

TAKING ACTION

CREATING VALUES

TAKING ACTION. CREATING VALUES.

Sustainability 2020



€50.8 BN
GROSS VALUE CREATION
THROUGHOUT GERMANY

15% OF FLEET
FITTED WITH EXHAUST
GAS SCRUBBERS

55%
REDUCTION IN CO₂
IN 2020

**RAIL EFFICIENCY
IMPROVEMENT
+5.5% TEU/KM**

CONSTRUCTION WORK,
DELIVERIES AND
SERVICES WORTH
€313 M
CONTRACTED (2020)

18.6%
ALL-ELECTRIC
VEHICLES

BRIDGES, ROADS
AND BARRAGES IN
GOOD CONDITION:
AVERAGE RATING
1.9-2.4

148,447 t CO₂
REDUCTION ACCUMULATED
SINCE 1990

17,600
CALLS BY SEAGOING
AND INLAND WATERWAY
VESSELS

4.2
ACCIDENTS
PER MILLION
VEHICLE KM

22%
FEMALE
MANAGERS

607,000
JOBS THROUGHOUT
GERMANY

50.7%
OF TONNAGE
BY RAIL

Table of contents

Foreword by the HPA	4	03 Climate and the environment	54
Profile of the HPA	6	Introduction	56
About this report	7	Climate strategy	57
01 The HPA and business performance	8	Climate change effects	60
Business model	10	Natural capital	62
Procurement	13	04 Values and people	63
Sustainability strategy	14	Pandemic and crisis management	65
Stakeholder engagement	20	Staff recruitment and development	66
Shareholdings	22	Transformation and collaboration	69
02 Infrastructure and traffic	25	Diversity and equal opportunities	71
Introduction and port	27	Health and occupational safety	72
Innovation and digitalisation	30	Staff mobility	74
Maintenance management	34	05 Facts and figures	75
Land	36	Table of key figures	76
Water	40	DNK content index	84
Rail	45	GRI content index	89
Road	49	Glossary	94
		Independent Practitioner’s Report	95
		Imprint	98

Foreword by Jens Meier, CEO of the HPA

Dear readers,

The city of Hamburg and its port are closely linked. The port is an economic driver, a habitat and part of the city's identity. It generates value creation and employment in the metropolitan region, ensures that businesses are supplied with raw materials and enables them to sell their goods worldwide. The port's development has a direct impact on residents' quality of life in our growing city.

Every day, we work hard to guarantee the port's accessibility and availability, maintain a resilient, functioning infrastructure, and use foresight in our planning. The EU taxonomy for green, ethical finance is raising ambitions for sustainable business, both in Europe and around the world. We are in the Decade of Action, which also includes considering whether our proposed investments contribute towards achieving the Sustainable Development Goals (SDGs) when we make decisions. Growth and value creation can only take place if they do not result in additional pressures or worsen the carbon footprint because there is no doubt that we can only continue to trade and keep developing the port in the heart of Hamburg in a future-



proof manner if we safeguard our social licence to operate. With this in mind, we have started the process of rethinking our business objective to ensure ongoing viability and constantly balancing social, environmental and economic considerations. This is not a process we consider complete: instead, it is a transition which we are working out step by step. The ultimate aim is to embed sustainability firmly at all levels of the HPA and in all of its business operations. Speed is of the essence.

We have already made a great deal of progress in the course of this transition. However, considerable challenges still lie ahead. Climate change, the digital transformation, demographic change and developments in world politics will all put the port's resilience to the test in the medium and long term. At present, we also face disruption stemming from the supply bottlenecks associated with the Covid-19 pandemic and higher prices for raw materials. We want and need to respond to these flexibly as well. In order to maintain the port's international competitiveness – and therefore also its value – it is crucial that we develop adaptation strategies and implement measures to deal with issues such as climate protection, the recruitment of skilled workers and digitalisation. The HPA has adopted a clear approach here and is also developing new solutions for people, the environment and the economy. With regard to climate change, for instance, we have established agreements on the achievement of climate targets with the Executive Board which affect managers' remuneration.

The Port of Hamburg is now also home to a new collaboration platform. The innovation campus homePORT enables product innovations to be developed and tested in real-life conditions. We understand the importance of joining forces with other port operators, the scientific community, start-ups and other creative thinkers in this way because

we are dedicated team players. We want to learn from one another and help the Port of Hamburg to develop into a seat of innovation with shared ideas and impetus.

This sustainability report contains transparent, comprehensive information about our strategy, the impacts and risks of our actions, and the latest developments in 2019 and 2020. It also shows the different interests and objectives which we have to take into account – and how we involve our stakeholders in our journey towards the sustainable port of the future.

We invite you to see this report by the HPA as a starting point for further dialogue because feedback from our valued readers helps us to come closer to achieving our goals. We hope you enjoy reading the report and look forward to discussion with you.

Yours,

A handwritten signature in black ink, appearing to read 'Jens Meier', with a stylized flourish at the end.

Jens Meier
Chief Executive Officer of the HPA

Profile of the HPA

The HPA operates sustainably and works in the **public interest** as a public-sector company. Its business activities focus on a safe, crisis-proof land- and waterside port infrastructure and the smooth, reliable accessibility of the port.

The HPA's operational responsibilities do not relate solely to the Port of Hamburg. It is closely linked with the **metropolitan region**.

The HPA also acts as a **public authority**: it is responsible for matters relating to water management and serves as a regulatory body.

Its wholly owned subsidiary Flotte Hamburg GmbH & Co. KG (FLH) owns 46 vessels and is responsible for numerous **system-critical functions**, such as transporting pilots and providing special boats for the fire brigade or the water police.

The HPA's customers include container handling companies, shipowners, rail operators, and some 700 companies from the port sector and industry, which provide a **large number of jobs** in the metropolitan region.

To **maintain the infrastructure**, the HPA operates four workshops, a shipyard, several facilities for the treatment of dredged material and two landfill sites for its disposal.

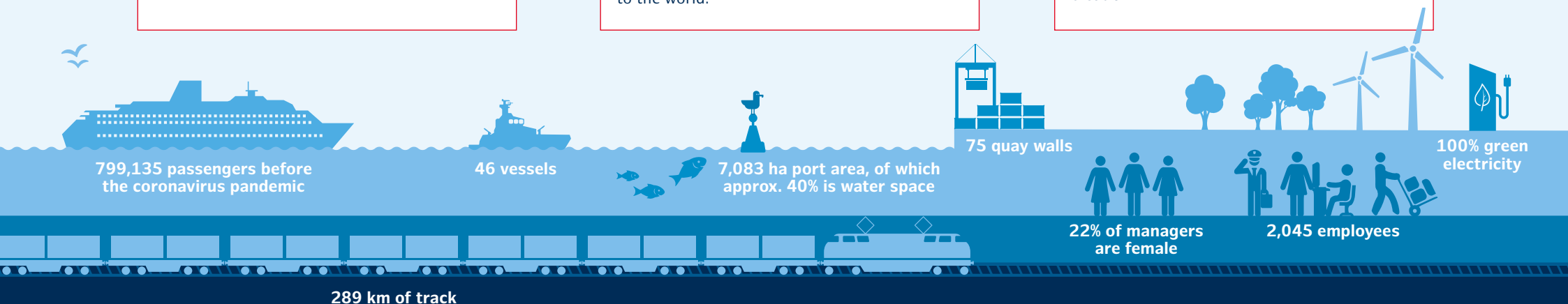
The wholly owned subsidiary CGH Terminal-eigentumsgesellschaft mbH Hamburg (TEG) and its wholly owned subsidiary Cruise Gate Hamburg GmbH (CGH) are successfully developing the cruise shipping business in the city. They bring **people from around the globe** to Hamburg and give local residents a gateway to the world.

The HPA is a **public-law institution** based in Hamburg subject to the expert and judicial scrutiny of the Ministry of Economy and Innovation (BWI) of the Free and Hanseatic City of Hamburg (FHH).

Five men and four women make up the HPA's nine-person Supervisory Board.

With its international market expertise, the HPA also provides strategic consultancy and produces the **port development plan** on behalf of the BWI.

The HPA performs customer-oriented asset management on the port railway infrastructure, roads, waterways, land and water space, and other structures in the port area which it owns. It ensures that the **port is able to operate and function**, thereby strengthening its value creation.



About this report

The Hamburg Port Authority (HPA) has been publishing a sustainability report every two years since 2011. The last report was published in 2019 and covered the period from 2017 to 2018. This report provides information about the activities and sustainability achievements of the HPA and its subsidiaries. It covers the period from 1 January 2019 to 31 December 2020.

Comprehensive reporting

The HPA's sustainability report is based on the HPA's organisational structure. It comprises all the entities under the control of the HPA, including the subsidiaries Cruise Gate Hamburg and Flotte Hamburg GmbH & Co. KG. The scope of reporting is defined by the geographic, organisational and operational systemic scope of the HPA's responsibilities, within which it owns, lets and manages properties and land and within which it is responsible for roads, waterways, tracks and space. Further information can be found in the → *2017/2018 sustainability report* and the corresponding sections of this report. Beyond this scope, greater attention is also being paid to the impact of business operations throughout the **value chain**, such as considerable indirect emissions and suppliers' protection of human rights.

During the **Covid-19 pandemic**, the HPA succeeded in maintaining global supply chains and safeguarding the supply of goods to both people and businesses. Greater use of digital processes ensured that the company and the Port of Hamburg were able to keep operating. The HPA's **resilience and adaptability** play a crucial role in enabling it to meet its responsibility – ensuring that the port is available and accessible at all times. Reporting on key issues includes the challenges which the company faces as it fulfils its remit and the measures which it takes to strengthen its **resilience**.

The content of the sustainability report follows the world-leading standards of the Global Reporting Initiative (GRI), applying the "Core" option. Both the content selected for inclusion and the chapter structure are based on materiality analyses and the sustainability strategies and measures derived as a result. With these, the HPA is making a positive contribution to the Sustainable Development Goals (SDGs), the UN's Agenda 2030 and the World Ports Sustainability Program (WPSP). For the first time, the report also complies with the requirements of the Sustainability Code (DNK). Furthermore, a separate declaration on the Code criteria has been published by the HPA.

The Sustainability Code has been a compulsory reporting standard since January 2020 as per the updated Hamburg Corporate Governance Code. In addition to a detailed presentation of the key performance indicators, the "*Facts and figures*" chapter includes, among other things, aspects specific to the port, the GRI content index and the DNK content index. A selection of technical terms is explained in the → *glossary*.

The HPA has voluntarily had the correctness, completeness, clarity and comprehensibility of this report validated by an external party. The non-financial declaration was subject to a business audit with limited assurance in accordance with the ISAE 3000 assurance standard, conducted by the independent audit firm Mazars GmbH & Co. KG.



01

The HPA and business performance

The HPA and business performance

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



- The Green Procurement Guidelines of the Free and Hanseatic City of Hamburg provide guidance on sustainable tendering criteria.
- Sustainability standards are agreed with all suppliers in the supplier code of conduct. For instance, the code stipulates that there must be no child labour anywhere in the supply chain.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

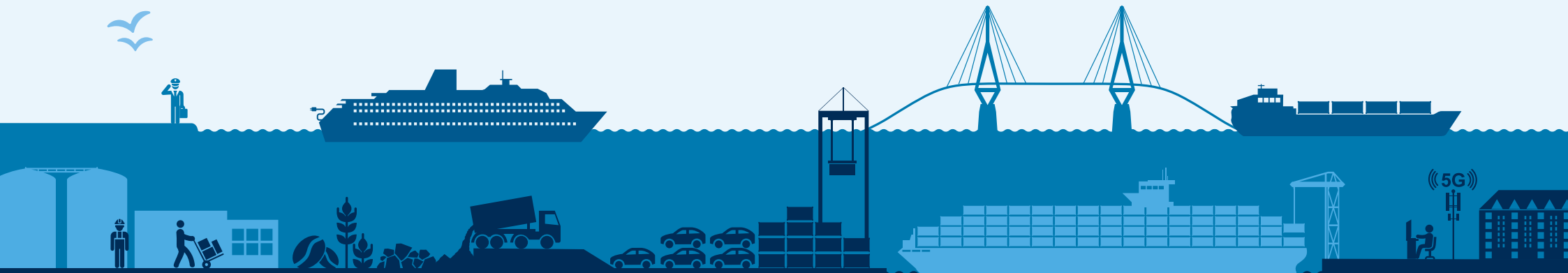


- Corruption is not tolerated. The target: 0 cases of corruption.
- Stakeholders' concerns pertaining to society, business and the company itself are important. Formats to engage with them – such as collaborations and surveys – are used regularly.

17 PARTNERSHIPS FOR THE GOALS



- With its work, the HPA strives to help bring about global understanding between port players: it organises national and international initiatives such as homePORT and chainPORT as well as taking part in the IAPH's WPSP.
- The HPA supports its employees to play an active role in society and gives them 90 days a year off for the purpose of volunteering.



Sustainability focus of the business model

15 years of HPA



Hamburg Port Authority AöR celebrated its 15th anniversary in 2020. By establishing the HPA, the Free and Hanseatic City of Hamburg took a crucial step towards forward-looking port management. As a public-law institution based in Hamburg, the HPA is economically independent and also acts as a public authority.

The profile contains a brief explanation of its main responsibilities (→ see section "Profile of the HPA"). More detailed information can be found in the Hamburg Port Authority Law and in paper 21/17908 concerning the restructuring of port management dated 30/07/2019. The Supervisory Board and supervisory authority steer the organisation.

Together with its cooperation partners, the HPA is responsible for the sea- and shoreside accessibility of the port and ensures the **crisis-proof availability of the infrastructure**. The HPA's vision is to offer efficient, sustainable solutions for the European industry, the city of Hamburg and the people who live there. In connection with this, its mission is to make efficient and future-proof products and services available that meet the stakeholder groups' wishes and are considered global bench-

marks in sustainable port management. To give greater weight to this mission in the future, the HPA decided at the end of 2020 that it would establish a new business unit entitled Port Process Solutions, focusing on developing solutions from prototype through to the product. The aim of this unit is to make innovations marketable so that they can be utilised as potential for new lines of business.

Two-pronged business model

Since 2019, the HPA's business model has consisted of two divisions which are financed differently, Commercial and Public. These are separated in the company's internal accounting. The aim of separating these two divisions was to report transparently on the HPA's business activities (Commercial) and its non-commercial responsibilities (Public). This transparent approach to the two divisions with their different sources of finance fulfils the EU's state aid requirements. At the same time, the new structure enhanced **financial transparency** for the various units and business models.

The HPA generates income from renting and letting land in the port, buildings and quay walls. It also receives proceeds from the port railway. It collects fees for water-

side use of the port and receives proceeds from other services and leases specific to the port.

An entrepreneurial approach to business is therefore crucial to the management of the Port of Hamburg. At the same time, being independent from public subsidies gives the HPA considerably greater commercial flexibility. This allows it to invest in modernising the Port of Hamburg faster and in an even more targeted and comprehensive fashion.

Taking action, creating values

The HPA's strategy rests on a value-based approach. Accordingly, responsible port management is geared towards the port's **societal added value** for the people in the city and the surrounding region. There is a direct link between the port's **value creation** and residents' **quality of life** in a growing city. In this context, **sustainable business** for the HPA means constantly balancing social, environmental and economic considerations in the public interest.

Corporate governance

The HPA is obliged to comply with the Hamburg Corporate Governance Code. Since 01/01/2020, this has included new rules aimed at improving corporate governance with a view to sustainability. Amongst other things, these relate to achieving the **climate targets** agreed between the HPA's Supervisory Board and Executive Board. Since 2019, ten per cent of Executive Board remuneration has been variable and linked to the attainment of these targets as an incentive. Moreover, the Hamburg Corporate Governance Code requires companies to produce and publish a sustainability report that meets the criteria of the Sustainability Code every two years. The HPA fulfils this requirement with this report and its dec-

laration on the Code criteria, which is published in the **Sustainability Code** database and on the HPA's website.

In addition, the Executive Board is expected to ensure that the **United Nations Sustainable Development Goals (SDGs)** are taken into account in the company's business activities. It reports to the Supervisory Board on this every two years. A concept is being developed to actively manage and integrate the SDGs into business operations.

Leadership structure and management

The HPA's organisational structure is designed to enable it to respond quickly and flexibly to the requirements of its customers, the market and policymakers. With

its established risk and opportunities management system (RCM), the HPA has a monitoring tool which identifies external and internal developments and trends at an early stage. This enables the HPA to take countermeasures promptly when necessary.

The HPA plans to develop a systematic procedure for assessing transition opportunities and risks arising from sustainability issues by 2024. **Transition risks** always represent capital risks, so **climate change effects** and their consequences are already assessed individually.

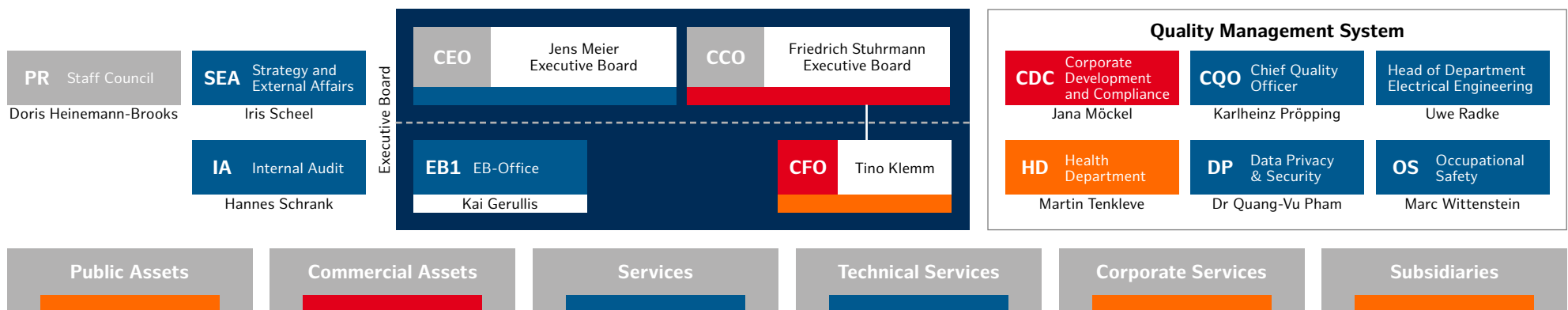
Efficient corporate management is based on targets, guidelines, **management systems** and a reporting procedure to measure

progress. The following systems are established and ensure that the HPA's performance is constantly improved:

- Occupational safety and health management (→ see section "Health and occupational safety")
- Energy management (→ see section "Climate strategy")
- Risk and opportunity management
- IT security management (→ see section "Innovation and digitalisation")
- Compliance management system (CMS)

The Executive Board has two members, who are both male. A complete current organisational chart can be found on the HPA's website (→ see www.hamburg-port-authority.de).

Fig. 1: Excerpt of the organisational chart showing the executive level



Tax strategy

The HPA’s operations only make it liable for domestic tax. To ensure that all tax liabilities are discharged in full and on time, the HPA observes the following principles:

- submitting self-assessments and tax returns in good time,
- providing complete and correct information to the tax authorities, and
- paying tax punctually.

In 2019, the HPA introduced a tax compliance management system (tax CMS) as a monitoring tool. This system is continually enhanced to reflect the latest requirements and information. Work is still under way to link the tax concept with the strategies for the organisation’s commercial and sustainable development.

In the interests of complete **tax honesty**, the tax CMS meets the requirements defined by the Institute of Public Auditors in Germany (IDW) in its practical guidance. The HPA takes into account the seven fundamental elements set out in this guidance with the aim of preventing contraventions based on the identified risks and defined goals.

The HPA Executive Board monitors the tax CMS rules and strict compliance with them. Contraventions must be reported

immediately. The processes in place are regularly scrutinised and checked by the unit responsible for them.

Compliance

Customers’ and stakeholders’ trust in the HPA is crucial for the long-term success of the company and the port. Maintaining and strengthening the HPA’s **trustworthiness** by means of integrity and compliance is therefore an important objective. Observing the **Sustainability Code** lays the groundwork for this (→ see section “Sustainability strategy”), and the Code also forms part of the Group’s set of binding regulations. All employees are required to confirm annually in writing that they are aware of all the associated regulations.

Establishing central compliance structures

Compliance must be embedded at every level of the company to ensure that all employees adhere to the rules. Due to the HPA’s wide-ranging remit, this was previously done by means of a largely decentralised compliance organisation. By establishing the Compliance Committee in spring 2020, the HPA created its first central body which acts as a point of contact for the Executive Board as well as a platform for ongoing information sharing, company-wide coordination on compliance issues, and reviewing the CMS. This over-

arching body aims to ensure compliance by the company, its officers, executives and employees. Non-compliance can result in considerable financial losses and consequently reputational damage.

Preventing corruption

The HPA has for many years had a process linked directly to the Executive Board which focuses on **preventing corruption**. Its foundation consists of a corruption register that classifies activities where there is a particular risk of corruption, and an anti-corruption body. All employees receive regular education on the subject by means of anti-corruption **training and guidelines**. An internal anti-corruption office and an ombudsman have been put in place for the reporting of suspected cases of corruption. Suspected cases are investigated ad hoc by Internal Audit.

Training in this area includes the HPA’s corruption prevention guidelines and an employee code of conduct. Whole-day training courses were held in both 2019 and 2020. Due to the pandemic, these courses were held virtually and via e-learning modules in 2020. During the reporting period, no cases of corruption were confirmed at the HPA and no reports of suspected corruption were received.

No

cases of corruption
in the reporting period

Responsible procurement

Construction work, deliveries and services worth 313 million euros were contracted in the period under review. Construction work for the 'infrastructure and facility development' value creation stage accounted for the highest expenditure here.

Public-sector customers are obliged to abide by public procurement law. The Green Procurement Guidelines of the Free and Hanseatic City of Hamburg provide guidance on criteria for sustainable tendering.

Public procurement law means it is not possible to prioritise local suppliers directly. In line with procurement law stipulations, the HPA considers sustainability aspects such as the carbon emissions of product supply chains and in its tendering process. In 2020, local suppliers from Hamburg metropolitan region accounted for 62 per

62% local suppliers

cent of expenditure. The value of orders placed with suppliers from 18 different countries made up less than five per cent of the total order value.

Supplier management system

The HPA introduced a supplier management system in 2020 which had been in development since 2018. It is tailored specifically to the HPA as a public-sector customer. Its key objectives are:

- Transparency regarding service providers' services
- Enhancing the quality of services provided and/or reducing poor performance
- Increasing work efficiency
- Sharing knowledge
- Developing partnerships

Suppliers provide important upstream services that allow service providers to offer their customers innovative and competitive goods and services. With the aid of a supplier management system, the Purchasing department can guarantee the procurement of high-quality goods and services. It is also possible to optimise supplier per-

formance with lasting effect. In the future, the broader supply chain will also be taken into account in this way.

The HPA had a total of 2,415 suppliers in 2020. At its core, the supplier management system serves to identify suitable suppliers, assess and develop their performance on an ongoing basis. It is becoming increasingly important to be able to draw on a pool of suppliers, especially during times of crisis.

The **Supplier Relations Code** was drafted in 2020 and ensures that standards and international guidelines are met. These include the principles of corporate governance and of the UN's Universal Declaration of Human Rights, the conventions of the International Labour Organization (ILO), OECD Guidelines and ISO standards. It also serves to confirm compliance with the HPA's **Sustainability Code**.

Fair, responsible relations are maintained with suppliers, founded on mutual trust and sustainability. The term 'supplier relations' covers all of the contractual parties who

work for the HPA in the competitive tendering and procurement process. Such contracts may relate to construction, engineering, services or products, or anything else. By registering for certain product groups or submitting an offer, the contractual parties accept the values in the Code and commit to upholding them. This also applies to other parties in the supply chain. Since then, there have been no indications of the agreed standards not being met.

The foundations have therefore been laid for achieving the target of **transition pathway 1 "We are a fair and reliable partner for the Port of Hamburg's/the HPA's stakeholder groups"**.

Road map target: suppliers

100 per cent

We will establish a sustainable supplier management system and will see to it that the supplier sustainability criteria and the supplier code are complied with in 100 per cent of the relevant procurement procedures by 2025.



Sustainability strategy

The HPA acknowledges its responsibility for a future-proof port, good labour conditions for its employees and the fair treatment of its business partners. It strives to cater for today’s economic needs without jeopardising the ability of future generations to fulfil their own needs regarding a high **quality of life**. The HPA sets itself **measurable sustainability targets**.

Commitments

The HPA bases its sustainability strategy on national and international frameworks and standards. These include the UN’s Sustainable Development Goals (SDGs), the Universal Declaration of Human Rights, the ILO’s international labour standards, the OECD Guidelines, the Global Reporting Initiative (GRI), the Sustainability Code (DNK) and the Hamburg Corporate Governance Code. The selected standards and frameworks are supplemented by guidelines and target systems specifically for ports,

such as the World Ports Sustainability Program (WPSP) of the International Association of Ports and Harbors (IAPH).

Furthermore, the HPA monitors developments in external requirements. In the future, the regulatory requirements for mandatory reporting will increase at European level due to the European Union’s Green Deal, the EU Taxonomy Regulation and the further development of the CSR reporting obligation set out in the Corporate Sustainability Reporting Directive (CSRD). The Supply Chain Due Diligence Act (LkSG) is also relevant in Germany; the HPA must implement this by 2024.

In addition, the HPA has updated its sustainability principles from 2012 and linked them with the SDGs. The updated **Sustainability Code** has been published on the intranet and is part of the HPA’s set of binding regulations.

The HPA’s contribution to the SDGs



“Sustainability encompasses all aspects of our daily work: how we treat resources as well as how we treat our colleagues and our finances. However, our responsibility is not limited to what we do at our own site – it also extends to the HPA’s partners and customers.

We have made a commitment to sustainable development and endorse global systems of values and standards. Our business policy is based on compliance with moral and ethical principles. And we expect this equally of our suppliers as well as every member of our team.

Our shared aim is to represent the company professionally and responsibly and to uphold its reputation.

This updated Sustainability Code contains rules of conduct which give us our framework. It requires us all – especially managers – to lead by example, but it is impossible to achieve the goal without the help of every single employee.”

Quotation: Tino Klemm, member of the Executive Board responsible for sustainable development

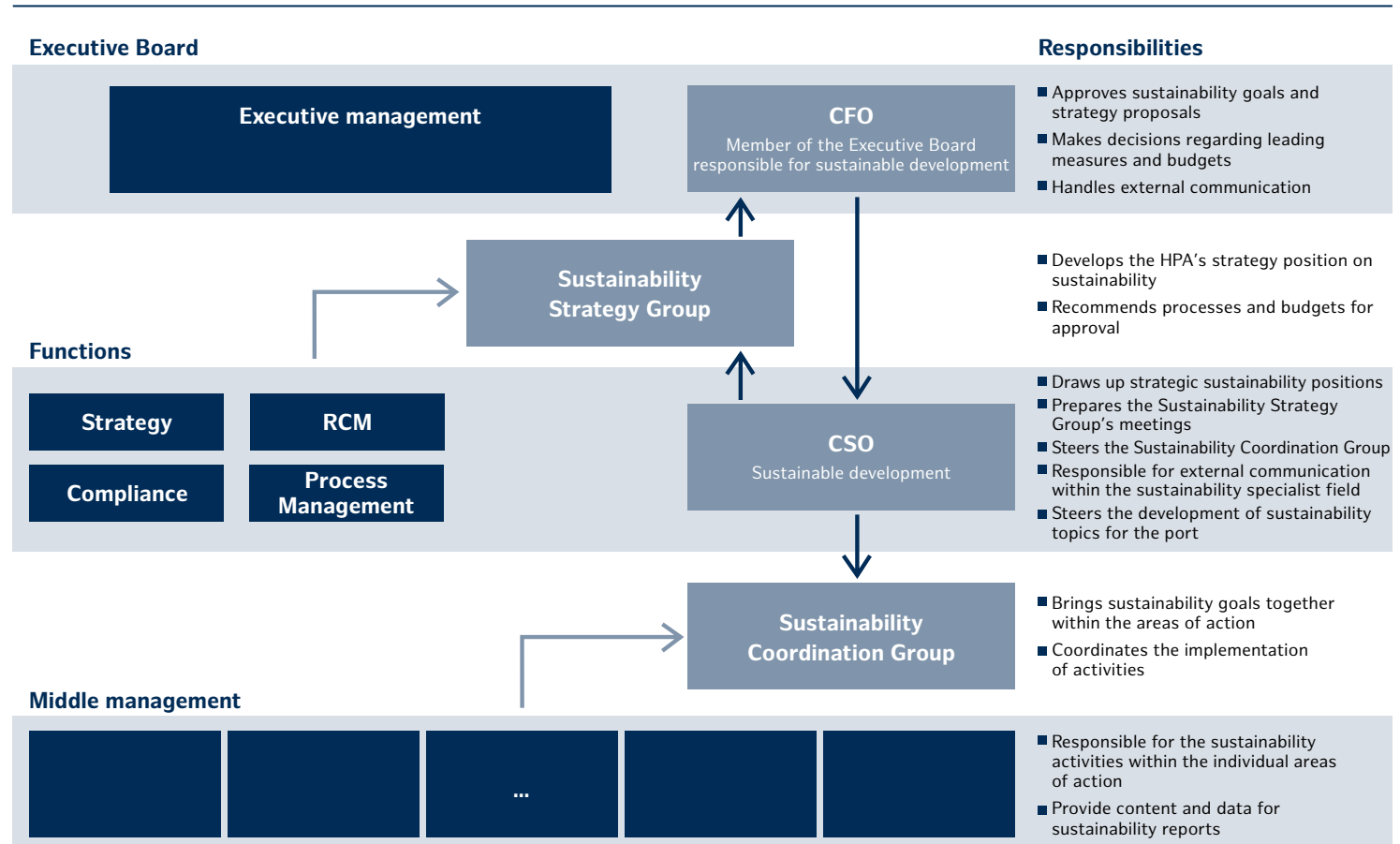
Management approach

Middle management is involved in sustainability management at the HPA. This strengthens the relevance of sustainability in our core line of business. Overall responsibility for the sustainability strategy is held by the Executive Board. The core team for sustainable development consists of the Strategy and Coordination Groups. The **Strategy Group** develops the strategic focus of the **transition process**, taking legal, environmental and societal developments into account. The Strategy Group comprises:

- Strategy, Process Management, Compliance, Risk and Opportunities Management,
- the Chief Financial Officer (CFO) who is responsible for sustainable development, and
- the Corporate Sustainability Officer (CSO).

