

PERS application– December 2022



The Port Environmental Review System (PERS) was developed on behalf of ESPO and the Ecoports Foundation





Contents

1. Introduction	3
2. Port profile	5
2.1 Introduction	5
2.2 General port information	5
3. Environmental policy	10
3.1 Introduction	10
3.2 Corporate Social Responsibility Statement	10
3.3 International frameworks	12
4. Register of Environmental Aspects, Legal Requirements and Performance Indicators	14
4.1 Introduction	14
4.2 Significance of environmental aspects	16
4.3 Environmental Aspect Register	21
4.4 Environmental performance indicators	30
5. Responsibilities and resources related to environmental aspects	31
5.1 Introduction	31
5.2 Environmental responsibility within Port of Rotterdam Authority.....	31
5.3 Environmental responsibility within and/or related to the port area	33
6. Conformity Review	34
6.1 Introduction	34
6.2 Compliance with environmental legislation and gap	34
6.3 Port environmental performance	34
6.4 Improvement plans	36
7. Environmental Report	38
8. Examples of best practice or management solutions	39
Appendix I	44
Appendix II	45



1. Introduction

1.1 Port of Rotterdam Authority & Corporate Social Responsibility

The Port of Rotterdam Authority (PoR) creates economic and social value by working together with customers and stakeholders to achieve sustainable growth. The authority takes responsibility for our impact. In doing so, we focus on themes where we can make a difference. The main themes are: a safe and healthy environment, commitment to climate and energy, people and work. The port wishes to be an example and inspire others. PoR invites stakeholders in and around the port to work together on the challenges we face with developments in the port in combination with the surroundings.

In 2021, the Port of Rotterdam Authority replaced its 2016 CSR statement with a new one. In this CSR-statement, the authority commits itself to working on a future-proof port where economic enhancement goes hand in hand with improving the environment. The authority also commits itself to working in a socially responsible manner with respect to people and safety. And as such contributes to the Sustainable Development Goals (SDGs; numbers 3, 7, 8, 9 and 13) of the United Nations. Additional to the SDG's, Port of Rotterdam commits to the Science Based Targets initiative by setting ambitious CO₂-reductions goals in line with the Paris Agreement of 2015.

Since 2009, the report of the Executive Board and the CSR report have been integrated within the Annual Report. Each manager has been delegated a responsibility for CSR within his/her own department. As of 2016, CSR has been given an definite place within the organization, where:

- The CEO is portfolio holder of CSR within the executive board.
- The department Environmental Management is coordinating and stimulating CSR developments, and oversees the entire organization's commitment to CSR. The CSR program manager within this department, addresses the CSR statement. And in addition, encourages and supports all departments of the organization to fulfil their CSR responsibility.
- A core team consisting of the CEO and representatives of Environmental Management, Communications & External Affairs and Human Resources coordinates the establishment of the CSR statement and monitors the awareness of CSR within the company by a set of KPI's.

The Port of Rotterdam Authority currently ranks twentieth in 2021's Dutch Transparency Benchmark – a year-end review of the content and quality of CSR reporting within Dutch companies. The Port Environmental Review System (PERS) fits into our ambition to be transparent regarding our environmental initiatives and urges other ports to do the same.

1.2 Aim of PERS

This Port Environmental Review System (PERS) covers an environmental management program in line with the recommendations of ESPO. PERS is based on internationally recognized port-specific system developed by ports – for ports. Following the ESPO Environmental Code of Practice (2004) the Port of Rotterdam is taking the following actions:

- contribute to the development of a sustainable logistics chain;
- encourage wide consultation, dialogue and cooperation with relevant stakeholders at local level (port users, public authorities, the surrounding communities and NGOs);
- generate new knowledge and technology and develop sustainable techniques which combine environmental effectiveness and cost efficiency;
- enhance cooperation between port authorities in the field of environment, facilitate the exchange of experiences and implementation of best practices on environmental issues;
- prepare a publicly available environmental policy to increase awareness of environmental concerns and integration of sustainable development;
- conduct appropriate environmental impact assessments for both port projects and port development plans;
- stimulate continuous improvement in the port environment and its environmental management;
- promote monitoring, based on environmental performance indicators, in order to measure objectively identifiable progress in environmental port practices;
- promote environmental reporting as a means of communicating environmentally good behaviour to stakeholders;
- intensify the communication about environmental improvements achieved by ports.

2. Port profile

2.1 Introduction

It is acknowledged that each port is unique. It is therefore important to be aware of the specific circumstances in which the port's environmental management program is operating. This section provides a summary of the major characteristics of the port of Rotterdam in terms of its legal status, commercial activity and environmental setting. This section combines useful background information about the port such as the range and scope of activity, the geography of the port and some general facts concerning ownership and organization.

2.2 General port information

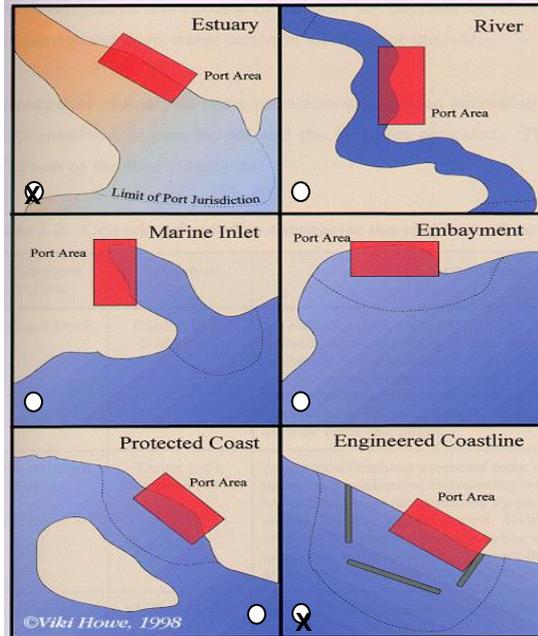
2.2.1 Legal Status and Port Operators

What is the port authority's legal position?	<input type="checkbox"/> Municipality <input checked="" type="checkbox"/> other: Unlisted public limited company	<input type="checkbox"/> State	<input type="checkbox"/> Private Company
Who is the owner of the land?	<input checked="" type="checkbox"/> Municipality <input type="checkbox"/> other	<input type="checkbox"/> State	<input type="checkbox"/> Private Company
Who operates the terminals?	<input type="checkbox"/> Public Companies <input type="checkbox"/> other	<input checked="" type="checkbox"/> Private Companies	
Who does the stevedoring?	<input type="checkbox"/> Public Companies <input type="checkbox"/> other	<input checked="" type="checkbox"/> Private Companies	
Who carries out cargo handling?	<input type="checkbox"/> Public Companies <input type="checkbox"/> other	<input checked="" type="checkbox"/> Private Companies	



2.2.2 Port Location and Port Area

Please tick the geographic setting of the Port



The port is located in an estuary and has an engineered coastline (Maasvlakte)

Please describe the area of the Port (figures 2021)

Area of port's land (km² or specify units):
12,464 hectares

Further detail (2021):

7.966 hectares land area of which 6.260 ha rentable sites

Port jurisdiction limit onshore (km or specify units): none

Area of port's navigable water (km² or specify units): 4,498 hectares

Port jurisdiction limit offshore (nautical miles): 30 km (circa 16 nm)

Further detail: The harbour master of the Port of Rotterdam is also the state harbour master (national jurisdiction).

