



# ENVIRONMENTAL STATEMENT 2016

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# 1. LETTER FROM THE CHAIRMAN

## 1. LETTER FROM THE CHAIRMAN

In 2016, the Port Authority of Valencia (PAV) implemented a certified energy management system in accordance with UNE-ES-ISO-50001 standard. This certification is again a declaration of intent of the PAV's commitment to the fight against climate change and the reduction of greenhouse gas emissions.

This Environmental Statement aims to ensure that the ports managed by this Port Authority maintain a commitment to sustainability, competitiveness and efficiency in management.

In 2008, the PAV acceded to the Eco-Management and Audit Scheme (EMAS III) regulated by Regulation EC 1221/2009 of the European Parliament and the Council of 25 November 2009, whose competent body is the Ministry of Agriculture, the Environment, Climate Change and Rural Development, and whose objective is to fulfil the PAV's commitment in relation to the environmental actions carried out during 2016, aimed at controlling and reducing the effect of the port's activity on the environment.

The PAV is fully committed to transparency in management, facilitating the public participation of any interested party through the publication of this Environmental Statement; by staying current with major environmental and port certifications, such as ISO 14001, EMAS III or PERS (Port Environmental Review System).

During 2016, the PAV's carbon footprint for the years 2010, 2012 and 2014 has been registered in the Registry for carbon footprint, compensation and CO2 absorption projects created by the Ministry of Agriculture, Food and the Environment, obtaining the seal of "calculation". This is the first Port Authority that registers the carbon footprint of a port area. This is the result of good practices aimed at reducing the greenhouse gases which occur in port activities.

The PAV, as the engine for initiatives for innovation and the improvement of the environmental quality of our environment, continues to work on the reduction of emissions from port activities and the efficient consumption of resources; in



AURELIO MARTÍNEZ ESTÉVEZ

*Chairman of the Port Authority of Valencia*

particular, water and energy, such as by promoting the use of low-carbon fuels and energy from renewable sources.

Throughout 2016, work continued on the European projects GAINN (GAINN4MOS and GAINN4MOS INNOVATION), and CORE LNG as HIVE, whose objective is the implementation of the technology derived from the use of LNG as a fuel in the activities related to maritime transport. These projects are financed 50% by the European Union through its CEF program (Connecting Europe Facility).

Through the ECOPORT II Project, the Environmental Committee and its working groups, we continue to collaborate with the Port Community companies on this road towards the implementation of Environmental and Energy Management Systems in their organizations.





Also, and as has been customary during recent years, the PAV continues to inform the public about the Port Authority of Valencia's 2016 environmental activities not only through this Environmental Statement, but also through the publication and distribution of "environmental tips" and relevant news from the Environmental Bulletin; work developed through the PAV intranet, raising the awareness of our staff and the port community.

All information about this Port Authority and its different environmental publications can be found on our website: [www.valenciaport.com](http://www.valenciaport.com).

Finally, I must thank both the PAV staff and the members of the port community for their involvement and collaboration in achieving these goals. Without them, we could not be carrying out this task of disseminating the results contained in this Statement.



## 2. INTRODUCTION AND BACKGROUND



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Environmental criteria have been part and parcel of the Port Authority of Valencia's business strategy for many years now, with the commitments it has taken on under its Environmental Policy being part of a Corporate Social Responsibility framework. Over the years, the Port Authority has championed many different environmental initiatives in the three ports it manages. The milestones are listed below in chronological order.

In 1998, the PAV launched the ECOPORT project, entitled 'Moving towards an environmentally-friendly port community', funded by the European Commission's LIFE Programme. This project led to the creation of a method to implement environmental management in ports at national and international level, as has also been implemented in a variety of port environments.

The ECOPORT project brought about a step change in the PAV's approach to including environmental criteria and concerns in its activities, and laid the foundations for the development of the organisation's Environmental Management System, which is set out in this report. In the same year, the staff were assigned to this area to work solely on environmental protection.

Accordingly, on 12th April, the PAV's Board of Directors approved the port's Environmental Policy. This was amended on 14 May 2015. In recent years, the PAV has broadened its commitment to environmental management, and its environmental management system has matured and embraced new challenges.

In 2003, the PAV was the first Spanish port authority to obtain PERS certification (Port Environmental Review System), a programme awarded by Lloyds Register and back by the ECOPORTS Foundation and the European Sea Ports Organisation (ESPO). In 2006, its Environmental Management System obtained ISO 14001 certification and, in 2008, the PAV was included in the Valencian Region's EMAS (European Eco-Management and Audit Scheme) Register, under entry number 23.

In 2008, the Port Authority of Valencia received the Eco-Excellent Organisation award at Ecofira, after being proposed as a candidate by the Valencian Regional Ministry of the Environment, Territory, and Housing's Clean Technology Centre.

Over the years, the Port Authority of Valencia has also taken on various international commitments, such as the signing in November 2006 of the Sydney Charter for the Sustainable Development of Port Cities, under the auspices of the International Association of Cities and Ports, and the signing in July 2008 of the World Ports Climate Declaration in Rotterdam.

In 2016, the PAV, in its commitment to improve in terms of climate change and the reduction gases, calculated and registered the Carbon Footprint of the Port of Valencia in the Registry of Carbon Footprint, Compensation and CO<sub>2</sub> Absorption projects, created by the Ministry of Agriculture, Food and Environment, obtaining the seal of "Calculation". Also in 2016, the PAV has achieved certification of its Energy Management System according to ISO 50001.

As detailed below, the PAV is involved in numerous initiatives and takes part in many different projects in order to improve its own environmental performance, as well as that of port community companies, including continuous improvement in its activities, which include:

- Improving tools for monitoring the main environmental aspects in the ports it manages.
- Working towards more efficient consumption through policies to monitor and measure the use of water and electricity in the networks that supply its ports, as well as policies to replace vehicles with others which are more eco-friendly.
- Monitoring the environmental impacts of the work to extend the ports of Valencia and Sagunto through its Environmental Surveillance Plan.
- Support and encouragement for port community companies in implementing environmental management systems in their organizations, through the ECOPORT II project.
- Keeping its Environmental Management System up to date, as this provides the information contained in this statement and enables environmental performance to be improved year after year.



### 3. PORT DESCRIPTION



## 3. PORT DESCRIPTION

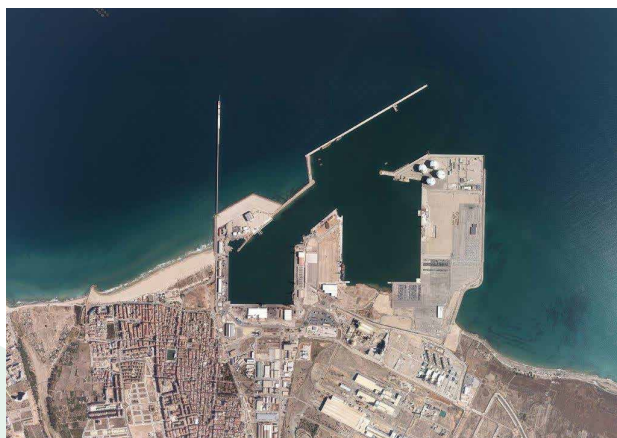
The Port Authority of Valencia (PAV), which trades under the name of Valenciaport, is the public body responsible for running and managing three state-owned ports, Sagunto, Valencia, and Gandia, located on an 80 km stretch of the Mediterranean coast in Eastern Spain.

Valenciaport has an exceptional geographical and strategic location in the centre of the Western Mediterranean arc, in line with the east-west shipping corridor which crosses the Suez Canal and the Gibraltar Straits. This makes Valenciaport the first and last port of call for the main regular ocean carriers operating between America, the Mediterranean Basin and the Far East.

### 3.1. LOCATION AND PHYSICAL DATA

The ports of Sagunto, Valencia and Gandia are located on the Spanish Mediterranean, and have a subtropical climate with mild winters and hot summers.

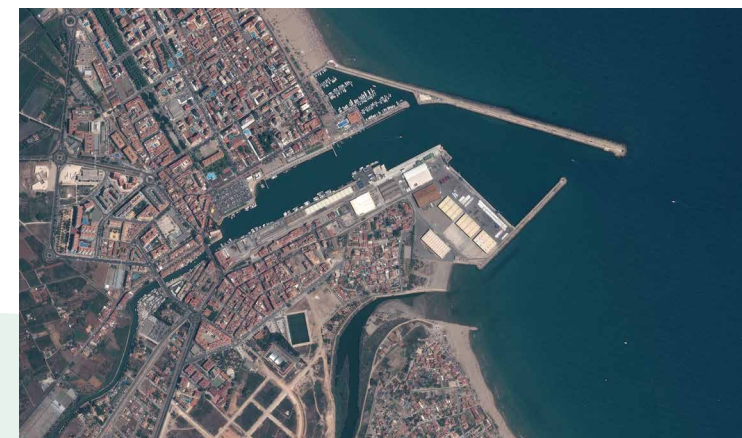
Port	Location	Total Surface Area	Total water surface area	Quays and berthing lines
<b>Sagunto</b>	Longitude 0° 13' W Latitude 39° 39' N	2,397,800 m <sup>2</sup>	2,206,000 m <sup>2</sup>	14 quays 5,801 m berthing lines
<b>Valencia</b>	longitude 0° 18,1' W latitude 39° 26,9' N	5,626,534 m <sup>2</sup>	5,746,000 m <sup>2</sup>	27 quays 13,554 m berthing lines
<b>Gandia</b>	longitude 0° 9' W latitude 38° 59' N	245,000 m <sup>2</sup>	284,000 m <sup>2</sup>	6 quays 1,289 m berthing lines



Port of Sagunto. 2014



Port of Valencia. 2015



Port of Gandia. 2014

### 3.2. LEGAL FRAMEWORK

The legal framework of port authorities is set out in Spanish Royal Decree 2/2011 of 5th September, under which the recast text of the Spanish Law on State-owned Ports and the Merchant Navy was passed.

The Port Authority of Valencia is a body governed by public law, with its own legal status and equity, which are independent from those of the State. It reports to the State-owned Ports Body and is responsible for the administration, management, and supervision of the ports of Sagunto, Valencia, and Gandia, and the operations carried out in them. Its main functions include managing public port land, awarding concessions and authorisations, planning designing and building any necessary infrastructure, organising surveillance and policing in the port service area, and maintaining navigational aids, among others.

The law gives the Central Government sole authority over public ports (article 149.1.20 of the Spanish Constitution), and establishes that the governing bodies of port authorities shall be designated by the autonomous regional governments. The Port Authority of Valencia's governing bodies are as follows:

- a) Governing bodies:
  - Board of Directors
  - Chairman
- b) Management bodies:
  - Director
- c) Advisory bodies
  - Shipping and Port Council

The Port Authority of Valencia has a system to regularly identify and assess legal and other environmental requirements. Thus, it keeps its environmental authorisations up to date, and complies with its environmental obligations on a regular basis.

The Port Authority of Valencia considers it essential to comply with current legislation and especially environmental legislation. This includes compliance with environmental requirements in aspects such as:

- Waste. Both hazardous and non-hazardous waste are monitored, as well as the storage, labelling, sorting, transport, and management of this waste using duly authorised transport and waste management companies.
- Emissions. It carries out vehicle inspections and monitors other types of emissions such as those generated by the organisation's boiler system.
- Water discharges. These are not representative as they come from domestic sources, such as the toilets and showers installed in its facilities, but they are still monitored.
- Noise. It regularly measures noise, thus complying with the applicable legal requirements in this area.

The PAV also encourages its staff and the concessions located in the port facility to comply with environmental legal requirements by providing training on the legal requirements that facilities must comply with in terms of hazardous waste, environmental responsibility, and discharges, among others.

The most important environmental legal requirements that are applicable to the organisation are described below:

YEAR	DESCRIPTION
2016	Royal Legal Decree 1/2016, of 16th December, which approved the revised text of the Law on the prevention and integrated control of contamination.
2016	Order AAA/699/2016, of 9th May, which modified operation R1 of annex II of Law 22/2011, of 28th July, on waste and contaminated soils.
2016	Amendments to the 2014 Annex of the 1978 Protocol relating to the International Convention to prevent pollution from ships, 1973 (Amendments to Annex I of the MARPOL Convention on the prescriptions related to stability instruments carried onboard), adopted in London on 4th April 2014 through Resolution MEPC.248(66).



YEAR	DESCRIPTION
2016	Amendments to the 2014 Annex of the 1978 Protocol relating to the International Convention to prevent pollution from ships, 1973 (Amendments to Annex I, II, III, IV and V of the MARPOL Convention to make the use of Code III mandatory), adopted in London on 4th April 2014 through Resolution MEPC.248(66).
2016	Royal Decree 56/2016, of 12th February, which transposed Directive 2012/27/EU of the European Parliament and of the Council of 25th October 2012 on energy efficiency, with regard to energy audits, accreditation of energy service providers and auditors and the promotion of the efficiency of the energy supply.
2015	Amendments of 2013 to the Annex to the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973 (Amendments to Annexes I and II of the MARPOL Convention to make the OR Code binding), adopted in London on 17th May 2013 through Resolution MEPC.238(65)
2015	Amendments to annexes A and B of the European Agreement concerning the international carriage of dangerous goods by road (ADR 2015) adopted in Geneva on 1st July 2014.
2015	Royal Decree 180/2015, of 13th March, regulating the transfer of waste within Spanish territory
2015	Royal Decree 183/2015, of 13th March, amending the Regulation on the partial development of Spanish Law 26/2007, of 23rd October, on Environmental Responsibility, adopted by Royal Decree 2090/2008, of 22nd December.
2015	Royal Decree 110/2015, of 20th February, on electrical waste and electronic equipment
2014	Regulation (EU) No. 1357/2014 of the Commission, of 18th December 2014, replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council, on Waste and repealing certain directives.
2014	Commission decision of 18th December 2014, amending Decision 2000/532/EC, on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council.

YEAR	DESCRIPTION
2014	Valencian Regional Ministry of Infrastructure, Territory, and the Environment Order 26/2014, of 30th October, approving the document to develop the measures drawn up in the Valencian Region's Integrated Waste Plan Prevention Programme.
2014	ROYAL DECREE 678/2014, of 1st August, which modified Royal Decree 102/2011, of 28th January, on the improvement of air quality
2014	Valencian Regional Government Law 5/14, of 25th July, on Spatial Planning, Town Planning and Landscape in the Valencian Region.
2014	Valencian Regional Government Law 6/14, of 25th July, on the Environmental Protection, Quality, and Control of Activities in the Valencian Region.
2014	Spanish Law 11/2014, of 3rd July, amending Law 26/2007, of 23rd October, on Environmental Responsibility (Official State Gazette No. 162, of 4th July 2014).
2014	Royal Decree 337/2014, of 9th May, approving the Regulation on the technical conditions and safety guarantees in high voltage electricity installations and its supplementary technical instructions ITC-RAT 01 to 23.
2014	Spanish Royal Decree 97/2014, of 14th February, regulating the transport of dangerous goods by road in Spain
2013	Valencian Regional Government Decree 81/2013, of 21st June, definitively approving the Valencian Region's Integrated Waste Plan
2012	Spanish Royal Decree 1695/2012 of 21st December, approving the National Response System to Marine Pollution
2011	Spanish Legislative Royal Decree 2/2011, of 5th September, approving the recast text of the Spanish Law on State-owned Ports and the Merchant Navy
2011	Spanish Law 22/2011, of 28th April, on contaminated soil and waste
2011	Spanish Royal Decree 100/2011, of 28th January, updating the list of activities that potentially pollute the atmosphere, and setting out the basic provisions for its application.

YEAR	DESCRIPTION
2011	Spanish Royal Decree 102/2011, of 28th January, on improving air quality
2011	Spanish Royal Decree 60/2011, of 21st January, on environmental quality standards in the field of water policy.
2010	Valencian Regional Government Decree 208/2010, of 10th December, setting out the minimum documentation needed to prepare environmental impact study reports, as referred to in article 11 of the Valencian Regional Government Law 4/1998, of 11th June, on Valencian Cultural Heritage.
2010	Spanish Law 33/2010, of 5th August, amending Law 48/2003, of 26th November, on the economic regulations for and supply of services by public ports.
2010	Spanish Law 6/2010, of 24th March, amending the recast text of the Spanish Law on the environmental impact of projects, passed by Spanish Legislative Royal Decree 1/2008, of 11th January.
2010	Valencian Regional Government Decree 97/2010, of 11th June, regulating the right to access environmental information and public participation in the environment in the Valencian Region.
2008	Correction of errors in Valencian Regional Government Decree 43/2008, of 11th April, amending Valencian Regional Government Decree 19/2004, of 13th February, setting out the regulations to control the noise made by motor vehicles, and Valencian Regional Government Decree 104/2006, of 14th July, on the planning and management of noise pollution.
2008	Spanish Legislative Royal Decree 1/2008, of 11th January, approving the recast text of the Spanish Law on the environmental impact of projects (Official State Gazette No. 23, of 26th January 2008).
2008	Spanish Royal Decree 2090/2008, a regulation partially developing Spanish law 26/2007 on environmental responsibility.
2007	Spanish royal Decree 1617/2007, of 7th December, which established measures for the improvement of port and marine transport protections.

