



PORT OF ROTTERDAM GATEWAY TO EUROPE

The European Union faces major challenges in its ambition to create a sustainable and prosperous Europe. Amid geopolitical tensions and global competition, a strong Europe is needed if it is to maintain its earning capacity through sustainable means. As a globally connected container, energy and raw materials hub, the port of Rotterdam fulfils a crucial role for the economy, sustainability and strategic autonomy of Europe. In the coming years, a competitive investment climate is needed to facilitate important projects on our continent. When the port of Rotterdam is doing well, the European economy is doing well.

Despite the events of recent years – the COVID-19 pandemic, a war on the European continent and hiccups in the Suez Canal – the European logistics system managed to emerge unscathed. Freight transport is the backbone of the internal market and enables companies to sell their products across the entire continent. Cooperation between companies and governments within the European Union is the key to a successful supply chain. A future-proof internal market depends on continued European investments in infrastructure and digitalisation.

Fit for 55 and REPowerEU both set a clear path for sustainability in Europe. Now the focus is on implementation. For a successful energy and raw materials transition, over the coming years we need stable policy and strong incentives to transition to renewable energy and a circular economy. There are several challenges currently impeding the transition from fossil fuels to renewable energy, such as grid congestion and issues with permitting processes. To accomplish this transition, it is essential that there are predictable and competitive market conditions to enable

investments in sustainable industry, as well as sufficient raw materials available.

In Rotterdam we work to build a future-proof port. With a wide portfolio of energy and raw materials transition projects, the port of Rotterdam wants to contribute to decarbonisation and attract future-proof cargo flows and activities to Europe. The Port of Rotterdam Authority is taking action in collaboration with international businesses and partners in the public sector. Recent developments include the start of construction of the first European hydrogen network and the final investment decision for the carbon capture and storage project Porthos in the port. With the 2024 European elections around the corner, the Port of Rotterdam Authority wants to inform the new European Commission and the newly elected members of the European Parliament about our priorities and the importance of European cooperation. The port of Rotterdam wants to remain as relevant to Europe as it is today, but in a climate-neutral form.