Total quayage Rotterdam (km): 79,5

Draught, largest vessel (m): 21,5

Tidal range (m): 1.65

Maximum draught (m): 22,55

2a. Use of Surrounding Land

- Agricultural land
- Conservation / Protected Areas
- Forestry / Woodlands
- Nature

- Open water (lakes, rivers, reservoirs)
- Urban / City
- Industry
- Recreational
- other



2b. Coastal and Marine Characteristics

- | | |
|--------------------------------------|-------------------------|
| ▪ Boulders | ▪ Offshore Islands |
| ▪ Cliff | X Offshore Banks |
| ▪ Rocky foreshore | X Rivers |
| X Tidal flats (mud) | X Sandy Beach |
| X Sea Walls / Coastal defence | ▪ Shingle Beach |
| X Dune Systems | ▪ Salt Marsh |
| | ▪ other |

2.2.3 Port Business

- | | | | |
|-------------------------------------|--|---------------|----------------|
| Tonnage:(million tons / year) | ▪ < 5 | ▪ 5 < 15 | ▪ 25 < 50 |
| | ▪ 50 < 100 | ▪ 50 < 100 | X > 100 |
| | Further detail: ± 469,7million tons (in 2021) | | |
| TEU* –containers:(thousands / year) | ▪ < 250 | ▪ 250 < 500 | ▪ 500 < 1000 |
| | ▪ 1000 < 2000 | ▪ 2000 < 3000 | ▪ 3000 < 5000 |
| | X > 5000 | | |
| | Further detail: ± 15,3 million TEU's (in 2021) | | |
| Passengers: (thousands / year) | ▪ < 1000 | ▪ 1000 < 3000 | ▪ 3000 < 7000 |
| | X > 7000 | | |

* TEU: container equivalent to 20 feet





2.2.4 Throughput (Port of Rotterdam, 2021)

<i>(brutoweight x 1.000 metric tons)</i>	2021
Iron ore and scrap	30.264
Coal	24.576
Agribulk	8.587
Biomass	2.170
Other dry bulk	13.111
Subtotal dry bulk	78.707
Crude oil	98.174
Mineral oil products	66.076
LNG	7.013
Other liquid bulk	33.326
Subtotal liquid bulk	204.589
TOTAL BULK GOODS	283.296
Deepsea	97.224
Feeder	30.170
Shortsea	27.091
Containers	154.485
Roll on/roll off	24.013
Other general cargo	6.916
Breakbulk	30.928
TOTAL BREAKBULK	185.413
TOTAL THROUGHPUT	468.709
Total amount of containers	8.896.425
Total amount of TEU	15.299.970



2.2.5 Environmental Management

Who is the designated officer for Environmental Management (name and job title):	Head of Department Environmental Management (Eric van der Schans) Harbour Master (René de Vries)
How is environmental management organised in the Port?	Does the Port have environmental review tools?
X Designated personnel:	X Environmental management plan
If yes , how many employees: ± 254, of which ± 208 within the harbour master's division.	<input type="checkbox"/> ISO 14000 certification <input type="checkbox"/> EMAS certification
<input type="checkbox"/> Environmental committee <input type="checkbox"/> Environmental working group <input type="checkbox"/> External consultants	Is environmental responsibility defined at board level?
X Environmental department	X Yes <input type="checkbox"/> No

Other remarks:

- The activities regarding the Slufter (depot for contaminated dredging sludge) are ISO 14001 certified.
- Environment is part of the general process of port management. As stated in part 1.1, CSR reporting has been integrated within the annual report, as well as being the guiding principle in the business strategy. Besides being in compliance with environmental rules and regulations, PoR decided to go even further because of its CSR-policy including a People, Planet Profit approach as an integral part of its business operations.

3. Environmental policy

3.1 Introduction

The Port of Rotterdam Authority aims to strengthen its ports' competitive position as a logistics hub and world-class industrial complex. Not only in terms of scale, but especially in terms of quality. The core tasks of the port authority are the sustainable development, management and operation of the port area and ensuring that shipping traffic in the port area is handled safely and efficiently. In addition, the port authority aims to combat climate change. It has the ambition to be frontrunner in the energy transition by lowering the carbon footprint of the industry while developing renewable energy, biobased production and circular initiatives. Also, it aims to ensure that the port area continues to make a major contribution to prosperity and employment in the Netherlands.

3.2 Corporate Social Responsibility Statement

As the Port of Rotterdam Authority, we create economic and social value by working together with customers and stakeholders to achieve sustainable growth. In doing so, we contribute to the Sustainable Development Goals (SDGs) of the United Nations. We are a reliable partner and act with honesty, integrity and transparency. We abide by the law and are guided by our moral compass. The principles and rules of conduct in our company code form the basis for this.

Sustainable Development Goals	CSR themes
 	<p>SAFE AND HEALTHY ENVIRONMENT</p> <p>Safety is a top priority. In addition, we are constantly working to create a healthy and attractive living environment and are committed to the preservation of nature and biodiversity.</p>
 	<p>CLIMATE & ENERGY</p> <p>We are contributing to the fight against climate change. The Port of Rotterdam is pre-eminently the place where energy transition and circular economy are taking shape.</p>
 	<p>PEOPLE & WORK</p> <p>We are working towards an inclusive port where people can develop their talents; a port with employment at all levels for current and future generations.</p>



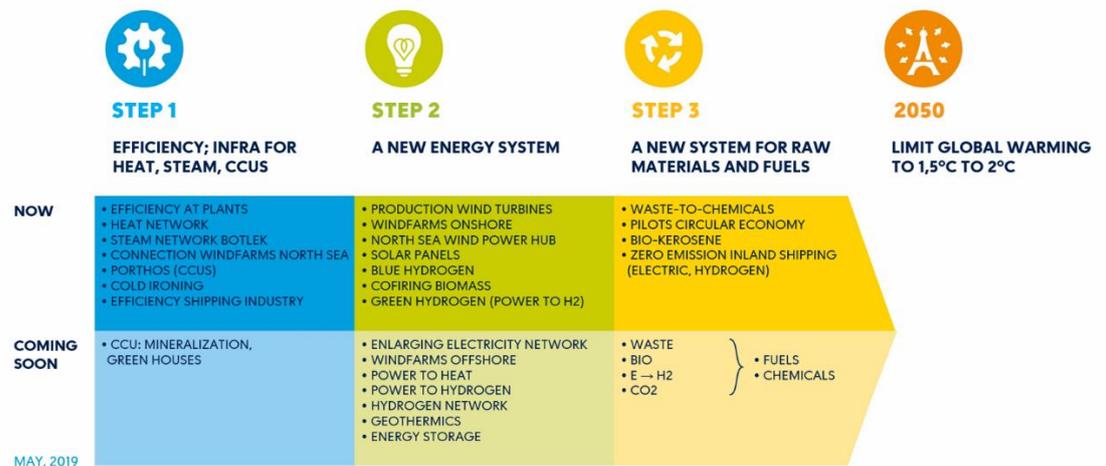
Allard Castelein, CEO Havenbedrijf Rotterdam

Climate change and energy transition

Approximately 20% of the CO₂ emissions in the Netherlands are released through fossil fuel based activities in the port of Rotterdam. Specifically, it is the industrial and energy cluster of the port that depends largely on fossil fuels. The Paris Agreement on climate change is therefore of significant importance to the port. The agreement calls for accelerated action to sharply reduce the emissions of greenhouse gases such as CO₂. The Port of Rotterdam Authority developed a strategy to develop the port of Rotterdam into the heartland of the energy transition so that the port can continue to thrive in the future.

Rotterdam achieves the climate goals in 3 steps: the first step. The industry takes efficiency measures. Residual warmth is used to heat homes, commercial buildings and greenhouses. CO₂ is captured and stored under the North Sea. Step 2: a new energy system. In the long term, electricity and hydrogen will play a major role in making the port sustainable. This requires affordable electricity from sustainable sources such as sun and wind. Step 3: a new raw materials and fuels system. Fossil resources are being replaced through the use of biomass, recycled materials and green hydrogen.

3 step to CO₂-neutral in 2050



Within the next thirty years, the ambition is to achieve CO₂-neutral energy management and a fully circular industry. The energy transition strategy towards a CO₂ neutral and circular port rests on four pillars:

Pillar 1: increasing the efficiency of existing industry, and building (extra) infrastructure for heat, CO₂, electricity and hydrogen.

Pillar 2: renewing the energy system by switching from fossil fuels to green electricity and hydrogen.

Pillar 3: moving to a new materials and fuel system.

Pillar 4: making transport more sustainable.

The port authority pursues this through invest in carbon capture storage and use, as well as enabling electrification of existing industrial activities. Additionally, the port authority is investing in an infrastructure that is used to transport residual heat generated by industrial activity in order to supply households in cities like Rotterdam with district heating (energy infrastructure under the Delta Plan). The port authority also looks to attract new businesses that fit a profile for a climate neutral port such as the accommodation of electrolyzers for the production of Hydrogen. New business is often associated with the offshore wind industry, bio-based chemical industry, circular industry and clean fuels. Looking at the transport sector, the authority encourages green shipping through LNG and biofuels, bunker infrastructure, shore power and incentives for green vessels using the port.