YEAR	DESCRIPTION
2007	Spanish Law 34/2007, of 15th November, on air quality and protection (Official State Gazette No. 275, of 16th November 2007).
2007	Spanish Royal Decree 1367/2007, of 19th October, developing Spanish Law 37/2003, of 17th November, on noise, in terms of noise zoning, quality objectives and noise emissions.
2007	Valencian Regional Ministry of Territory and Housing Order, of 31th January 2007, setting out the procedure for facility operators subject to Annex 1 of Spanish Law 2/2006, of 5th May, on pollution prevention and environmental quality, to provide details about their emissions.
2007	Spanish Law 26/2007, of 23rd October, on environmental responsibility.
2007	Spanish Royal Decree 1367/2007, of 19th October, developing Spanish Law 37/2003, of 17th November, on noise, in terms of noise zoning, quality objectives, and noise emissions.
2006	Valencian Regional Government Decree 127/2006, of 15th September, developing Valencian Regional Government Law 2/2006, of 5th May, on pollution prevention and environmental quality.
2006	Valencian Regional Government Decree 104/2006, of 14th July, on the planning and management of noise pollution.
2006	Spanish Law 2/2006, of 5th May, on pollution prevention and environmental quality.
2006	Valencian Regional Government Decree 32/2006, of 10th December, amending Valencian Regional Government Decree 162/1990, of 15th October, approving the regulation to enforce Valencian Regional Government Law 2/1989, of 3rd March, on environmental impact.
2005	Spanish Royal Decree 1513/2005, of 16th December, developing Spanish Law 37/2003, of 17th November, on noise, in terms of assessing and managing environmental noise.
2005	Spanish Royal Decree 9/2005, of 14th January, listing potentially soil-contaminating activities and the criteria and standards for the declaration of contaminated soils (Official State Gazette No. 15, of 18th January 2005).



YEAR	DESCRIPTION
2003	Spanish Law 37/2003, of 17th November, on noise (Official State Gazette No. 276, of 18th November 2003).
2002	Spanish Royal Decree 1381/2002 on port reception facilities for ship-generated waste.
2002	Spanish Environment Ministry Order 304/2002, of 8th February, publishing the operations to recover and dispose of waste, and the European List of Waste (Official State Gazette No. 43, of 19th February 2002).
2001	Spanish Legislative Royal Decree 1/2001, of 20th July, approving the recast text of the Spanish Law on water (Official State Gazette No. 176, of 24th July 2001).
2000	Valencian Regional Government Law 10/2000, of 12th December, on waste in the Valencian Region.
1999	Spanish Royal Decree 1566/1999 on safety advisors.
1988	Spanish Royal Decree 833/1988, of 20th July, approving the regulation to enforce Spanish Basic Law 20/1986, on toxic and hazardous waste.
1997	Spanish Royal Decree 952/1997, amending the regulation to enforce Spanish Basic Law 20/86, on toxic and hazardous waste.
1975	Spanish Decree 833/1975, of 6th February, developing Spanish Law 38/1972, of 22nd December, on the protection of ambient air (Official State Gazette No. 96, of 22nd April 1975).
1973	The International Convention for the Prevention of Pollution from Ships, of 2nd November 1973 (MARPOL Convention)

The PAV's main environmental authorisations and obligations include:

- An Environmental Impact Statement for the Port of Valencia's extension.
- An Environmental Surveillance Plan for the Port of Valencia's extension.
- Registration as a producer of small volumes of hazardous waste (No. 3631/P02/RP/CV).

- A yearly declaration of possession of equipment containing PCBs.
- A register of potentially polluting activities. Air pollution.
- The International Convention for the Prevention of Pollution from Ships, of 2nd November 1973 (MARPOL Convention).



Clocktower building. Headquarters of the Port Authority of Valencia's Board Meetings. 2015

## 3.3. TRAFFIC FIGURES.

SUMMARY OF TRAFFIC FIGURES	2015	2016	16/15
<b>PAV</b>			
Total traffic (t)	70,083,977	71,280,984	1.71%
Liquid bulk	3,814,375	3,803,068	-0.30%
Solid bulk	2,684,864	2,478,928	-7.67%
Conventional general cargo	10,934,853	10,749,993	-0.78%
Containerised general cargo	52,267,244	53,786,327	2.91%
Fishing	1,891	2,070	9.43%
Supplies	480,750	460,598	-4.19%
Vessels (units)	7,728	7,702	-0.34%
G.T.	240,530,129	255,887,783	6.38%
Containers (TEUs)	4,615,196	4,722,273	2.32%
Passengers (numbers)	748,115	908,145	21.39%
Ferries	373,549	504,881	35.16%
Cruise ships	374,566	403,264	7.66%
Cars (units)	689,426	774,708	12.37%
<b>Port of Valencia</b>			
Total traffic (t)	63,329,644	64,361,045	1.63%
Liquid bulk	1,317,773	1,250,863	-5.08%
Solid bulk	1,504,950	1,344,987	-10.63%
Conventional general cargo	8,104,570	8,091,786	-0.16%
Containerised general cargo	51,947,632	53,229,414	2.47%
Fishing	315	406	28.59%
Supplies	454,404	443,589	-2.38%
Vessels (units)	6,267	6,232	-0.56%
G.T.	219,136,003	230,807,629	5.33%
Containers (TEUs)	4,579,916	4,680,947	1.77%
Passengers (numbers)	748,114	909,145	21.52%

SUMMARY OF TRAFFIC FIGURES	2015	2016	16/15
Ferries	873,548	504,881	35.16%
Cruise ships	374,566	403,264	7.66%
Cars (units)	506,349	581,540	14.85%
<b>Port of Sagunto</b>			
Total traffic (t)	6,369,091	6,568,440	3.13%
Liquid bulk	2,496,602	2,552,205	2.23%
Solid bulk	1,179,213	1,133,941	-3.84%
Conventional general cargo	2,366,718	2,314,206	-2.22%
Containerised general cargo	301,972	552,053	82.82%
Fishing	238	260	9.41%
Supplies	24,348	15,775	-35.21%
Vessels (units)	1,302	1,320	1.38%
G.T.	20,455,774	24,204,515	18.33%
Containers (TEUs)	33,686	60,914	80.83%
Cars (units)	183,077	193,168	5.51%
<b>Port of Gandia</b>			
Total traffic (t)	385,242	351,495	-8.76%
Liquid bulk	-	-	
Solid bulk	701	-	-100.00%
Conventional general cargo	363,565	344,001	-5.38%
Containerised general cargo	17,640	4,860	-72.45%
Fishing	1,338	1,404	4.92%
Supplies	1,998	1,234	-38.24%
Vessels (units)	159	150	-5.66%
G.T.	938,352	875,639	-6.68%
Containers (TEUs)	1,594	412	-74.15%





## 4. DESCRIPTION OF THE PAV's ENVIRONMENTAL MANAGEMENT SYSTEM

## 4.1. ENVIRONMENTAL POLICY

### THE PORT AUTHORITY OF VALENCIA'S ENVIRONMENTAL AND ENERGY POLICY

Shipping is an essential element in the flow and exchange of goods. Modern port management and market competition have led port companies to concentrate and increase the volume of their activities and accordingly, they use ever larger amounts of resources, which makes the inclusion of efficient management criteria increasingly more important. One of the business strategy priorities of the Port Authority of Valencia, as the managing body of one of the main port areas in the Mediterranean, is sustainable development, combining respect for the environment with the economic and social growth of port activities in the facilities it manages.

The PAV is committed to developing an environmental and energy management system which, in addition to making all the members of its organisation aware of the responsibilities of sustainable management, also publicises and extends the need to adopt this ethical commitment to all the companies that operate on public port land, and involves customers, suppliers, official bodies, and other companies in the sector in this Environmental and Energy Policy. This commitment is specifically reflected in:

- The incorporation of environmental and energy considerations into public port land planning, organisation, management, and conservation processes to set goals and objectives for the improvement of both systems.
- Regular systematic analysis and assessment of the activities, products, and services of companies that may interact with the environment, in order to be aware of and manage the environmental risks they may create.
- Measuring, monitoring and managing the use of natural resources and energy, including eco-efficiency criteria in general, and energy efficiency criteria in particular, to ensure suitable environmental and energy performance in the services provided.
- Compliance with applicable environmental and energy legislation and requirements, aiming to go further than the demands required by law, whenever possible.
- Prevention and minimisation of emissions, consumption, discharges, noise, and waste produced as a result of its activities, aiming to recover as much as possible of the waste generated.
- Using and encouraging the implementation of the best, most viable technologies in each activity.
- The provision of suitable training and information for employees to encourage awareness and take-up of this policy.

As part of the voluntary commitments taken on to encourage environmental sustainability in the facilities it manages, the PAV supports a number of initiatives in its port community:

- Providing a forum where port companies can participate to establish common environmental initiatives and objectives, facilitate training for port company employees, and share concerns and needs linked to projects, communication and regulatory aspects which help to improve the environmental performance of all the participating firms.
- Encouraging port community companies to adopt the best technologies available to them through their participation in projects.
- Helping companies in the port community to implement energy efficiency improvements.
- Regularly assessing and measuring the impact of activities that take place in port facilities by calculating their carbon footprint.

Similarly, regular reports including a review of environmental initiatives will be drawn up and circulated to customers, suppliers, industry firms, members of the organisation and other stakeholders.

This Environmental and Energy Policy will be published and sent to all the members of the PAV so they can take part in improving the Environmental and Energy Management System. This policy will be updated when appropriate through a process of continuous improvement.

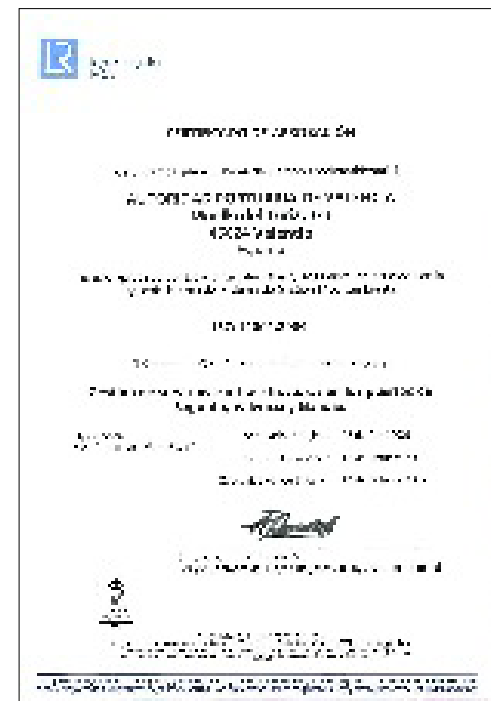
Approved by the Port Authority of Valencia's Board of Directors, on 12th April 2000, amended on 14th May 2015, and last updated on 11th November 2016 to include energy aspects.

*Aurelio Martínez Estévez*  
Presidente de la Autoridad Portuaria de Valencia

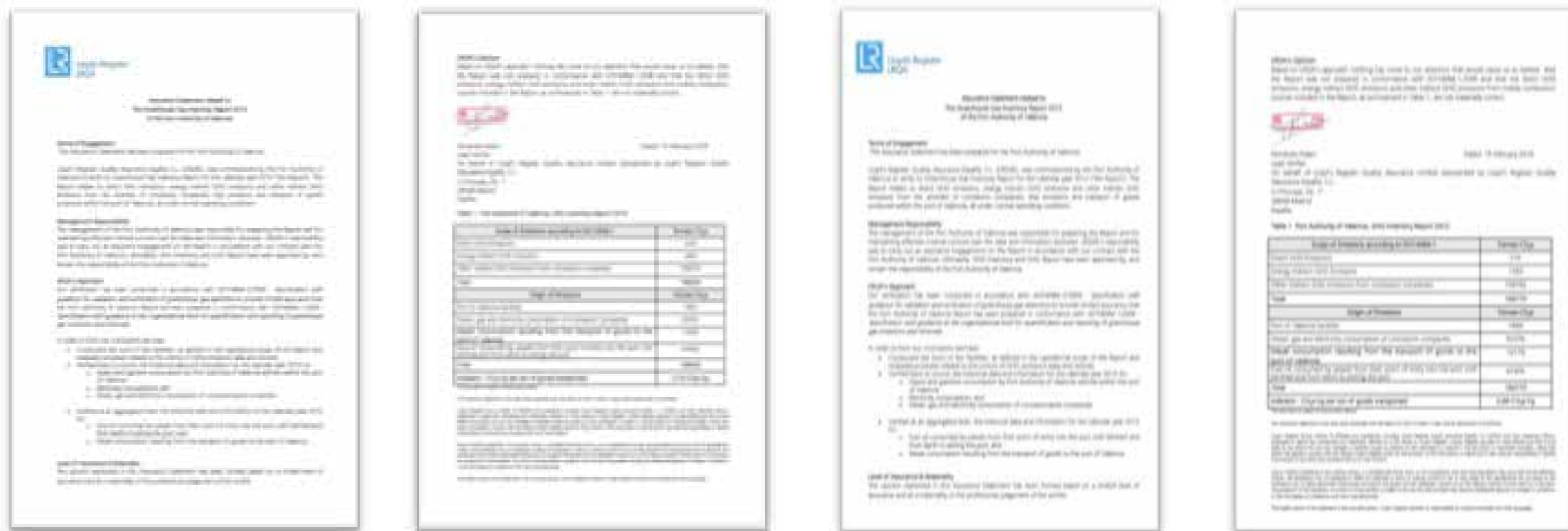
## 4.2. CERTIFICATIONS



The Port Authority of Valencia is certified under the PERS (Port Environmental Review System) model.



The Port Authority has been certified under the ISO 14001:2004 standard since 2006



Declaration of the verifier according to ISO 14064 for the calculation of the PAV's carbon footprint for 2012.



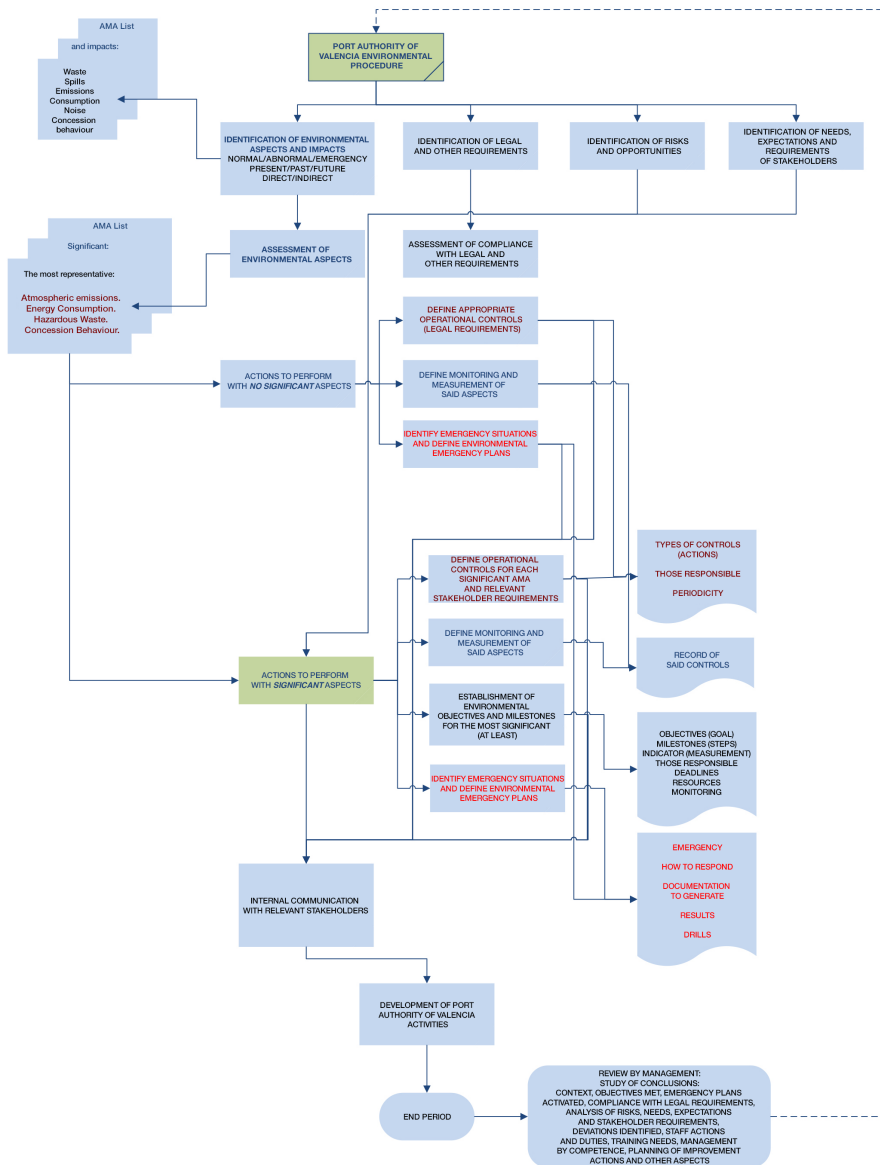


Declaration of the verifier according to ISO 14064 for the calculation of the PAV's carbon footprint for 2014.