The Coordination Group is responsible for fleshing out the details of and implementing the sustainability strategy within the company's operations. The CSO steers the process and reports directly to the CFO.

Fig. 2: Sustainability governance within HPA's organisational structure

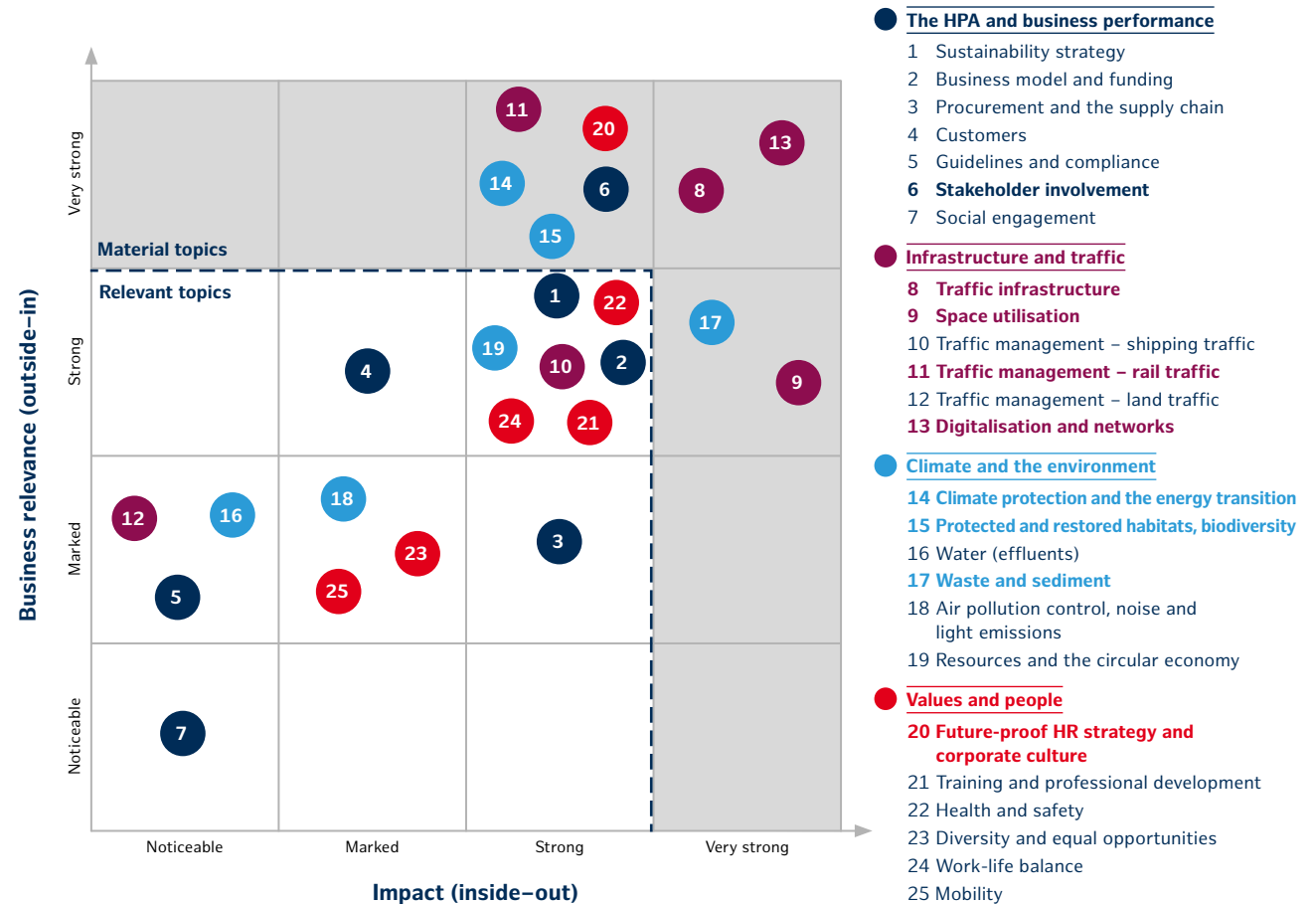


Materiality analysis

Back in 2018, the materiality analysis identified 25 topics which were potentially of material importance to the HPA. This was based on the HPA’s sustainability reports in recent years, the Hamburg Climate Plan, the UN’s SDGs, the WSPS and the GRI standards. The Strategy Group revalidated and reassessed the relevance of the topics which had been identified as material. The dimensions of stakeholder relevance and impacts were adjusted during the course of this, taking into account recent developments, changes in the underlying conditions since 2019 and the results of the stakeholder survey in late 2020 (→ see section “Stakeholder engagement”).

A matrix was used to compare the **impact (inside-out)** and **business relevance (outside-in)** of the topics. This draws on the new requirements of the Hamburg Corporate Governance Code applicable from 2020 and the concept of materiality set out in the Sustainability Code. Topics which have very high stakeholder relevance for the HPA were additionally classified as being material. A total of nine topics were identified as being material (see grey area in Fig. 3). These were grouped into four areas of action: “The HPA and business performance”, “Infrastructure and traffic”, “Climate and the environment” and “Values and people”. The nine material topics serve as the basis for the sustainability strategy and determine the structure of this report. The opportunities and risks which arise from the material topics for the HPA and shape its **sustainability management** are described in the various chapters.

Fig. 3: Results of the materiality analysis



Road map for the transition

The expansion of the Hamburg Corporate Governance Code also goes hand in hand with an obligation to take the SDGs into account in business operations and to report to the Supervisory Board on how this is done. In connection with this, the HPA is planning to give its contribution

towards achieving the SDGs an even stronger operational focus. This report shows how the HPA is making a positive contribution towards the SDGs.

The three **transition pathways** with binding, measurable targets were derived from the 2019 materiality analysis

and have been confirmed as valid. They guide the HPA as it moves into the future. Each of the targets carries equal importance and is backed up by quantitative sub-targets. They relate to various parts of the company and can be achieved simultaneously. The target for the third transition pathway, "Climate and the environment", has been

Transition pathway 1	Transition pathway 2	Transition pathway 3
<p>We are a fair and reliable partner for the Port of Hamburg's/the HPA's stakeholder groups.</p>	<p>We are developing the port sustainably and with the creation of value for the region.</p>	<p>We embed climate change in our actions and achieve climate neutrality.</p>
<p>We will engage in ongoing dialogue with our stakeholders to identify trends, expectations and needs, and systematically incorporate these into the focuses of our sustainability and business strategies. We see stakeholder satisfaction as the foundation for our company's success.</p>	<p>We will use our responsible port management to increase the port's contribution to value added for the people in the city and the region and will champion a sustainable city-port relationship and a liveable environment.</p>	<p>We will continually evaluate the impacts of our actions, will take steps to reduce pollution so as to protect people, nature and the climate, and will not be the cause of any additional negative impacts.</p>
<p>By 2025, we will improve the relevant stakeholders' assessments of our actions.</p>	<p>By 2025, we will strengthen the port's added value for society on the basis of effective action.</p>	<p>By 2025, we will noticeably reduce the negative impacts of our actions.</p>
<ul style="list-style-type: none"> ■ Employees KPI – We will establish a system of key performance indicators based on criteria that mark the HPA as an attractive employer both internally and externally. We will conduct an annual staff survey regarding health and employee satisfaction and will achieve good results. ■ Suppliers 100 per cent – We will establish a sustainable supplier management system and will see to it that the supplier sustainability criteria and the supplier code are complied with in 100 per cent of the relevant procurement procedures by 2025. ■ Customers EXCELLENCE – We will assess the quality of our efficient and future-proof products and services. We will use the findings and measures derived from this to deliver top performance and will achieve a high level of customer satisfaction by 2025. 	<ul style="list-style-type: none"> ■ Space-use strategy 100 per cent – We will establish transparent and sustainable space allocation criteria and will see to it that these are observed in 100 per cent of new businesses settling in the port by 2025. ■ Infrastructure 2.0 – 2.4 – We will assess the condition of the port's traffic infrastructure annually using a school marks system and will see to it that all the relevant structures are, on average, rated as being in good condition (2.0–2.4) by 2025, to guarantee high availability for business and private traffic. ■ Digital 100 per cent check – We will actively and inclusively shape digital transformation in order to boost the port's ability to compete. We will establish an impact check by 2025 and will examine the added value of new smartPORT projects. ■ Rail traffic 50 per cent – We will play our part in further increasing the efficiency and reliability of rail operations, thereby laying the foundations for increasing the proportion of rail as a low-emission mode of transport to more than 50 per cent of all the goods transported between the port and the hinterland by 2025. 	<ul style="list-style-type: none"> ■ Energy efficiency –5 per cent – We will reduce energy consumption by 0.5 per cent per annum by increasing our energy efficiency and will achieve savings of 5 per cent by 2025 in comparison to 2019. ■ Carbon emissions –50 per cent – We will reduce our direct carbon emissions by 50 per cent by 2025 in comparison to 2012. ■ Sediment NEW – We will improve sediment quality on the basis of new comprehensive strategies that extend across administrative borders, to reduce dredged volumes and conserve resources.

amended and is now: “We embed climate change in our actions and achieve climate neutrality”. The key performance indicators for target attainment are described in the chapters which follow and represented visually by means of a traffic light graphic.

Instrument for the transition

To embed the notion of sustainability throughout all levels of the HPA – and especially with a view to investment decisions – the basic framework for an **impact check** was put in place in 2020. This is designed to be used as an instrument for raising awareness of, quantifying, and monetising the possible impacts of projects.

As the instrument is still under development, the road map target for **transition pathway 2 “We are developing the port sustainably and with the creation of value for the region”** has not yet been achieved in full.

Road map target: digitalisation

100 per cent check

We will actively and inclusively shape digital transformation in order to boost the port’s ability to compete. We will establish an impact check by 2025 and will examine the added value of new smartPORT projects.



Sustainability controlling

Since the Business Intelligence Competence Center was established in 2016, the HPA has been working hard to create a transparent, interdepartmental data pool. The aim is to provide a user-friendly, visual single point of truth containing high-quality data. The data pool is constantly expanded with the help of the respective data owners. With a view to sustainability controlling, the ultimate goal is to create a platform which brings together all the key performance indicators necessary for target attainment.

Resilience and its impact logic

How does the HPA define resilience? Applied to a company or system (including an ecosystem), resilience can be defined as “robustness” or “ability to withstand difficult conditions”. It means being able to maintain important functions despite unexpected external influences, possessing the capacity to overcome or adapt/learn (in both technical and organisational terms), and to reorganise oneself during periods of change in such a way that critical structures are preserved. Based on this concept, the faster a system or company can respond and adapt, the more resilient it is.

The **impacts (stressors)** with disruptive potential to which the HPA is exposed are new challenges with business relevance along with existing tasks which it has so far been impossible to operationalise. Previously identified impacts which are set out in the following chapters of this report can be classified as one of four types:

- **Commercial:** climate change effects, pandemics, shortage of skilled workers, digitalisation, remote working, structural change, cyberattacks
- **Financial:** resource shortages and rising prices, supply bottlenecks, demand risks, stranded assets, security of supply, tenants changing their business models, lack of supply chain transparency, trends in ship sizes
- **Regulatory:** climate protection, EU Green Deal, LkSG, Hamburg Corporate Governance Code, DNK, EU Taxonomies
- **Political:** trade barriers, geopolitical tension, isolationism, globalisation, decarbonisation

Not attending to possible impacts in good time may lead to **transition risks** which do not fit into the classic risk and opportunity management model. Transition risks are associated with changes and transformation. They possess considerably greater multidimensional complexity and cannot be assessed easily because they lie in the more distant future, such as the target of achieving climate neutrality by 2040.

Tools for prevention and assessment

The established management systems named above and analyses of the operating environment can be used to identify impacts. **Defined thresholds** make it possible to recognise potential threats at an early stage and stave off crises. The HPA already has a large number of preventive instruments in place, such as internal guidelines, codes of conduct and training on topics like corruption prevention and energy efficiency. Audits are used to verify effectiveness (see Fig. 4).

What needs to change? Old narratives, shackles of tradition and old patterns of behaviour must be put aside. The HPA seeks to develop **new narratives** by way of transdisciplinary solutions:

- In times of actual climate neutrality, it will no longer be possible to reduce road traffic by using the lowest-emission mode of transport.
- Instead of energy-intensive air-conditioning systems, green roofs and façades can achieve the same cooling effect while also retaining water and supporting biodiversity.

- Supply bottlenecks and potential competition for resources (water) can be counteracted by means of storage, redundancies or bioeconomy.
- Resource productivity becomes the benchmark for value creation.
- Port development with the water calls for new concepts to counteract rising sea levels.

The HPA’s resilience is to be maintained by **developing a systematic evaluation process** and deriving adaptation strategies.

Fig. 4: Examples of recognised thresholds and tipping points

	← Threshold figures →			Figure acts as an early warning	Tipping point
	Resilient	Vulnerable	Irreversible		
Climate neutrality – metric: year	2040	2045	2050	2060	Costly damage, reputational losses
Condition of infrastructure – metric: school marks	2.0	2.4	> 3.5	≥ 4.5	Limitations to use, loss of structure
Suppliers – metric: number per service	Many	2	≤ 1	0	Unable to operate

Dialogue and collaboration with stakeholders

Isolationism in world trade creates uncertainty for everyone involved in the value chain. In its efforts to take into account and balance highly varied interests and objectives, the HPA sets great store by an approach based on **partnership, cooperation and networks** – because it is only possible to develop innovative solutions for a future-proof port and contribute towards achieving the United Nations SDGs if we work as a team.

Dialogue and participation are key to identifying the trends, expectations and needs of the HPA's stakeholders and incorporating them into its business activities. In this way, stakeholder management also helps to pinpoint and minimise risks at an early stage and to capitalise on changes as opportunities.

Focus on customers

The HPA's direct customers include local and international shipping companies, cruise shipping companies and port skippers, the tenants and users of port properties, local public transport companies, tourism companies and recreational craft operators, and

rail undertakings. The HPA's over 400 contractual partners comprise small and medium-sized enterprises as well as global concerns.

The HPA strives to achieve customer **satisfaction** by delivering top-quality services. Extensive surveys were conducted in 2019 and 2020. The results will be evaluated in 2021, and improvements subsequently derived from the outcomes.

The first stage of the road map target for **transition pathway 1 "We are a fair and reliable partner for the Port of Hamburg's/the HPA's stakeholder groups"** has been completed.

Road map target: customers

Excellence

We will assess the quality of our efficient and future-proof products and services. We will use the findings and measures derived from this to deliver top performance and will achieve a high level of customer satisfaction by 2025.



A customer relationship management (CRM) system is being put in place to improve communication with clients. In addition, annual events are held to share infor-

mation with customers about the latest developments and projects.

Involving stakeholder groups

In the political arena, the HPA's stakeholders include the Ministry of Economy and Innovation (BWI) of the Free and Hanseatic City of Hamburg, upon whose behalf the HPA operates and which exercises expert and judicial scrutiny of the company. The Ministry for the Environment, Climate, Energy and Agriculture (BUKEA) is also an HPA stakeholder with regard to nature conservation and the prevention of water pollution. Furthermore, the HPA works closely with the Ministry of Transport. Expert discussions are held with the waterway and shipping authorities, states bordering on the River Elbe and the German government (→ see www.forum-tideelbe.de) with regard to the port's shore- and waterside connections.

Within civil society, relevant stakeholder groups are residents, people who receive and dispatch goods via the Port of Hamburg, and workers throughout Germany who have direct or indirect links to the Port of Hamburg. The HPA also maintains constructive working relationships with non-governmental organisations and associations.

International partnerships

Knowledge and technology are shared in close collaboration with other ports. The HPA is active in organisations including the European Sea Ports Organisation (ESPO) and the International Association of Ports and Harbors (IAPH). IAPH is a global alliance which represents more than 180 member ports and 140 port-related businesses in 90 different countries. Its main objectives are to promote the interests of ports around the world, establish strong member relations and share best practices between members.

The chainPORT initiative is just one example of this constructive dialogue with other international ports. Initiated by the HPA, this is an **international partnership** among leading ports around the world (→ see section *“Innovation and digitalisation”*).

The HPA has been involved in IAPH for many years and sends representatives to sit on various technical committees – currently mainly the Climate & Energy, Data Collaboration, and Risk & Resilience committees. In addition to this, it has played a crucial role in drafting numerous expert opinions. Jens Meier was elected to the IAPH Board of Directors in 2019 as Vice President for Europe.

National partnerships

In connection with smartPORT projects and other digitalisation initiatives, the HPA works closely with innovation partners such as higher education institutions, research institutions and start-ups (→ see section *“Innovation and digitalisation”*).

The HPA is also active in the network of north German seaports. This consists of environmental representatives from the nine German seaport infrastructure companies based in northern Germany’s five coastal states. The network facilitates active **dialogue between experts** and collaboration on various environmental issues at Germany’s seaports. 2020 saw the launch of the *“Zero Emission@berth”* project, which focuses on zero-emission operations while ships are berthed.

Dialogue with residents of Moorburg

At local level, the HPA is involved in dialogue about the port expansion and its social impact. It takes part in the Moorburg Discussion Group, which looks at developments in the Moorburg neighbourhood. This was set up in 1998 because the district’s 740 residents are affected by the port area development plans. Together with various Hamburg authorities and organisations, the HPA promotes dialogue

with the residents regarding life in Moorburg and the plans for the port expansion area through this discussion group.

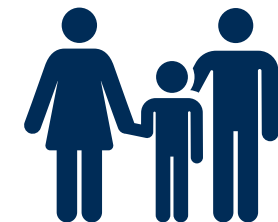
Advisory Committee

The HPA’s Advisory Committee performs a consultative role. It includes representatives of the German Trade Union Confederation (DGB), the Association of Hamburg Port Operators, Hamburg Chamber of Commerce, the Verein Hamburger Spediteure, the local construction industry association, Logistik-Initiative Hamburg, the Association of German Transport Companies, the German Shipowners’ Association, the German Shipbrokers’ Association, and twelve companies from the port sector.

Survey on sustainability issues

In late 2020, various relevant stakeholders – including cooperation partners, associations, customers, suppliers and contacts from academia and research – were asked about key sustainability issues and the HPA’s sustainability work. The stakeholders surveyed identified reducing climate-damaging emissions as a crucial sustainability issue. Expanding rail transport

was deemed an important means of doing this. Digitalisation is also seen as presenting a major opportunity. The stakeholders felt that social and environmental assessment criteria for suppliers and procurement management were particularly relevant. They also considered the maintenance and availability of the port infrastructure to be a key issue. The HPA took all of the results of the **2020 stakeholder survey** into account in its 2021 materiality analysis (→ see section *“Sustainability strategy”*).



Shareholdings



Flotte Hamburg

Under a single flag: Flotte Hamburg

Flotte Hamburg GmbH & Co. KG employs approximately 140 HPA staff members. It is responsible for managing the fleet belonging to the HPA, the fire department, the water police and the Hamburg State Office for Roads, Bridges and Water Bodies (LSBG). At the end of 2020, Hamburg's municipal fleet consisted of 46 vessels for a wide range of purposes. Of these, 16 were leased. The majority of direct services provided by the fleet – such as the pilot transfer service – are **system-critical activities** without which the port would be unable to operate. The fleet refinances its costs by means of long-term charter rates which remain stable for customers. Flotte Hamburg has reported a positive operating result since it was established in 2017.

Flotte Hamburg pays particular attention to training port skippers so that the next generation of skilled staff will be available when they are needed. During the reporting period, five apprentices took the places of departing skippers. A health programme was rolled out in 2020 with the aim of



keeping all staff healthy, especially with a view to the employees' age distribution.

Enhancing efficiency and lessening environmental burden

Flotte Hamburg has set itself the task of modernising the municipal fleet of vessels and making them more environmentally friendly. Together with the DNV, it developed a five-pillar concept in 2018 with the aim of reducing emissions of CO₂ (carbon dioxide), the air pollutants NO_x (nitrogen oxide) and SO_x (sulphur oxide), and black carbon particles (PM_{2.5-10}) (*→ see detailed concept in the 2017/2018 sustainability report*).

The **five-pillar concept** was implemented consistently in 2019 and 2020: almost the entire fleet is now powered by GTL (gas to liquids) – a synthetic, low-emission fuel. In addition, six vessels were fitted with exhaust aftertreatment systems (black carbon particle filters and nitrogen oxide catalytic converters). This conversion process has also begun on a further three ships. During the period under review, the nitro-

gen oxide and particulate matter produced by six ships was reduced by approximately 95 per cent using a combination of **exhaust aftertreatment and GTL**.

6 vessels

with exhaust aftertreatment

Overarching fleet management and intelligent pooling enable synergies to be leveraged. Between 2019 and 2020, three older vessels were taken out of service, which optimised the use of emissions-friendly ships.

The HPA aims to make its operations climate-neutral from 2040 onward. Since 2020, it has agreed annual targets with all managers who own energy-consuming equipment regarding their contribution towards reducing energy usage and CO₂ emissions (*→ see section "Climate strategy"*).

To achieve the climate targets, it is necessary to phase out the use of fossil fuels by 2040. Each year, steps are taken to reduce emissions by enhancing efficiency, such as:

- Supplying vessels with green electricity while they are berthed – reduction of approx. 31 t CO₂/a
- Workshops on fuel-saving ship operations – reduction of approx. 159 t CO₂/a

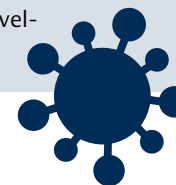
Further savings are dependent on corresponding propulsion technologies and synthetic fuels being available at realistic prices.

Using a climate-friendly, plant-based fuel made it possible to reduce CO₂ emissions considerably in 2017 and 2018. However, global demand and supply uncertainties at the Port of Hamburg made it necessary to stop using this (see Table 1).

Innovation

Flotte Hamburg has commissioned two new plug-in hybrid vessels to reduce CO₂ by means of innovative propulsion technologies. As the first plug-in hybrid vessels at the Port of Hamburg, the multifunctional fireboats will be able to run for up to two hours on electricity alone. A previously commissioned plug-in hybrid grader will also go into use in 2022. A feasibility study has been conducted concerning a fully electric vessel for the Alster and a dual-fuel **hydrogen** vessel for the port. In addition, Flotte Hamburg participates in international research projects such as the development of a seagoing vessel with a **methanol** fuel cell propulsion system (HyMethShip). Decarbonisation goes hand in hand with greater pressure to innovate as affordable alternative energy solutions must be available by 2040 at the latest.

Flotte Hamburg made a crucial contribution to maintaining port operations in spite of the **Covid-19 pandemic**, in particular with its pilot transfer service. The proportion of staff working from home was therefore low. To cater for self-isolation, the organisation has a small pool of reserve workers to enable it to respond flexibly to developments at all times.



Gateway to cruising: Cruise Gate Hamburg

Cruise Gate Hamburg GmbH (CGH) operates the three cruise terminals in Altona, Baakenhöft and Steinwerder with its eleven-strong team. It is the central point of contact for all cruise shipping companies in Hamburg. As well as allocating berths, it is responsible for ensuring the three terminals operate smoothly. This includes the associated infrastructure for handling cruise ships, such as supplying and disposing of water, managing transport logistics and implementing the International Ship and Port Facility Security Code (ISPS). CGH also markets Hamburg as a cruise destination, both nationally and internationally.

Table 1: CO₂ emissions by ships used by the HPA in g/kWh

2015	2016	2017	2018	2019	2020	Target: 2030	Target: 2040
246	245	148	225	236	235	120	0

Table 2: Calls by ships and passenger figures

	2015	2016	2017	2018	2019	2020
Vessels calling at the port	393	419	416	432	454	81
Cruise passengers	519,453	716,841	811,489	895,275	799,135	74,389
Passengers in transit	22,570	41,438	51,948	88,581	56,111	4,261

Due to building work, the HafenCity terminal is not available until it reopens in 2024. The temporary Baakenhöft terminal, which CGH opened in July 2020, is currently being used instead. All of the terminals are **accessible** for people with disabilities.

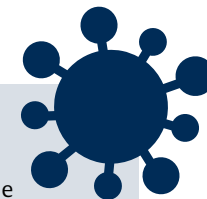
With its maritime ambience and rich cultural life, the Port of Hamburg is a magnet for tourists. It is particularly attractive for cruises.

The city benefits from this growth, but also has to keep a keen eye on the impact of cruise tourism. To increase acceptance among local residents, measures have been developed to protect health and preserve sociocultural values. The aim is to promote the long-term growth of cruising.

CGH is also involved in various initiatives with this goal in mind. In October 2019, CGH co-launched an industry-wide initiative to record cruise ships' emissions as part of the WPSP.

Reducing the environmental burden

At the terminal in Altona, cruise ships have been able to source climate-friendly electricity via an **onshore power facility** since back in 2016, making it possible to avoid emissions of air pollutants while the vessels are berthed. There are plans to construct additional shore power facilities at the Steinwerder and HafenCity terminals. It is also possible for ships to be supplied with liquefied natural gas at the Steinwerder terminal.



Since March 2020, the outbreak of **Covid-19** has presented cruise operations with new challenges time and time again. Due to national and international travel restrictions, numerous calls at the Port of Hamburg which had been planned for the 2020 season were cancelled. Operations in Hamburg were halted for the first time between March and June 2020. They were suspended again from December 2020 to mid-June 2021 following a resolution by the Senate of Hamburg.

In the course of the **Covid-19 pandemic**, it became clear that it is difficult to adapt cruises so as to incorporate the **infection control** requirements that are necessary during an acute pandemic. During this time, CGH supported eleven cruise ships and their crews while they were berthed temporarily at the terminals.

CGH always responded rapidly to the dynamic developments and adjusted its operating processes and infrastructure to the ever-changing situation. To pre-

pare for the first Covid-secure restart in late June 2020, the organisation maintained intense dialogue with authorities, shipping lines, the Cruise Lines International Association (CLIA) and its stakeholders. This constructive collaboration and a sophisticated hygiene concept made it possible to resume cruise terminal operations responsibly. In August and September 2020, CGH even managed to reach the number of calls which were originally planned for the season. Viewed globally, Hamburg was among the ports with the largest number of passengers in 2020, with 81 calls by vessels and 77,000 passengers. The sustainable restart concept met with international acclaim and served as a model for many other ports.

CGH also created alternative revenue streams. It let space in Steinwerder for use as a drive-through cinema and an in-car concert venue. The space was utilised optimally, hosting 80 events with approximately 33,000 audience members.





