

BUILDING TOMORROW'S PORT TOGETHER. MAKE IT HAPPEN.

Highlights of 2021 Annual Report



Foreword from the Executive Board



Building tomorrow's port together

In the port of Rotterdam, businesses must be able to flourish and deliver added value. As the Port of Rotterdam Authority, we are committed to safety, accessibility, digitalisation, sustainability and innovation. We are not alone here; we work with multiple partners. Together, we keep the port efficient and cleaner, and our aim is a healthy and green living environment. In that way, the port and industrial complex makes a substantial contribution to the earning capacity of the Dutch economy. But we have a wider impact.

We believe that the success of the port is also determined by solutions to issues faced by society as a whole. Figures about carbon reduction, cleaner air, employment, inclusiveness, safety, health and well-being are becoming increasingly important.

A range of initiatives to improve these figures - you can find examples in this annual report - demonstrate the strength and effectiveness of the Rotterdam port and industrial complex. And of our own organisation.

Results and investments

The Port Authority's financial results for 2021 were satisfactory. The profit on ordinary activities before taxation increased to €273.6 million (2020: €270.8 million). The result after taxation, adjusted for one-off tax effects associated with the change in the corporate tax rate, was €213.4 million (2020: €207.2 million). Throughput recovered strongly to a total volume of 468.7 million tonnes, which is almost back at the pre-corona level of 2019. In December 2021, we even set a record, with the arrival in the port of Rotterdam of the 15 millionth TEU container of the year. This is the first time a European port has broken through this magical barrier.

The results mean we can continue investing in the port of the future. In 2021, the goal was to invest €275 million in the port and industrial complex. At €226.3 million, we did not make that target. This was due in part to the adjustment of the scope of investments and global logistical problems, but also to delays caused by the problems in the Netherlands with nitrogen emissions. The Port of Rotterdam urgently needs more latitude in the short term under the regulations applicable to nitrogen emissions in order to implement a range of projects in the field of the energy transition. If this fails to materialise, we will not be able to achieve our ambitions in time and the process of making industry sustainable will stagnate.

Safety is the first priority

Not only were we confronted with the effects of the COVID-19 pandemic in 2021, we also had to manage the effects of the Suez Canal blockage: after the canal was cleared, dozens of ships arrived here at our port in a short period of time. Everyone involved was on alert to manage the consequences of this unique event smoothly and quickly. In this second corona year, the services of the Harbour Master's Division continued unabated and the port continued to be easily accessible and safe. To combat subversive activities associated with narcotics, we are working in tandem with enforcement agencies at the port such as customs and police.

Smart solutions for port logistics, management and development

We want to strengthen the competitive position of the Port of Rotterdam as a world-class logistics hub and industrial complex. Innovation and digitalisation play an important role here. For example, we use information from satellites and sensors for maintenance work on quays. The results allow clients to make more intensive use of our assets and we can carry out maintenance more efficiently. The fact that the Brexit has not led to any major problems in logistics in Rotterdam demonstrates that the systems of our Portbase subsidiary deliver good support for the transport sector and the government. The digitalisation of the logistics chain is also increasingly evident in the Harbour Master's Division. The handling of ship calls is now largely digital.

Important steps in the energy transition

The energy transition is proceeding apace. We are involved in a range of projects that will allow us to achieve 20 to 25% of the Dutch carbon reduction target for 2030. In May 2021, it was announced that the Dutch government is reserving about €2 billion for companies that want to capture CO₂ from 2024 onwards and deliver it for storage to the Porthos project that we are developing with Energie Beheer Nederland and Gasunie. Hydrogen is becoming increasingly important in the energy transition. A series of projects are in progress, not only in the area of large-scale local production and imports of hydrogen from overseas but also for application in the transport sector and industry in Rotterdam, Moerdijk, Chemelot and Germany. We have a lot of impact but, in order to maintain that role, we are explicitly committed to collaborating with the government. Provide clear legislation and regulations for the longer term and eliminate barriers. Work with us to ensure we can progress even faster and more decisively towards a climate-neutral world.

Enterprising and effective

We make a substantial contribution to the sustainability and earning capacity of the Dutch economy. We do this proactively and with a focus on cooperation based on our enterprising and effective organisation. In 2021, we took the decision to work on future-resilient lines: 60% at the office and 40% from home. COVID-19 has triggered an acceleration in digital, flexible and remote working. Our staff survey showed that the majority of our colleagues appreciate our continued encouragement to work from home: less travel time, more effective work and more autonomy. In addition to our employees, we thank our stakeholders and clients who placed their trust in us in 2021.

The Executive Board

Allard Castelein, Vivienne de Leeuw, Boudewijn Siemons

In brief

2021 in numbers

Safety and security

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major incidents



There were no major incidents in the port of Rotterdam in 2021.

Goods throughput

468.7

million tonnes



Our throughput in 2021 was 7.3% higher than in the previous year. With the market picking up, there was an increase in almost all types of goods.

Revenue

772.7

million euros



Our revenue in 2021 was 2.6% higher than in the previous year.