On 15th January 2008, the Port Authority of Valencia was registered by the Valencian Regional Ministry of Infrastructure, Territory, and the Environment under entry number ES-CV 000023, to certify compliance of its Environmental Management System according to Regulations (EC) 1221/2009 and 761/2001.

In 2016, the Port Authority of Valencia obtained ISO 50001 certification for the Port of Valencia.

## 4.3. DESCRIPTION



## 4.4. ENVIRONMENTAL ASPECTS.

The Port Authority of Valencia's Environmental Management System includes a procedure to identify and evaluate environmental aspects (PMA-03) which sets out a method to identify and assess the environmental aspects associated with its activities and services, and those generated directly and indirectly in the port facility.

In this procedure, environmental aspects are identified by the person responsible for the environment in the organisation. This includes pinpointing both direct and indirect environmental aspects in normal and abnormal situations. Similarly, potential environmental aspects are identified, based on an analysis of accidents and emergency situations that have taken place, and on a study of the facilities and the activities carried out.

**There are various types of environmental aspects:**

**Direct environmental aspect:** an environmental aspect associated with activities, products, and services of the organisation itself over which it has direct management control.

**Indirect environmental aspect:** an environmental aspect which can result from the interaction of an organisation with third parties and which can to a reasonable degree be influenced by an organisation.

**Significant environmental aspects:** these are the first aspects to be taken into account when defining objectives and goals aimed at reducing the impact of these aspects.

**Environmental impact:** means any change to the environment whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.

**Normal conditions:** normal or routine operating conditions.

**Abnormal conditions:** conditions which, although they are monitored, are not habitual, such as maintenance, cleaning, start-up and shutdown, etc.

**Emergency situations:** uncontrolled situations, which include both incidents and accidents.

**Direct environmental aspects** are assessed through the method explained in the corresponding procedure of the EMS. They are each analysed by calculating the

frequency of the environmental aspect and the criterion of severity, which is established by calculating the hazardousness of the aspect and its magnitude, in accordance with the corresponding procedure.

The frequency of each type of aspect is divided into three categories: low, average, and high. The magnitude and hazardousness, which establish the severity, are divided into four categories: low, moderate, average, and high. Aspects are considered to be significant if their severity is assessed as being high, irrespective of the frequency, as shown in the following table.

		Severity			
		Low	Moderate	Average	High
Frequency	Low				
	Average				
	High				

**Indirect environmental aspects** are assessed by calculating the frequency of the environmental aspect and its consequences, which evaluate the magnitude of the consequences for each of the identified aspects. Frequency is divided into three categories: low, medium, and high. Consequences are divided into three categories, low impact, medium impact, and high impact.

Accordingly, aspects are considered to be significant if their consequences have a high or medium impact, and occur frequently, as shown in the following table.

		Severity		
		Low impact	Medium impact	High impact
Frequency	Low			
	Medium			
	High			

**Environmental aspects identified in emergency situations** are assessed according to frequency, magnitude of the impact, and awareness of the environment, and scores previously defined in the corresponding EMS procedure are given accordingly. Thus, the total score is taken as being the sum of the points assigned for each criterion and each aspect. Once all the identified aspects have been assessed, their scores are used to obtain a ranking from highest to lowest. The top 20% of scores are considered to be significant. If there are any aspects not included in this segment, but which have the same points as the lowest scoring aspect on the list, this aspect will also be considered significant.

The possible environmental impacts of the Port Authority of Valencia's activities on the environment are shown in the following vectors:

Direct:	Obj.	Indirect	Obj.
Generation of waste		Generation of waste in the port facility	
Air emissions	No. 47 No. 58	Emissions from transport used in the port facility	No. 44 No. 55 No. 58 No. 59
Water Quality		Environmental performance of concessions	No. 44 No. 59
Noise and visual impact		Noise on roads in the port facility	
Water consumption		Water consumption in the port facility	
Energy consumption	No. 52 No. 57 No. 60	Energy consumption in the port facility	No. 52
Raw material consumption		Raw material consumption in the port facility	



The assessment criterion used to evaluate the environmental aspect "Environmental performance of concessions" is the percentage of concessions included in the various stages defined in Ecoport.

The table below shows the significant environmental aspects in line with the assessment criteria established in the "Procedure to identify and assess environmental aspects".

Significant Environmental Aspects				
Direct:	Obj.		Obj.	Indirect
Energy consumption	No. 52 No. 57 No. 60		No. 44 No. 59	Environmental performance of concessions
			No. 44 No. 55 No. 58 No. 59	Emissions derived from port operations in the Port facility.

The list of aspects is reviewed and updated every year.

Objectives are established (see point 4.5), to improve the principle aspects and the significant environmental aspects.

In the case of public works, environmental aspects are identified and their significance is assessed through an Environmental Impact Study. The Environmental Impact Statement and the Environmental Surveillance Plan are used to monitor them.

### 4.5. OBJECTIVES AND GOALS

#### 4.5.1. PRIOR TO AND PLANNED IN 2016

The following objectives, planned and carried out during 2016, are differentiated by colours according to the legend described below:

- Objective established in previous years that has not yet been met.
- Objective planned in the current year, which is linked to objectives established in previous years.
- New objective established in the current year.

#### **Objective no. 40: Implementation of a computer tool to manage the EMS**

The contents of the tool were defined to ensure their compliance with the demands of the ISO 14001 and the EMAS standards. In addition, the tool's design included a component which can be exported to any other management system. Both the content and the operational aspects of the local design of the tool have been completed.

The problems arising with the framework have been solved. Testing has been performed, and during the first quarter of 2016, a report was drafted with the detected faults/improvements. The modifications/improvements to the applicability of the tool have been solved. Delivery and installation has been planned for the first quarter of 2017. **The objective continues for 2017.**

#### **Objective no. 44: improving environmental quality in bulk handling at the Port of Sagunto.**

During 2015, a meteorological profiling study was carried out in Sagunto to develop the prediction tool and help control emissions in bulk handling operations at the Port of Sagunto. The technical specifications for the modelling tool tender specifications have been prepared. The requirements and tools needed for the model proposal have been analysed. The contracting specifications are drafted. Technical assistance awarded. **The objective continues for 2017.**

#### **Objective no. 47: Calculate the Carbon Footprint of the Port of Valencia.**

The Carbon Footprint of the PAV (Port of Valencia) for 2014 has been calculated for ranges 1, 2 and 3, according to the methodology established in the Climeport project and where the 2008 Carbon Footprint were first calculated. This methodology was validated by the certification company according to the requirements established in ISO 14064.

During 2015, the carbon footprint calculations for the years 2012 and 2014 were finalized, to later validate the data obtained for 2010, 2012 and 2014 by the certification company. In addition, the verified Footprint from 2008 was recorded in the MAGRAMA "Registry of Carbon Footprint, compensation and CO<sub>2</sub> absorption projects".

An emission reduction plan has been drawn up for the Port of Valencia, with a 2020 horizon, which includes specific actions aimed at reducing the PAV's carbon footprint.

Accordingly, the data obtained to date in Kg of CO<sub>2</sub>eq/t of moved goods are as follows:

- 2008: 3.12
- 2010: 2.74
- 2012: 2.66
- 2014: 2.58

During 2016, the Carbon Footprint data was verified for the years 2010, 2012 and 2014, according to the ISO 14064 criteria. The verified Carbon Footprint for years 2010, 2012 and 2014 have been registered with MAGRAMA.

The drafting of the Guide to calculate the Carbon Footprint has been completed and presented to the media.

**The objective has therefore been completed.**

### Objective no. 48: Developing a waste web application for the Port of Valencia (Origin in 2015)

The first version of the APP is finalized. The review and testing of the APP has been carried out. Work has proceeded to making the necessary modifications and adaptations. The APP has been commissioned and sent to potential users at the Port Authority. **Objective completed.**

### Objective no. 50: Wind Energy viability study at the Port of Valencia. (Origin in 2016)

Initial diagnostic study is completed. The study was carried out to analyse the potential of wind generation in Valencia and to choose the wind turbine to be installed. The study was completed with the project technical and economic analysis and presented before the Steering Committee. **Objective completed.**

### Objective no. 51: Study of the implantation of drones at the port to take water/air quality samples. (Origin in 2016)

A study has been developed to evaluate the technology to be applied. Work is being done with the departments involved (Environment, Industrial Safety and Operational Safety), to adjust the choice of the sensors to be installed on the drone. Characteristics of water and underwater drones have been studied. Completed feasibility study is planned. **Objective completed.**

### Objective no. 52: Port of Valencia Energy Study. (Origin in 2016)

A study is being carried out on renewable energies (wind and solar) that are part of the energy study. The wind study for the Port of Valencia was finalized. The demand study has been delayed due to the need to update the alternative power supply with a substation. **Objective moved to 2017.**

### Objective no. 53: Implementation of ISO 50001 (Origin in 2016)

An inventory has been made of all consumption. The necessary procedures for the Energy Management System are being drafted. The environmental policy has been modified to include energy aspects in such a way that both policies are integrated. The external certification audit was obtained, obtaining the ISO 50001 certificate in October 2016. **Objective completed.**

### 4.5.2. NEW OBJECTIVES FOR 2017

The objectives planned for 2017 tackle the main environmental aspects associated with PAV activities and operations that have environmental implications. The objectives have been grouped together based on these criteria, and with the colour code used above:

#### a) ENVIRONMENTAL ASPECTS:

AIR:

#### No. 44. Improving environmental quality in bulk handling at the Port of Sagunto.

This objective is carried out with the intent of studying the environmental impact of the atmospheric emissions of powdery particles from the handling of solid bulk, by means of the use of a tool in model form, able to simulate real situations depending on the material handled and the meteorological conditions, so that preventive measures can be more successfully put into place.

**Starting point:** Preventive measures are available for the handling of bulk and limitations for operations that can generate particulate emissions. There are no predictive tools that can improve these measures or limitations for each specific operation.

**Plan:** Develop a computer tool capable of simulating real situations, with precise meteorological and material conditions, so that the measures to be implemented can be adjusted in each bulk handling operation to minimize the impact of such operations on the atmosphere.

**Result:** Control emissions. **Environmental Policy Line:** Prevent and minimize emissions, discharges, noise and waste generated as a result of this activity, trying to value the waste generated as much as possible.



### No. 58. Calculate the Carbon Footprint of the Port of Valencia for 2016 and validate results with the certification company. Registration in MAGRAMA

**Starting point:** The Carbon Footprints for 2008, 2010, 2012 and 2014 are calculated and validated. Registry of the Carbon Footprint for said years in MAGRAMA.

**Plan:** Obtain the 2016 Carbon Footprint, to analyse the trend. Registration of the 2016 Carbon Footprint in MAGRAMA.

**Result:** Calculate Carbon Footprint. Environmental Policy Line: Evaluate and periodically measure the impact of the activities carried out in the port areas by calculating the Carbon Footprint

### b) IMPROVING PROCESSES & ACTIVITIES

#### ECO-EFFICIENCY:

#### No. 52. Port of Valencia Energy Study

This objective is carried out in order to make future use forecasts and to be able to better plan, control and improve the PAV energy system, so that measures can be taken to make forecasts and to develop viability studies for renewable energy in the port.

**Starting point:** Current information on energy management in the Port of Valencia.

**Plan:** Viable action alternatives to cope with future energy demand in the PAV.

**Result:** Port Energy Evaluation. Environmental Policy Line: Systematically and periodically analyse and evaluate the activities, products and services of the company that may interact with the environment, in order to know and manage the environmental risk that could be generated

#### No. 54. Increase electric vehicle fleet by 1%

This objective is carried out with the aim of improving atmospheric emissions, thus contributing to the improvement of the carbon footprint.

**Starting point:** In the ongoing renewal of the vehicle fleet, electrical vehicles will be used instead of fuel consumption vehicles.

**Plan:** It is intended to gradually increase the fleet of electric vehicles while decreasing fuel consumption.

**Result:** Decrease in greenhouse gases. Policy Line: Use and promote the best technologies that are viable for each activity.

#### No. 55: Study on the possibility of supplying electricity to ships in a Short Sea Shipping line at the Port of Valencia

This objective is carried out in order to obtain data and information that allows us to assess the feasibility of supplying electricity to ships.

**Starting point:** There is no technology available to provide electricity to ships.

**Plan:** The possibility of implementing the necessary facilities to supply ships with electricity will be assessed, evaluating the advantages that this would entail, as well as to study their economic viability.

**Result:** Decrease in greenhouse gases. Policy Line: Use and promote the best technologies that are viable for each activity.

#### No. 56. Extend the PAV's electrical energy control points by 5% compared to the prior year at the Port of Valencia

This objective is carried out to increase control of energy consumption in the PAV.

**Starting point:** An electrical inventory is available with the measured control points.

**Plan:** The plan is to gradually increase the number of measurement points, so that in addition to having them controlled, we can have the consumption of each inventory element, then manage it to achieve its reduction.

**Result:** Improved energy management. Policy Line: Measure, control and manage consumption of natural resources and energy, incorporating eco-efficiency criteria in general and energy efficiency in particular, in order to achieve the adequate environmental and energy performance of the services provided.

### No. 57. Decrease in electricity consumption in the PAV buildings in the Port of Valencia by 2% compared to the previous year

This objective is carried out with the purpose of reducing electricity consumption at the Port of Valencia, taking concrete actions to achieve this objective.

**Starting point:** Consumption data is available for the previous year.

**Plan:** carry out the necessary actions by changing lights to reduce electrical consumption compared to the previous year by the established percentage.

**Result:** Reduced energy consumption. Policy Line: Measure, control and manage the consumption of natural resources and energy, incorporating eco-efficiency criteria in general and energy efficiency in particular, to achieve the adequate environmental and energy performance of the services provided

### No. 59. Installation of a substation at the Port of Valencia

This objective is carried out to improve the supply capacity at the Port of Valencia in the face of projected future energy demand, as well as being able to facilitate the supply of electricity to ships (objective 55)

**Starting point:** Insufficiency to obtain greater Energy Power.

**Plan:** Achieve the projected energy needs.

**Result:** Reduction of noise and atmospheric emissions. Policy Line: Integrate environmental and energy considerations into the planning, management, control and conservation processes of the public port domain, serving to set goals and objectives for improving both systems.

### No. 60. Study on the improvement of the energy efficiency of the PAV's air conditioning facilities in Valencia

This objective is carried out with the purpose of evaluating possible improvements in the performance of the air-conditioning facilities to improve energy efficiency.

**Starting point:** The consumption data for this plant is available and the equipment being used will be reviewed.

**Plan:** carry out a study that allows us to both technically and economically assess the possibility of improving the air conditioning facilities, to improve energy efficiency.

**Result:** Improve energy efficiency. Policy Line: Measure, control and manage the consumption of natural resources and energy, incorporating eco-efficiency criteria in general and energy efficiency in particular, to achieve the adequate environmental and energy performance of the services provided

#### MANAGEMENT:

### No. 40. Implementation of an EMS computer tool

This objective is carried out to implement a computerized environmental management system that is more agile, simple, agglutinating information, and facilitating the participation of the different members of the organization involved.

