Ecology

Climate friendly logistic chains

Accounting for around one-fifth of all carbon emissions in the European Union (EU), the transport sector is a major emitter of CO_2 emitter. Transport volumes have risen significantly over recent decades and further growth is forecast. This is often associated with higher carbon emissions as fossil fuels continue to be the main energy source for transport by truck and ship. Of these emissions, a comparatively low 2.9 % is attributable to seaborne transport, which accounts for over 90 % of the global trade in goods. As a result of their enormous capacity of up to 24,000 standard containers, container mega-ships offer the best carbon footprint per tonne of goods transported. Rail transport is considered the most environmentally advantageous mode of transport on land as it is highly energy efficient and can be made carbon neutral.

HHLA's **business model of linking two environmentally advantageous modes of transport, ships and trains, to create climate-friendly logistics chains** is its most important contribution towards sustainability and climate and environmental protection. This is also underlined by the EU Taxonomy Regulation, in force since 2021, which classifies HHLA's primary activities as taxonomy-eligible. HHLA and METRANS link the Northern European and Adriatic ports with Central and Eastern Europe via a highly efficient intermodal network. The linkage of ocean-going vessels with feeders, inland waterway ships, barges and rail requires nothing less than the organisation of ideal multimodal transport chains. These transport chains save energy and infrastructure while causing comparatively little noise and fewer accidents. Hamburg's location deep inland is a further advantage, as the river Elbe is an environmentally friendly transport route.

HHLA also integrates other stakeholders into its creation of climate-friendly logistics chains. As the central, neutral and industry-wide coordination point for mega-ship, feeder and inland waterway vessel traffic in the Port of Hamburg, the **Hamburg Vessel Coordination Center (HVCC)** offers terminals and shipping companies operational coordination services to optimise the emissions of arriving and departing ships.

With its **HHLA Pure** product, HHLA offers its customers certified, climate-neutral container transport and container handling for all Hamburg container terminals and most routes in the METRANS network.

Area optimisation

The use of land for transport, industry and housing has one of the biggest environmental impacts, as land is a valuable, but limited, resource. The efficient use of port and logistics areas through high land **usage** productivity and increased storage capacity on existing space are therefore measures that HHLA uses to reduce the use of land for transport, industry and building developments. When investing in the demand-oriented expansion of its port terminals, HHLA is guided by its commitment to using scarce port and logistics areas as efficiently as possible. With regard to the efficient use of port areas, HHLA focuses on expanding storage capacity and boosting its quayside handling capacity.

At HHLA's Container Terminal Burchardkai (CTB), for example, **storage capacity is being increased** by the space-conserving expansion of the yard crane system. By condensing the container storage areas, the storage capacity of the existing space can be significantly increased in line with demand.

As well as increasing storage capacity by more concentrated storage, thus optimising land usage**, the expansion of quayside handling capacity** is an important element for the efficient use of space at the terminals. HHLA has significantly increased its quayside efficiency by means of an extensive expansion programme, including the use of state-of-the-art tandem container gantry cranes which can move up to four 20-foot containers simultaneously. Enhancing quay-wall productivity in this way without using additional space enables the company to handle a larger number of containers.

In addition to space-saving yard crane systems and efficient handling equipment, effective **processes** also make a key contribution towards increasing the efficiency of the existing areas. This combination of increased storage capacity with efficient equipment and processes makes it possible to cope with peak workloads in the existing areas.

For its network between the seaports and the Eastern European and South-Eastern European inland terminals, HHLA subsidiary METRANS uses wagons specially designed for maritime logistics. These 80-foot wagons offer the ideal combination of wagon/train length and **carrying capacity.** As a result, a block train operating a shuttle service can transport as many as 100 standard containers – more than would be possible with comparable wagons. This high carrying capacity per train makes optimum use of the existing infrastructure at the seaport, inland terminals and railway sidings.

Climate protection and energy efficiency

In order to effectively mitigate climate change, HHLA focuses on lowering its absolute CO_2 emissions. By steadily increasing its energy efficiency and the proportion of renewables in its energy mix, HHLA aims to decouple handling and transport volumes on the one hand and CO_2 emissions on the other. HHLA has reported on its carbon footprint regularly since 2008 as part of the CDP (formerly the Carbon Disclosure Project). CDP is a non-profit initiative that manages one of the world's largest databases of corporate greenhouse gas emissions on

behalf of institutional investors and makes this information available to the public. In the reporting period, CDP gave HHLA a B score. Of the 13,126 participating companies worldwide, only 5.5 % obtained a better score (A or A-).

