Sustainability report
Port of Antwerp
2012
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The Antwerp port community. Who does this mean?

The Antwerp port community consists of some 900 companies with a great variety of activities. The direct employment amounts to 60,010 full-time equivalents, while indirect employment contributes a further 82,963 FTE (2011 figures). The interests of the Antwerp port community are represented at regional, national and international level by various organisations including Antwerp Port Authority, Alfaport Antwerp and the Left Bank Development Corporation. Together these bodies have taken a joint initiative to map out the sustainable character of the port.

Antwerp Port Authority was formed in 1997 as an independent municipal company of the City of Antwerp. It plays an important role in the day-to-day operation of the port, with 1,650 or so employees ensuring that the port is able to function efficiently and continue to grow. The Port Authority maintains the docks, bridges, locks, quays and concession sites. It is also responsible for ensuring safe shipping traffic above the locks. The Port Authority has its own tugging, dredging and crane divisions, promotes the port nationally and internationally, and provides daily communication about events and developments within the port.

In the meantime the Port Authority invests in the future of the port. It strives to attain a port that is sustainable in all aspects, and seeks to be an example of responsible entrepreneurship.

Alfaport Antwerp is a federation of five industry associations which together have more than 400 companies as members. These companies employ more than 22,000 people directly and also generate a large amount of indirect employment.

The 400 companies are members of one or other of the five founding associations of Alfaport Antwerp:
- General Association of Antwerp Stevedoring and Port Companies (ABAS)
- Antwerp Shipping Association (ASV)
- Royal Belgian Shipowners' Association (KBRV)
- Royal Association of Freight Flow Managers (KVBG)
- Association for Forwarding, Logistics and Freight Interest in Antwerp (VEA)

Alfaport Antwerp sees five main conditions as being essential for sustainable development of the port:
- timely investment in infrastructure
- modern and flexible organisation of labour, to suit the needs of the companies
- space for sustainable enterprise
- training facilities to feed the demand for qualified labour in the port
- a secure port

The Left Bank Development Corporation (LBDC) was formed in 1982 to manage the Waasland port, i.e. the port area on the left bank of the Scheldt. Its main activities are making sites ready for construction, granting concessions on sites on the left bank, making compulsory purchases (eminent domain) and advising the government on expansion of the port area.
The port area on the left bank comprises 5,818 hectares, as defined by the Regional Land Use Plan. Of this amount, concessions have been granted on 1,500 hectares in the past 25 years. The area occupied by private companies amounts to 915 hectares. At the end of 2012 the number of people (FTE) employed in the Waasland port was 14,877.

Since 2010 the LBDC has taken various practical steps to make a reality of its vision for sustainable port management on the left bank, with great importance always being given to collaboration not only with economic but also with ecological interests. The LBDC shares responsibility for sustainable expansion of the port by exploiting all the opportunities for this. Thanks to its central position in the decision-making strategy it is also able to play an important role in developing sustainable energy sources.

The three initiative-takers consult each other frequently in various forums: Antwerp Port Authority is a shareholder in the LBDC, while Alfaport is represented in the port environment consultations that are coordinated by the Port Authority.

**Sustainability from a global perspective**

The long history of the port teaches us to view economic developments from a global perspective. In particular the growing affluence of the Western world after the Second World War set in motion a number of irreversible processes that have to be internalised in the port policy of the 21st century.

Transport activities, with ports as the essential link between maritime and continental carriage, reflect developments in the world economy and especially the continuing trend towards globalisation.

Changing economic structures and patterns of consumption, demographic developments, shifting production centres, deregulation of trade, new company strategies... Together with increasing concern for the environment these are all key considerations that will determine the prospects of ports and their importance in the 21st century. If they are to expand and flourish in such a situation, the concept of "sustainable development" cannot be ignored.

**Sustainability in the Port of Antwerp**

The port of Antwerp is a world player and the second-largest port in Europe. It benefits from widespread synergies between the maritime, logistics and industrial activities within the port area, together with its massive cargo-generating capacity. This multi-functional capability creates great added value for the city, the region and indeed the country as a whole. The port companies are able to call upon highly-trained personnel and provide direct and indirect employment for more than 140,000 people.

Antwerp’s location some 80 kilometres inland not only puts it at the heart of European consumption but also permits more efficient and sustainable transport to and from the European hinterland. The numerous hinterland connections are being further developed and expanded year by year, with the emphasis on a more evenly balanced modal split.

Investment has been heavy in the past and continues unabated, not least by energy-intensive companies: Antwerp is home to the largest integrated chemistry cluster in Europe. In the meantime specific measures are being taken to improve the air quality, and
investments are being made in nature areas to protect the flora and fauna. Indeed, a large part of the port has been classified as a Special Conservation Area under the terms of the EU Birds and Habitats directives (Natura 2000).

Over the years the modern port has developed farther and farther away from the city, with a consequent effect on local involvement, as "out of sight is out of mind." To counter this trend, initiatives such as the MAS Port Pavilion, the Flemish Port Days and consultation mechanisms for local residents are helping to strengthen the links once more.

Such investments and initiatives demonstrate clearly that a balance between "prosperity, people and planet" is a matter for the port community as a whole.

**Sustainability as an ongoing effort**

Notwithstanding all these efforts, everybody understands that a well-developed sustainability policy demands a consistent, port-wide vision.

The Total Plan for the Port of Antwerp, the joint response by the port community to the global financial crisis, was an important catalyst for stimulating the sustainability debate within the port in 2010. The environmental vision for the port of Antwerp also remains an important foundation of the port’s sustainability policy, having been drawn up in 2007 by the Port Authority in consultation with the Left Bank Development Corporation, Alfaport and the Antwerp-Waasland Chamber of Commerce (Voka). The publication of the first Sustainability Report by the port of Antwerp at the beginning of 2012 was the direct result of the Sustainability workgroup that arose out of the Total Plan.

In order to develop into a more sustainable port and to act more resolutely as a port community, it was decided to base the Sustainability Report on the international GRI standard (*Global Reporting Initiative*).

The first Sustainability Report was unique in that it was the work of a community, not an individual organisation. It was produced through intensive collaboration by a group of key stakeholders, all of which have strong social and economic links with the port of Antwerp. The decision to publish a report for the port as a whole was a deliberate choice by the entire port community.

As a result of these efforts the port of Antwerp received an award for the Best Belgian Sustainability Report 2012 in the category "other organisations." At international level the port has won two other awards for the way in which sustainability is implemented, namely the Environmental World Ports Award 2013 and the bronze IAPH Environmental Award.

In the meantime the port community has decided to continue along this path and to publish biennial a Sustainability Report.
The Port of Antwerp in figures

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<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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<tbody>
<tr>
<td>Shipping freight (million tonnes)</td>
<td>157.8</td>
<td>178.2</td>
<td>187.2</td>
<td>184.1</td>
</tr>
<tr>
<td>Containers (million tonnes)</td>
<td>87.2</td>
<td>102.5</td>
<td>105.1</td>
<td>104.1</td>
</tr>
<tr>
<td>Conventional breakbulk (million tonnes)</td>
<td>10.5</td>
<td>11.1</td>
<td>12.7</td>
<td>10.9</td>
</tr>
<tr>
<td>Ro/ro (million tonnes)</td>
<td>3.2</td>
<td>3.7</td>
<td>4.2</td>
<td>4.8</td>
</tr>
<tr>
<td>Liquid bulk (million tonnes)</td>
<td>39.5</td>
<td>41</td>
<td>46</td>
<td>45.3</td>
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<td>Dry bulk (million tonnes)</td>
<td>17.4</td>
<td>19.8</td>
<td>19.1</td>
<td>19.1</td>
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<tr>
<td>Seagoing ships</td>
<td>13,923</td>
<td>14,783</td>
<td>14,240</td>
<td>14,556</td>
</tr>
<tr>
<td>Barges</td>
<td>54,856</td>
<td>57,126</td>
<td>59,428</td>
<td>56,476</td>
</tr>
<tr>
<td>Port area (hectares)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Port area (ha)</td>
<td>13,057</td>
<td>13,057</td>
<td>13,057</td>
<td>13,057</td>
</tr>
<tr>
<td>- Right bank (ha)</td>
<td>7,239</td>
<td>7,239</td>
<td>7,239</td>
<td>7,239</td>
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<tr>
<td>- Left bank (ha)</td>
<td>5,818</td>
<td>5,818</td>
<td>5,818</td>
<td>5,818</td>
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<tr>
<td>- Nature area (ha)</td>
<td>1,250</td>
<td>1,250</td>
<td>1,250</td>
<td>1,250</td>
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<td>- Water area of docks (ha)</td>
<td>2,128</td>
<td>2,028</td>
<td>2,024</td>
<td>1,995</td>
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<tr>
<td>- Left bank expansion area (ha)</td>
<td>1,073</td>
<td>1,073</td>
<td>1,073</td>
<td>1,073</td>
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<td>Covered storage space (ha)</td>
<td>545</td>
<td>545</td>
<td>553</td>
<td>556</td>
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<tr>
<td>Tank storage terminals (m³)</td>
<td>3,521,933</td>
<td>4,532,955</td>
<td>5,247,055</td>
<td>5,149,141</td>
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<tr>
<td>Total quay length (km)</td>
<td>156</td>
<td>186</td>
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<tr>
<td>Rail track (km)</td>
<td>1,055</td>
<td>1,061</td>
<td>1,054</td>
<td>1,091</td>
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<tr>
<td>Roads (km)</td>
<td>392</td>
<td>409</td>
<td>409</td>
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<tr>
<td>N° of companies</td>
<td>900</td>
<td>900</td>
<td>900</td>
<td>900</td>
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<tr>
<td>Employment</td>
<td></td>
<td></td>
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<tr>
<td>- Direct (full-time equival.)</td>
<td>63,213</td>
<td>61,474</td>
<td>60,010</td>
<td>N/A</td>
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<tr>
<td>- Indirect (FTE)</td>
<td>83,848</td>
<td>83,996</td>
<td>82,963</td>
<td>N/A</td>
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<tr>
<td>Added value</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>- Direct (billion euros)</td>
<td>8.7</td>
<td>9.9</td>
<td>9.6</td>
<td>N/A</td>
</tr>
<tr>
<td>- Indirect (billion euros)</td>
<td>9</td>
<td>9.3</td>
<td>9.2</td>
<td>N/A</td>
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Largest integrated chemical cluster in Europe

Largest steel port in Europe

Largest fruit port in Europe

Second-largest rail port in Europe

Largest coffee storage port in the world

The Port of Antwerp and the world

As well as operating within the port area, the Antwerp port community forms a link in the long logistics chain that unites the Flemish, Belgian and European hinterland with the rest of the world.

From a European perspective, the port occupies a particularly favourable position.

Imports and exports per region of the world, in tonnes (2012)

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<th>Region</th>
<th>Imports</th>
<th>Exports</th>
<th>Total</th>
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<tr>
<td>Europe</td>
<td>37,377,476</td>
<td>26,369,174</td>
<td>63,746,650</td>
</tr>
<tr>
<td>South America</td>
<td>7,048,964</td>
<td>6,277,898</td>
<td>13,326,862</td>
</tr>
<tr>
<td>North and Central America</td>
<td>18,386,097</td>
<td>14,089,648</td>
<td>32,475,745</td>
</tr>
<tr>
<td>Africa</td>
<td>8,561,109</td>
<td>12,421,414</td>
<td>20,982,523</td>
</tr>
<tr>
<td>Middle and Far East</td>
<td>11,067,809</td>
<td>14,362,213</td>
<td>25,430,022</td>
</tr>
<tr>
<td>Near East</td>
<td>11,722,296</td>
<td>15,719,020</td>
<td>27,441,316</td>
</tr>
</tbody>
</table>
The partners in figures

| Pacific Region | 479,987 | 138,669 | 618,656 |
| Unknown        | 19,307  | 87,642  | 106,949 |
| **Total**      | **94,663,045** | **89,465,678** | **184,128,723** |

Our awards: honours we can be proud of

In the past few years the Antwerp port community has won numerous awards. Some examples:

**Bronze IAPH Environment Award (May 2013):** in recognition for efforts to develop into a sustainable port where economic activities and nature conservation go hand-in-hand. With its dossier “Creating Space for Port Development by Proactive Nature Management” Antwerp was able to convince the jury of the important place given to proactive nature management in the long-term strategy for development of the port.

**Environmental World Ports Award 2013:** in recognition of the efforts towards the environment and sustainability. Antwerp won this important distinction ahead of other large ports such as Rotterdam and Los Angeles.

**Best Belgian Sustainability Report Award 2012:** this award is an initiative of the Institute of Company Auditors, Business & Society and Kauri, the Belgian network that promotes interaction for sustainability. With its first-ever sustainability report the port of Antwerp was the winner in the category "other organisations," demonstrating the worth of getting various players together in order to produce a report that gives a faithful picture of the shared challenges in the field of sustainability.
East Flanders Local History Prize 2012 for restoration of the LBDC office building in Kallo.

Lloyd’s List Global Award 2010: Port Operator of the Year. A recognition for the efforts made by the port of Antwerp to maintain a high level of operation and customer satisfaction even during the most difficult years.

Security Award 2009 presented by the National Nuclear Security Administration (US) for the intensive checks for radioactive products carried out at more than 40 points within the port ever since 2007. This nuclear detection forms part of the worldwide Megaports imitative aimed at deterring trade in nuclear materials.

Shipping Star Award 2009: an initiative of the ShippingChina.com internet site, presented on the basis of voting by among others trading companies, forwarders and logistics operators in China.

Best Dry Bulk Port 2009: the ports nominated for this award are assessed for among other things their efforts towards efficient, safe and environment-friendly handling of bulk goods, the quality of their logistics processing, customer-friendliness, investments in port infrastructure and initiatives by management to generate local and international business. The port of Antwerp was rated most highly for these factors.

Numerous awards have also been won in the past few years by companies operating within the port. This Sustainability Report includes a supplement with a list of these distinctions at the moment of publication. Companies are encouraged to keep the list up to date on this website, so as to promote interaction between them and to disseminate know-how and innovation in the service of sustainability.

Safety, quality, product and other certificates are not included: practically all companies in the port are certified in one way or another, so the list would be endless!
Mission, vision, strategy and challenges

For this second Sustainability Report the port community has continued farther along the road already taken. The mission, vision and strategy remain unchanged: the port community pursues a clear policy for the way in which the port seeks to develop further in a sustainable way.

Mission

The Port of Antwerp has the ambition to position herself as the sustainability leader in the Hamburg-Le Havre range.

Vision

In the 20th century the emphasis of port policy was strongly on economic development. The basic aim was efficient organisation of the diverse and continually expanding flow of goods, so as to assure extensive, stable, high quality employment. This will remain a core task of the port community in future too. In addition to that, however, port activities are inextricably bound up with a number of social responsibilities. Care for the environment is increasingly important, and stakeholder management needs to be further developed. Moreover the port will continue its economic diversification in the decades to come, so as to expand the synergy between maritime trade, logistics and industry and develop new, port-related services. And, last but not least, greater efforts will be put into more environment-friendly hinterland transport.

The port of Antwerp sees itself as a port of and for people. This demands ongoing attention to involvement by the city and the region, as well as further developing local support. The
high productivity for which our port is justly famous can only be maintained by recruiting the right people in the right places. However, matching supply to demand on the labour market remains a challenge. A sustainable relationship with the employees and intensive promotion of port careers are both necessary to assure continuity of labour. We seek to achieve all of this within a safe work environment.

Finally, we must never forget that Antwerp’s geographical location remains a unique advantage for a future-oriented transport policy. Where else in the world can container carriers and other seagoing ships travel 80 km inland, into the heart of the most urbanised and industrialised region of the continent? Moreover, land transport costs are almost certain to rise in future due to European and national regulations. When this happens, Antwerp’s inland location will be an even bigger advantage, helping to reduce transport costs and limit the environmental effects of transport. This development will be reinforced by the further development of the already existing trimodal facilities for hinterland transport.

The concentration of freight flows in a major international port offers lots of new opportunities for an innovative transport policy. The ultimate condition is of course that the transport of goods between the maritime foreland and the continental hinterland must be smooth and efficient. But on the landward side too, the mainport model offers important advantages in terms of transport management. Since Antwerp already has well more than critical mass of freight, massive freight flows can be concentrated here. By consolidating this freight volume it is possible to make greater use of barge and rail transport, leading to a very environment-friendly transport policy. This finds expression in Antwerp’s favourable modal split, which however must develop further towards even more environment-friendly modes.

Sustainability means not only maintaining and increasing the port’s competitive position, but also developing a vital, recession-proof economic fabric. Specifically in the case of Antwerp, this means developing a port economy that is as diversified as possible: the mainport concept. The result is to promote stability and create numerous synergies that reinforce the economic structure of the port and thus make it even more attractive.

Good management demands a stable strategic policy that doesn’t change tack with every up and down of the economy. The usefulness of a sustainability report is that brings together a large number of sustainability factors and presents them as a comprehensible whole. The first report served to benchmark these various factors; in this second report we present the progress made after two years.

The Total Plan for the Port of Antwerp, a collaborative effort involving all port stakeholders, helped to provide a firmer foundation for the feeling of community, thus ensuring long-term support for future development of the port.

With the present Sustainability Report the port community seeks to further expand the support for sustainability so as to involve all port-related companies and players, attracting long-term investment, keeping stakeholders informed and involved in sustainability, and offering customers around the world an efficient, economically strong partner in the global supply chain.

After all, a sustainable approach is a basic requirement for continued growth and making progress for People, Prosperity and Planet through economies of scale.
Prosperity

In this second Sustainability Report we have chosen to use the term “prosperity” instead of “profit”, as the latter tends to be understood by the port community as purely economic.

By analogy with the World Summit on Sustainable Development held in Johannesburg in 2002, we prefer to speak of “prosperity” with reference to a wider context that includes social benefit for the entire region. In this context the term “prosperity” extends to the welfare created by the port.
Strategy

The Antwerp port community has the ambition to position the port as the sustainability leader in the Hamburg-Le Havre range. This objective is also to be found in the Total Plan for the Port of Antwerp.

Together, the four main themes for the supply chain and the six themes for benefiting the community will lead to a vital, environment-friendly port that enjoys support on all sides.

Vital and Efficient

A thriving port that acts as the economic engine of its region and hinterland. Where all activities are carried out efficiently. Where the following initiatives lead to prosperity:

- **Making it easier to opt for Antwerp:**
  - as a reliable partner in the worldwide supply chain
  - as a mainport with excellent sea access, a multifunctional port with a wide and continuous range of services, offering synergies between the different functions (shipping, logistics and industry)
  - with the cargo-generating capacity of the hinterland and port industry
  - with plenty of container handling capacity, a unique pipeline network and the world’s highest concentration of storage and distribution space
  - with high labour productivity.

- Sustainably maximising the already high **added value** of the port for Flanders and for Belgium.
- Improving the *hinterland accessibility*, so that intermodal transport to and from Antwerp can expand. Further developing the *Master Plans* for barge, rail and road transport, and dovetailing them with the government's Antwerp Transport Master Plan.
- Positioning the port of Antwerp even more strongly on the *world market*, with sustainability as one of its hallmarks. Offering *world-class service* by investing in improvements to operational efficiency and optimising the nautical and technical services.
- Making maximum use of the planned navigation possibilities and long-term vision for sea access afforded by the *chain principle*, in which ship movements from open sea to berth in port are managed as a single interconnected chain. Managing ship movements as an integrated whole instead of a series of independent steps not only enables ships to enter and leave the port more smoothly but also permits more efficient shipping traffic within the port.
- A strong *innovation policy* aimed at maintaining the competitiveness and image of the port at a high level.
- Improving *operational efficiency*, thanks to higher productivity per unit area. To achieve this, brownfield and greenfield sites will be made ready for construction in the coming years.
- Ensuring a *safe, secure port* as a key condition for efficient freight flows. Maintaining and where possible further raising the port’s already high reputation, with all terminals being ISPS-certified.
Environment-friendly

A port that pays attention to ecology and nature. Where the following initiatives care for the planet:

- Dealing with **environmental challenges** in a proactive, responsible and critical way.
- Developing a **knowledge centre** that brings together all useful information and data, so as to follow a coordinated environment and nature policy within the port area.
- Making care for the environment into a **competitive advantage** over the other ports in the range, instead of it being a potential obstacle to economic growth.
- Proactively investigating how the port activities relate to **international**, European and Flemish **environmental objectives**.
- Dealing with environmental challenges in a spirit of **social involvement**.
- Examining environmental initiatives for their **effectiveness and efficiency** in an overall environmental context.
- Implementing the above principles in an integrated, regional way where this offers greater added value than an industry-by-industry approach.

**Regional**: due to its specific nature the port needs to have a complementary policy that supplements (and if necessary replaces) industry-related policy, to the extent that environmental objectives are served by such an approach. This will help to assure an effective and more efficient environment policy.

**Integrated**: taking an integrated approach towards environmental problems benefits port users since there are cumulative effects and interactions between the environmental compartments.
Enjoying support

A port of and for people. Where the following initiatives are aimed at people.

- Remaining alert to **changing circumstances** at national and international level. Paying constant attention to the social aspects of work. Accentuating education and training, and attracting sufficient numbers of personnel.
- **Making a contribution** to attaining the social goal of a more sustainable society, with particular attention to employees and local residents.
- **Strengthening social support** for the port among all stakeholders, at home and abroad. Paying attention to “soft” values, in addition to creating employment and welfare.
- Making the importance of the port of Antwerp **better known**, promoting social integration with the city and the wider environment, and achieving maximum participation by the players involved. The instruments used for this are many and various, and are coordinated with each other through the consultation bodies.
- Promoting the image of the port of Antwerp as an **attractive employer**.
- Ensuring a healthy **climate of industrial relations**.
Challenges and opportunities of a mainport

After nearly two centuries of uninterrupted port expansion Antwerp has developed into a maritime, logistics and industrial cluster of worldwide importance. The history of the port teaches us that this development involved periods of rapid growth but also periods of stagnation and even contraction. Nevertheless, the most important port operators have always managed to put the port economy back on the growth path, thanks to product innovation, expanding the range of products and services and making significant investment in infrastructure and superstructure.

However, after the latest round of expansion in the past decade and a half, once the Saeftinghe Development Area comes into operation the port will have reached its physical limits. For the first time in the port's history, its policy makers will have to deal with the concept of "finiteness." But "finiteness" should be seen as a challenge rather than a problem. In order to grow further, the key concepts will be "inispansion" (inward expansion), repurposing and investment. The other key concept will be sustainability, because when "finiteness" plays a role in the port debate, the concept of sustainability will inevitably gain in importance.

