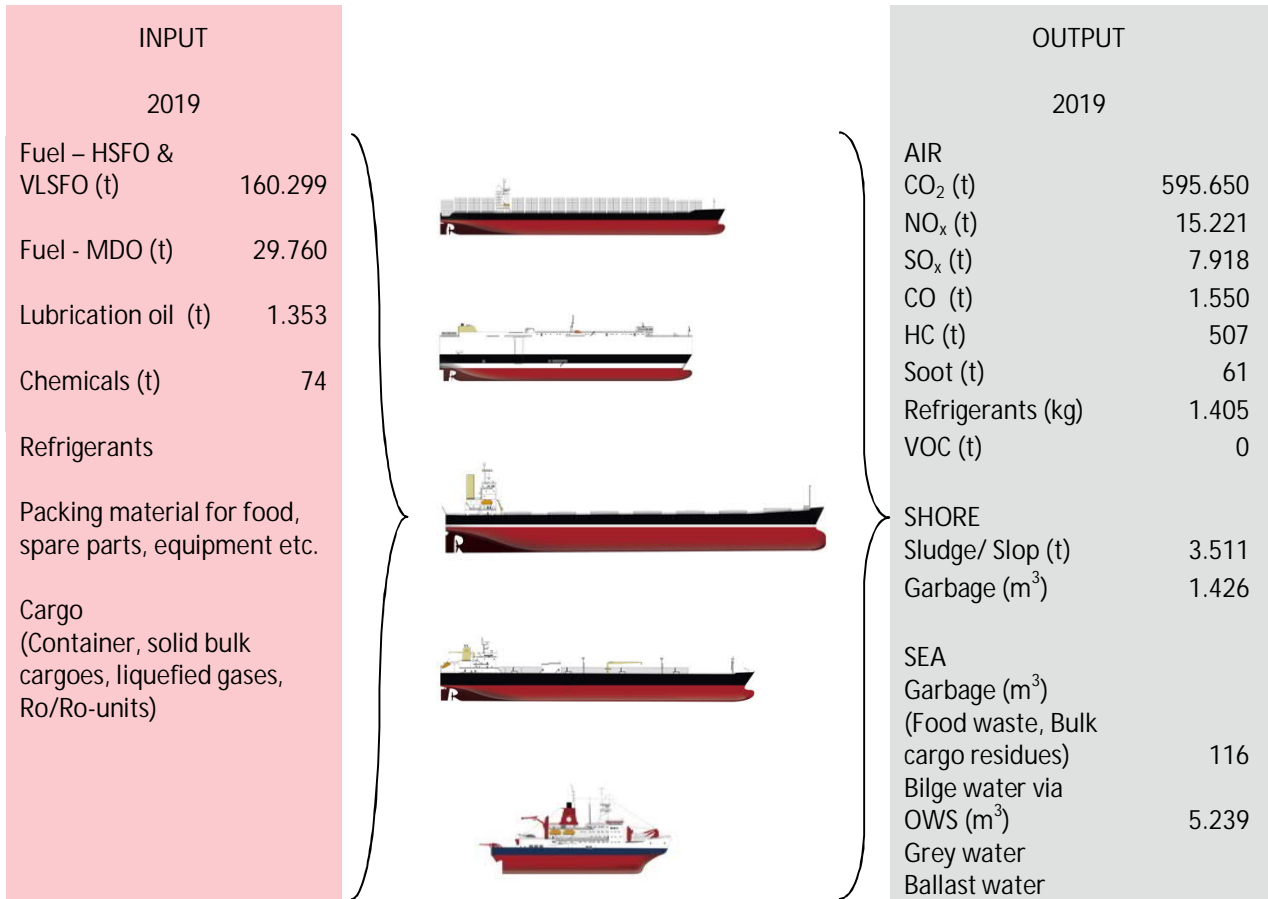
Energy policy of the shipping company F. Laeisz G.m.b.H.	3
1. Principles	7
2. Input-Output-Balance 2019	7
3. Summary of essential results.....	8
4. Environmental & Energy Impacts in detail	10
4.1. Environmental & Energy Aspects - Fleet	10
4.1.1. Fuel Oil Consumption.....	10
4.1.2. Emissions to air	11
4.1.2.1. Carbon Dioxide - CO ₂	11
4.1.2.2. Gaseous Emissions(absolute, except CO ₂ and HC)	11
4.1.2.3. Average Sulphur content of Fuel Oil (2006 - 2019).....	12
4.1.2.4. Emissions of refrigeration gases (mainly R404a).....	12
4.1.2.5. Incineration of Oil Sludge.....	12
4.1.3. Emissions to sea.....	13
4.1.3.1. Oily Waste Water – Bilge water	13
4.1.3.2. Ballast water.....	13
4.1.3.3. Grey and Black water	13
4.1.3.4. Garbage.....	13
4.1.4. Disposals ashore	14
4.1.4.1. Sludge oil (m ³)	14
4.1.4.2. Garbage.....	14
4.2. Environmental & Energy Aspects - Shore	15
4.2.1. Paper consumption.....	15
4.2.2. Company cars	16
4.2.3. CO ₂ -Emissionen caused by air travel (business travel & crew changes)	16
4.2.4. Energy consumption (kWh) in 2019 (electrical & thermal energy) of office buildings.....	17



1. Principles

The operation of our ocean-going vessels, the transport of cargo and work in the shore facilities are associated with adverse impacts on the environment and the consumption of energy. Aware of this fact, our shipping company acknowledges its responsibility to use the energy efficiently and to protect the environment from the adverse impacts caused by its business activities. In order to be able to act correctly, all our activities and services are continuously reviewed for their direct and indirect environmental impact, taking into account local, regional and global environmental aspects.

2. Input-Output-Balance 2019

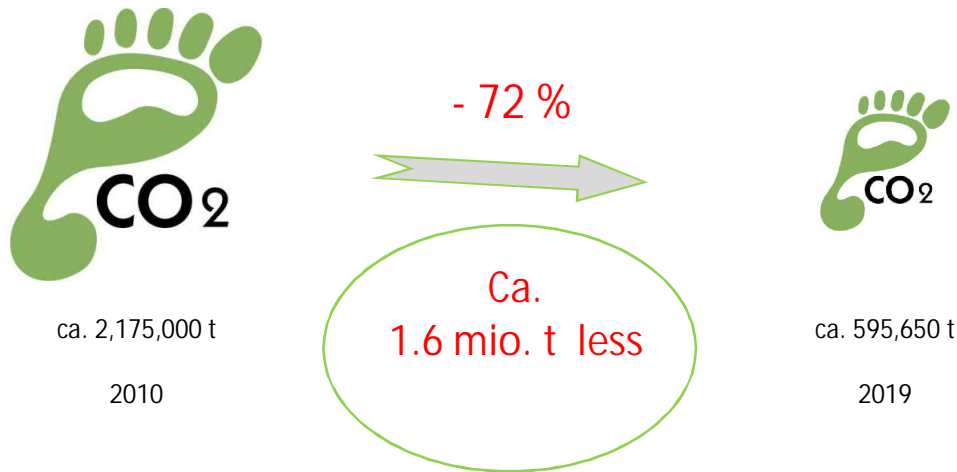


3. Summary of essential results

- In 2019 the **total fuel oil consumption** (HSFO, VLSFO & MDO) of the ships was approximately 190,059 t.
- In the 4th quarter of 2019 the vessels commenced bunkering VLSFO to be prepared for the IMO Sulphur Cap 2020. The fuel change-over was successfully completed and all ships were in compliance with the requirements as of 01.01.2020.
- Compared to the year 2010; this corresponds to a reduction in the amount of fuel oil used of about 510,000 t.