PORT OF ROTTERDAM | FACTS AND FIGURES

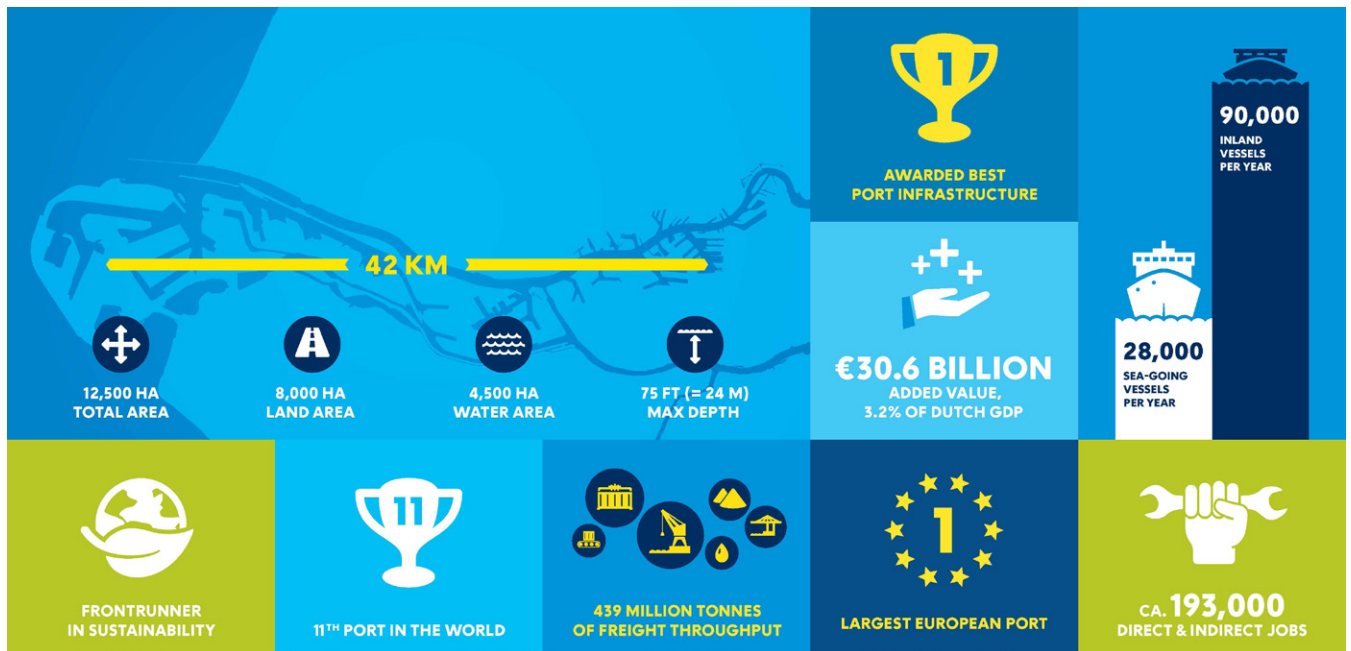


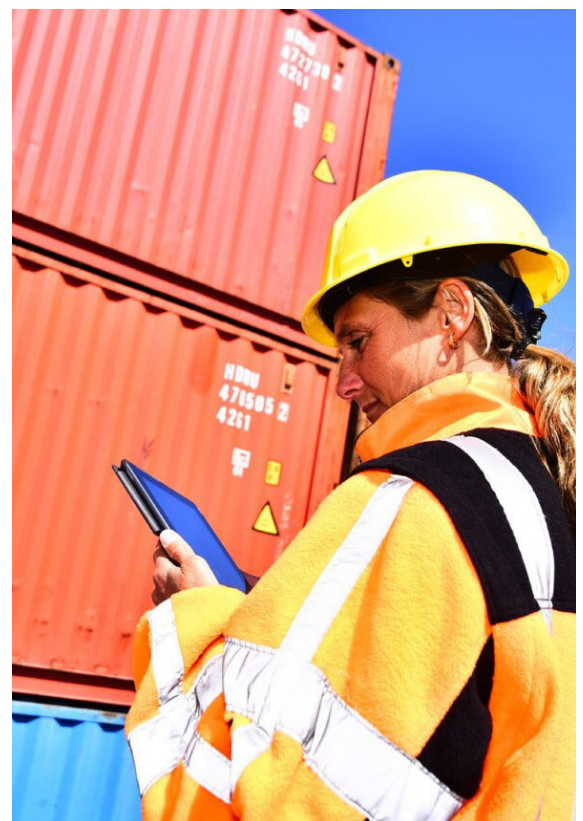
Figure 1: Port of Rotterdam - facts and figures 2023

PORT OF ROTTERDAM | KEY POINTS FOR EUROPE

The port of Rotterdam connects Europe to the world. Over thirty percent of container imports and exports for North-West Europe are transported via the port of Rotterdam¹. In addition, twelve percent of the energy demand in the European Union arrives at the port². This makes Rotterdam a major energy port. The challenges facing Europe are the same challenges that affect the port. The difficult geopolitical situation, the energy and raw materials transition, future-proofing the supply chain, and finally innovation and digitalisation. The Port of Rotterdam Authority wants to tackle these issues in collaboration with businesses in the port, but is also seeking the partnership and support of the European Commission, the European Parliament and national authorities.

Collaboration is the key to success, this also applies to all the challenges the port faces:

- The port as part of a globally connected system** in which Europe finds its new position in the changing geopolitical situation while maintaining a healthy investment climate. European industry desperately needs a stimulating industrial policy.
- The port as a transition accelerator for Europe** in the energy and raw materials transition. To achieve the climate targets, full priority must be given to ensuring a smooth implementation of sustainability projects in the coming years.
- The port as a logistics hub for Europe** where transport is becoming increasingly more sustainable. There needs to be a sustained focus on investments in robust infrastructure in the freight corridors.
- The port as a smart partner for innovation** through a process of digitalisation, which supports us in responding to Europe's various challenges. This is also a crucial factor in maintaining security and tackling organised crime.



¹ Erasmus UPT - Eindrapport Havenmonitor 2023.pdf

² Rotterdam-Moerdijk can make important contribution to achieving climate goals and European security of supply | Port of Rotterdam

1. THE PORT AS PART OF A GLOBALLY CONNECTED SYSTEM

In a world in which geopolitical tensions and economic uncertainties are a source of concern for people all over Europe, it is necessary for Europe to safeguard its autonomy. This requires a fundamental shift in the way essential freight, energy and technology is sourced and managed on our continent. The port of Rotterdam plays a major role in this.