**Starting point:** There is no computerized environmental management tool available.

**Plan:** Have a computerized management tool that facilitates: among others, access to environmental management information, improving the communication system, managing the identification and evaluation of legal and other requirements, facilitating the monitoring of environmental objectives, ensuring compliance with all requirements by developing a system to mail notices to the various members of the organization, bringing together the set of PAV environmental performance indicators. In short, to facilitate not only legal compliance, but good environmental management.

**Result:** Environmental management. Environmental Policy Line: Use and promote the best technologies that are viable for each activity.



# 5. MANAGEMENT OF NATURAL RESOURCES



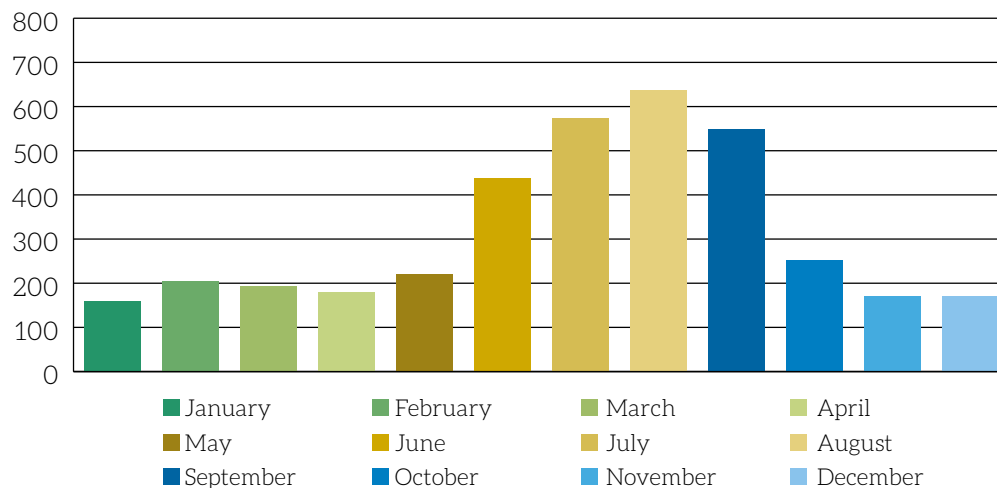
### 5.1. WATER

Water consumption at the PAV corresponds to water used in buildings and for watering gardens. Total water consumption at the PAV was 41,802 m<sup>3</sup>, which is almost 11.6% less than the previous year, where consumption was 47,276 m<sup>3</sup>.

Consumption by ports was distributed in the following manner:

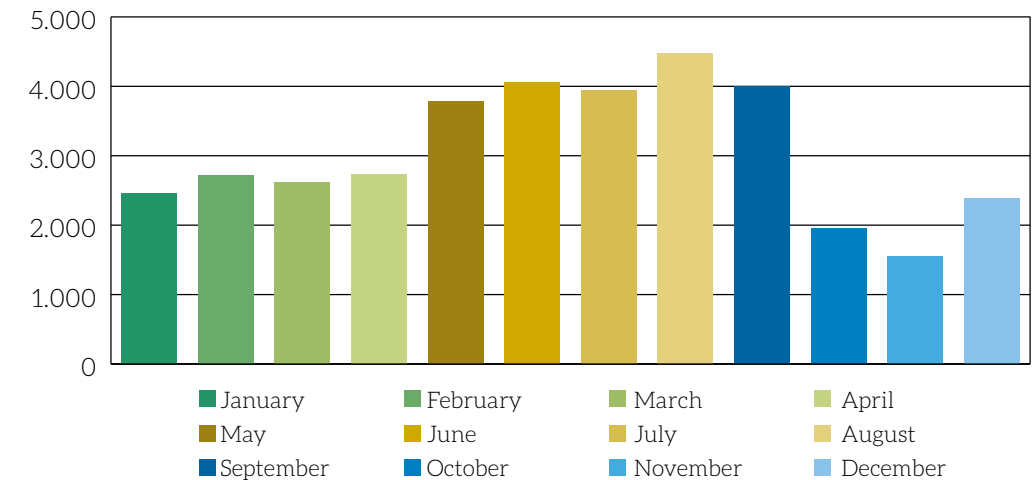
Consumption at the Port of Sagunto was 3,754 m<sup>3</sup>. Monthly consumption was as follows:

**SAGUNTO WATER CONSUMPTION 2016**



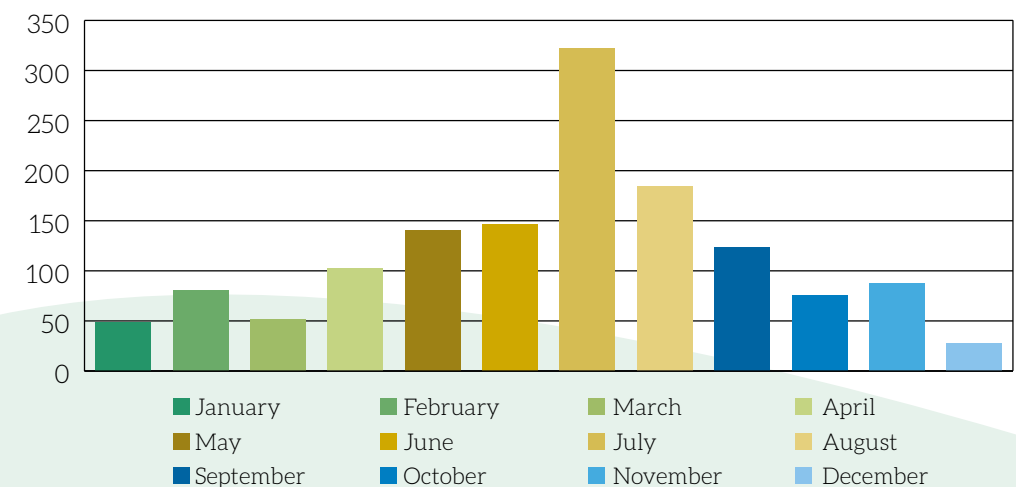
Water consumption at the Port of Valencia was 36,663 m<sup>3</sup> in 2016. Monthly consumption was as follows:

**VALENCIA WATER CONSUMPTION 2016**

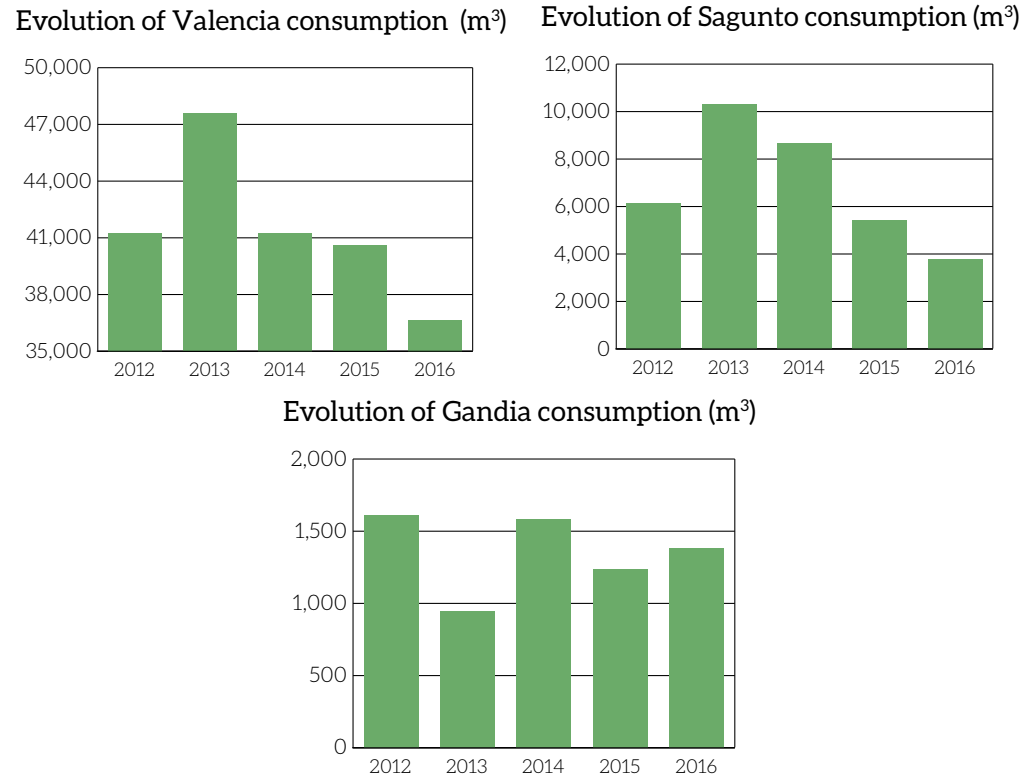


Water consumption at the Port of Gandia was 1,385 m<sup>3</sup>. Monthly consumption was as follows:

**GANDIA WATER CONSUMPTION 2016**



The evolution of water consumption at the ports of Sagunto, Valencia, and Gandia is shown below:



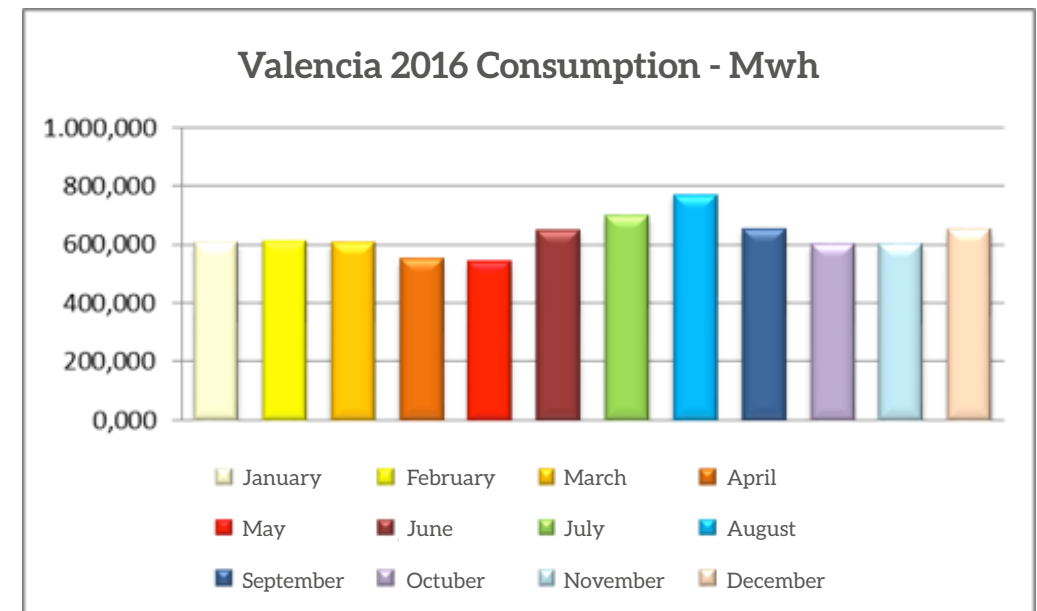
Consumption at the ports of Valencia and Sagunto fell slightly compared to the previous year, which shows the efficiency of the monitoring and reduction systems introduced over the last few years. At the Port of Gandia, there has been a slight, but not relevant, increase..

### 5.2. ELECTRICITY

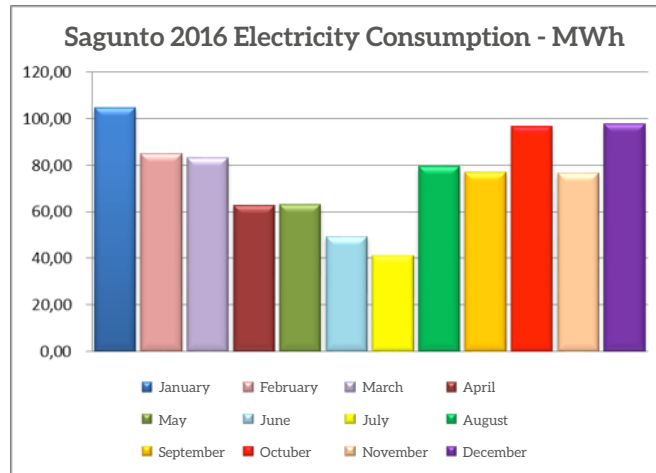
In 2016, total electricity consumption in the Port Authority of Valencia's buildings and on its road networks at the three ports was 9,005,253 Kwh (9,005.25 Mwh)

By ports, monthly electricity consumption was as follows:

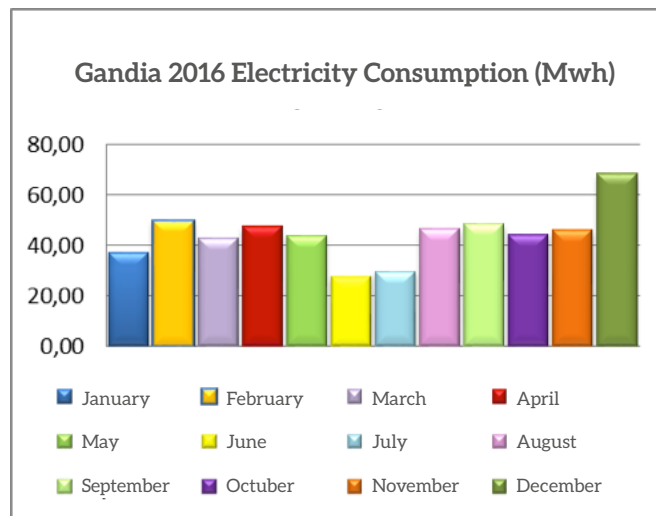
Total electricity consumption at the Port of Valencia in 2016 was 7,554,078 Kwh (7,554.07 Mwh). Monthly consumption is shown below:



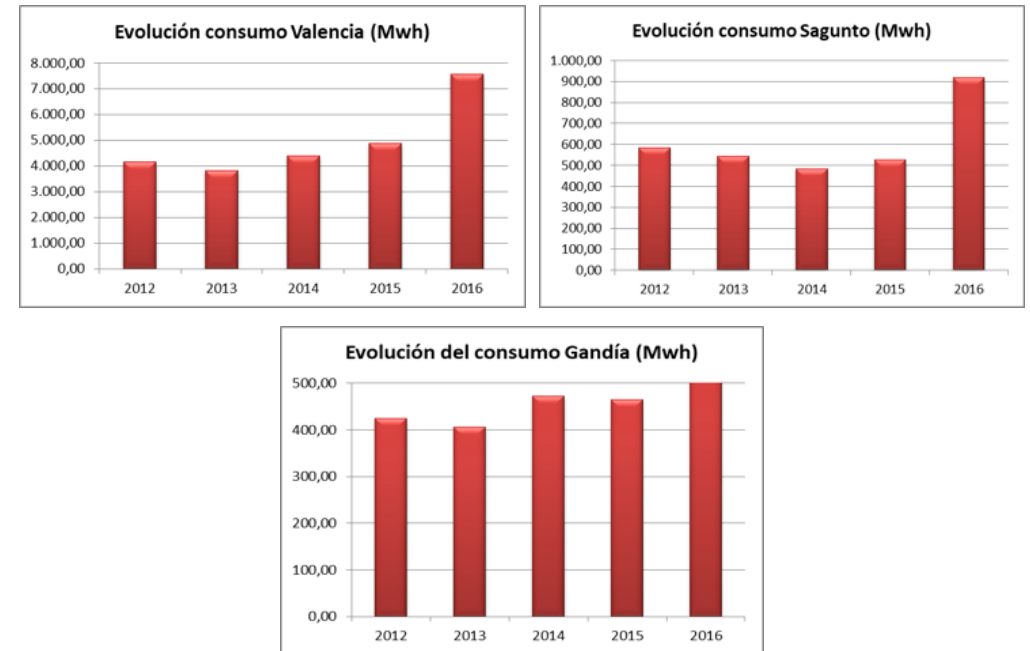
Total electricity consumption at the Port of Sagunto was 917,595 Kwh (917.595 Mwh). Monthly consumption was as follows:



Total electricity consumption in the PAV buildings and on its road networks at the Port of Gandia in 2016 was 533,580 Kwh (533.58 Mwh). Monthly consumption is shown below:



The evolution of electricity consumption at the ports of Sagunto, Valencia, and Gandia is shown below:



The graphs above show an increase in consumption, mainly in the ports of Valencia and Sagunto, due to the change in data collection criteria, in terms of including other services that had not previously been considered, derived from the energy certification study carried out for the certification of the Energy Management System. In this manner, the objective is to obtain greater control and better management, not only of the buildings and roads, but also of all the services that may be included in PAV consumption, currently measuring around 80% of electricity consumption, hoping to reach 100%.