HHLA **calculates its CO_2 emissions** on the basis of the Greenhouse Gas Protocol Corporate Standard (Revised Edition), an international standard for recording greenhouse gas emissions. Within the HHLA Group, greenhouse gas emissions mainly relate to CO_2. Carbon emissions are primarily influenced by throughput volumes at the port and inland terminals, rail transport volumes and the proportion of electricity from renewable sources. In line with the Greenhouse Gas Protocol, electricity procured separately from renewable sources was classified as carbon neutral in the calculation of specific emissions. For the calculation of absolute emissions, the CO_2 emissions, which are lower due to the use of electricity from renewable sources, are shown separately. The power needed by a port terminal depends largely on the number of seaborne containers it handles and the number of containers transported over land by rail and truck. HHLA uses seaborne and onshore throughput in containers as an effective indicator to determine specific CO_2 emissions in line with the recommendations of the European Economics Environment Group (EEEG). The recommendations of the EEEG are also taken into account in the Global Logistics Emission Council (GLEC) Framework 2.0.

The outstanding importance of reduced absolute CO_2 emissions is expressed by HHLA's **climate protection target**: to reduce absolute CO_2 emissions by at least 50 % by 2030 and **to become fully climate neutral by 2040**. The base year is 2018. In a comparison between the base year and the reporting year, absolute CO_2emissions decreased by 27.0 % to 124,418 tonnes (2018: 170,346 tonnes).

Including the use of electricity from renewable sources, which led to a 71,522-tonne reduction in CO_2 emissions, **absolute CO_2 emissions** decreased by 19.7 % to 124,418 tonnes (previous year: 154,954 tonnes). The development of CO_2 emissions during the reporting year was mainly influenced by the significant increase in the proportion of renewables. While 86.2 gigawatt-hours (GWh) of electricity was procured from renewable energy sources in 2020, this figure rose to 205.4 GWh in the reporting period. This rise was mainly due to electric trains in Germany switching to electricity from renewable sources. Consequently, the proportion of renewables in HHLA's total power consumption increased to 60.0 % in the reporting period (previous year: 27.9 %). Traction-related CO_2 emissions due to the use of electric locomotives decreased by 41.6 % to 38,581 tonnes during the reporting year.

Electricity from renewables was also used in the following areas in the reporting period:

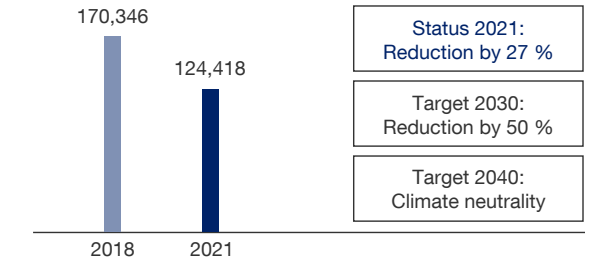
- **For all office buildings and workshops in Hamburg** occupied by HHLA, the Container Terminal Altenwerder (CTA), the all-electric yard crane system at the Container Terminal Burchardkai (CTB) and for the rail gantry cranes at the Container Terminal Burchardkai (CTB) and the Container Terminal Tollerort (CTT). In the reporting period, additional quantities of renewable energies were procured largely to compensate for CO_2 emissions from the operation of a high-efficiency CHP unit.
- Among the **holdings abroad,** the HHLA terminal TK Estonia in Tallinn has been using power from renewable sources since the middle of the reporting year.

Despite an increase in throughput at the four purely container-based terminals operated by HHLA, CO_2 emissions continued to decrease. At 53,583 tonnes, CO_2 emissions fell year-on-year by 4.7 % in the reporting period (previous year: 54,548 tonnes). Activities organised and carried out at HHLA terminals by third parties that resulted in CO_2 emissions are not included in the statistics.