Industrial policy and investment climate

The global playing field is shifting. These changes directly affect the port industrial complex. To be able to thrive as a port for Europe, we need a world in which global cooperation and free trade flourishes based on unanimously decided, bold climate ambitions. The port serves as a catalyst for increasing energy independence and achieving a diversification of global supply chains to Europe. To ensure a diversification of energy import flows, the port of Rotterdam is entering into global agreements for the supply of green hydrogen to North-West Europe. Geopolitical stability is vital for the port to fulfil its role as a strong container, energy and raw materials hub for Europe.

Countries outside Europe are currently encouraging companies to invest in industry and renewable energy. If Europe does not put in place a strong industrial policy in response, we risk missing out on important business activities on our continent. Not only will this lead to a loss of wealth and employment, it also makes Europe more dependent on third countries for its energy and raw materials transition. This is already visible in the chemical industry, where there is an increase in imports of products from other continents.

European commitment is necessary to ensure competitive ports and strong industry

To create a healthy investment climate within a global playing field, we need a strong European industrial policy for the coming years. Instruments such as ETS and CBAM provide incentives to make industry more sustainable while also pursuing a more even global playing field, but a broader industrial policy is needed in the new mandate. It is vital for our strategic autonomy that the maritime and chemical industries continue to invest in European ports.

In late 2023, the European Parliament published the report 'Building a comprehensive European port strategy', which identifies challenges facing ports that the European Commission must consider in a future port strategy. The development of a comprehensive European port strategy cannot be separated from the larger debate on strategic autonomy in the economy. The majority of containers transhipped at European seaports originate from non-European countries and contain many important products that are an essential part of various production and consumption chains. It is ultimately the supply chains that determine these dependencies, not primarily the ports or terminals directly. It is important that a potential future European port strategy covers all matters relevant to ports, addressing issues such as organised crime, cybersecurity, maritime cabotage and vertical integration. The important role of ports in the energy and raw materials transition must also be recognised in a potential European port strategy.



The Port of Rotterdam Authority calls for:

1. Europe to adopt a stronger industrial policy to facilitate sustainability in European industry and also safeguard its strategic autonomy.
2. Europe to demonstrate a global commitment to an ambitious emissions trading system (ETS) to ensure a more even playing field for its own industry.
3. Any new European port strategy to broadly address the competitiveness of the ports by giving consideration to the important role of the ports in the energy and raw materials transition.

2. THE PORT AS A TRANSITION ACCELERATOR FOR EUROPE

Central position for the port in the energy transition

Europe is committed to a new energy system. The port of Rotterdam wants to contribute to this on behalf of Europe. The climate targets for the port of Rotterdam are clear: a minimum of a 55% CO₂ reduction in 2030 compared to 1990 and climate neutrality by 2050³. In the port of Rotterdam, companies are moving from the planning stages to making investment decisions and implementing sustainability projects such as the production of offshore wind power, the storage of CO₂ under the seabed, the production and import of green hydrogen, and the expansion of circular industry⁴.

The port's energy system is strongly internationally interlinked. The energy-intensive industries in North-West Europe are interwoven in the Antwerp-Rotterdam-Rhine-Ruhr-area (ARRRA) cluster. Consequently, three times more energy is transported through the port of Rotterdam than is consumed in the whole of the Netherlands. As a result, the transition requires cooperation that spans far beyond the port, and supportive direction from Europe is crucial to move the energy transition forwards in the coming years.

Importance of energy infrastructure

Energy infrastructure in the port and connections to the hinterland are crucial to facilitate increased sustainability in Europe. Important international infrastructure projects such as the hydrogen network and the Delta Rhine Corridor (DRC) must therefore be rolled out as quickly as possible to provide the major industrial clusters with sustainable energy. For European industry, it is crucial that the hydrogen network is swiftly integrated into a cross-border hydrogen system.

Simultaneously, major investments in the electricity grid in the port are more urgently needed than ever to allow for a large-scale increase in sustainability in industry and shipping. The electricity grid is the foundation of the new energy system. European initiatives such as the 'EU Action Plan for Grids' are therefore essential. The electricity grid at the port of Rotterdam requires a substantial upgrade in the coming years to facilitate all sustainability projects.

A successful deployment of carbon capture and storage (CCS) infrastructure for industry also demands European attention. CCS from the port of Rotterdam helps decarbonise European industry and can therefore make a significant contribution to Europe's climate ambitions. Construction of the Porthos infrastructure at the port will



begin in early 2024. Porthos will allow around 37 Mton of CO₂ to be stored under the North Sea over a 15-year period⁵. In addition, the larger CCS project Aramis is also under development. CCS projects are economically viable as long as there is a business case for the entire value chain, including the transport of CO₂. CCS infrastructure should be strongly emphasised and supported within the European climate targets.