- The **fuel oil consumption per ship** was reduced from 14,871 t in 2010 to 8,639 t in 2019, which corresponds to a reduction of approx. 42 %.
- The average **fuel oil consumption per nautical mile** of the fleet was 113 kg in 2019.
- A total of approx. 595,650 t of the greenhouse gas **carbon dioxide** (CO₂) were emitted as a result of burning fuel. This is approx. 1.6 million t less than in 2010, reducing the shipping company's CO₂ footprint by approx. 72 %.



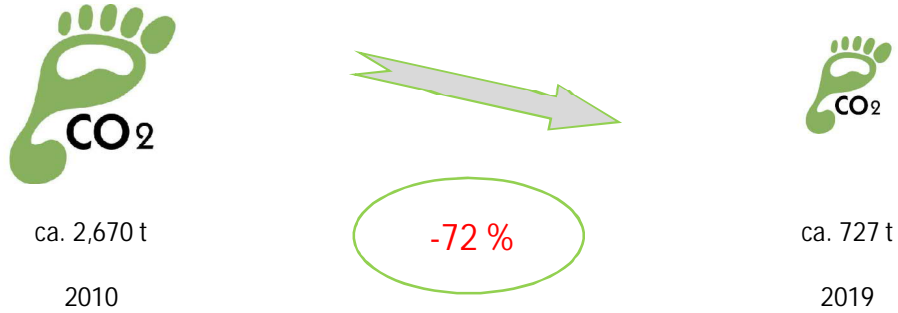
- Emissions of **sulphur oxides** (SO_x), **nitrogen oxides** (NO_x), **carbon monoxide** (CO), unburned hydrocarbons and soot also decreased significantly compared to previous years, e.g. 7,918 t of SO_x were emitted in 2019 compared to 38,121 t in 2010.

	2010	reduction	2019	
SO _x	38,121 t	30,203 t	7,918 t	-79%
NO _x	58,041 t	42,820 t	15,221 t	-73%
CO	6,264 t	4,714 t	1,550 t	-75%

- The annual consumption of **lubricating oil per ship** has been reduced by more than half compared to 2010.

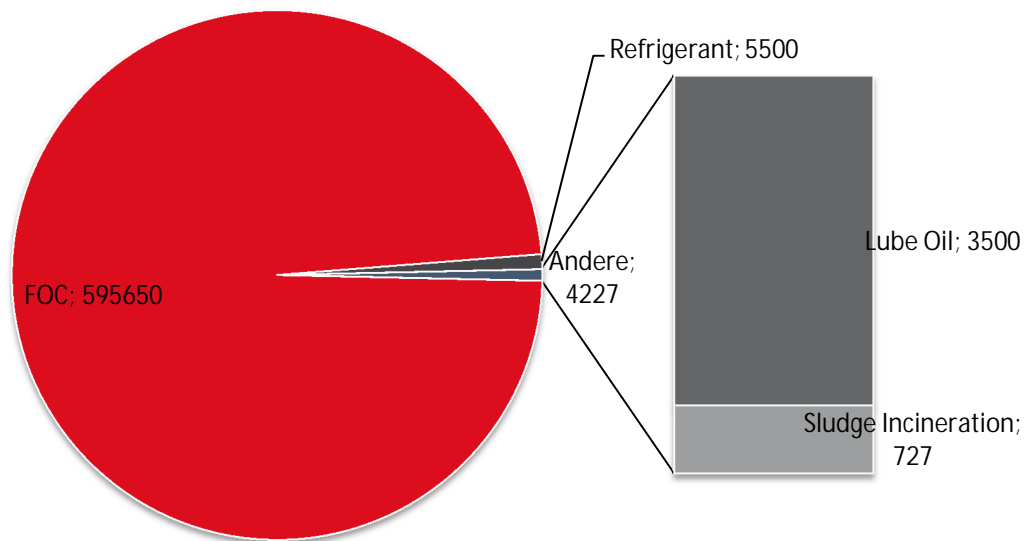


- The annual consumption of **refrigeration gases** (mainly R404a) was 1.4 t in 2019. In total, this quantity corresponded to a CO₂ equivalent of about 5,510 t.
- The on-board **incineration of oil sludge** was continuously reduced from 859 t in 2010 to 234 t in 2019, a reduction of more than 70%. As a result, approximately 1,940 t of CO₂ were emitted less.



- Thus, a **total** of approx. 605,390 t of **carbon dioxide** (CO₂) and other gases that contribute to the greenhouse effect (R404a with a GWP value of 3,922) were emitted from ship operations.

CO₂ Emission (in t)





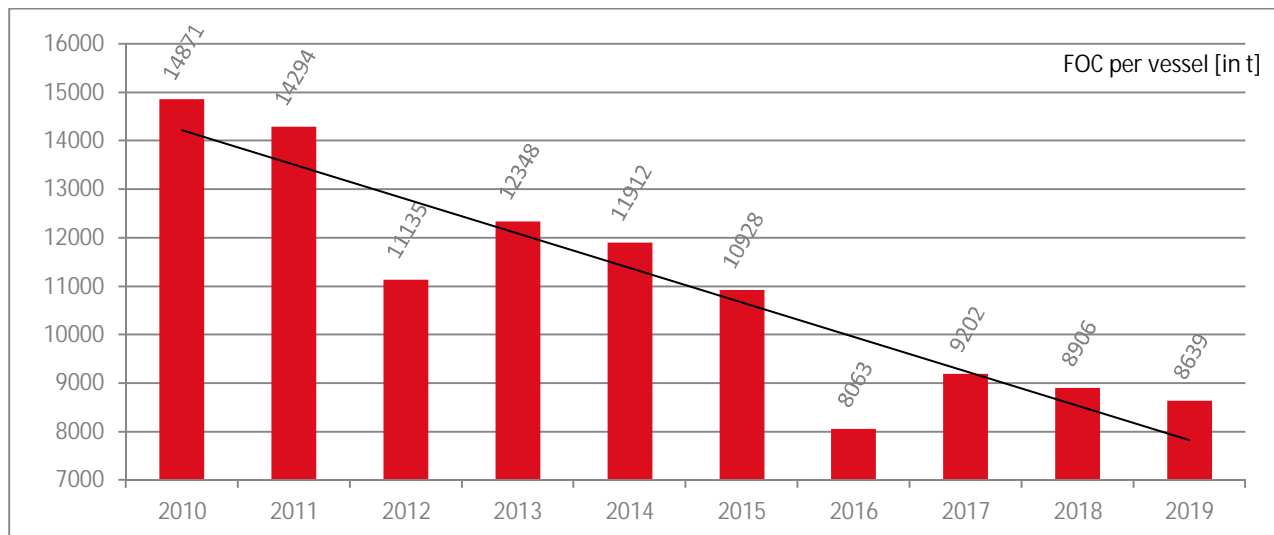
4. Environmental & Energy Impacts in detail

4.1. Environmental & Energy Aspects - Fleet

4.1.1. Fuel Oil Consumption

Both, the fuel oil consumption of the entire fleet as well as the fuel consumption per ship was continuously reduced.