Gross investments

226.3

million euros



In 2021, the Port of Rotterdam Authority invested in client-related infrastructure, in public infrastructure, in capital assets and in participating interests.

Energy transition

22.4 Mtonnes

Carbon emissions



Carbon emissions from the Port of Rotterdam fell by 27% between 2016 and 2020. The decline is due in part to the shift in electricity production from coal-fired plants to gas-fired plants. (Source: EU transaction log, figure relates to 2020)

Entreprising and effective organisation

49.1%

committed and passionate employees



Our staff survey showed that 49.1% of our employees are committed and passionate. Compared with the last measurement (48.2%), that is an increase. Our score is in the top quartile of the benchmark.

Employment

174,057

jobs



The port of Rotterdam employed 174,057 people directly and indirectly in 2020 (last known figure). (Source: 2021 Port Monitor).

Added value

3.0%

of gross domestic product



The added value of the port of Rotterdam was €23.8 billion in 2020 (last known figure). (Source: 2021 Port Monitor).

Milestones in 2021



Opening of Leuve Pavilion

The Leuve Pavilion opened its doors to the public on 16 July. It consists of a Port Information Desk of the Port of Rotterdam Authority, two catering facilities and public workshops of the Maritime Museum. The Leuve Pavilion provides a closer connection between the city and the port. It is also home to the Port Pavilion visitor centre of the Port of Rotterdam Authority.



Collaboration for the production of green hydrogen

In September, the energy company Uniper and the Port of Rotterdam Authority signed an agreement to develop the production of green hydrogen at Uniper's Maasvlakte location. These plans link up with the planned new hydrogen infrastructure and the growing demand for sustainable hydrogen.



Making the fleet more sustainable

On 4 October, the incident response vessel RPA10 was commissioned after being converted into a hybrid vessel. It complies with the strictest requirements for exhaust emissions.



Shell builds biofuel plant

Shell is to build a biofuel plant with a capacity of 820,000 tonnes a year at the Shell Energy and Chemical Park Rotterdam (Shell Pernis). Once built, the plant will be one of the largest of its kind in Europe for the production of sustainable aviation fuel (SAF) and renewable diesel from waste.



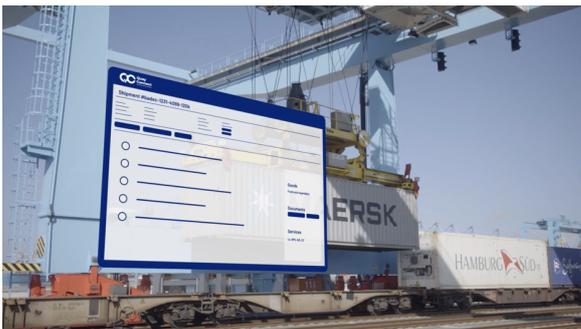
Opening of Theemsweg route

On 8 November, ProRail successfully connected the Theemsweg route in the Port of Rotterdam to the existing port railway. The first freight train travelled over the brand-new, four-kilometre-long, track.



Record draught in the Amazonehaven

In late November, the Ever Ace arrived at the ECT Delta terminal in the Amazonehaven. The world's largest container vessel has a draught of 16.5 metres. In December, this record was broken by the Ever Aim, which has a draught of 16.7 metres. According to the database of the Port of Rotterdam Authority, this is a new record for this port basin.



Naviporta develops Quay Connect

Since Brexit, exports to the UK have become more complicated. A new service has been developed on Naviporta, the independent blockchain platform for the logistics sector launched by the Port of Rotterdam Authority: **Quay Connect**. This service enables the automatic exchange of information with customs authorities in UK ports. The new service was announced on 16 December.



Throughput of 15 million TEU containers

In December, we set a new record for TEU container throughput in the Port of Rotterdam: 15 million. Despite the pandemic, the impact of the Suez Canal blockage and the other disruptions that have affected container traffic, the Port of Rotterdam closed the year with a throughput record.

Mission, vision, core tasks and strategy

Mission

We create economic and social value by achieving sustainable growth in the world-class port in collaboration with clients and stakeholders.

Vision

We are continuously improving the port of Rotterdam to make it the safest, most efficient and sustainable port in the world. We create value for our customers by developing chains, networks and clusters, both in Europe and in growth markets worldwide.

Core tasks

- Sustainable development, management and operation of the port.
- Maintaining the safe and smooth handling of shipping.

When executing our core tasks, we act as an entrepreneurial developer, matchmaker, facilitator, booster, director, investor and initiator.

Corporate strategy

Our corporate strategy focuses on three key areas. The central focus is on generating social and economic impact that goes beyond simply increasing volume. Relevance and quality also matter. Our activities allow our clients to be successful businesses.



Smart partner in logistics chains

By making information and data available, we are able to organise the handling of cargo in the logistics chain as efficiently and optimally as possible. In this way, we hope to ensure that more 'cargo' opts for Rotterdam.

Accelerator of sustainability in the port

As an accelerator of sustainability in the port, our aim is to achieve a carbon reduction of 49% relative to 2019 by 2030.