To ensure a well-functioning energy infrastructure, the Port of Rotterdam Authority calls attention to:

1. European funds such as the Innovation Fund and Connecting Europe Facility should be used to support an accelerated development of the renewable energy chains.
2. Strengthening the electricity grid is the basis for a successful transition. European support to accelerate the rollout of energy infrastructure will be crucial in the coming years.
3. In order to reach the climate targets, it is vital that the European Union provides certainty regarding regulations and investment opportunities for CCS expansion. This is of great importance in achieving our climate goals.



³ Strategy and research | Port of Rotterdam

⁴ Energy transition – ongoing projects | Port of Rotterdam

⁵ CO₂ reduction through storage under the North Sea – Porthos (porthosco2.nl)

A stable and attractive investment climate is crucial for the hydrogen economy

To realise Europe's hydrogen ambitions, a healthy green hydrogen market is crucial. Several initiatives such as the revision of the REDIII lay the foundations for this, but further action is needed. In a new mandate, it is important for the European Union to better connect green hydrogen supply and demand through instruments such as the Hydrogen Bank and H2Global.

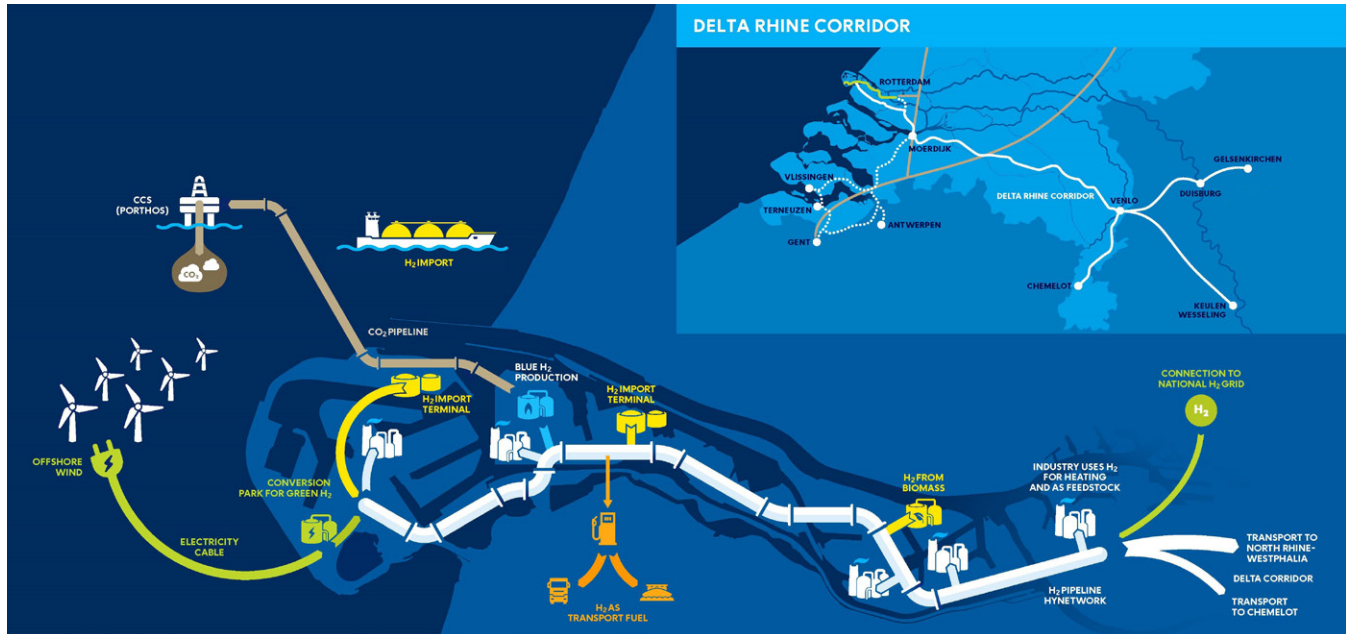


Figure 2: Port of Rotterdam - Europe's hydrogen hub

However, demand for green hydrogen in Europe will eventually be so high that Europe alone cannot generate enough green energy to produce the hydrogen. Therefore, the port of Rotterdam is simultaneously concentrating on the import of green hydrogen. A large proportion of the green hydrogen will be transported on to European industries in countries such as Germany. Rotterdam wants to be Europe's port for all hydrogen carriers, i.e. ammonia, liquid organic hydrogen carriers (LOHC) and liquid hydrogen. Therefore, the port is stimulating the diversification of terminals and pipelines for different energy carriers. The many hydrogen developments in Rotterdam demonstrate the port industry's active commitment to the transition to a renewable European hydrogen system⁶. One example is the construction of Europe's largest green hydrogen plant Holland Hydrogen I in the port of Rotterdam. The hydrogen plant should be operational around 2025.

To kick-start the hydrogen market, it is important to focus equally on blue hydrogen production in the coming years. In the short term, the cost of green hydrogen will still be substantially higher, partly due to the scarcity of renewable energy. Blue hydrogen will help to reduce industry emissions in the short term, due to carbon capture and storage.

To create a healthy hydrogen economy, the Port of Rotterdam Authority believes it is important for Europe to:

1. Actively support the prioritisation of hydrogen imports (renewable and low-carbon) to achieve the climate ambitions and ensure energy security.
2. Close the financial gap between the use of renewable and low-carbon hydrogen and its derivatives in comparison with the current CO₂ emitting alternatives.
3. Provide hydrogen certification to ensure that imported hydrogen is recognised and financially stimulated as part of the solution within the energy transition.
4. Ensure public and private hydrogen infrastructure is developed in parallel and facilitate a smooth and reliable permitting process for hydrogen projects.
5. Facilitate the use of ammonia as an important carrier for the import of green hydrogen.