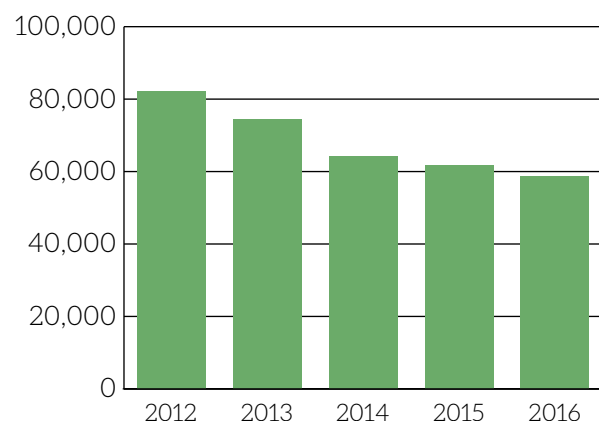


### 5.3. FUEL

In 2016, the Port Authority of Valencia used 25,404 litres of unleaded petrol, 33,177 litres of Diesel A and had no consumption of Diesel B. This made a total of 58,581 litres of fuel, a 5.2% decrease with respect to 2015. The following graph shows the amount of fuel used for the last 5 years:

Valencia fuel consumption in litres	2012	2013	2014	2015	2016
Unleaded petrol	33,162	32,941	23,990	25,530	25,404
Diesel A	45,324	37,421	35,014	34,088	33,177
Diesel B	3,727	4,096	5,203	2,165	0
<b>TOTALS</b>	<b>82,213</b>	<b>74,458</b>	<b>64,207</b>	<b>61,783</b>	<b>58,581</b>

Evolution of total fuel consumption in Valencia (litres)



The graph above shows the continued downward trend in the consumption of fossil fuels, as a consequence of the austerity plan introduced at the PAV, a reduction in the fleet of vehicles and the use of hybrid vehicles.

Fuel consumption at Sagunto and Gandia is shown below, with data available from 2016:

Sagunto fuel consumption in litres	2016
Diesel A	9,754
Unleaded petrol	342
<b>TOTALS</b>	<b>10,096</b>

Gandia fuel consumption in litres	2016
Diesel A	2,254
Unleaded petrol	30
<b>TOTALS</b>	<b>2,284</b>

The PAV has a gasoline pump in workshops in Valencia. During this year, the gasoline refuelling service was outsourced. The process of making the fuel tank located at the Valencia workshops inert has begun.

In 2016, the PAV fleet was made up of the following vehicles:

- Cars: 36 compared to 32 last year
- Vans: 21 compared to 24 last year
- Motorcycles: 3 compared to 4 last year
- Lorries: 2 compared to 3 last year

In addition to this vehicle fleet, the PAV also has several generators and other ancillary equipment which use petrol. These generators are used to create electricity on quay areas when necessary.

### 5.4. PAPER CONSUMPTION

Since 2010, conventional paper has been replaced with “sustainably-sourced” paper (Triotec IQ), certified by the Forest Stewardship Council (FSC). Consumers that purchase FSC paper know that it has been produced sustainably and that using it contributes to conserving forests and the environment.

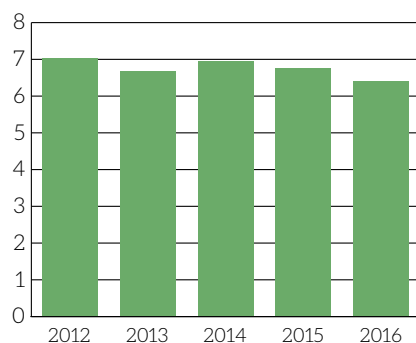
FSC-certified paper has the following characteristics:

- The virgin fibre used to make the paper is obtained via environmentally friendly methods, maintaining the biodiversity of forest eco-systems and ensuring that forests can be used by future generations.
- The paper bleaching process is totally chlorine-free.
- The rights of local communities who live or work in the forest are respected.

All the paper used at the PAV comes from sustainable sources.

In 2016, 6.40 tonnes of paper were used. Over the last few years, the Port Authority of Valencia has implemented a series of measures aimed at reducing paper consumption, such as the implementation of the austerity plan at the PAV, improving staff awareness, configuring printers to print on both sides of the paper, and reusing paper for drafts, which have managed to reduce paper consumption. Despite a slight increase in the previous year, this year continues the downward trend observed in recent years, having reduced consumption by 5.4% with respect to the previous year.

**Total Paper Consumption (t)**



### 5.5. SUMMARY OF INDICATORS

In line with the requirements of Regulation (EC) No. 1221/2009 of the European Parliament and of the Council, of 25th November 2009, on the voluntary participation of organisations in a community eco-management and audit scheme (EMAS), the following indicators were proposed:

2016 Indicator	Annual Total	Ratio
Electricity consumption	9,005.253 Mwh	21.04 (MWh per employee)*
Water consumption	41,802 m <sup>3</sup>	97.668 (m <sup>3</sup> per employee)*
Fuel consumption	571.077 Mwh	1.334 Mwh per employee*
Total fuel consumption	695,641 Mwh	1.625 Mwh per employee*
Biodiversity	13,974.73 m <sup>2</sup>	32.649 (m <sup>2</sup> surface area built per employee)*
Paper	6.40 t	0.014 (tonnes per employee)*
Hazardous waste	7.50 t	0.017 (tonnes per employee)*
Non-hazardous waste	8.32 t	0.019 (tonnes per employee)*
Emissions CO <sub>2</sub> Equivalent** (direct)	148.133 tonnes CO <sub>2</sub> eq	0.346 (tonnes CO <sub>2</sub> eq per employee)*
Emissions CO <sub>2</sub> Equivalent** (indirect)	1828.06 tonnes CO <sub>2</sub> eq	4.27 (tonnes CO <sub>2</sub> eq per employee)*
Total Emissions CO <sub>2</sub> Equivalent* (direct and indirect)	1976.19 tonnes CO <sub>2</sub> eq	4.617 (tonnes CO <sub>2</sub> eq per employee)*

\*No. workers in 2016 = 428. Data provided by the Human Resources Department

\*\*Emissions CO<sub>2</sub> Equivalent: as an organisation, the Port Authority of Valencia does not generate CO<sub>2</sub> emissions over and above those associated with the vehicles it owns (direct emissions) and indirect emissions, associated with energy consumption. Total emissions in tonnes of CO<sub>2</sub> eq. were calculated using Valencian Region energy data published in 2011 by the Valencian Energy Agency (AVEN).

The electrical emissions coefficient in g of CO<sub>2</sub> equivalent/KWh is 203 for indirect CO<sub>2</sub> emissions from electricity consumption.

The fuel emissions coefficient in g of CO<sub>2</sub> equivalent/KWh is 266.54 for diesel, and 249.28 for petrol for direct CO<sub>2</sub> emissions.

The annual evolution of the relative indicators is shown below:

Relative indicator	2013	2014	2015	2016
Electricity consumption (MWh per employee)	11.98	13.33	14.39	21.04
Water consumption (m <sup>3</sup> per employee)	147.766	133.136	115.674	95.985
Fuel consumption (MWh per employee)	1.82	1.56	1.476	1.334
Total fuel consumption (MWh per employee)	-	-	-	1.625
Biodiversity (m2 surface area built per employee)	35.11	34.763	34.193	32.649
Paper	0.016	0.017	0.016	0.014
Hazardous waste	0.012	0.006	0.016	0.017
Non-hazardous waste	0.027	0.024	0.021	0.019
Emissions CO <sub>2</sub> Equivalent* (direct)	0.47	0.407	0.383	0.346
Emissions CO <sub>2</sub> Equivalent* (indirect)	2.43	3.114	2.92	4.27





# 6. STATE OF THE ENVIRONMENT

## 6.1. WASTE

The Port Authority of Valencia is responsible for managing the waste produced directly by the organisation as the Producer (Law 22/2011, of 28th July, on waste and contaminated soils), which it refers to as “Own Waste” (see part 6.1.1)

The PAV is also responsible, indirectly, for proper management of waste that is generated (not in concessions) in the three port areas managed by the PAV in its position as Possessor, which we refer to as “Waste from the Port Facility” (see part 6.1.2)

### 6.1.1. OWN WASTE

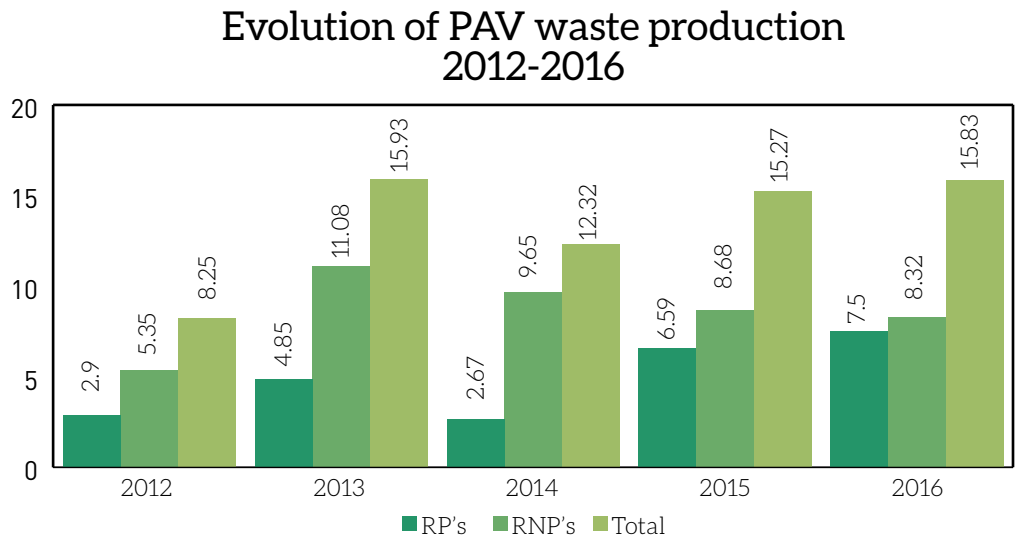
The PAV generates waste from the activities it carries out at its offices in Valencia, Sagunto, and Gandia, at its workshops and at its clinic located in Valencia.

In compliance with Law 22/2011, of 28th July, on waste and contaminated soils, for waste that is directly produced by the company activity, the PAV is defined as a Producer of hazardous waste and of health care waste, with registration numbers 3631/P02/RP/CV and 46/9127/CV, respectively, of waste it generates directly.

In 2016, the PAV generated a total of 15.82 tonnes of waste, of which 8.32 tonnes correspond to non-hazardous waste and 7.50 tonnes was hazardous waste.

To analyse the data obtained in 2016, the following graph presents data on the evolution of waste produced by the PAV during the 2012-2016 period:

Graph 1.



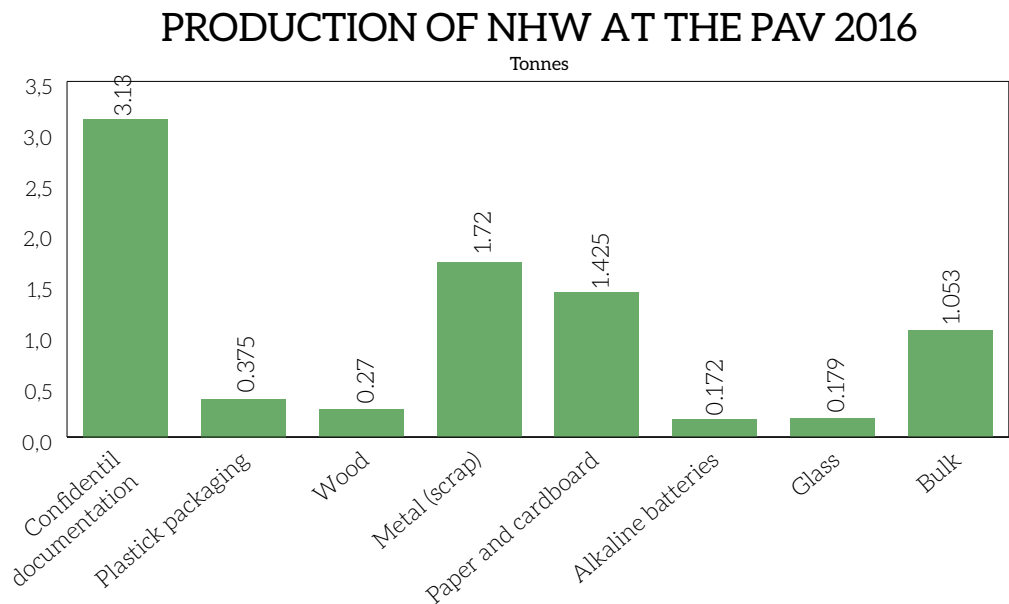
As can be seen in graph 1, there has been an increase in hazardous waste production during 2016. This is due to the exponential increase in the production of Waste Electrical and Electronic Equipment (WEEE), which started in 2013, reaching 4,298 tonnes in 2016.

With respect to the production of non-hazardous waste, as can also be seen in Graph 1, production remains stable compared to 2015. However, it is worth mentioning the reduction in the production of confidential documentation produced with respect to 2015. In 2015, 4.44 tonnes were produced while in 2016, there were only 3.13 tonnes, a drop of 1.31 tonnes.

On the other hand, there was an increase in bulk waste and metals (scrap), as a result of the removal of old marine signage material, cleaning warehouses owned by the PAV, etc.

Below, graphs 2 and 3 present the data on the production of non-hazardous waste and hazardous waste produced directly by the PAV during 2016:

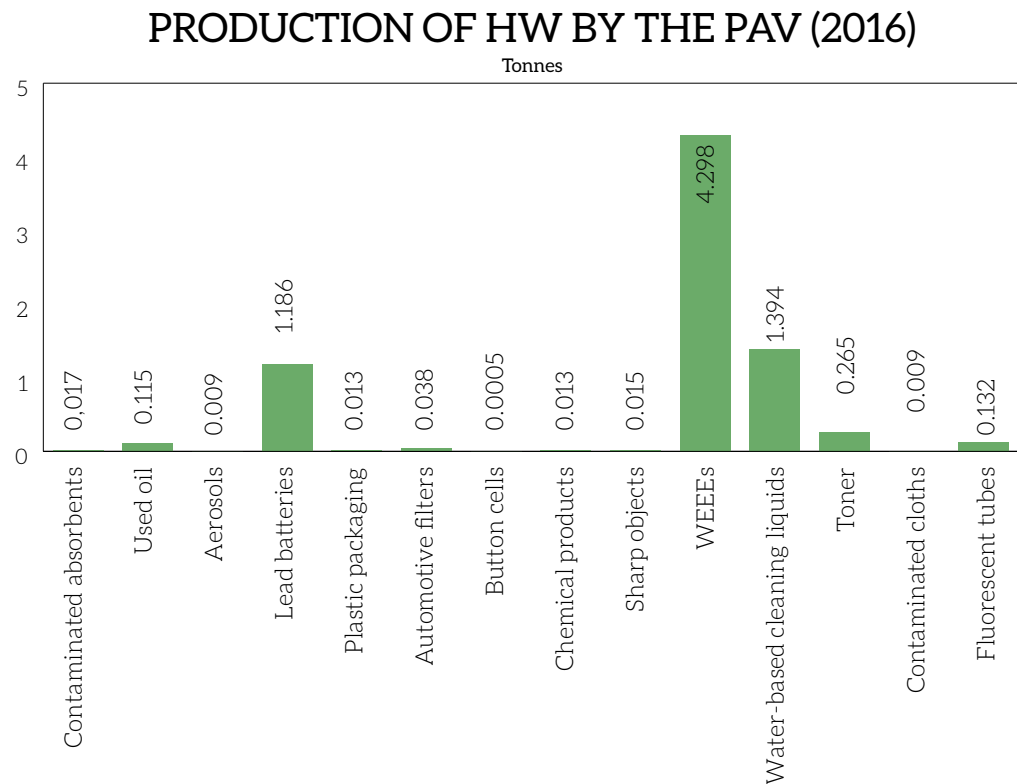
● **Non-hazardous waste (NHW)**  
**Graph 2.**



Note: NHW: Non-hazardous waste

As has been the case since 2013, Graph 2 shows that the largest volume of non-hazardous waste generated at the PAV was “Confidential documentation”, with a total of 3.13 tonnes.