In a certain way the port has become a victim of its own success. The enormous area of the port and the impressive volumes of freight create two serious challenges in terms of capacity, the environment and efficiency of the logistics process. If the port is to maintain its support among the general public, fundamental solutions will have to be found. At the same time the rapid developments in the world economy and the rise of new values will require policy makers and entrepreneurs to shift their emphases.

On 30 April 2013 the Flemish government gave its final approval for the Regional Land Use Plan which defines the seaport area of Antwerp, thus establishing geographical boundaries for the port and putting an end to years of uncertainty. With this decision the planning process that has stretched over more than 10 years has been completed with wide social involvement. But above all, the plan also means the start of sustainable development of the port area on the right and left banks within a horizon of 2030. In addition to the Regional Land Use Plan the Flemish government also approved an extensive action programme with measures and initiatives relating to the economy and job creation, agriculture, the viability of residential areas, nature and the environment, mobility, recreation and heritage. These flanking measures and actions will improve living conditions within the area while enabling the port to develop further in a sustainable way.

In short, the port can remain a mainport only by creating room for more freight and industrial/logistics activities within the present area and the future Saeftinghe Development Area. In addition, the seaward and landward accessibility of the port must be assured in the longer term. It is also crucial that the external effects of port activities on water, air and soil quality are kept to a minimum. Finally, the port community remains a significant employer, and there will be increasing competition to attract suitable talent.

If an answer to this challenge is not met than there is a risk of the port losing its role as an economic centre. A restructuring process will therefore be the logical consequence. The first scenario is of course the most preferable, even if only because the mainport scenario offers the greatest benefit for the community in economic, social and ecological terms.
Report profile and Methodology used

Report profile

The first Sustainability Report was published by the Antwerp port community in February 2012. The second report traces the developments since then, except where data are unavailable in which case the most recent data are used. The report will be published every two years.

Scope and definition

Sustainability at various levels

The sustainability reporting process for the Antwerp port community kicked off in October 2010 with the setting up of the “Sustainability Steering Group” as part of the Total Plan for the Port of Antwerp. This resulted in the first Sustainability Report at the beginning of 2012, which won the award for the Best Belgian Sustainability Report 2012 in the category “Other organisations.”

Immediately after publication a process was started to continue and further improve the sustainability performance and reporting. For this purpose the Steering Group worked together with three workgroups on specific subjects:

- People: social aspects, including port employees and the wider society of all those affected by or concerned with the port
- Planet: environmental aspects of port operation and development
- Prosperity: economic aspects of the port, including added value and prosperity for the region.

The Steering Group and the workgroups were made of representatives of the initiative-takers, namely Alfaport (representing private companies), Antwerp Port Authority and the Left Bank Development Corporation, together with essencia (federation of the chemical industry) and other stakeholders.

The Sustainability Report was drawn up in accordance with the guidelines laid down by the Global Reporting Initiative. This methodology is not only generally accepted but is also the most comprehensive, most standardised and the most commonly used for companies wishing to publish a sustainability report. By opting for this methodology the initiative-takers were assured of quality.

This quality guarantee was backed up by having the report verified by an objective third party, namely PwC. The verification was performed according to the “International Standard on Assurance Engagements” (ISAE) 3000, which affords a qualified degree of certainty. ISAE 3000 is a model developed for certification of non-financial data. To obtain certification with qualified certainty, the method used for gathering and calculating the data on the various indicators is discussed with the person responsible for this, accompanied by limited validation of the information thus obtained. This is comparable with a “review” of financial data, which is something less than an audit. In the text of the report, verified indicators are flagged with the PwC logo pictured here: pwc. 
Since the Sustainability Report is a joint production for the entire Antwerp port community, it presents the impact of the activities and competencies not only of the authorities (Antwerp Port Authority and Left Bank Development Corporation) but also the port community (Alfaport). Other information was contributed by VOKA (Antwerp-Waasland Chamber of Commerce), the National Bank of Belgium, INBO (Nature & Forestry Research), OVAM (Flemish Public Waste Company), VMM (Flemish Environment Company), and Water-Link.

The second Sustainability Report covers the Antwerp seaport area as defined in the Regional Land Use Plan Antwerp approved by the Flemish government on 30 April 2013 and published in the Belgium statute book on 3 June 2013. This means that it deviates slightly from the first report, as this was based on the Most Socially Feasible Alternative (MSFA) which excluded the Scheldt quays and the Petroleum South area. The difference is shown in the table below. Note however that all National Bank of Belgium data includes the Petroleum South area.

### Streets included in the first report but not the second

<table>
<thead>
<tr>
<th>Streets included in the first report but not the second</th>
<th>Possible impact on the results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beverse dijk, Engelse steenweg, Gemaalweg, Klein Arenberg, Lindenhofstraat, Melseledijk, Nieuwe Arenberg, Oud Arenberg, Paardenkerkhofstraat, Parkstraat, Scheldemolenstraat, Sint-Michielsstraat, Smoutpot, Spaans fort, Verkortingsdijk, Verrebroekstraat, Vitsweg, Zoutedijk</td>
<td>No, no port companies established</td>
</tr>
<tr>
<td>Kallodijk, Nieuwe Grote Watergang, Oostlangedijk</td>
<td>Streets do no longer exist</td>
</tr>
</tbody>
</table>

### Streets not included in the first report but included in the second

<table>
<thead>
<tr>
<th>Streets not included in the first report but included in the second</th>
<th>Possible impact on the results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ebeslaan (Kallo)</td>
<td>Small, 1 company established</td>
</tr>
<tr>
<td>Ekersedijk, Keetbergstraat, Noordkasteel-Zuid, Sloepenweg</td>
<td>No, no port companies established</td>
</tr>
<tr>
<td>Letlandstraat, Siberiastraat</td>
<td>Small, only some small Port Authority buildings</td>
</tr>
</tbody>
</table>

All indicators and data apply wherever possible to this aggregated level; where they do not, this is specifically mentioned.

With the first Sustainability Report we wanted to set an example to individual companies of how to draw up an integrated annual report or sustainability report themselves. The second Sustainability Report includes a “Sustainable Enterprise Guide” with information and advice to companies on how to include sustainability in their day-to-day activities.

This second report is published only on the Port Authority’s website and can be downloaded as a PDF. With this report the initiative-takers seek to disseminate ideas about sustainability, afford more opportunities for interaction and at the same time distribute the output in a sustainable way.
GRI methodology

According to GRI principles

This report follows the protocol and basic principles of the Global Reporting Initiative. According to the principles of relevance and control, the most relevant indicators are used, namely the ones on which companies base decisions to alter their methods of operation. After publication of the first report the list of selected indicators and those rejected was scrutinised once more in a process of intensive dialogue with the stakeholders, as described in “Stakeholder dialogue.”

According to the principles of balance and completeness, both the positive and negative sides of all aspects of sustainable development are discussed.

Finally, the principle of comparability demands that performance must be compared with a benchmark and with all other relevant players.

Tailored to the specific context of the Port of Antwerp

The GRI guidelines and methodology were modified and supplemented here and there so as to make the reporting framework relevant to the port of Antwerp. In other words, the report is tailored to the specific context of the port. The GRI methodology is originally intended for national and multinational organisations. Given its lack of indicators that are specific to the reality of a port area, various adjustments were necessary. Of the generic indicators in the GRI list, only those that are relevant in a port context were chosen. These have been supplemented by relevant indicators obtained from official sources and other external bodies, but always within the limits of the GRI guidelines and the basic principles mentioned above.

Use of official information

The information used is based as far as possible on official statistics. The reporting year is 2012, to the extent that data are available for that year. The main exception concerns economic and employment data from the National Bank of Belgium, which in turn is taken from annual reports of companies for 2011.
Consultation with stakeholders

The dialogue

After publication of the first Sustainability Report it was decided to define a path for improvement in consultation with the stakeholders. In addition to the consultation within the workgroups devoted to particular subjects, it was decided to have an analysis carried out by experts from the Kauri network (31 May 2012) as stakeholders who were not involved in drawing up the first report. In response KAURI asked experts to carry out an analysis both of the sustainability reporting and of the various sub-aspects, in consultation with the Sustainability steering group of the port of Antwerp. In addition all KAURI members were invited to contribute to this analysis. The remarks and suggestions were then considered by the workgroups on the particular subjects, after which the full results were presented to a general consultation of stakeholders (18 December 2012).

Despite the widespread invitation the final list of participants was rather one-sided in terms of the types of stakeholders. The groups representing “citizens” and “civil society & associations” were very much under-represented, in contrast to the stakeholder consultations in the run-up to the first Sustainability Report.

The stakeholders’ dialogue, which in our opinion was very open and constructive, helped to form the basis for changes and additions incorporated in the second Sustainability Report and for the various initiatives and studies now under way. The way in which the contributions from stakeholders were incorporated is described in a feedback report that was distributed to all stakeholders. This feedback report also mentions which stakeholders were involved in this process.

In addition to the stakeholders’ dialogue the Sustainability Report was presented in various forums. The remarks and questions gathered at these presentations were also included in the improvement path.

The improvement path

Failure to include a particular indicator – on the basis that it was not relevant or that the data were not available – frequently resulted in questions and/or suggestions from those involved. In this second report more attention is given to explaining why particular indicators are not or cannot be included. We also wish to emphasise that it is a report by an entire port community: a community consisting of more than 900 companies or departments whose parent company is not necessarily located in Antwerp, with a great diversity of activities. This means that for some indicators it is not always possible to obtain full and reliable data. Furthermore the data cannot always be compared with other ports, because of the different compositions of port industry.

For the first report a conscious decision was taken not to present a concrete vision or objectives. The intention was rather to benchmark the concept of sustainability for the port community as a whole, without formulating additional objectives for the various companies. In any case, companies frequently have objectives imposed on them by their parent companies or by national or international authorities, or voluntarily impose objectives on themselves.
In this version we try as far as possible to make the link with the existing objectives. Furthermore there is a growing realisation that when introducing a process of "measuring" sustainability there is a need for a shared, long-term vision on certain subjects such as energy and mobility.

A number of specific subjects that arise in practically every stakeholder consultation or that are frequently asked about whenever presentations are given include the following:

**Mobility**

The modal split is seen as an excellent indicator for the question of transport to and from the port. The stakeholders have urged for the report to go deeper into the vision and strategy pursued by the port community in order to achieve the desired modal split.

In response a separate section is now devoted to the subject of mobility, going into more detail about the visions and strategies pursued by the port of Antwerp and others regarding the various transport modes. The report also looks at travel between home and work, and the accessibility of companies by public transport or other shared transport initiatives.

**Energy**

How sure can we be of our energy supply in the short term? To what extent can or must the port be self-supporting in energy, and what is the situation regarding security of supply? In the longer term there is the question of whether the port community with its very large petrochemical cluster is prepared for future of oil scarcity and the pursuit of a low-C economy. These questions are recognised as important by various players, but at the same time it has to be admitted that no direct answers can be given as yet. A workgroup has been set up to examine these subjects in greater detail and will report on this in the third sustainability report.

**Nuisance**

When preparing the first Sustainability Report it proved difficult to get an overall picture of the nuisance situation, despite the existence of various complaint databases. Nevertheless, all those involved recognised the importance of this aspect for the relationship between the port area and local residents.

In this connection, after the publication of the first report an "experience" survey was started by the "Environment & Society" research group of the University of Antwerp. A summary of this investigation and the first results in the form of indicators that could possibly be included can be found in the chapter on “Society.” Some of the indicators have not yet been included but will be further developed in the run-up to the third sustainability report.

**Waste**

A question that repeatedly arose was whether it is possible to make an estimate of the amount of waste produced by the Antwerp port companies. Consultations with the four main waste collectors and OVAM (Flanders Public Waste Agency) led to the conclusion that it is practically impossible to get an overall picture for the area under consideration. OVAM publishes extensive reports about waste production at Flemish regional level, based on statistical surveys which cannot be extrapolated for the port area.
Diversity

Diversity was and remains limited to specifying the ratio of male to female workers. In collaboration with SEIN (Identity, Diversity & Inequality Research, University of Hasselt) we tried to give greater substance to this indicator, but in end we had to conclude that as yet there are no usable definitions that enable a quantitative picture of diversity to be given. Diversity in the port of Antwerp is mainly discussed in qualitative terms under the subject of employment.

In addition to these subjects various other aspects were looked at by one or more groups of stakeholders, such as materials management and policy, efficient use of space, emissions into the air and water, and human rights. More details of these are given in the feedback note.
The stakeholders

There are many players involved in the port area. The very wide category of “stakeholders” can be divided into the classic organisation of society, with three main groups: government, the market (companies) and citizens (see fig. 1). The connections between them are formed by civil society.

Figure 1: classic organisation of stakeholders

The players relevant to the port area are as follows:

**Government**

Port authorities (Antwerp Port Authority and Left Bank Development Corporation)

Local government:

- Municipalities with port and/or industrial activities within their area: City of Antwerp and its districts Berendrecht-Zandvliet-Lillo, and the municipalities of Ekeren, Zwijndrecht and Beveren
- Municipalities without port and/or industrial activities within their area: Stabroek, Kapellen, Ekeren, Brasschaat and Sint-Gillis-Waas

Provincial authorities: Province of Antwerp and Province of East Flanders

The Flemish Government and its responsible departments:
• The Social Mediator for the Flemish seaports
• Department of Mobility and Public Works (dept. Maritime Access, dept. Mobilty and Road Safety Policy, dept. General Policy and dept. Ports and Water Policy)
• Department of Environment, Nature and Energy
• Department of Spatial Planning, Living and Built heritage
• Department of Agriculture and Fisheries
• Department of Work and Social Economy
• Waterways and Sea Canal, Scheldt Estuary dept.
• Institute for Nature Conservation
• Management Committee for Nature Compensation, Left & Right Banks
• Flemish Land Company
• Flemish Environment Company
• Flemish Port Committee

Other authorities: Antwerp Regional Development Company, “Land van Waas” Inter-municipal Collaboration Association, Polder authorities, Infrabel (Belgian rail track operator), B-Rail, De Lijn (bus and tram), etc.

Market

Shipping industry / port companies / logistics and transport:

• Heavy industry: VOKA (Antwerp-Waasland Chamber of Commerce)
• Other, e.g. energy producers, waste processors, dredging companies
• Other ports (national and international)

Citizens

Non-organised citizens come in contact with the port through:

• Working in the area
• Living in the area
• Recreational visits
  - Initiatives by the City of Antwerp or Antwerp Port Authority (e.g. bus tours of the port, MAS Port Pavilion)
  - Lillo Port Centre, Liefkenshoek Fort, Natuurpunt (nature conservation society), boat trips on the Flandria, Antwerp & Beveren Guides Association, Antwerpen Averechts (city visits), Lillo Book Village, etc.

Civil society and associations

• Trade unions: ACV, ACLVB and ABVV
• Employers’ associations: Alfaport, ABAS (Antwerp Stevedoring & Port Company), ASV (Antwerp Shipping Association), BATO (Belgian Association of Tank Storage Operators), CEPA (Port of Antwerp Employers’ Association), essenscia (association of the chemical and life sciences industry), KBRV (Royal Belgian Shipowners’ Association), FEBETRA (Royal Federation of Belgian Transporters & Logistics Service Providers), KVBG (Royal Association of Freight Flow Organisers), Transport & Logistics Flanders, VEA (Association of Forwarding, Logistics & Freight Handlers in Antwerp), VIBNA (Association
of North Antwerp Industrial Companies), VOKA (Antwerp-Waasland Chamber of Commerce)

- Agricultural organisations: Boerenbond (Farmers' Association) and ABS (Farmers' Trade Union)
- Environment and nature organisations: Bond Beter Leefmilieu, Natuurpunt Antwerpen-noord & WAL, Benegora

Associations

- Residents’ associations and action groups associated with the area
- Heritage associations and local history clubs
- Recreation

Other

Port-related training centres and educational institutes

Media

International port-related organisations (ESPO, FEPORT, IAPH, PIANC, etc.)
Sustainable collaboration for a sustainable future

Introduction

The port of Antwerp presented its first Sustainability Report on 2 February 2012. This was a world first: never before had the various partners in a port community published a joint sustainability report covering an entire port area. With this benchmarking exercise the Antwerp port community gave form to its ambition of being the sustainability leader in the Hamburg-Le Havre range. We plan to repeat this labour-intensive exercise every two years, so now we are very pleased to present this second Sustainability Report of the port of Antwerp.

The importance of sustainability in developing the port of the future has now been recognised by all those concerned. The many aspects of accessibility, both of the port and of the hinterland and foreland, are viewed by the port community not only from a purely economic and financial point of view but also in the context of sustainability.

Ongoing, systematic consultation was seen by the various stakeholders parties as particularly useful and has been pursued by all parties, and so after publication of the first Sustainability Report a critical analysis of the process followed until then was made in collaboration with the stakeholders, and visions and recommendations for improvement were incorporated in this second report.

During the past two years particular attention has been paid to safety, with the emphasis on accident prevention. The modern port is a very busy environment with many risks, and so safety is a priority for all players in the port community.

But sustainability has many other aspects, as can be seen from the "nuisance" indicators. Nuisances can affect either the environment or people, or both. But the scientific data collected to survey the nuisances and take action to prevent them does not always match people's perception of the negative aspects of living near a port. It was therefore decided to carry out a comprehensive survey of how people experience nuisances in and around the port. The results provide particularly useful information about how the negative effects of port activities are experienced or not, as the case may be.

As regards energy the first concern is to make more rational use of energy and reduce the demand for it. But in an industrial environment such as the port of Antwerp with one of the world's largest chemical clusters there is huge demand for energy. The port community therefore strives to use “green” energy wherever possible, with respect for the “3 Ps.” Some companies such as the Port Authority purchase 100% green electricity. Significant expansion of the wind power capacity within the port is also planned, and the possibilities of bio-based energy sources are being examined. Furthermore industry in the port has invested heavily in energy efficiency in the past few years. Further research in this area is continuing, with the focus on among other things a heat distribution network.

The partners in the port are continuing their efforts to involve all companies and services, big and small, in the striving for sustainability. To support them in this effort a digital platform has been developed: the Sustainable Enterprise Guide. Here, all those who are interested can find background information for incorporating sustainability in their own company or service.
This digital platform is kept constantly up to date with new initiatives, work documents, case studies etc.

When reading this report you will also notice that “Profit” has been replaced by “Prosperity,” as the partners involved felt that the latter term was more appropriate for their basic vision, namely a long-term vision for sustainable growth and prosperity of the port, with high added value for society.

It is our heartfelt wish that this second Sustainability Report can inspire everyone to commit themselves to a sustainable port and sustainable society.

Enjoy reading it!

Bruno Stevenheydens (chairman, Left Bank Development Corporation)

Peter Van de Putte (general manager, Bank Development Corporation)

Walter Van Mechelen (chairman, Alfaport Antwerp)

Rudi De Meyer (CEO, Alfaport Antwerp)

Marc Van Peel (chairman, Antwerp Port Authority)

Eddy Bruyninckx (CEO, Antwerp Port Authority)
Maritime, logistics and industrial cluster

The port of Antwerp is unique in the Hamburg-Le Havre range in having such a strongly interwoven cluster of maritime, logistics and industrial activities. Shipping companies bring goods to the port, and these goods in turn form the basis for logistics and industrial activities. Conversely, industry and logistics generate goods that are exported by the shipping companies via the port of Antwerp. The industrial activities also reinforce the logistics activities and vice-versa, generating huge added value. This trinity is unique in the port landscape. What does it contribute in terms of freight volume and use of space (Prosperity)? And do how the companies in this cluster manage their consumption of raw materials and their emissions (Planet)?

The users

Shipping companies

The combination of efficient, high-quality freight handling with an extensive logistics network and a strong supply of cargoes from manufacturing industry makes the port very attractive to shipping companies.

Freight handlers

Loading and unloading ships, storing the goods in warehouses and making sure that they leave for the end customer in tip-top condition: these are basic activities in the port of Antwerp. A very important role is played by value-added logistics, so that many manufacturing companies opt to locate their European distribution centres here.

Logistics companies

It is these companies that create the added value. Examples include storage of chemical products, specialist storage, mixing to form new products, cutting steel to measure, repackaging, repair, quality control of breakbulk goods and cleaning, as well as inspection, personalisation and protection of new cars (Vehicle Processing Centres).

Forwarders

Forwarders organise the transport of the goods, along with the accompanying documentation and customs formalities.

Traders

Concentrate on buying and selling of goods. Antwerp has a reputation as a trading port for steel and non-ferrous metals, coffee, cacao, fruit and many other goods.

Shippers

Manufacturing companies opt for Antwerp because of the many possibilities it offers for importing and exporting goods, combined with innumerable value added activities.
All these users choose Antwerp on the basis of costs, speed, service and reliability. But increasingly also, sustainability is a factor in this choice, as can also be seen in the box text “Satisfaction survey”: the final consumers attach more and more importance to the quality of the products, the way in which they are processed and the environmental impact of manufacturing (People and Planet). Transport forms an essential part of this.

The advantages

The port of Antwerp is located 80 km inland, so that goods can literally sail into the heart of Europe. This not only reduces transport costs but is also much more efficient than truck transport. The port's central location makes it one of the main gateways to Europe.

An extensive network of pipelines, motorways, railways and barge connections enables the European market to be served rapidly. Some 60% of European purchasing power is located within a 500 km radius around Antwerp.

All possible types of goods are handled in the port, in every conceivable type of packaging. The port’s productivity, know-how and expertise are renowned around the world.

Facts & figures

- Second largest port in Europe (freight volume of 184 million tonnes in 2012)
- 900 companies operating in the port
- Largest chemical port in Europe: 30 companies producing basic chemicals, 7 of the 10 largest multinational chemical companies, and the largest integrated chemical cluster in Europe
- Most modern fruit terminal in the world: 600,000 tonnes of fruit per year
- Coffee port: 45% of European coffee stocks are held in the port of Antwerp. Sustainability is increasingly important for this commodity: see the box text “Sustainable coffee”.
- European leader in groupage loads
- Largest European port for steel, and wood
- 680,000 m³ of silo storage capacity
- 5.6 million m³ of covered storage capacity (the largest concentration of covered warehouses in the world)
- 6.3 million m³ of liquid bulk storage capacity
- 7 steel service centres
- 300,000 m² of all-weather terminal
- 16 terminals specialising in breakbulk
- 2 million m³ of refrigerated storage capacity
- 3 vehicle processing centres
Prosperity

For this cluster to be able to continue to grow, there has to be sufficient space available. In this report we look at whether space is used efficiently, the rate of growth in freight volume and how Antwerp’s market share is evolving.

Available space

In 2013 the Flemish government laid down hard and fast boundaries for the port area. Within this defined area the port offers sufficient space for the industrial, maritime and logistics cluster, so that it can grow and develop economically. There is sufficient capacity available for this on both the left and the right banks.

