Progress Report 2014
Port Vision 2030

Port Compass

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The state of the Port

Our vision
In 2030, Rotterdam is Europe’s most important port and industrial complex. It is a strong combination of the Global Hub and Europe’s Industrial Cluster, both leading in efficiency and sustainability. Rotterdam is closely linked to other North West European industrial and logistics areas. Leading businesses make long-term investments in the most modern facilities. Close cooperation between businesses, government and knowledge Institutions results in a high-quality labour market, living environment and accessibility. Our adaptive powers are unique. This makes the port- and industrial complex an important cornerstone for the welfare of the region, the Netherlands and Europe in 2030.

Source: Port Vision 2030 (2011)
Port Vision 2030 was formally adopted by Rotterdam’s Municipal Council in 2011. The convenant was then signed by six partners: the port business association Deltalinqs, the Port of Rotterdam Authority, the Municipality of Rotterdam, the Province of Zuid-Holland and the Government of the Netherlands (represented by the Ministries of Economic Affairs and Infrastructure and the Environment). These parties subsequently set to work on the Implementation Agenda. The dynamic nature of the global economy requires us to permanently monitor and anticipate new developments. In this process, we constantly ask ourselves as covenant partners whether we have set the right priorities and whether we are taking the right approach when it comes to their realisation. This is one of the key motives behind the publication of the annual Port Vision 2030 Progress Report, of which the first edition was issued in the summer of 2013.
2. Trends and developments

A number of new developments have presented themselves since the publication of Port Vision 2030, while several existing trends have been subject to further impulses. The following section offers a concise overview of these significant changes. Although these developments did not result in any changes to the Port’s ambitions, they did form the immediate occasion for the prioritisation of existing activities and further investment in new opportunities.

Slow economic growth

Despite signs of recovery, it appears as if the coming decade will be characterised by average economic growth figures that are lower than we were accustomed to in previous decades. This also has an impact on the Rotterdam port. In 2013, total throughput in the Rotterdam port fell short of the trend set out in the Port Vision’s Low Growth Scenario (440.5 million tonnes compared to the projected 450 million tonnes). Against a background of on-going limited economic growth and increasing competition, it is expected that over the next few years, the development in throughput will continue to follow the current scenario.

Increasing uncertainty

There are a number of factors affecting the Port’s growth: increasing competition from surrounding ports and ports further afield in the Mediterranean and the Baltic, the realisation of additional container terminal capacity in the Hamburg-Le Havre (HLH) range, the joining of forces by shipping companies, on-going scale increases in the container shipping sector and the development of new trade routes. This is compounded by fundamental changes in the energy market like the rise of shale gas in the US (which has a negative impact on the competitive position of the European petrochemical industry), the energy transition in Germany and the rapid advance of non-fossil, centralised and increasingly decentralised power generation. These are but a few examples of developments that have quickly come to the fore - developments that may well indicate that we are no longer in a period of change, but rather in a change of periods. We need to develop an effective response to this transition, since our ambition remains unaltered!

The Port’s modest growth figures combined with a growing number of uncertainty factors make it clear that we need to do more than just improve efficiency and establish competitive price levels. We will need to invest even more intensively in the broadening of our markets, knowledge development and innovation via co-creation.

The containers sector: stronger players and increased competition

Alliances and mergers between shipping companies are strengthening these players’ negotiating position vis-à-vis the international ports - a position that is further reinforced by the addition of considerable terminal capacity in the HLH range. The shipping companies’ decision to establish these conglomerates is mainly informed by price competition. They hope to further reduce their costs by means of an alliance or merger. This scaling up of the container sector will continue in the period ahead. Nevertheless, draught requirements aren’t the only important factor in opting for a particular port. The competition between European ports in the container sector is becoming even fiercer. Since as a result of scaling up, we can observe increasingly high volumes of cargo arriving on a steadily shrinking number of vessels, we can expect peak loads to become more prominent at the terminals and along the hinterland connections. Consequently, the speed at which cargo is put through via the Port’s terminals and hinterland connections - and the efficiency with which this is done - will become more and more important. The Port had already identified this challenge in Port Vision 2030, but it will now be given far stronger priority.
The performance of the entire chain is of crucial importance
Market players are opting more and more emphatically for chains rather than individual ports. International ports can no longer automatically assume that clients will opt for them on the basis of their location and water depths. Ultimately, clients’ key concerns are minimising emission levels and costs per transported cargo weight or unit. And they approach this on the basis of their own chain - from warehouse to warehouse, in other words. In this context, it is crucial to connect more and more effectively to the client’s specific process and needs. New developments in the field of information technology (including tracking and tracing in the logistics chain) are consistently improving the chain’s transparency and performance. That is why information plays an essential role in boosting the chain’s competitive position. Chain performance can be optimised even further by linking the relevant information and systems. The chain’s level of organisation also plays an important role in this context: the bundling of cargo and synchronomodality (exchange between transport modes) of connections to the hinterland. And this hinterland already starts at Maasvlakte 2, where logistics promise to be organised perfectly and the various parties will be required to work in close collaboration with one another.

State aid has an impact on competition - in rail transport, among other sectors
A recent study commissioned by the Dutch Ministry of Infrastructure and Environment shows that for the moment, the playing field for the different European Sea Ports is far from level. The rules for state aid are interpreted differently from one country to the next, meaning that a number of seaports are able to reduce the start-up and regular costs of e.g. their rail product with the help of state aid.