We intend to commit to the goal of 55% carbon reduction in 2022. We implement this in a broad portfolio of energy transition projects that allows the port to go down the road to carbon neutrality by 2050, attract future-robust cargo flows and activities, and invest profitably in sustainability.

Enterprising and effective organisation

We have strict standards for the effectiveness and client focus of our organisation. An interdisciplinary approach, sound internal and external collaboration, and a clear focus help to make that happen. This leads to further improvements in the organisation's agility, the control of operating costs and capital expenditure, and the ongoing sharpening of our customer focus.

The context in which we operate is becoming increasingly complex. Particularly in terms of positioning Rotterdam as a smart port and a port where the energy transition is in motion. Successful coordination with third parties requires a clear definition of roles: what we do and what we do not do. This provides focus, supports the organisation's effectiveness and enhances our capacity to fully commit to the implementation of our chosen role.

Added value

Added value including indirect backward effects

The added value of the port of Rotterdam, including indirect backward effects, was estimated at €23.8 billion in 2020. This is 3% of Dutch gross domestic product (GDP). Here, €10 billion is related to the direct business location function, €5.9 billion to the direct hub function, and €7.8 billion to the indirect backward effects of the Rotterdam port and industrial complex (Source: 2021 Port Monitor).

In 2020, an estimated 174,057 FTE jobs were linked to the port of Rotterdam. Of those, 42,250 FTE are related to the direct business location function, 60,806 FTE to the direct hub function, and 71,001 FTE to the indirect backward effects of the Rotterdam port and industrial complex (Source: 2021 Port Monitor).

.. also including forward indirect effects

'The Rotterdam Effect' calculated that added value and employment in 2017 were much higher if forward indirect effects were also included: € 45.6 billion and 384,500 FTE jobs.

Trade flow function of the ports in Rhine and Meuse estuary area

It is estimated that the ports in the Rhine and Meuse estuary area (including Moerdijk and the Drecht towns) contributed some €34 billion to the export value for Dutch products in 2018. This is on top of the added value based on the business location function and hub function. Most of the €34 billion by far is attributed to the port of Rotterdam. The trade flow function was also associated with some 301,100 FTE jobs in 2018, in addition to the business location function and hub function. This results, for the ports in the Rhine and Meuse estuary area, in a total added value of €63 billion and total employment of 563,800 FTE in 2018 (Source: Economische betekenis zeehavengebieden). The total value added is 8.2% of Dutch GDP.

Our contribution to the Sustainable Development Goals

As an organisation at the heart of society, we are aware of our responsibility for our impact on society and we assume that responsibility. Our recently updated Corporate Social Responsibility (CSR) statement shows the principles we stand for at the Port of Rotterdam Authority and it is based on international CSR frameworks such as the United Nations Global Compact (UNGC) and the OECD (Organisation for Economic Cooperation and Development) guidelines.

In our CSR statement, we identify three CSR themes that guide our social value creation: Safe & Healthy Environment, Climate & Energy and People & Work. Through our work, we contribute to the Sustainable Development Goals (SDGs) of the United Nations. We make the largest contribution to:



Indirect contribution to SDGs

In addition, we have identified two SDGs (5 – Gender Equality and 17 – Partnerships for the goals) to which we contribute more indirectly. We have not therefore linked them to our CSR themes or KPIs. Examples are described in this report, for example in the chapters relating to the [energy transition](#) and sustainable business. We summarise the connections between our spearheads, substantive themes, KPIs and SDGs in a table.

Our corporate code

Principles relating to human rights and working conditions, the environment and anti-corruption are fundamental to our corporate code. That code describes how we behave with respect to our locality and commits us to the 'Ten Principles' of the United Nations Global Compact (UNGC). We publish our corporate code on our [website](#).

It is the responsibility of us all to ensure that we act in accordance with the corporate code. The corporate code (and therefore the Ten Principles) applies to everyone who works at the Port of Rotterdam Authority. This applies both to management and employees, and also, for example, to temporary staff, interns, volunteers, seconded employees or other staff from outside the organisation.

Human rights and working conditions

At the Port of Rotterdam Authority, we support and respect human rights and good working conditions. We want to ensure that we have no part in violations of human rights.

We are aware of the fact that our work can have a direct or indirect impact on people and communities. We therefore have a responsibility to our employees, our clients and society as a whole to respect human rights.

Prioritisation in risks relating to human rights

To identify the most serious risks relating to human rights associated with our business, a scan was conducted that included a media analysis, interviews with employees and findings from surveys. A distinction was made here between, on the one hand, the impact of our own activities and, on the other, the impact of the activities of business associates in our chain such as suppliers, clients and partners.

Most of our own work, in the form of investment and tendered projects, is located in the Netherlands. In the context of our business, we are alert to risk areas that include:

- In our role as employers: the working environment: security, privacy, equality and discrimination;
- In our supply chain, with suppliers and contractors: the working environment and safety;
- In the port of Rotterdam: greenhouse gas emissions, nuisance for the community, the working environment, safety and privacy.