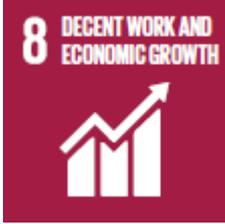
3.3 International frameworks

The CSR-statement is based on the core business of the Port of Rotterdam Authority, the interests and concerns of stakeholders, and international frameworks such as the United Nations Global Compact (UNGC), the OECD-guidelines and the UN Sustainable Development Goals (SDGs).

UN Sustainable Development Goals

The CSR statement takes the SDGs into account. The Port of Rotterdam Authority contributes to practically all SDGs – directly or indirectly. However, given our core business and the interests of our stakeholders, SDG's 3, 7, 8, 9 and 13 are of most importance to the authority. The relation between the CSR statement and the SDGs is displayed in table 1.

Table 1: Relation between the CSR statement and the SDGs

Sustainable Development Goal	Relevance for Port of Rotterdam	In what way do we contribute?
 <p>3 GOOD HEALTH AND WELL-BEING</p>	<p>Safety is a top priority in our port. Additionally, we are continuously working on a healthy and attractive living environment.</p>	<ul style="list-style-type: none"> • Ensuring nautical safety. • Collaboration with authorities on other safety domains such as security of port objects, external safety, occupational safety, road safety and port safety. • Efforts towards better air quality and a reduction of odor and noise.
 <p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p>We want to develop the port of Rotterdam into the place where energy transition takes shape.</p>	<ul style="list-style-type: none"> • Investing in smart energy infrastructure. • Encourage growth in renewable energy. • Stimulate clean shipping.
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	<p>We develop, manage and operate the port and industrial area as efficiently and sustainably as possible. The port offers employment to approximately 180,000 people.</p>	<ul style="list-style-type: none"> • Investing in issueable industrial sites and in port infrastructure. • Facilitate social dialogue about the labor market.
 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	<p>We are increasing the competitiveness of existing sectors in the port and are working hard to attract new markets too.</p>	<ul style="list-style-type: none"> • Attract and facilitate start-ups. • Innovation with customers by developing networks. • Improving systems and making data available.
 <p>13 CLIMATE ACTION</p>	<p>We are contributing to the fight against climate change. The Port of Rotterdam is pre-eminently the place where energy transition and circular economy are taking shape.</p>	<ul style="list-style-type: none"> • Facilitating the energy transition in Port area. • Commitment to CO₂-reduction targets (Fit55, SBTi) and nationale goals. • Facilitate more sustainable energy production capacity within the port area (sSolar, wind, biofuels and hydrogen). • Cooperate with business networks such as: World Business Council for Sustainable Development. PoR has a coordinating role in the World Ports Climate Action Program facilitated by the International Association of Port and Harbors (IAPH).

4. Register of Environmental Aspects, Legal Requirements and Performance Indicators

4.1 Introduction

Effective management of environmental performance requires awareness and knowledge of the environmental aspects in relation to the activities, products and services of the port. This chapter intends to identify the significant aspects, to manage them in line with policy and legal requirements, to use them as basis to identify environmental objectives and to be able to report on the performance. Throughout, an environmental aspect register has been created in 2017 and in 2020 reviewed by an independent legal expert from KWA Bedrijfsadviseurs. In 2023 the Dutch environmental legislation will change significant by implementing the Environment and Planning Act. This act combines various environmental laws. Currently the environmental legislation consists of dozens of laws and hundreds of regulations for land use, residential areas, infrastructure, the environment, nature and water. Each has its own starting points, procedures and requirements. This makes the legislation complex and it takes long procedures to get projects off the ground.

The Act will replace 26 existing laws, including the Water Act, the Crisis & Recovery Act and the Spatial Planning Act. The provisions of eight other laws will be transferred to the Environment & Planning Act. The new bill has been approved by both Chambers of Parliament. The expectation is that the Act will take effect in 2023.

Amersfoort, May 11, 2020

Our reference: 13225/400601DO02.DOCX/MHU/ist
Subject: declaration concerning Register of Environmental Legislation

Dear Mister De Wit,

Hereby we declare that KWA Bedrijfsadviseurs, represented by independent legal expert Miss M.J. (Marlies) Huijbers, has reviewed whether the most suitable and relevant legislation for the main environmental aspects of the port is included in the Register of Environmental Legislation of Port of Rotterdam.

Please note that we did verify the register based on publicly accessible sources. We only verified the European and Dutch legislation. We did not verify local legislation, such as policies and agreements and European and Dutch subsidy legislation.

Yours sincerely,
KWA Bedrijfsadviseurs B.V.



Miss M.J. (Marlies) Huijbers LL.M
Legal Advisor
t 0031334221376
e mhu@kwa.nl



Mr. D.A. Lokhorst
Director



KWA Bedrijfsadviseurs B.V.
Regentesselaan 2
Postbus 1526
3800 BM Amersfoort

t 033 422 13 00
e desk@kwa.nl
www.kwa.nl

Rabobank Amersfoort
NL86RABO0372977669
KvK Gooi en Eemland 320 69286

✓ Environment ✓ QHSE management ✓ Energy and process technology ✓ Occupational Health & Safety

4.2 Significance of environmental aspects

The Port of Rotterdam Authority manages and develops the Rotterdam port area, and wants to maintain and strengthen its position as a world-class port. The authority can exert influence in three areas: on its own company, on the port area and in the logistic chain. The degree of influence and the impact on the port area and environment can vary per area, as shown by figure 1.

Figure 1: Influence and impact per area

SUSTAINABILITY: SCOPE AND INFLUENCE POR



The impact of the authority's business operations on the port area and the chain is limited. However, we exert our influence on the port area and the logistic chain through cooperation and dialogue with stakeholders. Therefore, the impact of our investments in the port area and on transport to and from the area is much bigger than displayed.

The CSR Statement highlights the authority's focus on its own organisation as well as the port area. The authority puts effort into keeping the environment safe, healthy and attractive, as well as combatting climate change and pioneering in the energy transition (monitoring results in the Progress Report Port Vision 2030). It also aims to comply with all applicable laws, rules and regulations wherever business is being done. Moreover, the authority wishes to be an example-port to other ports. The determination of the significance of environmental aspects hence takes into account activities by the Port of Rotterdam Authority and activities in the port.

Table 2 displays an assessment of significant environmental aspects.

Tabel 2: Assessment of significant environmental aspects.

Activity	Frequency (A)	Aspect duration (B)	Extent of Influence (C)	Extent of impact (D)	Severity of Impact (E)	Stakeholders interest (F)	Legal Compliance (G)	Significant score Environmental aspect (A+B+C+D+E+F+G)
Activities by the Port of Rotterdam Authority								
<i>Dredging</i>								
Sediment relocation	10	10	5	8	5	1	1	40
Sediment disposal release into water of contaminants	10	10	10	8	1	5	1	45
Sediment storage landfills -"Slufter"- release of contaminants	10	10	10	8	1	5	1	45
Disposal waste water (dredging) (recirculation) to Water	10	10	10	8	1	1	1	41
<i>Maintenance and projects</i>								
Quay walls, piers, embankments, road, rail, pipelines)	10	10	10	8	5	1	1	45
<i>Energy consumption</i>								
Port buildings	10	10	10	4	5	5	1	45
Vessels and fleet	10	10	10	8	5	5	1	49
Personal (work-home)	10	10	5	4	1	1	1	32
Activities in the Port								
<i>Renewable energy</i>								
- Wind	10	10	10	4	1	10	1	46
- Sun								
<i>Air emissions and air quality (Global Hub)</i>								
Ships/vessels	10	10	5	4	5	10	1	45

Handling container/cargo (ships/vessels)	10	10	1	4	5	5	1	36
- Use of Energy (shore)	10	10	5	4	5	10	1	45
- Use of LNG (bunkering)								
Transport by road	10	10	10	4	5	5	1	45
<i>Air emissions and air quality (Industrial Cluster)</i>								
Industry	10	10	1	10	10	5	1	47
<i>Noise</i>								
Industry	4	4	5	4	10	10	1	38
<i>Odor</i>								
Industry	4	4	1	8	10	10	1	38