Increased costs as a result of changes to sulphur regulations
The new sulphur norms will come into effect as of the start of 2015 in the English Channel, the North Sea and the Baltic. For routes within these regions, these changes could result in an unwanted reverse modal shift - from water to land. After all, the production costs of the new low-sulphur fuel will be higher, and these additional expenses will be passed on to the client. Along the deep-sea routes, some private-sector parties expect fuel costs to increase by no less than 20%. In other words, it will become a lot more expensive to transport cargo and fuel from China, India and East Africa to Northwest Europe. At present, Rotterdam’s refineries have insufficient capacity for the further desulphurisation of fuel oil. As a result, there is a risk that large ocean-going vessels will bunker less often in the Rotterdam port. A positive aspect of the new regulations, however, is that they create new opportunities for LNG as a cleaner alternative - further strengthening Rotterdam’s position as an LNG Hub.

Increased dynamism in the energy market
The swift rise of sustainable energy in Germany is also pushing conventional coal- and gas-fired plants in the Netherlands off the network during peak periods. The advance of sustainable and decentralised power generation has weakened the competitive position of major established players in the energy arena. In addition, the low price of CO2 is currently discouraging investment in clean fossil fuels and carbon capture and storage (CCS).

...is putting pressure on the refinery sector...
The European refinery sector is faced with low margins and overcapacity, contracting local markets and competition from newly-developed production capacity in the Middle East and Russia. The situation is exacerbated by a recent development in the energy market: the US is producing more and more petroleum from relatively inexpensive shale oil. In a comparatively short period of time, the US has changed from an importer to an exporter of energy. This significantly reduces export opportunities for the Rotterdam refineries. As a result, the volumes of crude oil (for the local refineries) and oil products stored at and put through the Rotterdam port are expected to drop further.

...and the competitive position of the chemical cluster
We are starting to feel the chill of the US's swiftly stepped up extraction of shale gas. As a result of American shale gas operations, our local chemical industry is confronted with gas prices that are three times as high as those paid by competitors in the US, and electricity prices that are twice as high. As a result, biobased chemistry is also advancing at a slower pace, while the export position of energy-intensive products (iron, steel, petrochemical products) is deteriorating. If no policy changes are made, Europe runs the risk of becoming less attractive as a location for new chemical activities or expansion investments.

Future scenarios for the energy sector
The existing cluster will be reinforced and maximally supported with the further development of facilities and infrastructure like the heat network and the reduced burdens. At the same, the current transition will continue unabated, with efforts focussing on the key fields of biobased chemistry, the circular economy and sustainable energy. This line of approach was already introduced in Port Vision 2030 and will remain in full effect. Over the past year, the Port Authority, in consideration of the aforementioned new developments, worked together with its partners and knowledge institutes on the development of new energy scenarios for the port.
3. The 2014-2015 Priorities Calendar

For the time being, economic growth will continue to be relatively slow, putting more pressure on the Rotterdam port’s competitive position. This will be particularly apparent in the container sector and the port’s petrochemical cluster. The Port of Rotterdam Authority and its partners will grasp this opportunity to increase their focus on a number of weaker sections of the chain and the port area’s location factors. In addition, we will be making a maximum investment in the opportunities already offered by Rotterdam’s existing position. In short, our priorities over the next few years will be:

1. Improvements in the chain

Efficiency and reliability will be improved across the entire chain, and Rotterdam will work to ensure that its costs are competitive. These issues are relevant to the port’s sea shipping facilities, its port operations and its connections with the European hinterland. In shaping this priority, Rotterdam will respond effectively to the wishes and requirements of players in the chain including the shippers and the shipping companies. For shipping companies, the optimum deployment of their fleet plays a key role in their selection of a specific port and chain. Improvements to the chain require strong organisational capacity, since they involve a multitude of parties - each of which bears responsibility for its own segment of the chain. The utilisation of existing data, new data and intelligent combinations of data can help in this context and yield clearer insight in the chain. This allows for the more efficient use of transport modes - a fundamental requirement from both a cost and an environmental perspective. The Port of Rotterdam Authority will attempt to gain clear insight into the performance achieved along the entire length of the chain (costs, reliability) and consult with its partners to determine whether any additional impulses are required in addition to the current initiatives. Examples of existing initiatives include: Nextlogic (the improvement of the entire operational chain within container inland shipping), InlandLinks (the online platform for container terminals in the hinterland with a range of intermodal services), Avanti (which provides access to master data like water depths and the port’s admissions policy) and Pronto (which provides transparency in the area of event data dealing with arrivals, departures and ship servicing).

2. Integrated approach to the rail chain

The rail chain requires extra attention. Rotterdam’s rail volume is falling short of the established growth ambitions and targets relating to the modal split (the ratios between road haulage, water transport, rail and pipelines). We need to improve the rail product with respect to its costs, efficiency in terms of logistics and operations (capacity management, maintenance and servicing, traffic management, exchange of information). And naturally, ensure that the rail infrastructure is robust and sufficient. With regard to the latter, a number of improvements have already been realised or are in the pipeline, such as the construction of the key third track (connecting Rotterdam to Germany). The national government is working on the necessary adaptations to management tasks required for the effective organisation of freight transport and is presently formulating new concession terms for this purpose. The improvement of the rail chain requires an integrated approach that involves all stakeholders, including the railway infrastructure managers. The Port Authority has already taken the initiative to set up such an approach.