Figure 3: Port of Rotterdam - hydrogen import potential worldwide

⁶ Hydrogen in Rotterdam | Port of Rotterdam

Transition to an integrated energy and raw materials system

The energy transition is firmly on the European agenda today, but its relationship to the raw materials transition requires a greater focus in the coming years. A successful and independent circular materials economy requires an integrated approach and the cooperation of parties throughout the production chain.

Within the ARRRRA cluster, from which 40 percent of the petrochemical production in the European Union operates, the port of Rotterdam plays a central role⁷. The port industry, as the start and end point of raw materials chains, will have to play its role in facilitating the transition to a European circular economy. The Port of Rotterdam Authority collaborates with partners on the development of new, circular value chains in the port, for example for the chemical recycling of plastic and reuse and recycling of batteries⁸. Finally, the port is also well-located for the supply of critical raw materials from third countries to our continent. In this way, Rotterdam aims to contribute to the raw materials transition in its role as a European raw materials cluster.

To boost the circular economy in the coming period, we believe the following is crucial:

1. European enabling policies that encourage innovation in recycling technologies and promote the transition to the use of recycled and renewable materials.
2. The Port of Rotterdam Authority calls for the new mandate to focus even further on policies that secure the production and processing of such materials and products within Europe's borders.

Space for nature and transition

The port of Rotterdam is situated in a densely populated area. In the coming years, the importance of finding the right balance between the different function of the port in the region will increase. In the Rotterdam port area, the transition to renewable energy and a circular economy is being shaped while the current energy and raw materials system is still operational.

The claiming of additional space for the new system must go hand in hand with a smart reduction and conversion of facilities for the current system. For this transition, both physical and political space is required. Current European policies and legal procedures still make little provision for leeway that would enable the transition. This may hinder the energy and raw materials transition, and is negatively affecting the investment climate for sustainable investments in Europe. At the same time, it remains important to make sure European environmental policy can be implemented optimally in industrial areas such as the port.

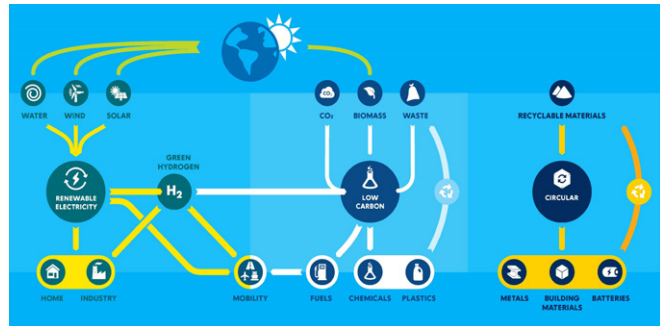


Figure 4: Port of Rotterdam – strong connection between energy and feedstock transition

The Port of Rotterdam Authority therefore advocates for:

1. Eliminating contradictions between energy and environmental policy to allow the energy and raw materials transition to develop at a steady pace in the coming years.
2. Analogous to that which was agreed in RED III and REPowerEU regarding renewable energy, a European approach based on acceleration areas for the energy and raw materials transition in industrial clusters such as ports.
3. Continued investment in innovative vocational education and the labour market. The availability of talent is a prerequisite for the realisation of sustainability projects.