If there are adverse effects on human rights, we take appropriate action depending on the operational context and the severity of the consequences. In doing so, we distinguish between the adverse consequences of our own activities and the adverse consequences of the activities of our business associates. A risk management and control system has been established at the Port of Rotterdam Authority for our own activities. The Port of Rotterdam Authority is not directly responsible for business associates and we have a limited influence. In these areas, we engage using the capacities appropriate to the position and role of the Port of Rotterdam Authority.

Policy for prioritised risks

For our own company, the corporate code sets out general principles relating to respecting human rights and good working conditions. For the Port of Rotterdam Authority, these principles mean that people are free to exercise their right of association and that we want to eliminate any form of discrimination. The corporate code also describes forms of desirable and undesirable conduct towards colleagues, job applicants, staff from outside the organisation, customers, suppliers and clients. In addition, explicit policies have been established in the areas of occupational health and safety, privacy and diversity. Through our Energy Transition programme, we focus on reducing greenhouse gas emissions in the port.

Legal remedies

If there is a suspicion of malpractice, improper conduct or unethical conduct, employees and third parties can report in various ways.

Environment

It follows from our corporate code that we take precautions to address environmental challenges, engage in initiatives to further environmental responsibility, and encourage the development and adoption of environmentally friendly technologies. We do this by encouraging cleaner shipping and the energy transition in industry but also by working to reduce the carbon footprint of our own organisation further.

Anti-corruption

In our corporate code, we endorse the importance of tackling corruption and fraud. Every employee is expected to prevent both. In addition, we reject all forms of corruption, including bribery and extortion. In our onboarding programme, an e-learning module and courses on ethical conduct, we instil an awareness of the procedures and guidelines in place to prevent undesirable conduct. A 'Certificate of Good Conduct' (VOG) is a standard part of our recruitment policy, with additional screenings by the AIVD (the Dutch Intelligence Service) for security positions at the Harbour Master's Division. In addition, we apply procurement guidelines and the OECD guideline 'Principles for Enhancing Integrity in Public Procurement'. Finally, we have additional financial control frameworks for key processes, such as procurement, sales and IT, that include mitigating measures for the purposes of preventing and/or detecting fraud. We monitor and discuss the risk of 'Unethical Conduct & Fraud' twice a year. No signs have been found indicating that our employees are involved in corruption or fraud.

Our international work

We are also active abroad. Through our joint ventures, we work in Oman and Brazil. We also provide consultancy services in Indonesia, India, Mozambique, Argentina, Egypt and Latvia. In our international activities, we are guided by the general CSR policy as it applies at the Port of Rotterdam Authority. However, in doing so, we take into account the local context, and the practical possibilities and expectations linked to that context. In our activities abroad, there is an extra focus on societal risks. We thoroughly prepare employees assigned to overseas activities. Lessons learned are discussed in ethical-dilemma courses, where we discuss cases taken from actual practice. In 2022, we will explore the further application of guidelines for our international operations.

Diversity and inclusiveness

The Port of Rotterdam Authority wants to be a diverse organisation where everyone feels at home. We believe that diversity in the workplace furthers the quality of teams, decision-making, and the agility and innovative capacity of our organisation. An inclusive organisation is resilient, agile, flexible and adaptive. In an inclusive organisation, there is a safe and open culture where everyone has the opportunity to voice their opinions and where there is equality. In addition, a varied workforce profile matches the changing labour market better.

Our goal is to improve diversity and inclusiveness at the Port of Rotterdam Authority. Our initiatives in this respect target areas including: a better male-female ratio, better age diversity, the recruitment of employees from different cultural backgrounds and actively seeking to employ people who have difficulty finding work. The guideline for a vacancy is that the new employee will always be 'the best person in the right place' and contribute to the diversity of the organisation.

Safety and security

Safety and security in the port and industrial complex constitute one of the top priorities of the Port of Rotterdam Authority. For shipping, but also for local residents, employees in the port, companies and users (including leisure users) of the port area. In addition to nautical safety, this includes safety on projects, transportation and environmental safety, flood risk management, subversive crime, safety in the organisation and cybersecurity. We monitor the 'safety and security landscape' continuously and share our knowledge and expertise about the various subjects.

Accidents

We report on the safety of shipping traffic using the Nautical Safety Index (NSI). This is an index which takes the seriousness of incidents into account. In 2021, the NSI was 7.46, which is higher than the standard of 7.0. There were no very serious incidents, but there were three serious incidents: a seagoing vessel collided with the Caland Bridge, a seagoing vessel and a barge collided near the Eemhaven and a barge (pusher) capsized.

Subversive crime

Drugs-related crime at the port was in the news regularly last year. Tackling subversive crime is a challenge facing society as a whole that, strictly speaking, is not the responsibility of the Port of Rotterdam Authority. However, subversive crime is high on our agenda: we do not want to see it at our port. That is in the interests of the integrity, security and competitive position of the port. We do not want criminals to use the port for nefarious ends. We are working with various agencies in the port to maintain security and combat drugs-related crime.