02

Infrastructure and traffic

Infrastructure and traffic

8 DECENT WORK AND ECONOMIC GROWTH



- The focus is on utilising existing infrastructure and smart control concepts to achieve better results and leverage efficiency reserves. Predictive maintenance systems (data-driven digital systems/smart bridge) are used for this purpose.
- The HPA works to attract sectors to the port which create high levels of value added. Amongst other things, it plans to incorporate sustainability criteria into the space allocation process to achieve this.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

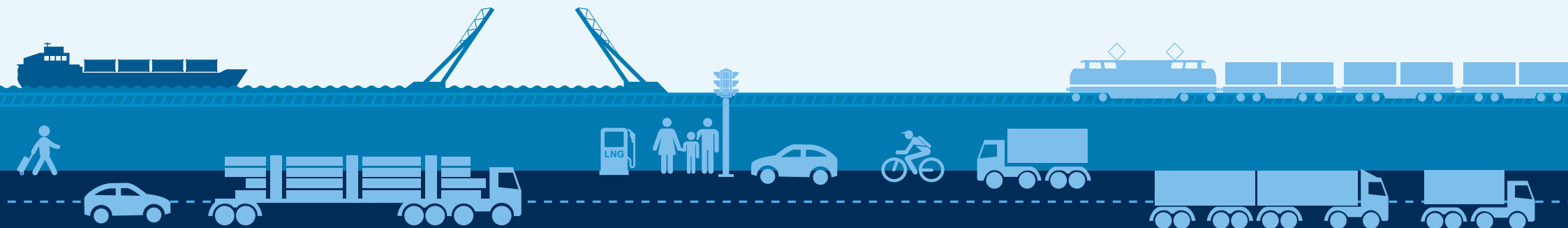


- The HPA is using a new form of risk and resilience assessment to ensure that infrastructure planning is sustainable long-term so that the ability to maintain operations is safeguarded (climate change adaptation).
- The HPA incorporates sustainability into the development of innovations.

11 SUSTAINABLE CITIES AND COMMUNITIES



- The modal split for rail is improving considerably, and additional cycle paths are being built. Traffic systems are being altered to redesign intersections where accidents are common.
- The HPA supports pilot projects to improve traffic in the city (e.g. Hamburger Hochbahn, autonomous driving).
- The charging point infrastructure is being expanded for the EV fleet. The waterborne fleet is fuelled by GTL.



Changes in value creation

3rd largest container port in Europe

The Port of Hamburg is Germany's largest seaport and Europe's third-largest container port. It is a major economic factor for Hamburg metropolitan region, an important hub for the global exchange of goods, and Germany's largest industrial site. Spanning 6,288 hectares, the dedicated port area is home to all manner of value creation. In addition to the two major container handling companies, some 700 companies from 16 different sectors are based at the Port of Hamburg. Well-known industrial firms from the energy sector, the raw materials industry, drive technology, shipbuilding, mechanical engineering and the fertiliser industry are also an important part of the business landscape at the port.

The Port of Hamburg makes a crucial contribution towards economic development in the metropolitan region. It generates value creation and employment, ensures that businesses are supplied with raw materials and enables them to sell their

goods worldwide. What is more, the port is part of Hamburg's **cultural identity**.

Its ability to function as a business and logistics hub rests primarily on a resilient infrastructure and optimised traffic flows. With this in mind, the HPA focuses on safeguarding infrastructure capacities and efficient traffic management. This is the case for all the relevant modes of transport, be it water, rail or road.

Steps must also be taken to ensure that the infrastructure and traffic management adapt to changes in value creation and logistics processes as a result of digitalisation. The HPA is responding to these changes by expanding existing systems to meet the economic, security-related and legal requirements. Its work here concentrates in particular on the following areas: **protecting critical infrastructures** (KRITIS), cyber defence, networking systems/transport chains, creating new platforms, and e-navigation.

The port as an economic driver

Throughout Germany, the gross value added associated with the Port of Hamburg totals 50.8 billion euros. The metropolitan region accounts for 12.4 billion euros of this. In Hamburg, the port-related gross value added stands at 8.1 billion euros. Of this, approximately two thirds is directly or indirectly dependent on the port's existence. These figures underline the economic significance of the Port of Hamburg, which extends far beyond the site itself. Port-related business yields some 2.6 billion euros in taxes throughout the whole of Germany, with 1.2 billion euros of this paid in Hamburg alone.

50.8 billion

gross value creation throughout Germany

The Port of Hamburg secures 607,000 jobs nationwide, spanning cargo and passenger handling, port services, the transport chain, sectors which benefit indirectly from the Port of Hamburg and, above all, the port industry itself. In Hamburg, port-related business generates gross value added of over 130,000 euros per worker.

Impact of structural change

As Germany’s largest **universal port** with four container terminals, 29 bulk cargo terminals and six multi-purpose and roll-on/roll-off terminals, Hamburg has adopted a strategy of **diversification**. It uses adaptive port space development to consistently strengthen local cargo volumes by attracting more manufacturing companies and industry to the area.

Table 1: Seaborne cargo throughput by mode of transport

	2019 in millions of tonnes	2020 in millions of tonnes	2019 in millions of TEU	2020 in millions of TEU
Seaborne cargo throughput	136.6	126.2	9.3	8.5
Transshipment, mega-ship	19.6	17.1	1.7	1.5
Transshipment, feeder	19.6	17.1	1.7	1.5
Hinterland, train	48.2	46.6	2.7	2.6
Hinterland, inland waterway vessel	8.9	8.4	0.1	0.1
Hinterland, truck	40.4	37.1	3	2.8

Throughput and cargo groups

Approximately 7,600 seagoing vessels called at the Port of Hamburg in 2020 with a total throughput of 126.2 million tonnes (see Table 1). This was 7.6 per cent lower than the benchmark figure from 2019.

Due to the coronavirus crisis, the global transportation of commodities and goods fell sharply in 2020. Container throughput at the Port of Hamburg decreased from 9.3 million standard containers (TEU) in 2019 to 8.5 million in 2020. This equates to a reduction of 8 per cent. In 2019, several transatlantic services relocated from Bremerhaven to Hamburg, which helped to drive growth of 6.1 per cent. Empty container throughput fell by 9.4 per cent in 2020, recording a sharper decline than

loaded containers. Transshipment saw an 11.6 per cent drop to 3.0 million TEU in 2020.

A process of recovery began in the second half of the year. This picked up pace considerably in the fourth quarter, affecting both bulk cargo handling and throughput of break bulk cargo, 98.7 per cent of which was containerised.

607,000

jobs nationwide

126.2 million

tonnage seaborne cargo throughput

All in all, the throughput figures for 2020 for the Port of Hamburg recovered faster and more markedly than was anticipated after the first six months of the year. In terms of cargo, container handling dominated in 2020 at 86.6 million tonnes, followed by 38.5 million tonnes of liquid and dry bulk cargo and 1.2 million tonnes of conventional break bulk cargo. The proportions of total throughput accounted for by these three cargo groups remained largely stable.

New narratives of strategic port development

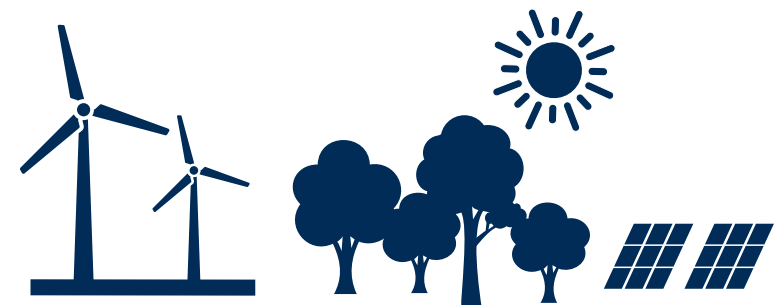
The Port of Hamburg is one of the largest city ports in the world. The city and the port are closely interwoven. They can only develop hand in hand with one another – and should ideally strengthen each other in the process. The port creates value, but generates burdens as well that have an impact on the environment, climate and people. With this in mind, work has been under way for years to reduce all port-related emissions that can have a detrimental effect on health and the climate.

The era of post-fossil technologies, developments in capacity at Mediterranean ports and market-related changes induced by climate change, such as crop failures, are affecting goods flows and supply chains around the world. Against this backdrop – and irrespective of geopolitical turbulence – there will be shifts in transport volumes within the modal split. The challenge is to rethink transport strategy narratives.

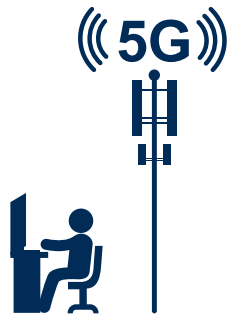
While maritime shipping responds rather sluggishly to the global community's decarbonisation requirements and targets, **onshore power facilities** will be needed at the Port of Hamburg for air pollution control and climate protection so as to limit the vessels' negative impact. Six facilities with thirteen connections are planned, which are expected to go online starting in 2023.

The old narrative of strategically developing the lowest-emission mode of transport is ceasing to function. In the future, all forms of transport will become more urban-

friendly as regards noise and emissions. Strategic criteria such as resource and space efficiency – but also a mode of transport's **flexibility** in the context of climate change – will take centre stage. Reliability, cost and speed may regain importance when choosing a means of transport, counteracting efforts to relieve pressure on the roads and having a detrimental effect on residents and other road users.



Innovative, digital and reliably connected – ready for the future



The HPA sees **digitalisation** as a global trend which plays an essential role in readying the smart port and company for the future. Digital innovations have huge potential with regard to sustainability, but the focus is on the respective application. Moreover, digitalisation projects allow the HPA to position itself as an attractive employer.

In this context, innovations should not just serve the sustainable development of the HPA and its value chains. The HPA must go beyond its own operational and organisational borders to take responsibility for the **digital transformation** of the port as well.

To a large degree, the success of such innovations rests on the reliable availability of physical and virtual infrastructure.

Redundancies make the systems more resilient. The infrastructure's fail-safe performance and **cyber defence** are critical in guaranteeing the HPA's ability to operate and communicate with port players.

Responsibility and management approach

Information technology: The organisation's own fibre-optic network covers a distance of more than 300 kilometres and in the interests of failure safety has a ring structure. It boasts nearly 100 per cent availability. All the relevant processes, including the stored data, are integrated into two fully redundant data centres. External cloud technologies are also used to make server capacity more flexible and boost energy efficiency.

Innovation and digitalisation: At the end of 2020, a new business unit entitled Port Process Solutions (PPS) was established to implement innovations and scale them up for use in new lines of business. It focuses on developing solutions from prototype through to the product.

Data protection and security: The HPA is considered to be of great public importance because it operates IT systems whose failure or impairment could cause

lasting supply bottlenecks and considerably compromise public safety. The established IT security management system has been shown to comply with the German IT Security Act, the BSI Act (BSIG), the Ordinance on the Identification of Critical Infrastructures (BSI-KritisV) and other international requirements such as the European Network and Information Security Directive (NIS Directive).

Cybersecurity

As the foundation for digitalising business processes, cybersecurity is a central challenge for IT. When innovative technologies are introduced, any vulnerabilities, as well as their impact on the HPA's digital business, are identified at an early stage with the help of targeted cybersecurity measures. Penetration tests were used in 2019 to check the digital technologies which have been implemented.

Security is crucial requirement of ensuring reliable processes in port logistics. The HPA thus aims to increase the resilience of its

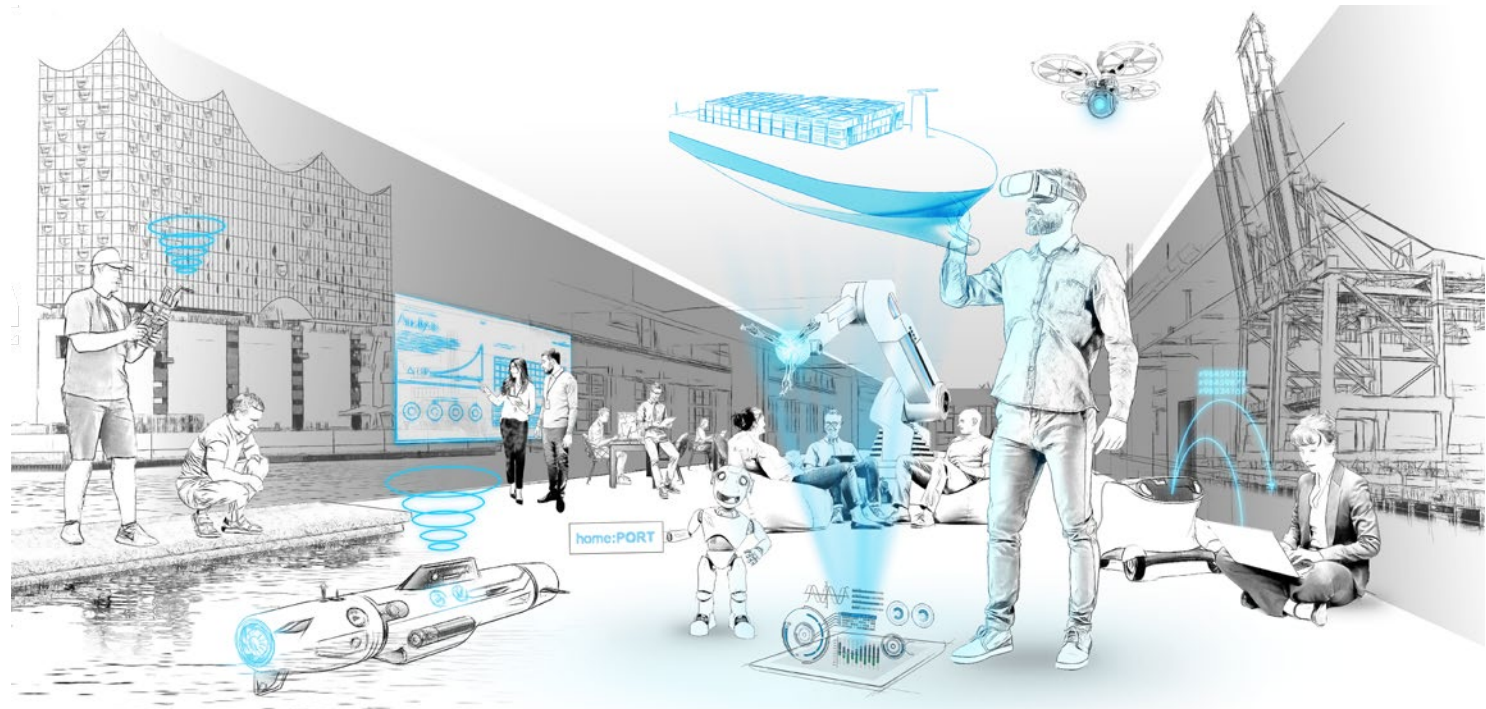
IT systems. They should be resistant to cyberattacks and highly **fail-safe** with the corresponding redundancies. This is all the more important as the HPA operates critical infrastructures which are systemically important. The HPA's customers count on these infrastructures in order to be able to complete their business processes smoothly. The HPA aims to achieve virtually 100 per cent fail-safe performance and connectivity by 2025.

High IT standards are applied to protect the intellectual property of the HPA and of its customers from theft, loss, unauthorised disclosure, unlawful access or misuse. A greater level of detail specificity is to be achieved in the future through the creation of a security operations centre (SOC). The process of establishing this began in 2020.

homePORT – real-life laboratory and testing ground for innovations

homePORT is an innovation campus located at the heart of the Port of Hamburg. It offers innovative port players, the scientific community, technology companies and start-ups the space to try things out, experiment and collaborate with other partners and players. homePORT makes it possible to develop product innovations and test them in real-life conditions. These may go on to shape the maritime port industry of the future. As a hub for creative ideas, homePORT pro-

Fig. 1: homePORT, the innovation campus



© HPA

vides standardised access to test spaces on land, on the water and in the air.

A digital collaboration platform has been developed which allows prospective users to make contact and facilitates an initial dialogue. It enables the port and the HPA to con-

nect with innovative companies, research groups and start-ups and to forge ahead with projects for the port of the future.

homePORT offers optimum conditions for **drone and robot tests**. As part of a smart port infrastructure management system,

the HPA is also making use of new instruments: in the future, it plans to use flying and swimming drones along with on- and off-road rovers as part of its emergency response plan to check buildings or inspect plants and infrastructures at the Port of Hamburg which are difficult to access.

Digital, sustainable planning with BIM

The HPA is adding digital offerings to its service portfolio with the aim of supporting managers and operators of virtual infrastructure systems as well as those in charge of physical ones. The digital **building information modelling** (BIM) method makes it possible to view the entire life cycle of a building, structure or infrastructure – from development to planning, construction and use all the way through to demolition. All of the relevant data and information is recorded, managed and shared with project participants via a virtual model of the structure (= digital twin) and its usage.

Using BIM thereby minimises construction risks and provides much greater schedule and cost stability than conventional planning. In the future, BIM will make an important contribution towards sustainable construction at the HPA. When this method is introduced comprehensively, the digital twin allows the structure’s environmental impact to be analysed in the early stages of planning. For instance, the carbon footprint of a building can be calculated for both the construction and the operation phase using the model as a basis. The digital twin can also be used to simulate demolition and evaluate the recovery of building materials in advance – two further examples of sustainable construction with a focus on the whole life cycle, from planning to demolition.

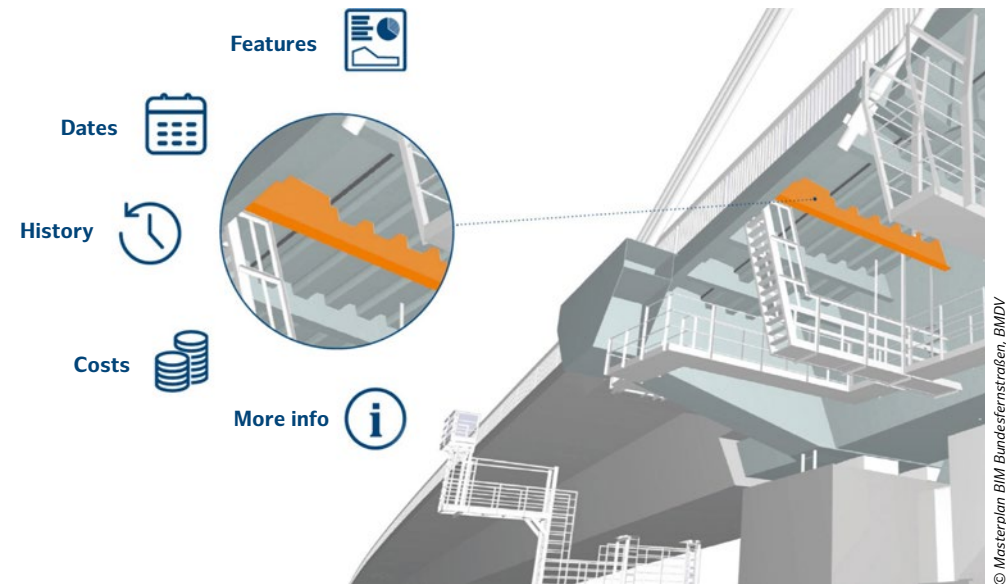
BIM enables users to make the leap from conventional 2D planning to a 3D model which offers a fully integrated, networked method of planning that involves all the relevant stakeholders. It offers completely new opportunities for public involvement with the aid of virtual or augmented reality. For instance, the HPA’s engineers utilise virtual reality to visualise structures when they are explaining building projects.

This comprehensive change process will fundamentally alter all participants’ standard way of working. When developing change measures, special attention must therefore be paid to ensuring that participants are informed, trained and supported. The necessary technical knowledge and skills for BIM are to be built up systematically and concepts for basic as well as advanced training developed.

smartPORT

An interconnected data flow and smart, innovative digital solutions aim to make the flow of goods and traffic in the port area more efficient and reduce emissions at the same time. This smartPORT philosophy is constantly further developed to perfectly coordinate the management of all means of transport, from containers to road and rail traffic. The HPA has set its sights on turning the Port of Hamburg into one of the world’s smartest ports by 2030 with its smartPORT projects.

Fig. 2: Virtual model of a structure using building information modelling



© Masterplan BIM Bundesfernstraßen, BMDV

With the assistance of the HPA, the Institute smartPORT at the Hamburg University of Technology (TUHH) is also conducting research into improving the efficiency and safety of port areas (to find out more, → see the 2017/2018 sustainability report).

The **smartBridge** project is trialling the use of sensors to assess the condition of existing bridges in real time. The Köhlbrand Bridge is being used as a demonstration structure for the pilot project (→ see section “Road”).

chainPORT

Initiated by the HPA and the Port of Los Angeles in 2016, chainPORT is a partnership between world-leading ports which goes beyond the traditional concept of bilateral partnerships. It strives to leverage innovations and digitalisation to enable safe, efficient and sustainable supply chains for maritime players. chainPORT aims to bring together port authorities, their partners and customers to share experience and best practices and to develop joint strategies to tackle current and future issues,

such as cybersecurity and sustainability. The goal is to make it possible for ports to cooperate in a global network via both digital and analogue means.

In 2020, the working group “Shaping the Digital Culture in Port Authorities” published a digital article discussing lessons learned from the Covid-19 pandemic. Its aim was to develop a practical approach for port authorities to master global crises strategically with the help of digital solutions. Also developed in 2020, the chainPORT playbook on “Leveraging Digital Solutions in Crisis Management” explains a four-step approach to producing a digital road map (→ www.hamburg-port-authority/chainport).

Innovative research and publicly funded projects

Internal and port logistics processes are to be monitored and improvement potentials are to be identified using interconnected and intelligent sensor technology, digital device networking and workflow automation. Close collaboration with colleges and universities as well as businesses, start-ups and innovation hubs boosts

project completion levels. Maintaining links with other port authorities – especially regarding cyber resilience and cybersecurity – also helps to safeguard infrastructure.

Within the HPA, involving employees in the digitalisation process plays an important role. By enhancing its staff members’ **digital literacy**, the HPA gives them the skills they need to actively help shape the transition. All employees are to have completed training in digitalisation by 2025.

Its ongoing acquisition of research projects makes the HPA a first mover in many areas. This enables it to adopt new technologies at an early stage. For example, the HPA is currently involved in SANTANA,

a project funded by the German government to digitalise ports and modernise digital infrastructures at ports. Meanwhile, in the project RoboVaaS (Robotic Vessels as a Service), it is working with the Hamburg University of Technology and other partners to develop autonomous underwater vehicles that can complete automated environmental monitoring tasks on demand.

The HPA is involved in the **SeaClear** project as a demonstration site. This EU-funded project uses the latest mapping, classification and robot control methods to locate and collect pieces of plastic, bottles and other items in or on the water using autonomous flying drones and underwater and surface vessels.

Even before the **Covid-19 pandemic**, our employees used notebooks in their work and Office 365 was the standard software. The IT team built on this to provide the necessary framework for as many staff as possible to work from home. VPN connections were provided using a proprietary solution and all employees were given an email address. Our IT team also assisted users with any technical queries they had while they were working remotely.



Preventive maintenance management

The HPA monitors factors which may compromise the resilience of infrastructure and traffic management. These are primarily **climate change, the shortage of skilled workers, trends in ship sizes, pandemics, resource shortages and rising prices**, and digitalisation. By developing mechanisms which are effective in a crisis, the HPA strengthens its ability to act in these areas so that it can respond promptly to changing underlying conditions.

Preventative maintenance strategies are essential to guaranteeing the safety, longevity and availability of the port's infrastructures at all times. Repair backlogs are systematically prevented. The age of the structures and changes in structural loads call for targeted investments to maintain assets and their value. In this context, a long-term maintenance forecast is crucial so that the necessary funding can be calculated for the HPA's financial planning. **Maintenance management** is based primarily on the principles of paper 21/13592 published by the Free and Hanseatic City of Hamburg. These guidelines set out a sys-

tematic approach that guarantees value retention and aims to extend the asset's useful life.

In 2016, the HPA introduced a condition assessment programme for vertical retaining walls as specified in the "BAW Merkblatt Schadensklassifizierung an Verkehrswasserbauwerken (MSV)" document produced by the Federal Waterways Engineering and Research Institute. To date, 71 of 75 quay walls have been inspected as part of the programme. An initial evaluation of the quay walls examined as part of the condition assessment programme found that 50 of the quaysides/retaining walls inspected were in an unsatisfactory or inadequate condition while 21 structures were in a satisfactory condition. The maintenance management strategy is expected in late 2022. At this point, a decision can be made on whether the same system of targets, set out below, applies to quay walls. The condition of railway bridges, road bridges, roads, barrages and locks is assessed on a regular basis. The target is a good median condition rating and the lowest possible num-

ber of structures with a condition rating ≥ 3.5 that are at risk of failure.

A system based on German school marks is used to denote the condition of each structure. This corresponds to the standardised banding used in the paper:

- Mark ≤ 1.5 : reference figure following construction
- Mark 1.5–3.49: no specific observation required
- Warning rating ≥ 3.5 : observation and possibly also action required
- Threshold rating ≥ 4.5 : individual examination needed, action is required

Depending on the infrastructure, marks are awarded on the basis of various aspects, such as a user-oriented rating that represents a structure's usability and traffic safety and a structural rating that stands for the current quality of the structure. There are regular inspections throughout the life cycle, taking into account criteria such as the degree of wear, weathering, age, material and load.

As the mean condition ratings demonstrate, maintenance management can be successful with a small number of facilities which are in the critical zone (> 3.5).

The road map target for **transition pathway 2 "We are developing the port sustainably and with the creation of value for the region"** has thus far been achieved in full.

Road map target: infrastructure

2.0–2.4

We will assess the condition of the port's traffic infrastructure annually using a school marks system and will see to it that all the relevant structures are, on average, rated as being in good condition (2.0–2.4) by 2025, to guarantee high availability for business and private traffic.*



* without quay walls

Locks and barrages

Nine structures were inspected. The predicted mean condition rating for 2030 is 2.5 because it can be assumed that the condition of certain structures will deteriorate due to old age (see Fig. 3).

Rail

In 2020, 51 railway bridges were assessed. Forward-looking maintenance and needs-based renovation are used with a view to keeping structures in a good condition overall (see Fig. 4).

Road

Both major and minor roads were inspected, resulting in an average rating of 2.8. Road bridges are rated annually in the course of routine structural inspections (see Fig. 5 and 6).

Fig. 3: Change in condition of barrages and locks

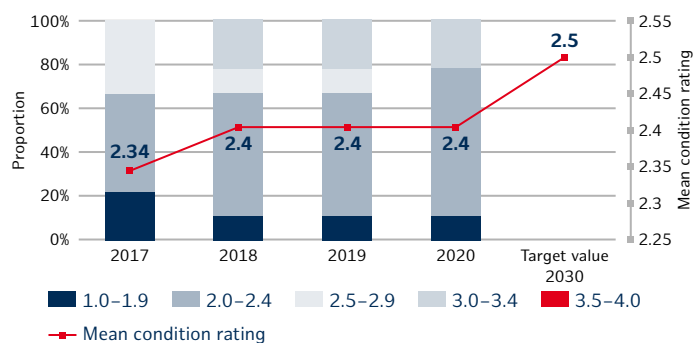


Fig. 4: Change in condition of railway bridges

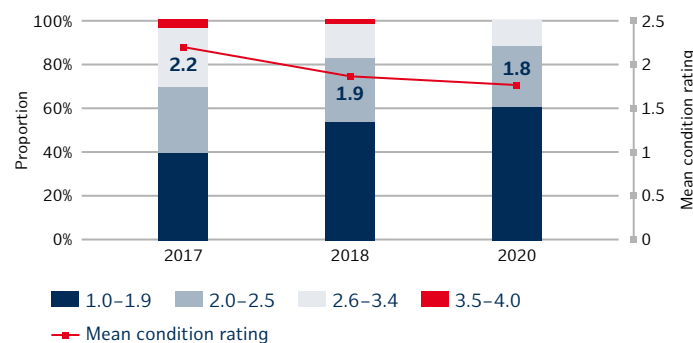


Fig. 5: Change in condition of major roads

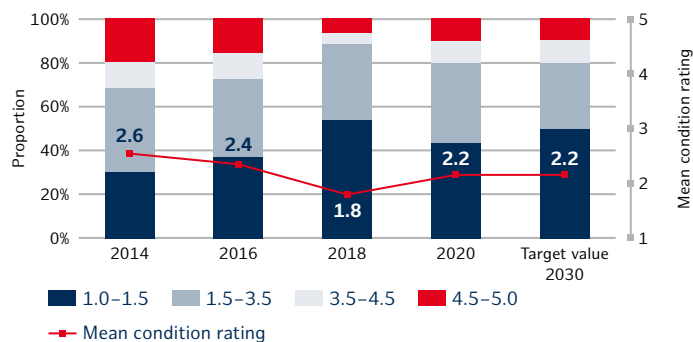
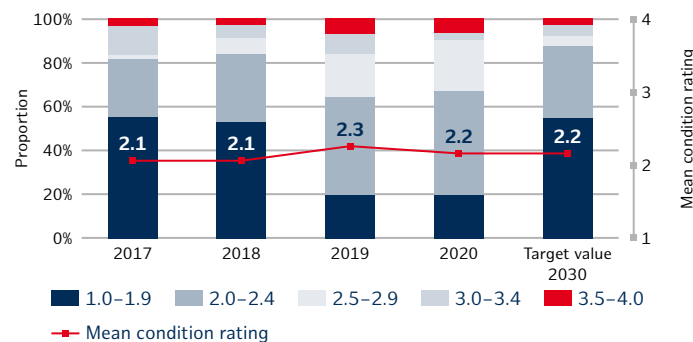


Fig. 6: Change in condition of road bridges



Value-oriented land strategy

The port's social added value for the people in the city is highly significant. Innovative and intelligent **usage and settlement concepts** are needed precisely because of the limited space available (land and water), usage conflicts and competition for space as the city continues to expand, and the impact that port activities have on people and the environment.

