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HOW TO DEAL WITH THE PROBLEM OF INDUSTRIAL/PORT NUISANCES?

G.1. COMPILE AN INVENTORY OF THE DIFFERENT TYPES OF ENVIRONMENTAL IMPACT

The restrictions imposed by national and supranational environmental legislation offer an opportunity to adopt a proactive rather than a reactive approach, by committing to dynamic, forward-looking environmental strategies. Before practical steps can be taken to monitor and manage the environmental impacts of ports, especially in city-port interface areas, those impacts first need to be clearly identified and assessed.

- VALENCIA (SPAIN)

The environment and eco-efficiency have been central to the Port of Valencia's development strategy for some time. They formed the core issue of its Ecoports programme and the Sympic project (“Environmental Integration of Ports and Cities”) funded by the European LIFE programme. Completed in 2007, the project allowed Valencia and its partner cities Toulon (France) and Livorno (Italy) to develop a system of indicators, used to identify responsibilities and define a joint programme of environmental actions for the city/port interface.

As part of the Climeport project (2009-2012), a carbon footprint measuring tool was created in conjunction with the other Mediterranean ports involved in the project (Algeciras, Koper, Livorno, Marseilles, Piraeus). The method used allows four different carbon footprints to be calculated: the port's overall footprint, and the specific footprints of port activities, services, and facilities. The tool has also been used to draw up an action plan and define 30 best practices for these four categories.

This project, like the previous ones, also highlighted the importance of cooperation between different members of the port community for reducing environmental impacts, as was the case in Valencia between 2008 and 2012.
### Evolución del Indicador de Emisiones de CO2e de los años 2008, 2010 y 2012

<table>
<thead>
<tr>
<th>Año</th>
<th>2008</th>
<th>2010</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emisiones Totales de CO2e (Kg de CO2e)</td>
<td>161.685.275</td>
<td>158.026.709</td>
<td>160.770.152</td>
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<tr>
<td>Producción Anual (Tráfico de Mercancías en Toneladas)</td>
<td>51.897.337</td>
<td>56.893.676</td>
<td>60.517.225</td>
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<tr>
<td>Indicador (Kg CO2 e/Tm Mercancía)</td>
<td>3.12</td>
<td>2.78</td>
<td>2.66</td>
</tr>
</tbody>
</table>

The above figures have been calculated based on the methodology from Climaport project but excluding the effect from staff mobility. These figures have been verified by Lloyd’s Register according to ISO 14064 standard.

### Evolución del Indicador de Emisión Serie 2008-2012 (Kg CO2e/Tm)

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G.2. FORMALISE COMMUNITY ACCEPTANCE OF CERTAIN NUISANCES

In city/port interface areas, cities committed to a deliberate marketing strategy to sell office or housing space “with port views” will be careful to ensure that the presence of an active port is indicated in sale or rental documents. The aim is to reduce the number of subsequent appeals and secure the long-term future of the port’s activities.

- FREMANTLE (AUSTRALIA)

Fremantle is located at the mouth of the Swan River, around twenty kilometres from Perth. It is home to the state of Western Australia’s largest working industrial port. As a vital economic player in a fast-growing city, it also has to coexist with the residential area close to the active port, and deal with complaints from local residents and businesses concerning noise and fears about the port’s impact on property prices.

To ensure sustainable future development and successful coexistence between the port and the city, the port of Fremantle has adopted a multi-faceted strategy. This strategy is based on the creation of buffer and transition zones, with the area split into three zones with possible urban uses based on risk levels and the potential impact of port activities. Legal arrangements have also been adopted to minimise the likelihood of successful lawsuits, along with specific legislation on the port’s protection. This legislation recognises the port’s right to exist on its current site, and that its activities do not constitute a nuisance provided appropriate control procedures are put in place.
G.3. UNDERTAKE A COOPERATIVE APPROACH WITH ALL INDUSTRIAL STAKEHOLDERS

By working together with all of the businesses present in the industrial-port area from an early stage, all of the appropriate legal options can be examined, along with the range of solutions that businesses can adopt in order to comply with environmental legislation. This process begins in the very first stages of a project to maintain, extend or establish industrial and port activities.

- DELFZIJL (NETHERLANDS)

In Delfzijl, the very close proximity between port activities (Groningen SeaPorts), industrial activities and the city centre makes for a particularly complex and challenging situation.

Work was carried out with all of the businesses concerned, focusing partly on providing information about the environmental impacts and various legal constraints (such as laws on "noise zoning", safety and habitations). But most importantly, it entailed cooperating with the businesses to examine and adapt the whole range of solutions, including abandoning projects and/or relocating activities.

_Delfzijl, Noise zoning in the industrial-port zone_
_Copyright: Municipality of Delfzijl (AIVP Days, 2007, Le Havre)_
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Defzijl, Safety zoning: Green: habitation zones, where high-risk businesses, especially petrochemical activities, are prohibited; Blue: intermediate zones, where high-risk businesses are permitted only if necessary measures have been taken; Red: unrestricted zone.
Copyright: Municipality of Defzijl (AIVP Days, 2007, Le Havre)

- ANTWERP (BELGIUM)

The Port of Antwerp has made cooperation with stakeholders the cornerstone of its sustainability commitment. This collective approach resulted in the publication of a first sustainability report in February 2012. It supposes close involvement by the various partners concerned, and encourages exchanges of expertise and feedback. It also promotes acceptance and adoption of sustainable practices and solutions, in particular for stakeholders such as small businesses, for whom this may be more challenging.