3. Port Infrastructure Investment Agenda

A large number of infrastructure projects in and around the port are on the agenda for the next few years, including extra tunnel capacity, a new railway bridge and the widening of the Nieuwe Waterweg. It is important to carefully coordinate the planning and financing of these projects, so that funds and resources can be used as efficiently as possible and the projects can be realised on schedule. To this end, we will be drawing up a Port Infrastructure Investment Agenda in which the Port of Rotterdam Authority and the national government will jointly map out the different investment wishes and economic opportunities. In addition, we will be studying which opportunities there are to realise these wishes. And finally, we will sketch a general picture of which infrastructure interventions may possibly be required in the future.

4. Collaboration between ports

The Netherlands has a substantial number of sea ports located at a relatively short distance from one another. Collaboration between ports is intended to significantly improve the competitive advantage of the Dutch sea ports and allow for the more efficient use of the available space and resources. In June 2014, the Minister of Infrastructure and the Environment, the Netherlands’ five sea ports, the port business communities signed a joint Working Programme that sets out the sea ports’ priorities until year-end 2016. The priorities listed in this Priorities Calendar are incorporated in the Working Programme.
5. European level playing field
Achieving a level Playing field in Europe is high on the partners’ agenda. The Netherlands’ national government is working hard to realise greater transparency in the funding of ports within the European Union and cut back reliance on - frequently illegitimate - state aid. In addition, it will actively contribute towards the realisation of further European legislation in the area of the state aid for port activities. At the same time, we need to ensure that the tax burden faced by the private sector in the Rotterdam port is in line with that of private-sector firms established in other foreign ports. We will be taking the necessary actions in partnership with the municipal administration.

6. Energy Infrastructure Delta Plan
Parties have reconfirmed the importance of the Energy Infrastructure Delta Plan with the signing of the national Energy Covenant in the summer of 2013. The Delta Plan focuses on the capture, storage and recycling of heat and CO₂ and the development of steam networks. The realisation of this Delta Plan contributes to energy efficiency - specifically in the Energy, Chemical and Process Manufacturing sectors. The Plan constitutes a major step forward in the attainment of climate objectives and the improvement of local location factors. The heat network will be able to supply heat to greenhouse complexes and homes using the heat produced in the port area. It can be used to heat some 350,000 homes, saving some 20 Petajoules of energy per year. The Port of Rotterdam Authority is presently drawing up a Master Plan that works out the coordination of heat demand and supply in more detail. Necessary Investments in technologies like carbon capture and storage (CCS) are impeded by the relatively high price of energy and the low cost of CO₂. That is why the signatories of the Energy Covenant aim to promote a more decisive energy policy at the European level. The Netherlands’ national government will be taking the lead in this development.
7. Broadening our markets
It is important to expand the port’s operations into new segments or activities in order to remain a robust and competitive economy. Our efforts to further expand Rotterdam’s energy cluster continue unabated - among other things via the development of the LNG hub, the biobased cluster, Coolport and the associated reefers logistics. Developments like the circular economy also create new opportunities. Generally, new developments like this involve certain start-up risks - which is why they need to be effectively supported. This can be achieved by developing facilities, for example, facilitating business networks or supporting parties in the acquisition of funds or research and innovation activities. Further priority will be given to Rotterdam’s development into a fully-fledged World Port City that can serve as a home base for the leading firms in the cluster of marine service providers (insurance, legal services, financial) and the marine industry. In the most recent period, the Municipality and its partners have taken a number of important steps in this context and developed a programme that will be implemented over the next few years.

8. Securing sufficient environmental space for new developments
The region’s location climate is best served by unambiguous regulations and procedures that are implemented swiftly but with due care. The Netherlands’ new Environment & Planning Act [Omgevingswet] goes a long way to achieving these objectives. It is important for the development of the port and the social environment in the surrounding area that the environmental buffer is effectively and clearly safeguarded. At present, the most pressing requirement is to develop a robust solution for issues relating to nitrogen deposits. Another priority involves the signing of the Noise Agreements Framework for the port area. Processes like this tend to be very complicated, in part due to complex legislation and regulations and the large number of stakeholders and interests involved, but also the poor economic climate and financial constraints at private companies and public organisations. To realise the established objectives, it is of paramount importance to continue to invest in collaboration and broaden the support base. An important instrument in this context is the Regional Sustainable Dialogue Platform [Duurzame Dialogoog platform], in which municipalities, port authority and citizens’ associations in the Rotterdam-Rijnmond region regularly come together to confer.

9. Education that is geared towards the employment market
Qualified personnel are indispensable for a location climate that can compete at the international level. We can observe a growing demand for employees with specific training, in the area of maintenance engineering, for example, or port-related services. After years of falling intake, we can now observe a growing number of students opting for a technical vocational degree. Over the past few years, educational institutions in Rotterdam have already invested substantially in tailoring their curricula to these kinds of jobs. In the period ahead, the focus will be mainly on the further development of the core locations for this kind of education like RDM Campus for research and education in the technical field, the Process and Maintenance College and the Shipping and Transport College. Due to the dynamism of the employment market, it is becoming difficult to effectively plan the demand for strategic personnel. This major issue will now be addressed by employers, employees’ associations and educational institutions via the Mainport Rotterdam Sector Plan. This programme will focus among other things on the Social Innovation learning pathway, the realisation of a new training plant and the re-education or further education of jobseekers for employment in the maintenance industry.