The port embraces digitalisation

Rotterdam is Europe's largest sea port. With a maximum water depth of 24 metres, it is accessible for the vessels with the deepest draughts. The port brings together shipping, inland shipping, rail, road and pipeline modalities. In 2021, 28,876 seagoing vessels and 99,558 inland vessels called at the port of Rotterdam. The port of Rotterdam wants to be the world's smartest. We are constantly investing in that position.

Through the digital transformation, the Port of Rotterdam Authority is growing from a traditional port manager to become an enterprising network organisation that strengthens the port. As an independent actor, we assume our responsibility for driving digitalisation processes, recruiting external expertise and forging alliances. In that way, we are building the smartest port as a way to generate competitive advantages for our clients. This includes not only transport and logistics: using sensors and data models, we are also making infrastructure, sites and buildings smarter.

Digitalisation at the Harbour Master's Division

Digitalisation contributes to the work of the Harbour Master's Division in several ways. The Harbour Master Next Generation (HMNG) program allows us to innovate with smart solutions while ensuring that we make our work easier and transparent. The program improves the Harbour Master processes and delivers more convenience and efficiency for our clients. Planning, traffic, supervision & enforcement and crisis management are at the heart of the program.

Digitalisation of port development and management

Two focus areas of our strategy meet in port development and management. As an enterprising organisation, we are working on using our assets more efficiently and effectively, while contributing to making the port and industrial complex more sustainable. Digitalisation supports us at every stage of asset management. Examples include spatial data in GIS, drawings in Autocad, sensors in quays, and cameras on sites and in vehicles. Infra Innovation plays an important role at the Port of Rotterdam Authority.

Practical digital initiatives

By developing practical digital initiatives, we are able to make logistical processes in and around the port more efficient. In that way, we make the port more competitive. Our initiatives also contribute to a global network of 'smart connected ports'. Digitalisation is not something we do alone. In the logistics chain, we create an open climate in which we cooperate, exchange data and take steps forward. By pooling our forces in areas where we do not compete directly, we make goods flows stronger. Success can only be achieved here through standardisation and by ensuring that systems can communicate with each other.

Future-resilient accessibility

The revised 2030 Port Vision states our ambition to become Europe's best connected port by 2030. To safeguard excellent multimodal accessibility for our clients in the long term as well, we surveyed the long-term accessibility challenges. Using throughput forecasts for 2030-2040, we conducted a capacity analysis for the different modes. That identified a number of bottlenecks in the physical infrastructure network, resulting in an Accessibility Strategy. We are talking to the national government, provincial authorities and industry about possible solutions, and in particular to our partners in the MIRT programme *Goods Transport Corridors*.

We are focusing on using the existing infrastructure better (capacity management) and making joint investments with other parties in new and existing infrastructure. The use of smart information systems and the exchange of data between various parties in the chain will also help to improve accessibility. We are also looking to optimise connectivity through all transport modes and to achieve a modal shift by encouraging more transport using inland shipping and railways rather than road haulage.

We will describe one important development for each mode.

Water

In Nextlogic, we are working on integrated planning for the handling of inland container shipping in Rotterdam. Steps were made in 2021 to achieve this by organising live pilot projects. Nextlogic also works with Portbase. One of the next steps for Portbase is a further focus on the hinterland, for example using the 'Melding Container Achterland' (Hinterland Container Report) application with the aim of also connecting as many inland terminals as possible. Portbase manages the digital infrastructure of the Dutch ports. It connects all the agencies involved in the logistics chain with different types of services.

Road

Digitalisation and innovation are essential to making road traffic more efficient, safe and sustainable. With Transport en Logistiek Nederland (TLN) and Portbase, we are working together under the banner of 'Data Fuel' to implement further efficiency improvements in container logistics step by step. This is happening at several points in the chain. For example, we are working with the City of Rotterdam and other organisations to introduce smart traffic lights that can regulate traffic better and with fewer emissions by communicating with vehicles.

Rail

The Dutch government introduced the Rail Freight Transport Measures Package with the aim of enabling and facilitating the growth of rail freight transport. In 2021, the Port of Rotterdam Authority, as the leader of the 'Digitalisation' cluster, engaged in the further digitalisation of the rail process, for example through the measure 'Digital basis in order'. In 2021, we mainly saw higher frequencies in the existing shuttle connections and the arrival of new shuttles. The shuttle service to Basel, for example, intensified.

Pipelines

The port of Rotterdam offers companies the option, and the space, to install new pipelines in the pipeline strips available for this purpose. These corridors are already fully equipped for new construction. The energy transition will result in the installation of large numbers of cables and pipelines in the coming decades. With our partners, the Port of Rotterdam Authority is developing a new pipeline infrastructure for heat, CO₂ and hydrogen.

Energy transition generates impact

We are determined to make our contribution to sustainability. We aim to reduce carbon emissions by 49% by 2030 compared with 1990 and expect a more ambitious target in line with 'Fit for 55'. This is in conformity with the Dutch climate agreement. By 2021, we will have taken important steps towards sustainability.

The plans with hydrogen are an important component of the energy transition. We want to have a future-resilient, clean port. We are working in this area with the companies located here and other like-minded stakeholders. The results are clear to see. For example, carbon emissions in the port have fallen by 27% since 2016.