Table 2: Assessment of significant environmental aspects

Evaluation and quantification of above mentioned issues:

Issue	Quantification Aspect
Frequency (A)	10: More than once a day; 4: At least once a day; 2: At least once a week; 1: Less than once a week
Aspect duration (B)	10: More than 1 day or continuous; 8: Between 8 hours and 1 day; 4: Between 3 and 8 hours; 2: Between 1 and 3 hours; 1: Less than 1 hour
Extent of Influence (C)	10: High; 5: Moderate/partly; 1: Minimal or low
Extent of impact (D)	10: Effects are spread outside the port boundaries and it is located next to a sensitive place (e.g. city, protected area, or heritage); 8: Effects are spread outside the port boundaries, however it is not located next to a sensitive place; 4: Effects are spread only within the port boundaries; 2: effects are located exactly in one point; 1 no effects or impacts associated to this aspect ; Score 8-10: High , Score 4: partly impact; Score 1- 2:

low impact

Severity of Impact (E) **10:** High or severe; **5:** Moderate; **1:** Minimal or low

Stakeholders interest (F) **10:** High or severe; **5:** Moderate; **1:** Minimal or low
or
10: Five or more complaints; **5:** Between two and four complaints; **2:** One complaint; **1:** no complaint

Legal Compliance (F): **10:** Yes and permissible levels are exceeded, receiving fines for this; **5:** Yes and permissible levels are exceeded, but no fine has been received
aspect affected by legal for this;
requirements **1:** Yes and permissible levels are not exceeded.

**SIGNIFICANT
ENVIRONMENTAL
ASPECT
SCORE > 35** **A+B+C+D+ E +F+G;**

4.3 Environmental Aspect Register

Table 3: Environmental Aspect Register

Activity	Aspects and Impact (Direct-Indirect)	Responsible person/organisation	Legal and other requirements	Applicable legislation	Control measures
Activities by Port of Rotterdam Authority					
<i><u>Dredging</u></i>					
Sediment disposal	Water/Soil Indirect	Asset Management Ports & Fairways	Directive 2000/60/EC establishing a framework for Community action in the field of water policy Water Act	Water Act - Chapter 5	Yearly monitoring and reporting
Sediment disposal release into water of contaminants	Soil Direct	Asset Management Ports & Fairways	Directive 2000/60/EC establishing a framework for Community action in the field of water policy Water Act/Water Decree Water Rule Decree on Soil Quality Rule on Soil Quality Policy Rule on the Application and Disperse of Dredge Spoil on the North Sea	Water Act/Decree Water Rule – Chapter 6 Decree on Soil Quality Rule on Soil Quality – Chapter 4	Monitoring before disposal and reporting amount (%) of disposal
Sediment storage landfills -“Slufter”-	Soil Direct	Asset Management	Environmental Licensing (General Provisions) Act Decree on Environmental Licensing	Environmental Licensing (General	Periodic monitoring level of leaching

Activity	Aspects and Impact (Direct-Indirect)	Responsible person/organisation	Legal and other requirements	Applicable legislation	Control measures
release of contaminants		Ports & Fairways	<p>Rule on Environmental Licensing</p> <p>Act on Environmental Management</p> <p>Soil Protection Act Decree on Soil Quality Rule on Soil Quality</p> <p>Water Act</p> <p>Directive 2000/60/EC establishing a framework for Community action in the field of water policy</p>	<p>Provisions) Act (Article 2.1, clause 1, subsection e), Decree on Environmental Licensing and Rule on Environmental Licensing.</p> <p>Soil Protection Act Decree on Soil Quality Rule on Soil Quality – chapter 4</p> <p>Water Act - Chapter 5</p>	
Disposal Waste water (dredging) (recirculation) to Water	Water Direct	Asset Management Ports & Fairways	<p>Directive 2000/60/EC establishing a framework for Community action in the field of water policy</p> <p>Water Act Water Decree</p>	<p>Water Act Water Decree</p>	Monitoring before disposal

Activity	Aspects and Impact (Direct-Indirect)	Responsible person/organisation	Legal and other requirements	Applicable legislation	Control measures
			Water Rule	Water Rule - Chapter 6	
<u>Maintenance and projects</u>					
Quay walls, piers, embankments, road, rail, pipelines)	Energy use, noise, air quality and CO ₂ emissions	Asset Management: port infrastructure maintenance. Port Development: Port infrastructure development.	Environmental Management Act	Environmental Management Act – Chapter 1 and 10	Control by maintenance dredging contract (Green Contracting). Carbon-footprint of Projects (not public) Management plans Port development
<u>Energy consumption</u>					
Port buildings	Energy-usage and energy saving measures	Asset Management Port infrastructures POR-Real Estate	Directive 2012/27/EU on Energy Efficiency Directive 2010/31/EU on the energy performance of buildings Decree on the Energy Performance of Buildings Rule on het Energy Performance of Buildings	EED-report every 4 years. AI offices Label C by 2023	Periodic monitoring CO ₂ footprint EED-report to DCMR Promotion of BREEAM-NL

Activity	Aspects and Impact (Direct-Indirect)	Responsible person/organisation	Legal and other requirements	Applicable legislation	Control measures
					certification
Vessels and fleet	Energy usage Direct Air Emissions	Asset Management Equipment	<p>Directive 2012/27/EU on energy efficiency</p> <p>Directive 2008/50/EC on ambient air quality and cleaner air for Europe (CAFÉ Directive).</p> <p>Environmental Management Act</p> <p>Regulation (EU) 2015/757 on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport, and amending Directive 2009/16/EC Commission Implementing Regulation (EU) 2016/1927 on templates for monitoring plans, emissions reports and documents of compliance pursuant to Regulation (EU) 2015/757</p> <p>Commission Implementing Regulation (EU) 2016/1928 on determination of cargo carried for categories of ships other than passenger, ro-ro and container ships pursuant to Regulation (EU) 2015/757</p> <p>Nature Conservation Act</p>	<p>Environmental Management Act – Chapter 5</p> <p>Nature Conservation Act – Chapter 2</p>	<p>Periodic monitoring CO₂ footprint</p> <p>Retrofit vessels to diesel / electric</p>

Activity	Aspects and Impact (Direct-Indirect)	Responsible person/organisation	Legal and other requirements	Applicable legislation	Control measures
			Agreement on the Sustainable Maasvlakte2 (Overeenkomst Duurzame Maasvlakte)		
Activities in the Port					
<i>Renewable energy</i>					
<ul style="list-style-type: none"> - Wind - Solar - Biomass 	Emissions (air) Direct	Energy & Process industry	Directive 2009/28/EC on the promotion of the use of energy from renewable sources Directive 2012/27/EU on Energy Efficiency Environmental Licensing (General Provisions) Act Decree on Environmental Licensing Rule on Environmental Licensing Activities Decree Activities Rule Agreement on the Realisation of Wind Energy in the Harbour of Rotterdam (Convenant realisatie windenergie in de Rotterdamse haven)	Environmental Licensing (General Provisions) Act (Article 2.1, clause 1, subsection e), Decree on Environmental Licensing and Rule on Environmental Licensing. Activities Decree Activities Rule – Chapter 2 and 3	Monitoring amount (MW's) renewable energy port area. Accommodating biggest land vbased windturbine Solar Investement project (PoR-owned assets, PoR-commercial buildings). Business Opportunity for a floating solarpanel initiative at the Slufter (dredgematerial disposal basin located on the Maasvlakte).