![Graph](image1.png)

Fig. 1.1: The area within the defined port area on the left bank of the Scheldt that is available for economic activities within different time periods (source: Antwerp Port Authority)

![Graph](image2.png)

Fig. 1.2: The area within the defined port area on the right bank of the Scheldt that is available for economic activities within different time periods (source: Antwerp Port Authority)
The challenge of finding sufficient space for further economic growth will be tackled in various ways:

- occupying the Saeftinghe Development Area
- upgrading and repurposing older parts of the port
- making more efficient use of the existing space
- drawing up an investment vision with the emphasis on cluster effects and synergy with new projects.

Use of space

Most of the land in the port is owned either by Antwerp Port Authority or by the Left Bank Development Corporation, both of which award concessions to companies for using certain parts of it. Through their concession policy the two authorities are able to manage the port economically and ecologically.

![Graph](image)

Fig. 1.3: The area within the port held in concession or owned by companies (source: Antwerp Port Authority)

In order to guarantee prosperity, efficient economic use must be made of the land available. This is reflected in the development of logistics activities.

The total area of covered storage space (excluding the tank storage capacity in the petrochemical sector) has grown by some 10% since 2003, to around 550 hectares. This is more than the total storage capacity of all neighbouring ports combined.
The volume of tank storage capacity for its part has fluctuated around 10 million m³ over the past 10 years. In 2011 and 2012 there was a significant increase in the storage capacity of storage and distribution companies, to 6.3 million m³ in 2012.
Freight handling

Containers

Every year some 8.6 million standard containers (20-foot equivalent units, or TEU) are loaded or unloaded in the port. 1 TEU equates to the volume of around 300 supermarket carts. In other words, the volume of containers handled by the port represents 2.6 billion visits to the supermarket!

The success of the container trade is due in particular to the presence of various specialist container terminals. The opening of the Deurganck dock in 2005 doubled the port’s container capacity at a stroke. Container handling will certainly remain one of the port’s biggest advantages in future.

Antwerp has seen its market share increase in recent years, overtaking Hamburg to become the second-largest container port in Europe after Rotterdam.

Breakbulk

Breakbulk is subdivided into two main categories: conventional breakbulk and ro/ro. In 2012 the port of Antwerp handled nearly 11 million tonnes of conventional breakbulk. Despite the recent loss of some of its market share Antwerp is still the largest port in terms of conventional breakbulk, although competing ports have won a significant share in recent years. When it comes to handling fruit, coffee and wood Antwerp is the No. 1 in Europe. With a volume of 7.3 million tonnes of steel, Antwerp is actually one of the most important steel ports in the world. Thanks to the presence of among others ICO and Grimaldi, Antwerp also plays a leading role in the ro/ro sector. In 2012 the ro/ro volume handled in the port of Antwerp amounted to 4.8 million tonnes.
Fig. 1.7: Non-containerised breakbulk volume handled by the different ports in the Hamburg – Le Havre range over the period 1980-2012 (source: annual reports of port authorities).

Fig. 1.8: RoRo volume handled by the different ports in the Hamburg – Le Havre range over the period 1980-2012. Note: the definition of roRo is not the same in all ports. For instance, some ports include car ferry traffic in the roRo volume, while Antwerp does not (source: annual reports of port authorities).
Dry bulk

Antwerp has outstanding facilities for handling dry bulk quickly and efficiently. The most important types of dry bulk are coal, iron ore, other ores and kaolin. These mainly come from Russia, Algeria and North America. Antwerp’s market share for dry bulk is declining. Moreover, the volume of this trade depends closely on demand from European industry. In 2012 the volume of dry bulk handled in the port of Antwerp fell by 3.5% to 19.1 million tonnes.
**Liquid bulk**

Each year more than 45 million tonnes of liquid bulk “flows” through the port, with chemical products and crude oil accounting for the lion’s share. An underground network of 1,000 kilometres of pipeline ensures fast, safe and affordable transport of the crude oil (directly from Rotterdam) and chemical products. The various terminals in Antwerp offer 6.3 million m³ of storage capacity.

The presence of a world-class petrochemical cluster in Antwerp means that this freight category has great strategic importance.

Antwerp’s market share of European trade in liquid bulk is stable or slightly expanding. If crude oil is not included in this category then the share is actually increasing.

![Graph showing liquid bulk volume handled by different ports in the Hamburg – Le Havre range over the period 1980-2012](source: annual reports of port authorities)
Planet

What efforts does the maritime-industrial-logistics cluster make to limit the impact of its activities as far as possible? What about its energy consumption, water consumption, emissions etc.?

Reducing energy consumption per unit of production

Over the period 2000 to 2010 energy consumption in the port of Antwerp grew in absolute figures. In 2010 the energy consumption was 3% higher than in 2008, with the chemical industry and refineries being the biggest energy users.

Energy generation not destined for manufacturing industry expanded by 6% in the period 2008-2010. The chemical industry and refineries for their part experienced growth of 5% and 3% respectively.

Part of the growth in energy consumption is due to the increased cogeneration capacity; this form of energy generation uses relatively cleaner fuels but requires more energy inputs.

If we compare the energy consumption of manufacturing industry (all sectors except energy generation not destined for industry) with the production index we see that energy consumption per unit of production decreased over the period 2000-2010. In other words, energy is being used more efficiently.

![Graph showing energy consumption by sector in Antwerp Port](image)

Fig. 1.12: Total primary energy consumption in the port area per sector of industry (source: Antwerp Port Authority based on data from Eandis, Ela, Infrax, Fluys and VITO) and consumption by industry related to the production index (data from VOKA)
More accurate figures than first Sustainability Report

In the first Sustainability Report the heat consumption by the chemical industry and refineries was estimated on the basis of figures for Flanders. In the meantime the Port Authority has an aggregated figure based on data for the individual cogeneration units. The latter approach is more accurate, and so in the second Sustainability Report it has been decided to correct the figures for 2008.

Also, the electricity production by cogeneration units was expressed in MWh instead of PJ (petajoules). The figure for 2008 has also been adapted in the second Sustainability Report.

Water consumption

Water in the port is supplied by the water companies (Antwerpse Waterwerken and the Dutch water company EVIDES) or drawn directly from ground, surface or rainwater.

About 97% of water consumption is for cooling, for which surface water is drawn directly from the docks or from the Scheldt and afterwards returned to them. The rest of the water used is mainly mains water, supplied by drinking water companies which draw most of it from surface water. The proportion of mains water obtained from ground water has declined sharply in the past two years, because since 2011 mains water has been supplied from the Netherlands, which draws it from surface water. As a result, less mains water has to be obtained from ground water.

Rainwater accounts for only a small proportion of the total consumption, although many companies are trying to use it for sanitary and cleaning purposes. Initiatives are also being taken to work with a closed water cycle in order to limit net consumption, or to achieve efficiencies through joint outsourcing; production of demineralised water in particular is being outsourced to Induss I.

The least sustainable form of water consumption, namely drawing it directly from ground water, is hardly used.
Fig. 1.13: Surface, mains and cooling water consumption by companies in the port of Antwerp (source: FEA, water company, Antwerp Port Authority and WdnZ). The figures for all sources up to and including 2009 were obtained from the Economic Supervision department of VMM. However, the latter was no longer willing to provide the figures, so it was necessary to find other sources. It has been decided to show these other sources retrospectively, so that any differences are visible. The cooling water consumption for Doel nuclear power station in 2010 was not available.

Fig. 1.14: Mains water, ground water and rainwater consumption by companies in the port of Antwerp, excluding the proportion used as cooling water (source: VMM and water company). The figures for all sources up to and including 2009 were obtained from the Economic Supervision department of VMM. However, the latter was no longer willing to provide the figures, so it was necessary to find other sources. It has been decided to show these other sources retrospectively, so that any differences are visible. The differences in mains water consumption between the water company and the VMM data cannot be determined directly since data on individual consumers cannot be provided. Rainwater and ground water consumption are no longer available. Ground water consumption is tracked as of 2012 by means of the quantities that are permitted to be extracted.
Emissions into the atmosphere

_Greenhouse gases_

Emissions of CO\textsubscript{2} by heavy industry rose during the period 2000-2010 as a result of increased production. However, production has become more efficient, as relative CO\textsubscript{2} emissions (expressed in terms of the production index) have declined. Further emissions to reduce CO\textsubscript{2} emissions are being taken by all those concerned. Companies are being encouraged to considerably reduce their CO\textsubscript{2} emissions through initiatives such as the Lean & Green project (see box text: “Lean & Green project”):

Emissions of CO\textsubscript{2} equivalents were lower in 2010 than in 2000, due mainly to decreased N\textsubscript{2}O emissions from production of nitric acid. This decrease is due to the systematic fitting of N\textsubscript{2}O catalysers in the various nitric acid plants. In addition the oldest plant was retired in 2008 and replaced by a new one with larger catalyser bed.

The period 2008 – 2010 saw an increase of 1.9% in emissions of CO\textsubscript{2} equivalents: although emissions by industry grew as a result of new facilities being built in this period, there was a decrease of 1% from refineries and 5% from energy generation.
SO₂, NOₓ and PM₁₀

Emissions of sulphur dioxide (SO₂), mainly from refineries, have decreased sharply in recent years due to stricter emission standards. In the shipping industry the reduction in emissions is explained by the new standard imposing a lower sulphur content for ship’s fuel.
Emissions of nitrous oxides (NO\textsubscript{x}) by industry and refineries have decreased significantly in the past few years, with an additional dip caused by the economic recession in 2009. This downward trend undoubtedly has something to do with the emission control measures introduced by the various players involved.

NO\textsubscript{x} emissions by shipping, by contrast, have followed a rising trend, with the exception of a sharp dip in 2009 due to the economic crisis. The rise in emissions is probably due to the increase in the number of ships, as well as the trend towards larger vessels. Since the freight volume in the port of Antwerp rose from 152 to 178 million tonnes between 2004 and 2010, this means that more and larger ships have been calling at the port.

![Graph showing emissions by sector](image)

Fig. 1.18: Estimated emissions of nitrogen oxides by the various sectors in the Antwerp port area (source: FEA)

PM\textsubscript{10} emissions have shown the same rising trend as nitrous oxides. In the case of PM\textsubscript{2.5}, however, figures are only available from 2008 onwards. Furthermore there are few real measurements or emission reports for this parameter, so for the moment the VMM figures are limited to estimates.
Emissions into water

The study entitled “Specific emissions into surface water in the Antwerp port area” was completed at the beginning of 2013. Emissions of metals and polyaromatic hydrocarbons (PAHs) were inventoried for the first time in 2010, both for diffuse, port-specific sources and for diffuse, non-specific sources and point sources. This inventory will be carried out every two years. Two sources that are very specific to the port area were not inventoried, namely: transfer and storage of dry bulk goods on the one hand, and ship repair and maintenance on the other.

The presence of metals and PAHs in the surface water is only partly due to activities in the port area: oil spills are a major source of PAHs. Now that the Port Authority devotes great efforts towards dealing with such spills and indeed preventing them occurring in the first place, these emissions are expected to decline in future. Meanwhile ships themselves are major sources of zinc and copper, which are used to protect hulls against respectively rusting and growth of organisms.
Table 1.1: Relative importance of heavy metal emission sources in the Antwerp port area (2010) (empty cells mean that no emissions of this substance are expected from the source concerned; sources that did not make a contribution of 3% or more for any single substance are not included) (source: Flemish Environment Agency and Antwerp Port Authority on basis of a study by Deltares/VITO).

<table>
<thead>
<tr>
<th>Source of Emission</th>
<th>Arsenic</th>
<th>Cadmium</th>
<th>Chrome</th>
<th>Copper</th>
<th>Mercury</th>
<th>Nickel</th>
<th>Lead</th>
<th>Zinc</th>
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<tbody>
<tr>
<td>Atmospheric deposition on water (%)</td>
<td>5</td>
<td>52</td>
<td>7</td>
<td>1</td>
<td>3</td>
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<td>Chemical industry (%)</td>
<td>63</td>
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<td>54</td>
<td>2</td>
<td>82</td>
<td>58</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>Corrosion of shell of buildings (%)</td>
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<td>0</td>
<td>36</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pipe corrosion (%)</td>
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<td>9</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Soil erosion (%)</td>
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<td>9</td>
<td>13</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Industrial cleaning (%)</td>
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<td>0</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Production and distribution of electricity and gas (%)</td>
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<td>1</td>
<td>8</td>
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<tr>
<td>Production of means of transport (%)</td>
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<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Production of refined oil products (%)</td>
<td>18</td>
<td>5</td>
<td>1</td>
<td>9</td>
<td>9</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Barges - anodes (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road traffic - tire wear (%)</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Road traffic - brake wear (%)</td>
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<td>3</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seagoing ships - anodes (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seagoing ships - coatings (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (kg)</td>
<td>116</td>
<td>3,64</td>
<td>111</td>
<td>5888</td>
<td>7.91</td>
<td>359</td>
<td>235</td>
<td>17299</td>
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Table 1.2: Relative importance of PAC emission sources in the Antwerp port area (2010) (empty cells mean that no emissions of this substance are expected from the source concerned; sources that did not make a contribution of 3% or more for any single substance are not included) (source: Flemish Environment Agency and Antwerp Port Authority on basis of a study by Deltares/VITO).

<table>
<thead>
<tr>
<th>Source of Emission</th>
<th>acenaphthene</th>
<th>acenaphthylene</th>
<th>anthracene</th>
<th>benzo[a]anthracene</th>
<th>benzo[a]pyrene</th>
<th>benzo[b]fluoranthene</th>
<th>benzo[g,h,i]perylene</th>
<th>benzo[k]fluoranthene</th>
<th>chrysene</th>
<th>dibenzo[a,h]anthracene</th>
<th>fluoranthene</th>
<th>fluorene</th>
<th>indeno[1,2,3-cd]pyrene</th>
<th>naphthalene</th>
<th>pyrene</th>
<th>PAH 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmospheric deposition on land &amp; water (%)</td>
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<td>0</td>
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<td>50</td>
<td>70</td>
<td>74</td>
<td>65</td>
<td>74</td>
<td>63</td>
<td>40</td>
<td>38</td>
<td>72</td>
<td>10</td>
<td>74</td>
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<tr>
<td>Chemical industry (%)</td>
<td>5</td>
<td>37</td>
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<td>2</td>
<td>6</td>
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<td>4</td>
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<td>3</td>
<td>5</td>
<td>9</td>
<td>3</td>
<td>8</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Households (%)</td>
<td>7</td>
<td>5</td>
<td>11</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>2</td>
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<td>7</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>4</td>
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<tr>
<td>Production of refined oil products (%)</td>
<td>13</td>
<td>5</td>
<td>17</td>
<td>36</td>
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<td>3</td>
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<td>Barges - Coating (%)</td>
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<td>4</td>
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<td>Olie spills (%)</td>
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<td>1</td>
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<td>22</td>
<td>4</td>
<td>36</td>
<td>0</td>
<td>43</td>
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</tr>
</tbody>
</table>
Waste

The main sources of waste in the port area are industrial waste, ships' waste, litter and floating rubbish.

*Industrial waste*

Waste produced by companies in the various sectors is monitored by OVAM, which reports on this annually.

The Port Authority encourages companies to set up joint waste management, and also promotes other sustainable initiatives in the Luithagen area (see box text: “Luithagen sustainable park management”).

*Litter*

Developments concerning litter are monitored by OVAM in collaboration with the local authorities. Measures have also been taken recently to reduce litter in the port, for example by installing litter bins at places where trucks are regularly parked.

*Ships’ waste*

Antwerp Port Authority encourages barges and seagoing ships to hand over their waste for collection, and takes measures to help them with this.

In the case of seagoing ships these measures are regulated by general international agreements under the terms of the MARPOL (MARine POLlution) treaty and the EU directives on port collection facilities for ships’ waste and cargo residues. The 2013-2015 waste management plan was drawn up and approved by the Flemish Ministry of the Environment in 2012. In the port of Antwerp there are sufficient waste collection facilities for ships’ waste and cargo residues. Thanks to an open market approach there is competition between the different waste collectors, leading to competitive prices and good service.

As a result of amendments contained in Annex V to MARPOL, as of 01/01/2013, it is forbidden to discharge not only ship’s waste into the sea (plastics, packaging material, glass, metal etc.) but also certain dry bulk materials, and so there is a worldwide need for facilities to collect this type of cleaning water. In response, at the end of 2012 Antwerp Port Authority in consultation with the various players involved (dry bulk sector, waste collectors and OVAM) investigated whether specific measures needed to be taken. The conclusion was that there is sufficient collection capacity in Antwerp.
Fig. 1.20: Ship-generated oily waste handed in for collection in each of the four ports concerned (source: port authorities)

Fig. 1.21: Ship-generated household, food and plastic waste handed in for collection in each of the four ports concerned (source: port authorities)
Barge operators too are being encouraged to hand over their waste in a responsible way. The Port Authority provides the necessary service for this, under the terms of the “Convention on the Collection, Deposit and Reception of Waste Produced During Navigation on the Rhine and Inland Waterways” (CDNI) as incorporated in the Barge Waste Management Plan 2011-2015. These measures also help to deter fly tipping. The Port Authority offers three waste collection parks (two on the right bank and one on the left) where barges can deposit their dangerous and non-dangerous waste. It also operates a bilge barge on the right bank. The barge waste is taken by a certified waste collector to a licensed processing plant.

A second waste collection park opened on 29 March 2013 at quay 601 on the right bank, near the fish spawning ground. The combination of waste collection park, drinking water point and car unloading ramp makes this a handy service quay for barges. When creating this facility advantage was taken of the opportunity to improve conditions for water life, both for macro-invertebrates and for fish. At the same time sustainable choices were made in construction of an office and shed, with green roofs, advanced thermal insulation, heat pump and use of concrete made with recycled granulates (IRCOW project).

The figures below show how this port policy is bearing fruit.
Floating rubbish tends to be made up of waste packaging material (wood and plastic) and bits of rope and fenders, along with litter (drink cans etc.) that end up in the water. The Port Authority takes the necessary measures to clean up this waste. The Condor cleaning barge is in operation every day to pick up floating waste. Some 48.5 tonnes of waste was collected in this way for processing in 2012.

Oil spills come from various sources: loading and unloading ships, supplying fuel to a ship, leaks in onshore facilities and ground clean-up operations. Not all spills are reported, so that
the source of the pollution is not always known. The graphic below shows the number of registered oil spills and their cause.

Between 2007 and 2012 there was a downward trend, due mainly to the reduction in the number of spills with a known cause. However, the number of spills of unknown cause remains relatively constant.

**Actions in case of oil spills**

Oil causes damage to the environment (e.g. seabirds) and can contaminate ships and facilities. Since contaminated ships are forbidden by the Harbourmaster to leave berth, this creates an obstacle to port activities. If oil is fought with chemical substances (dispersants), the contamination spreads from the surface water into the water column; the oil then sticks to sediments and accumulates on the bottom.

Good prevention of oil leaks, quick containment of the oil slick and correct (mechanical) cleaning of contaminated objects and of the water surface are crucial to limit the damage.

If the cause (source) of the leak is known, then the responsibility for containment lies with the polluter. If action is not taken in good time (or is not taken correctly) then the Port Authority takes over responsibility. In case of a leak of unknown origin then the Port Authority also takes care of the clean-up. In 2012 a stand-by service for oil spills was set up to oversee and if necessary direct the clean-up measures.

The Port Authority for its part strives to reduce the number of oil spills in the port to a minimum, mainly through prevention measures and computerisation. An important part of this is the obligatory use of a checklist for all bunkering activities. With success: the number of oil leaks in the course of bunkering activities has trended downwards between 2007 and 2011. Going forward the Port Authority is in the process of appointing a service provider who will remove oil from contaminated ships and from the water surface in an appropriate and ecologically responsible way.
People

People are also extremely important in the maritime, logistical and industrial cluster. This aspect is dealt with extensively in the chapters on Employment, Safety and security and Society.
LUITHAGEN SUSTAINABLE PARK MANAGEMENT

Together with the “Flemish Enterprise Agency,” Antwerp Port Authority has identified various sites that can represent a win-win for ecology and economy, where companies can develop existing activities more sustainably by means of clustering.

The first site selected for this is the Luithagen area. In the first stage the requirements and problems of the companies were inventoried under the headings of water, effluent, waste, energy, mobility, security and waste collection. This led to three main headings being identified: mobility, security and waste collection.

The results of the survey were announced at an initial meeting. Alfaport Antwerp gave a presentation of the “More sustainable enterprise” guide, with a practical example. The companies were also informed about the possibilities for group purchasing of green electricity and natural gas.

Actions for the main headings were worked out, leading to a 30-point action plan. The current situation can be found here.

PORT SATISFACTION SURVEY (2012)

Every two years the port of Antwerp carries out a survey of its customers (shipping companies, ship’s agents, shippers, transport companies, forwarders, logistics service providers etc.) in order to measure the degree of satisfaction with port services. Some of the questions are concerned specifically with sustainability.

From the most recent survey (in 2012) it appears that 63% of respondents consider that the port is already taking serious measures for sustainability. They also considered it very important to keep up with the competition in terms of the environment and sustainability: 8 out of 10 customers are convinced that this creates competitive advantage for the port.

The survey further indicated that shippers consider the port’s inland location as an important advantage for reducing their ecological footprint. This is because a greater proportion of transport can be done by seagoing ships, with lower CO2 emissions than other modes.

One area where improvements can be made is how much customers know about existing collaboration between the port and NGOs in the field of the environment: only 15% are aware of this, while 75% consider it to be an additional advantage.
SUSTAINABLE COFFEE IN THE MARITIME, LOGISTICS AND INDUSTRIAL CLUSTER

Antwerp has long been one of the leading coffee ports in Europe. Already at the beginning of the 19th century under the Dutch king William I, coffee was an important product imported from the Dutch East Indies. Coffee began to be imported from other parts of the world in the second half of the 19th century. Various freight handling companies such as Molenbergnatie, the Noord Natie subsidiary Norexa, Zuidnatie (ACCL), Pacorini and the German company Vollers catered for this trade and built warehouses specially designed for storing coffee.

Today there are strict rules concerning temperature control, exposure to light, humidity and hygiene. Antwerp has developed into a world leader for coffee storage, both for robusta and for arabica beans, with 700,000 m² of specialist warehouses holding 45% of European stocks of raw coffee. More than half of imports in Antwerp are stored here for speculation on the commodities markets in London (robusta) and New York (arabica).

Coffee is normally delivered in containerised jute sacks of 60 to 70 kg. Sporadically it is delivered loose in a container lined with protective foil to prevent direct contact with the container. Coffee handling is fairly labour-intensive. Thanks to the specialist expertise built up in Antwerp, significant added value is created here by activities such as sampling, quality control, blending different types of bean and managing the onward logistics chain for the customer.