The approach is also progressive: the partners' critical analysis and recommendations on the first report were taken into account in the second report, published in October 2013. The next update is due in October 2015. To complement this approach, a communication strategy has been adopted with a dedicated website.
G.4. SEEK INNOVATIVE TECHNOLOGICAL SOLUTIONS IN ORDER TO MITIGATE SOUND POLLUTION

There are now a multitude of technological solutions available (insulation and other treatments of buildings, lights, port equipment, coverings, etc.) to reduce nuisances and allow contact between heavy port activities and urban activities. Research and innovation in this area will be intensified, to produce ever more effective solutions.

- BREMERHAVEN (GERMANY)

Completed in 2008, the construction and operation of container terminal CT 4 in this location required compensation measures and work on buildings in the nearby urban zone.

Bremenports, the company which runs the port, contacted around 85 homeowners and residents in the centre of Weddewarden and certain districts of Imsum, to offer to equip their homes with high-quality soundproofed windows and insulated doors. Each home situated near the terminal has also been equipped with a new ventilation system, to guarantee clean air in houses with new class III windows.

These noise protection measures are also aimed at residents of Weddewarden and Imsum living further from the terminal. Specialists review cases individually, based on forecast exposure to noise pollution.

- STOCKHOLM, HELSINKI, NAANTALI, TALLINN, TURKU

European regulations and the development of residential areas closer to ports have put the issue of noise pollution at the very top of the list of environmental priorities for Europe’s ports. The ports of Stockholm, Helsinki, Naantali, Tallinn, Turku and three research institutes took up the challenge through the European Penta project, which was completed in August 2013.

For the members of the Penta project, while there are technological tools available for measuring and reducing noise (noise barrier, quayside electricity, handling methods, ship machinery, port layout, access roads, etc.), these are not enough.

Their approach to noise management can be summed up in three key words: reduce, anticipate, cooperate. This complex issue requires a proactive strategy relying heavily on cooperation between port and urban authorities. It also requires a procedure that ensures complaints are passed up the chain, coupled with a strong communication strategy aimed at raising awareness among partners, and the population at large, of actions taken to reduce noise pollution and their results.
G.5. RECONCILE PORT FUNCTIONS AND ENVIRONMENTAL CONCERNS WITH A VIEW TO IMPROVING AIR QUALITY

Port and industrial activity is one of the main sources of air pollution in port cities. Architects can use innovative designs to reduce this pollution and transform environmental restrictions into sources of inspiration. Another effective solution involves combining the use of groundbreaking technologies with cooperation with stakeholders.

- **A CORUNA (SPAIN)**

  The coal terminal at the port of A Coruna was designed and built by Cymimas SA for the company Union Fenosa. It was inaugurated in July 2007, and has a capacity of 100,000 m³. The terminal has a dome measuring 105 m beneath which coal is stored, after being carried from ships on covered conveyors. The system used to transfer and store the materials is designed to prevent dust being carried into the air.

  Combining the twin concerns of efficiency and ecology, the structure has been adopted by the local population who refer to it by the evocative name “La Medusa”. It constitutes both a unique piece of architecture, clearly identifiable within the port, and a functional infrastructure that preserves air quality and mitigates the risks inherent to this type of traffic for the nearby city. It represents a qualitative long-term solution for bulk terminals.

  ![A Coruna port terminal](image)

  *Copyright: Autoridad Portuaria de A Coruña*

- **ROTTERDAM (NETHERLANDS)**

  The “We-nose” network currently relies on close to 100 electronic sensors, used to identify the nature and location of odours so that action can be taken more quickly. It has been rolled out in the Rotterdam Rijnmond area, and is set to have its coverage area extended with 300 sensors by 2016. The network is designed to protect the health and safety of people living or working in the area.

  While the Port of Rotterdam has played a leading role, it sees the project as a joint effort based on cooperation with the local environmental authority (DCMR Milieudienst Rijnmond), the companies present at the port, the City of Rotterdam and the other municipalities concerned.
The project also represents an opportunity for dialogue with the population. A platform has been set up for consultation with local residents and the private sector.

**KOPER (SLOVENIA)**

The economic growth of the port of Koper has made environmental issues a key focus of debate in recent years. A variety of initiatives have been adopted, aimed at managing and reducing the port's environmental impact. Technical measures specifically concerning air pollution were found to be insufficient.

A coal and mineral terminal and dust emissions posed a particular problem. The solution adopted in December 2013 is based on a more global approach to waste management, namely a circular approach summed up by the slogan "no waste, just resources" which earned an award from the ESPO in 2014. The process involves reusing waste from the paper industry which is sprayed on the heap of coals and mineral and then dries, creating a protective crust. The quality of the coal and mineral is unaffected by this process, and measurements taken in windy conditions with gusts exceeding 100 km/h have confirmed its efficacy. It replaces the more traditional spraying techniques, while saving some 3000 m³ of water annually.

Copyright: Port of Rotterdam

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