Activity	Aspects and Impact (Direct-Indirect)	Responsible person/organisation	Legal and other requirements	Applicable legislation	Control measures
			PoR Solar Policy for land lease Policy on the Large-scale Generation of Solar Energy		Agreements with warehouse builders for Solar ready roofs.
<i>Air emissions and air quality (Global Hub)</i>					
Ships/vessels	Emission air, noise) Indirect	Environmental Management	Directive 2008/50/EC on ambient air quality and cleaner air for Europe (CAFE Directive). Environmental Management Act Harbour Management Regulation Rotterdam 2020 Update (2016); (Havenbeheerverordening)	Environmental Management Act – Chapter 5	Stimulating clean fuels and noise reduction during ship operations incentive program Environmental Ship index, (ESI). Green award (seagoing vessels and innerships).
Handling container/cargo (ships/vessels)	Emission/Spills (water)	Harbour master	Environmental Management Act Harbour Management Regulation Rotterdam 2020 ; (Havenbeheerverordening)	Environmental Management Act, Article 1.1a	Monitoring compliance (SEI index)
- Use of on-shore Energy (shore) inland vessels. - Use of LNG (bunkering)	Emission (air)/Noise Direct	Port Authority: Asset Management Constructions for barges & Environmental	Directive 2008/50/EC on ambient air quality and cleaner air for Europe (CAFE Directive). Environmental Management Act Environmental Licensing (General Provisions) Act	Environmental Management Act – Chapter 5 Environmental	Stimulating use of: Green Energy and alternative fuels Clean fuels

Activity	Aspects and Impact (Direct-Indirect)	Responsible person/organisation	Legal and other requirements	Applicable legislation	Control measures
		Management or seagoing ships	Decree on Environmental Licensing Rule on Environmental Licensing Activities Decree Activities Rule Harbour Management Regulation Rotterdam 2020 (Havenbeheerverordening)	Licensing (General Provisions) Act (Article 2.1, clause 1, subsection e), Decree on Environmental Licensing and Rule on Environmental Licensing	
Transport by road	Emission (air) Direct	Environmental Protection Agency (DCMR) Municipality of Rotterdam	Directive 2008/50/EC on ambient air quality and cleaner air for Europe (CAFE Directive). Environmental Management Act Policy concerning the Decree on Exemptions of the Road Traffic Decree Maasvlakte Euro VI 2022 (Wijzigingsbesluit milieuzone Maasvlakte Rotterdam 2022)		Monitoring NO _x , CO ₂ , fine dust Restriction (only clean trucks (Euro 6) allowed on Maasvlakte.
<i>Air emissions and air quality (Industrial Cluster)</i>					
Industry	Emission (air)	Environmental Protection	Directive 2008/50/EC on ambient air quality and cleaner air for Europe (CAFE Directive).		Monitoring amount of emissions NO _x , CO ₂ ,

Activity	Aspects and Impact (Direct-Indirect)	Responsible person/organisation	Legal and other requirements	Applicable legislation	Control measures
	Indirect	Agency (DCMR) Environmental Management	Directive 2010/75/EU on industrial emissions (pollution prevention and control) Nature Conservation Act Nature Conservation Decree Nature Conservation Rule Environmental Management Act		fine dust; Assessment of deposition of Nitrodioxides with Aerius-tool. NOx-emission Balance approach.
<u>Noise</u>					
Industry	Noise Indirect / Direct (partly)	Environmental Protection Agency DCMR Environmental Management	Act on Noise Pollution Regional Framework Agreement on Noise and Spatial Planning (Regionaal afsprakenkader geluid en Ruimtelijke Ordening (policy)	Act on Noise Pollution – Chapter 5	Controlling Noise zoning plan. Monitoring complaints I ² (monitoring). Program Actualisation Noise management
<u>Odour</u>					
Industry	Air quality (Odour) Indirect	Environmental Protection Agency DCMR	Environmental Licensing (General Provisions) Act Decree on Environmental Licensing Rule on Environmental Licensing	Environmental Licensing (General Provisions) Act (Article 2.1, clause	Controlling E-nose and Monitoring complaints.

Activity	Aspects and Impact (Direct-Indirect)	Responsible person/organisation	Legal and other requirements	Applicable legislation	Control measures
				1, subsection e), Decree on Environmental Licensing and Rule on Environmental Licensing Decree on Environmental Licensing (Article 5.4) Activities Decree, Article 2.7a	

4.4 Environmental performance indicators

This section identifies several environmental performance indicators relevant to the major environmental aspects in order to facilitate monitoring of the environmental performance.

In order to continue CSR efforts into keeping the environment safe, healthy and attractive, as well as efforts into combatting climate change and pioneering the energy transition, the port of Rotterdam Authority invests resources in various partnership (elaborated upon in section 5.3), where environmental performance indicators are monitored. The authority reviews the monitored results in several reports, of which the most significant being the Progress Report Port Vision 2030.

Safe environment

A safe environment means an environment where incidents do not occur or if they occur, do not have big impact on people or the environment. The indicator allocated to safety is the number of significant nautical incidents. A nautical incident is significant when there is an occurrence of fatal or seriously injured victims; major damage to the fairway, shipping, cargo or the environment; or when there has been a complete block of 1 hour or more.

Healthy and attractive environment

A healthy and attractive environment means an environment with low air emissions and where there is a good quality of life for the people living in the surroundings of the port. The indicators allocated to healthy and attractive air emissions are:

- nitrogen dioxide (NO₂) concentration annual average in the Rijnmond region in microgram/m³;
- particulates concentration annual average in the Rijnmond region in microgram/m³.

Climate change and energy transition

The authority is dedicated to combatting climate change and wants the Port of Rotterdam to be the place where the energy transition is taking shape. The indicators allocated to this objective are:

- CO₂-emissions port industry cluster in kiloton.
- CO₂-emissions from shipping activities in kiloton.
- Share of energy produced from renewable sources within port in percentage, capacity of wind energy generation within port and capacity of solar energy generation within port compared with share of fossil-fuel use .

Please refer to section 6.3 for a review of the environmental performance based on the chosen environmental performance indicators.



5. Responsibilities and resources related to environmental aspects

5.1 Introduction

The purpose of this section is to demonstrate that the Port of Rotterdam Authority has an adequate and appropriate management organization and personnel in place to deliver the objectives specified in the policy statement.

5.2 Environmental responsibility within Port of Rotterdam Authority

The environment is incorporated in different departments of the Port of Rotterdam Authority; the overall organizational structure is displayed in figure 2.

ORGANISATION CHART PORT OF ROTTERDAM AUTHORITY

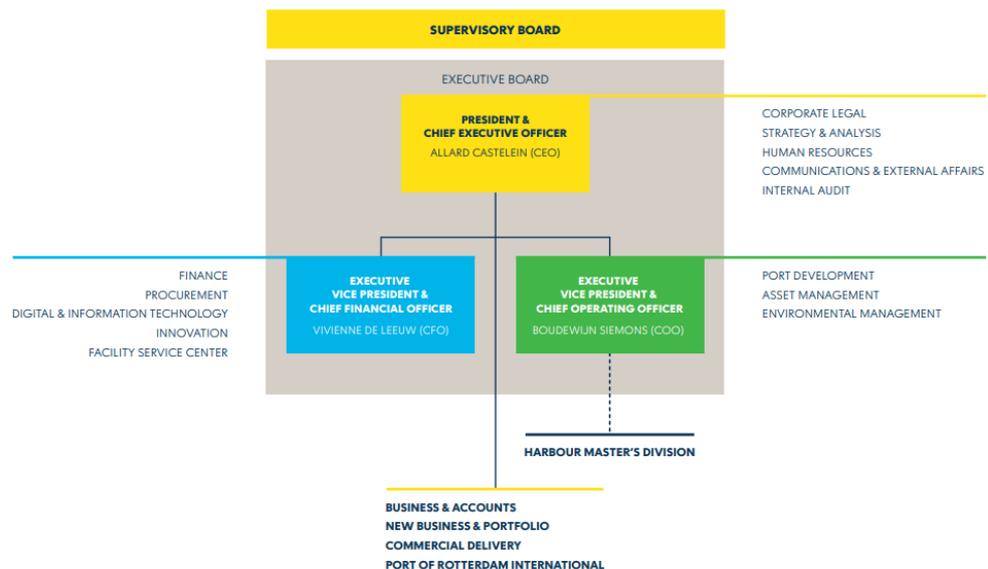


Figure 2: Organizational structure of the Port of Rotterdam Authority

Environmental Management is responsible for the development and implementation of policies in the field of environment, spatial planning and sustainable development. Within these fields, all the activities are focused on the ability to achieve future growth of the port industrial complex, including related transport, coupled with an improvement in the quality of the environment. Its main tasks are:

- To ensure an efficient and systematic management of the environmental space of the Rotterdam port area;

- To develop the Global Hub and Europe's Industrial Cluster as a leader in the field of sustainability;
- To provide environmental advice for optimal allocation of customers and activities in the port area including the necessary licensing and planning procedures.