The past few years have been devoted to exploring a range of possibilities, developing and assessing plans, and conducting feasibility studies. A number of projects involved a strong emphasis on defining our role more closely. The central focus is: how can we achieve most impact? We see our role primarily as a driver and facilitator that provides the infrastructure.

Pillar 1

The industry is moving step by step towards climate neutrality. The first pillar relates to the implementation of efficiency measures. Residual heat will be used to heat homes, commercial buildings and greenhouses. CO₂ will be captured and stored under the North Sea. These developments will require a lot of additional infrastructure, such as pipelines and cables, in the coming years. The Port of Rotterdam Authority acts as the project developer for the expansion of the energy infrastructure.

One example is Porthos:

Energie Beheer Nederland (EBN), Gasunie and the Port of Rotterdam Authority are working together on a basic infrastructure for the collection and transport of CO₂ in the Rotterdam port and industrial complex for storage in depleted gas fields in the North Sea. This is the Porthos project: Port of Rotterdam CO₂ Transport Hub & Offshore Storage. In late 2020, the European Commission proposed reserving €102 million in subsidy for this project. In 2021, the Dutch government followed, earmarking €2 billion for four companies that will supply CO₂: Air Liquide, Air Products, ExxonMobil and Shell. This subsidy is needed to bridge the gap between the cost of carbon emission allowances (ETS) and the cost of CO₂ capture and storage (CCS). In this way, carbon emissions are reduced but the companies are not put at a competitive disadvantage.

Pillar 2

This pillar focuses on transforming energy systems. Instead of using oil and gas for heating, industry will switch to electricity and hydrogen, preferably green hydrogen. This will require large amounts of affordable electricity from sources like wind and solar. Here again, the Port of Rotterdam Authority is acting as a driver of the required change and as a project developer for the expansion of the energy infrastructure that is needed.

One example is hydrogen:

We are continuing to work on the preparations for a range of projects from our [hydrogen vision](#). They relate to large-scale local production, imports of hydrogen and application in the transport sector and industry. For example, we have entered into an agreement with the energy company Uniper to develop the production of green hydrogen at Uniper's Maasvlakte location. These plans link up with the planned new hydrogen infrastructure and the growing demand for sustainable hydrogen from the petrochemical industry in Rotterdam.

In 2021, we completed a feasibility study for the development of an import terminal in the port and industrial complex. Studies are being conducted into the construction of pipelines between Chemelot and North Rhine-Westphalia for a range of substances such as hydrogen and CO₂. The Delta Corridor was included as a priority project in the national government's Multi-Year Infrastructure and Climate Programme in 2021.

Pillar 3

Pillar 3 involves replacing fossil commodities. This can be done by using biomass, recycled materials, green hydrogen and CO₂. The Port of Rotterdam Authority is actively looking for companies that contribute to a circular economy.

One example is Waste-to-Jet:

Waste-to-Jet is expected to process up to 360,000 tonnes of recyclables a year and produce up to 80,000 tonnes of renewable products, of which about 75% can be Sustainable Aviation Fuel (SAF). SAF is fundamentally important in terms of reducing carbon emissions during the lifecycle of the aviation industry by up to 80% compared with conventional fuel. We are executing this project with Enkkem and Shell and we expect the first plane to fly on Sustainable Aviation Fuel in 2025 or 2026.

Pillar 4

Alongside industry, the transport of goods to, in and from the port area will also have to become climate-friendly. With our partners, the Port of Rotterdam Authority is developing activities to help the logistics sector reduce carbon emissions.

An example is an inland vessel that runs on batteries:

In September, the inland vessel De Alphenaar was the first in the Netherlands to sail completely emission-free between Alphen aan den Rijn and Moerdijk for beer brewer Heineken. The vessel uses replaceable energy containers for propulsion. This voyage was an initiative from Zero Emission Services (ZES), a company founded in June 2020 by ENGIE, ING, Wärtsilä and the Port of Rotterdam Authority with support from the Dutch Ministry of Infrastructure and Water Management. The energy containers - 'ZESpacks' - are filled with batteries charged using green electricity. The ambition of ZES is to scale up in the short term and establish thirty zero-emission shipping routes by 2030. The company is therefore taking an important step in the transition to emission-free inland shipping.

Nature and biodiversity

The port and industrial complex requires an appealing local area where companies want to invest and where people want to live and enjoy their leisure time. There is therefore a close relationship between the economic and social value of the port and the quality of the living environment. That quality depends on factors such as local nature and biodiversity, noise levels, safety and air quality.

We believe that it is important to know what local residents think of the port and industrial complex. A good reputation generates greater understanding, support and backing among our stakeholders, enhancing our entrepreneurial scope. A study in 2021 found that local residents gave us a high score of 83.2 for our reputation and 75.6 in the area of 'license to grow'. The second score is a good one but it is significantly lower than last time. Three out of four local residents still benefit more from the port than they are bothered by it. This is an area on which we must work hard.