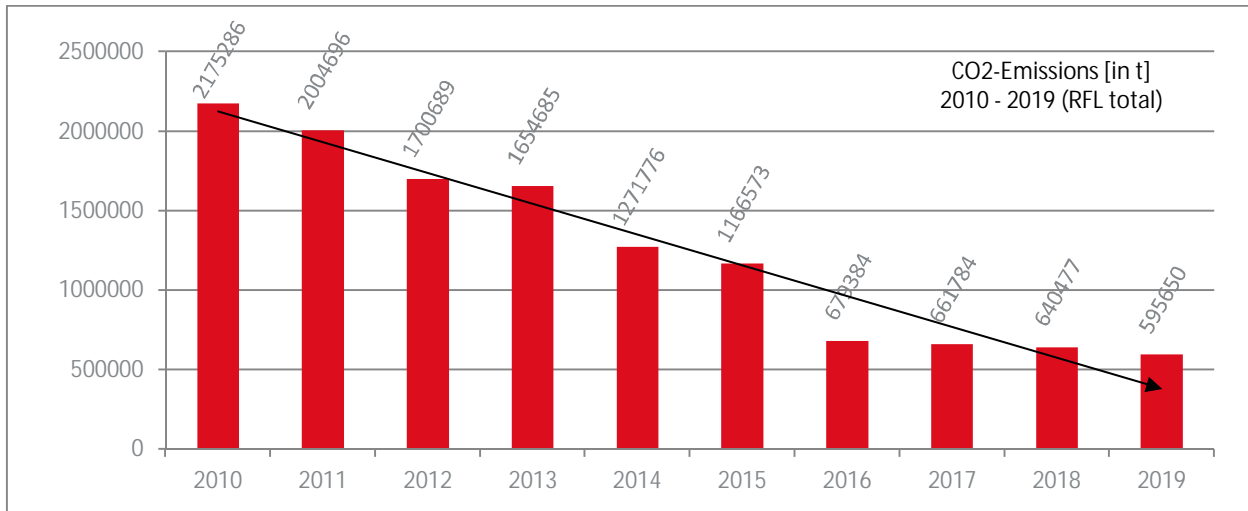
Year	Vessels	Fuel Oil Consumption (FOC) per year (t)			
		Total	HSFO & VLSFO	MDO	Quantity per vessel
2010	47	698,933	672,176	26,757	14,871
2011	45	643,211	616,576	26,635	14,294
2012	49	545,610	519,717	25,893	11,135
2013	43	530,946	511,045	19,901	12,348
2014	35	416,922	403,210	13,712	11,912
2015	35	382,495	352,897	29,598	10,928
2016	27	217,703	193,066	24,637	8,063
2017	23	211,651	183,061	28,590	9,202
2018	23	204,831	176,948	27,883	8,906
2019	22	190,059	160,299	29,760	8,639