⁷ Refining and chemicals | Port of Rotterdam

⁸ A new raw materials and fuel system | Port of Rotterdam

3. THE PORT AS A LOGISTICS HUB FOR EUROPE

With a throughput of approximately 14 million TEU (standard size container) per year, the port of Rotterdam is a central hub of global trade⁹. The majority of the containers at the port of Rotterdam contain essential goods such as food, medicine, semi-finished products, materials and machinery that Europe needs. The distribution chain therefore supports the prosperity and livelihoods of many Europeans. Container throughput for North-West Europe is set to grow, which is also going to lead to a substantial increase in required capacity at the port of Rotterdam¹¹. The port of Rotterdam is preparing for this by expanding innovative CO₂-neutral container terminals. A focus on creating robust freight corridors to the hinterland is crucial to ensure a strong European internal market. Major investment in future-proof infrastructure is needed. Climate change and the state of infrastructure are putting pressure on the availability of Europe's freight corridors.



Making transport sustainable

The European blending mandates have increased demand for biofuels in recent years. As the largest bunker port in Europe and a pioneer of bio-bunkering, the aim is to accelerate the shift to sustainable transport activities in the port. For example, the Port of Rotterdam Authority will offer a discount on the port dues when a ship bunkers sustainable fuels¹⁰.

The rollout of shore-based power also plays an important role in making transport more sustainable. Shore-based power contributes to the achievement of climate targets, reduces nitrogen deposition and improves the environment for local residents around the port. The first examples of the use of shore-based power for vessels are already visible in the port of Rotterdam. A European energy tax exemption for shore-based power is important to encourage a more extensive implementation in the ports.

As a port authority, we also feel a responsibility for the optimisation and sustainability of the entire supply chain. From facilitating more efficient intercontinental port calls to offering sustainable shipping fuels in the port. A major challenge is making seagoing vessels more sustainable. The Port of Rotterdam Authority has already initiated several green corridor projects, including between Rotterdam and Singapore. This is one of the busiest trade routes and

connects two of the largest bunker ports in the world. The corridor brings shipping companies, ports and fuel suppliers from the entire supply chain together with the aim of achieving sustainable shipping on this route by 2027¹¹. The commitment to more efficiently connect an integrated and sustainable freight chain requires European cooperation with a global focus.

Future-proof European logistics

The Port of Rotterdam Authority also wants to be a partner in zero-emissions hinterland transport. Due to the Rhine corridor and a large rail network, the port of Rotterdam is currently the most sustainable option for freight transport for many European hinterland destinations.

The Port of Rotterdam Authority is aware that further steps need to be taken to facilitate the use of these modes of transport. To function successfully as a major European container hub, an extensive rail network to the hinterland is crucial. As a port authority, we are therefore actively working to future-proof the TEN-T network in Europe. The Port of Rotterdam Authority is also a partner in initiatives such as HyTrucks, CONDOR and RH2INE, which aim to make freight transport to the hinterland more sustainable with the use of hydrogen. These developments require incentives from Europe. The use of funding mechanisms, such as the Innovation Fund and Connecting Europe Facility, are important to maintain a high-quality European infrastructure network.



⁹ Throughput figures | Port of Rotterdam

¹⁰ Port of Rotterdam supports ZEMBA initiative with additional incentive for sustainable shipping fuels | Port of Rotterdam

¹¹ Partners support emission reductions on Rotterdam-Singapore Green & Digital Shipping Corridor | Port of Rotterdam