Nature vision

A responsible approach to our natural resources and the environment is essential for a future-resilient port. Our nature vision is the underpinning of our commitment to nature in the port and our goals for it. This is a complex challenge. We have to work with a wide range of species that may or may not be protected, and also with species that are actually harmful, and therefore undesirable. We must comply with legislation and regulations, keep stakeholders happy, and not hinder the development of the port and our projects. As the Port of Rotterdam Authority, we must manage our nature portfolio effectively and think well ahead in our projects.

National and international port alliances

The Rotterdam port and industrial complex has a sound national and international reputation. The Port of Rotterdam Authority uses its knowledge and expertise internationally to further strengthen this reputation, to attract companies, to advise strategic parties and to cement our international network through participation. In that way, we can serve the interests of both Rotterdam and the Netherlands.

Sohar Port and Freezone, Oman

Sohar Port and Freezone is a 50-50 joint venture between the Port of Rotterdam Authority and the Omani government. Sohar Port and Freezone develops and manages the port of Sohar.

The port is expanding. That includes the development of a transshipment facility for steel and iron products. Furthermore, a new calcined coke plant was commissioned this year (calcined coke is an intermediate product for manufacturing aluminium). These developments fit in with the trend that the port has seen in recent years; throughput rose to nearly 70 million tonnes.

The port is focusing on expansion options for the port and free zone in order to create space for future growth. In addition, work continues on making the complex greener. For example, the ambition is to expand the solar farm in the free zone further and the possibilities for using green hydrogen in the industrial complex are being explored.

In 2021, the ports of Sohar and Pecém signed a memorandum of understanding. In addition to working together on the energy transition and green hydrogen, both ports will strengthen each other through business development, knowledge development and sharing best practices.

Pecém, Brazil

Pecém is a 30/70 joint venture between the Port of Rotterdam Authority and the state of Ceará in Brazil. The Rotterdam participation in the port of Pecém offers opportunities for international trade flows and an investment opportunity for clients who are active in the port of Rotterdam. These objectives are in line with our international policy.

2021 was a record year. Throughput amounted to 22.4 million tonnes. This is an increase of almost 41% over the same period in 2020, when throughput was 15.9 million tonnes. Throughput was also substantially higher than in the previous record year of 2019, when it reached 18.1 million tonnes.

In 2021, good progress was made towards the ambition of developing a hydrogen cluster in the port and industrial complex. The presence of solar and wind mean that Northeast Brazil has sound facilities for the production of green electricity and hydrogen. Numerous contacts have been established with potential investors in a cluster of this kind. The expansion of the export zone has also been completed.

2021 was not exclusively a success story. In early 2021, the winner of the tender for the tank terminal withdrew. The options for establishing a tank terminal after all are now being considered.

Throughput and future-resilient portfolio

Its geographical location means that the Port of Rotterdam is the gateway to the European hinterland and an important hub in international goods flows. Our port is the largest in Europe. We aim to maintain and strengthen our position as the market leader. Our market share in the Hamburg-Le Havre range in 2021 (up to and including the third quarter) was 37.4%. That is more than in 2020 (36.6% up to and including the third quarter).

Developments in goods throughput

Dry bulk

The throughput of dry bulk amounted to 78.7 million tonnes, an increase of 23.4% by comparison with 2020. With the exception of agribulk, the throughput of all types of goods in the dry bulk category increased. Agribulk declined because grain and corn imports fell given the presence of existing stocks. Iron ore rose because steel production increased. The rise in coal throughput was attributable in part to the harsh winter of early 2021, the sharp increase in gas prices and the decline in wind production. Coal throughput also rose due to an unexpected combination of circumstances: a sharp rise in the gas price, relatively little steam production from wind, and high demand from the German steel industry for cokes.

Liquid bulk

Liquid bulk throughput amounted to 204.6 million tonnes in 2021, an increase of 6.6% relative to 2020. Crude oil throughput increased, driven by higher refining volumes and a rise in overall demand for oil products. Throughput of oil products rose due to higher imports of fuel oil from Russia. Refineries in Rotterdam purchased fuel oil because of the good price and the lower availability of heavy and sulphur-rich crude oil. More demand from the chemical industry led to higher imports of naphtha. Imports of gas oil/diesel were lower and exports higher. For example, more was transported to the United States, partly because of the extreme cold there. Kerosene throughput dropped sharply due to low demand.

LNG (liquefied natural gas) throughput was 12.4% higher than in 2020: the high gas price attracted more spot cargoes to Europe and therefore to Rotterdam. A favourable development is that Hapag Lloyd converted one of its large container vessels to sail on LNG.

Containers

In December, we attained a record throughput of 15 million TEU containers in the Port of Rotterdam. This is the first time a European port has broken through this magical barrier.

Container throughput dipped due to the COVID-19 outbreak but it recovered quickly in Rotterdam. The throughput of containers (in tonnes) was 2.3% higher than in 2021. The economy recovered from the COVID-19 dip, partly due to higher consumer spending. The rise in demand for consumer goods, in combination with disruptions in the logistics chains (including the Suez Canal blockage, the COVID-19 pandemic and lockdowns in some Chinese ports), led to delays and high freight tariffs around the world. Rotterdam also had to cope with these logistical challenges.