Responsibility and management approach

As a property owner, the HPA has the largest proportion of port space in the dedicated port area along with the following assets:

- 170 floating facilities
- 75 quay walls with a total length of approx. 36.5 kilometres
- 135 buildings
- 2,081 hectares of leased and lettable space

The HPA has introduced a portfolio board, which is an efficient way of managing and steering its space-use strategy. Made

up of managers, this body acts in an advisory and decision-making capacity. It coordinates and prepares decision-making documents.

The body reports to the Executive Board concerning contracts which have a material effect on the HPA's organisation or exceed a certain value. Particularly important contracts are also reported to the Supervisory Board or presented to it for decision-making.

The strategy and targets

The HPA is pursuing a business settlement strategy that features **sustainable allocation criteria** for Hamburg as a universal port. This focuses in particular on systematically boosting local cargo volumes and maintaining sector diversity, among other things by stepping up the settlement of manufacturing companies and industry and by focusing on high value creation and work-intensive sectors. The **diversification** that this entails reduces economic vulnerability and generates additional **stability**.

The climate change megatrend also impacts on tenants and port players. Crop failures and climate-related supply bottlenecks are already being observed today. Decarbonisation, climate change effects and resource shortages will affect business models in the future. Usage concepts for spaces and infrastructures must be made considerably more flexible and adaptable. As part of the property strategy, attention is paid to **further intensifying use**, such as by constructing buildings with multiple storeys or multi-purpose facilities which are also suitable for a specific third-party use.

Actions are guided by the efficient use of land and water space as valuable resources. Productivity should be enhanced without using additional water space. For instance, Hamburg's 2020 coalition agreement states that the Steinwerder Süd project should achieve a neutral effect on **water volume**, meaning that no retention space is destroyed (→ see section "Climate change effects", Table 3, p. 61).

Long-term focal points for development

The port area is divided into approximately 90 economic entities, which are grouped into seven regional areas. The regional areas reflect the potential of the various parts of the port, such as sufficient depth for sea-going vessels or proximity to the city, and infrastructural links. Generally speaking, the economic entities have strategic targets for property which are derived from the regional areas' overarching goals. Using this approach, zones are being developed which aim to attract more companies from specific sectors.

Feasibility studies provide more detailed information for the targeted transformation of areas within the port. These have already been completed for the following sections or whole economic entities: Worthdamm Shell site, Ellerholzweg, Ellerholzdamm, Steinwerder Süd, Alte Schleuse, Hohe-Schaar/Kattwykdamm Shell site, Peutestraße.

For the port's further development, it is therefore essential that industrial usage on the periphery of the port is reconciled with the sensitive use of adjacent areas, e.g. for residential properties. The HPA is working

together with various stakeholders to develop joint solutions which meet the needs of both businesses and the requirements of urban development. During the reporting period, the HPA actively accompanied the urban development projects planned for Kleiner Grasbrook, Wilhelmsburg, Harburg and Veddel Nord in particular.

Space utilisation

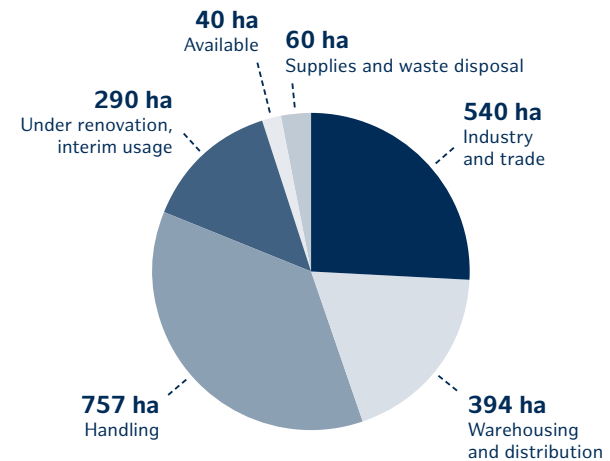
There were no changes in space within the port area in 2019 and 2020. The dedicated port area comprises 6,288 hectares, with 3,045 hectares of this being water space. Third-party property accounts for some 3,165 hectares of land and water space.

There are approximately 3,243 hectares of land in the Port of Hamburg's dedicated port area. Deducting the land which is privately owned along with the land used for infrastructure, flood defences, green space and the HPA's own facilities leaves around 2,081 hectares of lettable land (see Fig. 7).

Space allocation criteria

Larger, commercially attractive properties are leased using transparent, non-discriminatory, Europe-wide bidding processes.

Fig. 7: Lettable and leased land (2,081 hectares)



The modal shift towards transporting more freight by rail and ship to relieve pressure on the roads remains an important goal, in particular with regard to the settlement of traffic-heavy businesses. Priority is to be given here to sites with bi- and tri-modal traffic links.

The following sustainability criteria are relevant:

- Number and value of jobs: if possible, jobs subject to social insurance contributions should be created. Maintaining the number of jobs – especially for unskilled workers in warehousing or packing – gives rise to a conflict of aims with regard to increasing the level of automation.
- Value creation: preference is given to business activities which focus on high value creation and work-intensive sectors.
- Good neighbourliness: a company has to fit in with its surroundings. In the interests of good neighbourliness, consideration must be given to businesses which are already based at the site, e.g. if the new tenants could cause problematic emissions, or vice versa. When considering a port operator’s application to occupy the site, it should be examined whether emissions of noise, light, harmful substances or odours associated with a planned three-shift operation would have a negative impact on nearby residential areas.
- Environmental and climate protection. The tenants’ commitment is also a crucial consideration. The aspects of clean production, green building and CO₂ targets in particular are assessed. Tenants

have to establish and maintain ten per cent of the leased area as open green space planted informally with indigenous deciduous trees and shrubs suited to the site.

In the future, a company’s achievement of carbon neutrality and greater use of eco-friendly modes of transport are to play a greater role in the allocation of space. Businesses which are in a position to route cargo through the Port of Hamburg and keep it running via the port long-term are also given high priority when plots are allocated.

In the period under review, 27 leases and five option agreements were signed (see Table 2).

The 32 contractual partners’ business models can be assigned to four industry clusters (see p. 37, Fig. 7). All of the new lettings in the period under review are geared towards making efficient and

effective use of the plots with regard to their development and utilisation.

External and internal guidelines for space allocation

Whenever space at the Port of Hamburg is allocated, all of the applicable legal requirements for public-law institutions are observed. Particular attention is paid to the Port Development Act (HafenEG).

By disclosing the allocation criteria above, part of the road map target for **transition pathway 2 “We are developing the port sustainably and with the creation of value for the region”** has already been achieved.

Road map target: space-use strategy

100 per cent

We will establish transparent and sustainable space allocation criteria and will see to it that these are observed in 100 per cent of new businesses settling in the port by 2025.



Table 2: Leases

Subject of the contract	2019		2020	
	Number	Area	Number	Area
Plots	4	4.3 ha	7	41 ha
Buildings	4	9,287 m ²	6	6,494 m ²
Floating facilities	3		3	

Climate protection

The HPA aims to make its operations climate-neutral from 2040 onward. Since 2020, it has agreed annual targets with all managers who own energy-consuming equipment regarding their contribution towards reducing energy usage and CO₂ emissions (→ see section “Climate strategy”).

In 2019, photovoltaic panels and an energy storage system were installed at the Neuwerk company building, making it possible to stop using the heating oil system. This led to permanent annual savings of around 58 t CO₂ in 2020.

Public and private flood defences

The port area is protected by both public and private flood control systems (polders). In the area of flood control, the HPA is officially responsible for approximately 26 kilometres of the public main dyke line within the port and also serves as the overarching port authority responsible for dyke and polder supervision. The HPA is further responsible for the planning, drafting, execution, maintenance and operation of special flood control structures: three locks, four barrages, pumping

stations and floodgates. It is crucial that the structures are kept in good condition (→ see section “Maintenance management”).

Given the anticipated increase in flooding due to **climate change**, the HPA will increasingly have to take into account raising the height of defences in the future. Furthermore, a strategy needs to be developed to enhance the resilience of various structures for the polders. This is being developed as part of a new risk and sustainability management concept for the privately owned polders. The aim of maintaining the polders along a dyke length of 97 kilometres and modifying them in accordance with future design flood levels is to guarantee flood control for the entire port area, avert risks and keep port operations running as smoothly as possible even during storm surges.

The plan is for the dyke lines of the public flood protection systems to have been brought into line with the new design flood level of 8.10 metres above sea level (Hamburg-St. Pauli as the reference level) by 2042. A **climate-based addition** of 20 centimetres and a reserve of 60 centimetres have also been factored in.



The Port of Hamburg was not exempt from the impact of the global pandemic in 2020. Lockdowns, the resulting uncertain macroeconomic environment and a lack of goods shipments interrupted logistics chains. Some companies were severely affected by these factors. To help them to overcome and survive the crisis, the HPA allowed affected tenants to defer payment of their rent without incurring any interest. This ensured the ongoing liquidity of businesses which were suffering. Due to this decision, the HPA was unable to achieve the revenue targets which were originally forecast. However, forward-looking action avoided more substantial losses in the Port Estate and Property division.

Safe accessibility of the port

Safe calling conditions and short dwell times are crucial for the Port of Hamburg’s customers. A reliable waterside infrastructure and **smoothly flowing** shipping traffic are central to achieving this. During the period under review, it was possible to guarantee and even improve the safe accessibility of the port and reliable traffic flow management for all vessels in the Port of Hamburg.

Responsibility and management approach Infrastructure: Maintaining the section of the federal waterway delegated by the federal government to Hamburg and the port waterways belonging to the state of Hamburg (approaches, turning circles, harbour basins) forms a key part of the HPA’s remit. As a result, it ensures that everything is done to keep the waterways navigable. It commissions dredging work to maintain the water depth as well as projects to extend the navigation channel. The HPA regularly sounds the water depth to keep track of the ever-changing sediment levels. It also has extensive monitoring procedures in place covering both the sediment quality in the port and environmental impacts at the deposit sites.

To treat dredged materials which cannot be relocated, the HPA operates washing plants, a separation and extraction facility, water treatment plants and a landfill site in Feldhofe. Until 2020, it also had a landfill site in Francop, but this has now been closed.

Port traffic: The Harbour Master’s Office is responsible for managing shipping traffic in the Port of Hamburg. The port has a high volume of traffic, consisting of sea-going ships, inland waterway vessels, tourist boats, traditional craft and recreational boats. A large number of different tasks have to be completed around the clock to record, oversee and steer this ship traffic.

Safe traffic flow management that meets customers’ needs

The Vessel Traffic Service Centre manages some 10,000 calls by inland waterway vessels and more than 7,600 calls by sea-going ships every year. Handling this traffic smoothly and reliably enables freight to make its way through the port on schedule and proceed to its destination. The key to efficient shipping traffic management lies in the precise coordination of all the

Table 3: Container ships by size

Ship classes	Maximum dimensions in m			2012	2018	2019	2020
	Draught	Beam	Length				
Mega-ship	> 15.50	> 49.00	> 370.00	100	532	526	458
Fleet max.	15.50	49.00	370.00	493	426	376	310
Reference ship	14.55	46.00	350.00	416	142	167	223
Post-Panamax	14.55	42.00	318.00	317	204	370	296
Panamax	13.50	32.40	295.00	1,175	819	799	680
Kiel-Canal-Max feeder	9.50	27.00	210.00	980	650	794	806
Feeder	8.00	28.00	170.00	1,582	736	639	620
Total				5,063	3,509	3,671	3,393

parties that have a bearing on how long a ship remains within the port. These include handling companies, tugboat companies, Elbe and harbour pilots, moorers and ship-brokers.

As ships become larger, not only the requirements for safe traffic management grow with them. At the terminal, completing logistical just-in-time handling without using additional space presents a challenge. Consequently, calls by mega-ships place specific pressure on roads and lead to longer dwell times for vessels.

17,600

calls by inland waterway vessels and seagoing ships

Work to **extend the navigation channel** began in July 2019. A section with a length of approximately seven kilometres between Wedel and Blankenese was widened to 385 metres. Since early 2021, vessels with a combined width of 104 metres – instead of 90 metres, as was previously the case – have been able to pass one another there. After two and a half years of construction work, vessels can now use around 50 per cent of the capacity offered by the new channel depth. The draught has been increased by up to 0.9 metres. Due to safety reasons, approval for the second phase will be granted towards the end of 2021 or the beginning of 2022. For one, greater morphological drift is to be expected following completion of the dredging work. For another, the greater immersion depth has brought about a change in seagoing vessels’ performance when manoeuvring.

Monitoring ship sizes on an ongoing basis is essential for traffic management planning. Simulation analyses show under which conditions it is possible for the new mega-ships to call at the port. It is already clear that further **growth in ship sizes** would considerably restrict processes at the respective berths. It would no longer be possible to use these economically in line with current standards. To enhance **safety**, the HPA is examining whether new manoeuvring strategies are needed for mega-ships and developing these via international collaborations with both harbour and Elbe pilots and shipping lines.

Given the higher number of mega-ships calling at the port, the HPA has also created waiting berths at the Finkenwerder pilings in the interests of safety. The western berths were completed in 2019, followed by the eastern berths in 2020. One berth is always kept free for incidents or emergencies. The berths are equipped with climate-friendly winches powered by solar electricity.

In addition to trends in ship sizes, **changing limitations** have an impact on traffic flow management. These include different water levels, current, draught and weather factors, up-to-date details of construction work and clearance for bridges.

A speed limit of 10 knots has been introduced at the Port of Hamburg for the sake of safety and to reduce suction and swell; compliance is monitored by the Vessel Traffic Service Centre. **Congestion and dwell times** are reduced by a new system of making contact with vessels three to five days before they arrive at the port. Previously, they were contacted 24 hours beforehand.

To fulfil preventive duties, nautical calling conditions such as wind restrictions and simultaneous passing bans have to be taken into account in traffic flow management, as do dangerous goods transport, customs and clearance matters, and waste disposal from and supplies to seagoing vessels.

The Vessel Traffic Service Centre coordinates the whole process of traffic flow management for ships arriving or departing from the port. Meanwhile, the Hamburg Vessel Coordination Center (HVCC) coordinates the rotation of ship movements between the terminals for HVCC clients.

The HPA and HVCC are currently looking into the advantages of a joint venture with the aim of harmonising waterborne traffic flow management for the Elbe/Port of Hamburg and minimising interruptions in the **sharing of data** for all users while taking into account the official responsibilities and commercial interests of all those involved.

Fig. 8: Aspects influencing congestion and waiting times



The HPA is also involved in the Digital Container Shipping Association (DCSA) project along with container shipping companies and the port operator. This project aims to set up an information platform to optimise calls by ships, making it possible to communicate with the vessel even earlier and adjust speeds to reduce fuel consumption.

Target: the Port of Hamburg must be accessible at all times

The Port of Hamburg is a tidal seaport. This means that the Lower Elbe’s tidal dynamics combined with the Upper Elbe’s volatile water inflow – which is at current increasingly low – lead to greater deposits of sediment in the port. The waterways and berths therefore have to be dredged regularly to maintain the necessary depth. At times, this restricts the use of berths – particularly those which are adversely affected by currents.

Maintaining water depth in the waterways and berths

The maintenance of water depth – i.e. dredging and removing sediment – is affected by two factors above all: the quantity of sediment to be dredged and its quality. The latter has improved considerably in the last 25 years, making it possible to relocate fresh sediment elsewhere in the waters. Nevertheless, sediment contains a certain quantity of harmful substances. These are carried into the port from the whole of the Elbe catchment area (especially

from legacy contamination and mining) with the silt. Complying with the requirements of conservation and water protection legislation is therefore a considerable challenge. For instance, work to maintain the water depth is restricted during fish spawning seasons and when oxygen levels in the Elbe are low.

If necessary, port areas with more heavily contaminated old sediment are dredged to a depth that allows fresh sediment to be relocated within the waters during subsequent dredging. This restores tidal volumes and environmentally valuable shallow water zones which were lost due to silting up, while also saving landfill site capacities and lengthy treatment on land. Removing contaminated sediment also makes an active contribution towards **water and marine protection**.

The development and maintenance of waterside infrastructure within the port area are managed centrally and efficiently by the HPA. Most of the equipment needed for dredging is rented. Depending on requirements, this includes numerous specialist machines, ranging from a large trailing suction hopper dredger to a small grab dredger.

Enhancing efficiency and conserving the environment

Considerable endeavours by the river basin community throughout the Elbe catch-

ment area are needed to achieve future improvements in the quality of sediment. The HPA supports the ELSA project, which sets out to eliminate harmful substances from Elbe sediment by offering incentives and expertise for those upstream. A concerted effort has not yet been made to implement effective measures throughout the river basin.

The HPA continuously works closely with Germany’s Federal Waterways and Shipping Administration (WSV) and the neighbouring federal states to improve tidal Elbe **sediment management** across administrative borders. The aim here is to reduce sediment cycles and dredging volumes and enhance the quality of sediment (Elbe remediation).

These measures will help to achieve the road map target for **transition pathway 3 “We embed climate change in our actions and achieve climate neutrality”**.

Road map target: sediment

New

We will improve sediment quality on the basis of new comprehensive strategies that extend across administrative borders, to reduce dredged volumes and conserve resources.



New shallow water zones (→ see section “Natural capital”) and flood space can also have a favourable effect on tidal characteristics and sedimentation. With this in mind, in 2020 measures were discussed within Forum Tideelbe in cooperation with the affected stakeholders and administrators of the states bordering the Elbe. Their implementation is now being examined by the relevant administrative authorities and political decision-makers (→ see www.forum-tideelbe.de).

For years, the HPA has repeatedly been given permission to take sediment to the silt deposit site at the E3 buoy in the North Sea. In October 2019, that permission was extended for an additional five million tonnes with no change in the terms of the agreement. However, the capacity available at the E3 buoy site is no longer sufficient due to the Upper Elbe’s outflow, which has been extremely low for an extended period of time. As a consequence, it was no longer possible to keep the volume relocated to the Hamburg area at Neßsand as low as in previous years.

Depositing options for fine sediment

Against this backdrop, Hamburg is considering several possible deposit sites for relocating fine sediment in line with its needs. The River Elbe and North Sea are subject to national and international legislation concerning environmental protection and nature conservation. As a result, it must always be ensured that any change in main-

tenance procedures does not have negative environmental impacts. Impact forecasts and ongoing monitoring for over 15 years show that depositing dredged material at the E3 buoy does not adversely affect the environment. In the overall ecological assessment, the advantages of relocating sediment towards the North Sea outweigh the disadvantages, despite necessitating longer transport routes (see Fig. 10).

Depositing sediment near the estuary can also help to stabilise the mud flats and foreshore. This is successfully practised in the Netherlands (Mud Motor and Sand Motor projects). Work is currently under way on the necessary permissions for suitable depositing options. Hamburg relies on the support of neighbouring federal states and the German government when it comes to sediment management.

Fig. 9: Overview of dredging volumes, broken down by deposit sites

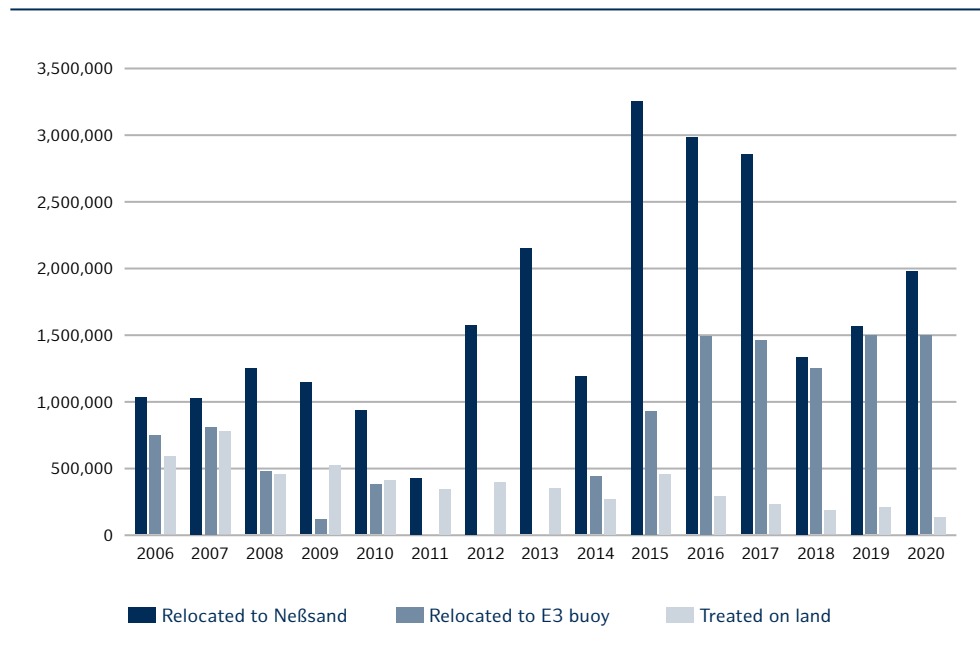
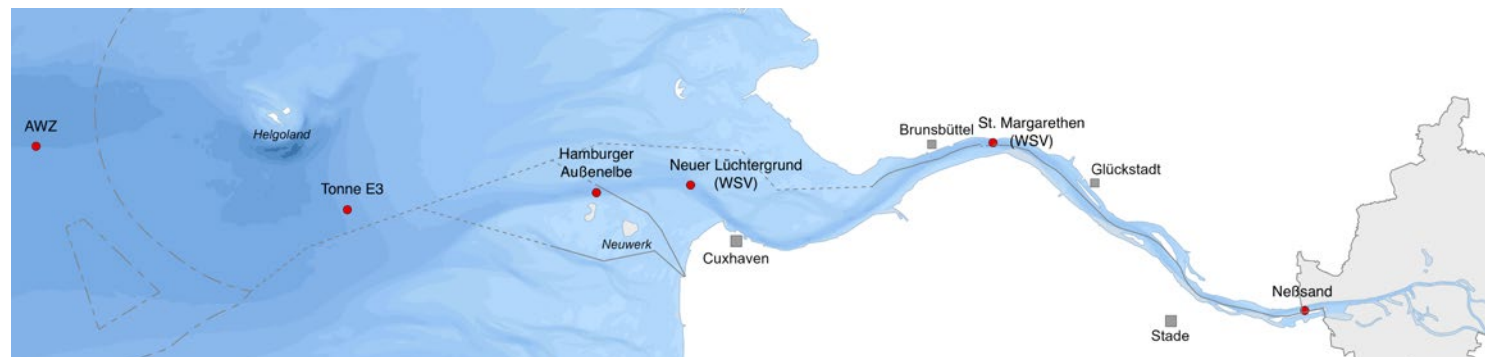


Fig. 10: Depositing options for flexible, adaptive sediment management



Making material flows resource-friendly

More heavily contaminated old sediment is processed at the METHA treatment facility (mechanical separation of port sediment) and on drainage fields, then disposed of on land. The dredged material is taken to a reservoir at the treatment facility or to drainage fields. Rinsing water has to be removed from the Elbe in order to pump the dredged material. The amount of water needed to pump the dredged material depends on the dredger’s technical specifications. A hopper dredger was used in 2020, which halved the amount of **water needed** between 2019 and 2020, taking it to 77,682 cubic metres.

The removal process comprises both **recovery** and disposal of the waste at the open landfill site in Feldhofe. Internal recovery rates are volatile and depend on there being an opportunity to utilise the

waste for landfill construction. The aim is to make do with the existing landfill space instead of using additional space.

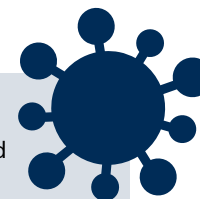
As per the Landfill Ordinance, any **methane emissions** at the landfill sites are recorded by technical equipment and treated using methane oxidation cover soils and a lean gas flare.

Waterborne and overland transportation of sediment

Transport routes and the drive technology used affect **resource consumption**. Due to the closure of the landfill site in Francop, the overland transport route is now approximately 20 kilometres longer in each direction. The trucks needed for transportation are rented, so the CO₂ emissions produced are Scope 3 emissions. The same applies to waterborne emissions because the dredgers are also rented. CO₂ emissions depend largely on the

propulsion technology and fuel used (see Tables 4 and 5).

In 2020, **allocation criteria** for the low-emission hopper dredgers used for water depth maintenance were developed in conjunction with the DNV, without restricting competition unlawfully.



During the **Covid-19 pandemic**, the HPA’s goal was to maintain a functioning port and ensure that key workers such as navigators, pilots and ships’ crews could work in a way that protected the health of all those involved.

Quarantine berths were set aside for vessels with infected crew members. Special measures were introduced to protect staff and harbour pilots.

To enable it to respond to pandemics even faster in the future, the HPA has further developed its **pandemic planning** and **reporting chains** and ensured that it has sufficient stocks of protective clothing, masks and rapid test kits, even for an extended period of time. These measures will be reviewed regularly in the future and revised if necessary. The HPA is also involved in the ARMIHN project for adaptive resilience management at the port. The results of this initiative will be incorporated into pandemic planning by 2022. This project focuses on enhancing ports’ capabilities for action if there is a mass outbreak of an infectious disease on board ships.

Table 4: Energy consumption and CO₂ emissions for the overland transport of sediment

	2017	2018	2019	2020
Energy consumption in kWh	662,082	953,459	3,040,716	2,174,594
CO ₂ emissions in t	163	235	748	535

Table 5: Energy consumption and CO₂ emissions for the waterborne transport of sediment

	2017	2018	2019	2020
Energy consumption in kWh	135,027,684	114,271,077	87,726,979	88,087,280
CO ₂ emissions in t	33,217	28,111	21,581	21,669

Europe's largest railway port: outstanding connections

Excellent hinterland links via low-emission rail transport give the Port of Hamburg a clear locational advantage. Established more than 150 years ago, the port railway is a long-standing fixture at the Port of Hamburg. A third of all the tonnage that arrives at the Port of Hamburg on sea-going vessels is subsequently transported further by rail. In terms of the volume of freight transported between the port and the hinterland, rail already accounts for 50.7 per cent of tonnage (see Table 6). This means that the road map target for **transition pathway 2 "We are developing the port sustainably and with the creation of value for the region"** relating to rail transport has already been achieved. The goal was to increase the proportion of rail transport to over 50 per cent of all goods transported between the port and the hinterland.

The proportion of container hinterland transport accounted for by rail between 2005 and 2020 also increased considerably, up from 31 to almost 47 per cent. In 2020, the port railway network succeeded in:

- Handling an average of 205 freight trains per working day
- Carrying 60,125 trains with 1,618,155 wagons and 2,577,867 TEU

An efficient, resilient rail structure and a smooth flow of traffic are success factors which make it possible for rail operators to offer attractive transport services and give the railway a competitive and environmental advantage over the road.

Road map target: rail traffic

50 per cent

We will play our part in further increasing the efficiency and reliability of rail operations, thereby laying the foundations for increasing the proportion of rail as a low-emission mode of transport to more than 50 per cent of all the goods transported between the port and the hinterland by 2025.