As laid out in 1.1, a CSR core team consisting of the CEO, representatives of Environmental Management, Communications & External Affairs and Human Resources, monitors and stimulates the awareness of CSR within the company. For example, resources are allocated to short presentations during lunchtime, organized for the employees of the port authority, in order for them to obtain new insights on sustainability topics and to awaken their awareness.

The Harbour Master's Division (figure 3) is responsible for the safe and efficient management of shipping within its control area. In order to fulfil its responsibility, the Harbour Master's Division has been authorized to enforce on behalf of the State, and the municipalities of Rotterdam, Schiedam, Vlaardingen, Dordrecht, Zwiindrecht and Papendrecht. Moreover, the Harbour Master is the nautical authority for environmental, safety and security issues. In addition to taking care of emergency management on the water, its tasks involve patrolling the waters with its vessels, operating the Harbour Coordination Centre and Traffic Control centres, and carrying out inspections on board of ships.



Figure 3: Organization structure of the Harbour Master's Division

5.3 Environmental responsibility within and/or related to the port area

The Port of Rotterdam Authority is not responsible for all the environmental issues and aspects connected to the use of the port and industrial area. We have already determined that Harbour Master's Division does play a more prominent role in environmental responsibility. Figure 4 presents an overview of other relevant organizations and their involvement as well as responsibilities regarding the environment.

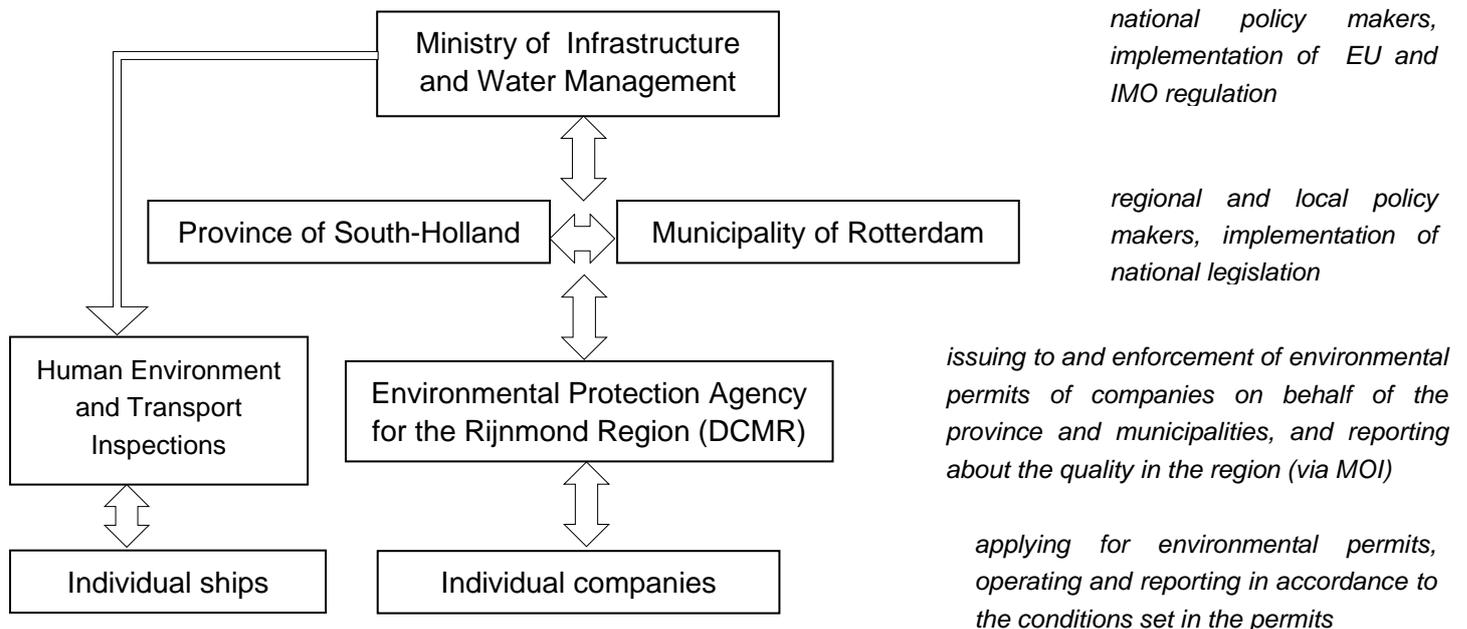


Figure 4: Main responsibilities of other organizations

Monitoring & Environmental Information

The Port of Rotterdam Authority is part of the Monitoring Build Environment (Monitoring in Omgevingsinformatie, MOI) partnership, where various governmental organizations, including the Environmental Protection Agency (DCMR), collect data and information about the impact of strained activities on humans and nature, about the state of the environment and about the effects of protective measures. This data is of importance to the port authority, as well as to policy makers and other governmental organizations such as surrounding municipalities. In order to prioritize actions, and hence allocates resources that support the continuous collection of data and information.

6. Conformity Review

6.1 Introduction

The purpose of this section is to identify any major gaps with environmental policy objectives. In order to do so, the section provides a review of the compliance with environmental legislation, a review of the port environmental performance, and a documented summary of priorities for improvement plans based on the above review.

6.2 Compliance with environmental legislation and gap

Based upon the assessment of environmental aspects and the environmental aspect register, it can be stated that the Port of Rotterdam Authority is in compliance with environmental legislation and that it has no direct responsibility regarding the enforcement of legislation. It is organizations such as the Province of South-Holland, the Regional Environmental Protection Agency (DCMR) and the Harbour Master who are mainly responsible for enforcing the legal requirements. Yet, it is important to note that the Port of Rotterdam Authority continuously engages in communication between stakeholders of the port in order to foster compliance with environmental legislation and ensure that environmental ambitions are reached. It is the control measure of monitoring that makes apparent whether or not an activity is in line. The authority will then act upon this by addressing environmental compliance and measures for improvement. Being in a partnership with MOI (section 5.3) who delivers such monitored information is hence of great importance. The information on environmental data is accessible via the website www.staatvanrijnmond.nl.

Gap

The Port of Rotterdam Authority uses monitoring as a control measure to determine the environmental impact of its own activities as well as those occurring within the port. Despite its greatest efforts, the authority is working to address all activities. For example the environmental impact on carbon footprint of our port construction activities and the maintenance of quay walls, piers, embankments, roads, rails and pipelines. Nonetheless, the authority has made significant progress to control such environmental impact by contracting the most sustainable companies using the Green Deal for Sustainable Road and Waterway approach. Significant aspects and developments with regards to the CSR statement (representing the environmental policy) are constantly monitored, analysed and improved on a yearly basis. Environmental management reports and KPI's will be published in PoR's annual report.

6.3 Port environmental performance

In section 4.4, the environmental performance indicators were identified. This was based on their ability to address CSR efforts into keeping the environment safe, healthy and attractive, and CSR efforts into combatting climate change and pioneering the energy transition. This was also based on their availability in the Progress Report Port Vision 2030.



6.3.1 Safe environment

Safety is of significant importance to the Port of Rotterdam Authority. We monitor the amount of significant nautical incidents yearly. Since 2012, significant nautical incidents (table 4).

Table 4: Significant Nautical Accidents

Report Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
# Significant Nautical Accidents	6	6	6	5	1	1	5	4	1	3

6.3.2 Healthy and attractive environment

The annual average concentrations of nitrogen dioxide and particulates are also monitored yearly, as shown by table 4. It is evident that both concentrations have decreased over time and that the air quality in the Rijnmond area has improved. For a while now, the concentrations of these substances have fallen within the air quality standards set. This is due to the increasingly clean technology and new applications. Examples are clean engines for trucks and measures to promote clean shipping such as shore power at public berths and the use of liquefied natural gas as a fuel source. This provides a better quality of life and makes the port area a more attractive environment for those surrounding the port.

Table 5: NO₂ and particulates concentration from 2014 until 2021.