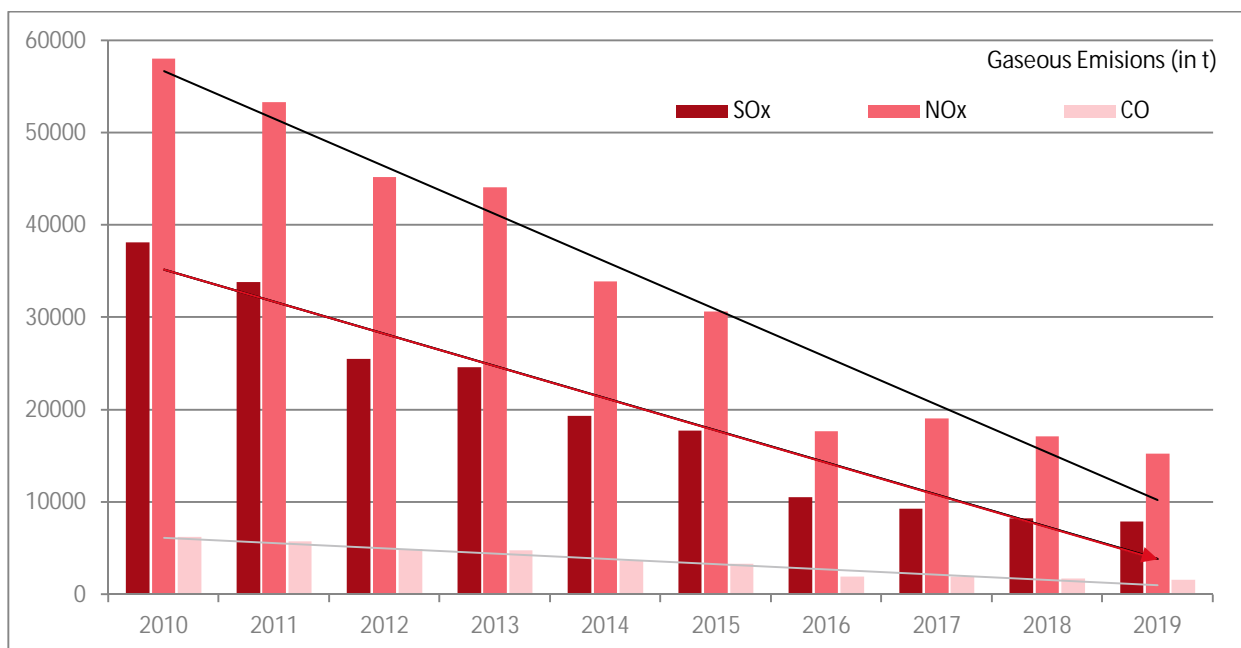
4.1.2. Emissions to air

4.1.2.1. Carbon Dioxide - CO₂



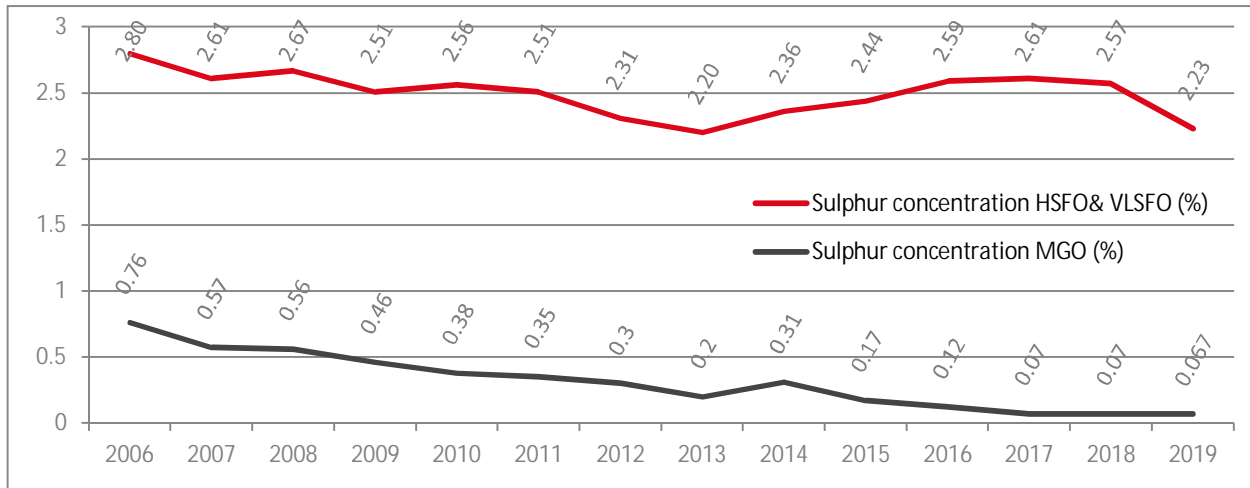
4.1.2.2. Gaseous Emissions(absolute, except CO₂ and HC)

Year	SO _x (t)	NO _x (t)	CO (t)
2010	38,121	58,041	6,264
2011	33,840	53,364	5,762
2012	25,505	45,184	4,885
2013	24,591	44,102	4,759
2014	19,347	33,938	3,659
2015	17,722	30,679	3,337
2016	10,548	17,671	1,935
2017	9,301	19,047	1,908
2018	8,251	17,106	1,729
2019	7,918	15,221	1,550
Difference 2019 - 2010	-30,203	-42,820	-4,714
	-79 %	-73 %	-75 %





4.1.2.3. Average Sulphur content of Fuel Oil (2006 - 2019)



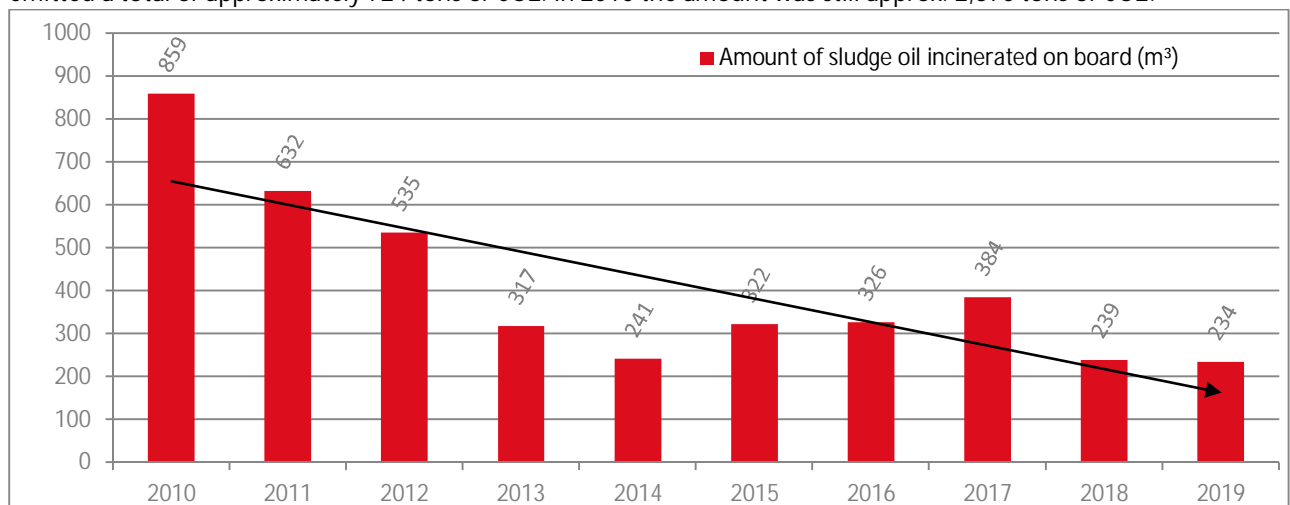
4.1.2.4. Emissions of refrigeration gases (mainly R404a)

The increased use of refrigerant gases was caused by the age of the plants and thus by increased maintenance and repair intervals and shipyard times.

Year	Average quantity - total (kg)	Average quantity per vessel (kg)
Ø 2006 - 2008	4,400	120
2013	3,284	77
2014	1,980	57
2015	1,413	40
2016	951	35
2017	999	42
2018	1,303	59
2019	1,405	64

4.1.2.5. Incineration of Oil Sludge

The incineration of oil sludge was significantly reduced during the period considered. The incinerations in 2019 emitted a total of approximately 724 tons of CO₂. In 2010 the amount was still approx. 2,670 tons of CO₂.





4.1.3. Emissions to sea

4.1.3.1. Oily Waste Water – Bilge water

By means of the oily water separators installed on board (max. 15 ppm residual oil content), approx. 7,091 m³ of oily bilge water were still being treated in 2018 and approx. 5,239 m³ in 2019.

4.1.3.2. Ballast water

For ballast water, the environmentally relevant aspects lie in the saving of fuel required for energy generation for the operation of the BW pumps or ballast water treatment plants and, directly related to this, in the reduction of CO₂ emissions and in the reduction of the risk of spreading foreign species through the ballast water exchanged. By the time the report was completed, three more ships had been equipped with ballast water treatment systems.