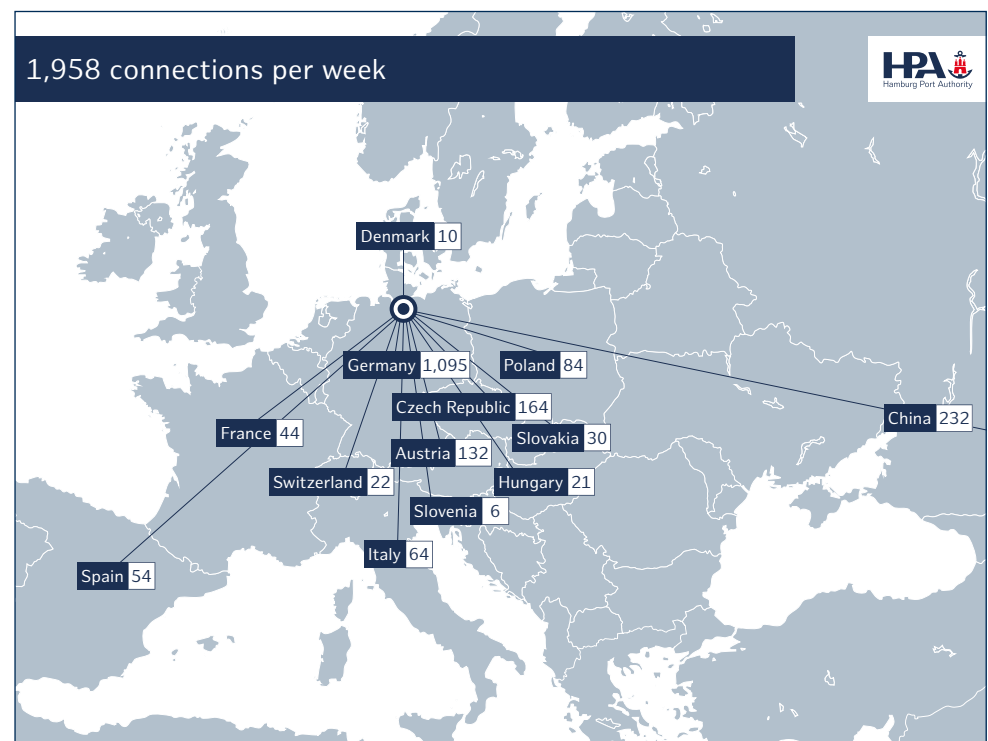
Modal split tonnage rail

50.7%

Table 6: Port railway tonnage, percentage of the modal split

2015	2016	2017	2018	2019	2020	Target: 2025
45.8	46.6	46.6	48.4	49.4	50.7	50

Fig. 11: Container train connections to/from Hamburg per week in 2020



Efficient rail infrastructure and transportation

As the owner and operator of the rail infrastructure, the HPA observes the German Railway Regulation Act and railway engineering standards such as the Deutsche Bahn guidelines. It has a legal obligation to make the infrastructure available to all authorised users without discrimination. At the same time, it has a duty to ensure that the infrastructure is used as efficiently as possible, maintain a high **level of safety** by ensuring the infrastructure is undamaged, and involve users. The operating directives issued to rail operators place them under an obligation to contribute towards the safe running of the railway as well, for example by training staff adequately and monitoring the condition of locomotives and wagons. This plays a crucial role, especially in the transportation of **hazardous goods**.

The port railway network consists of 289 kilometres of track with approximately 755 points. In addition, there are 62 civil engineering structures such as rail bridges and passages, eight signal boxes and a wagon repair workshop. 73 private railway siding companies with an approximate total track length of some 120 kilometres and 470 points are also connected to the network.

The HPA’s aim is to ensure that all structures are in a good condition by 2025 (see p. 35, Fig. 4).

The road map target for **transition pathway 2 “We are developing the port sustainably and with the creation of value for the region”** has been exceeded. Due to the age of the structures, the growing volume of traffic and climate risks, targeted investments need to be made in structural maintenance (→ see section “Maintenance management”).

Road map target: infrastructure

2.0–2.4

We will assess the condition of the port’s traffic infrastructure annually using a school marks system and will see to it that all the relevant structures are, on average, rated as being in good condition (2.0–2.4) by 2025, to guarantee high availability for business and private traffic.



The infrastructure is used by a large number of players. For the HPA, the challenge lies in coordinating a large number of different traffic flows. Punctuality, planability and a smooth flow of traffic all make rail services more attractive and help clients to operate cost-effectively.

Targets: high availability and greater efficiency

The HPA constantly monitors whether its infrastructure development and traffic management focuses on the right areas. To enable it to respond to market and customer needs, it regularly conducts surveys along with statistical and operational analyses covering traffic volumes and infrastructure usage. For growth potential to be realised, fundamentally two areas of action have to be harmonised. Firstly, efficiency should be enhanced without using more space or enlarging the existing rail network so as to create capacity for traffic growth. Secondly, it will be necessary to further develop the infrastructure in a targeted fashion and expand it. This is the only way to achieve the political objective of transferring goods carriage to rail as an environmentally friendly mode of transport. The aim is to be able to process up to 235 trains a day within the track network by 2030 (see Table 7).

In addition to high infrastructural availability, efficient traffic management is needed to increase the use of rail for goods shipments. Long-term challenges are raising

Table 7: Development in number of train dispatches per day

2015	2016	2017	2018	2019	2020	Target: 2025	Target: 2030
196	200	198	204	209	205	220	235

goods handling speeds and ensuring the transport chains' **reliability**. Overall, the HPA is striving to lift the percentage of container hinterland traffic transported by rail to over 50 per cent before 2025 if possible and by 2030 at the latest. To achieve this, the HPA will continue to work on simplifying data sharing, proactively incorporating additional data sources and involving stakeholders.

In the second half of the decade, train capacity utilisation in container transport should reach 80 TEU per day. This will reduce unit costs for rail transport and improve competitiveness. In 2020, the figure fell slightly due to the Covid-19 pandemic to stand at 74.7 (see Table 8).

Stakeholder involvement

Information meetings are held with rail operators and railway siding companies to give them plenty of notice of any engineering work which will restrict operations. Residents are sent letters informing them of engineering work and explaining its purpose. In addition to this, the 24/7 port railway service centre serves as a central

point of contact for customers with questions or complaints. Moreover, the HPA is always open to suggestions or criticism through its involvement in Logistik-Initiative Hamburg's rail working group and information meetings. If there are any issues which cannot be resolved directly, customers can make use of the legally prescribed complaints procedures, e. g. via the German Federal Network Agency (BNetzA).

Reducing energy usage and CO₂ emissions

The HPA aims to make its operations climate-neutral from 2040 onward. Since 2020, it has agreed annual targets with all managers who own energy-consuming equipment regarding their contribution towards reducing energy usage and CO₂ emissions (→ see section "Climate strategy").

In the future, the port railway will take steps to make reductions and enhance efficiency with this goal in mind. Priority will be given to using LED bulbs wherever possible for future extensions, new builds and changes to railway yard lighting.

Energy audits of the signal boxes made it possible to develop a package of measures which is resulting in considerable energy savings. As part of this work, the port railway has introduced a climate protection routine, which includes discussing possible measures on a monthly basis.

Enhancing capacity and productivity

The HPA has removed bottlenecks for both moving and stationary traffic and increased rail capacity by means of expansion projects.

The new Kattwyk rail bridge went into use in December 2020. Along with the new bridge, a double-track passing section was added on what was previously a single-track connection between the Hohe Schaar and Hausbruch station parts. The terminals in the west of the port also benefit from this additional capacity. Thanks to the new bridge, they are now linked more efficiently with the Deutsche Bahn network at the Süderelbbrücke intersection. A second track was also added to the original single-track connection in the Kornweide area.

Reducing environmental impacts and noise

In 2020, approximately 93 per cent of all journeys to and from the port were powered by electricity. This represented an increase of around five per cent on 2018.

Transport connections to Burchardkai
 In June 2021, the last phase of the large-scale project to improve transport connections to Burchardkai was completed following two years of construction work. As part of the project, the former Waltershof railway bridges were replaced and a third track was added to the south of Mühlenwerder station. This has made services between Mühlenwerder station and the Container Terminal Burchardkai (CTB) and EUROKOMBI terminals smoother. Train waiting times have also been reduced. Joining the connecting track in Mühlenwerder with the second siding for the CTB terminal creates the necessary capacity in the port railway network to decrease the volume of truck traffic in the Mühlenwerder area significantly. This makes it possible to boost rail transport by 40 to 50 per cent.

Table 8: TEU per train

2015	2016	2017	2018	2019	2020	Target: 2025
71.3	71.5	72	73.9	76.3	74.7	80

81%

of the wagons are low noise

The connecting tracks and railway yards for electric locomotives are fitted with overhead lines. Approximately 53 per cent of the HPA's total track has such lines. There are no plans to add overhead lines in the remaining areas because these sections are only used for shunting to and from the loading points. It is not practicable to install overhead lines at the loading points because of the processes involved in loading.

Other **incentives** within the system of charges are also aimed at efficient, low-emission usage of the port infrastructure:

- Banded parking fees for stationary traffic
- Modern wagons with quiet brakes: a bonus is paid for each passage by the train. The number of registered wagons equipped with such brakes increased to 258,420 in the reporting period (2018: 205,703). On average, they therefore accounted for approximately 81 per cent of rail traffic from and to the port in 2020.

To reduce noise emissions, the HPA continues to systematically work on the tracks in the vicinity of Hausbruch. This involves working on the surface of the tracks in noise-sensitive areas twice a year.

Increasing usage and conserving land

A central locomotive parking management system was introduced in 2019 to ensure space for parking locomotives is used as

efficiently as possible and at the same time keep tracks and traffic flows free of obstructions due to idle locomotives. Adjustments in operating processes facilitated more **intense usage** of the infrastructure. Throughput on the track network rose to 8,920 TEU per kilometre of track length by the end of 2020 (2018: 8,424 TEU per kilometre) and was therefore up by 5.5 per cent. With regard to all goods transported, the figure remained virtually unchanged in 2020 at 161,240 tonnes per kilometre.

Efficiency increase of

5.5%

From March 2020 onwards, the **Covid-19 pandemic** presented new challenges for port railway operations. It was important to keep trains running reliably in order to supply the population. At the same time, the number one priority was to keep people healthy. Employees who were needed to work at the signal boxes or maintain infrastructure were grouped together in "bubbles". This allowed the number of contacts to be reduced and minimised the potential impact of infections and self-isolation on operations.

During the first lockdown in spring 2020, transport volumes fell noticeably for a short period of time. Connections were suspended and additional layover capacities were needed. The HPA liaised closely with rail operators to keep rail traffic moving nevertheless.

To make more efficient use of existing facilities, the HPA is also working to enhance customer loyalty via new lines of business. These include letting construction material handling space that is used internally to third parties for external construction work within the port or the metropolitan region.

Innovations for tomorrow

In its work within the Association of German Transport Companies (VdV), the HPA engages in national dialogue with fellow experts on technical standards and regulatory frameworks. The HPA also partners with other organisations via development projects, for example to establish a charging infrastructure for innovative **hydrogen** or hybrid locomotives. Close dialogue with customers and industry players also helps to ensure uniform standards in the development of innovations.



Charges for infrastructure usage (INES)
 To reduce the emissions generated by shunting within the port, the HPA is offering incentives through its system INES. Existing measures to encourage the use of shunting locomotives with black carbon particle filters were expanded at the beginning of 2019. Since then, locomotives with SCR catalytic converters and electric/hybrid locomotives have also benefited from discounted fees. Various levels of discount are available, from 50 per cent for locomotives with black carbon particle filters to 70 per cent for fully electric locomotives. The number of registered locomotives eligible for discounts rose from 61 in 2018 to 90 in 2020.

High-quality road network for business and private traffic

About half of all goods are transported to and from the port by road (→ see details of modal split in the “Introduction and port” section). The HPA faces the conflicting priorities of ideally maintaining full infrastructure availability but also effecting the necessary maintenance work in the form of engineering measures. Furthermore, it has to record and manage all other incidents which disrupt the flow of traffic, such as accidents, bridge openings, bomb discoveries, protest marches, etc. Moreover, congestion beyond the port boundaries can also have an effect within the port area.

Responsibility and management approach

The HPA is responsible for the 142-kilometre network of roads and 90 kilometres of cycle paths within the port area. In addition to this, there are 110 bridge structures, tunnels, passages, dams, ditches, 70 kilometres of drainage systems, embankments, ramps, retaining walls, safety strips, roadside verges, lighting, traffic signal systems and road signs.

The HPA takes a forward-looking approach with its maintenance and planning strategy.

Analyses of the operating environment are used to assess future mobility require-

ments and the needs of the port industry so that new builds such as the Köhlbrand tunnel or connections for new businesses in the port can be planned strategically and the funding needed to implement these measures can be secured.

Efficiency and capacity

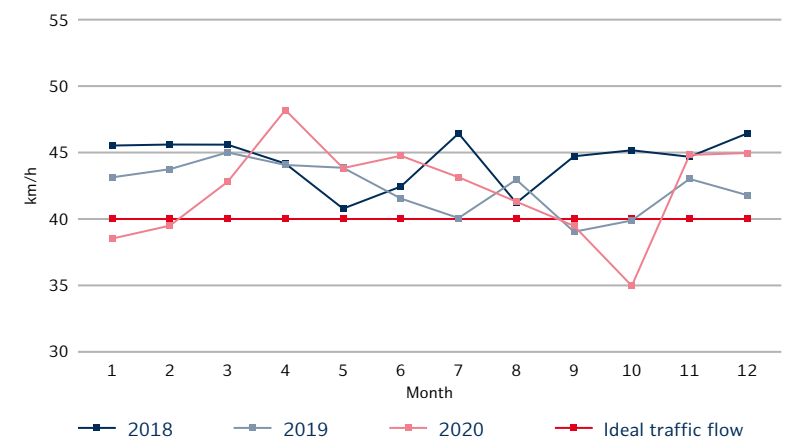
Approximately 23.8 million motor vehicles entered Hamburg’s main port network in 2019, of which 19.2 million were passenger vehicles and 4.5 million were trucks. In 2020, 17.1 million passenger vehicles and 4.4 million trucks accessed the network. Based on an average work day, this equates to approximately 59,000 passenger vehicles and 17,000 trucks. The number of vehicles entering the port area fell in 2020 by 2.6 per cent compared with 2018. The number of trucks remained stable, but there were 6.3 per cent fewer passenger vehicles.

Average speed is an important indicator of the availability and **efficiency** of the road network. It is calculated by using a large number of sensors throughout the port which capture the length of time it takes motor vehicles to cover a certain distance. In 2019, the average speed for vehicles on the main port route was 42.34 kilometres per hour. The average for 2020 was

42.27 kilometres per hour. The maximum speed is 50 kilometres per hour on almost all of the main port route. An ideal, even flow of traffic averaging a speed of around 40 kilometres per hour is the aim (see Fig. 12).

There was a marked deviance in October 2020 for two reasons. Firstly, the Köhlbrand Bridge Run was held, which meant that the bridge was closed completely. Secondly, there was an additional closure of Köhlbrand Bridge lasting two days.

Fig. 12: Average speed, main port route



A central, digital **roadwork coordination system** in cooperation with the city authorities visualises and predicts the possible impacts of travel disruption, boosting the efficiency of the traffic network throughout the city.

Conserving resources

Cleaning systems were installed by the end of 2020 as part of a project to introduce rainwater treatment systems to the Köhlbrand Bridge. These significantly reduce the pollutants which are channelled into the drainage system/waterways. They also help to manage heavy downpours and their effects by retaining a larger volume of water. The project therefore makes an important contribution towards the **RISA programme, which seeks to amend the rainwater infrastructure and improve water management** in the interests of urban drainage.

The HPA helped to develop a resource-conserving process for road surface dressing using 50 to 70 per cent **recycled** materials. It adopted this process in 2013 and has been using it continuously since 2014. The shorter transport routes needed for the asphalt have resulted in a 106-tonne reduction in carbon emissions (Scope 3) since then, while the use of

recycled materials has also conserved 12,000 tonnes of raw materials.

Target: high availability and a safe, environmentally friendly flow of traffic

The preventative maintenance strategy keeps the infrastructure in a good condition (see p. 35, Fig. 5 and 6).

The road map target for **transition pathway 2 “We are developing the port sustainably and with the creation of value for the region”** has been achieved. Due to the age of the structures, the growing volume of traffic and climate risks, targeted investments need to be made in structural maintenance (→ see section “Maintenance management”).

Road map target: infrastructure

2.0–2.4

We will assess the condition of the port’s traffic infrastructure annually using a school marks system and will see to it that all the relevant structures are, on average, rated as being in good condition (2.0–2.4) by 2025, to guarantee high availability for business and private traffic.



The availability of bridges – especially moving bridges – has a major impact on the flow of traffic as a whole. In 2020, the

availability of the Rethe bascule bridge was only about 66 per cent. Due to a hydraulic defect, the bridge had to remain in open position for several months so that vessels could pass through, as ship traffic takes priority over motor vehicles.

At the HPA’s Port Road Management Center (PRMC), the status of the technical infrastructure and current traffic is recorded and monitored in its entirety so that constructive steps can be taken promptly to adapt traffic flows to changing situations. The data collected is also used for long-term assessments of traffic trends. It serves as the basis for strategic decisions and adjustments to ensure that the road infrastructure is fit for purpose. In particular, it feeds into the DIVA information system, which provides **real-time information** about traffic volumes. There are 13 DIVA boards located around the port, which display the following traffic information:

- Available parking spaces to reduce the number of vehicles searching for spaces
- Real-time traffic situation and information about hold-ups such as bridge closures, roadworks, etc. to redirect traffic and to reduce slow-moving traffic and unnecessary detours

- **Travel times** to assist in planning arrival times (which also helps with planning at the terminals)
- Warnings so that hazards are recognised sooner
- **Route recommendations**

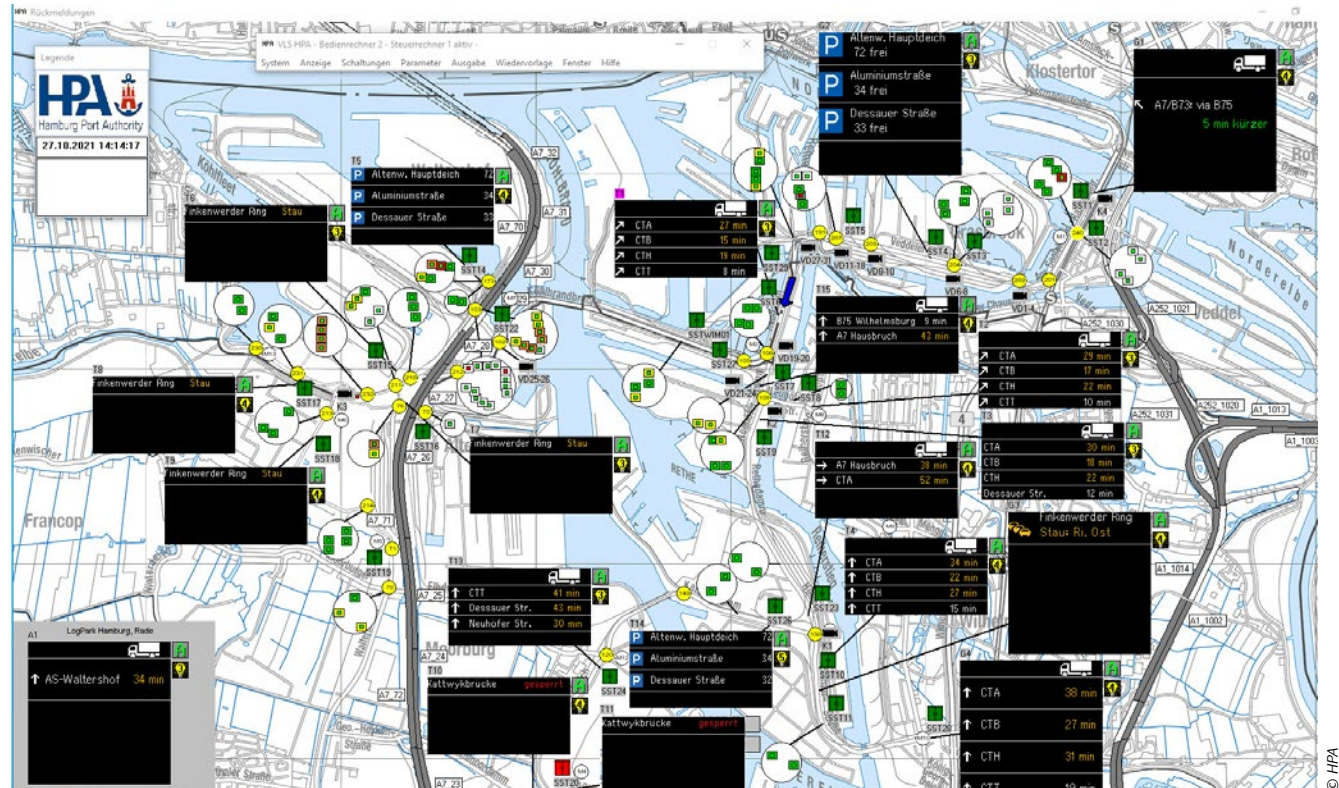
This optimised management **reduces traffic** and consequently decreases emissions of noise and harmful substances.

The HPA's traffic management activities are aimed at increasing the capacity of the port's roads by boosting efficiency. The DLSAI project is dedicated to digitalising traffic lights and is looking into communication between the signal systems and road users. Working together with the police, it uses digital traffic management measures and the PRMC to monitor traffic and optimise its management. The HPA operates an extensive network of sensors and cameras to generate the necessary data. Drivers receive information almost in real time and can respond to the current traffic situation (see Fig. 13).

Involving stakeholders

Close contact with local residents and those who use the traffic infrastructure is very important to the HPA. To facilitate this, it has established communication channels such as letters to residents, information events, online notifications and the DIVA boards installed in the port that provide traffic information.

Fig. 13: The PRMC's graphic interface showing sensor technology and DIVA boards



Kühlbrand crossing – the project of the century

The Köhlbrand Bridge is the most important link on the main port route. It connects the eastern and western parts of the port. The bridge's useful life will reach a critical point in 2030; it has been at the limits of its load capacity for some time now.

Until a replacement structure can be completed, one of the HPA's key tasks is to make it possible for port traffic to keep using the Köhlbrand Bridge. Existing measures to relieve pressure on the bridge (ban on overtaking, minimum vehicle distance rules) remain in place (→ see the 2017/2018 sustainability report).

Thanks to the **smartBRIDGE** project, the structure’s **condition is assessed using sensors** nearly in real time. A digital twin is being used to bring the Köhlbrand Bridge to life, enabling analogue and digital data on its condition to be combined. Building information modelling (BIM) makes it possible to collate and evaluate key data from a traditional structural inspection, details of loading and weather conditions. This method allows damage to be anticipated more precisely and contributes towards forward-looking maintenance management. The aim is to **extend the life** of the structure (→ see www.smart-bridge.hamburg).

Three potential ways of constructing a future-proof replacement for the Köhlbrand Bridge were examined: a new bridge, a bored tunnel and an immersed tunnel. The HPA commissioned feasibility studies for all three. The immersed tunnel was found to be the most expensive option. It would also entail significant disruptions to the

aquatic ecosystem and an extended closure of the Köhlbrand waterway. The bridge and bored tunnel were considered equal from a technical perspective, but the latter was preferred – despite being more expensive – as it is the most future-proof solution. The bored tunnel has the advantage of allowing even larger container ships to approach the Altenwerder terminal in the future. At present, the height limit for passing vessels is 50 metres.

The Free and Hanseatic City of Hamburg, represented by the HPA, has already started the preliminary planning process for a 2.5-kilometre bored tunnel to replace the current bridge. This includes design development, application planning and the planning permission process. Provided permission is granted, construction work is due to begin in 2026, which would mean the tunnel could become operational in 2034. Once traffic can flow through the tunnel, the Köhlbrand Bridge will be dismantled.

Safety and accident reduction

Information about the frequency, location and nature of accidents is relayed by Hamburg’s police force. The HPA evaluates this information and uses it as the basis for traffic planning, such as at Finkenwerder Ring in the western part of the port. With up to 250 accidents a year, this intersection is one of Hamburg’s crash hotspots. As approximately 70 per cent of these **accidents** happen while vehicles are changing lane, the HPA installed an additional traffic light system in 2019. This separates two flows of traffic at the Finkenwerder Straße/Vollhöfner Weiden junction. The new layout is having a positive effect: in 2020, the number of accidents fell by almost 50 per cent compared to the previous year. Although the lower volume of traffic prompted by the Covid-19 pandemic also plays a role in this reduction, accident figures were only down by approximately 25 per cent in the remainder of the main port network (see Table 9).

Healthy, environmentally friendly mobility

Cycling is becoming increasingly important in Hamburg. However, it is under-represented in the Port of Hamburg compared with other central locations within the city.

Almost
50%
fewer accidents in
2020 than in 2019

Table 9: Accident rate in the major road network in accidents per million vehicle kilometres

2015	2016	2017	2018	2019	2020	Target: 2025
6.5	5.2	4.9	5.1	5.5	4.2	3.9

Cycling is prohibited on a number of routes, such as the Köhlbrand Bridge. Like the city, the HPA is keen to do more to promote cycling in the port and always incorporates it into new plans. For instance, a new 900-metre cycle lane and footpath has been created on the new Kattwyk railway bridge. By 2020, cycle paths had been created on both sides of further sections of road that make up Veloroute 11. Meanwhile, in Finkenwerder, the HPA has completed an approximately 1,300-metre cycle lane and footpath along the old railway line running between Finkenwerder Norderdeich and Osterfelddeich.

2.2 km

additional bicycle route

Bicycle traffic within the port area focuses largely on Veloroute 11 (→ see Velorouten-hamburg.de). This also includes the Old Elbe Tunnel. Due to coronavirus, a number of people are also cycling directly to their places of work in the port. Some cyclists use a combination of bikes and public

transport. The port does not currently attract many tourists on bicycle. However, this type of cycling traffic is welcome and has expansion potential, for instance in connection with the port discovery route (→ see the “Port tour by bike” flyer) and the Cruise Centers.

Innovative collaboration

With the renovation of the Kattwyk Bridge in the Port of Hamburg, the HPA is taking a new approach to collaboration with the German construction and consultancy sector. The new Kattwyk railway bridge opened for trains crossing Hamburg’s Süderelbe in June 2021 (→ see section “Rail”). This means that the old Kattwyk Bridge, dating from the 1970s, can undergo a complete programme of renovation. It was previously used by both road and rail traffic, but will serve purely as a road bridge in the

future. The traffic installations on the approach to the bridge and surrounding buildings are also being modernised. The HPA is the first public-sector customer to enter into an **integrated project alliance** with its partners to ensure that the renovation goes smoothly. As part of this alliance, all of the key players involved in the refurbishment (planning, construction, engineering/road building/electrical engineering) formed a team at an early stage and signed a joint alliance agreement guided by a “best for project” mindset. The team members developed and planned the construction specification jointly. Now, they are working on the build together. The HPA hopes that this “best for project” ethos will lead to more work being completed on time and a more straightforward construction specification with fewer amendments.

The volume of road traffic in the port fell in 2020 as a result of the **Covid-19 pandemic**. As a lot of people were working from home, there were fewer passenger vehicles in particular on the roads in the port. The average speed was therefore higher during this period.

Wherever possible, tasks were switched to remote work. Before the pandemic, it was only possible to monitor the current traffic situation, call up traffic data and activate warnings on the DIVA boards from the PRMC itself. During the pandemic, the HPA made it possible to access the system remotely. This option is to be retained in the future.



03

Climate and the environment



Climate and the environment

6 CLEAN WATER AND SANITATION



- It focuses on reducing water usage, supporting groundwater formation by unsealing soil, and making greater use of rainwater.
- Maintaining the biotope network within the port is the objective when measures are developed and implemented.

7 AFFORDABLE AND CLEAN ENERGY



- Renewable energy plants have been installed and transport routes shortened with the aim of using renewables and enhancing the HPA's energy efficiency.
- Fossil fuels are planned to be phased out by 2040.

11 SUSTAINABLE CITIES AND COMMUNITIES



- The HPA fosters biodiversity via extensive green management alongside the railway tracks.
- Heritage sites like the Old Elbe Tunnel are preserved and other buildings, public places and green spaces are incorporated into development plans for a more attractive working environment in the port area.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



- The HPA is focusing on changing the procurement and the use of renewables.
- It is guided by the life cycle costing (LCC) principle. In addition, it regularly compares calculations and carries out substitution assessments and uses these to identify potential for optimisation.

13 CLIMATE ACTION



- The HPA builds structures that serve the aim of risk mitigation and disaster control, among other things flood defences. Polders also serve to reduce financial losses in the case of flooding.
- The HPA regularly holds workshops to share the skills needed to read and interpret climate change signals.



Climate and environmental protection

The HPA's business activities have **impacts** on people, the environment and the climate. These are caused by ship emissions stemming from the use of fossil fuels, noise, odours and light resulting from construction work and businesses, operations, and disruptions to the aquatic ecosystem of the River Elbe. With its environmental guidelines, the HPA has adopted a **precautionary principle**. It is also committed to environmental and climate protection, nature conservation, **energy efficiency**, and the avoidance of measures which have a detrimental effect on quality of life and the environment, both in the port and in the city as a whole. Moreover, the guidelines discuss the careful use of resources, nature conservation, and reducing pollution.

Challenge

With the EU Green Deal, highly ambitious targets in line with the SDGs are to be expected in the coming years. There will be targets for **preserving biodiversity** and the **zero pollution ambition** for air, water and soil. This will lead to usage conflicts in the context of utilising space for commercial purposes versus the requirements for development and the protection of **natural capital**. The challenge is to balance this dichotomy by finding the best possible ways to limit the impact of all port development projects.

Management approach

In 2010, the HPA developed environmental and climate protection strategies and adopted binding guidelines and targets. The energy management system was introduced in 2016 in accordance with DIN EN ISO 50001 and is regularly certified externally. It ensures that there is a continuous improvement process. Target agreements between the supervisory authority and the Executive Board are used to steer the achievement of climate targets and delegate them to the next managerial level.