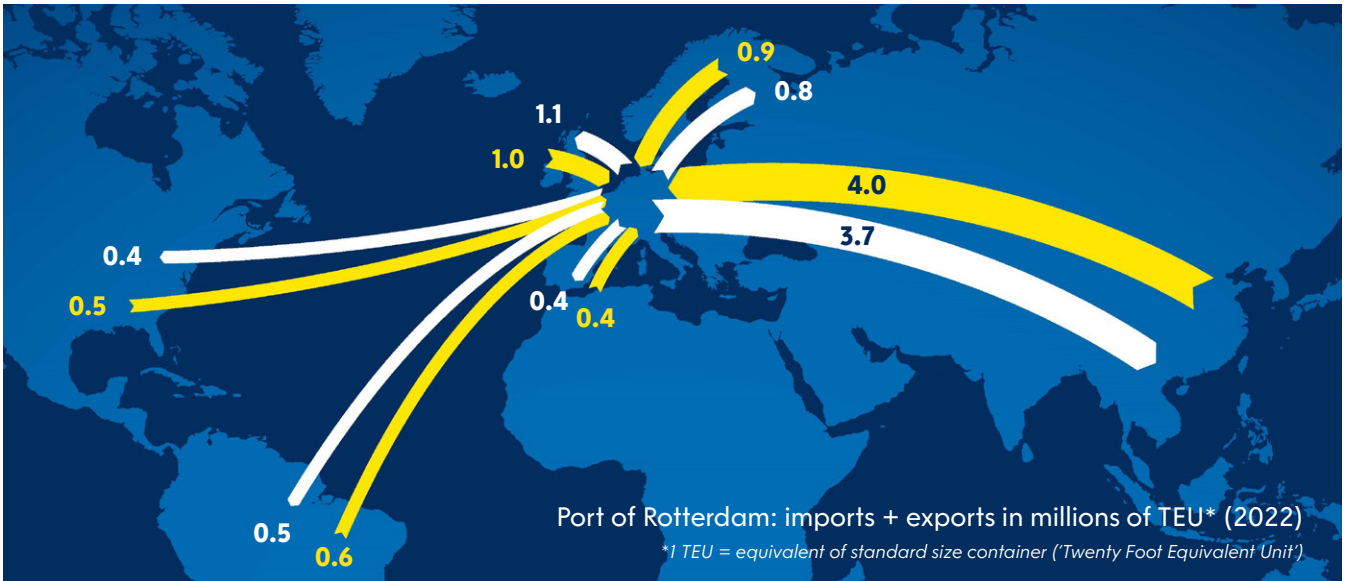


Figure 5: Port of Rotterdam - logistics hub for Europe

A European commitment to sustainable transport should focus on:

1. Preventing carbon leakage and business leakage by encouraging a wider scope of sustainable bunkering that also stretches outside of the European Union. We would prefer an instrument for pricing shipping fuels to be concluded through the International Maritime Organization (IMO).
2. Making renewable fuels more competitive for inland shipping, which requires both price incentives and a mandatory CO₂ reduction for fuels. To accelerate the sustainability of inland shipping, the Port of Rotterdam Authority calls for the retention of the zero tariff for renewable fuels.
3. Creating a sustainability fund for inland shipping. In this way, renewable fuels will become competitive faster and additional funds will be made available to accelerate the sustainability of this sector.
4. Gaining a better overview of inland shipping emissions, the Port of Rotterdam Authority calls for a harmonised European labelling system for inland shipping emissions that is implemented via the Central Commission for the Navigation of the Rhine. This will enable more control over emissions.
5. Achieving a better distribution between different modes of transport (modal shift) to efficiently serve the hinterland. Expanding rail and inland waterway capacity should be a central focus within this.