4.1.3.3. Grey and Black water

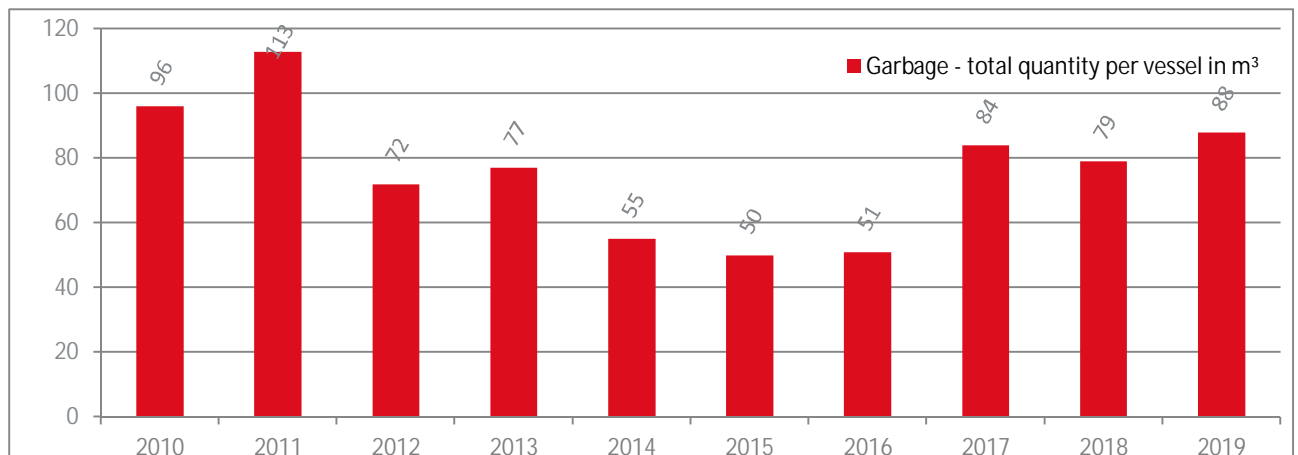
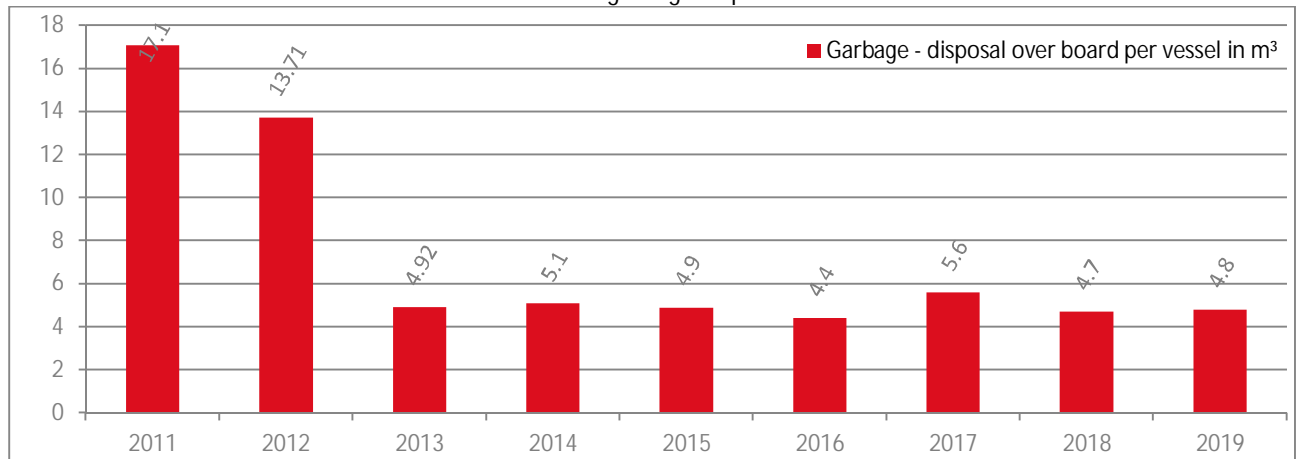
The black water produced on board is treated by the sewage treatment plants on board before it is discharged into the sea. Grey water is only discharged in compliance with the applicable regulations.

4.1.3.4. Garbage

In 2019 the total amount of garbage disposed over board into the sea remained stable compared to the previous year.

Garbage Categories according to MARPOL Annex V	Garbage disposed into the sea (m ³) in 2018	Garbage disposed into the sea (m ³) in 2019
Category B (Food waste)	111	106
Category J (Bulk cargo residues)	7	10
Other category	0	0

Since amendment of the MARPOL Annex V in 2013 the garbage disposal over board remained stable