In TEUs, container throughput increased by 6.6%. The higher increase in TEUs by comparison with tonnage can be attributed to the lower weight of full containers. The reason is that shipping companies preferred not to carry very heavy containers given the current vessel utilisation levels because the focus was on the maximum utilisation of the vessels. That led to an increase in the throughput of empty containers.

Suez blockage

It is an image that is still clear in the minds of many people. The 'Ever Given', one of the largest container vessels in the world, got stuck sideways in the Suez Canal. That led to almost a week of gridlock, and large numbers of vessels backed up on either side of the canal. Of those vessels, 64 were en route to Rotterdam. They included the Ever Given. The Port of Rotterdam Authority immediately engaged in proactive consultations with all the parties involved (shipping companies, container terminals, inland terminals, hinterland transporters) to see how the surge in the arrival of vessels could be handled as smoothly as possible after the refloating of the Ever Given.

Container market share

With a market share of 32.0% (up to and including the third quarter in TEU), the port of Rotterdam is the market leader in the Hamburg-Le Havre range. Our market share was slightly lower than in 2020 (up to and including the third quarter: 32.1%). Compared with our main competitors, we are continuing to do well.

Break bulk

Total break bulk throughput in 2021 was 30.9 million tonnes, an increase of 3.2% relative to 2020. Roll-on-roll-off throughput exceeded the level of last year because demand from the UK recovered to the pre-Brexit level. The throughput of other general cargo was 15.2% higher. High energy costs for smelters led to more imports of nonferrous metals such as aluminium. More steel was also imported because European mills could not keep up with demand.

Financial results

The Port of Rotterdam Authority's financial results were good in 2021. Our revenue rose by 2.6% to €772.7 million (2020: €753.3 million). Contract revenues from site rental increased, mainly because some existing contracts were brought in line with the current market price. Revenues from sea port dues rose due to higher throughput volume.

Operating expenses were 5.5% down on last year, mainly due to lower expenditure during the COVID-19 pandemic and strong cost awareness. Our result before taxation was €273.6 million, 1.1% more than in 2020. The result after taxation was €247.2 million.

In 2021, our total gross investments amounted to €226.3 million. Completion was below our 2020 investment level (€265.8 million).

All ratios comply with the standard values

The goal of the Port of Rotterdam Authority's strategy is to have a financial position appropriate to at least an A rating in order to achieve our investment ambitions and maintain our operating activities in the event of unexpected negative developments. Our financing consists of a mix of loans and capital market products. The most important financial ratios that we follow are: net debt in relation to EBITDA, solvency and the interest coverage ratio. All ratios are well above the standard values stated in the financing contracts.

Balance sheet

	31. December 2021		31. December 2020
Assets			
Fixed assets			
Intangible fixed assets	79.269		72.596
Tangible fixed assets	3.915.969		3.938.420
Financial fixed assets	1.700.617		1.377.751
		5.695.855	5.388.767
Current assets			
Inventory	779		628
Accounts receivable	232.822		181.321
Cash and cash equivalents	291.179		206.836
		524.780	388.785
Total assets		6.220.635	5.777.552

Liabilities			
Shareholders' equity			
Issued share capital	900.000		900.000
Share premium reserves	391.200		391.200
Legal reserves	105.006		102.056
Other reserves	2.670.445		2.435.772
Result for appropriation	247.231		351.718
		4.313.882	4.180.696
Provisions		53.181	57.018
Long-term debts		1.629.445	1.353.694
Short-term debts		224.127	186.144
Total liabilities		6.220.635	5.777.552

(Before result appropriation, amounts x € 1,000)

Income statement

		2021	2020
Net revenue	730.038	714.959	
Other operating income	42.685	38.296	
Total operating income		772.723	753.255
Wages, salaries and social security	-117.634	-116.219	
Depreciation and impairment of tangible fixed assets	-189.947	-161.428	
Other operating expenses	-142.855	-159.504	
Total operating expenses		-450.436	-437.151
Operating result		322.287	316.104
Financial income and expenditure		-48.673	-45.343
Result from ordinary activities before taxation		273.614	270.761
Taxation		-33.131	79.147
Income from participating interests		6.784	1.810
Result after taxation		247.267	351.718

(Amounts x € 1,000)

Key figures

	Unit	2021	2020
Added value	Bln €	-	23,8
Employment	Jobs	-	174.057
Throughput total	Million tonnes	468,7	436,8
Throughput containers	TEU million	15,3	14,3
Ship calls (seagoing)	Number	28.876	28.170
Ship movements	Number	77.869	75.679
Very serious nautical incidents	Number	0	0
Nautical Safety Index	Score	7,46	7,99
Port reputation among local residents	Score	83,2	-
Carbon emissions HIC	Mtonnes	22,4	25,3
CO ₂ footprint PoR	Ktonnes	2,9	4
Proportion of women (total)	%	27,2%	28,0%
Proportion of women (management)	%	29,4%	31,4%