A three-year average showing annual trends in specific CO_2 emissions forms part of the targets agreed with the Executive Board. This is taken into account when determining Executive Board remuneration. Achieving the agreed target range triggers the payment of a corresponding bonus. Corporate governance declaration/remuneration report

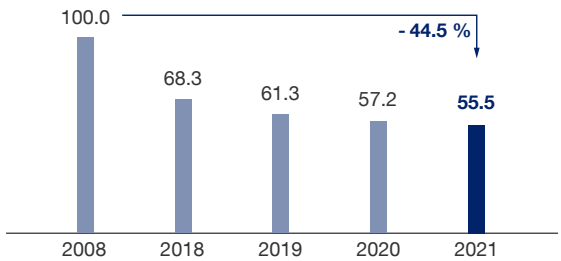
Absolute CO_2 emissions

in tonnes



Trends in specific CO_2 emissions

Specific CO_2 emissions compared with 2008 in %

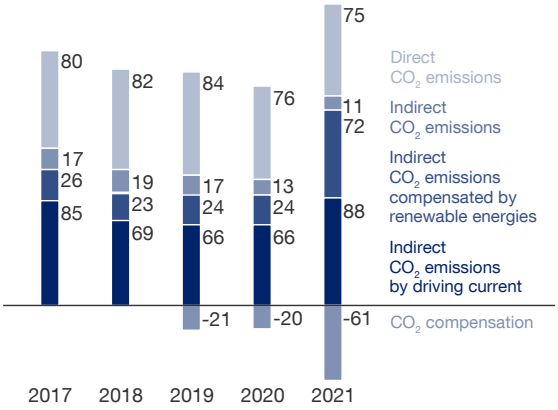


Certified climate neutrality

The HHLA Container Terminal Altenwerder (CTA) in Hamburg is the world's first container handling facility to be certified climate-neutral. It is largely electrified, using power from renewable energy sources. Terminal processes that still produce CO_2 emissions are being gradually electrified or the transition to electricity is being field-tested. During the reporting year, the CO_2 emissions of CTA were calculated by TÜV Nord in accordance with DIN ISO 14064-3:2000 and its climate-neutral status certified with the TN-CC-020 standard. All unavoidable CO_2 emissions resulting from container throughput (including Scope 3), amounting to 16,073 tonnes (previous year: 19,619 tonnes), were offset via Gold Standard projects.

Direct and indirect CO_2 emissions

in thousand tonnes



CO_2 emissions for transporting a standard container to/from Hamburg, Bremerhaven and Koper within the METRANS network, as verified by the independent certification body TÜV Nord, form the basis for the climate-neutral product HHLA Pure. HHLA Pure stands for climate-neutral container transport and handling. During the reporting year, a total of 911,975 standard containers (TEU) were transported with HHLA Pure. The resulting 45,118 tonnes of verified CO_2 emissions were offset via Gold Standard climate protection projects.

Measures to reduce CO_2 emissions

An extensive **programme to boost energy efficiency** and thus lower CO_2 emissions within individual HHLA companies was continued during the reporting year with a variety of measures. These include retrofitting more energy-efficient technologies, such as the ongoing transition to LED lighting, shortening journeys via improved yard planning, increasing the quota of containers handled in tandem and raising the proportion of journeys in which two containers are transported simultaneously.

Direct and indirect energy consumption and supply

	2017	2018	2019	2020	**2021**
Diesel, petrol and heating oil in million liter	27.4	28.4	28.0	24.1	24.1
Natural gas in million m^3	3.6	4.4	8.0	9.1	7.5
Electricity[1] in million kWh	135.6	135.9	123.2	117.0	133.7
thereof from renewable energies in million kWh	82.8	78.9	78.7	86.2	97.4
Traction current in million kWh	157.5	181.4	185.0	191.9	208.7
thereof from renewable energies in million kWh				6.6	115.7
District heating in million kWh	3.6	3.7	3.6	3.1	4.0
District heating supply[2] in kWh	–	10.9	33.3	32.8	25.5

Consumption of natural gas, traction current and district heating in 2021 is based on preliminary and estimated figures.

1 Electricity without traction current

2 Generated by a highly efficient combinded heat and power generation plant (CHP) based on preliminary figures

The HHLA climate protection goal can be achieved by **increasing the proportion of renewables in the Group's energy mix**. For substantial CO_2 reductions, HHLA is aiming to electrify more of its equipment and machinery at the terminals, thus substituting fossil fuels for renewables. Such equipment and machinery produces fewer emissions and less noise and is also easier to service.

In order to achieve its climate change mitigation target, HHLA focuses on **energy-efficient equipment, facilities, machinery and processes**. These advanced technologies not only lower emissions locally but also offer economic benefits, which are becoming increasingly important as energy prices rise. Several projects in this area were successfully implemented during the reporting period:

- The number of all-electric **cars** in operational use grew to 96 in the reporting period (previous year: 93).
- 18 new hybrid straddle carriers and ten locally emission-free automated guided vehicles (AGVs) were put into operation in 2021 as we continued the expansion of our fleet of particularly energy-efficient and low-pollution **heavy equipment**. These hybrid straddle carriers have a much smaller and more efficient combustion engine, combined with a large battery. In real-life terminal operations, the new hybrid straddle carriers achieve diesel savings of around 30 %.
- At CTA, our first all-electric **tractor unit** was added to the fleet. This is used to transport containers from the container rail terminal to the yard crane system without any local emissions. This means it is now possible, for the first time, to transport a container from the quayside to the container rail terminal using purely electric equipment.