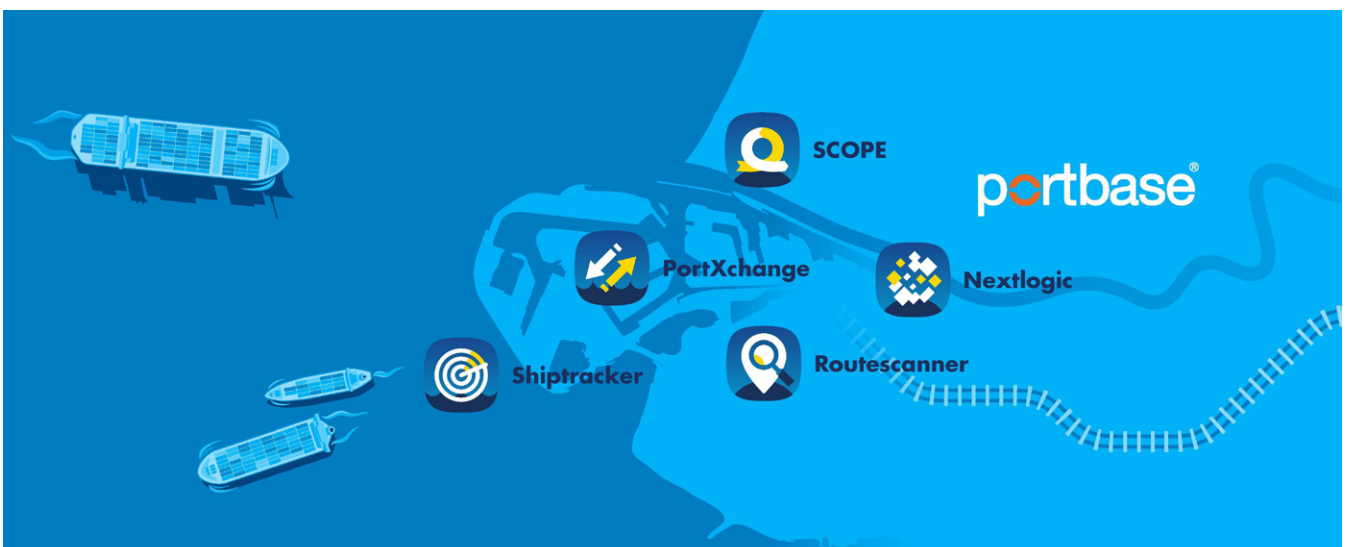


Figure 6: Port of Rotterdam - innovation and digitisation of the logistics chain

4. THE PORT AS A SMART PARTNER FOR INNOVATION

A more efficient supply chain

Innovation and digitalisation should allow Europe to make its supply chains more transparent, efficient and sustainable. Calculations show that container ships can reduce their CO₂ emissions by 14% by using just-in-time arrivals¹². The Port of Rotterdam Authority is committed to innovation with the aim of becoming a smart partner in efficient freight chains. To enable this, it is essential that logistics data can be shared safely and efficiently.



Europe can play a leading role by strongly supporting the foundations for digital transformation. A valuable example are the European Digital Infrastructure Consortia (EDICs) initiated by the European Commission and Member States that allow federated forms of data sharing to be effectively rolled out within Europe's supply chains. There are many innovative projects under development in the port of Rotterdam. For instance, transport data is shared via the Portbase Port Community System to better coordinate the handling of freight transport¹³. In addition, the platform Routescanner can show the quickest and most sustainable global shipping route in real time¹⁴. It is important that Europe continues to encourage the expansion of innovative initiatives in the coming years, as well as actively stimulating data sharing across the entire supply chain.

Cybersecurity and tackling organised crime

In the fight against drug-related organised crime in the port, digitalisation and innovation can offer new opportunities. For instance, to facilitate data sharing between governments and businesses. In 2022 the 'virtual fence' project was launched at the port, which will allow law enforcement to conduct tighter surveillance with smarter cameras and the deployment of drones. A successful approach to drug-related crime requires close collaborations between the European ports. The 'Roadmap to fight Drug Trafficking and Organised Crime' lays a good basis for additional European action.

Although digitalisation offers opportunities, it also makes the port of Rotterdam more vulnerable to cyberattacks. To ensure that European ports can defend themselves against digital attacks, it is important for the European Union to keep cybersecurity at the core of its agenda. In the past mandate, the NIS 2 Directive was adopted. An assessment must be made of whether additional policy is required to better protect the ports, which are critical infrastructure. This may include a revision of the 2004 ISPS Code.

The Port of Rotterdam Authority calls for European commitment to:

1. Europe to play a leading role in innovation by laying the foundations for digital transformation, such as for data sharing in the supply chain.
2. Any further development of the European approach to drug-related crime to include a focus on digitalisation as an important tool within a port-wide approach.
3. Assurance that ports are protected against digital attacks, as the ports play an important role in the critical infrastructure. Digitalisation should never come at the expense of cybersecurity.



¹² Up to 14% less containership CO₂ emissions through Just In Time arrivals | Port of Rotterdam

¹³ Portbase

¹⁴ Routescanner – worldwide container shipping platform

PORT OF ROTTERDAM | CONCLUSION

In the coming years, it will be crucial for Europe to make clear decisions that pave the way for the implementation of innovative projects and the energy and raw materials transition. The Port of Rotterdam Authority would like to continue to work with Europe to develop a smart and sustainable port that helps secure our future prosperity. The port of Rotterdam has consistently delivered for Europe in the past years. You can count on us to do so also in the future.



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