10. Bundling strengths in the interest of innovation
As has become clear in this Priorities Calendar, the partners face a range of challenges: chain optimisations and supporting IT, raw materials efficiency and energy transition, environmental issues, the expansion into new markets (biobased, circularity) and the employment market. Such challenges all call for solid knowledge and innovation, which are both key themes in the Port Vision. Knowledge development and innovation need to be focused on the crucial issues faced by our market and our clients. Existing sectors in Rotterdam like the chemical sector need to make major strides in the area of innovation if they intend to strengthen their international competitive advantage. This can be achieved on the basis of a systematic approach. This method centres on the development and implementation of targeted research agendas in partnership with knowledge institutions, the attraction and facilitation of new start-ups and supporting innovative companies in their further growth by means of funding distributed via innovation funds. Major projects like the Energy Infrastructure Delta Plan, the Circularity Center and the Biobased Hub also need to be continued and expanded further. New connections will be established with and between current initiatives. The necessity to promote new innovation and develop an optimised Port Innovation Ecosystem will also demand a great deal of the region’s organisational capacity.
4. The Implementation Agenda

The full integrated Implementation Agenda – containing two growth visions and ten success factors – was presented in the 2011 Port Vision. It has presently been updated by the partners in this edition of the Progress Report.
What will we be doing to realise Port Vision 2030?

- Make more efficient use of the available space.
- Maintain sufficient flexibility in the port’s spatial development.
- Reserve space for possible future uses.
- Increase level of expertise.
- Translate new knowledge into innovations with practical application value.
- Implement innovations on a wide scale by the private sector.
- Increase the quality of legislation and regulations through innovations in the current environment and planning law.
- Work towards a customer-orientated government that operates both quickly and effectively.
- Maintain the present high safety levels for local residents and employees.
- Achieve balanced growth by keeping emissions in check.
- Achieve balanced growth by carefully establishing environmental zones and effectively planning and developing these areas.
- Reduce port-related nuisance.
- Dual objective: strengthen the port and improve the local living quality.
- Achieve balanced growth by carefully establishing environmental zones and effectively planning and developing these areas.
- Strengthen the Port of Rotterdam Authority’s position as an enterprising developer of European port policies and regulations.
- Influence European policy and regulations geared towards the development of a sustainable port and industrial complex.
- Engage in industrial and energy politics at the European level.
- Optimise shipping schedules.
- Maintain the present high safety levels for shipping traffic.
- Strengthen economic synergies between the region and the port.
- Further develop the Stadshavens district.
- Strengthen the ties between the city centre and the port.
- Increase the appeal of living, working and spending leisure time along the riverfront.
- Cluster industrial activities in Rotterdam.
- Connect Rotterdam’s industrial sector to counterparts in Moerdijk, Antwerp, Flushing and Terneuzen.
- Increase the share of renewable resources used to generate energy.
- Create new facilities for the capture, storage and transport of carbon dioxide as well as CO2 trading.
- Develop biobased chemistry.
- Increase production capacity and renew production assets.
- Attract premium industry-related activities to the region.
- Increase throughput capacity and further expand Rotterdam’s hub function.
- Improve connection with multimodal transport junctions in the hinterland.
- Increase efficiency of the logistics chains.
- Improve information flows.
- Minimise the ecological footprint of the logistics chains.
- Attract premium port-related activities.
- Improve the Rotterdam port’s value-for-money ratio.
- Improve inspections and supervision.
- Improve the local financial climate.
- Pursue a dedicated European policy and develop the relevant institutions.
- Realise an efficient European transport and logistics system.
- Strengthen the Port of Rotterdam Authority’s position as an enterprising developer of European port policies and regulations.
- Influence European policy and regulations geared towards the development of a sustainable port and industrial complex.
- Engage in industrial and energy politics at the European level.
- Get young people interested in the port.
- Increase intake and graduation numbers for technical and logistics degree programmes.
- Improve strategic human resources planning.
- Strengthen economic synergies between the region and the port.
- Further develop the Stadshavens district.
- Strengthen the ties between the city centre and the port.
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- Clusters industrial activities in Rotterdam.
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- Improve information flows.
- Minimise the ecological footprint of the logistics chains.
- Attract premium port-related activities.
What will we be doing to realise Port Vision 2030?

For the **Space** success factor:
- Make more efficient use of the available space.
- Maintain sufficient flexibility in the port’s spatial development.
- Reserve space for possible future uses.

For the **Accessibility** success factor:
- Make more effective use of the local infrastructure.
- Reduce pressure on the road network.
- Expand the existing infrastructure and resolve bottlenecks.

For the **Shipping** success factor:
- Optimise shipping schedules.
- Maintain the present high safety levels for shipping traffic.

For the **Legislation and Regulations** success factor:
- Increase the quality of legislation and regulations through innovations in the current environment and planning law.
- Work towards a customer-orientated government that operates both quickly and effectively.

For the **Investment Climate** success factor:
- Improve the Rotterdam port’s value-for-money ratio.
- Improve inspections and supervision.
- Improve the local financial climate.

For the **Europe** success factor:
- Cluster industrial activities in Rotterdam.
- Connect Rotterdam’s industrial sector to counterparts in Moerdijk, Antwerp, Flushing and Terneuzen.
- Increase the share of renewable resources used to generate energy.
- Create new facilities for the capture, storage and transport of carbon dioxide as well as CO2 trading.
- Develop biobased chemistry.
- Increase production capacity and renew production assets.
- Attract premium industry-related activities to the region.