● **Hazardous waste (HW)**  
**Graph 3.**



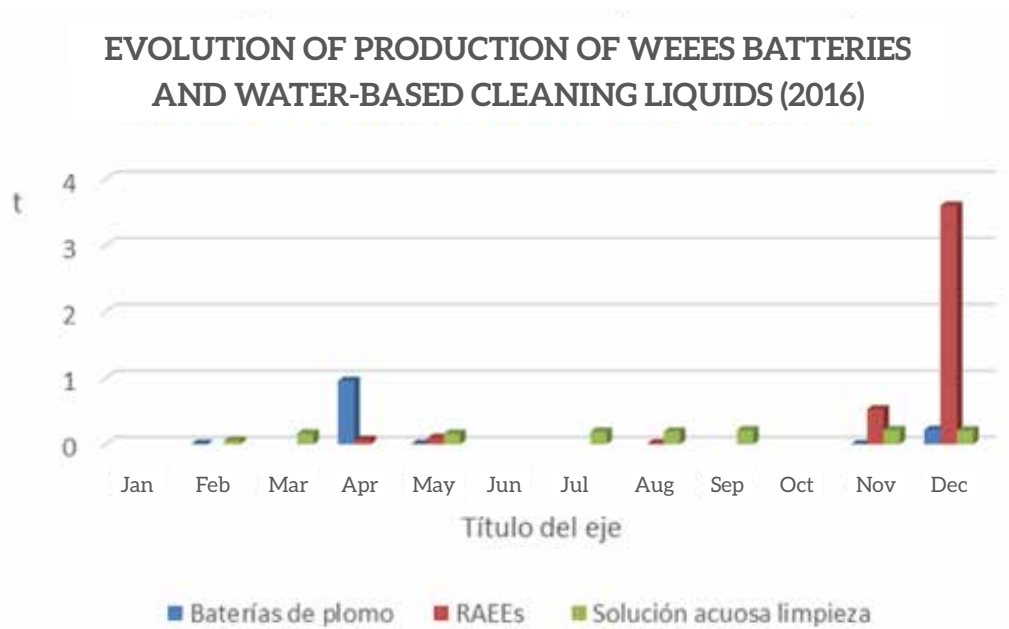
Note: HW: Hazardous waste

Graph 3 shows the same trend since 2014, as the largest volumes of hazardous waste generated at the PAV in 2016 was waste electrical and electronic equipment (WEEEs), followed by water-based cleaning fluids and lead batteries, with 4.298, 1.394 and 1.186 tonnes, respectively.



Graph 4 presents the evolution in the production of the three wastes cited above:

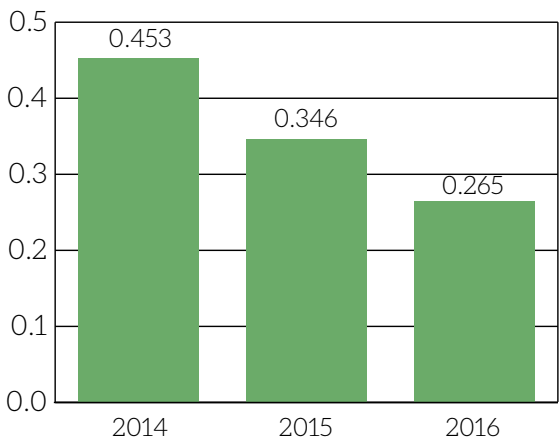
Graph 4.



It should be noted that the production of toner is clearly decreasing since 2014, coinciding with the replacement of the printing equipment (Graph 5).

Graph 5.

Evolution of toner production during 2014-2016 period



Finally, note that the largest volume of waste worth mentioning in this section is “Water-based cleaning liquids” that is generated as a result of the washing of parts in the two washing machines that were installed in the workshops in Valencia.

### 6.1.2. WASTE FROM THE PORT FACILITY

The companies located in the ports managed by the Port Authority of Valencia are obliged to correctly handle the waste they generate in their facilities.

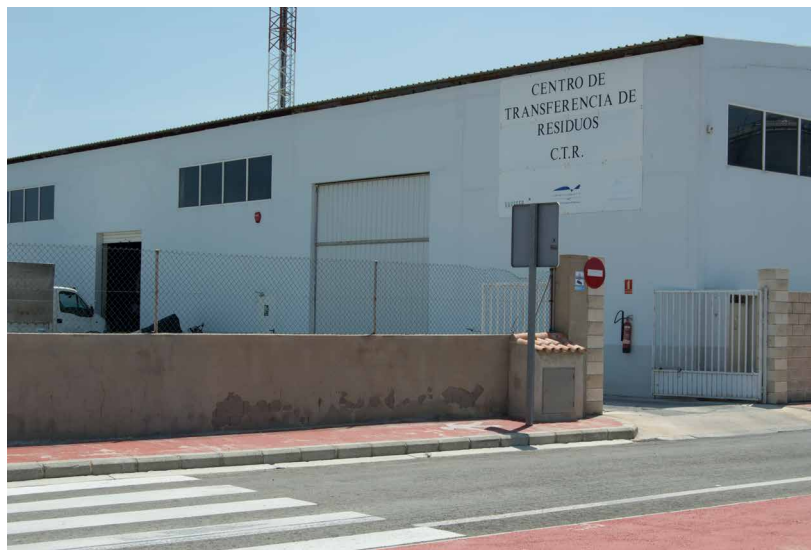
To help manage this waste generated by the companies in the port areas of Valencia, Sagunto, and Gandia, a Waste Transfer Centre (CTR) was set up in the Port of Valencia in 2005 to collect and store the waste before its subsequent transportation to its final destination where it is recycled, recovered or disposed of. Thus, every company located in the ports managed by the Port of Valencia has access to a facility that can handle its waste easily and flexibly, in line with the hierarchy of waste established in article 8 of Law 22/2011, of 28th July, on waste and contaminated soils.

Through this waste transfer centre, the Port Authority of Valencia:

- Facilitates the collection and management of the waste generated at the Ports of Sagunto, Valencia, and Gandia.
- Facilitates the paperwork associated with waste removal and management.
- Contributes to maintaining its port facilities in harmony with its environment.

The Port of Valencia's Waste Transfer Centre, located on the Xita Quay, has a total surface area of 3,235.18 m<sup>2</sup>, of which 2,400 m<sup>2</sup> are used to store waste before it is finally managed.

To store non-hazardous waste, there is one 20 m<sup>3</sup> container for bulk, one 20 m<sup>3</sup> container for wood, several 3 m<sup>3</sup> containers for light packaging and plastics, one 11 m<sup>3</sup> container for glass, two containers of 11 and 25 m<sup>3</sup> for metals (scrap metal), one 11 m<sup>3</sup> container for used tires and several containers of 3 m<sup>3</sup> for cardboard/paper.



Waste containers for separate collection at the CTR.

In addition, it also has a calibrated weighbridge, and a 3,500-kg vehicle with a trailer, authorised by the Valencian Regional Ministry of Infrastructure, Territory, and the Environment, to transport dangerous goods.

There is a specific procedure for collecting waste generated in port facilities. This can be carried out by regular scheduled collection routes on one hand, and tailor-made collections requested by customers on the other.

The companies located in the port areas managed by the Port Authority of Valencia therefore have a facility where it is possible to manage the waste they produce as a result of their activity in a comfortable and flexible manner, in accordance with current legislation, and benefiting from the savings generated by economies of scale.



*Trailer loaded for the transfer of waste to the final destination plant.*



*Loading of containers containing Hazardous Waste onto the trailer, to later be unloaded at the final destination plant.*

For waste generated indirectly by the PAV, i.e. it appears accidentally or under controlled conditions in the port facilities of Valencia, Sagunto, and Gandia, the PAV has the status of waste holder (in line with the adaptation to Spanish Law 22/2011, of 28<sup>th</sup> July, on waste and contaminated soils), with registration numbers POS363, POS365, and POS364, respectively.

The waste generated at the port facilities in Valencia, Sagunto, and Gandia is divided into two categories:

- Waste generated under controlled conditions, which is deposited in containers installed in the facilities or generated as a result of specific cleaning in which bulky or inert waste, rubble, etc. may be produced.
- Waste generated accidentally as a result of spills caused by traffic accidents, waste that may appear in the sea (such as buoys or other marine signage debris), waste arising from maritime pollution emergencies, abandoned waste, etc.

As for the volume of waste produced in the three port areas managed by the PAV, there was a total of 33.73 tonnes of waste generated in 2016, broken down in the following manner:

- A total of 22.76 tonnes of controlled waste was generated at the port facilities, of which 22.65 tonnes was non-hazardous waste and 0.11 tonnes was hazardous waste.
- A total of 10.97 tonnes of accidental waste was produced, of which 4.12 tonnes was non-hazardous waste and 6.85 tonnes was hazardous waste.

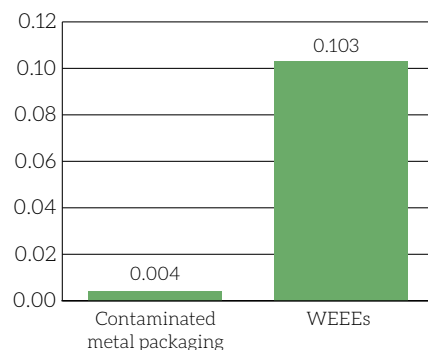
Therefore, the PAV has been directly or indirectly responsible (as the producer or waste holder) for a total of 14.46 tonnes of hazardous waste and 35.09 tonnes of non-hazardous waste, for a total of 49.55 tonnes of total waste in 2016.

The graphs below show the data for hazardous and non-hazardous waste indirectly generated by the PAV in both categories in the port areas during 2016:

• **Waste generated in port facilities under controlled conditions:**

**Graph 6.**

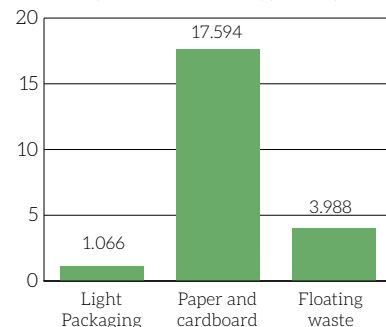
PRODUCTION OF HW IN PORT AREA 2016  
(CONTROLLED ORIGIN) (TONNES)



Note: HW: Hazardous Waste

**Graph 7.**

PRODUCTION OF NHW IN PORT AREA 2016  
(CONTROLLED ORIGIN) (TONNES)



NHW: Non-Hazardous Waste

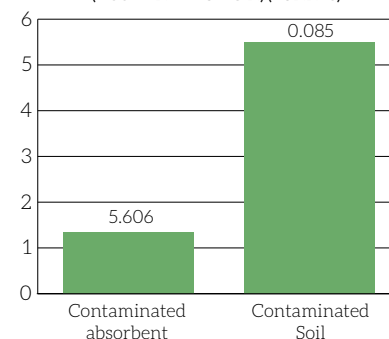
As shown in graphs 6 and 7, the largest volumes of waste during 2016 were WEEE under the heading of hazardous waste and paper/cardboard under the heading of non-hazardous waste, with 0.103 tonnes and 17.594 tonnes, respectively.

The origin of paper/cardboard is due to the paper and cardboard deposited in the containers installed throughout the port areas of Valencia, Sagunto, and Gandia specifically for it.

• **Accidental waste generated in port facilities:**

**Graph 8.**

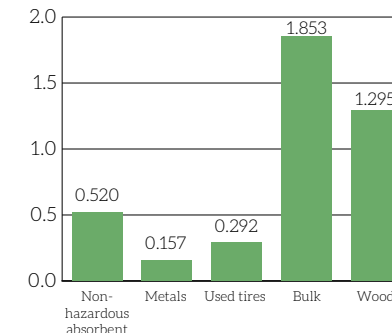
PRODUCTION OF HW IN PORT AREA 2016  
(ACCIDENTAL ORIGIN) (TONNES)



Note: HW: Hazardous Waste

**Graph 9.**

PRODUCTION OF NHW IN PORT AREA 2016  
(ACCIDENTAL ORIGIN) (TONNES)



NHW: Non-Hazardous Waste

In the case of accidental waste, as can be seen in graphs 8 and 9, the largest volume of hazardous waste was contaminated soils with 5.505 tonnes. In terms of non-hazardous waste, bulky waste accounted for the highest figure, with 1.853 tonnes.

The contaminated soils occur as a result of the cleaning of spills that occur in the enclosure from accidents, mainly traffic accidents, oil spills, diesel spills, etc.



### 6.1.3. SHIP-GENERATED WASTE

The Marpol 73/78 International Convention to prevent marine pollution by vessels is one of the tools created under the auspices of the IMO for prevention. It contains six annexes which include detailed rules on the various sources of pollution. These are:

Annex I – Rules for the prevention of pollution by oil.

Annex II – Rules for the control of pollution by noxious liquid substances in bulk.

Annex III – Rules for the prevention of pollution by harmful substances carried by sea in packaged form.

Annex IV – Rules for the pollution by sewage from ships.

Annex V – Rules for the pollution by garbage from ships.

Annex VI – Rules for the prevention of air pollution from ships

Royal Decree 1381/2002, of 20<sup>th</sup> December, on port reception facilities for ship-generated waste and cargo residues, sets out the obligation for all the vessels that berth at the ports of Sagunto, Valencia, and Gandia to hand over waste subject to the Marpol Convention to an authorised Marpol facility, excluding the exceptions stipulated in the decree.

From June 2010, the GEDES computer tool has been used to improve the control of waste collection services from ships berthed at the ports of Valencia, Sagunto and Gandia.

Companies who provide this type of service must meet the following requirements:

- Have the corresponding license from the PAV (by port and annex)
- Have the authorisation issued by the environmental body to carry out the management of this type of waste.
- Have documentation accrediting a commitment of acceptance for its treatment or elimination by the recipient manager.

To comply with article 132 of the consolidated text of the Law on State Ports and the Merchant Marine, the PAV charges a fixed fee to ships that dock in port, whether or not they use the waste reception service. With this measure, all discharges to

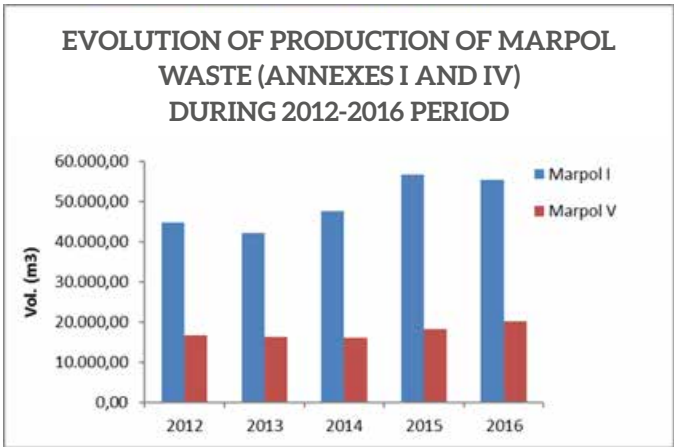
the sea are avoided, as ships can discharge all wastes included in Annexes I and V of the Marpol Convention as needed.

The chart below presents the data on the volume of waste managed during the last five years (Annexes I and V):

WASTE VOLUMES COLLECTED (m³)					
ANNEX	2012	2013	2014	2015	2016
Marpol I	44,788.59	42,223.00	47,565.00	56,725.94	55,499.55
Marpol V	16,636.01	16,257.00	16,149.00	18,261.91	20,094.90

DISTRIBUTION BY PORTS IN 2016 (m³)		
PORTS	MARPOL I	MARPOL V
Valencia	49,305.14	18,338.90
Sagunto	5,663.79	1,614.72
Gandía	530.62	141.28

Graph 10.



The Port Authority of Valencia also has two waste collection points at the ports of Sagunto and Gandia for the collection of waste from recreational craft and fishing boats, which are duly managed by companies that are authorised to handle Marpol waste.

### 6.2. AIR QUALITY MONITORING.

The Port Authority of Valencia checks and monitors quality parameters in its surrounding area and one of the Environmental Policy Department's priority objectives in this field is the monitoring of air quality. The Port Authority of Valencia uses an instrumentation and monitoring network for this purpose which provides continuous data about air quality and enables us to analyse its status practically in real time. In particular, concentrations of the various pollutants affecting air quality in the port facility are monitored, such as particulate matter (measured in PM10, PM2.5 and PM1 concentrations), sulphur dioxide, nitrogen dioxide, and carbon monoxide. At the same time, meteorological data is recorded by five weather stations sited in significant locations around the port facility.

The map below shows the strategic location of the various stations in the Port of Valencia's air quality network.