Environmental Performance Indicator	Unit	2014	2015	2016	2017	2018	2019	2020	2021
Nitrogen dioxide (NO ₂) concentration annual average in the port region	Microgram/m ³	29,9	29,3	30,0	29,4	27,5	26,2	22,9	23,1
Particulates concentration annual average in the port region	Microgram/m ³	21,3	19,2	19,0	19,5	21,2	20,4	17,4	19,0

6.3.3 Climate change and energy transition

CO₂ emissions HIC are monitored yearly. CO₂ emissions peaked at 2016 due to the commissioning of two new coal-fired plants. After that period the emissions reduced significantly. In 2021 however we see an increase in CO₂-emissions due to the gas crisis.



Tabel 6: CO₂-emissions region Rotterdam

Environmental Performance Indicator	Unit	2014	2015	2016	2017	2018	2019	2020	2021
Annul CO ₂ -emission Rotterdam region	Kiloton	30.170	32.758	34.360	31.892	29.891	29.210	26.170	27,200

A target has been set; specifically, to reduce CO₂ emissions by 55% by 2030. It will be a challenge to achieve this goal. However, the Port of Rotterdam Authority is committed and works with parties such as national and local governmental agencies and clients to invest in energy transition measures and projects.

The share of energy produced from renewable sources within the port, the generating capacity of wind energy and solar have been monitored through the past few years too. The Port of Rotterdam Authority has the ambition to produce more energy from renewable sources. Since 2010, an increase has been realised, setting at 6% in 2017. However, more initiatives related to wind and solar energy needs to be engaged in order to reach the national goals for renewable energy..

The generating capacity of wind energy was 195 MW in 2020. It has been agreed with several partners that the total capacity of wind turbines will be 300 MW by 2025 within the port area. In order to realise this, wind farms will be required on the outer fronts of Maasvlakte 2 and preparatory action has been taken to meet the goals for windpower.

The generating capacity of solar energy in the port has increased from a generating capacity of 0.9 Megawatts in 2015 to 18 Megawatts in 2021. This substantial increase is mainly due to the installation of 7,500 m² of solar panels by a transshipment company for cooling and freezing products in the Waalhaven. A test with 120 floating and rotating solar panels in the Slufter was successful. In the next steps this solar park will increase the solar power potential with 100 MWp.

6.4 Improvement plans

Looking at the indicators in the port environmental review, it becomes apparent that the air quality has improved and that initiatives regarding renewable energy sources have been taken. With the regards to CO₂ emissions HIC, improvements can be made. Specifically, the port authority has set a CO₂-reduction goals based on the SBTi-taret of 1.5 degrees and takes appropriate action upon achieving them (see section 8, best practices 1, 5 and 6).

Generally, we must continue:

- To improve the quality of life in the Rijnmond region by (i) maintaining a high level of safety in the port area and Rijnmond region, (ii) developing the port within the set environmental boundaries, (iii) reducing the nuisance for residents in the Rijnmond region and (iv) having a sustainable and structural dialogue with municipalities surrounding the port area.
- To develop the sustainable Global Hub by (i) improving the accessibility of the port area and facilitating clean modes of transport, (ii) promoting the transport of cargo with



- the lowest carbon emission per ton kilometre and (iii) creating the right conditions for clean and fuel efficient shipping.
- To develop a sustainable Industrial Cluster by pro-actively promoting energy efficiency, a transition towards a biobased economy and the production and use of sustainable energy within the port area.

7. Environmental Report

The Port of Rotterdam Authority does not specifically have one environmental report. Our efforts towards keeping the environment safe, healthy and attractive are incorporated in our annual report, CSR statement, building a sustainable port campaign, and the Progress Report Port Vision 2030 report, for which the links can be found in appendix 1.

The aim of the environmental information through such reports is to provide environmental information to the public and other interested parties regarding the environmental impact and performance of the ports' major environmental aspects. It may be regarded as a major communication tool with these parties.

The minimum requirements as listed below can be found in the following reports:

- a. *a description of the nature and size of port activities*: annual report
- b. *the environmental policy statement*: CSR statement
- c. *an overview of major environmental aspects, impacts and the port's performance on these issues, based on the results of the monitoring of environmental performance indicators*: annual report and Progress Report Port Vision 2030 (publication 2020).
- d. *a brief description of the environmental management organization*: annual report
- e. *identification of relevant stakeholders related to the port environment, their needs and expectations and the engagement of stakeholders with the environmental port activities*: annual report and Progress Report Port Vision 2030.
- f. *some examples of environmental objectives, actions and projects*: annual report, building a sustainable port campaign and website Port of Rotterdam Authority
- g. *contact information*: annual report and website Port of Rotterdam Authority

8. Examples of best practice or management solutions

This chapter provides five examples of environmental measures which have been taken within the Port of Rotterdam area to improve environmental conditions, as well as the way of life for the citizens. For more best practices see link in Annex 1.

8.1 New resources of fuel

Hydrogen Vision

The Port Authority is working with various partners towards the introduction of a large-scale hydrogen network across the port complex, making Rotterdam an international hub for hydrogen production, import, application and transport. This hydrogen hub will also enable Rotterdam to maintain its position as important energy port for Northwest Europe in the future.

Annually 8.800 Petajoules (PJ) of energy are imported and exported. At this moment most energy originates from fossil resources. To become a climate neutral port in 2050 we need 20 million metric tons of hydrogen (2.400 PJ). This will require over 100 gigawatt electrolysis capacity.

For example PoR is taking the following action:

Port of Rotterdam Authority and Rotterdam Rijn Pijpleiding Maatschappij (RRP) have started a joint feasibility study regarding the development and construction of pipelines for various product streams, e.g. hydrogen (H₂) between Rotterdam, the Chemelot (Limburg) industrial estate and North Rhine-Westphalia. This pipeline bundle will offer Chemelot (Limburg) further sustainability opportunities and could potentially develop into an important supply route for German industry which has committed to the further reduction of its carbon emissions.

For more information link to : [Hydrogen in Rotterdam | Port of Rotterdam](#)

Bunkering alternative fuels in Port of Rotterdam. The port of Rotterdam plays a leading role in the introduction of LNG (liquid natural gas) and biofuels as a cleaner transport fuel. During the combustion of natural gas, the emissions of CO₂, NO_x and SO_x are considerably lower than when using traditional fuels, such as heavy fuel oil and marine gas oil. Specifically, the use of LNG can achieve a 10% to 20% reduction of CO₂ emissions. Additionally, it can be said that LNG complies with the strict sulphur standards, as well as with the future nitrogen emission standards that will apply to new ships from 2021 onwards. This makes the use of LNG and biofuels an attractive option to enhance the transition towards the zero emission era.

The Port Authority, together with the business community, has invested in all kinds of alternative fuel facilities within the port. Not only sea-going ships and inland barges can bunker LNG, or biofuels also trucks can fill up their tanks too. It was 2014 when the port of Rotterdam became the first port in Europe to officially allow bunkering of LNG from ship to

ship (from truck to ships had already been allowed). In 2016, Gate terminal opened its breakbulk facilities, providing a possibility to relocate LNG to smaller ships, such as bunkers. The Port Authority assisted through the construction of a dedicated harbour basin for small scale distribution.

Besides investing in LNG facilities, the Port Authority stimulates the implementation of national and international regulation favouring LNG, provides financial incentives (such as discounts on port dues) to shipping companies and encourages the development of training facilities. In 2016, the Authority signed a declaration of intent at the International Bunkering Conference and Exhibition. This declaration included international agreements on bunkering LNG by nautical parties and was signed by Japan, Korea and by the Port Authorities of Singapore, Antwerp and Zeebrugge too. Needless to say, many other strategic collaborations with external parties have occurred too, in order to support the use of LNG.

Another important development in the energy transition is the connection of Heerema's large offshore vessels to shore power. We are working on this area in close collaboration with Eneco, which supplies electricity through wind turbines in the immediate vicinity of the shore-based power location. This is a development that could allow us to reduce carbon emissions significantly in line with the target for 2030.