For the **Europe’s Industrial Cluster** vision:
- Cluster industrial activities in Rotterdam.
- Connect Rotterdam’s industrial sector to counterparts in Moerdijk, Antwerp, Flushing and Terneuzen.
- Increase the share of renewable resources used to generate energy.
- Create new facilities for the capture, storage and transport of carbon dioxide as well as CO2 trading.
- Develop biobased chemistry.
- Increase production capacity and renew production assets.
- Attract premium industry-related activities to the region.

For the **Environment, Safety and Living Quality** success factor:
- Achieve balanced growth by keeping emissions in check.
- Achieve balanced growth by carefully establishing environmental zones and effectively planning and developing these areas.
- Reduce port-related nuisance.

For the **Innovation** success factor:
- Increase level of expertise.
- Translate new knowledge into innovations with practical application value.
- Implement innovations on a wide scale by the private sector.

For the **Legislation and Regulations** success factor:
- Increase the quality of legislation and regulations through innovations in the current environment and planning law.
- Work towards a customer-orientated government that operates both quickly and effectively.

For the **Investment Climate** success factor:
- Improve the Rotterdam port’s value-for-money ratio.
- Improve inspections and supervision.
- Improve the local financial climate.

For the **Environment** success factor:
- Make more efficient use of the available space.
- Maintain sufficient flexibility in the port’s spatial development.
- Reserve space for possible future uses.

For the **City and Region** success factor:
- Optimise shipping schedules.
- Maintain the present high safety levels for shipping traffic.
- Strengthen the ties between the city centre and the port.
- Further develop the Stadshavens district.
- Increase the appeal of living, working and spending leisure time along the riverfront.

For the **Employment success factor**:
- Make more effective use of the local infrastructure.
- Reduce pressure on the road network.
- Expand the existing infrastructure and resolve bottlenecks.

For the **Global Hub** vision:
- Increase throughput capacity and further expand Rotterdam’s hub function.
- Improve connection with multimodal transport junctions in the hinterland.
- Increase efficiency of the logistics chains.
- Improve information flows.
- Minimise the ecological footprint of the logistics chains.
- Attract premium port-related activities.

For the **Space** success factor:
- Make more efficient use of the available space.
- Maintain sufficient flexibility in the port’s spatial development.
- Reserve space for possible future uses.

For the **City and Region** success factor:
- Make more effective use of the local infrastructure.
- Reduce pressure on the road network.
- Expand the existing infrastructure and resolve bottlenecks.

For the **Employment success factor**:
- Make more effective use of the available space.
- Maintain sufficient flexibility in the port’s spatial development.
- Reserve space for possible future uses.
The State of the Port offers various facts and figures that offer insight into the Rotterdam port’s current development. This section includes a number of indicators that illustrate the financial and economic importance of the port, its location climate, accessibility, environmental impact and effects on the surrounding residential climate and social context. Can we manage to develop the port in a way that is both sustainable and efficient? How are we doing in terms of our dual objective: are we able to create room for increased economic activity and simultaneously improve local quality of life? The indicators and long-terms trends set out in the State of the Port are intended to supply arguments and objective input for discussions and evaluations in relation to these kinds of important issues.

Overall picture
The economic importance of the Rotterdam port rose steadily year by year in the period until 2008. From 2009 on, this economic role gradually came under pressure, resulting in the levelling off of figures relating to aspects like added value, employment, throughput and, as of 2011, also market share. In the period until 2012, the port did see stabilisation in its figures for throughput, added value and employment. The full set of data for 2013 was not yet available at the time of writing. In many aspects, the Rotterdam port is presently developing in the right direction. The region’s accessibility, modal split, local air quality and water quality have improved considerably in recent years. These developments show that the policies and collaborations that were initiated in the past have yielded the desired effects and that we are presently able to realise our joint ambitions for the Rotterdam port.

How did the State of the Port come about?
The indicators included in the State of the Port are derived from or calculated on the basis of existing publications that deal with the Rotterdam port or region. This first edition of the State of the Port shows that a large volume of port-related knowledge can already be found at the Port Vision partners. This knowledge allows us to give an initial quantitative substantiation of our port’s development.

The State of the Port was realised in a relatively short period of time. Consequently, it can best be compared to a rough draft that will still be developed in more detail. In this first edition, it hasn’t always proven possible to depict all major trends and themes by means of an Indicator. For the moment, we still lack suitable indicators for a number of key subjects like innovation, chain efficiency, the port’s transition, the port-city relationship and people’s experience of the port area. In addition, a number of figures are indicative rather than objective. This is due to a lack of precise measurement options and occasionally due to the lack of uniform definitions. In upcoming editions of the State of the Port, we expect to make further progress in the development of these missing indicators. In selecting
the most relevant available indicators, our initial focus was consistently indicators at impact and outcome level - i.e. indicators that say something about the intended effects and results. One example of an impact indicator that sheds light on the improvement of local air quality is the concentration of nitrogen dioxide in the air.

However, indicators at the output and possibly the process or input level can also prove useful. It is often far easier to influence these values directly, and they clearly illustrate which actions or efforts have been invested to achieve the intended effects or results. One example of an output indicator that illustrates the possible improvement of local air quality is the number of shore-based power units in the port. In a number of cases, such output indicators have also been included in this State of the Port to offer insight into various concrete results and developments.

**Which developments are reflected by the figures?**

We can reach a number of conclusions based on the trends outlined in the State of the Port:

**Added value**

In the period 2004-2008, the direct and indirect added value of the port and employment opportunities in the port have increased substantially. This was followed in 2009-2012 with a period of stabilisation. No data were available at the time of writing for the years 2013 and 2014.