Over the years Antwerp has built up its own coffee history. Small family firms began roasting coffee in the middle of the 19th century. Many of these have since developed into big name coffee roasters such as “Koffie F. Rombouts”, “N.V.Koverim-Koffie De Vlijt”, “Verheyen Koffie” and “Beyers Koffie” among others. The city is renowned among connoisseurs for its many coffee roasters that each create their own blend to suit the taste of their customers. New coffee businesses have also been started up in recent decades, such as Vascobelo.

In addition to its roasters Antwerp also has many other refined coffee spots: coffee shops, cozy old-fashioned cafés and trendy coffee bars.

Given the challenges facing the industry and the need to respond to the reality of the suppliers facing the growing consequences of global warming, the various coffee companies are paying increasing attention to sustainable, fair-trade coffee. This trend is also partly due to promotion of the Fairtrade label, represented by Max Havelaar, Utz certified, Rainforest Alliance, Efico Foundation and Oxfam. Nearly 30 companies now make and produce Fairtrade coffee in Belgium, produced by methods that preserve the environment and offer a fair price for the growers. With international coffee prices falling once more, it is now more important than ever to support Fairtrade coffee, so as to guarantee a minimum price for producers. This enables them to stay in business, improve their production methods and react to climate change.
Since 2012 the Flemish Institute for Logistics (VIL) has been promoting the Lean and Green project in Flanders, in which participating companies undertake to improve their energy efficiency and reduce the CO₂ emissions of their logistics activities by 20% within a period of five years. Antwerp Port Authority is also taking part, by encouraging and supporting port companies in this process.

With the help of VIL the Port Authority is currently developing a detailed plan of approach that companies can adopt, describing all the measures necessary to achieve the objective and backed up by figures. The MOBI department of the Free University of Brussels (VUB) is carrying out an objective assessment of the plan of approach (October 2013). Each plan approved by the VUB receives the Lean & Green Award. Companies that win this award may use the logo in their external communication (e.g. on their trucks, website etc.) for a period of five years.

Participation in Lean & Green makes sustainability more tangible. It also involves and motivates employees, affords leverage in developing relations with customers and suppliers, shines a revealing light on logistics from a new angle, and gives access to a unique group of leading companies that exchange information and develop joint initiatives.
**COST-EFFICIENCY AND SAFE DELIVERY OF DEMINERALISED WATER ON THE SCHELDELAAN BOULEVARD**

*Induss I* is a decentralised, industrial water purification plant with an accompanying network. It is located in the heart of the port, on the Scheldelaan boulevard, and supplies ultra-pure demineralised water to various industrial customers located nearby. In this regard it forms a water cluster in the middle of the industry cluster.

By entrusting their water production to Induss, customers save on investment and operating costs and are able to focus on their core activities. They are also assured of reliable water solutions that meet strict environmental standards. In this way they are able to get away from single-user production (with inevitable overcapacity due the need for reliability) and adopt multi-user production instead.

The location is also very economical in terms of space: to produce 1,200 m³ of water per hour Induss I only needs a ground area of 50 x 30 metres.

Never before has such a concept been tried out in Belgium on such a scale and with such a high quality of water.

*Induss I* is practical proof that economy and ecology can go hand in hand.
Employment

With its unique combination of industrial, logistics and shipping functions the port of Antwerp is the engine of the Flemish economy. This is reflected directly in employment, with more than 60,000 people earning their living here, making the port the largest employer in the wider Antwerp region. The daily contribution by all these employees is also crucial for the success of the port. The high labour productivity and high level of training in turn mean that the human factor plays an important role in making the port so attractive as a location for companies. It is therefore very much in the interests of the port community to consolidate this climate, and so large efforts are put into maintaining a constant supply of motivated, qualified employees. In this chapter we look in greater detail at regional employment, personnel turnover and labour productivity (Prosperity), and we also consider what forms this employment takes (People).

Prosperity

Which sectors in the port employ what numbers of people? How much turnover of personnel is there, and how productive are these people?

Largest employer in the wider region

Between them the companies in the port of Antwerp provide more than 60,000 jobs (expressed in full-time equivalents or FTE). If indirect employment is included – i.e. jobs that are dependent on the economic activities in the port area – the total comes to as much as 143,000 (FTE). 6.6% of Flemings in employment owe their job to the port of Antwerp, which makes the port by far the biggest employer in the wider region.

Up until the end of 2008 the level of employment followed a gently increasing trend. But the economic crisis of 2009 was a tipping point: the contraction in the volumes of freight handled had a direct impact on employment. This downward trend continued in 2010 and 2011. In absolute terms, however, employment remains at a high level.
The maritime sector plays an important role, with 46% of employment in the port of Antwerp being shipping-related. During the economic crisis and the subsequent recession this sector proved to be more resilient than manufacturing industry: where employment in the maritime sector has contracted by just 0.5% over the past six years, employment in industry has declined by 16.3%. However this finding has to be qualified, as the contraction was heavily influenced by the closure of GM Belgium at the end of 2010.
Employment in the sectors “Land transport” and “Other logistics services” has continued to expand, with both of these reaching their highest level in six years.

But in all cases we also have to take the outsourcing effect into account: in order to be more competitive, companies in the port and elsewhere are concentrating more and more on their core activities. Supporting services are being trimmed and outsourced. This may make it seem as if employment in a particular sector has declined sharply, but in actual fact it has simply been displaced so that there are no job losses overall.

Personnel turnover

In 2009 the rising trend toward hiring new recruits came to an end, since due to the recession there was clearly less need for additional personnel in the port of Antwerp.

Conversely, the number of people leaving the port in 2009 was lower than in the period 2006-2008. This meant that the port was able to avoid mass redundancies despite the sharp fall in freight volumes in 2009.

In 2010 there was an exceptional peak in the number of people leaving the non-maritime sector, mainly due to the closure of GM Belgium. Then in 2011 the number of people entering the workforce was greater than the number leaving.
High labour productivity

Belgium remains well established among the European leaders in terms of productivity of labour, and the port of Antwerp is the leader in Belgium. Within the port area industry scores even better than the maritime sector.

Indeed the “Industry” sector saw its labour productivity grow even slightly higher in 2008. The effects on labour productivity of the crisis year of 2009 can clearly be seen in the “Maritime” and “Other” sectors. In 2010 and 2011 all sectors experienced significant recovery in their labour productivity, with the “Industry” sector leading the way.

Fig. 2.4: Labour productivity in the port of Antwerp (source: National Bank of Belgium, working paper 242)
People

What are the main characteristics of a job in the port of Antwerp? What is the work/life balance? How sustainable is this employment? Do women have/get equal opportunities with men? Are these jobs intellectually challenging enough?

Close to home

In the municipalities around Antwerp 11.1% on average of the working population is employed directly or indirectly by the port. The proximity of such a powerful economic engine means that many people in the Antwerp-Waasland area find a job close to home. This has a positive effect for the work/life balance, as well as for mobility (i.e. travel between home and work). The Antwerp port community puts great efforts into making this home-work travel as safe and sustainable as possible. Collective transport – such as the shuttle bus and i-bus among others – contributes significant added value here.

Full-time job with open-ended contract

Contracts of employment in the port of Antwerp tend to differ in some respects from the usual pattern in Belgium: more than 90% of port employees work full-time, compared with about 70% in the rest of the Belgian economy. The contracts are generally open-ended (i.e. for an unlimited period): only 3% of contracts are for a limited period.
The “Dockers’ pool” (governed by Parity Committee 301) forms an exception within the port of Antwerp. In theory this group of around 9,000 dockers forms a pool of day labourers hired on a day-by-day basis. In strictly legal terms, this means that about half of all dockers have a contract for a limited period (one day). In practice, however, many of them have a contract for a longer period with a single employer, and nearly always work for the same employer every day. For more information on this subject, see the box text “Dockers’ pool”.

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Diversity in employment

There are too little data to make firm pronouncements about diversity of origins of people working in the port of Antwerp. On the other hand there are signs on the ground that there is plenty of room for improvement. For instance, the vast majority of dockers in the pool are of Belgian nationality, which means the pool is a poor reflection of society in the city of Antwerp with more than 180 nationalities. Note however that nationality is only one element of diversity. To give an example, somebody may have Belgian nationality but might not have been born in this country.

Already when drawing up the first Sustainability Report an attempt was made to find a suitable methodology to portray diversity among the workforce across the Antwerp port community as a whole. However, the steering group considered that the definition used for the City of Antwerp was not sufficient, as it is mainly based on people’s names.

When drawing up the second Sustainability Report the authors contacted the Sein research institute of the University of Hasselt, on the recommendation of Kauri. This research institute carries out basic research into diversity, equality/inequality and identity. From the discussions it emerged that while the traditional breakdown into allochthonous/autochthonous (i.e. people of Belgian versus non-Belgian origin) appears simple and straightforward, in practice it is fraught with difficulties.

On the other hand Sein was not able to propose a suitable methodology, other than carrying out a full survey of the port sector from the point of view of diversity. The steering group decided that this did not fit the rule of reporting on the basis of information that is already available, with as few additional surveys as possible.

The main conclusion that the initiative-takers behind the Sustainability Report drew from the discussions with Sein was that rather than focusing on measuring the numbers of allochthonous versus autochthonous, it would be better to focus on action programmes specifically aimed at promoting diversity within companies.

One good example is Job Channel, an initiative of the Unizo and Voka employers’ organisations with support from the Flemish government. Job Channel concentrates on among other things promoting diversity within companies by building bridges between the regular job market on the one hand and the allochthonous community and people with a handicap on the other.

A number of companies in the port have a diversity plan for the years 2011-2012-2013. These plans can be subdivided into four types, depending on the degree to which a diversity policy is already implemented within the organisation. The actions and individual action plans of the various companies are confidential and so cannot be made public. However, below are some examples of typical initiatives for the industry, logistics and port sectors:

- Developing a low-threshold induction policy, including “godparenting”
- Producing a drivers’ handbook or training film (as part of the induction and training policy)
- Personnel surveys
- Developing a skills and qualifications policy
- Developing a training policy
• Age-conscious personnel policy
• Management training for foremen
• “Dutch on the workfloor” language classes
• Developing an internship policy aimed at diversity

Men and women... But still mainly men

Most people have a rather clichéd picture of work in the port of Antwerp: heavy, physical and dominated by men. This was once true: a century ago, working in the port was indeed heavy labour. But much has changed since then. Although the physical aspect still plays a role in some sectors of freight handling (physically loading and unloading ships), this is progressively being replaced by a high degree of automation.

But still in 2013 there are more men than women working in the port, in a ratio that deviates significantly from conditions at national and provincial level. Industry and above all the agencies, shipping companies and forwarders present a more mixed picture: in these companies the ratios are closer to the national averages, and there are significantly more women employed.

![Graph showing the ratio of male to female employees in the port of Antwerp from 2006 to 2011.](image)

*Fig. 2.8: Ratio of male/female employees in the port of Antwerp (source: National Bank of Belgium)*
There is no really convincing explanation for the preponderance of men in the port sector. The Parity Committee that represents dock workers (PC 301) has a very masculine tradition, and this factor certainly plays a role. But the development of dock labour has meant that more and more women have been choosing this line of work in the past few years.

Furthermore, port companies have a high proportion of technical and operator jobs. Training for such jobs is mainly followed by male students, and so most new recruits are men.

**Increasingly higher educational level**

The average level of education in the port of Antwerp differs significantly from the national average: the port has a higher level of employees with a secondary school education and fewer with only primary education. There are also slightly more employees with a non-university higher education diploma.
There are significant differences between the maritime and non-maritime sectors. The latter has twice as many people with university degrees and 60% more with a non-university higher education diploma. However the proportion of people with higher education qualifications (university and non-university) has risen in both sectors in recent years.
Port seeks keen wrkr m/f

The availability of sufficiently well trained and motivated employees is an important advantage for the port of Antwerp. It is therefore in the interests of the port to ensure that this supply remains assured in future. But just as in other sectors, companies find themselves forced to wage a "war for talent" in which it is increasingly difficult to fill vacancies. The difficulty is particularly acute for certain key jobs.

Table 2.1: The top 5 trades most in demand by industry and the maritime and logistics sectors in Antwerp over the next two years.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Maritime &amp; logistics sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process operator</td>
<td>General operative</td>
</tr>
<tr>
<td>Maintenance electrician</td>
<td>Forwarder</td>
</tr>
<tr>
<td>Maintenance mechanic</td>
<td>Forklift driver</td>
</tr>
<tr>
<td>Welder</td>
<td>Accountant</td>
</tr>
<tr>
<td>Metal structure erectors</td>
<td>Warehouse operative</td>
</tr>
</tbody>
</table>

Numerous initiatives to assure an adequate supply of new recruits are being taken by companies, acting either individually or collectively (e.g. through their trade associations). When choosing a field of study young people are encouraged to opt for a job in the port, and unemployed people are guided towards available port work. In the past there tended to be lack of coordination between the various initiatives, reducing their effectiveness as a result. Then in 2012 a number of players combined their efforts and set up Talentenstroom (Talent
Stream). This initiative seeks to assure an adequate and sustainable supply of recruits for port employment.
BACKGROUND: LABOUR AND SOCIAL PROTECTION IN THE PORT

Setting a number of ground rules covering collective labour relations between employer and employee is a European tradition. In Belgium too, many aspects are covered by employment law. Indeed Belgium historically played a leading role in setting various international standards in industrial relations, banning child labour, prohibiting forced labour etc. In modern times the International Labour Organisation (ILO) plays a crucial role. These ground rules naturally also apply in the port of Antwerp, where there are more than 2,000 companies operating. Their employees fall under an all-embracing legal framework that governs relations between employer and employee, with structured dialogue concerning pay and working conditions.

The applicable pay and working conditions for these companies are defined in collective labour agreements (CLAs). A CLA is an agreement between one or more employees' organisations on the one hand and one or employers' organisations or one or more employers on the other. It governs individual and collective relations between employers and employees in a particular company or sector, and defines the rights and obligations of the contracting parties.

The great majority of CLAs are made within parity committees (so called because employers and employees are equally represented). These bodies were set up under the terms of the Act of 5 December 1968 on collective labour agreements and parity committees. They are made up of an equal number of representatives of employers' and employees' organisations, and there is one for each branch of industry; companies with similar activities are grouped together so that appropriate regulations can be drawn up to suit the working conditions. In addition to making CLAs, the parity committees play a central role in preventing or settling industrial disputes. They also advise the government, the National Labour Council and the Central Economic Council.

As of 1 January 2011 there were 102 parity committees and 70 parity sub-committees in Belgium. In the port of Antwerp there are 42 parity committees and 18 parity sub-committees, which points to the wide range of activities within the port.

Some organisations (and their employees) do not belong to a particular parity committee. This applies e.g. to people working in the various levels of government (federal, regional, provincial and local) or the dependent government bodies, as well as those in public utilities. Examples within the port of Antwerp include the Port Authority itself, as well as other public bodies such as the Administration of Customs & Excise, the Pilotage etc. Such bodies are covered by the regulations laid down by the National Labour Council. Depending on the status of the employees (tenured or contracted), the Employment Act of 16 March 1971 may also apply. In the specific case of Antwerp Port Authority the provisions of the National Labour Council do not apply. Instead, the Port Authority has its own "social consultation" framework, with collective agreements being made under the terms of the Act of 1874 governing relations between government and labour unions. The Port Authority is also subject to the provisions of the Employment Act of 16 March 1971 in its capacity as a legal entity. Finally, the Port Decree has a regulatory character.

The notice periods and conditions for contracted employees are laid down in the Act of 3 July 1978 governing contracts of employment. If a private enterprise wishes to carry out mass
dismissals then a specific procedure for contracted employees has to be followed. These provisions are incorporated in CLAs and in legislation. If a private company fails to comply with this procedure then sanctions may be applied. In the public sector the status of tenured employee still exists (at least for the timebeing). This applies to the Port Authority, which has both contracted and tenured employees. Notice periods for contracted employees in the public sector – as in the private sector – are laid down in Section III of the Labour Agreements Act of 3 July 1978. This of course does not apply to tenured employees, who are permanently appointed.

Belgium played a leading role within the ILO (International Labour Organisation) from the very early days. Indeed it was one of the founding members in 1919, so it is hardly surprising that many ILO conventions have been ratified by Belgium. For instance, on 23 October 1951 Belgium ratified the ILO convention on the Right of Freedom of Association and the Right to Organise (ILO Convention N° 87, 1948), and on 10 December 1953 it ratified the convention on the Right to Collective Bargaining (ILO Convention N° 98, 1949). The practical implementation of these conventions and their transposition into Belgian law are contained in CLA N° 5, in which the signatory organisations declare that the essential conditions governing the authority and working procedures of the union representatives are laid down in this CLA. These comprise among other things mutual respect, freedom of association, industrial relations procedures, the election or appointment of union representatives and the prevention or settlement of collective disputes. In implementation of the ILO convention on the Minimum Age of Employment (ILO Convention N° 138, 1970), Belgium set the minimum age of employment at 15 in 1988. Belgium labour law specifies that it is forbidden to let children (minors aged below 15 or still in full-time education) do any type of work or other activity not associated with their education or training. It further specifies that it is forbidden under any circumstances for children to carry out any activity that can adversely affect their educational, intellectual or social development, or that threatens their physical, psychological or moral integrity, or which is deleterious to any aspect of their welfare. Finally, Belgium also ratified the ILO convention banning Forced Labour (ILO Convention N° 29, 1930) on 20 January 1944, and the ILO convention concerning the Abolition of Forced Labour (ILO Convention N° 105, 1957) on 23 January 1961. As part of the fight against human trafficking, Belgian ratified the Treaty of the Council of Europe against human trafficking (2005) on 27 April 2009, and provisions concerning human traffic were added to criminal law.

In case of unemployment, illness or disability employees in Belgium are able to claim benefit. They also receive a state pension. All benefits available to full-time employees are also available to part-time employees. It goes without saying, however, that these benefits depend on contributions, and a minimum number of days have to be worked. Both full-time and part-time employees are entitled to holidays, as well as leave of absence for career breaks or other special conditions. The right to parental leave, palliative leave or leave to care for a seriously ill or incapacitated family member similarly does not depend on the degree of employment. On the other hand the degree of employment may determine just how much leave the employee is entitled to.

This equality of the right to benefits reflects the principle of non-discrimination between full-time and part-time employees, which states that part-time employees must not be treated less favourably, and further that a difference in treatment is only possible if there is an
objective reason for it. This principle is laid down in EU Directive 97/81/EC and has been transposed into Belgian law (Act of 5 March 2002).
Anyone who walks from the Scheldt quays towards the Town Hall can hardly miss it: the bronze figure of an Antwerp docker stands gazing calmly into the distance. The statue by Constantin Meunier pays homage to the important contribution made by the Antwerp dock workers to the growth and development of the port.

Loading and unloading seagoing ships has a long history in Antwerp, going back centuries to the days of sailing ships when the work was done using primitive cranes and lots of muscle power, both human and animal. With the introduction of steam and then diesel-engined ships in the second half of the 19th centuries there was a consequent rise in the speed with which ships had to be handled. There was also an increase in specialisation, with freight handling and stevedoring companies calling upon specialist labour: dockers experienced in handling certain types of cargo.

Relations between employer and employees were uneven to say the least: agreements on pay and working conditions frequently had to be won by striking. Not until after the First World War was a system of regulated parity consultation introduced: since then, employers’ and employees’ organisations reach structural agreements governing pay and working conditions in the port.

The dockers for their part obtained their own special status in 1929, when it was laid down that registered dockers had to be given priority whenever an employer wished to hire people for loading or unloading a ship. Traditionally, the two parties made a contract of employment for a single day. Dockers started queuing for employment early in the morning, first in the street and then from 1929 onwards increasingly in dedicated hiring rooms. The contract of employment expired at the end of the day. Such a system was necessary because of the great variations in the demand for labour from one day to the next, due to the fluctuation of economic activity in the port.

In times of recession and declining volumes this meant that dockers were unemployed more frequently than people working in other industries. Financial security was therefore an important demand for dockers and their employees' organisation up until the Second World War. The Living Wage Fund was set up in 1946 to guarantee a supplement on top of the statutory unemployment benefit in case of involuntary unemployment (when the docker turned up for work but didn’t get a job).

This system still applies in 2013, as does the system of registered dock workers, under which only registered dockers may carry out dock work within the port area.

After the Second World War there were less fluctuations in economic activity in the port, with the exception of the crisis year of 2009. Accordingly there was a more constant demand for dock labour, with fewer peaks and troughs, and the port organisation gradually adapted to this new situation. A system of guaranteed employment and pay was introduced in 1964 for supervisory personnel and foremen. This meant that such persons worked for the same company every day.

With the increasing demand for specialisation and the more regular calls by seagoing ships – certainly after the introduction of container liners – the link between individual dockers and
individual companies became closer. Recent research shows that more than 85% of dockers work for not more than two companies. In fact, nearly 70% of dockers work for the same employer all year round. Legally speaking the vast majority of them still have the status of day labourer, but in practice the relationship is frequently that of a contract for an unlimited period with a single employer.

Fig. 2.14: Degree of attachment of dock workers to a particular company in the port of Antwerp during 2011 (source: CEPA)
Talentenstroom (Talent Stream)

Thanks to the port there is a high concentration of logistics activities in the Antwerp area. Behind the more visible port activities such as loading and unloading ships there is a less visible but nevertheless huge and complex process of moving goods internationally from producer to consumer.

To keep this process flowing smoothly the sector needs a constant supply of well-trained employees. Furthermore technical progress and globalisation lead to increasing demand for jobs with higher qualifications, making it even more difficult to find suitable candidates.

Not enough young people are opting for logistics as their field of study, and work-seekers are simply not finding their way to these jobs. The factor “out of sight is out of mind” certainly also plays a role here.

The challenge is therefore very difficult. Attracting and keeping well-trained personnel is crucial not only for companies in and around the port, but also for education and the job market in Antwerp.

As has already been mentioned, many initiatives have been set up in the past but all too often there was no coordination between them. This sad state of affairs has been recognised by all players in the port community, and lessons have been drawn. On 24 September 2012 the efforts and know-how of the various initiatives were combined in Talentenstroom. This new collaboration between the City of Antwerp, the Flemish Department for Job Placement & Vocational Training, Antwerp Port Authority, Logos (training fund for employees in international trade, transport & logistics), Alfaport and the Province of Antwerp is aimed at improving the image of the sector and offering sufficient training opportunities so as to provide more recruits for these jobs.

Talentenstroom brings people and resources together under one roof to offer an all-in service for job-seekers, employers, schools and colleges. Thanks to this joint approach, existing initiatives can be developed further and new ones started. Talentenstroom concentrates on:

- promoting the image of the sector
- guiding job-seekers towards vacancies or new, sector-specific training courses
- ensuring a closer fit between education and the job market.