The sensors are located in an Air Quality Monitoring Station which was positioned on the Transversal Poniente Quay, in line with recommendations made by the Energy, Environmental and Technological Research Centre (CIEMAT). This

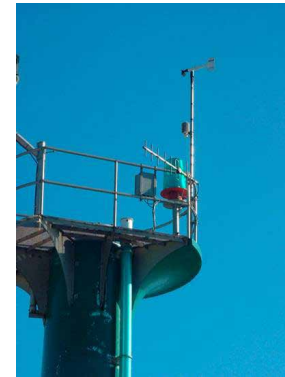


location on the port-city interface means we can track the evolution of pollutants and their potential impact on the area between the port and the city and hence find timely solutions to possible air pollution episodes. Another particle collector is located on the port-city interface in the area closest to the Nazaret neighbourhood.

There is a regular maintenance and data validation plan for the Air Quality Monitoring Station, the weather stations and the particle collectors to ensure the accuracy of the data they supply.

In addition to the stations shown on the map, there are three more weather stations: two at the Port of Sagunto and another at the Port of Gandia.

#### Air quality monitoring stations



1. East Breakwater Buoy Weather Station



2. Principe Felipe Weather Station



3. Silo Weather Station



4. Xità Weather Station



5. Turia Weather Station



6. River Turia Particle Collector



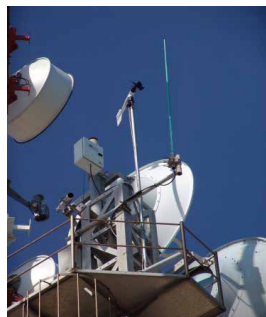
7. Immission Station – Particle Collector



Sagunto Offices Weather Station



Sagunto East Breakwater Weather Station



Gandia Serpis Quay Weather Station

### 6.2.1. AIR QUALITY IN THE PORT FACILITY IN 2016

Numerous epidemiological studies have demonstrated the adverse effect on health of occasional or prolonged exposure to high levels of air particles. The most recent studies indicate that smaller diameter particles are responsible for the most important respiratory conditions. Hence there was a clear need to monitor air pollution in terms of both PM10 and also PM25 and PM1.

The PAV, in addition to measuring the air quality within the port area, has put in place various measures to control operations that could have any impact on air quality.

Among these measures, note the control over the wind direction and intensity variables. When certain intensity and duration values are exceeded, operations concerning the loading, unloading or handling of pulverulent materials are suspended, all through the air quality control network supervised by the PAV Emergency Control Centre.

To improve and reduce the negative impacts of particle emissions, the PAV will also invest in the construction of physical barriers that minimize the movement of particles.

In addition, the inclusion of particle emission minimisation measures is required for any operation performed at PAV sites, such as cleaning the area, equipment maintenance, good handling practices, determination of the maximum height of the pits, in case of storage, etc...

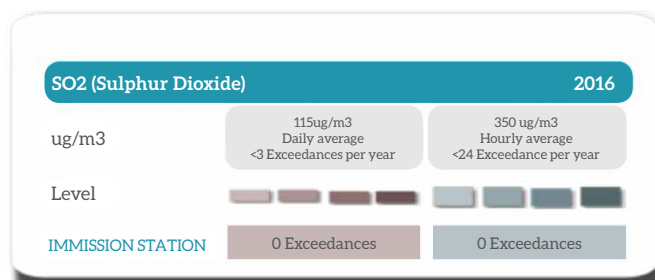
These concentrations are monitored and controlled in accordance with the reference levels established in Spanish Royal Decree 102/2011, of 28<sup>th</sup> January, on improving air quality.

### Assessment of the results obtained in 2016 according to reference standard values

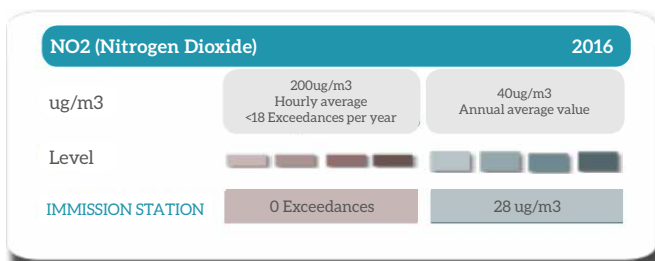
The Port Authority of Valencia draws up monthly reports on the data obtained and evaluates trends in these data in order to identify the possible underlying causes. This is done following tables with colorimetric scales showing the quality limit values in the reference standards and the number of exceedances or cumulative average values in each case.

The air indexes recorded in 2016 were as follows:

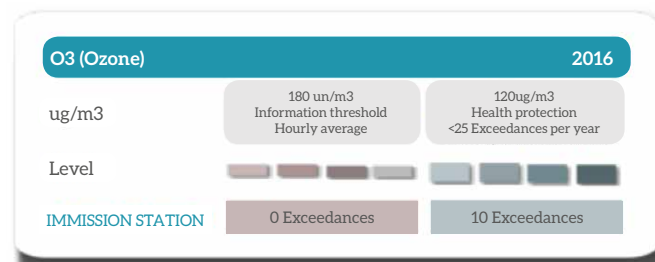
Number of exceedances of sulphur dioxide concentration levels (SO<sub>2</sub>)



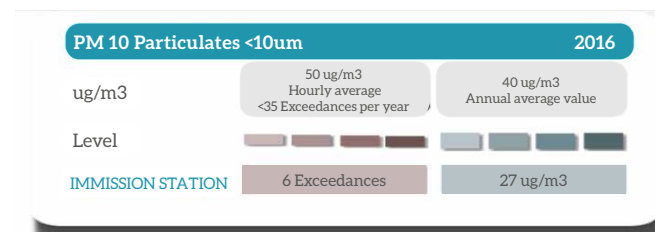
Number of exceedances and annual average value of nitrogen dioxide concentration levels (NO<sub>2</sub>)



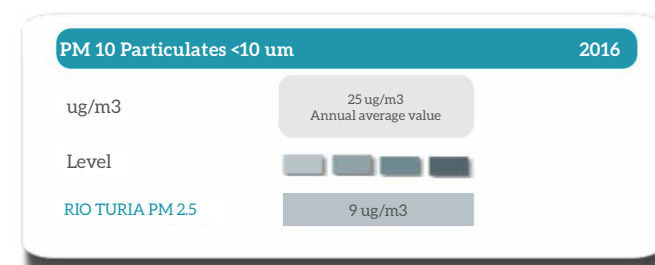
Number of exceedances in Ozone concentration levels (O<sub>3</sub>)



Number of exceedances and annual average value of PM10 concentration levels.



Number of exceedances and annual average value of PM2.5 concentration levels



Note: In the tables above ug/m<sup>3</sup> = µg/m<sup>3</sup> (micrograms per cubic metre)



## Conclusions on air quality results

Analysis of data for 2016 (January-December) and their assessment with respect to the applicable limit levels led to the following conclusions:

- The hourly limit values for SO<sub>2</sub> and NO<sub>2</sub> were not exceeded at any time.
- The daily limit value for SO<sub>2</sub> was not exceeded on any day.
- The annual average value for NO<sub>2</sub> was below the annual limit value.
- The daily PM10 value was exceeded six times according to the data recorded in the Immission Station and 4 times at the Turia Weather Station. The maximum number of exceedances under Royal Decree 102/2011 is 35 for the whole year, so this value falls within the admissible tolerance interval.
- The annual average values for PM10 at both stations were below the annual limit value. These data are already the definitive measurements for 2016, after the relevant adjustments made by the Saharan intrusions.

In conclusion, in 2016 the data registered in both the Immission Station and the River Turia Station did not exceed the limit values for air quality established in Spanish Royal Decree 102/2011, of 28<sup>th</sup> January, on improving air quality.

### 6.2.2. ENVIRONMENTAL CONCENTRATIONS IN THE AREA SURROUNDING THE PORT OF VALENCIA IN 2016.

Data readings taken in the city of Valencia by the Regional Ministry of the Environment, Water, Town Planning, and Housing were collated in order to evaluate the results obtained in the port facility. The statistical data shown in the table below were taken from the Regional Ministry's website:

Average annual values for the city of Valencia:

STATION	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	O <sub>3</sub> µg/m <sup>3</sup>	PM10 µg/m <sup>3</sup>	PM2.5 µg/m <sup>3</sup>
AVDA. FRANCIA	4	32	46	-	-
BULEVARD SUR	4	32	48	-	-
MOLÍ DEL SOL	3	23	50	15	13
PISTA DE SILLA	4	42	42	23	9
POLITÉCNICO	3	21	51	14	9
VIVEROS	3	24	51	-	-

The average annual values obtained by the Port of Valencia stations are:

STATION	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	O <sub>3</sub> µg/m <sup>3</sup>	PM10 µg/m <sup>3</sup>	PM2.5 µg/m <sup>3</sup>
PORT OF VALENCIA - IMMISSION STATION	3	28	54	27	-
PORT OF VALENCIA - RIVER TURIA STATION	-	-	-	12	9

The environmental assessment carried out in line with the regulations indicates that all the parameters are below the level of the "lowest assessment threshold", and in line with the lowest legal limits.

In general, the parameters of the Port Authority of Valencia's network stations are normal and correlate with the automatic stations nearby in the city of Valencia.

In 2016, the results of the data obtained from the Port Authority of Valencia's network comply with the limit values for air quality established in Spanish Royal Decree 102/2011, of 28<sup>th</sup> January, on improving air quality.

### 6.2.3. WEATHER DATA.

The Port Authority of Valencia currently has eight strategically sited weather stations: five at the Port of Valencia, two at the Port of Sagunto and one at the Port of Gandia.

The information provided by these stations is extremely useful for decision-making in a range of port operations, for instance solid bulk operations, where handling has to be stopped when winds reach a specific speed to avoid the possible release of particles into the air.

The monthly statistical data recorded at some of the measuring stations in the ports of Valencia, Sagunto and Gandia during 2014 is given below.

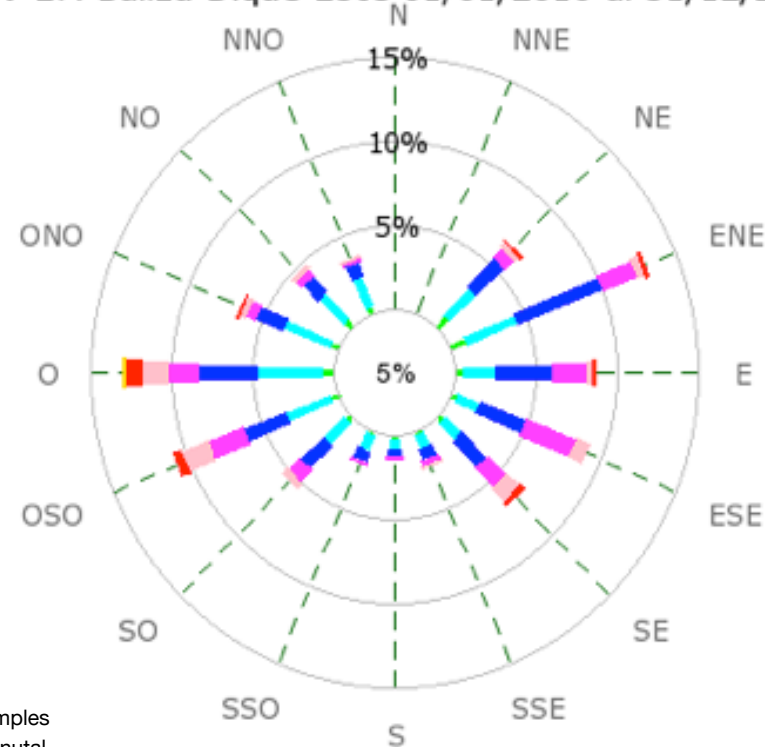
Monthly statistics from the station  
MA.V.1. EAST BREAKWATER BUOY. EM.1 - 2016

	DD (°grados)		VV (m/s)				HR (%)			
	Muestras	Media	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.
Enero	31	56.06	31	5.21	9.64	1.82	31	55.87	82.23	30.81
Febrero	29	55.94	29	5.97	11.28	2.31	29	55.67	85.77	30.56
Marzo	30	46.45	30	4.86	8.90	2.98	30	58.36	86.10	34.60
Abril	30	26.82	30	4.47	7.41	1.90	30	66.55	88.49	46.58
Mayo	30	28.13	30	4.44	8.53	1.98	31	68.82	96.04	37.16
Junio	29	19.49	29	3.77	7.33	1.72	30	68.46	83.24	37.94
Julio	31	348.74	31	3.71	5.99	2.50	31	67.69	81.09	54.49
Agosto	27	14.70	27	4.03	5.90	2.69	31	75.07	85.89	49.39
Septiembre	30	356.42	30	3.92	6.87	2.62	30	70.47	84.79	43.07
Octubre	30	22.07	30	3.39	5.74	1.89	31	77.26	94.30	52.91
Noviembre	29	39.64	29	4.60	8.90	2.29	29	75.97	97.23	52.13
Diciembre	25	31.75	25	4.32	11.69	2.15	25	76.06	89.08	52.61

NOTE: Data calculated on an hourly basis.

Wind rose – MA.V.1. EAST BREAKWATER BUOY. EM.1 – 2016

APV EM Baliza Dique Este 01/01/2016 al 31/12/2016

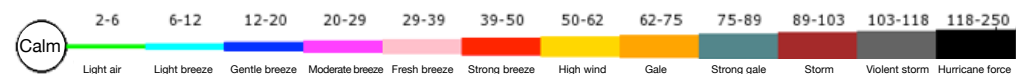


49253 samples

Data X-minutal

Represented according to the Beaufort scale

% indicates the preponderance of the wind direction during the period



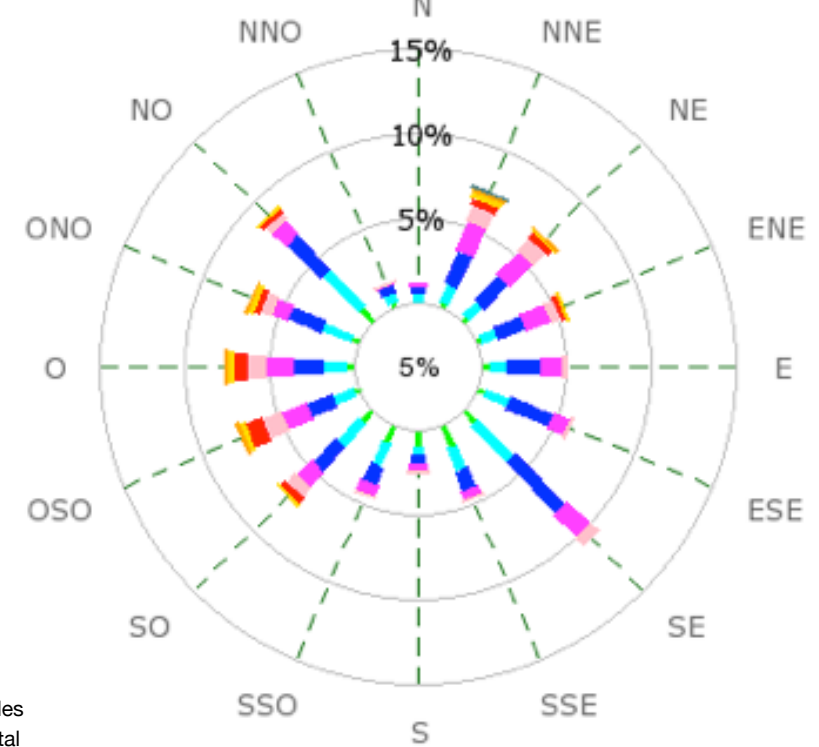
### Monthly statistics from the station MA.V.6.SILO. EM4 - 2016

	DD (°grados)		VV (m/s)			
	Muestras	Media	Muestras	Media	Máx.	Min.
Enero	31	49.65	31	6.14	11.68	1.23
Febrero	29	23.84	29	6.97	14.93	2.28
Marzo	30	33.95	30	5.68	10.67	2.98
Abril	30	8.54	30	5.17	9.12	2.24
Mayo	31	6.49	31	4.61	9.26	1.55
Junio	30	338.68	30	4.19	7.60	1.93
Julio	31	340.10	31	3.96	5.84	2.19
Agosto	31	329.67	31	3.93	5.94	2.00
Septiembre	30	0.41	30	3.93	8.21	2.35
Octubre	29	4.39	29	3.53	5.70	1.71
Noviembre	30	5.78	30	5.45	12.29	2.55
Diciembre	31	343.95	31	5.51	19.13	1.91

NOTE: Data calculated on an hourly basis.