**Market share**

In terms of market share, the port has consistently improved its position year after year throughout the period 2006-2010. After this, we can observe a slight decline, although market share is still well above the average level of ten years ago. The market share in the Containers sector has been subject to fluctuations in the past decade, with the market share percentage in 2013 falling short of that achieved in 2004.

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**Overall added value of the port**

in billions of euro

![Graph showing overall added value of the port](image)

*The added value is equal to the market value of production (turnover) minus the raw materials sourced for this purpose. Added value is a term from the field of economic science and expresses the essence of production: adding value to a product. It indicates which value a company contributes to the economy by means of its activities.*

**Market share**

in percentages

![Graph showing market share](image)

*Market share = Market share in Hamburg – Le Havre range. This range covers the following ports in northern Europe: Hamburg, Bremen, Wilhelmshaven, Amsterdam, Rotterdam, Zeeland Seaports, Antwerp, Ghent, Zeebrugge, Dunkirk, Le Havre.*
**Investment volume**
The port business community’s investment volume more than doubled in the period 2004-2011. The number of firms setting up in the region has presently stabilised. In other words: the average investment volume per business location grew by more than 200% in the period in question. No data were available at the time of writing for the years 2012, 2013 and 2014.

**Stakeholder satisfaction**
A study into stakeholders’ appreciation of the port, performed in 2012, revealed that on average, these parties gave the port an average mark of 7.8 (scale 1-10). It can be concluded from this mark that in general, the stakeholders (port companies, sector associations, nature conservation and environmental groups, shareholders, the national government and regional authorities) are satisfied with the Rotterdam port.

**Accessibility**
Accessibility issues in the port area have been partially resolved. For a number of years now, the morning and evening rush hours in the direction of the port have not caused any structural congestion problems. At present, the focus is on the most important bottleneck: the evening rush hour traffic moving out of the port area. It is expected that accessibility on roads leading out of the port area during the evening rush hour will improve further from 2014 on, when the widened A15 highway has been taken into operation.
**Modal split**
The modal split improved further in 2012 and 2013 (reflected in the reduced share of road haulage in the modal mix) compared to previous years. Over the past decade, the number of containers transported from Maasvlakte via the road network in TEU has barely risen, despite a significant increase in the total number of transported containers. This increase has mainly been accommodated by inland shipping.

**CO₂**
In the period 2005-2012, CO₂ emission levels in the port have neither increased nor decreased, despite an increase in throughput. The main share of the port’s carbon emissions (approximately 90%) can be attributed to energy generation and industrial activities in the Rotterdam port area.

**Sustainable energy**
For the moment, there has been next to no increase in the local capacity to generate sustainable energy. It is the port’s ambition to double this capacity within the next few years through a number of new impulses.

---

**Modal split for containers transported via the road from Maasvlakte to the hinterland**
in percentages

<table>
<thead>
<tr>
<th>Year</th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>55</td>
<td>50</td>
<td>45</td>
<td>40</td>
<td>35</td>
<td>30</td>
<td>25</td>
</tr>
</tbody>
</table>

Share of road transport = Ratios between transport via road, rail and inland shipping.

**CO₂ emissions**
in kilotonnes

<table>
<thead>
<tr>
<th>Year</th>
<th>05</th>
<th>06</th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>25</td>
<td>30</td>
<td>30</td>
<td>25</td>
<td>20</td>
<td>15</td>
<td>10</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

**Generation capacity for energy from sustainable sources**
in the port as a percentage of the total capacity

- **Wind**: 136.5 MW in 2012
- **Solar**: 0.5 MW in 2012

**Target for 2030**
- **Wind**: 14% of generation capacity
- **Solar**: 3.5% of generation capacity

---

**REGIONAL TOTAL**
Port industry including energy generation

- **2012**: 25,000 kilotonnes
- **2013**: 30,000 kilotonnes
- **2014**: 20,000 kilotonnes
**Air quality**

Over the past 10 years, the concentration of airborne pollutants like nitrogen dioxide (NO₂), sulfur dioxide (SO₂) and particulates (PM10) has decreased significantly despite an on-going rise in throughput and currently satisfies all legal requirements in this area.

<table>
<thead>
<tr>
<th>Year</th>
<th>NO₂ Concentration (µg/m²)</th>
<th>SO₂ Concentration (µg/m²)</th>
<th>Particulates Concentration (µg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>38.0</td>
<td>13.0</td>
<td>29.8</td>
</tr>
<tr>
<td>2013</td>
<td>33.1</td>
<td>5.9</td>
<td>21.8</td>
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</table>

**Smell**

From 2011 on, there has been an increase in the number of smell-related complaints in the area surrounding Europoort. It has been established that two local companies are responsible for this increase, and a number of measures have since been taken that are expected to result in fewer complaints from 2014 on. The number of complaints in other port areas has been falling since 2008.

**Water quality**

Local water quality has improved in recent years, although quality levels still do not satisfy the established norms. This can be mainly attributed to the pollutants that are introduced upstream from Rotterdam. Further agreements to this end will be made in the upcoming period.

**Employment**

Employment in the port has grown in the period 2004-2008. In the period that followed, we can observe stabilisation until the end of 2012. No data were available at the time of writing for the years 2013 and 2014.