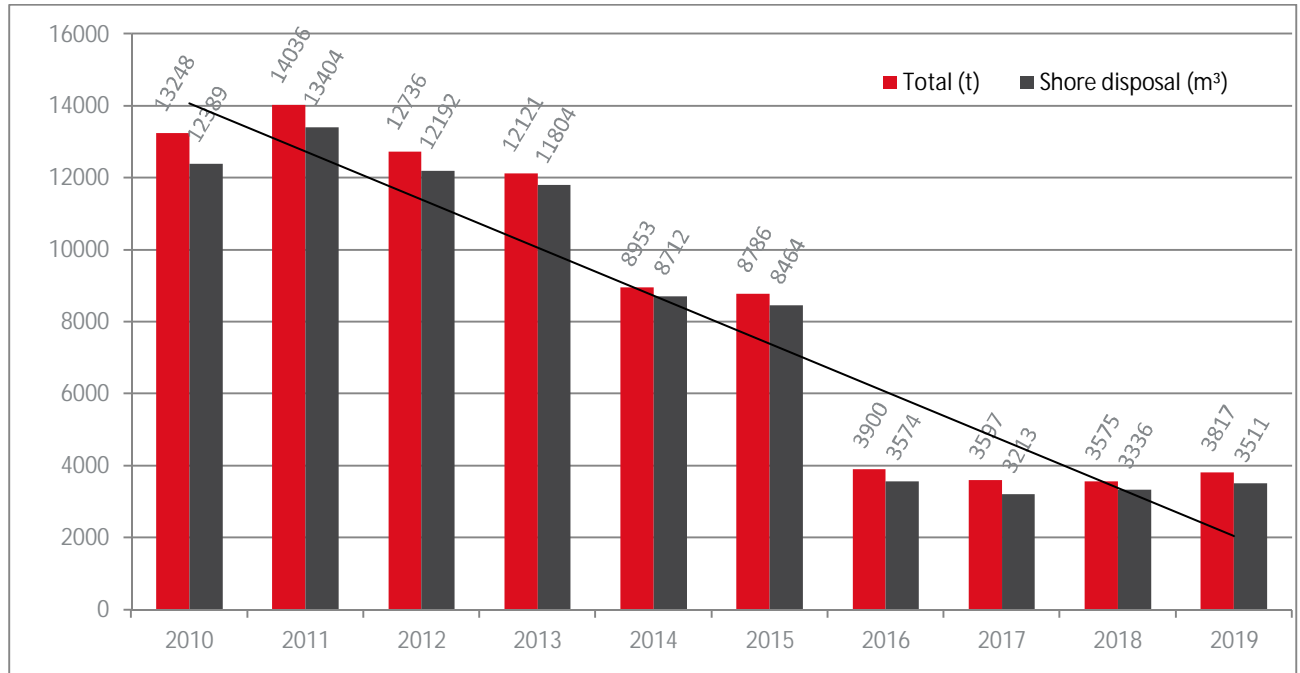




4.1.4. Disposals ashore

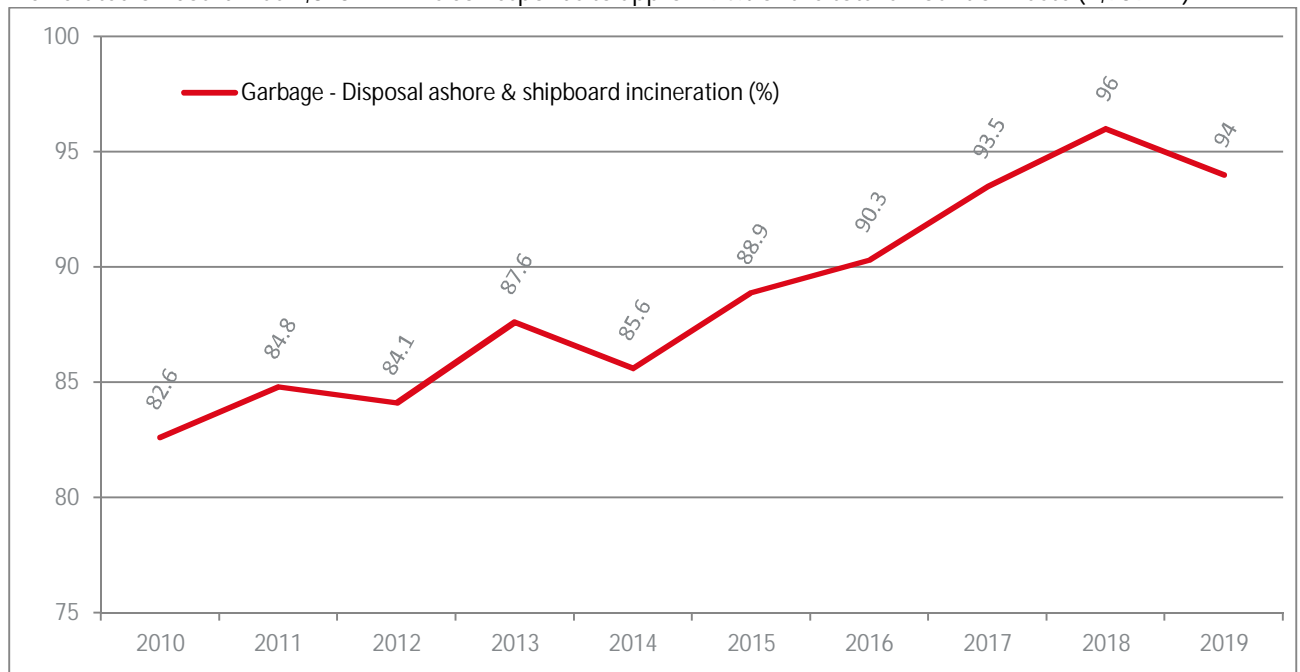
4.1.4.1. Sludge oil (m³)

In 2019, a total of 3,817 m³ of oil sludge was generated on board our ships in on-board operations. Thereof 92% (3,511 m³) were disposed of ashore. In 2019, the amount of oil sludge produced rose again.



4.1.4.2. Garbage

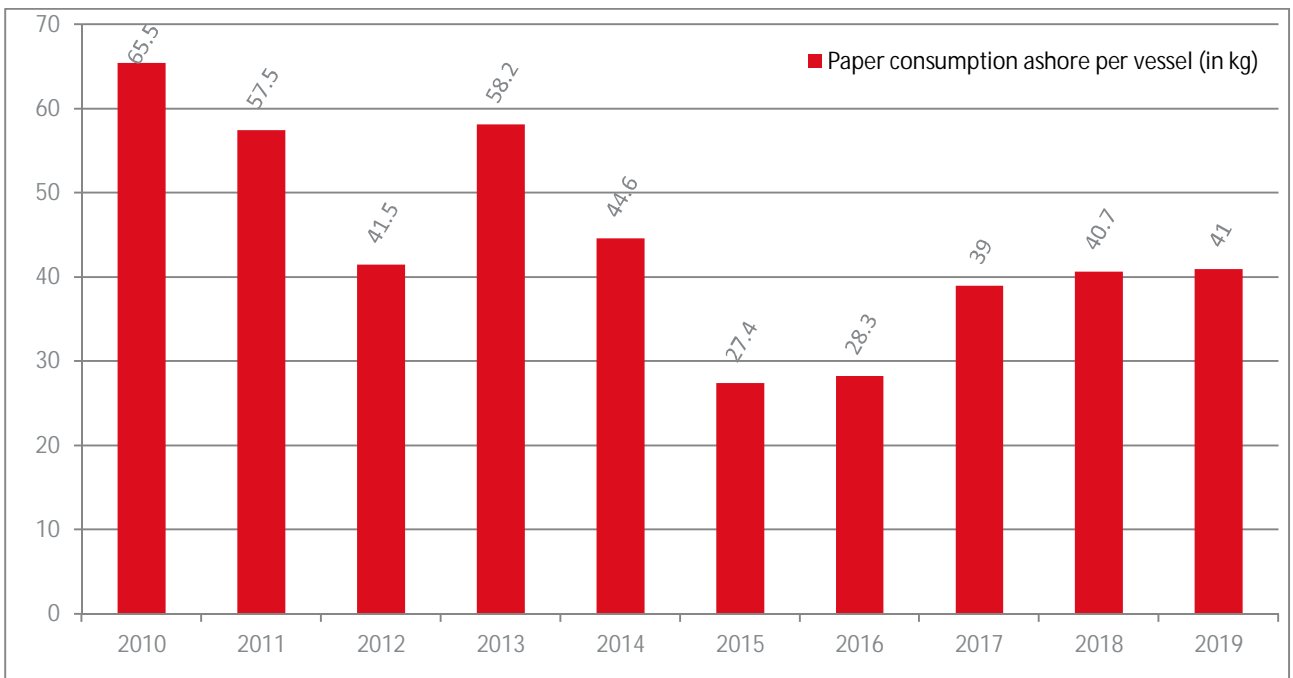
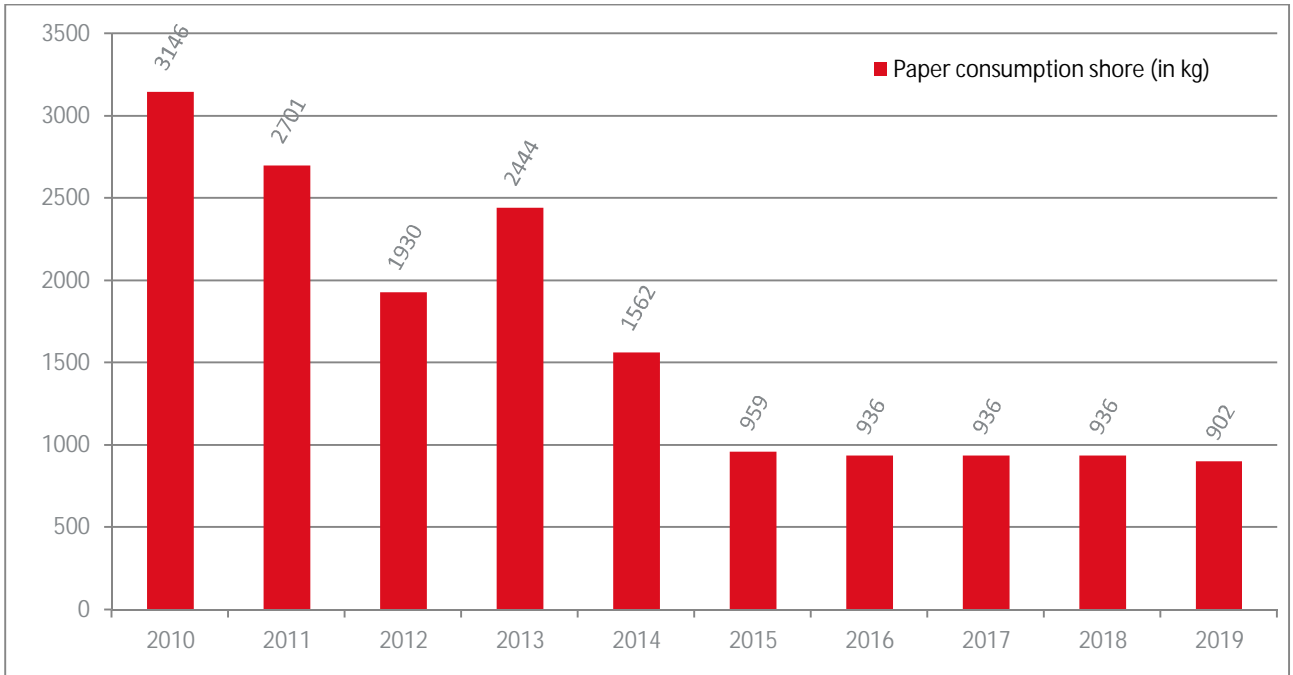
In 2019, the amount of garbage generated during on-board operations and which was disposed of ashore or incinerated on board was 1,823 m³. This corresponds to approx. 94% of the total amount of waste (1,939 m³).