- Two electrified **storage blocks**, with three stacking cranes each, were put into operation at CTB during the reporting period. This enables containers to be stored and retrieved efficiently, with low emissions and requiring little space.
- METRANS continued to expand its fleet with the addition of a further seven **multi-system locomotives** into operation, METRANS continued to expand its fleet. These multi-system locomotives can be used for cross-border freight traffic in various European countries.
- In addition, the **computer-aided optimisation of container storage positions** minimises the distance travelled by transport equipment, thereby reducing energy consumption and noise pollution. The use of retreaded tyres for various container handling equipment and the on-site cleaning and reuse of used oils also improve the utilisation of resources.

The existing **energy management system**, certified according to DIN ISO 50001:2018 and covering all HHLA companies with measurable energy consumption in Germany, was successfully recertified during the reporting period.

Hydrogen as a fuel source

HHLA is also continually searching for new options to help the company reach its goal of becoming climate-neutral by 2040. As a fuel source, hydrogen can play a key role in a company's decarbonisation efforts. HHLA therefore plays an active role in the recently established **H2Global Foundation** and is one of 240 partners from science and industry involved in the TransHyDE project.

In contrast to grey hydrogen, green hydrogen is rarely used where it is produced. **TransHyDE** is addressing this challenge by developing an overarching concept for the import, distribution and use of hydrogen. Together with its partners, HHLA is analysing the various transportation and storage options for hydrogen in high-pressure containers and via LOHCs (liquid organic hydrogen carriers).

Environmental and resource protection

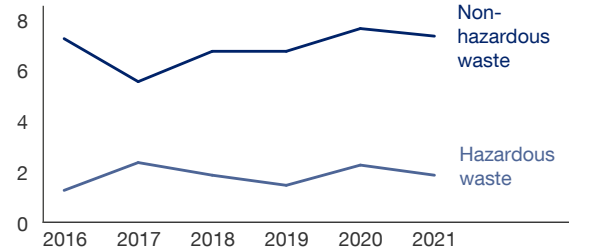
Waste

HHLA's efforts to conserve resources is demonstrated by its waste management system and the use of recycled building materials for the maintenance of its terminal areas. With regard to waste management, HHLA reduces refuse and separates rubbish for recycling wherever possible so that reusable waste can be fed back into the resource cycle. Due to the fluctuation in throughput volumes at the various HHLA terminals, the quantities of each waste type can vary widely from one year to the next.

The **total amount of waste** produced at the German sites decreased significantly by 26.1 % to 7,350 tonnes in the reporting period (previous year: 9,940 tonnes). This decrease is almost exclusively due to significantly lower quantities of fruit waste.

Developments in the volume of waste

in thousand tonnes



Non-hazardous waste

Fruit waste, which accounts for the largest share of waste at around 26 %, decreased by 51 % to 1,929 tonnes in the 2021 financial year (previous year: 3,975 tonnes), bringing it even below 2019 levels. This type of waste includes fruit – such as bananas or pineapple – no longer suitable for consumption or processing. HHLA has no influence on the amount of such waste, as the fruit is already unfit for sale when it arrives in Hamburg and has to be disposed of. Most of this waste, 1,451 tonnes (previous year: 2,441 tonnes), was used by an external biogas plant in order to generate electricity. 278,377 kWh of electricity were produced without CO_2 in this way in the reporting period.

The **mixed metals** waste category was the second-largest by volume during the reporting period, with a slight rise of 0.8 % to 954 tonnes (previous year: 946 tonnes). This type of waste includes items such as steel cables from container gantry cranes or yard cranes that are no longer fit for use. This type of waste is fully recycled.

The volume of **commercial waste** for pretreatment and mixed packaging increased slightly by 6 % to 601 tonnes in 2021. This made it the third-largest waste category. **Packaging** made from paper, cardboard and mixed paper decreased by 21.3 % compared to 2020 levels to 516 tonnes (previous year: 655 tonnes), making it the fifth-largest type of non-hazardous waste. Residual waste, which is collected by the public refuse collection services, accounted for 252 tonnes – a slight rise of 2.8 % – and represented the seventh-largest category of non-hazardous waste.