![Graph showing employment in the port](image-url)

The Port of Rotterdam Authority intends to develop the State of the Port section further in the years ahead.
### Port in general

<table>
<thead>
<tr>
<th>Source</th>
<th>Unit</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
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<th>2008</th>
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<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct added value</td>
<td>€ million</td>
<td>10,336</td>
<td>11,797</td>
<td>11,860</td>
<td>12,931</td>
<td>14,138</td>
<td>10,953</td>
<td>11,818</td>
<td>12,534</td>
<td>12,886</td>
<td>-</td>
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<tr>
<td>Indirect added value</td>
<td>€ million</td>
<td>4,981</td>
<td>5,305</td>
<td>5,827</td>
<td>6,490</td>
<td>7,176</td>
<td>6,299</td>
<td>6,147</td>
<td>6,775</td>
<td>7,066</td>
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<tr>
<td>Total throughput</td>
<td>million tonnes</td>
<td>353</td>
<td>370</td>
<td>382</td>
<td>409</td>
<td>421</td>
<td>387</td>
<td>430</td>
<td>435</td>
<td>442</td>
<td>440</td>
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<tr>
<td>Total market share</td>
<td>Percentage</td>
<td>35.1</td>
<td>35.4</td>
<td>34.7</td>
<td>35</td>
<td>35.1</td>
<td>36.8</td>
<td>37.8</td>
<td>37</td>
<td>37.6</td>
<td>37.3</td>
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<tr>
<td>Property taxes revenue port area</td>
<td>€ million</td>
<td>56</td>
<td>48.3</td>
<td>48.3</td>
<td>44.6</td>
<td>44.2</td>
<td>49.5</td>
<td>58.1</td>
<td>63.5</td>
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<tr>
<td>Stakeholder satisfaction level</td>
<td>Research - PoR Grade</td>
<td>1 - 10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7.8</td>
<td>-</td>
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<tr>
<td>% residents believing the port is important for the economy</td>
<td>Municipality of Rotterdam Percentage</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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### Global Hub

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<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td>Throughput of containers</td>
<td>TEU x 1,000</td>
<td>8,292</td>
<td>9,287</td>
<td>9,653</td>
<td>10,791</td>
<td>10,784</td>
<td>9,743</td>
<td>11,148</td>
<td>11,877</td>
<td>11,866</td>
<td>10,931</td>
</tr>
<tr>
<td>Market share in the Containers sector</td>
<td>Percentage</td>
<td>29.1</td>
<td>29.6</td>
<td>28</td>
<td>27.6</td>
<td>26.9</td>
<td>28.9</td>
<td>29.6</td>
<td>29.5</td>
<td>29.5</td>
<td>28.8</td>
</tr>
<tr>
<td>Bunkering</td>
<td>m³ x 1,000</td>
<td>-</td>
<td>-</td>
<td>13,611</td>
<td>13,580</td>
<td>12,967</td>
<td>12,167</td>
<td>11,896</td>
<td>12,224</td>
<td>10,931</td>
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</tr>
<tr>
<td>CO₂ emissions traffic and transport</td>
<td>Kilotonne</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>2,064</td>
<td>2,078</td>
<td>2,031</td>
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<tr>
<td>CO₂ emissions built environment</td>
<td>Kilotonne</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>950</td>
<td>906</td>
<td>880</td>
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### Accessibility

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<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td>Average travel time A15 &lt; 48 min (morning rush hour port-in port-out)</td>
<td>Traffic Management Company Percentage</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>99.5</td>
<td>98.2</td>
<td>98.8</td>
<td>98.3</td>
<td>99</td>
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<tr>
<td>Average travel time A15 &lt; 48 min (morning rush hour port-out)</td>
<td>Traffic Management Company Percentage</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>99.5</td>
<td>99.6</td>
<td>98.9</td>
<td>99.6</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>Average travel time A15 &lt; 48 min (evening rush hour port-in)</td>
<td>Traffic Management Company Percentage</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>98.3</td>
<td>99.3</td>
<td>98.5</td>
<td>99</td>
<td>98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average travel time A15 &lt; 48 min (evening rush hour port-out)</td>
<td>Traffic Management Company Percentage</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>85.9</td>
<td>82</td>
<td>79.8</td>
<td>80</td>
<td>84</td>
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<tr>
<td>Modal split containers hinterland Maasvlakte</td>
<td>% road traffic</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>49.8</td>
<td>46.9</td>
<td>45.7</td>
<td>47.2</td>
<td>46.4</td>
<td>44.3</td>
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### Industrial Cluster

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<th>2007</th>
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<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Added value Industry (total)</td>
<td>€ million</td>
<td>4,016</td>
<td>5,763</td>
<td>5,342</td>
<td>5,656</td>
<td>6,600</td>
<td>4,111</td>
<td>4,793</td>
<td>5,236</td>
<td>5,296</td>
<td>-</td>
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<tr>
<td>CO₂ emissions port industry</td>
<td>Kilotonne</td>
<td>25,300</td>
<td>24,998</td>
<td>25,211</td>
<td>26,084</td>
<td>25,577</td>
<td>26,045</td>
<td>26,549</td>
<td>25,231</td>
<td>25,253</td>
<td>-</td>
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<tr>
<td>CO₂ emissions region total</td>
<td>Kilotonne</td>
<td>28,868</td>
<td>27,885</td>
<td>28,104</td>
<td>28,675</td>
<td>27,923</td>
<td>29,114</td>
<td>29,588</td>
<td>28,198</td>
<td>28,145</td>
<td>-</td>
</tr>
<tr>
<td>CO₂ reduction through biomass</td>
<td>Kilotonne</td>
<td>185</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>141</td>
<td>-</td>
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</tr>
<tr>
<td>Utilisation of residual heat</td>
<td>Home</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3,417</td>
<td>6,998</td>
<td>10,099</td>
</tr>
<tr>
<td>Sustainable energy power generation. capacity in the port</td>
<td>Megawatts</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3.5</td>
<td>-</td>
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</tr>
<tr>
<td>Solar Power</td>
<td>Megawatts</td>
<td>0.5</td>
<td>0.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.5</td>
<td>0.5</td>
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</tr>
<tr>
<td>Wind Power</td>
<td>Megawatts</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>141.1</td>
<td>-</td>
<td>136.1</td>
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### Investment climate