Climate strategy

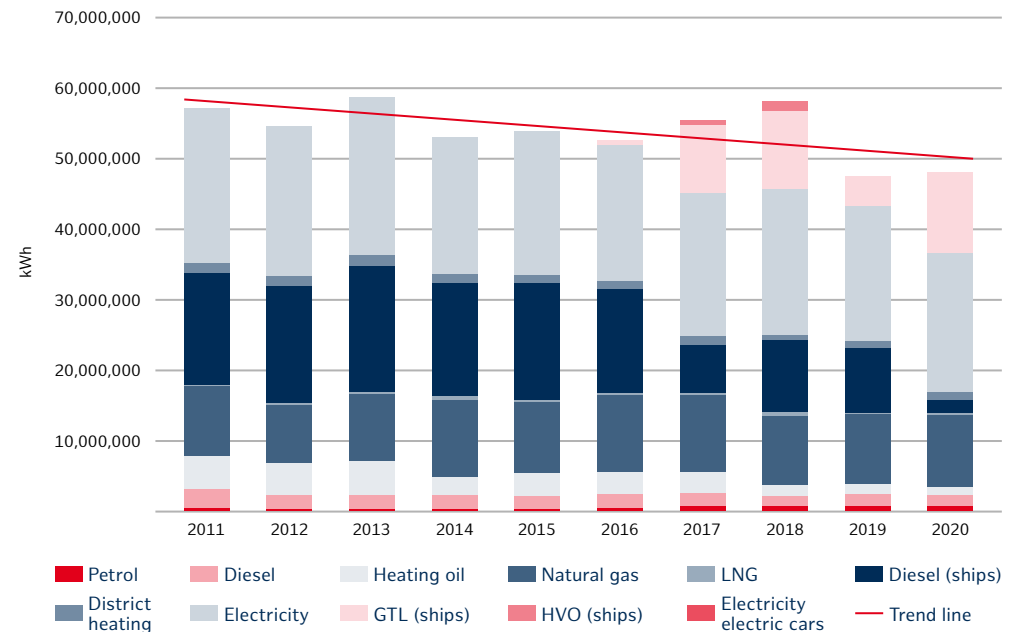
The HPA’s current climate strategy consists of two pillars: a **climate protection strategy** and a **climate adaptation strategy**. Whereas the climate protection strategy was developed back in 2011 and contains very **concrete targets**, the adaptation strategy centres on the signs and potential consequences of climate change. Measures for an adaptation strategy are developed by identifying impacts throughout the value chain.

Climate protection strategy

The first update of the Hamburg Climate Plan was published and came into effect in late December 2019. It takes into account the requirements of the new Hamburg Climate Protection Act. As a public-sector company, the HPA has an obligation to meet these targets.

Energy efficiency and the use of renewables support achievement of the Hamburg Climate Plan’s objectives of limiting global warming to less than 1.5 °C. The HPA has set itself the target of reducing its carbon emissions by 50 per cent by 2025 and cutting them by 100 per cent by 2040, i.e. becoming climate-neutral.

Fig. 1: Energy consumption by the HPA Group



The HPA has been recording its material flows for energy since 2011. Energy consumption fluctuates, primarily due to the volatile need for heat and deployment of the waterborne fleet. Due to efficiency-

enhancing measures, a downwards trend can be observed between 2011 and 2020 (see Fig. 1). All consumption data is viewed and measured using the ISO 50001 management system.

The Energy Services Act (EDL-G) requires us to reduce energy consumption demonstrably. The HPA has set itself a corresponding target. Achievement of this is checked annually by an independent certifier.

The road map target for **transition pathway 3 “We embed climate change in our actions and achieve climate neutrality”** was achieved on average, with slight annual fluctuations.

Road map target: energy efficiency

- 5 per cent

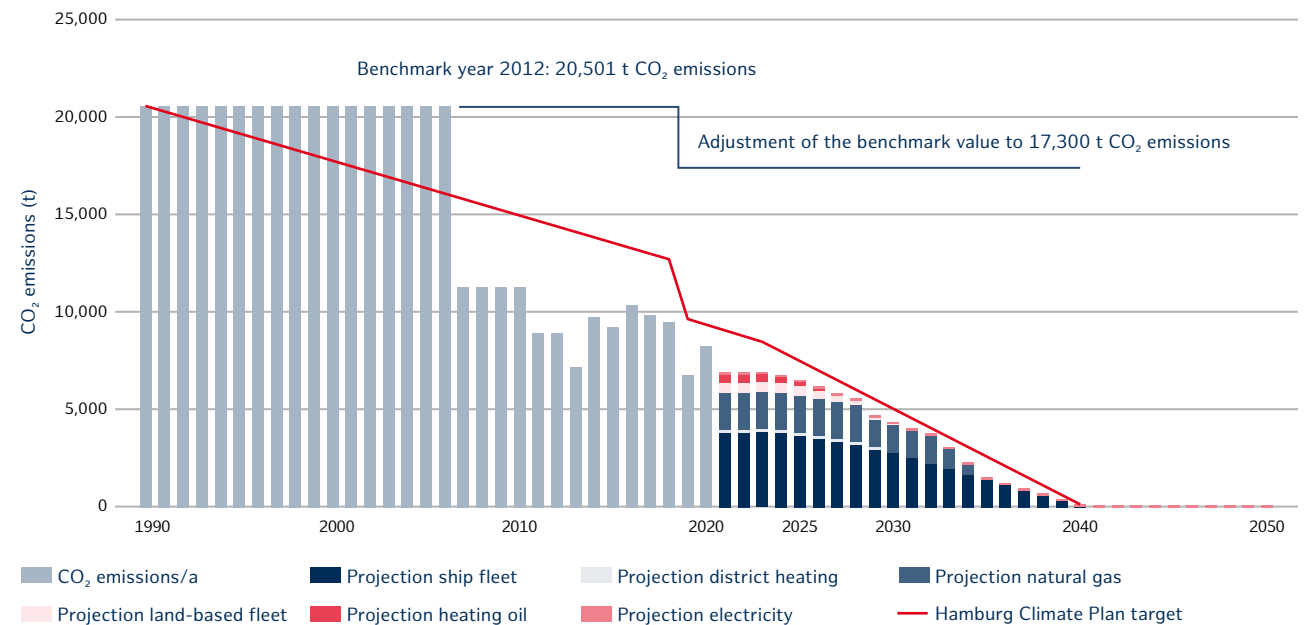
We will reduce energy consumption by 0.5 per cent per annum by increasing our energy efficiency and will achieve savings of 5 per cent by 2025 in comparison to 2019.



Climate-neutral by 2040

The HPA uses the model-based approach climate model of the Free and Hanseatic City of Hamburg, which evaluates the reduction targets using 1990 (Paris Agreement) as a baseline. The HPA calculated its first valid carbon footprint of 20,501 tonnes of CO₂ (baseline) in 2012. Accordingly, 2012 serves as the benchmark year. As no emis-

Fig. 2: Climate model as per the Hamburg Climate Plan



sions data was collected between 1990 and 2011, the HPA applied this benchmark figure to 1990 (see Fig. 2). Emissions are calculated using the Greenhouse Gas Protocol. The red line is the target trajectory

for reducing carbon emissions to virtually 0 by 2040, with 1990 as a baseline. The area above the red line is a geometric representation of the absolute CO₂ reduction target.

Initial reductions were made between 2007 and 2011 by purchasing CO₂ certificates. Since 2011, the HPA has been procuring 100 per cent green electricity for most of its assets via its incorporation into the Free and Hanseatic City of Hamburg’s power supply contract. This electricity has an emission factor of 0 kg CO₂/kWh making it possible to reduce carbon emissions by more than 50 per cent between 1990 and 2020 (see Tables 1 and 2).

The baseline was adjusted in 2019. It was lowered to 17,300 tonnes due to the leasing (Scope 3) of ships in the fleet. To remain in the target zone – i. e. below the red line – in the future, additional

reduction measures will be needed starting in 2025 at the latest.

The blue bars (see Fig. 2) show annual CO₂ emissions up to 2020 and represent the difference between the baseline figure and the annual carbon reductions recorded in connection with measures.

The forecast figures visualise the planned phase-out of fossil fuels. Each division or unit is given an annual CO₂ emissions reduction target, calculated pro rata based on the total energy consumption. To stay in the target zone below the red line, an additional 311 tonnes of carbon need to be saved every year from 2021.

The road map target for **transition pathway 3 “We embed climate change in our actions and achieve climate neutrality”** has already been met.

Road map target: carbon emissions

- 50 per cent
We will reduce our direct carbon emissions by 50 per cent by 2025 in comparison to 2012.



As well as routinely **conserving energy and boosting efficiency**, the aim is to gradually phase out fossil fuels to achieve the 2040 target compared to the benchmark year of 2012 (1990):

- Heating oil by **2025**
- Natural gas by **2030**
- 50 per cent of fuels by **2030** (or a 50 per cent CO₂ reduction)
- 100 per cent of fuels by **2040**
- All new buildings or properties must be planned and built to be fossil-free.

In recent years, the HPA has already achieved visible successes in reducing CO₂ and conserving resources:

- Since 2020, it has used 100 per cent green electricity.
- Heating oil is continuously substituted by the use of photovoltaics and heat pumps.
- Use of electric vehicles is growing year by year, prompting a corresponding increase in the necessary charging point infrastructure.
- Lighting has been switched to LEDs.
- Drive technology has been optimised by means of efficient frequency control.
- Onshore power facilities for berthed ships reduce the fuel consumed by the HPA’s own fleet.
- Paper use per employee fell by almost 50 per cent between 2013 and 2020.

The climate footprint was verified by the DNV in 2020. Additional climate protection measures are set out in the other chapters.

Table 1: CO₂ reductions in tonnes per year

	2015	2016	2017	2018	2019	2020	Target: 2030	Target: 2040
Target value	6,832	7,106	7,379	7,652	7,651	7,962	12,325	17,300
Actual value	11,367	10,248	10,723	11,101	10,508	9,553		

Table 2: Cumulative CO₂ reductions in tonnes since 1990

	2015	2016	2017	2018	2019	2020	Target: 2030	Target: 2040
Target value	88,822	95,928	103,307	110,959	118,610	126,561	228,315	378,519
Actual value	96,314	106,562	117,285	128,386	138,894	148,447		

Climate change effects



Maritime accessibility, guaranteed space utilisation and functioning traffic connections are fundamental prerequisites for the Port of Hamburg’s **ability to compete and future viability**. The HPA has developed a reference framework in order to gain an initial overview of possible vulnerabilities throughout the value chain and supply chains.

Climate change effects are identified using the results of the scientific analysis of small-scale climate change signals (12 km × 12 km) commissioned in 2017 by the Climate Service Center Germany (GERICS). These results fed into a location-specific climate fact sheet with climate parameters (temperature and precipitation) for the 21st century.

The consequences of climate change will affect and impair the HPA’s business activities along with the accessibility and availability of the port and its infrastructure via various **chains of action**. The HPA already

responds to high winds, rising sea levels, drought, heavy downpours and heat along with the associated conflicts:

- It checks whether mega-ships can still enter the port and berth there safely in high winds. The HPA is implementing a new mooring programme in conjunction with Europe’s leading software in this area, Windlass. It supports the modernisation, equipping and future construction of quay walls along with their bollards and fender systems.
- By contrast, rail and road networks run the risk of flooding in heavy downpours. With this in mind, the HPA believes it is essential to build up redundancies for routes to and from the hinterland so that it is prepared for extreme weather events. Alternative rail routes also ensure that the port is accessible when sections of track are out of use.
- Meanwhile, more frequent extreme occurrences – such as flooding in the Upper and Middle Elbe – may trans-

port higher levels of contaminated sediment from these regions to the port and further impede sediment management, for example if the maximum values set out in existing permits are exceeded. Additionally, a rise in the temperature can lead to more frequent anoxia situations, which then prevent maintenance measures from being implemented due to water protection considerations.

- In order to avert limitations on track usage due to strong winds and fallen trees, the green management system at the port railway was developed further and intensified.

Accessibility from the sea, secure land use and functioning transport connections are basic prerequisites for the Port of Hamburg’s competitiveness and future viability.

The climate changes listed in table 3 are to be expected in both the short and long term. Risks and opportunities can be assessed using the available climate change information. The organisation

needs to investigate when an impact will occur and how severe it will be. Using this information, the commercial consequences can be determined and countermeasures identified.

Affording the river more space

Changes in the water space and the concomitant loss of tidal volumes have been the focus of political and societal attention for several years. This is because the

loss of tidal volumes goes hand in hand with accentuation of the hydromorphological conditions, resulting in increased upstream sediment transport into the Port of Hamburg.

Table 3: Results of the 2019 HPA/GERICS workshop: climate change risks and possible commercial impacts



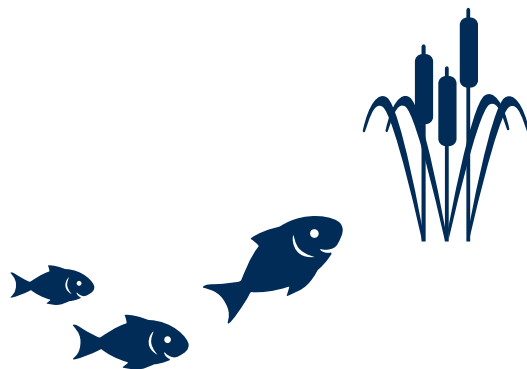
The HPA is therefore counteracting this elsewhere with the creation of the Kreet-sand tidal shallow water zone and with the Billwerder Island measure, expected to result in the creation of approximately 37 hectares of tidal water space by 2022. Kreet-sand alone will generate tidal volumes of approximately one million cubic metres.

Within its own jurisdiction, the HPA has so far successfully pursued the goal of having a positive or at least balanced **water footprint**, with changes in space resulting from construction work being recorded in relation to specific measures rather than year by year. Potential changes to the water space and volume have become an important aspect to consider when port development measures are planned, regardless of statutory balancing obligations (payments to the Elbe Habitat Foundation).

Natural capital

Building projects and other infrastructure investments by the HPA inevitably involve vegetation structures and stretches of water which are home to various animals and plants. Huge quantities of soil are also moved in connection with construction work.

The **Covid-19 pandemic** provides drastic evidence of the importance for human health of conserving natural habitats. Functioning ecosystems are a fundamental prerequisite for human life. Consumer behaviour and changing land use along with the associated loss of intact ecosystems can cause more pathogens to jump from animals to people and spread rapidly, as in the case of the novel coronavirus.



Management approach

A single specialist unit is responsible for both environmental planning and permit management. With its interdisciplinary team, this specialist unit is therefore involved in planning infrastructural measures right from the start. The team is made up of experts with backgrounds in various academic disciplines, the natural sciences, planning and law.

Managing material flows: soil

The HPA has set itself the goal of using the natural resource soil as sustainably as possible. The HPA's soil management working group coordinates soil requirements and surpluses exceeding 500 cubic metres to facilitate reuse and avoid disposal. The working group then uses this as the basis for making proposals regarding what to do with surplus soil and, in close consultation with the projects, for developing binding rules for soil incorporation. In 2019 and 2020, solutions were found to reuse a total of 492,900 m³ of surplus soil.

Biodiversity

On Billwerder Island, south of the timber port, the HPA has established a protected area of tidal, shallow water mudflats with gentle currents for the Elbe water dropwort. To create this area, the two northern basins at the water extraction and pumping facility on Billwerder Island were reconfigured. They are part of the former Kaltehofe filtration plant for Elbe water. The first Elbe water dropwort seedlings were planted there in August 2020.

During work to dismantle the old Rethel Bridge pylons, it emerged that they were being used as a breeding ground and nesting place by several jackdaws (*Corvus monedula*), which are a protected species. The HPA therefore postponed the dismantling work until the birds had finished breeding and raising their chicks on the existing structures. At the same time, nesting aids for jackdaws were installed on the pylons of an adjacent power line so that the birds still have a breeding site in their habitat.

Creating the Kreetzand tidal shallow water zone should mean that the area evolves into a very precious habitat which will be protected together with the Auenlandschaft Norderelbe nature reserve. For example, the shallow water zone serves as a place of refuge for a variety of fish, while its banks offer optimum conditions for the Elbe water dropwort, which is found nowhere else in the world.

492,900 m³
of soil were reused



04

Values and people

Values and people

3 GOOD HEALTH AND WELL-BEING



- The process of steadily substituting fossil fuels while increasing the use of harmless substances continues so as to reduce pollution and contamination of the air, water and soil.
- Air pollutants are also being reduced by using onshore power for berthed ships and electric vehicles, for instance.

4 QUALITY EDUCATION



- A wide range of training is available on topics such as equality, well-being and health, but also energy efficiency, environmental protection and resilience. Courses are also run on soft skills, first aid, and conflict and communication.
- Information about sustainability is communicated to employees within the framework of annual lectures. In the future, the use of e-learning tools is also planned.

5 GENDER EQUALITY

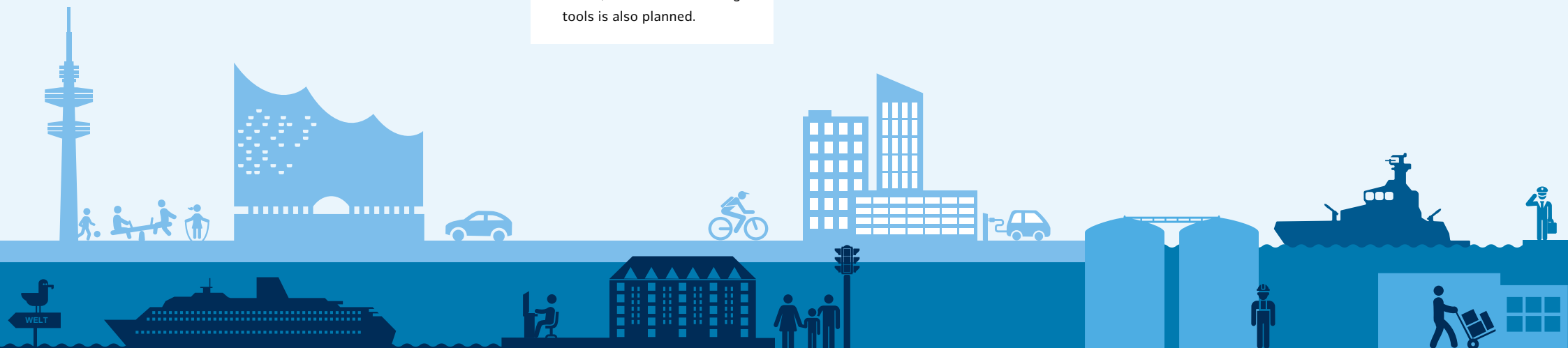


- Equal opportunities and gender equality are firmly embedded at the HPA via its equal opportunities plan. The company also implements a wide range of measures.
- Women receive targeted career support to enable them to take on management roles.
- Gender-neutral language is used throughout the Group.

8 DECENT WORK AND ECONOMIC GROWTH



- Surveys are conducted on topics such as stress levels, communication within the team and with managers, treatment of staff, and appreciation.
- Comprehensive re-integration management provides support for individuals who experienced longer periods of illness and aids them in readjusting to the work environment.



Navigating the coronavirus crisis safely

The coronavirus presented huge challenges for the HPA because, as the port operator, it is responsible for ensuring the accessibility and availability of the port at all times. This is essential in maintaining supply chains and ensuring that the population has access to important goods, such as medical products. Most of the HPA's employees are therefore classed as **key workers**. Accordingly, approximately 35 per cent of staff members had to continue working on site during the Covid-19 pandemic, while 22 per cent worked at least partly on site. From the beginning of the pandemic, the HPA's top priority was keeping its employees safe. A task force was therefore established right at the start, which met regularly. Its aim was to avoid staff absences due to illness and self-isolation to the greatest possible extent and to maintain the company's performance so that the port remained fully functional.

Working together, the specialist health team acted quickly and efficiently. The team members had to address numerous questions: what technical means are available to provide protection? How many masks do we have and how many more of what kind do we urgently need to order? At this stage, it was impossible to foresee how long the crisis would last. Who is vulnerable, what working practices do we need to adopt, and how can the many different processes be adapted to keep workers as safe as possible? The team created organisational structures and adjusted working processes to enable staff to maintain the recommended distance from one another. They also set up a contact-tracing team, which at times consisted of as many as 22 employees. A coronavirus rapid-testing team was trained to enable staff to work at the port safely. Especially with regard to occupational safety, measures such as mandatory

mask-wearing represented an additional inconvenience. It was important to keep ensuring that employees accepted the precautions.

Approximately 900 members of staff were able to work remotely. Employees were supported by means of training, such as seminars on self-management for staff working from home and remote leadership. Open meetings discussing pandemic-related issues were also held on a regular basis. Working from home did not lead to a loss of productivity. In retrospect, the HPA overcame the crisis well despite registering 36 infections.



Motivated employees

The HPA employs 2,045 people (1,872 active staff members), of whom

- 438 are women
- approximately 8 per cent are civil servants
- 172 are severely disabled
- 278 work part-time – 93 men and 185 women
- 14 have special contracts
- 267 are managers, including 54 women and 5 people with severe disabilities; 55 are civil servants.
- The average age is 47.

The HPA's employees covered by collective bargaining agreements are under the collective bargaining agreement of the Labour Law Association of Hamburg (AVH). All employees subject to collective bargaining agreements receive both a company pension and performance-based pay. Staff turnover stands at 4.0 per cent – a 1.3 per cent decrease on 2019. The lower churn rate stemmed from a reduction in both unplanned turnover and severance agreements.

HR strategy and management

HR management is performed by various specialist departments. The business partners act as internal consultants. Meanwhile, the Recruitment and HR Marketing team fosters links with schools and higher education institutions to attract skilled workers. It also presents the HPA as an employer. The People and New Ways of Working department develops concepts for the future.

The HR strategy focuses on recruiting, further developing and retaining staff. It pursues four strategic objectives:

- Digital and time-saving: we support you with efficient HR processes right from day one.
- Transparent, straightforward and focused on you: in person or through mobile solutions, we are dedicated to ensuring a positive and professional customer experience at all times. You reflect high satisfaction back to us.
- Reliable and up to date: we ensure that the HPA is flexible in both structural

and organisational terms. We always stay one step ahead and shape the conditions needed to keep pace with the evolution of our diverse company.

- Human-digital blend and promoting future development: we forge training and development paths together. We change the nature of leadership as a team. The use of AI and automation (robotics) will change many jobs over the coming years. Humans and machines work together on products in human-digital teams. This process is proactively supported.



The HPA strives to be an attractive employer. To check its progress in achieving this target, it has developed a set of measurable KPIs:

- Social well-being index: employees' social well-being is evaluated using a number of questions from the staff survey. The questions centre on whether the respondent feels they and their work are valued by line managers and within their team of peers (see Table 1).
- Attractive work index: figure derived from questions in the staff survey about how manageable the workload is, how interesting and varied the job is, and about communication and organisation at work (see Table 2).

The occupational health management is a holistic health concept which integrates

Table 1: Social well-being index

2019	2020	Target: 2025
7.3	7.6	7.6

Table 2: Attractive work index

2019	2020	Target: 2025
7.2	7.6	7.6

all levels of the hierarchy, includes staff participation and is geared towards the strategic corporate goals.

The results of the annual staff survey are worked out using 12 key questions and numerous more in-depth questions in a certified online survey system belonging to the service provider FAVOX GmbH. Responses are given using a scale from 0 to 10 points. In the online-based analysis of soft factors, the results are shown for each organisational unit and made available in this level of detail.

Scores over 7.0 (7.0–8.5) are classed as “good” (see Table 3). This is a high figure compared with other companies. The aim is to maintain these scores and make the survey more representative by increasing the percentage of staff who respond. The response rate stood at only slightly more than 50 per cent for the most recent survey. Using the results of other clients' surveys, the service provider completes a comparative assessment.

Table 3: Satisfaction survey

2019	2020	Target: 2025
7.5	7.9	7.9

The road map target for **transition pathway 1 “We are a reliable partner for the Port of Hamburg’s/the HPA’s stakeholder groups”** has been met.

Road map target: employees

KPI

We will establish a system of key performance indicators based on criteria that mark the HPA as an attractive employer both internally and externally. We will conduct an annual staff survey regarding health and employee satisfaction and will achieve good results.



Addressing demographic change

“Fit4Future” is the HPA’s overarching programme of initiatives geared towards overcoming the challenges of demographic change. During the reporting period, it completed two sub-projects: one on data analysis and demographic indicators, and another devoted to HR marketing.

Various networking formats are used to strengthen a collegial corporate culture, such as a networking lunch and managerial dialogue. A new sub-project dedicated to non-managerial career paths has been rolled out as part of Fit4Future.

Over the next few years, many professionals and managers will retire from the company. To attract new talent, the HPA has sharpened the employer profile with which it positions itself on the market. A new employer brand has been developed with the active involvement of staff. It encapsulates the HPA's values, culture and identity. The HR marketing campaign "Opportunities" conveys the organisation's strengths as an employer, as pinpointed by its employees: reliability, development, identification, foresight, pioneering spirit and variety.

4,041
applications
 in 2019

Its objective is to attract a higher number of applications. In 2019, 4,041 applications were received. In 2020, it was just 2,950 – probably due to the Covid-19 pandemic. A third of all applications are submitted by female candidates.

The HPA has also expanded communications with potential applicants via a new company blog called the HPA (B)LOG-BUCH. Marketing aimed at higher education institutions was stepped up as well. Formats such as (digital) company tours establish contacts to potential candidates early on. There is also a special focus on the next generation of female workers.

Knowledge management

As well as recruiting new managers, the HPA is consciously ensuring that knowledge is passed on so that the necessary expertise remains within the company. Since 2019, the company has proactively organised structured, professionally guided knowledge sharing, especially when there is a change at managerial level or long-standing knowledge holders leave the organisation.

Training and continuing professional development

Training and continuing professional development are very important to the HPA. Alongside industrial and commercial apprentices, the HPA offers placements for trainees, students on dual study courses and interns every year. It is strengthening dual study courses with a project entitled "Ausbildung der Zukunft" (Apprenticeship of the Future).

The HPA offers a wide variety of development opportunities and targeted training schemes for all of its employees. By introducing e-learning formats, it makes it pos-

sible for staff to learn at their own pace, whenever and wherever it suits them. Blended learning formats also make the programmes more attractive.

The courses on subjects such as leadership, health, law, personal skills, IT, occupational safety and current issues are well received. In response to the growing use of artificial intelligence in workflows, the HPA is also developing specific measures for collaboration within human-digital teams. Over the next few years, there will be an increase in the training available in this area with a view to enabling staff to overcome these challenges. The courses focus on improving employees' and managers' digital skills and developing targeted programmes to foster a digital mindset at the company.

In total, staff completed 3,690 hours of training in 2019 and 3,744 hours in 2020. Women made greater use of the training on offer than men.



The changing world of work

Demographic change, the resulting shortage of skilled workers and digitalisation are all changing the way in which people work with one another and with machines. Within society, the meaning of work as a whole is changing. This affects businesses like the HPA.

Since the Covid-19 pandemic, there has been an increase in teams working together remotely or using hybrid models. This “new normal” makes it necessary to develop new forms of collaboration, strengthen cohesion within individual teams and guide employees through this process of change. Doing so will enhance workers’ acceptance and motivation with lasting effect. The HPA is also responding to the need to transform the world of work by offering a large number of individual working-time models (including part-time work, remote working, continuing to allow staff to work from home after the pandemic, sabbaticals) which enable staff to achieve a work-life balance.

For employees, issues relating to leadership culture, approaches to change, equality, their own further development, the company’s ethics and the ability to balance different aspects of life are also growing in importance.

At the same time, it is clear that too much change unsettles staff. The HPA uses so-called “move agents” to increase understanding and acceptance. They have been support-

ing change processes since 2017 with a particular focus on employees’ needs. This is important because there is a fundamental link between the success of a change process and the involvement of people at the company. New move agents were trained in 2020.

Move agents are selected using a structured procedure and trained over a period of several months. This training focuses on ensuring they understand change processes at the company and methods of providing targeted support. Their responsibilities include both advising managers and conducting specific measures (workshops, information events, etc.) in connection with change processes.

Working environment for collaboration

The HPA designs workplaces to provide employees with the best possible conditions to complete all of their tasks. Co-working spaces have been set up which are available to the different divisions and can be used in various ways. Along with new ways of working, they help to promote agility, creativity and interdisciplinary collaboration. The co-working spaces also serve as satellite offices for staff from other sites. This eliminates the need to travel between meetings.

Improving the leadership culture

To meet the specific challenges associated with change, the HPA is also striving to overhaul its existing leadership instruments. Its aims are to increase staff satisfaction by changing the leadership culture and to give employees greater autonomy. Feedback on management was most recently collected in 2020 to gain insights into achievements to date. The response rate was 86 per cent. Leadership quality was rated as good (see Table 4).