Examples of specific initiatives include the following:

- support for companies in filling vacancies and collaborating with schools and colleges. HR events are organised to inform them about particular subjects such as sandwich courses and employment measures. New tailor-made training courses are also developed.
- job-seekers are informed on a wider scale about the sector and the various jobs available within it. They are also guided towards vocational courses, and receive help in looking for vacancies in the sector.
- schools can make use of teaching material that is already available, and can participate in Port Activity Days for primary and secondary school pupils. They are also encouraged to develop collaboration with companies (through internships and sandwich courses).
Talentenstroom shares these important challenges with Talentenfabriek (Talent Factory) and Talentenwerf (Talent Construction Site). The latter focus respectively on the chemical and metal industries on the one hand and the construction industry on the other, seeking synergies wherever possible.

Finally, some videos have been made with the aim of encouraging companies to find other ways of filling problem vacancies. They can be viewed here.
Knowledge and innovative investments

The Antwerp port community can only achieve its ambition to be the front runner in the field of sustainability if it makes sufficient investments in knowledge development and innovative processes. This is possible through both own research and development as by cooperation with scientific and knowledge centres which specialise in the port system.

The port community supports this accumulation of knowledge and innovation through the subsidising of research projects concerning prosperity, planet and people in the follow sectors: (port) transport, logistics, management, economy, integrated water management, energy efficiency, environment and social engagement with and participation in the port.

This chapter gives an overview of the innovative investments of the port community (prosperity and planet) and the measure in which training is offered (people).

The “Sustainable Enterprise Guide” section of this website contains examples of innovative initiatives by Antwerp port companies.
Prosperity

How much does the port community in knowledge development and innovation? Which sectors take the lead in this, and what is the ratio in the total investment budget?

General investments

Companies make considerable investments in the port of Antwerp. However, since the top year 2008 investments have dropped year by year. The last three years total investments fluctuated around 2.5 billion euro.

The investments are equally spread over the various sectors. Investments by the big shipping companies show large fluctuations, and are not always linked to the Antwerp port area. The top was reached in 2008. After the 2009 crisis the investments by shipping companies were markedly reduced.

The fluctuations in the other sectors are smaller. In 2011 we saw a return to an increase of the investments, which was the largest in the freight handling sector.

![Investments by various sectors active in the port of Antwerp](source: National Bank of Belgium, working paper 242)

Investments in research and development

Investments in research and development (R&D) represent only 0.7 % of total investments. The employment costs of employees working at the R&D departments of the companies have however not been included. Furthermore several port enterprises also have R&D departments in other parts of the country. The real contribution is therefore larger than 0.7 %.
After a plateau in R&D investments from 2008 up to and including 2010, a clear increase was noted in 2011. This increase was nearly fully due to the industry's expenditure for R&D in industry. This sector also accounts for more than 75% of total R&D investments.
Planet

Which investments in R&D are we actually talking about?

Part of the company’s investments is aimed at a reduction of the environmental impact of the activities. The reduction of the emissions by certain sources (see for instance the text about LNG), air and water quality, the reduction of the use of natural resources and nuisance in and around the port. Energy efficient production and the use of sustainable energy sources is also an important point of attention.

Sustainable energy

The port community endeavours to make the switch to sustainable energy sources. Combined heat and power (cogeneration) remains the frontrunner in this domain and continues to show an increase. Renewable energy also saw a growth in 2011 which can be fully ascribed to a growing number of installed solar panels. In the mean time preparations are underway for the construction of wind turbines on both the Left and the Right Bank (see frame Wind farm).

The cogeneration capacity installed in 2010 can supply 11.40% of the energy use of the port area during that year; the renewable energy can supply 1.81%. The effective contribution was lower, as the installations not always give a full time supply, for instance because of cloudiness or lack of wind.
People

Investing in knowledge and development means investing in training and education. How many courses are the employees of the port of Antwerp enrolled in?

Hours of training

Knowledge and innovation require the presence of well qualified personnel. This means that there should be a good balance between the competences of graduates and jobseekers and the competences required in the Antwerp port employment market. This is why the port community, in conjunction with the sectoral training funds, invests in offering courses for jobseekers, in the supplementary training of graduates and in the broadening of the competences of its own employees. Furthermore a large number of companies offer internal job training.

In the port the number of formal hours of training of employees, both in absolute as in relative terms (number of hours of training per employee) increased until 2008. A sharp decrease caused by the crisis year 2009 continued in 2010. A slight recovery was visible in 2011, when the number of hours of training per employee increased to 18 hours per annum.

In the non-maritime sector the amount of training hours is significantly higher than in the maritime sector.

The graphs attached show the hours of formal training initiatives. It is not yet known whether the decrease in 2009 led to an increase of the number of informal training hours and the ratio of informal training hours is unknown.

See for instance text about "talent stream".
Cooperation

Cooperation between the Antwerp port community and knowledge centres results in the development and consolidation of (international) expertise. In this way the port can be a frontrunner concerning the preservation of the economy.

There is a longstanding cooperation with research groups of academic institutions such as:

- **University of Antwerp:**
  - Institute of Transport and Maritime Management Antwerp (ITMMA), specialised in maritime and logistic subjects
  - Department Transport and Regional Economy (TPR), specialised in transport and logistics
  - Institute for the Environment and Sustainable Development (IMDO), offering education around the environment and sustainability (environment coordinator)
  - Research group Ecosystem management (ECOBE), expertise in integrated and sustainable management of the Scheldt-estuary and nature management
  - Research group Systemic Physiological and Ecotoxicological Research (SPHERE), expertise in the ecological impact of dock water (soil) contamination
  - Department of sociology, expertise in the interaction of the port with the community
  - Antwerp Management School (AMS), offering education for safety and sustainability (safety coordinator)

- **University of Ghent:**
  - Maritime Institute, specialised in international maritime law, national and international environmental law, national and international preservation law, transport law the policy aspects linked to these
- **Department Maritime Engineering**, concentrating on the design, construction, propulsion, functioning and the continuing operation of maritime systems such as ships and other floating constructions

- **Antwerp Maritime Academy**: education in the nautical sciences and marine engineering as preparation for a maritime career, both at sea as on land.

This cooperation includes the exchange of data and the joint undertaking of research and educational projects.

Several professorships are supported by the port community:

- GHA Chair Safety sciences
- BASF Chair Safety sciences
- CEPA Chair Safety sciences
- BASF-Deloitte Chair Sustainability

Seaports also cooperate with each other in the field of sustainability: see the frame ‘Sustainable seaports’.
**SUSTAINABLE SEAPORTS**

The ports of Antwerp, Ghent, Ostend, Terneuzen/Vlissingen and Zeebrugge have been cooperating with the Interreg-project ‘Sustainable seaports’ on sustainable development since 2013. A first track is the development of a ‘learning network’ which not only supplies inspiration, but which also allows for exploring opportunities in depth and the sharing of knowledge. This should lead to increased efficiency and action for a more sustainable exploitation and development of the seaports and their region. An Internet platform supports the learning platform.

A second track is research. The port authorities will jointly undertake a feasibility study into an environment related database for maritime traffic. Besides, in the ports of Ghent, Ostend, Vlissingen/Terneuzen and Zeebrugge research is done around a priority theme concerning sustainable energy exploitation of the seaport areas. These partial research projects will form the basis of the setting up of the learning network.

All this should lead to an increased sustainability of the exploitation and development of the ports, and in this way contribute to a strong embedding of the port activities in the region, which in turn will lead to guaranteeing prosperity in the long term.

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**WIND FARM**

Port areas are the locations of choice for the installation of large scale wind farms for both the Flemish Wind Power Association (VWEA) and the Flemish minister for Energy. The port of Antwerp already has two concrete projects.

The first two wind turbines appeared in 2004 in the northern part of the port area. These two turbines are part of a wind farm on the Right Bank which will have at least 38 wind turbines. The project should generate 90 megawatt electricity, sufficient to supply some 74,000 families. The extension of this wind farm will be accelerated in the period 2014-2020.

The Port Authority and the Company Left Scheldt Bank, together with private partner NV GEHA, will assure the development on the Left Bank through project development company Wind aan de Stroom. The wind farm could develop into the largest on shore wind farm in Belgium, as the level of ambition is at about 50 wind turbines (including those belonging to Katoennatie). The electricity generated should supply the annual requirements of 100,000 to 120,000 families. In the second half of 2014 Wind aan de Stroom will start constructing the first wind turbines.
**LIQUEFIED NATURAL GAS**

For shipping companies LNG as a marine fuel is an excellent solution to comply with the various emission regulations which come into force from 2015 (a.o. those of the International Maritime Organization (IMO)). The use of LNG as marine fuel results in a significant reduction in the emission of sulphur oxides, nitrogen oxides, CO$_2$ and small particles in comparison with traditional marine fuels such as heavy fuel oil and diesel. For this reason LNG is considered as the marine fuel of the future.

A ship powered by LNG reduces its NOx emissions by 85 to 90% and its emissions of SOx and small particles by almost 100% in comparison to the usual marine fuels. Furthermore a significant reduction of the CO$_2$ emissions is achieved (taking into consideration the methane slip of the LNG engines currently available).

*LNG in the port of Antwerp*

The Port Authority intends that all ships can bunker LNG in the port of Antwerp by 2015. However, a logistics chain for LNG and the corresponding infrastructure are exceedingly costly. For this reason, and after a European tender, the Port Authority decided to work closely together with EXMAR for the development of an LNG bunker ship and the necessary studies. The Authority also wishes to provide flexible LNG bunker solutions such as for instance LNG truck-to-ship bunkering and a temporary LNG storage terminal in the port area.

The Argonon, the first ever LNG powered barge in the world, executed the first LNG-truck-to-ship bunkering in the Antwerp port area at the end of 2012. In January 2013 the Argonon executed this procedure twice in Antwerp.

*LNG storage*

In order to provide a flexible LNG supply for the ships, ‘intermediate’ storage and transhipment is required. At this moment the possibilities for LNG storage and transhipment on both the Right and the Left bank are gradually being mapped. Three locations have been included in the study which could possibly serve as structural location for the execution of truck-to-ship bunkering and fixed bunker infrastructure for inland shipping. The results of this study should be available in February 2014.

*International pioneering role*

The Port Authority is coordinator of the WPCI (World Ports Climate Initiative) LNG working group of the IAPH (International Association of Ports and Harbours) since the end of last year. The main aim of this working group is the standardisation of (port) regulations concerning LNG.

At the end of 2012 a draft truck-to-ship bunker checklist was delivered which is currently being used for validation in the ports of Antwerp, Rotterdam and Stockholm.

It is clear that this working group generates interests in other ports and industrial partners, witness the many questions the Port Authority, as coordinator, has received.
INDUSTRIAL WASTE HEAT

After the MIP2 study demonstrated that recovering waste heat and using it for district heating is feasible provided certain conditions are met, attention in 2013 focused on gathering existing know-how in Flemish and Antwerp heating policy.

The City is currently working on a concession for a heating network on the Nieuw Zuid site, with a view to eventually creating a network that will act as a market for waste heat recovered from the port. This is an important first step towards setting up a municipal heating market.

Using waste heat for district heating is also included in the new EU Energy Efficiency directive which requires Member States to carry out cost/benefit analyses and, if the results are favourable, to make the necessary preparations for heating networks to be built.

In Flanders, policy also focuses increasingly on making use of waste heat. A number of executive decrees have been approved for subsidies for heat recovery and setting up heating networks, and the three majority parties in the Flemish Parliament have submitted a joint resolution requesting the Flemish Government to draw up a district heating policy for Flanders.

The conclusions and recommendations of the MIP3 feasibility study for district heating in Antwerp that was launched in 2012 in collaboration with among others the City of Antwerp will be issued from the end of 2013 onwards.
Mobility

A port cannot function without its environs. Port, region and hinterland together make up a trinity through a complex network of economic, logistic, social and societal relations which are mutually connected by functional transport. In the Port of Antwerp this can very distinctly be seen.

Its inland location in the industrial, demographic and commercial heart of North-Western Europe gives a vast number of possibilities to significantly limit overland transport. Bundling freight streams in a world port such as Antwerp generates sufficient critical mass and, when combined with the excellent tri-modal accessibility, offers many chances for a sustainable mobility policy. Of course the ultimate requirement is that goods can be supplied and retrieved without any problems from the maritime headland to the continental hinterland.

This chapter focuses on the numerous possibilities offered by a sea port, in this case the port of Antwerp, in combination with inland navigation, rail, underground and road transport, and the relations between all these modes of transport (prosperity). Another part will deal with the environmental impact of the transport (planet) including the sustainable mobility projects which are offered to the employees in the port (people).

Prosperity

Sea, inland navigation, railways, pipelines, motorways: how many goods are transported in these ways and in which way are sustainable means of transport used in the totality of port activities?

Hectic junction with many exits

As sea port Antwerp is an important junction for international trade. Each year some 15,000 ocean-going vessels and 57,000 barges moor in the port.

In recent years there also has been an important increase in scale of the ocean-going vessels and barges: in three years the average gross tonnage (GT) of the ocean-going vessels calling at Antwerp has increased by 15 %. The number of the largest ocean-going vessels (+ 13,000 TEU) has also substantially increased.
Not only is the tonnage of freight in the second largest port of Europe impressive, these goods then smoothly, safely and quickly find their way to the European hinterland. To achieve this, the port offers various possibilities.

Antwerp is the second largest rail port in Europe, with more than 1,000 kilometre tracks, where 250 freight trains are loaded and unloaded per day. Every day thousands of trucks enter and leave the port.

Furthermore, every month the port of Antwerp offers 280 short sea departures to more than 150 destinations.

Antwerp’s location on the European junction of pipelines and the pipeline network of 1,000 kilometre within the port ensure that massive amounts of liquid goods can be transported in this environment friendly way.
Antwerp’s industry has an important role in this freight transport: it contributes some 160 million ton on an annual basis. This includes both the supplying of raw products and the transport of finished products, using all means of transport. In industry the pipeline transport handles about half of the total volume transported. This sector even accounts for 88% of the transport of industrial goods in the port through the pipeline network. This is an impressive number, which means that goods and products arrive at their destination in a safe and less environmentally impacting way.

**Sustainable solutions**

The port community creates an important impetus to the search for sustainable solutions for the mobility issues because of the enormous cluster effects. Currently about half of the goods are transported to and from the hinterland using inland navigation and railways.

From the sustainability point of view it is therefore important to increase the use of these sustainable modes of transport. In order to let them achieve a larger market share, it is extremely important to bundle traffic within the port area and freight in the hinterland. That is the reason a number of projects were started which should make the transport within the port more efficient, cheaper and more sustainable in this way.

An electronic registration and booking system was developed for the container inland navigation (BTS, Barge Traffic System) which allows bargees to announce their arrival to the terminals. This system will in time lead to a port-wide planning system which will reduce waiting times to a minimum.
Since 2010 the port of Antwerp has at its disposal a small fleet of five barges which call at the various container terminals in the port. The flagship is the Premium Barge which guarantees a daily, fixed inland connection between the most important terminals. Because of the punctuality of this service containers must not be registered in advance. Due to the success of this Premium Barge a second ‘run’ will be started in the near future.

Initiatives are also underway for the railways in order to develop an open and cost efficient distribution system for railway containers. By founding Railport Antwerp the Port Authority, Alfaport and essenscia (the federation of the chemical industry and life sciences) hope to meet the requirement for a neutral rail operator who first and foremost will make the spread out traffic within the port more efficient.

The bundling of maritime and continental freight streams to the hinterland is also being addressed. The ultimate aim is to substantially increase the frequency as well as the number of destinations from and to the hinterland locations. The development of new, innovative middle distance (100 to 350km) railway projects is also receiving special attention, together with the setting up of an internal distribution system in the port for single wagon loads.

And then of course we have the road transport. The mobility in and around the port should be increased by specific projects. For instance by making use of dynamic road signage the port traffic can be efficiently directed to the main road network. Service centres are also being built for truck drivers, providing amenities including actual information concerning the road network. Within the Municipal Antwerp Port Authority a project is being started to study in which way the road transport sector could best be supplied with actual and company relevant information.

A web app which will allow road transporters to request re-use of an empty container has recently been developed. Combined with the expansion of a truck hub this should markedly reduce the number of empty trucks, which not only improves mobility but which also has a positive impact on the environment.

The project Logistic Park Waasland illustrates that all parties within the port community make efforts to solve the road transport problems. The Maatschappij Linkerscheldeoever (the Left Scheldt Bank Company) is currently investigating how multi-modality can be sustainably anchored in the Logistic Park Waasland (LPW). The companies themselves took the initiative to map the freight streams in the logistic park and to investigate how various means of transport can be combined in order to transport freight streams in as sustainable a way as possible.

Modal split goods transport

The usage of the various means of transport to the hinterland is called the modal split. The evolution of this modal split indicates how the hinterland transport goes and how much the non-road means of transport (rail, inland navigation, pipeline) gain in importance.

Road transport accounts for less than 50% of all movements, apart from containers (56%). The modal split is slowly evolving towards non-road means of transport. Especially the share of inland navigation in the freight volume of the port of Antwerp is increasing rapidly. The container traffic is the leader in this. More than a third of the container volume in Antwerp is now transported in this way.
In order to stimulate the railways and to offer more possibilities, volume bundling into a critical mass is essential. It is only by combining smaller volumes of different companies that the railway can be seen to be an alternative, and can competitive pricing be achieved.

The Port Authority has worked in a more generic way, together with the various parties, to establish two specific Master plans (rail and inland navigation) which should especially make possible the bundling and direction of freight streams to the railway and inland navigation.

Fig. 4.3: The distribution of delivery and removal of the different modes of transport, known as modal split (source: PGA)
Planet

What’s the environmental impact of the transport, and how does Antwerp score on this point?

The inland location is more environment friendly

The railway and inland navigations can be used as an alternative to road transport thanks to the geographical location of the port of Antwerp. Therefore Antwerp scores better on the front of environment friendliness than the competing sea ports. Fig. 4.4 shows the areas for which the port of Antwerp is the better choice for import or export of goods when CO$_2$ emissions are taken into account.

![Map showing environmental impact](image)

Fig. 4.4: Comparison CO$_2$ emissions for the transport of 150,000 TEU to a location (source: POA). Optimization – road distance Antwerp + Zeebrugge compared to other ports.

Clean ships get a discount

As early as July 2011 the port of Antwerp introduced the Environmental Ship Index (ESI). The ESI is an initiative of five ports and fits within the framework of the World Ports Climate Initiative (WPCI). In this way ports wish to reward environmentally friendly vessels which score better than the legally required minimum concerning emissions of sulphur dioxide, nitrogen dioxide and carbon dioxide. Furthermore, ships which are equipped with a coupling plant for onshore electricity receive extra points, which improve their ESI score even more. The maximum ESI score is 100.

At the end of 2012 more than 1,700 vessels were already registered on the ESI website.
In the port of Antwerp all ESI registered ocean going vessels with a score higher than 31 can benefit from a discount of 10% on the tonnage dues. In 2012 the Port Authority granted roughly 500,000 euro ESI discounts.
People

Public transport is a sustainable solution for mobility. Companies and authorities strongly encourage this in the port area!

Public transport

For instance, the i-bus provides for the commuting of staff of the participating industrial companies on the Right Bank. The I-Bus allows almost all employees living in the region to commute. More than 2,900 people concerned already use this. Daily 41 routes are serviced: 29 busses serve the day shifts (5 working days) and 12 busses serve the daily three shift workers. This amounts to 130 journeys per day in order to transport employees in working day shifts or team shifts to and from their place of work.

The project ‘Linkeroeverpendel’, to transport employees to the companies in the port are on the Left Bank started in October 2009.

At the end of 2010 some 100 employees used one of the six bus routes in the Waasland port on a daily basis. In 2011 a seventh route was added. All these routes offer various departure times, for shift as well as day hours, seven days a week.

A total of 24 bus stops are served, and 130 companies use the service. 106,000 people already used the commuting bus to go to work.

Other companies also organise collective transport. Furthermore a special and free bus service between the port area and Antwerp town centre is organised for mariners. The public transport company also has a number of bus lines which connect to the port area.
By bike

In order to make commuting more sustainable there are investments in new cycle paths in the port area.

The cycling infrastructure along the Scheldelaan was judged to be good by the cyclists in Antwerp (source: fietsrapport 2012, fietsersbond Antwerpen).
Safety and security

The port of Antwerp takes many initiatives to assure safety and security in the port, both in terms of the health and safety of employees and in terms of a safe and secure port.

A safe and healthy work environment, appropriate to the specific activities within the port, has absolute priority. Employees who work in such an environment also have fewer absences due to illness, which in turn has a positive impact on the “economic health” of the port companies.

This chapter focuses on the various measures taken to ensure safety and security within the port, so that everyone can concentrate on economic growth (Prosperity). It then looks at travel between home and work, and the various initiatives to make it safer. Finally we consider accident prevention measures, industrial accidents and absence due to illness (People).

Prosperity

A safe, secure port is part of everyone’s responsibility. Statutory measures such as the ISPS Code have led to a uniform identity card for the port – the Alfapass – and a Port Security Plan has been introduced. Further, a “Serious Game” has been developed to make port users more alert, and so on.

ISPS and Alfapass

The attacks of 11 September 2001 led to much stricter security measures being introduced. The International Ship and Port facility Security (ISPS) Code (ISPS) drawn up by the International Maritime Organization (IMO) came into force on 1 July 2004. This Code imposes a number of obligations concerning safety and security. Among other things it specifies that all waterfront terminals served by international shipping must have an access control system. In 2012 there were 83 such facilities in Antwerp, where there is interaction between international shipping traffic and the port or terminals served by international shipping that meet the requirements of the ISPS Code (see box text: “Secure port”).

At Belgian level there is an additional obligation for all persons to be registered before they can gain access to an ISPS-secured location. In response to this requirement the Antwerp port community developed the Alfapass Card Management System, with an identity card carrying the personal details of the holder. The terminals themselves decide whether to grant access rights to Alfapass holders, and also which access rights to grant. The great advantage of this ID card is that it is a uniform system covering the whole of the port of Antwerp. Visitors who do not have an Alfapass must pay for a separate visitor’s card for each ISPS facility that they wish to visit.

The number of Alfapass cards issued has increased slightly since 2011 and now fluctuates around 36,200. Most terminals have an access control system for the Alfapass.

Raising alertness

Port users too have their own contribution to make in helping to assure a safe and secure port. To raise awareness among port users the Port Authority has developed a “Serious
Game." More details of this can be found in the box text “Serious Game for improving security in the port.”

**Port-wide security**

In addition to the security measures under the terms of the ISPS Code, the Port Authority has a Security Plan covering the entire port area. It also looks for points of contact with other security projects. Thus, particular attention was paid to security as part of the “Luithagen sustainable site management” project. More details of this can be found in the box text “The Luithagen example”.