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<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment volume port business sector per year</td>
<td>€ million</td>
<td>1,719</td>
<td>1,344</td>
<td>1,753</td>
<td>1,776</td>
<td>3,085</td>
<td>1,920</td>
<td>3,400</td>
<td>4,200</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Established businesses in the port</td>
<td>Number</td>
<td>1,423</td>
<td>1,398</td>
<td>1,416</td>
<td>1,415</td>
<td>1,391</td>
<td>1,366</td>
<td>1,295</td>
<td>1,326</td>
<td>1,422</td>
<td>-</td>
</tr>
<tr>
<td>Customer satisfaction: Price-quality ratio port</td>
<td>Grade 1 - 10</td>
<td>6.2</td>
<td>6.2</td>
<td>6.4</td>
<td>6.4</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td>Space</td>
<td>Source</td>
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<td>2006</td>
<td>2007</td>
<td>2008</td>
<td>2009</td>
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<td>2011</td>
<td>2012</td>
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<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Space productivity (throughput/m²) total port area</td>
<td>PuR</td>
<td>tonne/m²</td>
<td>8.1</td>
<td>8.5</td>
<td>8.4</td>
<td>8.8</td>
<td>8.9</td>
<td>8.0</td>
<td>9.0</td>
<td>8.8</td>
<td>8.8</td>
</tr>
<tr>
<td>Sites yet to be issued</td>
<td>PuR</td>
<td>Hectare</td>
<td>692</td>
<td>898</td>
<td>624</td>
<td>582</td>
<td>510</td>
<td>385</td>
<td>426</td>
<td>929</td>
<td>908</td>
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<tr>
<td>Issued site</td>
<td>PuR</td>
<td>Hectare</td>
<td>4,344</td>
<td>4,378</td>
<td>4,570</td>
<td>4,614</td>
<td>4,754</td>
<td>4,813</td>
<td>4,785</td>
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<table>
<thead>
<tr>
<th>Environment, safety and living environment</th>
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<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td>Noise reports industry DCMR</td>
<td>Environmental reports Rijnmond</td>
<td>Number of complaints</td>
<td>1,762</td>
<td>1,621</td>
<td>1,662</td>
<td>1,641</td>
<td>2,379</td>
<td>2,312</td>
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<td>2,582</td>
<td>2,228</td>
<td>1,791</td>
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<tr>
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<td>Environmental reports Rijnmond</td>
<td>Number of complaints</td>
<td>2,626</td>
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<td>1,585</td>
<td>2,113</td>
<td>2,538</td>
<td>3,022</td>
<td>4,033</td>
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<tr>
<td>Nitrogen dioxide (NO²) regional average annual concentration</td>
<td>MSR - DCMR</td>
<td>Microgram/m³</td>
<td>38</td>
<td>38.3</td>
<td>35.2</td>
<td>36.6</td>
<td>36.7</td>
<td>36</td>
<td>34.5</td>
<td>34.5</td>
<td>34.6</td>
<td>33.1</td>
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<td>Nitrogen oxide (NOx) emissions:</td>
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<td></td>
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</tr>
<tr>
<td>• Industry</td>
<td>MSR - DCMR</td>
<td>Kilotonne</td>
<td>23.3</td>
<td>24</td>
<td>23.6</td>
<td>17.6</td>
<td>16.4</td>
<td>14.2</td>
<td>14</td>
<td>14.6</td>
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<tr>
<td>• Shipping</td>
<td>MARIN</td>
<td>Kilotonne</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9.8</td>
<td>-</td>
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<tr>
<td>Sulphur dioxide (SO²) concentration annual average region</td>
<td>DCMR</td>
<td>Microgram/m³</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>11</td>
<td>9</td>
<td>11</td>
<td>10</td>
<td>6.9</td>
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<tr>
<td>Sulphur oxide (SOx) emissions:</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>• Industry</td>
<td>MSR - DCMR</td>
<td>Kilotonne</td>
<td>34</td>
<td>33.4</td>
<td>33.8</td>
<td>31.3</td>
<td>24.7</td>
<td>19.3</td>
<td>15.3</td>
<td>15</td>
<td>15.8</td>
<td>-</td>
</tr>
<tr>
<td>• Shipping</td>
<td>MARIN</td>
<td>Kilotonne</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Particulate matter (PM10) regional average concentration</td>
<td>DCMR</td>
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<td>• Shipping</td>
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<td>Consumption of shore-based power by inland vessels</td>
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<td>Residents in Rotterdam who find the port an attractive place to work</td>
<td>Omnibus survey – Municipality of Rotterdam</td>
<td>Percentage</td>
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