Idea management

Idea management is a more advanced format growing out of the employee suggestion scheme. The transformation into an innovative organisation will only succeed if employees have an innovative mindset. For that reason, idea management sets out to enable staff to hone their innovativeness. With the aid of design thinking tools, employees acquire methodological skills helping them, for instance, to keep customers' interests in mind whenever they develop products and services.

In 2019, an innovation team challenge was held which gave cross-divisional teams the freedom and coaching needed to turn their idea into an innovation. Four of the five teams were able to take their idea through to the execution/prototype phase. One of the outcomes was an app for booking electric bicycles, for example.

Table 4: Leadership quality*

2018	2019	2020	Target: 2025
7.4	7.7	7.7	7.7

* The KPI "leadership quality" was calculated using the staff survey (see section "HR strategy and management").

Another product was a video communication format which allows executives to share information with employees.

Work-life balance

A large number of measures have been developed to promote a healthy work-life balance. The existing partnership with a provider of holiday play schemes has been extended, and the HPA has successfully established a collaboration with a local day-care provider. Staff have had access to a parent and child room since 2020. In 2021, after extensive preparations, the organisation joined the "Erfolgsfaktor Familie" (Success Factor Family) network of the German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth. It also took part in the work-life balance index to measure progress in helping staff to reconcile their professional and family commitments. The HPA is heading in the right direction and meets key criteria stipulated by the network.

Social engagement

Despite the pandemic, the HPA goes beyond its core line of business with its commitment to the local community in Hamburg. In 2019 and 2020, it gave employees 720 hours off so that they could help by harvesting fruit, volunteering with the conservation charity NABU and gardening. CGH also played an active role in society by coordinating **donations of food** by shipping lines to Hamburg's food banks.



Strength in diversity

Diversity boosts a company’s performance and innovativeness and makes it a more attractive employer. The HPA has made a clear commitment to implementing the Diversity Charter, thereby positioning itself as an advocate of tolerance and openness. The HPA wants all employees to feel welcome and be given the same opportunities, regardless of their ethnic origins, gender, sexual orientation, age, disability, religion or world view.

Employees are protected by law against workplace discrimination by the principle of equality in employment, the General Act on Equal Treatment (Allgemeine Gleichbehandlungsgesetz, AGG), and other special legislative provisions. No cases of discrimination were reported using the HPA’s complaints procedure in 2019 or 2020.

0

discrimination cases in the reporting period 2019 and 2020

Equal opportunities

The HPA is committed to gender equality. It has had an Equal Opportunities Officer and an equal opportunities plan since 2017. The targets for 2024 are to increase the proportion of women to 25 per cent and to raise the percentage of female managers to 22 per cent. In the future, it hopes to achieve gender parity in managerial roles (see Tables 5 and 6).

Targeted measures are in place to support the goal of increasing the percentage of women throughout the company and in managerial roles. These include the mentoring programme Odyssea, which aims to facilitate dialogue between experienced and aspiring female managers.

22%

female managers in 2020

Table 5: Percentage of women in %

2016	2017	2018	2019	2020	Target: 2024
20.6	21.6	22.2	23.9	22.5	25

Table 6: Percentage of female managers in %

2016	2017	2018	2019	2020	Target: 2024
21.6	22.2	18.9	18.3	22	22

Promoting health and safety

The specialist health protection and occupational safety teams report directly to the Executive Board. Occupational safety is embedded procedurally in the HPA via the legal requirements for companies. The specialist health team and the Health Committee steer all aspects relating to health.

The statutory Health and Safety Committee meets every two months. The health and occupational safety units are closely linked and work together every day.

Occupational health management

Due to the Covid-19 pandemic, health protection within the HPA gained even greater importance during the period under review. Everyone knows that health is essential: without it, no business can operate.

In addition to strategic competence, the specialist unit's remit includes:

- Operational health management
- Corporate re-integration management
- Occupational medicine

- Advice and information
- Severe disability representation

Employees are involved in all health projects, such as the fleet's health pilots (see Fig. 1).

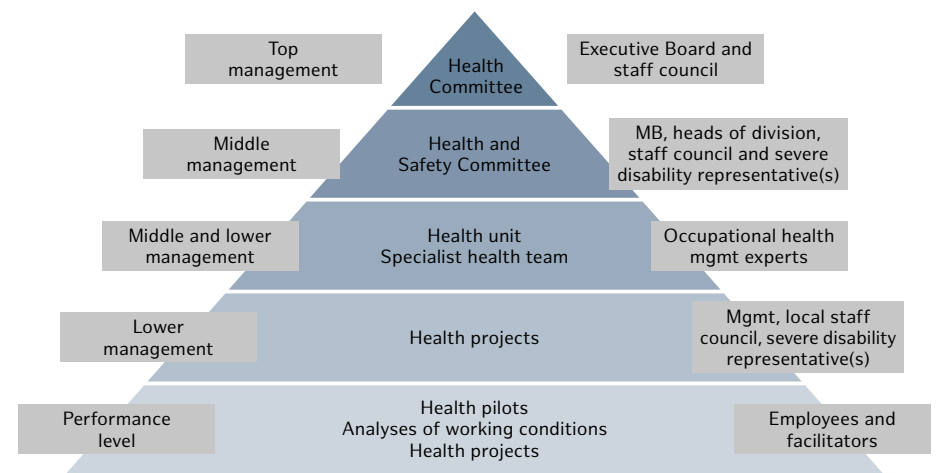
Two teams have been developing health concepts and steering the topic of health across all levels of the hierarchy since 2018. Maintaining and improving employees' physical and mental health and ability to work are the prime objectives of the occupational health management team at the HPA.

During the reporting period, the **percentage of healthy employees** rose slightly. It stood at 92.7 per cent in 2020 and was therefore 2.6 per cent higher than in 2018. The links between periods of absence and causes of illness are multifactorial and not easy to attribute. Both personal and occupational factors play a role in the majority of illnesses and it is not possible to establish the extent to which each contributes. The introduction of remote working at

the beginning of the pandemic prompted an abrupt rise in the percentage of healthy employees. Behaviour focused strongly on avoiding any kind of infection, meaning that the wave of flu which had just begun at that point was also cut short. A sharp

decline was also seen in other infectious diseases. Furthermore, it is likely that the high proportion of remote working led to fewer employees reporting sick and enabled those with only mild symptoms to complete their work at home.

Fig. 1: Health management strategy



The following measures are implemented in these areas:

- Promoting the individual health and **health literacy** of employees
- Analysing conditions and factors which maintain health or cause illness
- Improving conditions in occupational health and safety
- Strengthening resources and minimising sources of strain

The HPA helps to promote the individual health and health literacy of employees in various ways via its "machtfit" intranet platform. These include exercise classes, resilience training, vaccination campaigns and even certified courses on a broad range of health-related topics. More health

1st Place
at the Corporate Health Award

awareness days are now being held by individual units with content geared towards specific focal areas and a stronger emphasis on improving health awareness.

Re-integrating employees who have been off sick long-term is also a priority for the HPA. In 2020, 54 employees were able to return to work with the aid of corporate re-integration management.

The external certification company EuPD Research Sustainable Management GmbH audited and confirmed the effectiveness of the HPA's health management system in 2018. In 2020, the HPA also entered the Corporate Health Award and won first place in the transport and logistics sector.

Occupational safety

The HPA consistently considers occupational safety at the planning stage to ensure employees' safety right from day one. The specialist team actively supports managers and advises all members of staff. This ensures a high standard as per Article 153 of the Treaty on the Functioning of the European Union.

Table 7: Injury rate – number of accidents in relation to the whole workforce (active employees)

2016	2017	2018	2019	2020
0.034	0.03	0.036	0.032	0.035

Nevertheless, there were 65 accidents in 2020 due to the varied and hazardous jobs completed by staff. However, none of these resulted in serious injuries or even death. Trips, slips and falls accounted for the majority of accidents. The reason for this is the working environment. As many jobs are completed close to or on the water, there are wet or slippery surfaces everywhere. Non-slip flooring is installed where possible, e.g. on board ships. Non-slip footwear is also used. The Covid-19 pandemic itself did not have a major impact on work accidents because the operational units continued to work normally whenever possible (see Table 7).

In order to further mitigate risks to employees and the environment, the company aims to reduce the hazardous substances used by 15 per cent each year. At present,

791 active substances in different container sizes are listed in the hazardous substance management system. Due to the wide range of tasks completed, a very high basic level of hazardous substances has to be kept in stock at all times.

Table 8: Change in the number of hazardous substances used

2018	2019	2020
767	652	791

Category 1 and 2 carcinogenic, mutagenic and reprotoxic (CMR) substances may not be used.

Cultural shift in mobility



Mobility is not just a fundamental prerequisite for social and economic participation: it is also an expression of personal freedom. As the world of work changes and working-time models become more and more flexible, work will increasingly be done away from traditional workplaces. Companies need to rethink the topic of mobility to remain competitive in the battle for sought-after talent. This means developing healthy, climate-friendly **mobility solutions** such as public transport, cycling, electric vehicles (EVs) and – in future – inclusive means of transport like MOIA ride-sharing.

Despite the switch to working from home due to coronavirus, a large number of trips still had to be made within the port in 2020. The HPA currently has a fleet of 172 passenger vehicles and 90 trucks available for this purpose. Passenger vehicles are assigned centrally using the digital portal Carsync. The driver’s log has also been digitalised, so it is no longer necessary to keep a manual log. Instead, the fleet data for each vehicle, including the distance travelled, can be accessed and analysed digitally.

32

all-electric vehicles

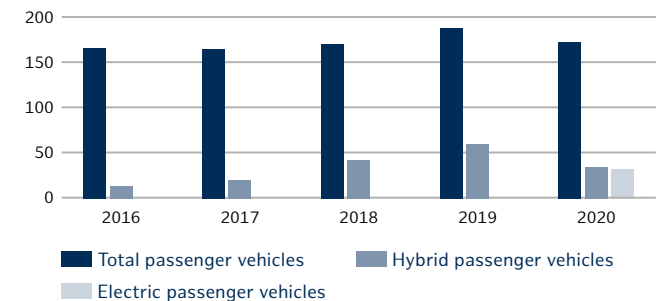
In 2020, EVs accounted for almost 39 per cent of passenger vehicles. The HPA’s ultimate aim is to phase out cars with combustion engines by 2030. It is increasingly using all-electric vehicles to do this because hybrid models have not proved to be efficient.

Vehicle **electrification** is only possible if the necessary charging infrastructure is also put in place. At present, the HPA operates 87 charging points. This means it has more than doubled its capacity since 2018.

In late 2020, the organisation resolved to initiate a project for the further optimisation, greater utilisation and electrification of its fleet. As well as optimising cost-effectiveness, this will focus in particular on making even more consistent use of carbon-free mobility.

With this in mind, the HPA strives to reduce carbon emissions by its fleet of cars

Fig. 2: Changes in the passenger vehicle fleet



each year. The KPI for target attainment is carbon emissions in g/kWh. This figure should be 0 for the fleet of passenger vehicles by 2030 at the latest (see Table 9). Electrification saves diesel and petrol every year:

- Electric vehicles and the use of green electricity – reduction in 2019 and 2020 of approx. 73.4 tonnes of CO₂

Table 9: Carbon emissions by passenger vehicles in g/kWh

2016	2017	2018	2019	2020	Target: 2030
243	229	228	227	225	0

05

Facts and figures



Table of key figures

The HPA provides a detailed list of selected sustainability performance figures below. This is based on the standards of the Global Reporting Initiative (GRI) and of the Sustainability Code (DNK).

	Description	Unit	2016	2017	2018	2019	2020
Scale of the organisation	Business locations	Number	2	3	3	3	3
	Sales	in EUR m	185	192	229	226	219
	Equity	in EUR m	1,010	965	984	1,017	1,017
	Debt (incl. special items)	in EUR m	1,059	739	841	860	932
	Total assets	in EUR m	2,069	1,704	1,825	1,877	1,949
Area productivity (PO1)	Port-related gross value added (direct and indirect) in relation to water surface area usage	EUR m/ha					4.2
	Weight of transported goods in relation to water surface area usage	t/m ²	4.85	4.76	4.76	4.5	4.1
	Leased area in relation to available and leasable land surface area	%	90.6	90	90	90	84
Seaborne freight volume (PO2)	Total number of passengers	Number	716,841	811,489	895,275	799,135	74,389
	Number of transit passengers	Number	41,438	51,948	88,581	56,111	4,261
	Number of containers, TEU	Number	8,907,000	8,815,000	8,730,000	9,258,000	8,519,000
Employees and other workers	Total workforce	Persons	1,933	1,936	1,980	2,013	2,045
	Staff, male	Persons	1,515	1,518	1,521	1,539	1,557
	Staff, female	Persons	418	418	459	474	488
	Total active staff	Persons	1,749	1,769	1,827	1,845	1,872
	Part-time staff	Persons	232	244	256	275	278
	Part-time staff, male	Persons	90	87	88	100	93
	Part-time staff, female	Persons	142	157	168	175	185

	Description	Unit	2016	2017	2018	2019	2020	
Employees and other workers	Active staff (permanent employment)	Persons	1,721	1,743	1,827	1,845	1,872	
	Active staff (permanent employment), male	Persons	1,371	1,372	1,421	1,428	1,434	
	Active staff (permanent employment), female	Persons	350	371	406	417	438	
	Active staff (temporary employment)	Persons	28	26	25	27	27	
	Active staff (temporary employment), male	Persons	17	15	13	13	16	
	Active staff (temporary employment), female	Persons	11	11	12	14	11	
	Non-active staff (apprentices, on leave, elected representatives, other)	Persons	184	167	153	168	173	
	Trainees (incl. students on dual study courses and civil service trainees)	Persons	65	62	62	78	78	
	Trainees (incl. students on dual study courses and civil service trainees), male	Persons	60	56	55	68	68	
	Trainees (incl. students on dual study courses and civil service trainees), female	Persons	5	6	12	10	10	
	Civil servants (active)	Persons	174	169	170	163	156	
	Civil servants (active), male	Persons	124	120	120	114	109	
	Civil servants (active), female	Persons	50	49	50	49	47	
	Percentage of trainees	%	3.1	2.8	2.6	2.9	2.9	
	Average age	Years	46.2	47.0	47.0	46.8	47.0	
	Percentage of part-time employees	%	12	12.6	12.9	13.7	13.6	
	Percentage of female employees	%	20.6	21.6	22.2	23.9	22.5	
	Percentage of female managers	%	21.6	22.2	18.9	18.3	22.0	
	The majority of business operations are carried out by employees of the HPA.							
		Severely disabled, total	Persons				171	172
	Severely disabled, women	Persons				47	48	
	Severely disabled, men	Persons				124	124	
Collective bargaining agreements	Percentage of employees covered by collective bargaining agreements	%	99.7	99.7	99.5	99.1	99.3	

	Description	Unit	2016	2017	2018	2019	2020
Newly hired employees and staff turnover (permanent staff)	Sum of all new appointments/percentage	Persons/%	43/2.46	85/4.81	110/6.02	134/7.26	76/4.06
	Of which women/percentage	Persons/%	14/0.80	32/1.81	44/2.41	49/2.67	27/1.44
	Of which women under 30/percentage	Persons/%	7/0.40	14/0.79	13/0.71	9/0.49	3/0.16
	Of which women aged 30 to 50/percentage	Persons/%	7/0.40	16/0.90	25/1.37	24/1.30	17/0.91
	Of which women over 50/percentage	Persons/%	0/0.00	2/0.11	6/0.33	16/0.87	7/0.37
	Of which men/percentage	Persons/%	29/1.66	53/3.00	66/3.61	85/4.61	49/2.62
	Of which men under 30/percentage	Persons/%	4/0.22	13/0.73	8/0.44	16/0.87	8/0.43
	Of which men aged 30 to 50/percentage	Persons/%	23/1.32	30/1.70	48/2.63	52/2.82	33/1.76
	Of which men over 50/percentage	Persons/%	2/0.11	10/0.57	10/0.55	17/0.92	8/0.43
	Sum of total fluctuation/percentage	Persons/%	65/3.71	78/4.40	80/4.40	96/5.30	75/4.00
	Fluctuation among women/percentage	Persons/%	13/0.74	21/1.18	24/1.31	35/1.90	22/1.20
	Of which women under 30/percentage	Persons/%	2/0.11	1/0.06	4/0.22	3/0.16	3/0.16
	Of which women aged 30 to 50/percentage	Persons/%	7/0.40	13/0.73	11/0.60	18/0.98	10/0.50
	Of which women over 50/percentage	Persons/%	4/0.22	7/0.40	9/0.49	14/0.76	9/0.48
	Fluctuation among men/percentage	Persons/%	52/2.97	57/3.22	56/3.06	61/3.31	53/2.82
	Of which men under 30/percentage	Persons/%	1/0.05	5/0.28	6/0.33	5/0.27	5/0.27
	Of which men aged 30 to 50/percentage	Persons/%	18/1.02	18/1.02	21/1.15	25/1.36	13/0.69
Of which men over 50/percentage	Persons/%	33/1.88	34/1.92	29/1.59	31/1.68	35/1.86	
	Total of all departing employees	Persons	65	78	80	96	75
Injuries, occupational illnesses, working days lost, absence and number of fatal work accidents	Working hours lost (rate of absence)	%	9.8	9.7	9.9	9.1	7.3
	Of which men	%	9.7	9.7	10.0	9.3	7.3
	Of which women	%	10.3	9.7	9.3	8.7	7.1
	Rate of injuries ¹ (accidents/total workforce)		0.034	0.03	0.036	0.032	0.035
	Of which men	%	95	83	90.8	86.44	80
	Of which women	%	5	17	9.2	13.56	20
	Rate of occupational illness during the reporting period (number of claims)		8	3	5	7	5
	Of which men	%	100	100	100	100	100
	Of which women	%	0	0	0	0	0

¹ Excluding minor injuries, day = planned working day, reportable and non-reportable accidents, excluding accidents on the way to/from work

	Description	Unit	2016	2017	2018	2019	2020
Injuries, occupational illnesses, working days lost, absence and number of fatal work accidents	Type of injury		Distortion, contusion, burns, electric shocks				
	Rate of absence ¹ due to accidents (days lost/planned working days)		0.00187	0.00207	0.00184	0.00152	0.00271
	Of which men	%	97.4	89.9	98	96.3	83.2
	Of which women	%	4.3	10.1	2	3.7	16.8
	Fatal work accident	Persons	0	0	0	0	0
	Fatal work accident at contractual partner	Persons	HPA carries no liability for accidents at contractual partners – Section 2 Accident Prevention Regulation				
¹ Excluding minor injuries, day = planned working day, reportable and non-reportable accidents, excluding accidents on the way to/from work							
Incidents of discrimination and corrective actions taken	Incidents of discrimination	Number	0	0	0	0	0
	Status and actions taken in the case of an incident		-	-	-	-	-
Health and satisfaction	Social well-being index – survey result “satisfaction”		-	-	-	7.3	7.6
	Health rate (inverse of hours lost)	%	90.2	90.3	90.1	90.9	92.7
	Men	%	90.3	90.3	90.0	90.7	92.7
	Women	%	89.7	90.3	90.7	91.3	92.9
Training and professional development	Training and professional development			1.8	2.2	2.3	2.0
	Of which active staff (permanent employment)			1.9	2.0	2.2	2.0
	Of which active staff (permanent employment), male			1.7	1.8	1.7	1.8
	Of which active staff (permanent employment), female			2.3	3.1	3.0	2.6
	Active staff (temporary employment)			3.1	3.6	7.1	4.7
	Active staff (temporary employment), male			2.5	2.4	6.8	4.1
	Active staff (temporary employment), female			4.0	4.8	7.4	5.6
	Non-active staff (apprentices, on leave, elected representatives, other)			0.9	1.2	2.3	1.3
	Trainees (incl. students on dual study courses and civil service trainees)			2.1	3.5	4.7	2.6
	Trainees (incl. students on dual study courses and civil service trainees), male			2.1	3.3	4.7	2.5
	Trainees (incl. students on dual study courses and civil service trainees), female			2.2	4.2	4.5	3.2
	Civil servants (active)			1.9	1.8	1.9	2.4
	Civil servants (active), male			1.6	1.5	1.6	2.1
Civil servants (active), female			2.6	2.6	2.4	3.0	

Data has not been collected as yet.

Total number of hours for training and professional development/ total number of employees

	Description	Unit	2016	2017	2018	2019	2020
Corruption	Business locations checked for risk of corruption	Number/ checked	1/100	1/100	1/100	1/100	1/100
	Corruption risks		Financial losses	Financial losses	Financial losses	Financial losses	Financial losses
Anti-corruption	Info to governance bodies	%	100	100	100	100	100
	Info to employees (breakdown by employee category not necessary)	%	100	100	100	100	100
	Info to business partners by type of business partner	%	100	100	100	100	100
	Trained governance body members	%	0	0	0	0	0
	Trained employees (breakdown by employee category not necessary)	%	100 in 5 years	100 in 5 years	100 in 5 years	100 in 5 years	100 in 5 years
Confirmed incidents of corruption and actions taken	Incidents of corruption	Number	0	0	0	0	0
	Dismissals/disciplinary action due to corruption	Number	0	0	0	0	0
	Incidents with business partners whose contracts were terminated	Number	0	0	0	0	0
	Public legal cases against employees	Number	0	0	0	0	0
Local communities	Percentage of business locations with implemented local community engagement, impact assessments, and development programmes	%	100	100	100	100	100
Financial assistance received from government	Received from government – tax relief and credits	in EUR m	0	0	0	0	0
	Received from government – subsidies	in EUR m	0	0	0	0	0
	Received from government – grants	in EUR m	214.9	115.0	211.5	256.7	324.7
	Received from government – awards	in EUR m	0	0	0	0	0
	Received from government – royalty holidays	in EUR m	0	0	0	0	0
	Received from government – financial assistance from export credit agencies	in EUR m	0	0	0	0	0
	Received from government – financial incentives	in EUR m	0	0	0	0	0
	Received from government – other financial benefits	in EUR m	0	0	0	0	0
Supply chain	Supply chain – total order value	in EUR m	287.7	224	234.1	239.3	312.7
	Supply chain – order value in Germany	in EUR m	273.6	217.5	230.3	235.7	304
	Supply chain – order value with international suppliers	in EUR m	14	6.6	3.7	3.59	8.7
	Number of supplying countries	Number	16	14	15	21	18
	Total number of suppliers	Number	2,270	2,656	2,718	2,531	2,415

	Description	Unit	2016	2017	2018	2019	2020
Energy consumption	Consumption of petrol with 10% bioethanol (5% until 2014)	GJ	1,399	1,878	2,217	2,524	2,096
	Consumption of diesel with 7% bioethanol in diesel (as of 2017)	GJ	13,219	8,143	5,489	16,779	12,338
	LPG (liquefied petroleum gas) consumption	GJ	175	131	73	10	0
	Power consumption by electric cars	GJ	31	198	217	253	274
	Marine diesel consumption (HPA fleet)	GJ	53,339	24,822	36,852	13,920	7,098
	Marine diesel consumption (rented dredgers)	GJ	-	486,100	411,376	315,817	317,114
	GTL consumption	GJ	2,313	34,756	40,241	32,515	41,522
	C.A.R.E. diesel consumption (biodiesel)	GJ	-	2,883	4,663	0	0
	Electricity consumption	GJ	70,083	70,061	71,802	68,808	69,728
	Heating oil consumption	GJ	10,284	8,835	5,831	4,353	4,026
	Consumption of natural gas with 2% bioethanol (1.7% until 2017)	GJ	38,402	33,401	35,259	35,728	36,360
	District heating consumption	GJ	4,188	4,089	3,056	3,960	3,960
	LNG (liquefied natural gas)/propane consumption	GJ	1,301	1,555	1,154	881	1,227
	Cooling energy consumption	GJ	< 2% of total consumption	< 2% of total consumption	< 2% of total consumption	< 2% of total consumption	< 2% of total consumption
	Consumption of energy from renewable sources	GJ	259	617	717	634	754
	Electricity sold	GJ	465	377	471	392	312
	Heat energy sold	GJ	0	0	0	0	0
	Cooling energy sold	GJ	0	0	0	0	0
	Total energy consumption	GJ	192,680	677,469	618,947	496,182	496,497
Energy savings	Reduction in energy consumption – direct savings	GJ	532	545	473	3,937.4	5,106.8
	Fuel savings	GJ	32	38	79	3,363	4,102
	Electricity savings	GJ	500	165	379	574.4	0
	Heat savings	GJ	0	342	15	0	1,004.8
	Cooling savings	GJ	0	0	0	0	0
	Chosen base year		2015	2016	2017	2018	2019
Note: The data is collected using a Group-wide survey.							

	Description	Unit	2016	2017	2018	2019	2020
Water withdrawal	Rinsing water withdrawn from the Elbe (for treatment of dredged materials)	m ³	166,034	164,394	240,064	150,705	75,524
	Water withdrawn from groundwater	m ³	0	0	0	0	0
	Water withdrawn from rainwater collected directly by the organisation	m ³	0	0	0	0	0
	Water withdrawn from other organisations' waste water	m ³	0	0	0	0	0
	Water withdrawn from municipal water supplies	m ³	57,770	66,725	51,753	55,499	62,667
Direct (Scope 1) GHG emissions	Direct CO ₂ -equivalent GHG emissions (Scope 1 of the GHG Protocol Initiative)	t CO _{2eq}	7,388	7,068	8,269	5,865.8	5,867.9
	Greenhouse gases included in the calculation		CO ₂	CO ₂	CO ₂	CO ₂	CO ₂
	Emissions in the base year 1990; from 2020 corresponds to the baseline year 2012	t CO _{2eq}	7,938	7,938	7,938	6,300	6,300
	Source of emission factors: Free and Hanseatic City of Hamburg, Ministry of Urban Development and Environment, climate protection control centre						
Energy indirect (Scope 2) GHG emissions	Indirect CO ₂ -equivalent GHG emissions (Scope 2 of the GHG Protocol Initiative)	t CO _{2eq}	10,772	10,900	11,044	10,530.7	8,540.7
	Greenhouse gases included in the calculation		CO ₂	CO ₂	CO ₂	CO ₂	CO ₂
	Emissions in the base year 1990; corresponds to the baseline year 2012	t CO _{2eq}	12,563	12,563	12,563	11,000	11,000
	Source of emission factors: Free and Hanseatic City of Hamburg, Ministry of Urban Development and Environment, climate protection control centre						
Reduction of GHG emissions	CO ₂ -equivalent GHG emissions reductions – direct savings	t CO _{2eq}	10,248	10,723	11,101	10,358	9,458
	Greenhouse gases included in the calculation		CO ₂	CO ₂	CO ₂	CO ₂	CO ₂
	Chosen base year		2015	2016	2017	2018	2019
	CO ₂ -equivalent GHG emissions reductions – Scope 1 savings	t CO _{2eq}	2	287	397	242.4	234
	CO ₂ -equivalent GHG emissions reductions – Scope 2 savings	t CO _{2eq}	10,246	10,436	10,704	10,116	9,224
	Note: The emissions reductions are calculated based on energy savings and are multiplied using local emissions factors published by the climate protection control centre for Hamburg.						
Significant air emissions	HPA fleet of ships: significant emissions – NO _x	kg	42,072	48,835	61,794	53,069	52,710
	HPA fleet of ships: significant emissions – SO _x	kg	22	13	19.4	15.3	5.3
	HPA fleet of ships: significant emissions – PM ₁₀	kg	29.5	32.9	41.1	35.5	35

	Description	Unit	2016	2017	2018	2019	2020
Water discharge	Total volume of indirect water discharge – buildings and companies	m ³	43,000	51,725	36,753	51,138	79,220
	Destination		Urban drainage				
	Treatment method		None				
	Water quality		Dirty water				
	Total volume of direct water discharge – Francop (SARA)	m ³	753,261	1,924,528	1,511,015	1,279,134	1,414,879
	Destination		Finkenwerder outer harbour (Elbe)				
	Treatment method		Sedimentation and nitrification				
	Water quality		Monitoring data: pH 6.5–8.5; COD 85 mg/l; TP 0.6 mg/l; TN 80 mg/l; NH ₄ -N at T > 12 °C 2 mg/l; NO ₂ -N 2 mg/l				
	Total volume of direct water discharge – Moorburg-Ellerholz	m ³	293,101	269,273	420,297	289,457	115,199
	Destination		Süderelbe				
	Treatment method		Sedimentation and deferrisation				
	Water quality		Monitoring data: pH 6.5–8.5; COD 85 mg/l; TP 1 mg/l; TN 10 mg/l; NH ₄ -N 2 mg/l; NO ₂ -N 2 mg/l; Fe 4 mg/l; Fe(II) 0.5 mg/l				
	Total volume of direct water discharge – landfill Feldhofe, Ringgraben	m ³	241,396	369,987	276,554	191,294	293,344
	Destination		Dove-Elbe				
	Treatment method		Deferrisation and biological treatment				
Water quality		Monitoring data: pH 6.5–8.5; COD 85 mg/l; TP 0.6 mg/l; TN at T > 12 °C 8 mg/l; NH ₄ -N at T > 12 °C 2 mg/l; NO ₂ -N 2 mg/l; Fe 2 mg/l; AOX 120 µg/l; HC 10 mg/l					
Total volume of direct water discharge – Neuwerk	m ³	7,858	7,878	7,364	6,787	4,404	
Destination		German Bight					
Treatment method		Treatment plant					
Water quality		COD 85 mg/l; NPOC 40 mg/l; BSB5 20 mg/l; HC 10 mg/l; AOX 120 mg/l; Fe 2 mg/l					
Reuse by another organisation		m ³	0	0	0	0	0

DNK content index

The requirements of the Sustainability Code (DNK) are included in the sustainability report for Hamburg Port Authority AöR. They are also published separately in the HPA’s declaration on the Code criteria.