**Authorised Economic Operator (AEO)**

As of 2008, AEO certification is awarded by the Customs authorities to companies engaged in international trade that are able to demonstrate that they meet a number of security criteria. These criteria are based on the “Community Customs Code” and its various implementing decrees.

The AEO certificate is “gold standard” for reliability in international trade and applies throughout the European Union. As such it offers a number of advantages for companies engaged in international trade. For example, their consignments are not inspected so strictly at border crossings, thus affording time savings.

There are three types of AEO certification:

- AEO Customs procedures certificate (AEOC)
- AEO security certificate (AEOS)
- The full AEO certificate (AEOF)

The number of certificates issued is shown in the graphic below. The number is steadily rising, with most certificates being issued in Antwerp.
Undesired passengers

The Customs service has fixed and mobile scanners to check for among other things the presence of undesired passengers. Elsewhere within the port too, there are strict measures to prevent undesired passengers. A distinction is made between stowaways (people who try to enter the country illegally by hiding on board a ship), and illegals (who try to leave the country illegally on board a ship). The numbers fluctuate greatly from one year to the next.

Fig. 5.1: N° of AEO certificates issued in Belgium (source: Antwerp Port Authority)

Fig. 5.2: Number of illegals and stowaways recorded by the Shipping Police (in 2009 the recording of illegals was incomplete) (source: Shipping Police)
People

The safety of employees in the port area concerns travel between home and work, the repercussions in terms of absence due to illness, and raising the level of safety on the workfloor by training and accident prevention.

Safe travel between home and work

In addition to collective traffic between home and work organised for employees by public and private operators (see the chapter on Mobility), the main methods of getting to and from work are by car and by bicycle.

Public transport within the port area is limited.

From a survey by the Dutch agency TNO (see box text: “Why promote cycling for sustainable home-work travel”) it can be seen that cycling offers significant advantages for employees and employers alike.

However, the accident figures demonstrate the serious consequences that road accidents can have for people riding bicycles, mopeds or motorbikes, and thus also for the employer.

The risks for each method of transport in 2012 were calculated on the basis of figures from 199 companies and/or sites in the Antwerp port area, together accounting for 27,000 employees. The number and seriousness of accidents in travel between home and work (including accidents with damage to property as well as those resulting in injury) were related to the seriousness (level of danger) and the distance travelled (the level of exposure). The results show clearly that two-wheelers are by far the most risky mode of travel between home and work.

![Diagram showing the number of lost days and number of accidents per million km for different modes of transport.]

Fig. 5.3: Indicator of safe home/work travel for 2012 (source: Antwerp Port Authority)
To counter this, Antwerp Port Authority and eight other parties signed a declaration of intent at the end of 2012 for “Safe travel between home and work in the Antwerp port area.” The eight other parties are: Alfaport, VOKA (Antwerp-Waasland Chamber of Commerce), VIBNA (North-Antwerp association of industrial companies), BASF Antwerp, VSW (Flemish traffic study institute), BIVV (Belgian institute for traffic safety), the Province of Antwerp and the City of Antwerp. Together with the Port Authority they seek to improve the safety of travel between home and work in the Antwerp port area. Here we have yet another example of joint action by public and private players.

To achieve this objective, seven initiatives were launched:

1. Gather and exchange information about safety of travel between home and work, and examine methods of raising the level of safety,
2. Develop a digital platform to promote safe cycling, including promotional material (web page, flyers and brochures),
3. Produce a map of the port showing safe cycle paths, and keep it up to date,
4. Set up a centre where infrastructure problems can be reported, as necessary,
5. Make a film about safe cycling in which a “Well-known cyclist” points to all the possible dangers (speed, visibility, simple accidents, riding in a group, etc.), with active support from the CEOs of leading port companies,
6. Enable companies to offer in-house training and coaching in traffic safety,
7. Actively monitor the indicator “Accidents in travel between home and work in the Antwerp port area” so as to measure the effects of the campaign and tweak it where necessary.

**Accident prevention**

Companies in the port of Antwerp invest specifically in preventing accidents at work. The accident prevention policy for port employees is laid down by CEPA (port of Antwerp employers’ organisation) in close collaboration with the port companies. The policy is aimed at preventing incidents that can cause bodily, material or economic harm to port employees.

However, CEPA also considers prevention policy in the wider sense of improving the welfare of all those concerned in the port community; it therefore pays attention to the long-term health of port employees, by e.g. issuing guidelines for ergonomics and measuring the conditions of work. In recent years more attention has also been paid to the mental and social health of port employees, for example by taking account of the psycho-social aspects of work.

To put all of this into practice CEPA has set up a “Prevention & Protection” department to supply accurate, up-to-date and user-friendly information and training on the subject of safety. This can range from individual audits and recommendations for a particular port company, to making a wide range of safety information systems available, for instance the Safety Instruction Cards (SICs).

In addition CEPA provides safety training, with internal courses, study afternoons etc.

The “Take 5” concept is a good of example of where accident prevention and safety converge. The principle is simple: always take five minutes before starting work to check that everything is in order. This enables all those involved to go through the day-to-day safety instructions in the same, structured way.
The concept is also used by other organisations and is based on three rules:

- Work must not start until all conditions are safe enough.
- If an unsafe work situation is found (before or during the shift), the necessary measures must be taken to exclude or limit the risk. If the situation changes during the shift, then the safety level must be re-examined and any necessary measures taken.
- Communicate with team members about risks and prevention measures.

Special courses in this Take 5 concept are organised for port employees, with the aim of applying it generally.

CEPA has its own motivated, highly trained and experienced safety experts. These experts continually keep their skills up to date by means of study days and specialist courses. Each safety expert also has a particular specialisation related to one of eight particular target groups or fields of safety, namely: container terminals, breakbulk, cooperage, warehouses, technical services, Seveso, ro/ro and bulk.

Practical safety courses are also organised in the port. See also the box text: “ISEC: tailor-made safety courses for industry.”

Safety at work and absence due to illness

The health and safety of workers are a major concern for the port, which strives to offer its employees a rewarding job in a healthy, safe environment.

The results of the many safety efforts on the part of CEPA (Joint Internal Safety Department), the Port Authority, the port companies and all other players involved are reflected in the number of industrial accidents.

The number of industrial accidents is falling steadily, both in absolute and in relative terms (number of accidents in relation to the number of jobs done), both for lost-time accidents and for accidents without lost time.

But despite these positive developments there were, very regrettably, still some fatal accidents in 2011 and 2012.

On the other hand the number of industrial accidents with fatal consequences is falling in the long term. Nevertheless the port community is convinced that constant investments have to be made so as to further raise the level of safety in the port.

The number of days of absence due to illness or injury per employee within the category of dockers (defined as employees covered by Parity Committee 301) rose slightly in 2011, to nearly 16 days, but fell once more in 2012 to 14 days. In the case of Port Authority employees the number fluctuates between 10 and 11, with a slight increase in 2012.

The number of lost days remains below the Belgian average of 14.71 working days (source: Securex). However, the recording of absences varies from organisation to organisation, making comparisons difficult.
Fig. 5.4: Number of accidents with lost time (absence on the day after the accident) and without (absence only on the day of the accident), and number of accidents per 1000 jobs worked by dockers subject to Party Committee 301 (source: CEPA)

Fig. 5.5: Number of industrial accidents in Antwerp Port Authority with and without lost time (source: Antwerp Port Authority)
Fig. 5.6: Number of fatal accidents among dockers (Parity Committee 301) (source: CEPA)

Fig. 5.7: Average number of lost days per employee (source: CEPA and Antwerp Port Authority)
WHY CYCLING IS SAFE

The Dutch independent research organisation TNO examined the benefits of cycling in 2009 and 2010.

Why promote cycling for sustainable travel between home and work?

1. People who regularly cycle to work have less absences due to illness than non-cyclists.
2. The more frequently people cycle and the greater the distance covered, the less the absence due to illness.
3. The potential financial gain from cycling to work is considerable, possibly amounting to savings of 27 million euros per year by avoiding absence due to illness.

(Source: TNO, Research results 2009)

Why cycle to work?

1. Cycling raises your fitness.
2. Cycling keeps you the right weight.
3. Regular cycling feels good.
4. Cycling reduces your risk of illness and makes you live longer.
5. Cycling is easy.
6. More cycling means cleaner air in your home area.
7. Cycling is quiet.
8. Cycling means greater accessibility over short distances.
9. Cycling is cheaper.
10. Cycling means less greenhouse gas emissions.

(In the report “Fietsen is groen, gezond en voordelig” (TNO, 2010) these arguments are supported by research results and literature searches)

ISEC: TAILOR-MADE TRAINING COURSES FOR INDUSTRY

The ISEC training centre is specifically targeted at industry: all possible industrial disaster scenarios can be game-played here.

In the centre trainees learn how to deal with dangerous substances, fight fires, carry out rescue operations and work with gas suits, all in real-life conditions. There are tanks and silos to practice safety exercises in enclosed spaces, and various types of fire can be simulated.

80% of courses are given in the client companies’ own premises, which has the advantage of learning in the trainees’ normal work environment.

On ISEC’s own 1 hectare site there is a container structure specially built for various types of training. The structure forms a labyrinth of openings and ladders: ideal for the “Tower climbing and rescue” course that has been specially developed for the wind power industry, to carry out rescue operations at great heights. The field of action has now been extended to the shipping sector, for rescues on the water.
Various fire brigades and some city services also make use of these training facilities. The courses vary in length from half a day to ten days, for example for managers of chemical companies.

**‘SERIOUS GAME’ TO IMPROVE SAFETY AND SECURITY IN THE PORT**

Antwerp Port Authority has developed a “Serious Game” with which port users can learn in an innovative way how they can contribute towards raising the level of safety and security in the port. In the course of the game players are confronted with various threat situations. For example, people acting suspiciously in the vicinity of port facilities, or things that turn up at places where they don’t belong. In this way the Port Authority seeks to raise awareness among port users and get them to report suspicious situations, take the right measures and inform the correct channels. This in turn enables the security services to get to the scene more quickly and deal more effectively with the situation.

The game is set in a virtual industrial landscape with 30 situations on 6 levels. There are game levels focusing on awareness, perimeter control, safety and evacuation. Each of the situations demands a specific reaction on the part of the player. One a level has been completed the player is given an explanation of why particular actions had to be taken.

The game can be downloaded from the Port Authority’s website and is available from Apple’s iTunes App Store.
A SECURE PORT

The port of Antwerp has to defend itself against external risks and threats. For this purpose there are a number of “security locks” under the supervision of the various authorities. Private companies too have important responsibilities to bear, while the Harbourmaster’s Office of the Port Authority play an important role.

We asked Kathy Dua of the Port Authority to explain in more detail.

Nine-eleven, the day that the world seemed to stand still, has also had radical repercussions for the security of seaports around the world. What was the immediate reaction?

Fairly soon after the terrorist attacks of 11 September the USA looked closely at all possible external risks from the air and from the sea. This led to a tightening of procedures for goods and persons entering America, and not only there: just look at the greater security that you have now in Brussels National Airport. There are also numerous regulations for goods entering the USA via the various seaports. Given the international character of shipping trade, the International Maritime Organisation quickly drew up a set of regulations imposing stricter controls on ships and ports around the world. The International Ship & Port Security (ISPS) Code came into effect on 1 July 2004.

How does the ISPS Code make itself felt on the ground?

It’s highly visible and tangible. Whereas most terminals used to be open, with people being able to wander in and out and look around as they liked, since the introduction of the ISPS Code they are now closed, and access controls have been introduced. This applies both to the quay and to the direct vicinity of the ship. Most of the terminals in Antwerp have now been extended to cover the whole of the particular concession. In total there are now 83 ISPS-certified port facilities in the port of Antwerp offering a higher degree of protection for ships and port facilities against terrorist violence, not only in Antwerp itself but also in subsequent ports of lading.

How do you make sure the ISPS Code remains enforced?

Each company has to draw up a security plan and carry out regular checks and exercises. For example a drill has to be organised once every three months to test part of the security plan (e.g. checking that the communication systems work, or inspecting the perimeter). In addition an obligatory large-scale exercise is held annually with the full security plan being put into practice, preferably with the various authorities and security services attending.

Presumably this requires close collaboration between different departments?

At national level we have the "Threat Analysis Coordination Body" which monitors and analyses the external risks and threats. If particular risks are detected then the national crisis centre (ADCC) is alerted, and this body may decide to escalate the security level.

The basic level is 1, which applies to all ISPS facilities in the port. This level can be raised to 2, or in the extreme case to 3. For each level there are particular additional checks and procedures laid down. The ADCC in turn may alert the National Authority for Maritime Security, which coordinates and monitors the day-to-day application of legislation in seaports.
From the published data there appears to be a sharp rise in the number of incidents reported. Does that mean the port has become less secure?

On the contrary, our efforts at raising awareness among companies are paying off. Furthermore there are now smooth operating procedures, so each incident gets properly reported. This can range from someone trying to gain access to the terminal, to suspicious behaviour, a gap in the perimeter, etc. So the greater number of incidents does not necessarily mean that the port has become more insecure, rather it means that there are more tripwires. And were previously incidents were reported on an if-and-please basis, now there are automatic procedures.

As a gateway to the world the port is naturally also attractive to people wishing to flee the country or trying to get into another country by ship. What role do you play here?

The Harbourmaster’s Office works closely together with the Shipping Police. For example, people who try to gain access to terminals (illegals) or who are found on board a ship (stowaways) are reported to the Shipping Police and arrested by them under the terms of the ISPS regulations. Appropriate measures are then taken in consultation with the justice authorities.

The port of Antwerp has played a pioneering role in this debate. Indeed, the Antwerp approach has been adopted as “best practice.”

The “European exercitium” (European handbook of maritime security exercises and drills) is a manual with lots of tips and tricks for carrying out maritime security exercises. The port of Antwerp received a “Grant Agreement” from the DG Move of the European Commission to compile this handbook which is largely based on practices within the port of Antwerp:

THE LUITHAGEN EXAMPLE

In the project entitled "Luithagen sustainable industrial site management" various site-specific topics are tackled in a joint manner. Security is one such topic, and so the various companies were asked about their security requirements. They are given information and introduced to the central reporting point for security violations, and a security guide is provided to raise the awareness of personnel in matters of security.

This information helped to lower the threshold for many companies to report various matters and exchange information.
Nature and the environment

Ports are synonymous with air and water. Add soil and sediment to this and you have the three environmental factors that are monitored continuously within the port. In addition to accurate monitoring of air, soil/sediment and water quality, the risks to port operations of climate change are also constantly assessed (prosperity). The position of the port of Antwerp makes it a significant centre for economic growth. However, Antwerp’s sea port area is also of great ecological importance. The port of Antwerp is therefore involved in the creation of nature reserves in the port region and is developing an ecological infrastructure network (planet). For the community as a whole, the natural oases in the port offer a range of recreational possibilities (people) and help provide habitats for a range of flora and fauna.

Prosperity

What risks face economic activities at the port of Antwerp as a result of climate change?

Planet

How does the port community support nature in the port area and its surroundings? How does it reconcile this with its economic needs? What’s the latest news on the quality of the water, sediment, soil and air?

A haven for endangered European plant and animal species

The position of the port of Antwerp does not just make it an important economic growth centre: an estuary that extends so far inland also creates space for unique natural developments. This makes the Antwerp port area a vital habitat for endangered European species, and large parts of it are classified as Special Areas of Conservation in the European Birds and Habitats Directives (Natura 2000). Naturally the port wishes to support such a unique setting.

This situation used to be perceived as one of conflict between industry and nature, but that is a thing of the past: every extension of economic activities now goes hand in hand with the conservation, reinforcement and indeed further development of the wonders of nature in and around the port area.

In this context, the Port Authority and the nature organisation Natuurpunt already signed a charter in 2000 for the creation of a network of ecological infrastructure within the port area by means of the project ‘Antwerp Port More Naturally’. Ecological infrastructure is ‘nature on a small scale’ which can be combined with other functions. The idea was that a network of core areas, corridors and stepping stones in the Antwerp port area should create more opportunities for protected port-specific plant and animal species, without adversely affecting the development and commercial exploitation of the port.

With ‘Antwerp Port More Naturally’, the Port Authority and Natuurpunt want to safeguard up to 5% of the Antwerp sea port area as ecological infrastructure, thus guaranteeing the sustainable conservation of these port-specific species. With the definitive delimitation of the port area in the Regional Spatial Implementation Plan (GRUP), an effort is being made to build a network of ecological infrastructure with a total area of 603.4 ha. The partnership with Natuurpunt was renewed in 2009 after an evaluation, and confirmed again in 2012.
The figures show that since 2009 just over 60 percent of the target has been achieved, but that since then progress has more or less halted. This is due to the fact that the GRUP was under preparation and needed to be approved. Now that the extent of the port area has been definitively delineated, work will continue in the future on meeting the set targets.

Table 6.1: Area of ecological infrastructure created within the port area as a percentage of the target (source: GHA)

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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<tbody>
<tr>
<td>Area created (%)</td>
<td>56.0</td>
<td>58.7</td>
<td>62.2</td>
<td>62.3</td>
<td>62.3</td>
<td>62.3</td>
</tr>
</tbody>
</table>

In addition to the establishing of ecological infrastructure within the port area, core nature areas are being created around the port area. These robust nature areas are being created and maintained in an effort to achieve a favourable conservation status for the Special Areas of Conservation (SACs). This will make port development possible within these SACs. This approach is regarded by various European countries as revolutionary, and is being put forward by the European Community as a model approach.

![Fig 6.1: An overview of the core nature areas created on the Left and Right Banks as of 2013 (Source: POA)](image)

Nature conservation and promotion measures within the port area and the development of core nature areas outside the port area ensure that the port of Antwerp meets the requirements of the Flemish Species Policy and the European Birds and Habitats Directives. This produces legal certainty for the port community that economic development in harmony with nature is possible within Antwerp’s port area.
In addition to monitoring and creating core nature areas, the Left and Right Bank Nature Management Committees have the task of monitoring and lending support to the achievement of favourable conservation status. The Management Committees report on the current position every year. This report is presented by the competent minister to the European Commission and the Flemish Parliament.

The development of the nature areas on the Left and Right Banks

The Left Bank has seen an average increase in the extent of the nature area since 2003. Because the filled-in Doel Dock is currently being used as a storage place for sand and dredging materials for the construction of the second sea lock, 2012 saw a slight decrease in the extent of the nature area. In 2012, 70% of the total extent of nature area provided for in the MMHA (Socially Most Feasible Alternative) was in place.

The Right Bank saw an increase in 2008 and a decrease in 2009 in the extent of the nature area. In the last four years, as stated earlier, there has been little overall change. In 2012, 66% of the total extent of nature area provided for in the MMHA was in place.
On both the Right and the Left Bank, numbers per bird species fell in 2012 as a percentage of the figures set in the conservation targets. As the conservation targets for most species have not yet been attained, there is not yet a ‘favourable conservation status’ on either bank. In order to achieve the set nature targets, as many new core nature areas as possible will need to be created, and the existing ones will need to function optimally.

Good water quality in the port of Antwerp

The port’s water quality, measured in all docks behind the locks, can be described as moderate to good overall.

The European Water Framework Directive lists 33 priority and 8 other pollutants. Under the Integral Water Policy Decree, efforts must be made to reduce and/or put a stop to discharges and emissions of these substances. Water analyses show that the admissible limits for these 41 substances are almost never exceeded any more.

Since 2011, the focus has been on those substances from the list of 41 which have been associated with problems in the past, and for which possible emission sources are situated within the port area. In 2012 excess levels of priority substances were only measured for cadmium and for the sum of benzo(ghi)perylene and indeno(1,2,3-cd)pyrene.

Levels of phosphate and nitrate in the port docks generally present the same pattern as in the Scheldt and the Albert Canal, the most important sources of water for these docks. However, the levels are significantly lower than the average concentrations in Flanders.
The nitrogen concentration has fallen over the years, but the levels still exceed the norm (average for the summer half year < 1.8 mg N/l). The so-called chemical oxygen demand (COD) also presents a problem in the docks. This is the oxygen level needed to break down organic material in the water column. The maximum norm (30 mg O₂/l) is regularly exceeded, with a very high overshoot in autumn 2011 on the left bank, the cause of which could not be determined.

![Graph showing number of priority substances that do or do not exceed the water quality standard. The monitoring program changed in 2011. The monitoring focuses since 2011 on three representative locations and substances that did not show exceedance in the years before and of which no sources are known in the port were not anymore analysed. (source: POA)](image1)

![Graph showing changes in chemical oxygen demand in the docks on the Left and Right Banks and in the Scheldt and the Albert Canal at the locations closest to the docks. (source: VMM and GHA)](image2)
Sediment quality

The sediment quality of all docks is mapped every five years, in line with sediment quality monitoring in the rest of Flanders.

As the last monitoring dates from 2010, there are no changes to mention here from the first sustainability report.

Soil quality

The soil quality in the port area mainly suffers from legacy pollution. However, this is being systematically dealt with.

As a result of the definitive delimitation of the port area in the Regional Spatial Implementation Plan, the number of plots of land and the total surface area has fallen compared with the MMHA limit mentioned in previous reports.

The soil condition in 2012 was compared with that in 2010 and 2006.

In addition, the mapping of the soil quality is improving every year. In recent years, more soil surveys have been performed, resulting in better records and the accumulation of more accurate knowledge.

In the land subdivided into plots, the number of plots with pollution for which descriptive soil surveys or soil decontamination projects must be performed is low. Moreover, the information shows that there are increasing numbers of plots where no further measures are required.

We can therefore conclude that the condition of the soil is gradually improving.
Air quality

Much of the environmental policy is underpinned by European regulations. Thus the EU imposes air quality standards for, among other substances, nitrogen oxides (NOx), sulphur dioxide (SO2) and particulate matter (PM10), and defines a time period within which these standards must be achieved. The monitoring of air quality has been done since 1990 by the Flemish Environment Agency.

As in other European countries, certain Flemish regions find it difficult to achieve the standard for particulate matter (PM10) and nitrogen dioxide (NO2). The reasons for this are the high population density, the very dense road network, the large number of industrial zones and high background concentrations compared with neighbouring regions.