Hazardous waste

The largest waste type by volume classified as hazardous was **sludge from oil/water separators**. This figure increased by 9.5 % to 559 tonnes (previous year: 510 tonnes). This type of waste primarily results from the cleaning of straddle carriers and other large equipment with pressure washers and is the fourth-largest waste category overall. The other emulsions waste category resulting, for example, from removing oil spills, increased by 24.3 % to 515 tonnes (previous year: 414 tonnes).

Recycling

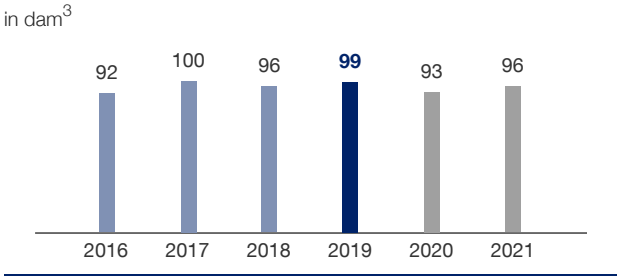
After energy – and excluding investments in equipment and machinery – **construction materials** are the second-largest direct material input at HHLA. Recycled building materials are also used to maintain existing terminal areas and to prepare other areas for different purposes. The volume of recycled building materials used at the Hamburg container terminals decreased year-on-year by 41 % to 21,646 tonnes (previous year: 36,695 tonnes). This decline was due to reduced resurfacing requirements during the reporting period. Slag from waste incineration plants that was bonded with cement accounted for the largest share of recycled building materials used at 54.2 % or 11,740 tonnes (previous year: 4,440 tonnes). This material was used for the expansion of the yard crane system at Container Terminal Burchardkai (CTB).

At 31.0 % (6,720 tonnes), the use of asphalt recycling accounted for the second-largest proportion. Of this total, 1,820 tonnes was used for the sustainable resurfacing of Container Terminal Altenwerder (CTA) and 1,236 tonnes for the surfacing of the new storage crane blocks at CTB. With a share of 11.6 % and a material input of 2,510 tonnes, slag from waste incineration plants was also used to construct the storage crane blocks at CTB. A total of 676 tonnes of electric furnace slag was used for the renovation of the block storage area at CTA. The use of recycled building materials minimises the consumption of resources and reduces greenhouse gas emissions.

Water consumption

The use of fresh water by the HHLA Group is mainly restricted to the cleaning of large-scale equipment and containers, as well as for employee hygiene and canteen operations. HHLA's operations in Austria, the Czech Republic, Estonia, Germany, Italy, Poland, Slovakia, Slovenia, Ukraine and Hungary consumed 95,791 m^3 of water in 2021 (previous year: 92,727 m^3, excluding Italy, Slovenia and Hungary). This consumption, which is low in comparison to pre-pandemic levels, was due to fewer staff being in the office at most sites, as many were still working from home in 2021. HHLA's facilities draw water from the public supply network.

Water consumption



HHLA locations: Austria, Czech Republic, Estonia, Germany, Italy, Poland, Slovakia, Slovenia, Ukraine and Hungary

Society

Working world

Strategic HR management

Organisation and control

HR management is established as a central division at Executive Board level. This organisational structure ensures that strategic HR guidelines can also be implemented throughout the Group. The performance of both specialist staff and managers is systematically enhanced and developed and continuously overseen by the HR management team. The same applies to all organisational development measures.

HR strategy

The HHLA's HR strategy comprises five action fields: "Employer of Choice", "Develop Further", "Work Together", "Resource Management" and "Co-Determination". The strategic HR objectives include, for example, developing new **recruitment strategies** and **enhancing HHLA** as an employer brand. Moreover, existing resources in the field of HR are to be aligned more effectively in future with the aid of innovative technologies, methods and concepts, and the range of services offered is to be continuously expanded. **Participation-oriented co-determination processes** are also to be further refined in cooperation with the co-determination partners, managers and employees, in order to shape the future-proof conditions for HHLA's entrepreneurial success.

In addition to cultivating existing potential and creating an effective learning culture within the company, staff development also plays a key role in developing the organisation and corporate culture. Another major component of strategic planning is therefore the targeted **promotion of digital networking** and cooperation between all those involved within the Group. In this way, staff are encouraged to exchange knowledge, thus helping to drive the long-term development of corporate culture.