DNK criterion	Description of the DNK criterion	Cross-reference and note
General		
General information	Description of the business model (including the purpose of the business, products/services)	<ul style="list-style-type: none"> ■ Profile of the HPA (p. 6) ■ Business model (pp. 10–12)
Strategy		
1. Strategy Analysis and Action	The company declares whether or not it pursues a sustainability strategy. It explains what concrete measures it is undertaking to operate in compliance with key recognised sector-specific, national and international standards.	<ul style="list-style-type: none"> ■ Sustainability strategy (pp. 14–19)
2. Materiality	The company discloses the aspects of its business operations that have a significant impact on sustainability issues and what material impact sustainability issues have on its operations. It analyses the positive and negative effects and provides information as to how these insights are integrated into the company’s processes.	<ul style="list-style-type: none"> ■ Sustainability strategy (pp. 14–19) ■ Business model (pp. 10–12)
3. Objectives	The company discloses what qualitative and/or quantitative as well as temporally defined sustainability goals have been set and operationalised and how their level of achievement is monitored.	<ul style="list-style-type: none"> ■ Sustainability strategy (pp. 14–19)
4. Depth of the Value Chain	The company states what significance aspects of sustainability have for added value and how deep in the value chain the sustainability criteria are verified.	At present, no system is used to precisely record the individual value creation stages, the various materials procured, and the impacts of the HPA’s operations and business relations in the value creation stages. These are important issues for the future – for instance in connection with the Supply Chain Due Diligence Act – which will be broached in the next reporting period.
Process Management		
5. Responsibility	Accountability within corporate management with regard to sustainability is disclosed.	<ul style="list-style-type: none"> ■ Sustainability strategy (pp. 14–19)
6. Rules and Processes	The company discloses how the sustainability strategy is implemented in the operational business by way of rules and processes.	<ul style="list-style-type: none"> ■ Sustainability strategy (pp. 14–19) ■ Business model (pp. 10–12) ■ Procurement (p. 13) ■ Introduction to climate and the environment (p. 56)
7. Control	The company states how and what performance indicators related to sustainability are integrated into its periodical internal planning and control processes. It discloses how suitable processes ensure reliability, comparability and consistency of the data used for internal management and external communication.	<ul style="list-style-type: none"> ■ Sustainability strategy (pp. 14–19) ■ Table of key figures (pp. 76–83)
Performance indicators (5–7)	Performance indicator GRI SRS 102-16: Values	<ul style="list-style-type: none"> ■ Business model (pp. 10–12) ■ Sustainability strategy (pp. 14–19)

DNK criterion	Description of the DNK criterion	Cross-reference and note
8. Incentive Schemes	The company discloses how target agreements and remuneration schemes for executives and employees are also geared towards the achievement of sustainability goals and how they are aligned with long-term value creation. It discloses the extent to which the achievement of these goals forms part of the evaluation of the top managerial level (board/managing directors) conducted by the monitoring body (supervisory board/advisory board).	<ul style="list-style-type: none"> ■ Sustainability strategy (pp. 14–19)
Performance indicators (8)	<p>Performance indicator GRI SRS 102-35: Remuneration policies</p> <p>Performance indicator GRI SRS 102-38: Annual total compensation ratio</p>	Detailed information about Executive Board remuneration is published on the website. All other details are disclosed in the annual report, provided this is standard practice for public-sector companies.
9. Stakeholder Engagement	The company discloses how the socially and economically relevant stakeholders are identified and integrated into the sustainability process. It states whether and how an ongoing dialogue takes place with them and how the results are integrated into the sustainability process.	<ul style="list-style-type: none"> ■ Stakeholder engagement (pp. 20–21) ■ Details in additional chapters, such as Land (pp. 36–39) <p>No additional systematic analysis of key stakeholder groups has been performed since 2012.</p>
Performance indicators (9)	Performance indicator GRI SRS 102-44: Key topics and concerns raised	<ul style="list-style-type: none"> ■ Stakeholder engagement (pp. 20–21)
10. Innovation and Product Management	The company discloses how innovations in products and services are enhanced through suitable processes which improve sustainability with respect to the company's utilisation of resources and with regard to users. Likewise, a further statement is made with regard to if and how the current and future impact of the key products and services in the value chain and in the product life cycle are assessed.	<ul style="list-style-type: none"> ■ Introduction to climate and the environment (p. 56) ■ Climate strategy (pp. 57–59) ■ Innovation and digitalisation (pp. 30–33)
Performance indicators (10)	Performance indicator G4-FS11	The HPA only has financial assets (cash assets) at Kasse.Hamburg, which serve its business operations. It does not conduct positive and negative environmental or social screening.
Environment		
11. Usage of Natural Resources	The company discloses the extent to which natural resources are used for the company's business activities. Possible options here are materials, the input and output of water, soil, waste, energy, land and biodiversity as well as emissions for the life cycles of products and services.	<ul style="list-style-type: none"> ■ Introduction to climate and the environment (p. 56) ■ Climate strategy (pp. 57–59) ■ Natural capital (p. 62) ■ Details in additional chapters: see Land (pp. 36–39), Water (pp. 40–44), Road (pp. 49–53) <p>The use of natural resources, such as the input and output of water, soil, waste, land and biodiversity is not yet reported in full.</p>
12. Resource Management	The company discloses what qualitative and quantitative goals it has set itself with regard to its resource efficiency, in particular its use of renewables, the increase in raw material productivity and the reduction in the usage of ecosystem services, which measures and strategies it is pursuing to this end, how these are or will be achieved, and where it sees there to be risks.	<ul style="list-style-type: none"> ■ Introduction to climate and the environment (p. 56) ■ Climate strategy (pp. 57–59) ■ Details in additional chapters, such as Rail (p. 45–48) <p>The use of natural resources, such as the input and output of water, soil, waste, land and biodiversity is not yet reported in full.</p>

DNK criterion	Description of the DNK criterion	Cross-reference and note
Performance indicators (11–12)	Performance indicator GRI SRS 301-1: Materials used	This data is not recorded as yet. Systems are being set up to capture and report these details.
	Performance indicator GRI SRS 302-1: Energy consumption	<ul style="list-style-type: none"> ■ Climate strategy (pp. 57–59) ■ Table of key figures (pp. 76–83)
	Performance indicator GRI SRS 302-4: Reduction of energy consumption	■ Table of key figures (pp. 76–83)
	Performance indicator GRI SRS 303-3: Water withdrawal	<ul style="list-style-type: none"> ■ Table of key figures (pp. 76–83) These figures are taken from invoices. The data captured is not comprehensive.
	Performance indicator GRI SRS 306-2: Waste	<ul style="list-style-type: none"> ■ Water (pp. 40–44) The company's material flows relating to waste and disposal are not yet recorded in full. Systems are being set up to capture and report these details.
13. Climate-Relevant Emissions	The company discloses the greenhouse gas (GHG) emissions in accordance with the Greenhouse Gas Protocol or standards based on it and states the goals it has set itself to reduce emissions.	<ul style="list-style-type: none"> ■ Climate strategy (pp. 57–59)
Performance indicators (13)	Performance indicator GRI SRS 305-1 (see GH-EN15): Direct (Scope 1) GHG emissions	■ Table of key figures (pp. 76–83)
	Performance indicator GRI SRS 305-2: Energy indirect (Scope 2) GHG emissions	■ Table of key figures (pp. 76–83)
	Performance indicator GRI SRS 305-3: Other indirect (Scope 3) GHG emissions	<ul style="list-style-type: none"> ■ Water (pp. 40–44) Other indirect GHG emissions (Scope 3) are calculated when critical upstream operations involving high carbon emissions are outsourced, e.g. for overland and waterborne transport routes.
	Performance indicator GRI SRS 305-5: Reduction of GHG emissions	■ Table of key figures (pp. 76–83)
Society		
14. Employee Rights	The company reports on how it complies with nationally and internationally recognised standards relating to employee rights as well as on how it fosters staff involvement in the company and in sustainability management, what goals it has set itself in this regard, what results it has achieved thus far and where it sees risks.	<ul style="list-style-type: none"> ■ Procurement (p. 13) ■ Transformation and collaboration (pp. 69–70) ■ Health and occupational safety (pp. 72–73) ■ Table of key figures (pp. 76–83)
15. Equal Opportunities	The company discloses in what way it has implemented national and international processes and what goals it has for the promotion of equal opportunities and diversity, occupational health and safety, participation rights, the integration of migrants and people with disabilities, fair pay as well as a work-life balance and how it will achieve these.	<ul style="list-style-type: none"> ■ Staff recruitment and development (pp. 66–68) ■ Transformation and collaboration (pp. 69–70) ■ Diversity and equal opportunities (p. 71)
16. Qualifications	The company discloses what goals it has set and what measures it has taken to promote the employability of all employees, i.e. the ability of all employees to participate in the working and professional world, and in view of adapting to demographic change, and where risks are seen.	<ul style="list-style-type: none"> ■ Staff recruitment and development (pp. 66–68) ■ Transformation and collaboration (pp. 69–70)

DNK criterion	Description of the DNK criterion	Cross-reference and note
Performance indicators (14–16)	Performance indicator GRI SRS 403-9: Work-related injuries	<ul style="list-style-type: none"> ■ Table of key figures (pp. 76–83) Figures are not collected for all workers who are not employed by the HPA but whose work and/or jobs are controlled by the HPA.
	Performance indicator GRI SRS 403-10: Work-related ill health	<ul style="list-style-type: none"> ■ Health and occupational safety (pp. 72–73) ■ Table of key figures (pp. 76–83)
	Performance indicator GRI SRS 403-4: Worker participation on occupational health and safety	<ul style="list-style-type: none"> ■ Staff recruitment and development (pp. 66–68) ■ Health and occupational safety (pp. 72–73)
	Performance indicator GRI SRS 404-1 (see G4-LA9): Hours of training	<ul style="list-style-type: none"> ■ Staff recruitment and development (pp. 66–68) ■ Table of key figures (pp. 76–83)
	Performance indicator GRI SRS 405-1: Diversity	<ul style="list-style-type: none"> ■ Business model (pp. 10–12) ■ Profile of the HPA (p. 6) ■ Table of key figures (pp. 76–83)
	Performance indicator GRI SRS 406-1: Incidents of discrimination	<ul style="list-style-type: none"> ■ Diversity and equal opportunities (p. 71) ■ Table of key figures (pp. 76–83)
17. Human Rights	The company discloses what measures it takes, strategies it pursues and targets it sets for itself and for the supply chain for ensuring that human rights are respected globally and that forced and child labour as well as all forms of exploitation are prevented. Information should also be provided on the results of the measures and on any relevant risks.	<ul style="list-style-type: none"> ■ Procurement (p. 13) No systematic identification of risks has been performed as yet. An analysis of risks throughout the HPA's value chain will be tackled in the coming reporting period.
Performance indicators (17)	Performance indicator GRI SRS 412-3: Investment agreements that underwent human rights screening	As the HPA is a public-law institution which operates solely in the Hamburg metropolitan region, this indicator is not applicable.
	Performance indicator GRI SRS 412-1: Operations that have been subject to human rights reviews	As the HPA is a public-law institution which operates solely in the Hamburg metropolitan region, this indicator is not applicable.
	Performance indicator GRI SRS 414-1: New suppliers that were screened using social criteria	<ul style="list-style-type: none"> ■ Procurement (p. 13)
	Performance indicator GRI SRS 414-2: Negative social impacts in the supply chain	<ul style="list-style-type: none"> ■ Procurement (p. 13) The HPA was not aware of any significant negative social impacts in the supply chain during the reporting period. Other than requiring all suppliers to comply with the supplier code, no checks were performed in the period under review. An analysis of sustainability risks throughout the HPA's value chain will be tackled in the coming reporting period.
18. Corporate Citizenship	The company discloses how it contributes to the community in the regions in which it conducts its core business activities.	<ul style="list-style-type: none"> ■ Sustainability strategy (pp. 14–19) ■ Shareholdings (pp. 22–24) ■ Transformation and collaboration (pp. 69–70) ■ Staff recruitment and development (pp. 66–68) Further information about the HPA's charity work can be found in the 2017/2018 sustainability report.
Performance indicators (18)	Performance indicator GRI SRS 201-1: Direct economic value generated and distributed	<ul style="list-style-type: none"> ■ 2020 annual report ■ Table of key figures (pp. 76–83)

DNK criterion	Description of the DNK criterion	Cross-reference and note
19. Political Influence	All significant input relating to legislative procedures, all entries in lobby lists, all significant payments of membership fees, all contributions to governments as well as all donations to political parties and politicians should be disclosed by country in a differentiated way.	<ul style="list-style-type: none"> ■ Details in the respective chapters, such as Procurement, Climate strategy The HPA does not exercise any political influence. It is not involved in politics and is not a member of any politically active organisation.
Performance indicators (19)	Performance indicator GRI SRS 415-1: Political contributions	The HPA does not make any in-kind contributions.
20. Conduct that Complies with Regulation and Policy	The company discloses which measures, standards, systems and processes are in place to prevent unlawful conduct and, in particular, corruption, how they are verified, which results have been achieved to date and where it sees there to be risks. The company depicts how corruption and other contraventions in the company are prevented and exposed and what sanctions are imposed.	<ul style="list-style-type: none"> ■ Business model (pp. 10–12) Detailed information about corruption risks associated with the HPA’s business activities is subject to internal confidentiality requirements and is not published.
Performance indicators (20)	Performance indicator GRI SRS 205-1: Operations assessed for risks related to corruption	<ul style="list-style-type: none"> ■ Table of key figures (pp. 76–83) Detailed information about corruption risks associated with the HPA’s business activities is subject to internal confidentiality requirements and is not published.
	Performance indicator GRI SRS 205-3: Incidents of corruption	<ul style="list-style-type: none"> ■ Business model (pp. 10–12) ■ Table of key figures (pp. 76–83)
	Performance indicator GRI SRS 419-1: Non-compliance with laws and regulations	In the period under review, there were no fines or non-monetary sanctions due to non-compliance with laws and/or regulations. The organisation does not conduct or document a systematic, comprehensive check of compliance with laws and regulations.

GRI content index

This sustainability report for Hamburg Port Authority AöR was produced in accordance with the GRI Standards: Core option.

GRI Standard	Disclosure		Cross-reference and note
GRI 101: Foundation 2016			
GRI 102: General Disclosures 2016			
Organisational profile			
GRI 102: General Disclosures 2016	102-1	Name of the organisation	■ Profile of the HPA (p. 6)
	102-2	Activities, brands, products and services	■ Profile of the HPA (p. 6)
	102-3	Location of headquarters	■ Profile of the HPA (p. 6)
	102-4	Location of operations	■ Profile of the HPA (p. 6)
	102-5	Ownership and legal form	■ Profile of the HPA (p. 6)
	102-6	Markets served	■ Profile of the HPA (p. 6)
	102-7	Scale of the organisation	■ Staff recruitment and development (pp. 66–68)
	102-8	Information on employees and other workers	■ Staff recruitment and development (pp. 66–68)
	102-9	Supply chain	■ Procurement (p. 13)
	102-10	Significant changes to the organisation and its supply chain	■ Business model (pp. 10–12)
	102-11	Precautionary principle or approach	■ Business model (pp. 10–12) ■ Introduction to climate and the environment (p. 56)
	102-12	External initiatives	■ Disclosed throughout the report in the corresponding sections
	102-13	Membership of associations	■ List on request from nachhaltigkeit@hpa.hamburg.de
Strategy			
GRI 102: General Disclosures 2016	102-14	Statement from senior decision-maker	■ Foreword (pp. 4–5)
Ethics and integrity			
GRI 102: General Disclosures 2016	102-16	Values, principles, standards and norms of behaviour	■ Business model (pp. 10–12) ■ Sustainability strategy (pp. 14–19) ■ Foreword (pp. 4–5)

GRI Standard	Disclosure	Cross-reference and note
Governance		
GRI 102: General Disclosures 2016	102-18 Governance structure	■ Business model (pp. 10–12)
Stakeholder engagement		
GRI 102: General Disclosures 2016	102-40 List of stakeholder groups	■ Stakeholder engagement (pp. 20–21)
	102-41 Collective bargaining agreements	■ Staff recruitment and development (pp. 66–68)
	102-42 Identifying and selecting stakeholders	■ Stakeholder engagement (pp. 20–21)
	102-43 Approach to stakeholder engagement	■ Stakeholder engagement (pp. 20–21) ■ Disclosed throughout the report in the corresponding sections
	102-44 Key topics and concerns raised	■ Stakeholder engagement (pp. 20–21)
Reporting practice		
GRI 102: General Disclosures 2016	102-45 Entities included in the consolidated financial statements	■ Profile of the HPA (p. 6)
	102-46 Defining report content and topic boundaries	■ Sustainability strategy (pp. 14–19)
	102-47 List of material topics	■ Sustainability strategy (pp. 14–19)
	102-48 Restatements of information	■ About this report (p. 7)
	102-49 Changes in reporting	■ About this report (p. 7)
	102-50 Reporting period	■ About this report (p. 7)
	102-51 Date of most recent report	■ About this report (p. 7)
	102-52 Reporting cycle	■ About this report (p. 7)
	102-53 Contact point for questions regarding the report	■ Imprint (p. 96)
	102-54 Claims of reporting in accordance with the GRI Standards	■ About this report (p. 7)
	102-55 GRI content index	■ GRI content index (pp. 89–93)
	102-56 External assurance	■ About this report (p. 7)
GRI 200: Economic		
Economic performance		
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	■ Business model (pp. 10–12)
	103-2 The management approach and its components	
	103-3 Evaluation of the management approach	

GRI Standard	Disclosure	Cross-reference and note
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed ■ Annual Report 2020 (pp. 10–12)
	201-2	Financial implications and other risks and opportunities due to climate change ■ Business model (pp. 10–12) ■ Climate strategy (pp. 57–59)
	201-4	Financial assistance received from government ■ Table of key figures (pp. 76–83)
Indirect economic impacts		
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary ■ Maintenance management (pp. 34–35) ■ Climate strategy (pp. 57–59)
	103-2	The management approach and its components
	103-3	Evaluation of the management approach
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported ■ Maintenance management (pp. 34–35) ■ Land (pp. 36–39) ■ Rail (pp. 45–48) ■ Road (pp. 49–53)
	203-2	Significant indirect economic impacts ■ Land (pp. 36–39) ■ Climate strategy (pp. 57–59)
Taxes		
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary
	103-2	The management approach and its components ■ Business model (pp. 10–12)
	103-3	Evaluation of the management approach
GRI 207: Taxes 2019	207-1	Approach to tax ■ Business model (pp. 10–12)
	207-2	Tax governance, control, and risk management ■ Business model (pp. 10–12)
	207-3	Stakeholder engagement and management of concerns related to tax ■ Business model (pp. 10–12)
	207-4	Country-by-country reporting ■ Note: The HPA’s operations only make it liable for domestic tax.
GRI 300: Environmental		
Energy		
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary ■ Climate strategy (pp. 57–59)
	103-2	The management approach and its components
	103-3	Evaluation of the management approach
GRI 302: Energy 2016	302-1	Energy consumption within the organisation ■ Climate strategy (pp. 57–59) ■ Table of key figures (pp. 76–83)
	302-4	Reduction of energy consumption ■ Climate strategy (pp. 57–59) ■ Table of key figures (pp. 76–83)

GRI Standard	Disclosure	Cross-reference and note	
Biodiversity			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	<ul style="list-style-type: none"> ■ Introduction to climate and the environment (p. 56) ■ Natural capital (p. 62)
	103-2	The management approach and its components	
	103-3	Evaluation of the management approach	
GRI 304: Biodiversity 2016	304-03	Habitats protected or restored	<ul style="list-style-type: none"> ■ Natural capital (p. 62)
Emissions			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	<ul style="list-style-type: none"> ■ Climate strategy (pp. 57–59)
	103-2	The management approach and its components	
	103-3	Evaluation of the management approach	
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	<ul style="list-style-type: none"> ■ Climate strategy (pp. 57–59) ■ Table of key figures (pp. 76–83)
	305-2	Energy indirect (Scope 2) GHG emissions	<ul style="list-style-type: none"> ■ Climate strategy (pp. 57–59) ■ Table of key figures (pp. 76–83)
	305-5	Reduction of GHG emissions	<ul style="list-style-type: none"> ■ Climate strategy (pp. 57–59) ■ Table of key figures (pp. 76–83)
	305-7	Nitrogen oxides (NO _x), sulphur oxides (SO _x) and other significant air emissions	<ul style="list-style-type: none"> ■ Climate strategy (pp. 57–59) ■ Table of key figures (pp. 76–83)
Effluents and waste			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	<ul style="list-style-type: none"> ■ Climate strategy (pp. 57–59) ■ Water (pp. 40–44)
	103-2	The management approach and its components	
	103-3	Evaluation of the management approach	
GRI 306: Effluents and Waste 2016	306-1	Water discharge by quality and destination	<ul style="list-style-type: none"> ■ Water (pp. 40–44) ■ Table of key figures (pp. 76–83) <p>Note: Due to organisational reasons, data relating to GRI 306-2 has not yet been comprehensively recorded.</p>

GRI Standard	Disclosure		Cross-reference and note
GRI 400: Social			
Employment			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	■ Staff recruitment and development (pp. 66–68)
	103-2	The management approach and its components	
	103-3	Evaluation of the management approach	
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	■ Staff recruitment and development (pp. 66–68) ■ Table of key figures (pp. 76–83)
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	■ Staff recruitment and development (pp. 66–68)
Local communities			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	■ Stakeholder engagement (pp. 20–21) ■ Land (pp. 36–39)
	103-2	The management approach and its components	
	103-3	Evaluation of the management approach	
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments and development programmes	■ Land (pp. 36–39) ■ Table of key figures (pp. 76–83)
	413-2	Operations with significant actual and potential negative impacts on local communities	■ Climate strategy (pp. 57–59)

Glossary

- **Blended learning formats:** Classroom events and e-learning take place in an integrated manner.
- **Cyber resilience** is a company's ability to prepare for and counteract adverse cyber events, whatever attack vector they come from.
- **Greenhouse Gas Protocol (GHG Protocol):** The GHG Protocol is the most widespread international accounting instrument for government and business leaders to understand, quantify and manage greenhouse gas emissions.
- **Hydromorphology** describes the structures currently found in a stretch of water (such as coves, groynes, areas of sedimentation) and their run-off characteristics. Hydromorphological quality elements are: water balance (flow and flow rate, connection to bodies of groundwater), river continuity, morphological attributes (variation in depth and width, structure and substrate of the river bed, structure of the shore area).
- **Modal shift** means a change in the mode of transport used. The aim of modal shift is to move transport volume onto the most environmentally friendly method of transport (ship, rail, road).
- **TEU** stands for "twenty-foot equivalent unit" and is a unit used to express the freight capacity of container ships and container terminals.
- **Tidal dynamics** are the ways in which oceans, shallow seas and estuaries respond to tidal forces.

Independent Practitioner's Report

on a Limited Assurance Engagement on Sustainability Information¹

To the HPA Hamburg Port Authority AöR (HPA), Hamburg

We have performed a limited assurance engagement on the disclosures in the sustainability report of the HPA Hamburg, for the period from 1 January 2019 to 31 December 2020. Our audit does not cover the external sources of documentation or expert opinions mentioned in the sustainability report.

Responsibilities of the Officers

The executive directors of the HPA are responsible for the preparation of the sustainability report 2019/2020 in accordance with the requirements of the "Deutschen Nachhaltigkeitskodex" (DNK).

This responsibility of company's executive directors includes the selection and application of appropriate methods of sustainability reporting as well as making assumptions and estimates related to individual sustainability disclosures, which are reasonable in the circumstances. Furthermore, the executive directors are responsible for such internal control as they have considered necessary

to enable the preparation of a sustainability report that is free from material misstatement whether due to fraud or error.

Practitioner's Declaration Relating to Independence and Quality

We are in accordance with the provisions under German commercial law and professional requirements independent of the HPA, and we have fulfilled our other ethical responsibilities in accordance with the relevant provisions within these requirements.

Mazars GmbH & Co. KG Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft applies the German national legal requirements and the German profession's pronouncements for quality control, in particular the by-laws regulating the rights and duties of Wirtschaftsprüfer and vereidigte Buchprüfer in the exercise of their profession (Berufssatzung für Wirtschaftsprüfer und vereidigte Buchprüfer) as well as the *IDW Standard on Quality Control 1: Requirements for Quality Control in Audit Firms (IDW QS 1)*,

¹ We have performed a limited assurance engagement on the German version of the sustainability report and issued an independent assurance report in German language, which is authoritative. The following text is a convenience translation of the independent practitioner's assurance report.

that are consistent with the International Standard on Quality Control 1 issued by the International Auditing and Assurance Standards Board (IAASB).

Practitioner's Responsibility

Our responsibility is to express a limited assurance conclusion, based on the assurance engagement we have performed. We conducted our assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the IAASB. These Standards require that we plan and perform the assurance engagement to allow us to conclude with limited assurance that no matters have come to our attention that cause us to believe that the information for the period from 1 January 2019 to 31 December 2020 has not been prepared, in all material respects, in accordance with the requirements of the "Deutschen Nachhaltigkeitskodex" (DNK).

In a limited assurance engagement the assurance procedures are less in extent than for a reasonable assurance engagement and therefore a substantially lower level of assurance is obtained. The assurance procedures selected depend on the practitioner's professional judgment.

Within the scope of our assurance engagement, we performed amongst others the following assurance procedures and further activities:

- Obtaining an understanding of the structure of the sustainability organization and of the stakeholder engagement
- Inquiries of executive directors and personnel involved in the preparation of the Sustainability Report regarding the preparation process and the internal control system relating to this process and selected disclosures in the non-financial statement
- Analytical evaluation of selected disclosures in the non-financial statement
- Enquiry and review of selected documents (audit evidence) supporting the disclosures in the non-financial statement
- Assessment of the conception and implementation of systems and processes for the collection, management and monitoring of data, including data consolidation
- Evaluation of the presentation of the selected disclosures regarding sustainability performance

Assurance Conclusion

Based on the assurance procedures performed and assurance evidence obtained, nothing has come to our attention that causes us to believe that the disclosures in the sustainability report for the period from 1 January 2019 to 31 December 2020 has not been prepared, in all material aspects, in accordance with the requirements of the "Deutschen Nachhaltigkeitskodex" (DNK).

We do not express an audit opinion on the external sources of documentation or expert opinions mentioned in the non-financial statement.

Intended use of the Assurance Report

We issue this report on the basis of the engagement agreed with the Company. The assurance engagement has been performed for purposes of the Company and the report is solely intended to inform the Company about the results of the limited assurance engagement. The report is not intended for any third parties to base any (financial) decision thereon.

Our responsibility lies only with the Company. We do not assume any responsibility towards third parties.

Limitation of Liability

For the performance of our engagement and our liability, also in relation to third parties, the Special Engagement Terms for Audits and Audit-Related Services of Mazars GmbH & Co. KG Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft dated 1 June 2019 as well as the

General Engagement Terms for German Public Auditors and German Public Audit Firms as of 1 January 2017. Accordingly, our liability is limited pursuant to No. 9 of the General Engagement Terms. In relation to third parties, No. 1 (2) and No. 9 of the General Engagement Terms apply.

Hamburg, 04. March 2022

Mazars GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft
Steuerberatungsgesellschaft

Dr. Joachim Dannenbaum
Partner, Wirtschaftsprüfer

Kai Michael Beckmann
Director

Imprint

Contact details

If you have any questions or suggestions relating to the topic of sustainability and the HPA, please do not hesitate to contact us. To do so, please use the following email address: nachhaltigkeit@hpa-hamburg.de

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Hamburg Port Authority AöR
Neuer Wandrahm 4
20457 Hamburg, Germany

Tel.: +49 (0)40 42847-0

www.hamburg-port-authority.de

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Sustainability Manager

Dorita Hermes, Hamburg Port Authority AöR

Concept, editing and realisation

Scholz & Friends Reputation, Berlin

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