Because the port of Antwerp is a ‘hot spot zone’ for the parameters PM10 and NO2, in December 2008 an ‘Action plan on particulate matter and NO2 in the port of Antwerp and the city of Antwerp’ was drawn up. This plan includes various action points for the Flemish government, the Port Authority, the city of Antwerp and industry. Five working groups monitor actions and manage implementation. An updated list is being compiled in 2013.
Fig. 6.8: SO$_2$ annual mean trend for the Antwerp port area and Flanders (source: VMM)

Fig. 6.9: SO$_2$ annual mean concentration in the port of Antwerp in 2000 and 2011 (source: VMM)
Fig. 8.10: NOx annual mean trend for the Antwerp port area and Flanders (source: VMM)

Fig. 8.11: NOx annual mean concentration in the port of Antwerp in 2000 and 2011 (source: VMM)
Fig. 6.12: PM10 particulate matter annual mean trend for the Antwerp port area and Flanders (source: VMM)

Fig. 6.13: PM10 particulate matter annual mean concentration in the port of Antwerp in 2008 and 2011 (source: VMM)
A fairly clear and systematic improvement is noticeable in the measured emission values of nitrogen oxides (NO\textsubscript{x}), sulphur dioxide (SO\textsubscript{2}) and particulate matter (PM\textsubscript{10}). Sulphur dioxide concentrations in particular have declined sharply over the past 10 years. A slightly higher concentration can still be measured only around the petrochemical industry. For nitrogen oxides the concentration in 2011 was also lower than in 2000; only around main roads was no decrease observed.

A comparison with other typical areas in Flanders shows that the concentration of nitrogen oxides and sulphur dioxide in the port of Antwerp is somewhat higher. The concentration of PM\textsubscript{10} (annual mean) decreased systematically until 2010, bringing it to well below the standard of 40µg/m\textsuperscript{3}. In 2011, the daily limit was exceeded at a number of measurement stations, but this had a limited the annual mean.

The preliminary data for 2012 point to better results again, partly thanks to weather conditions which were more favourable for particulate matter in 2012.
People

A busy world port where security is tight is not the obvious place for leisure activities. However, a considerable number of people regularly spend time in the port, primarily for work, but also because of its specific leisure possibilities as a port area combined with a range of nature areas.

Cycling, sport, ship-spotting, sailing...

To help people get to know the port on a long-term basis, the Port Authority has issued a cycling map featuring four cycle routes for several years now. These routes link up with the wider cycling network in the provinces of Antwerp and East Flanders. The cycling map also gives an overview of a whole host of things worth seeing, interesting places to stop and beautiful vantage points on the way.

The Van Moer Triathlon on the Left Bank of the Scheldt uses the Waasland port as a unique setting for a sporting event. Both amateurs and professional athletes take part, and businesses can enter their workers in the triathlon as a team. The swimming leg traditionally takes place in the Doel Dock. This event is a fine example of the integration and interconnection of industry, work, sport and the port.

The wide expanses of water also attract amateur anglers. You encounter them wherever you go in the port. The improved water quality has made the port an attractive place for them.

On the dykes, as well as people fishing you can also find ship-spotters with their regular vantage points overlooking the port. Given their fascination for the mastodons of all colours and shapes that ply the seas, they find the port of Antwerp a great place to be.

A number of the many nature areas are open to the public, or, like the 'Kuifeend', have an observation hut for watching all kinds of birds. In addition to cyclists and other visitors, these nature areas also attract a regular contingent of committed nature enthusiasts, who observe and identify the wildlife.

The boat tour operators also take advantage of the combination of water and recreation. All the year round, they give tourists and visitors the chance to look round the port from the water. These round trips have been a regular feature of life at the port for a long time, and are an essential part of the tourist activities on offer.
**Prizes for Sustainability in Antwerp**

In 2012, the port of Antwerp received a number of awards in recognition for the efforts it is making to develop into a sustainable port where economic activities and nature conservation and promotion go hand in hand.

At the annual meeting of the **International Association of Ports and Harbours** in Los Angeles, Eddy Bruyninckx, CEO of the Antwerp Port Authority, received the bronze Environment Award.

With its entry entitled “Creating Space for Port Development by Proactive Nature Management”, the port convinced the panel of judges of the importance of proactive nature conservation measures in the port’s long-term development strategy. This international award is an inspiring accolade, but the port of Antwerp community has numerous companies that have won awards and prizes for their dedication to a more sustainable economy.
Society

A port is not an island with economic activity alone, it forms an essential part of the surrounding community. As such it must be able to answer critical questions. Does it create real added value? What proportion of Gross Domestic Product (GDP) does it account for? How profitable is the port (Prosperity)?

At the same time it is under an obligation to give something back to society. This can take various forms: social commitment, providing information on its activities, affording the right of consultation and enabling as many people as possible to become acquainted with its operations, as often as possible (People).

With a heart for people

The times are past when purely economic considerations (Profit) were enough to justify the development and expansion of a major international port. As already stated elsewhere in this report, we prefer to speak of “prosperity” rather than “profit”, but there is more to it than that: an international port must develop within a sustainable context (Planet), with respect for the local environment, local residents and local heritage.

The best judges of this are the local people. The port community keeps in touch with them through neighbourhood councils and local publications. To record this in terms of metrics the University of Antwerp carried out an “Experience survey.”

But more than giving a purely passive role to local residents, we must pay attention to them as human beings (People). This means that whenever a port wishes to expand there must always be a social support plan.

The port community must also expand its social commitment by opening the port to all visitors and by keeping society informed about the port. This information role can take various forms, including press reports and organising Port Days.

And finally the best way of showing honest interest in “People” is for the port to ensure correct and fair treatment of its personnel and offer them good training opportunities. After all, they are the ones who keep the economic engine running.

Consultation

The Flemish government decided from the very beginning that further expansion of the port of Antwerp should be accompanied by wide social dialogue. For this purpose the Central Network was set up on 7 November 2012 as a stakeholders’ consultation forum to monitor the further development of the port.
In 2012 the Regional Land Use Plan for the seaport of Antwerp was presented by the Flemish government to local residents at a public enquiry. This plan determines which activities are to be carried out in particular areas, which urban planning regulations apply, and how the land is to be divided up and managed. All stakeholders were given two months in which to make their opinions known.

In addition to the statutory consultation in the town halls two Info Markets were organised, respectively on 19 June 2012 in Kallo and on 21 June in Stabroek, at which the new plans and projects were presented. Visitors also received information about the various accompanying measures such as the Social Support Plan and the Land Bank, and about ways in which they could participate in the public enquiry. The Info Market in Kallo attracted around 250 visitors, mainly local residents and farmers who wanted to know what impact the plans would have on their activities and on their daily lives.

Further, anyone who wanted could phone the free number 1700 and ask for a folder about the public enquiry and a general brochure about the plans for the port, entitled "Flourishing port, prosperous region." These could be downloaded from the website www.havenvandetoekomst-antwerpen.be, which also bears the Anysurfer label.
Social support plan

The Social Support Plan applies to all those affected by compulsory purchases (“eminent domain”) in connection with port development. All such compulsory purchases are located within the boundaries of the Regional Land Use Plan.

The plan includes measures both for owners and for users of agricultural land, as well as residents, self-employed people, small businesses and entrepreneurs.

Residents can claim a relocation grant and can count on quick access to social housing or individual support. The Flemish government will also create housing opportunities in the village of Prosperdorp, thus enabling the residents of among others Ouden Doel and Rapenburg to find a new home in similar surroundings.

Farmers for their part will be able to buy land elsewhere from the Land Bank. They can also claim a reconversion grant (for switching from one crop to another), a reduction grant (for reducing the size of their farm) or a relocation grant. In addition they can call on support in the same way as any other self-employed people.

It goes without saying that an information brochure was made available for all those concerned.

Prosperity

What does the port of Antwerp have to offer in terms of employment? What added value does it contribute? What proportion of GDP does it account for? Is it profitable?

Engine of the economy and of employment

The interaction of maritime, logistical and industrial activities generates significant added value. In this regard the port of Antwerp plays an important role in the economic tissue of Flanders and Belgium, which is naturally reflected in employment. The port of Antwerp provides direct employment for around 60,000 people living in and around the port area. In most cases these are permanent, full-time jobs. More information on this subject can be found in the chapter on Employment.

Added value

The amount of added value generated by the port has fluctuated greatly over the past six years. After steady growth from 2006 to 2008 there was a sudden dip in the crisis year of 2009 followed by a slow recovery in 2010. Then in 2011 there was another small downward correction.
The recovery in 2010 was observed both in the maritime and in the non-maritime sector. By contrast the correction in 2011 occurred only in the maritime sector; in the non-maritime sectors the added value remained the same in 2011.

In the maritime sectors the added value was strongly affected by the great volatility in the shipping industry. Other important activities in the maritime sector, such as “Ship’s agents and forwarders” and “Freight handling” saw their added value increase in 2010 and again in 2011.

In the non-maritime sectors the added value remained flat, with a slight fall in industry being offset by a slight rise in other activities. The fall in added value contributed by manufacturing industry was mainly due to the closure of GM Belgium; the increase in added value contributed by the chemical industry was not enough to make up for this.
Proportion of added value in Flanders and Belgium

As can be seen from the figures for 2011, the port of Antwerp generates more added value than most other sectors of industry in Belgium: only the construction industry contributes more.
In 2011 the direct added value of the port of Antwerp accounted for 4.5% of the Gross Domestic Product (GDP) of Flanders, 0.3% less than in 2010.

The total added value accounted for as much as 8.9% of Flemish GDP, down 0.5% on the year before. At national level the contributions to GDP were 2.5% and 5% respectively.

![Graph showing direct and indirect added value over years from 2006 to 2011.](source: National Bank of Belgium)

**Profitability**

In general the profitability of companies in the Antwerp port community lies at a decent level. However a dichotomy can be observed between sectors with good or normal margin on the one hand, and those with a low margin on the other (land transport, commerce and other logistics services).
The shipping companies mostly have high profitability, albeit strongly dependent on the economy. Their profitability only went negative in 2011.

Noticeable also is the negative profitability of the Port Authority in 2011. This is due to large provisions being set aside under the terms of the new pensions legislation.
People

Local residents are an excellent barometer of popular support for the port. The level of support was gauged from an “Experience survey” and consultation meetings. Below we also look at the “social economy” and the broad social commitment on the part of the port community, aspects that received too little attention in the first Sustainability Report.

How do local residents experience the port

At the request of the Port Authority, the University of Antwerp carried out a survey of how local residents experience the port. The data were collected and analysed between July 2012 and June 2013. With this pioneering sociological research the Port Authority seeks to identify and situate any negative experiences in or around the port, and subsequently to develop a concept and strategy for raising the level of local involvement in port activities. The survey also yielded proposals for concrete indicators that could be included in the Sustainability Report.

The survey drew on the experience gained from stakeholders in drawing up the first Sustainability Report, and sought to incorporate suggestions from the stakeholder analysis.

On the basis of the qualitative results the researchers concluded that the negative experiences of local residents could be grouped into four areas:

- economic importance and employment opportunities,
- traffic and transport,
- environmental nuisance,
- administrative complexity and transparency.

The huge economic benefits of the port and the non-permanent character of the negative aspects (specific aspects are often described as “local” and “now and then”) mean that these aspects are considered bearable by the majority of local residents surveyed.

Consultation with neighbouring municipalities

Consultation between the port community and the neighbouring municipalities is structured within a sub-regional consultation body. The aim is to gather opinions about the impact of the port on urban planning, the environment, mobility and the viability of residential areas.

In addition to the Flemish government, Antwerp Port Authority and the Left Bank Development Corporation, the participants in this sub-regional consultation body will be the municipalities of Beveren, Stabroek and Zwijndrecht, along with the Antwerp districts of Antwerp, Ekeren, Merksem, Berendrecht, Zandvliet and Lillo.

The box text “Consulting the neighbours” describes other consultations organised by the port community.

Social economy

The public and private sectors in the port call upon employees in the “social economy” (i.e. employing people who would otherwise have difficulty in finding work) for:
• activities in their own organisation such as kitchen staff, putting stamps on documents, making up promotional packages etc.
• activities that form part of the day-to-day operation of the port: sorting wood, metal and waste, putting stickers on products, re-stacking pallets etc.
• maintenance of public areas: cleaning (Werkvormm), removing weeds, acting as ecological manager (through the Natuurpunt conservation society), etc.
• maintaining the maritime heritage. For instance, the historic port cranes are being restored as part of a social employment project.

Training for socially disadvantaged groups focuses on jobs such as seaman or container repairer. For example, the Port Authority currently has an arrangement with Levanto under which seamen gain work experience with the Port Authority and do their theoretical training at Levanto.

Seafarer’s welfare

The port of Antwerp has a long tradition of offering material and spiritual care for seafarers. In fact there have been seafarers’ missions in Antwerp ever since 1865. There are four seafarers’ churches, and various organisations provide medical care, recreation and emergency help. All these organisations along with the Port Authority, Alfaport, Mediport and the Antwerp Shipping Association are represented in the Port Welfare Committee which was set up in 2008 and meets on a regular basis. Via this umbrella organisation they can count on financial and material support from the port community. Despite globalisation, developments in shipping and improvements in work conditions – or perhaps because of them – there is still a real need for seafarers’ organisations.

On the other hand the approach to the welfare of seafarers has evolved over the years. Stays in port are much shorter than they used to be, crews are very mixed and international in character and work conditions are much better, although the pressure of work is greater. In the meantime security measures in international ports are particularly severe nowadays, which poses problems for contact between seafarers and the port community. And yet the need for communication, a sympathetic ear and social services remains as great as ever.

New initiatives include free bus transport on both sides of the river, to take seafarers to the city centre or the Antwerp Seafarers’ Centre. A free wi-fi network covers the port so they can keep in touch with home at all times. There is also a sports field where they can exercise and relax during their short stay in the port. Finally, the representatives of the various seafarers’ organisations provide communication and psychological and religious support.

A new hotel for seamen was opened in 2013, the Antwerp Harbour Hotel, to replace the former Seamen’s House. Here crew members can stay overnight in a modern, renovated hotel at moderate prices. The hotel is an initiative of the City of Antwerp, the Port Authority and various other organisations.

But the barge community is just as important. Bargees have their own permanent meeting place in the port, namely “Het Kerkschips”. This concrete-hulled barge, which was formerly a coal tender, forms part of the historic identity of the port of Antwerp. Now it is an open, social and spiritual meeting place where anyone can drop in: bargees, tourists and passers-by. Generations of bargees have celebrated significant moments in their lives here. The Church
Boat celebrated its own 60th anniversary in 2011. On this occasion it also moved to a new berth, within walking distance of the city centre, the port and the restored Eilandje neighbourhood.

The port of Antwerp won the International Seafarers’ Welfare Award in 2011 for these various initiatives, and will continue to assure the welfare of seafarers in future.

Social commitment by the port community

The port community takes a large number of social initiatives, and the individual companies nearly all support social organisations of one sort or another. This social commitment is underscored by a number of joint projects.

The new Belgica

In 2007-2008 the non-profit organisation De Steenschuit decided to build a replica of the historic three-master the Belgica with the help of unemployed people. The replica was built using sustainable materials and equipped with low-emission propulsion. The New Belgica will take part in the campaign against climate change: for details go to www.newbelgica.be. The project is sponsored in part by the port community.

“Port & Goods” theatre production

Antwerp Port Authority and the Left Bank Development Corporation are supporting a theatre production based on the life of ordinary people in the port. It was written in 2012 by Peter Thyssen and Jan Geers and tells stories of the waterfront on both sides of the river.

The play has been produced six times in 2013, in Antwerp and Beveren. This series of performances was also an excellent opportunity for presenting the job of docker in all its aspects. The stirring tales of yesteryear are skilfully interwoven with the unprecedented developments in working conditions, with physical labour being replaced by automation and modern concepts of safety on the workfloor. It is planned to present this play regularly in future.

Port For Life

Port For Life is a large-scale fund-raising initiative by the port community in support of Music for Life, a charity project by the radio station Studio Brussels. Everyone remembers the broadcasts from the “Glass House.”

The port companies and their members of personnel contributed en masse to Port For Life, demonstrating that the port is the workplace of highly motivated and committed people.

Fund for Sustainable Materials & Energy Management

The Sustainable Materials & Energy Management Fund, managed by the King Baudouin Foundation, supports sustainable, innovative projects for e.g. “collaborative consumption” and “eco-design.”
The Fund was set up to support both large and small projects for innovation, sustainability and awareness-raising throughout Flanders. The projects are aimed at a wide target group of citizens, consumers, children and young people.

The Sustainable Materials & Energy Management Fund is a collaboration between the Indaver company, Bond Beter Leefmilieu Vlaanderen (non-profit environmental organisation) and Ablo (action committee for protection of the environment on the Left Bank and in the Waasland region).

Open companies in an open port

**Flemish Port Days**

Antwerp and the other Flemish ports opened their gates to the general public on 25 June 2011. The event drew some 17,500 people in Antwerp, despite the atrocious weather. They were able to visit some 30 locations in the port including the Job Event in the Willem dock. To help visitors find their way around, there was a choice of three themes: Nature & Ecology, Tastes & Smells, and Technology & Goods.

The second Flemish Ports Day had as its slogan “Is this how you see your port?” The aim was to make the general public acquainted with the many aspects of port activities. Some 3,000 people visited the Job Event in Antwerp featuring vacancies in a very wide range of jobs in nearly all sectors of the port. A similar Job Event was recently held this year.

In Antwerp people were offered a unique opportunity to visit the construction site for the new lock being built for the Deurganck dock lock, which once it has been completed will be the largest dock in the world. The freight handling companies PSA and DP World also opened their terminals in the Deurganck dock to the general public. In total some 15,000 visitors came and viewed the Deurganck dock lock: [www.vlaamsehavendag.be](http://www.vlaamsehavendag.be).

**Open Door Weekend in the chemical industry**

On 21 and 22 May 2011 an Open Door Weekend was organised by essenscia, the federation of the chemical industry and life sciences to mark International Chemistry Year. No fewer than 46,640 people visited one or more of the 60 companies taking part.

The Open Door Weekend was devoted to the many sustainable and innovative solutions offered by the chemical industry to meet everyday needs and worldwide challenges such as food supply, drinking water, healthcare, efficient use of energy and alternative raw materials.

**The port as tourist attraction**

**New Port Pavilion**

The [MAS Port Pavilion](http://www.mashaven.be) was opened to the public on 5 February 2011. During its first year this multimedia information centre for the Port Authority drew no fewer than 80,000 visitors who were fascinated by the 360° surround screen showing live action in the port, the giant floor map of the port and the interactive information screens.

On 4 July 2012 the MAS Port Pavilion welcomed its 100,000th visitor, demonstrating the huge appeal of this information centre.
Lillo Port Centre

The Provincial Port Centre in Lillo has existed for a quarter of a century now, in which time it has welcomed more than 800,000 enthusiastic school pupils, professionals, families and friends. Thanks to the wide range of guided tours and events there is plenty to attract young and old, as well as schools, companies and associations.

Each year 80 port guides, between them speaking four languages, take some 47,000 visitors around the port.

The Port Centre also has more than 2,000 m² of exhibition space and offers a unique view behind the scenes in the port. Thanks to the many interactive modules visitors can go on their own voyage of discovery.

A new Industry module was added to the exhibition in September 2012 aimed specifically at young people, encouraging them to choose port-related fields of study and eventually consider job opportunities in the port. The module was created with the support of various companies in and around the port area.

In addition the Port Centre in collaboration with Portilog organised an introduction to the port for new employees, to give them a better idea of the place occupied by their new job and new employer within the logistics chain. The introduction covers a one-day programme and consists of a drive around the port area and a visit to the Port Centre, with expert explanations at each stage.

Free bus tours

In 2012 the Port Authority introduced free bus tours of the port area. Aimed at local residents they have attracted people from nearly all municipalities in the Province of Antwerp and the Waasland region. The tours lasting about three hours start with an introduction in the MAS Port Pavilion and cover the port areas on the left and right banks, with explanations from an experienced guide. In 2012 there were 70 buses, and in view of the great success the number has been increased to 115 in 2013.

150th anniversary of the Freedom of the Scheldt

16 July 1863 is one of the most important dates in the history of the port of Antwerp. On that day 26 maritime nations paid a lump sum to redeem the Dutch toll on shipping to and from Antwerp. 2013 was therefore the 150th anniversary of freedom of shipping being restored on the Scheldt. The anniversary was marked by a whole series of celebrations and events organised by the Antwerp port community.

Exhibitions, guided tours and other activities were held to give visitors an idea of the impact of port activities, the challenges for the future and the importance of managing the Scheldt estuary and keeping the port accessible to shipping.

Cultural link between old and new

The Eilandje former docklands area has now been restored and repurposed. Strategically located between the city centre and the waterfront it is now the natural setting for many events, affording historic backdrops and views of the river with space for people to gather
and activities to be held. The port community for its part offers support and the use of its facilities. The heart of this area is formed by the historic Willem dock and Bonaparte dock, the first and oldest docks in Antwerp. They form part of a large-scale urban renewal project in which heritage, city rejuvenation, recreation, housing and commercial activities are all combined in a harmonious way.

The Eilandje neighbourhood also offers many cultural facilities, demonstrating how heritage and historical buildings can play a contemporary, future-oriented role. The Felix Archive, for example, is housed in one of the city’s oldest warehouses. The new MAS museum for its part has been built between the two historic docks, on the site of the former Hansa House. This city museum tells the story of Antwerp. The top floor is dedicated to the port and offers a wonderful panorama of the city and the port facilities. At the foot of the museum stands the MAS Port Pavilion, which focuses on the modern port. Just behind the MAS the Port Museum has been set up in the Bonaparte dock. Here on the banks of the Scheldt stands the world’s largest collection of historic port cranes. Just across the street is the new Red Start Line Museum, dedicated to the shipping company that carried so many European emigrants to the New World. Antwerp was the jumping-off point for nearly all those who left the continent of Europe in search of a better life in the USA. At the top of the Kattendijk dock the Port Authority is building its new headquarters. The new Port House is an iconic design by the world-famous architect Zaha Hadid, with a ship-shaped modern structure suspended over the historic fire station below it. This listed building is an exact replica of the former Hansa House that stood where the MAS museum is now located. In 2016 work will start on converting the dry dock complex that borders on the modern port. It will be transformed into a public space on the banks of the Scheldt, with low-density housing, public areas and an open-air museum for the collection of historic vessels. Thus the last link will be laid, from city to old port to modern port. The Eilandje docklands, once the oldest port area, will be the heart of a new city neighbourhood, a gathering place and location for culture and events that forms a living bond with the modern port.
CONSULTING THE NEIGHBOURS

The Advisory Council of the chemical industry was set up 20 years ago for consultations between representatives of Monsanto, Solvay and Evonik, employees and residents in the surrounding municipalities of Zandvliet, Berendrecht and Stabroek. This consultative body meets several times per year to consider the wishes of people living close by as well as various other subjects such as safety, care for the environment, transport of dangerous goods, permits and legally imposed measures.

Another consultative body is BurenOverleg BASF (BOB) which was set up in 2005 and has developed into an important channel of communication with local residents. Its members meet at least once every three months.