Contact information

Port of Rotterdam

Contact name: Jarl Schoemaker

Job title: Senior Advisor Environmental Management

T: +31 (6) 1178 2980

E: jt.schoemaker@portofrotterdam.com

8.2 LED for public lighting

From the viewpoint of sustainability, fluorescent lighting, halogen and gas discharge lamps are not promoted. LED lighting, however, lasts longer and consumes 50% less electricity than conventional lights. In 2014, the first durable LED streetlights were introduced in the port of Rotterdam. The Port Authority decided that it will be replacing all public lighting in the port area with LED lights. This has already been completed on the Maasvlakte, and the other port areas will follow by 2023. Overall, it will save energy, maintenance costs and an amount of roadblocks. Using renewable electricity, no CO₂ emissions are released either.

Contact information

Port of Rotterdam

Contact name: Rob van Bekkum

Job title: Asset Manager Infrastructure

T: +31 6 5149 7564

E: rm.bekkum@portofrotterdam.com



8.3 Nature in the port: the Bird Valley

Rotterdam's port area is surprisingly rich in animal and plant life. For example, the 'Green Gateway' near the Rozenburg Peninsula is home to 20 hectares of riverbank nature. The Maasvlakte also contains a wealth of nature, such as the Bird Valley. This is built nature area covering 21 hectares. It has been developed by the Port Authority of Rotterdam in close consultation with Bureau Stadsnatuur (urban nature agency of Rotterdam), HNS Landscape Architects and various nature organisations. The Port Authority has chosen to invest in biodiversity and create a living environment for the birds instead of developing a new industrial area (as could have been done according to law and regulations).

In 2022 the movie "Wild Port of Europe" was released. This film shows the resilience of the nature values within the port area. Flora and fauna co-exist and is thriving in the industrial port environment. The shooting of the film was between 2017 and 2021 and sponsored by PoR.

Nature inclusive port development fits well into the Port Authority's policy to become the most sustainable port of its kind and to encourage the residents to go to the port for recreation and sports. The Bird Valley is 3 hectares larger than the previous valley, and has diverse islands, large water bodies and a wall where sand martins can breed. It is a safe, enclosed area where birds can rest, eat and breed, after exhausted birds have flown in from sea. Due to the diversity of islands and vegetation, many different species of coastal birds – such as terns, common terns and black-headed gulls – and singing birds – such as common whitethroats and blue throats – can be found in the valley. There are two popular bird-watching stations that offer the opportunity to spot the bird population, accessible by bike and car.

Contact information

Port of Rotterdam

Contact name: Robbert Wolf

Job title: Advisor Environmental Management

T: +31 (0)6 2282 4435

E: r.wolf@portofrotterdam.com

8.4 Carbon Footprint of the Port Authority

The Port Authority does not only encourage companies within the port to get involved in sustainability initiatives, but also takes sustainable measures itself. The ambition is to reduce CO₂ emissions through the use of renewable energy, hybrid patrol vehicles and electric and hybrid lease cars. Since 2011, the Port Authority's business operation emissions have been compensated by voluntary carbon emission credits.

Between 2016 and 2020 a reduction of 20% in the Port Authority's carbon footprint has been realized. This is mainly the result of an increase in biofuel consumption. The World Port

Center, headquarter of the port authority decided to use residual heat from the port area instead to heat up the building. During the summer the cold riverwater is used to cool down the building. As of 2010 all energy used for Port Authority operations comes from renewable recourses such as wind and solar power. In 2022 the Port Authority has set a more ambitious reduction target of a 90% reduction of the scope 1 and 2 emissions in 2030 compatre to 2019. The reduction targets, including targets for scope 3 emissions, are approved by the Science Based Targeting initiative. To meet the targets, PoR is increasing the renewable fuel consumption by operational ships and preparing for new to build low-emission ships or retrofit the existing patrol vessels to hybrid (biodiesel/electric) vessels. As of 2021 only electric and hybrid lease cars are in operation. Additionally, the Port Authority works with dredging companies who are active within the port area to make a shift to cleaner and alternative fuels and dredging techniques.

Contact information

Port of Rotterdam

Contact name: Pim de Wit

Job title: Advisor Environmental Management

T: +31(0)6 1336 2083

E: pcb.wit@portofrotterdam.com

8.5 Energy infrastructure

The authority has invested in an energy infrastructure for residual heat, steam, and CO₂. Residual heat produced by the industry can be used as district heating for households in the city of Rotterdam, the Hague and Leiden. Additionally, the authority views the capture, reuse and storage of CO₂ as a practical solution to reduce the amount of CO₂ emitted in the port area in the short term. Reuse takes place on a small scale within OCAP, which collects CO₂ from Shell Pernis and supplies it to greenhouse horticulture in Westland. Moreover, the Port of Rotterdam Authority, the Gasunie and EBN are jointly exploring the realization of PORTHOS, a basic infrastructure for the collection and transport of CO₂ in the Rotterdam port area where it is pre-storaged in (empty) gas fields under the North Sea. In 2019 four companies made an agreement with PORTHOS to work on preparations for the capture, transport and storage of CO₂. These companies are ExxonMobil, Shell, Air Liquide and Air Products. The capture is to take place at these refineries and hydrogen producers in Rotterdam. Another important development: we are working with sixteen companies and organisations on the hydrogen economy in Rotterdam under the auspices of the H-vision project.

Contact information

Port of Rotterdam

Contact name: Wilco van der Lans

Job title:

T: +31 623227819

E: w.lans@portofrotterdam.com



Appendix I

Link to annual report 2021 (in Dutch)

[Havenbedrijf Rotterdam - Jaarverslag 2021 \(portofrotterdam.com\)](https://www.portofrotterdam.com/nl/over-de-haven/over-de-haven/jaarverslag-2021)

Link to CSR statement:

<https://www.portofrotterdam.com/en/port-authority/about-the-port-authority/corporate-social-responsibility>

Link to building a sustainable port campaign:

<https://www.portofrotterdam.com/en/our-port/our-themes/a-sustainable-port/sustainability>

Link to 2021 Fact and Figures:

<https://www.portofrotterdam.com/en/experience-online/facts-and-figures>

Cluster Energy Strategy:

[Cluster Energie Strategie Rotterdam-Moerdijk.pdf \(portofrotterdam.com\)](https://www.portofrotterdam.com/nl/over-de-haven/over-de-haven/cluster-energie-strategie-rotterdam-moerdijk)

Progress Report Port Vision 2030:

<https://www.portofrotterdam.com/en/about-port-authority/mission-vision-and-strategy/rotterdam-port-vision>

Register Monitoring & Environmental Information (MOI):

<https://staatvanrijnmond.nl/>

Transparantiebenchmark

<https://www.transparantiebenchmark.nl/scores#/survey/10>

Havenverordening Rotterdam 2020

<https://zoek.officielebekendmakingen.nl/gmb-2020-12201.pdf>

Appendix II

Environmental aspect: Elements of the Port Authority's activities, products, or services which interact with the environment.

Environmental impact: Any change to the environment, whether adverse or beneficial, wholly or partially resulting from the Port Authority's activities, products or services

Environmental management system: This covers the organizational structure, responsibilities, ways and means of implementing functional and effective environmental management. It ensures that the activities of the Port Authority, and their impacts, conform with environmental policy and associated objectives and targets. It includes the preparation and implementation of a documented system of procedures and instructions providing the basis for a program of continuous environmental improvement.

Environmental objective: Overall environmental goal, arising from the environmental policy and significant environmental aspects, that the Port Authority sets itself to achieve, and which is quantified where practical. An explicit statement of what the Port Authority hopes to achieve e.g. to improve air quality in the port area, to reduce the environmental impact of ship waste.

Environmental policy: Statement by the Port Authority of its intentions and principles in relation to its overall environmental performance which provides a framework for action and the setting of its environmental objectives and targets.

Environmental Review: An initial comprehensive analysis of the environmental issues, impacts and performance related to activities in the port area.

Havenverordening: 2020 Rotterdam Port Bye-Laws (www.portofrotterdam.com)

Science Based Targeting Initiative (SBTi): The SBTi is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). SBTi drives ambitious climate action in the private sector by enabling organizations to set science-based CO₂-emission reduction targets.

Significant Environmental aspect: A significant aspect is an aspect with a significant impact on the environment.

Stakeholders: Individual or group concerned with or affected by the environmental performance of an organisation, e.g. local community, government, employees, clients, authorities.