4.2. Environmental & Energy Aspects - Shore

4.2.1. Paper consumption

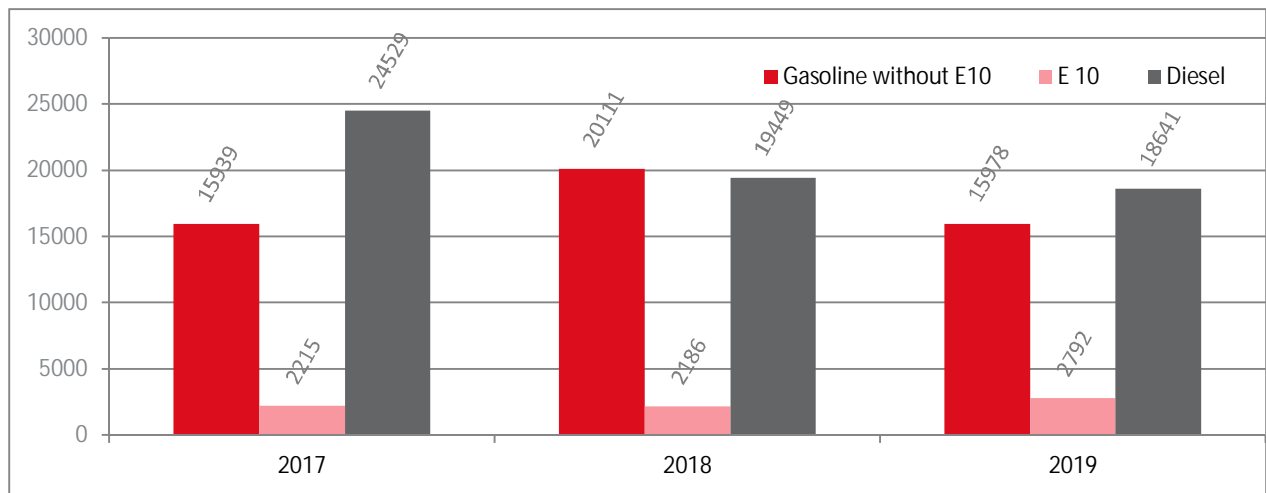




4.2.2. Company cars

In 2019, the following grades and quantities of fuel were required for the operation of company cars:

Sum	Gasoline (l)		Diesel (l)	total (l)
	total	thereof E10		
2017 – HRO – Consumption	18,154	2,215	24,529	42,683
2018 – HRO – Consumption	22,297	2,186	19,449	41,746
2019 – HRO – Consumption	18,853	2,875	18,641	37,411
2019 – BHV – Consumption	13,236	1,897	9,369	22,605
2019 – Total RFL	32,089	4,772	28,010	60,099



The following emissions of environmental pollutants occurred:

Year	Fuel		Mileage (km)	Emissions	
	Grade	Average consumption in l / 100 km		CO ₂ (kg) ³⁾	NO _x (kg)
2019 - HRO	Gasoline	6.8	277,634	43,927	5.3 ¹⁾
	Diesel	8.5	218,451	49,025	41.5 ²⁾
2019 – BHV	Gasoline	5.9	223,102	30,840	4.2 ¹⁾
	Diesel	10.1	95,145	24,640	18.1 ²⁾
2019 – Total RFL	Gasoline	6.4	500,736	74,767	9.5 ¹⁾
	Diesel	8.9	313,596	73,666	59.6 ²⁾

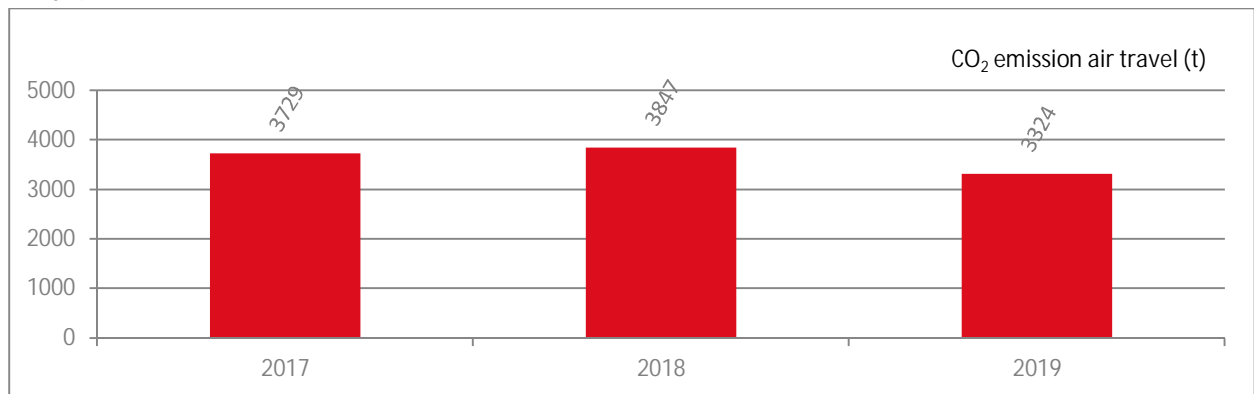
¹⁾ - approx. 0.019 g NO_x is emitted per km (source: German Energy Agency)

²⁾ - approx. 0.190 g NO_x is emitted per km (source: German Energy Agency)

³⁾ - CO₂ emission per litre: gasoline = 2.33 kg / diesel = 2.63 kg

4.2.3. CO₂-Emissionen caused by air travel (business travel & crew changes)

Air travel in connection with business trips and crew changes caused a total emission of approximately 3,324 t CO₂ in 2019.