In Zwijndrecht the chemical companies publish the OPEN newsletter for local residents. It appears three times per year and covers a wide variety of subjects including products and processes, employees, the environment and safety.

The waste processing company Indaver for its part has neighbourhood councils on the left and right banks of the river.

Doel nuclear power station regularly invites all local residents to attend its consultative council.

The survey carried out by the University of Antwerp on the subject of how local residents experience the port came to the conclusion that the participants in these neighbourhood consultative bodies are satisfied about the openness of the companies concerned and about the answers to questions that are asked.

The companies for their part organise consultative councils on their own initiative as part of their corporate social responsibility, to widen the support for their activities within the local area and to head off potential problems, complaints or clashes with local residents and/or neighbouring companies.
Real estate heritage

Buildings and other structures of historic importance form part of the port's identity and provide it with recognisable symbols.

Many structures within the port area have been included in the inventory of real estate heritage. The oldest of these are buildings from the former polder villages, such as the Oosterweel church or the chuchtower of Wilmarsdonk. In addition there a number of industrial buildings in the port area that have historic value, such as the grain warehouse in the America dock. Finally, many of the hydraulic engineering structures in the port area have historical importance, including docks, dry docks, locks, bridges etc.

Then there are the small residential areas such as Lillo village with its fort and yacht harbour: picturesque locations that attract many visitors. Lillo Fort and Fort Liefkenshoek, which is also within the port area, form part of the historic circle of fortifications around Antwerp.

Jobswitch

Antwerp Port Authority CEO Eddy Bruyninckx swapped jobs for a day on 14 November with Luuk Zonneveld, general manager of Vredeseilanden (a Belgian NGO that promotes sustainable agricultural development in Africa, Asia and Latin America). The Job Switch Day is an initiative of Kauri (Belgian professional network and knowledge centre for sustainability). “Professional, no-nonsense and highly motivated” was how Bruyninckx described the organisation afterwards.
<table>
<thead>
<tr>
<th>Profile Disclosure</th>
<th>Description</th>
<th>Cross-reference/Direct answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>G4-1</td>
<td>Statement from the most senior decision-maker of the organization.</td>
<td>Sustainable collaboration for a sustainable future</td>
</tr>
<tr>
<td>G4-2</td>
<td>Description of key impacts, risks, and opportunities.</td>
<td>Challenges and opportunities of a mainport</td>
</tr>
<tr>
<td><strong>Organizational Profile</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4-3</td>
<td>Name of the organization.</td>
<td>Port of Antwerp</td>
</tr>
<tr>
<td>G4-4</td>
<td>Primary brands, products, and/or services.</td>
<td>The Antwerp Port Community. Who does this mean?</td>
</tr>
<tr>
<td>G4-5</td>
<td>Location of organization’s headquarters.</td>
<td>Contact</td>
</tr>
<tr>
<td>G4-6</td>
<td>Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.</td>
<td>The port of Antwerp and the world</td>
</tr>
<tr>
<td>G4-7</td>
<td>Nature of ownership and legal form.</td>
<td>The partners in figures</td>
</tr>
<tr>
<td>G4-8</td>
<td>Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).</td>
<td>The port of Antwerp and the world</td>
</tr>
<tr>
<td>G4-9</td>
<td>Scale of the reporting organization.</td>
<td>The partners in figures</td>
</tr>
<tr>
<td>G4-10</td>
<td>Characteristics of the employees/workforce</td>
<td>Employment</td>
</tr>
<tr>
<td>G4-11</td>
<td>The percentage of total employees covered by collective bargaining agreements</td>
<td>Labour and social protection in the port</td>
</tr>
<tr>
<td>G4-12</td>
<td>The organization's supply chain</td>
<td>Sustainability in the port of Antwerp</td>
</tr>
<tr>
<td>G4-13</td>
<td>Significant changes during the reporting period regarding size, structure, or ownership.</td>
<td>No significant changes during the reporting period</td>
</tr>
<tr>
<td>G4-14</td>
<td>The precautionary approach or principle addressed by the organization</td>
<td>The Port of Antwerp is not an organization, but a community of companies and organizations, both public and private, without a common operational structure</td>
</tr>
<tr>
<td>G4-15</td>
<td>Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses</td>
<td>Labour and social protection in the port</td>
</tr>
<tr>
<td><strong>Sustainability as an ongoing effort</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4-16</td>
<td>Memberships of associations (such as industry associations) and national or international advocacy organizations</td>
<td>The port community itself is not a legal entity and cannot be a member of associations, however three associations were represented in the steering group of the sustainability report: - AlfaPort Antwerp: federation of port-bound businesses and logistics companies in the port of Antwerp - Essenscia: the Belgian Federation for Chemistry and Life Sciences industries - VOKA Kamer van Koophandel Antwerpen-Wasaland: Flanders' Chamber of Commerce and Industry</td>
</tr>
<tr>
<td>Profile Disclosure</td>
<td>Description</td>
<td>Cross-reference/Direct answer</td>
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</tr>
</tbody>
</table>
| **G4-17** | a. List all entities included in the organization’s consolidated financial statements or equivalent documents.  
b. Report whether any entity included in the organization’s consolidated financial covered by the report | All financial information is based on data provided by the National Bank of Belgium (NBB). They extract the data out of the annual reports of the organizations. The data provided by the NBB has been externally assured.  
The Port of Antwerp is not an organization, but a community of companies and organizations, both public and private, without a common operational structure |
| **G4-18** | a. Explain the process for defining the report content and the Aspect Boundaries.  
b. Explain how the organization has implemented the Reporting Principles for Defining | page 27 & 28 of *Sustainability report 2010* and the feedback note: stakeholder dialogue 2012 |
<p>| <strong>G4-19</strong> | List all the material Aspects identified in the process for defining the report content | feedback note: stakeholder dialogue 2012 |
| <strong>G4-20</strong> | the Aspect Boundary within the organization for each material Aspect | feedback note: stakeholder dialogue 2012 |
| <strong>G4-21</strong> | the Aspect Boundary outside the organization for each material Aspect | feedback note: stakeholder dialogue 2012 |
| <strong>G4-22</strong> | The effect of any restatements of information provided in previous reports, and the reasons for such restatements | No restatements |
| <strong>G4-23</strong> | Significant changes from previous reporting periods in the Scope and Aspect Boundaries | No significant changes from previous reporting periods |</p>
<table>
<thead>
<tr>
<th>Profile Disclosure</th>
<th>Description</th>
<th>Cross-reference/Direct answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>G4-24</td>
<td>A list of stakeholder groups engaged by the organization</td>
<td>The stakeholders</td>
</tr>
<tr>
<td>G4-25</td>
<td>The basis for identification and selection of stakeholders with whom to engage</td>
<td>consultation with stakeholders</td>
</tr>
<tr>
<td>G4-26</td>
<td>the organization’s approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process</td>
<td>consultation with stakeholders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>feedback note: stakeholder dialogue 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>consulting the neighbours</td>
</tr>
<tr>
<td>G4-27</td>
<td>key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns.</td>
<td>The improvement path</td>
</tr>
<tr>
<td></td>
<td></td>
<td>feedback note: stakeholder dialogue 2012</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Profile Disclosure</th>
<th>Description</th>
<th>Cross-reference/Direct answer</th>
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<tbody>
<tr>
<td>G4-28</td>
<td>Reporting period (e.g., fiscal/calendar year) for information provided.</td>
<td>Methodology used</td>
</tr>
<tr>
<td>G4-29</td>
<td>Date of most recent previous report (if any).</td>
<td>October 8th, 2013</td>
</tr>
<tr>
<td>G4-30</td>
<td>Reporting cycle (annual, biennial, etc.)</td>
<td>Biennial</td>
</tr>
<tr>
<td>G4-31</td>
<td>Contact point for questions regarding the report or its contents.</td>
<td>Contact</td>
</tr>
</tbody>
</table>
| G4-32 | GRI content index | General standard disclosures: this table  
Economic aspects  
Environmental aspects  
Social aspects |
| G4-33 | External assurance | Assurance letter PwC |

### Governance

<table>
<thead>
<tr>
<th>Profile Disclosure</th>
<th>Description</th>
<th>Cross-reference/Direct answer</th>
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<tbody>
<tr>
<td>G4-34</td>
<td>The governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts</td>
<td>The Port of Antwerp is not an organization, but a community of companies and organizations, both public and private, without a common operational structure</td>
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### Ethics and integrity

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<tr>
<th>Profile Disclosure</th>
<th>Description</th>
<th>Cross-reference/Direct answer</th>
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<tbody>
<tr>
<td>G4-56</td>
<td>The organization’s values, principles, standards and norms of behavior such as codes of conduct and codes of ethics</td>
<td>The Port of Antwerp is not an organization, but a community of companies and organizations, both public and private, without a common operational structure</td>
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</table>
### Economic indicators

#### G4 Content Index – Port of Antwerp 2012

**SPECIFIC STANDARD DISCLOSURES**

**Economic indicators by aspects**

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Description</th>
<th>Cross-reference/Direct answer</th>
<th>Data Source</th>
<th>Assured by PwC</th>
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<tbody>
<tr>
<td><strong>Economic performance</strong></td>
<td></td>
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<tr>
<td>G4-EC1</td>
<td>Direct economic value generated and distributed.</td>
<td>Added value</td>
<td>National Bank of Belgium, based on the annual reports of the companies</td>
<td>yes</td>
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<tr>
<td></td>
<td></td>
<td>Relative added value in Flanders and Belgium Profitability</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Indirect economic impacts</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>G4-EC8</td>
<td>Understanding and describing significant indirect economic impacts, including the extent of impacts.</td>
<td>Relative added value in Flanders and Belgium</td>
<td>National Bank of Belgium, based on the annual reports of the companies</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>other economic indicators</strong></td>
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<tr>
<td>Investments in the Port of Antwerp</td>
<td>Investments of the different sectors</td>
<td>National Bank of Belgium, based on the annual reports of the companies</td>
<td>yes</td>
<td></td>
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<tr>
<td>Investments in research &amp; development</td>
<td>Investments of the different sectors in R&amp;D</td>
<td>National Bank of Belgium, based on the annual reports of the companies</td>
<td>yes</td>
<td></td>
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<tr>
<td>Labour productivity</td>
<td>Added value per FTE for all sectors</td>
<td>National Bank of Belgium, based on the annual reports of the companies</td>
<td>yes</td>
<td></td>
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<tr>
<td>market shares per cargo type</td>
<td>Market share of freight-handling of the different ports in the range Le Havre- Hamburg</td>
<td>Annual reports of port authorities</td>
<td>no</td>
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<tr>
<td>economical use of the area</td>
<td>Available area in the port of Antwerp</td>
<td>Antwerp Port Authority</td>
<td>no</td>
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<tr>
<td>logistic activity</td>
<td>Surface storage-room and volume of tank storage</td>
<td>Antwerp Port Authority</td>
<td>no</td>
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</table>
## G4 Content Index – Port of Antwerp 2012

### SPECIFIC STANDARD DISCLOSURES

#### Environmental indicators by aspects

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Description</th>
<th>Cross-reference/Direct answer</th>
<th>data Source</th>
<th>Assured by PwC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy</strong></td>
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<tr>
<td>G4-EN3</td>
<td>Energy consumption within the organization</td>
<td>Direct and indirect energy consumption</td>
<td>Energy balance of Flanders, based on data of the electricity system operators</td>
<td>yes</td>
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<tr>
<td>G4-EN5</td>
<td>Energy intensity</td>
<td>Energy consumption per produced units</td>
<td>Energy balance of Flanders, based on data of the electricity system operators / production index is provided by the Chamber of Commerce (VOKA)</td>
<td>no</td>
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<tr>
<td></td>
<td>Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.</td>
<td>Installed capacity for sustainable energy production</td>
<td>Flemish Regulator of the Electricity and Gas market and Antwerp Port Authority</td>
<td>yes</td>
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<tr>
<td><strong>Water</strong></td>
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<tr>
<td>G4-EN8</td>
<td>Total water withdrawal by source.</td>
<td>Water consumption</td>
<td>Flemish Environment Agency</td>
<td>yes</td>
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<tr>
<td>G4-EN9</td>
<td>Water sources significantly affected by withdrawal of water.</td>
<td>none</td>
<td>Antwerp Port Authority</td>
<td>no</td>
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<tr>
<td>G4-EN10</td>
<td>Percentage and total volume of water recycled and reused.</td>
<td>Reuse of rain water</td>
<td>Flemish Environment Agency</td>
<td>no</td>
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<tr>
<td><strong>Biodiversity</strong></td>
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<td></td>
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<tr>
<td>G4-EN11</td>
<td>Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas</td>
<td>Description of management of habitats in function of conservation objectives</td>
<td>Antwerp Port Authority</td>
<td>no</td>
</tr>
<tr>
<td>G4-EN13</td>
<td>Habitats protected or restored.</td>
<td>Description of management of habitats in function of conservation objectives</td>
<td>Antwerp Port Authority</td>
<td>no</td>
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<tr>
<td>G4-EN14</td>
<td>Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.</td>
<td>Bird presence and density compared to the conservation objectives</td>
<td>Institute for Nature and Forestry research</td>
<td>no</td>
</tr>
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<td>---------</td>
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<td>-------------------------------------------------</td>
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<tr>
<td><strong>Emissions</strong></td>
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<tr>
<td>G4-EN15</td>
<td>Direct greenhous gas (GHG) emissions (scope 1)</td>
<td>Emissions of carbon dioxide and equivalents</td>
<td>Carbon footprint study of Flemish Institute for Technological Research</td>
<td>yes</td>
</tr>
<tr>
<td>G4-EN16</td>
<td>Energy indirect greenhouse gas (GHG) emissions (scope 2)</td>
<td>Emission of carbon dioxide and equivalents</td>
<td>Carbon footprint study of Flemish Institute for Technological Research</td>
<td>yes</td>
</tr>
<tr>
<td>G4-EN18</td>
<td>Greenhouse gas (GHG) emissions intensity</td>
<td>Emission of carbon dioxide and equivalents per produced unit</td>
<td>Carbon footprint study of the Flemish Institute for Technological Research / production index provided by Chamber of Commerce</td>
<td>no</td>
</tr>
<tr>
<td>G4-EN21</td>
<td>NOx, SOx, and other significant air emissions.</td>
<td>Emission of SO₂, NOₓ and PM10 by the different sectors</td>
<td>Antwerp Port Authority</td>
<td>no</td>
</tr>
<tr>
<td><strong>Effluents and Waste</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4-EN22</td>
<td>Total water discharge by quality and destination.</td>
<td>Emission of pollutants from point and diffuse sources in the port area</td>
<td>Antwerp Port Authority</td>
<td>no</td>
</tr>
<tr>
<td>G4-EN23</td>
<td>Total weight of waste by type and disposal method.</td>
<td>Different types of waste of the ships collected in the port</td>
<td>Antwerp Port Authority</td>
<td>yes</td>
</tr>
<tr>
<td>G4-EN24</td>
<td>Total number and volume of significant spills.</td>
<td>Number of oil spills in the docks</td>
<td>Antwerp Port Authority</td>
<td>yes</td>
</tr>
<tr>
<td>G4-EN26</td>
<td>Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.</td>
<td>Water quality in the docks, based on nutrients and priority substances</td>
<td>Antwerp Port Authority</td>
<td>no</td>
</tr>
<tr>
<td><strong>Environmental Grievance Mechanisms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4-EN34</td>
<td>Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms</td>
<td>The perception of the port by people living around the port area</td>
<td>Antwerp Port Authority</td>
<td>no</td>
</tr>
<tr>
<td><strong>Other Environmental Indicators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sediment quality</td>
<td>Sediment quality</td>
<td>Antwerp Port Authority</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Soil quality</td>
<td>Status based on the soil remediation databank</td>
<td>Public Waste Agency of Flanders</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Air quality</td>
<td>Concentration of SO₂, NOₓ and PM10 as well as the exceedance of the PM10 concentration</td>
<td>Flemish Environment Agency</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>
## Social indicators

### G4 Content Index – Port of Antwerp 2012

**SPECIFIC STANDARD DISCLOSURES**

**Social indicators by aspects**

### Social: Labor Practices and Decent Work

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Description</th>
<th>Cross-reference/Direct answer</th>
<th>data Source</th>
<th>Assured by PwC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4-LA1</td>
<td>Total number and rate of new employee hires and employee turnover by age group, gender, and region.</td>
<td>Employees in the port</td>
<td>National Bank of Belgium, CEPA and Antwerp Port Authority</td>
<td>yes</td>
</tr>
<tr>
<td>G4-LA2</td>
<td>Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation.</td>
<td>Background labour and social protection in the port</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td><strong>Labor/management relations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4-LA4</td>
<td>Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.</td>
<td>Background labour and social protection in the port</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td><strong>Occupational health and safety</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4-LA5</td>
<td>Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.</td>
<td>Background labour and social protection in the port</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td>G4-LA6</td>
<td>Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender.</td>
<td>Number of industrial accidents, fatalities and lost days per person due to diseases</td>
<td>CEPA and Antwerp Port Authority</td>
<td>no</td>
</tr>
<tr>
<td><strong>Training and education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4-LA9</td>
<td>Average hours of training per year per employee by gender, and by employee category.</td>
<td>Number of training hours in official higher education</td>
<td>National Bank of Belgium</td>
<td>no</td>
</tr>
</tbody>
</table>
## Diversity and equal opportunity

<table>
<thead>
<tr>
<th>Performance Indicator</th>
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</tr>
</thead>
<tbody>
<tr>
<td>G4-LA12</td>
<td>Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.</td>
<td>Gender ration and level of education</td>
<td>National Bank of Belgium</td>
<td>yes</td>
</tr>
</tbody>
</table>

## Social: Human Rights

### Freedom of association and collective bargaining

<table>
<thead>
<tr>
<th>Performance Indicator</th>
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</tr>
</thead>
<tbody>
<tr>
<td>G4-HR4</td>
<td>Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights.</td>
<td>Background labour and social protection in the port</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Child labor

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>G4-HR5</td>
<td>Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.</td>
<td>Background labour and social protection in the port</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Forced and compulsory labor

<table>
<thead>
<tr>
<th>Performance Indicator</th>
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</tr>
</thead>
<tbody>
<tr>
<td>G4-HR6</td>
<td>Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.</td>
<td>Background labour and social protection in the port</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Social: Society

### Local communities

<table>
<thead>
<tr>
<th>Performance Indicator</th>
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<th>Cross-reference/Direct answer</th>
<th>data Source</th>
<th>Assured by PwC</th>
</tr>
</thead>
<tbody>
<tr>
<td>G4-SO1</td>
<td>Percentage of operations with implemented local community engagement, impact assessments, and development programs.</td>
<td>Public consultation Social support plan</td>
<td>Antwerp Port Authority</td>
<td>no</td>
</tr>
</tbody>
</table>

### Other social indicators

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Description</th>
<th>Cross-reference/Direct answer</th>
<th>data Source</th>
<th>Assured by PwC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security measures International Ship and Port facility Security Code and Alfarpass</td>
<td>isps-and-alfapass</td>
<td>Antwerp Port Authority and CEPA</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Security measures: Authorised Economic Operator</td>
<td>AEO</td>
<td>European Commission</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Unwanted passengers</td>
<td>Illegals and stowaways</td>
<td>Police</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------</td>
<td>--------</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>Sustainable transport for employees</td>
<td>Qualitative description of initiatives to enhance the use of sustainable transport such as busses or bikes</td>
<td>MLSO and VOKA</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Educational programs for schools</td>
<td>Qualitative description of the programs offered</td>
<td>Antwerp Port Authority and Port Centre Lillo</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>

### Social: Product Responsibility

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Description</th>
<th>Cross-reference/Direct answer</th>
<th>data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product and service labelling</td>
<td>Results of surveys measuring customer satisfaction</td>
<td>Port satisfaction survey 2012</td>
<td>no</td>
</tr>
</tbody>
</table>
Assurance letter

PricewaterhouseCoopers Bedrijfsrevisoren
For the attention of: Marc Daetman and Ilse Moens
Woluwestraat 19
1932 Sint-Stevens-Woluwe

Date: October 8, 2013

Sustainability Report 2013 on Port of Antwerp

Dear Mr. Daetman and Mrs. Moens,

This representation letter is provided to you at your request, in connection with the assurance engagement granted to you in the engagement letter dated June 19, 2013 to conduct a limited assurance engagement on the Port of Antwerp Sustainability Report of the year 2013. The engagement is aimed at issuing a limited assurance report and to obtain for your conclusions on the key performance indicators identified with a specific symbol (\textsuperscript{a}).

For the Sustainability report we refer to the website of Port of Antwerp, where it can be downloaded. The list of key performance indicators subject to your review is attached.

We acknowledge our responsibility for the content of the Sustainability Report. We confirm to the best of our knowledge and belief, as of October 8, 2013, the following representations in relation to your engagement letter with respect to the Port of Antwerp Sustainability Report:

- We have given you access to the relevant data, procedures and correspondence for the Sustainability Report. This includes the accounting records, the underlying source data, policy documents, descriptions of internal procedures and other internal guidelines.
- The Sustainability Report gives a true and fair view and includes all disclosures necessary for such a true and fair view, and includes all necessary disclosures of material importance to provide such a true and fair view;
- The Port of Antwerp has formulated business principles. Compliance with these principles is monitored by the different responsibilities within Gemeente/Ik Havenbedrijf Antwerpen, Alport Antwerpen and Maatschappij Internechekeovergebied. This process has not revealed any indications pointing to breaches that could be materially important to the content of the Sustainability Report.
- There have been no violations of legislation and rules, permit conditions, contractual obligations, as well as regulations issued by regulatory authorities, which if not complied with
could be of material importance to the Sustainability Report. If breaches have occurred, which are of material importance to the overall image eroded in the Sustainability Report, they have been sufficiently explained in the Sustainability Report.

- After the end of the reporting period of December 31, 2012, December 31, 2011 or December 31, 2010, depending on the specific indicator ne subsequent events have taken place that could require changes to the Sustainability Report or which should have been mentioned to improve the understanding of the stakeholders of the report.

Finally, we confirm that we are not aware of any actions and/or facts which should be classified as fraud, the effect of which on the Sustainability Report could be of material importance.

Yours sincerely,

[Signatures]

[Signature]
Anno van der Putte
Matschappij Linkerscheldecoever

[Signature]
Rudi De Meyer
Algemeen bestuurder
Alspoort Antwerpen

[Signature]
Walter Van Mechelen
Vorzitter
Gemeentelijk Havenbedrijf Antwerpen

[Signature]
Cath. De Swert
Vorzitter
Gemeentelijk Havenbedrijf Antwerpen

[Signature]
Eckehardt De Schrijver
Algemeen bestuurder
Gemeentelijk Havenbedrijf Antwerpen