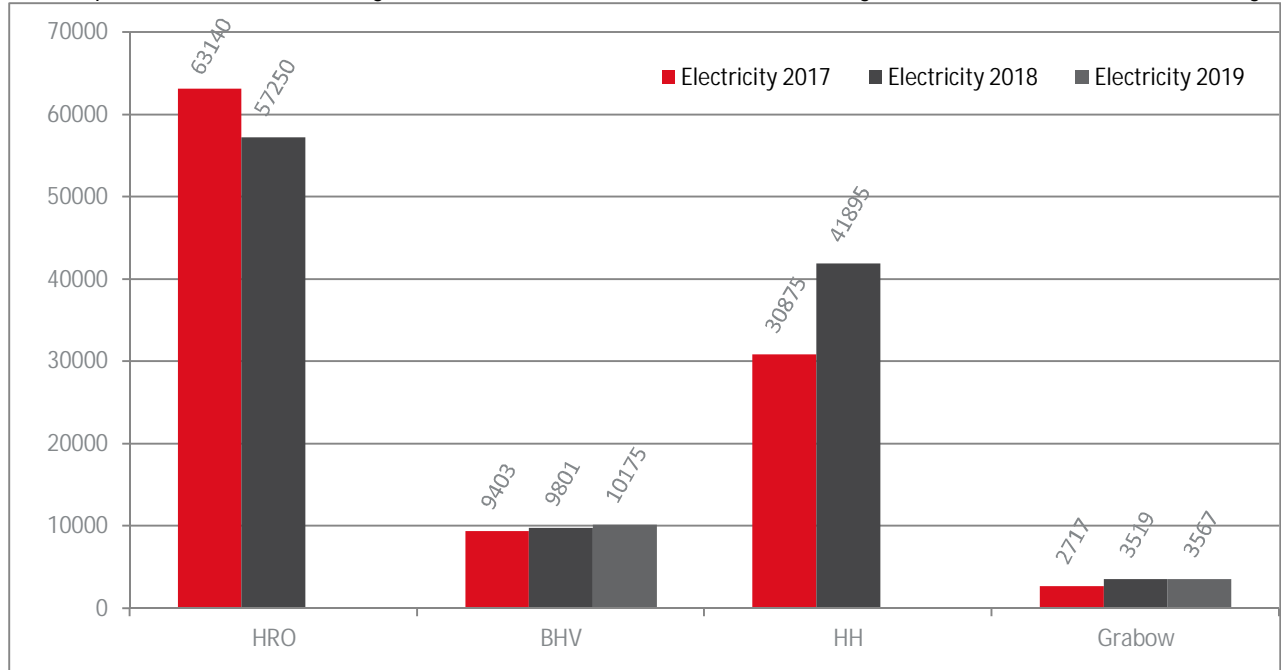


4.2.4. Energy consumption (electrical & thermal energy) of office buildings

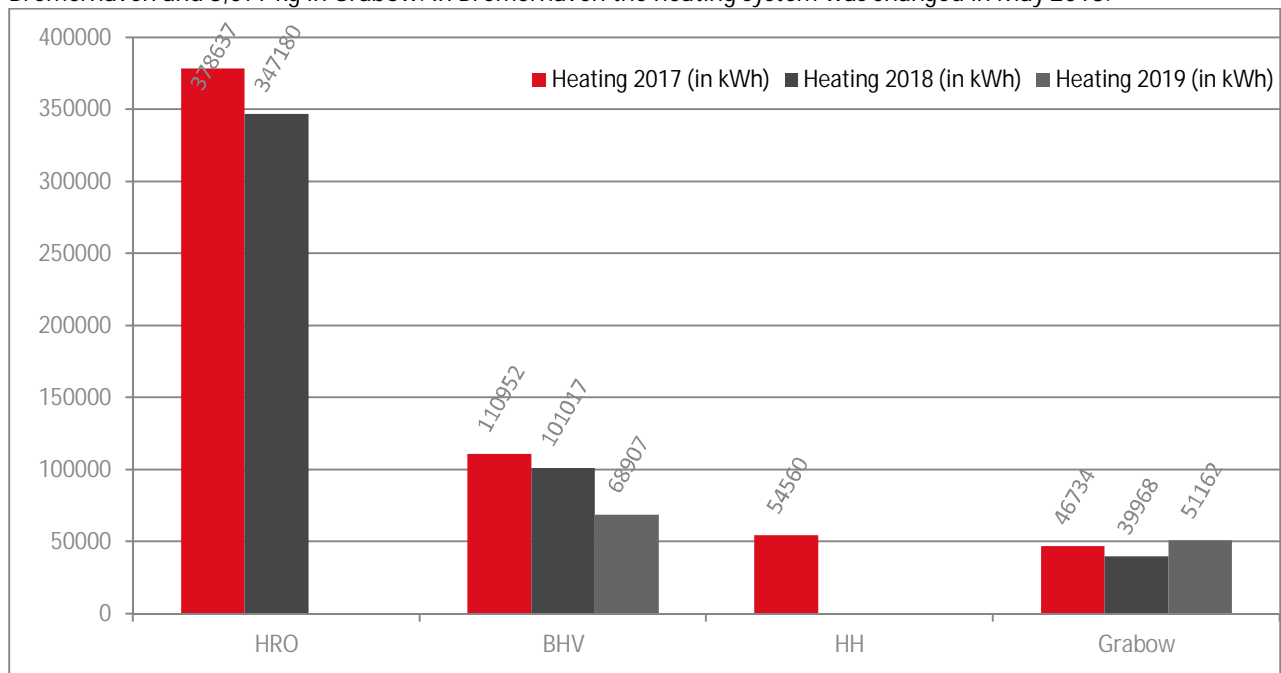
For electricity supply and heating of the office buildings the below mentioned energy (in kWh) was consumed:

Year	Rostock		Bremerhaven		Hamburg		Grabow	
	Electricity	Heating	Electricity	Heating	Electricity	Heating	Electricity	Heating
2017	63,140	378,637	9,403	110,952	30,875	54,560	2,717	46,734
2018	57,250	347,180	9,801	101,017	41,895	Invoicing still open	3,519	39,968
2019	Invoicing still open		10,175	68,907	Invoicing still open	Invoicing still open	3,567	51,162

Apart from the Rostock site, electricity consumption increased in Bremerhaven, Hamburg and Grabow. The electrical energy in Hamburg and Grabow is CO₂-neutral. In 2018, as per electricity supplier, the electricity consumption of the office building in Rostock caused the emission of 11,164 kg CO₂ and for Bremerhaven 4,460 kg.



In 2018 the CO₂ emissions for the heat supply of the office building were 46,106 kg in Rostock, 20,405 kg in Bremerhaven and 8,077 kg in Grabow. In Bremerhaven the heating system was changed in May 2018.



While in 2017 still 126.8 tonnes of CO₂ were emitted, the amount was significantly reduced in 2018 down to 90.2 t. This is a reduction of 28.8 %.