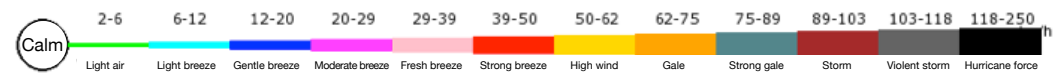
### Wind rose - MA.V.6.SILO.EM4 -2016

#### APV EM Silo Turia 01/01/2016 al 31/12/2016



51946 samples  
Data X-minutal  
Represented according to the Beaufort scale

% indicates the preponderance of the wind direction during the period



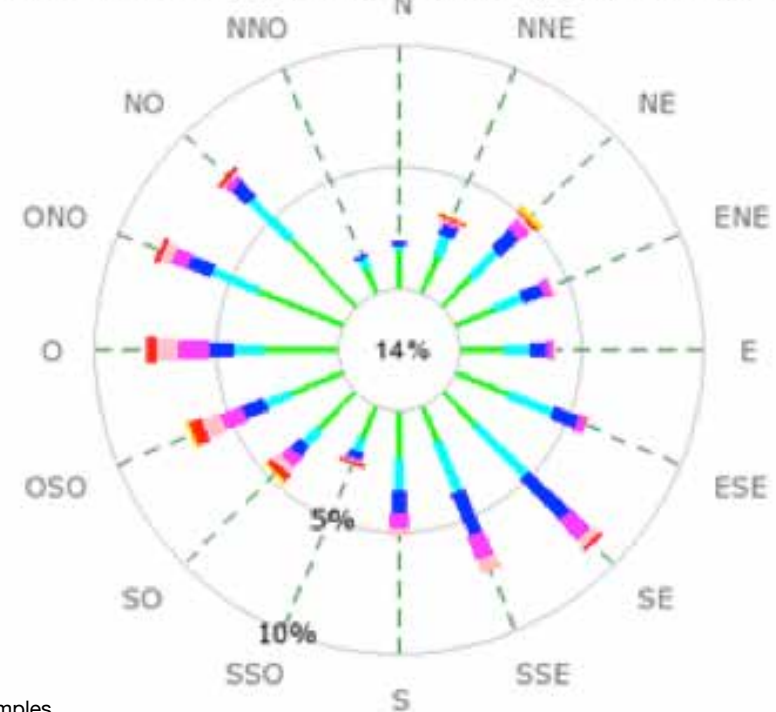
### Monthly statistics from the station MA.V.7.PRINCIPE FELIPE. EM6 - 2016

	DD (°grados)		VV (m/s)				TMP (°C)				HR (%)				RS (w/m2)				PLU (l/m2)
	Muestras	Media	Muestras	Media	Máx.	Mín.	Muestras	Media	Máx.	Mín.	Muestras	Media	Máx.	Mín.	Muestras	Media	Máx.	Mín.	Acumulado
Enero	31	42.46	31	4.16	9.79	1.06	31	13.90	20.33	7.55	31	57.81	81.31	37.68	31	115.3	176.90	37.48	2
Febrero	29	52.26	29	4.92	10.5	1.32	29	13.79	20.19	9.16	29	52.53	68.05	39.36	29	179.0	255.04	40.17	4.70
Marzo	30	41.10	30	3.65	7.01	1.72	30	14.06	18.88	10.16	30	54.03	80.47	28.45	30	260.0	344.17	81.20	4.90
Abril	30	28.85	30	2.92	5.59	0.88	30	16.33	20.85	13.57	30	66.47	81.04	48.46	30	229.4	318.69	44.16	13.1
Mayo	30	342.6	30	2.40	5.57	0.90	14	16.56	19.54	14.03	14	58.85	92.04	27.46	16	120.5	328.55	0	6.10
Junio	29	2.42	29	1.46	4.69	0	1	-	-	-	-	-	-	-	-	-	-	-	2.80
Julio	31	319.4	31	2.29	3.92	1.28	30	-	-	-	-	-	-	-	-	-	-	-	1.80
Agosto	31	329.6	31	2.43	4.06	1.08	31	-	-	-	-	-	-	-	-	-	-	-	13.5
Septiembre	30	353.0	30	2.09	4.54	0.96	30	24.46	29.33	18.28	30	44.68	55.03	23.96	30	199.5	241.12	88.88	22.6
Octubre	31	18.61	31	1.55	3.44	0.71	31	21.08	24.17	18.28	31	47.46	63.51	5.56	31	129.6	187.02	21.66	17.4
Noviembre	30	14.09	30	2.58	7.71	0.85	30	15.69	21.72	12.23	30	39.75	55.06	22.70	30	94.07	150.23	5.35	219.3
Diciembre	25	26.01	25	2.87	13.4	0.89	25	12.91	16.02	9.80	25	55.27	82.53	37.68	25	69.51	114.57	9.56	137.5
																			Acumulado 445.7

NOTE: Data calculated on an hourly basis.

Wind rose - MA.V.7.PRINCIPE FELIPE. EM6 -2016

### APV EM Muelle Principe Felipe 01/01/2016 al 31/12/2016



50767 samples

Data X-minutal

Represented according to the Beaufort scale

% indicates the preponderance of the wind direction during the period



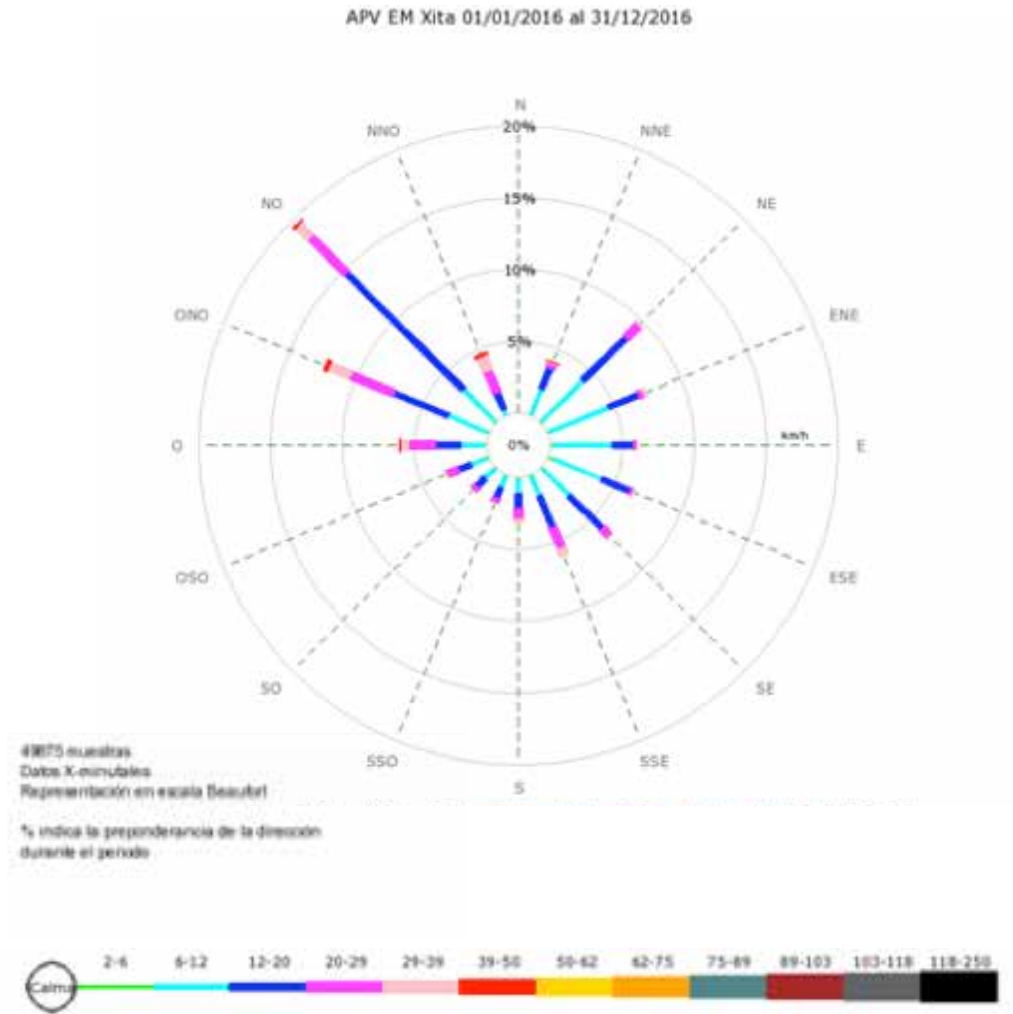


### Monthly statistics from the station MA.V.2. XITA. EM2 - 2016

	DD (°grados)		VV (m/s)				TMP (°C)				HR (%)			
	Muestras	Media	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.
Enero	31	307.4	31	5.32	8.58	2.45	31	14.14	20.48	8.20	31	58.23	82.99	34.16
Febrero	29	300.1	29	6.12	10.1	3.24	29	13.94	20.32	9.61	29	51.78	70.06	35.09
Marzo	30	323.5	30	5.55	8.18	3.70	30	14.05	19.04	10.51	30	53.79	80.08	32.65
Abril	30	3.96	30	5.37	7.03	3.01	30	15.98	20.77	13.19	30	62.44	78.03	41.08
Mayo	29	355.3	29	4.72	7.32	3.09	29	18.19	22.81	15.04	29	64.36	81.69	35.90
Junio	29	39.71	29	3.57	6.47	2.26	29	22.36	25.15	20.24	29	65.98	77.73	31.62
Julio	31	31.81	31	3.17	4.17	2.44	31	25.40	27.72	23.66	31	66.93	74.12	55.35
Agosto	31	340.6	31	3.20	4.09	2.55	31	25.76	26.96	23.91	31	67.47	75.37	55.70
Septiembre	30	344.1	30	3.68	6.18	2.43	30	24.19	28.68	20.95	30	63.88	73.12	42.89
Octubre	30	328.1	30	4.11	5.49	3.24	30	21.13	23.64	18.25	30	68.98	78.69	51.54
Noviembre	30	312.6	30	4.58	7.58	3.27	30	15.76	21.50	12.28	30	61.15	80.40	37.93
Diciembre	25	327.4	25	3.70	6.57	2.80	25	13.56	16.41	10.88	25	70.62	78.02	56.75

NOTE: Data calculated on an hourly basis.

### Wind rose – MA.V.2. XITA. EM2 - 2016



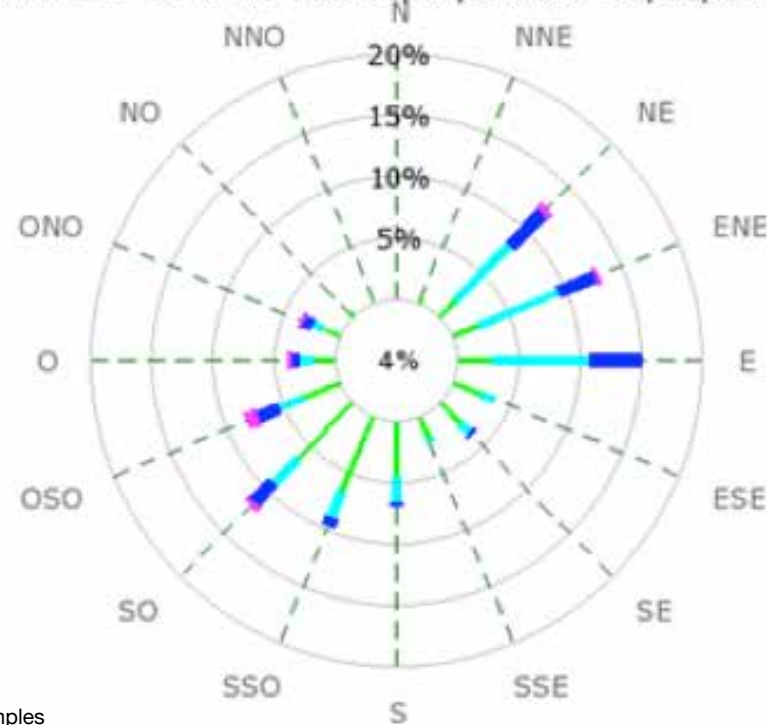
### Monthly statistics from the station MA,V.6. TURIA. EM5 - 2016

	DD (°grados)		VV (m/s)				TMP (°C)				HR (%)			
	Muestras	Media	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.
Enero	31	20.13	31	2.29	4.32	0.93	31	14.48	20.93	7.96	31	57.20	80.03	34.58
Febrero	29	22.22	29	2.68	6.00	1.07	29	14.43	21.05	9.77	29	51.36	68.61	35.86
Marzo	30	22.74	30	2.33	4.86	1.44	30	14.72	19.84	10.75	30	52.80	76.52	34.03
Abril	30	352.98	30	2.31	4.53	1.39	30	16.94	21.84	14.11	30	59.86	73.81	41.42
Mayo	30	19.97	30	2.46	4.48	1.21	30	19.25	23.73	16.04	30	61.07	79.23	35.17
Junio	29	37.41	29	2.27	3.43	1.54	29	23.53	26.42	21.49	29	62.54	72.97	32.72
Julio	31	14.06	31	2.28	3.35	1.45	31	26.35	28.07	24.60	31	63.29	70.76	53.67
Agosto	31	332.94	31	2.28	3.52	1.63	31	26.63	27.61	24.50	31	64.06	71.03	52.40
Septiembre	30	344.17	30	2.03	3.15	1.44	30	24.81	29.50	21.56	30	61.57	70.50	42.62
Octubre	31	344.86	31	1.70	3.03	0.93	31	21.56	24.01	18.30	31	67.12	75.55	51.22
Noviembre	29	15.81	29	1.96	3.87	1.02	29	15.82	21.75	12.12	29	60.67	78.45	38.51
Diciembre	25	19.69	25	2.20	6.85	0.93	25	13.58	16.42	10.63	25	69.71	76.76	57.11

NOTE: Data calculated on an hourly basis.

### Wind rose - MA,V.6. TURIA. EM5 - 2016

APV EM Turia VR-013 01/01/2016 al 31/12/2016



50272 samples

Data X-minutal

Represented according to the Beaufort scale

% indicates the preponderance of the wind direction during the period



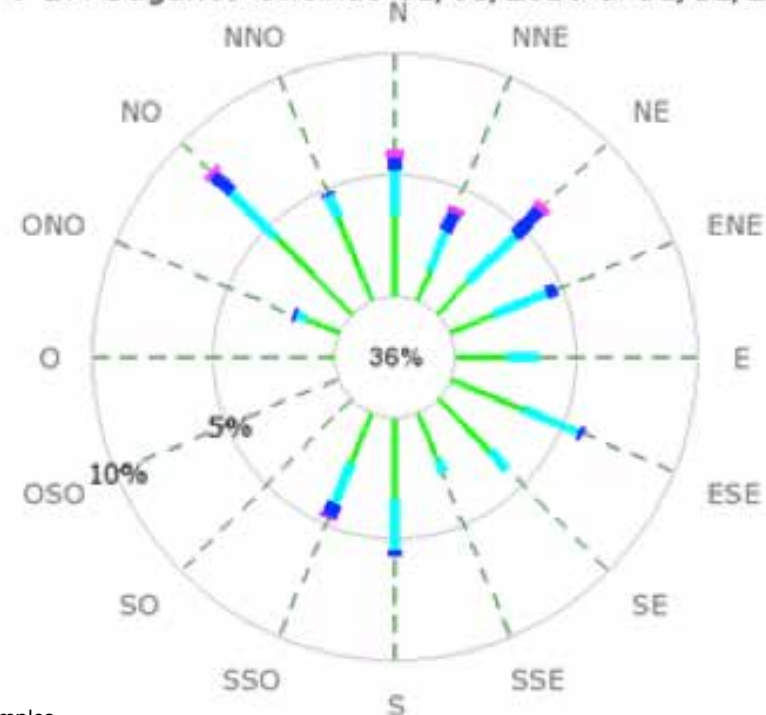
## Monthly statistics from the station MA.S.1. EM1 OFFICES - 2016

	DD (°grados)		VV (m/s)				TMP (°C)				HR (%)			
	Muestras	Media	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.
Enero	31	13.33	31	1.1 3	3.1 4	0.2 7	31	14.0 6	19.1 9	8.50	31	56.0 1	82.3 6	29.8 6
Febrero	29	9.47	29	1.5 1	3.0 9	0.4 2	29	14.1 7	21.2 6	9.47	29	47.9 6	70.1 0	30.1 1
Marzo	30	1.09	30	1.3 9	3.4 5	0.5 3	30	14.2 5	19.2 9	11.0 0	30	51.0 4	80.9 2	27.0 6
Abril	30	16.39	30	1.4 0	2.9 8	0.2 5	30	16.3 3	21.4 4	13.4 9	30	59.5 4	75.4 7	37.1 1
Mayo	31	13.08	31	1.1 7	1.9 2	0.6 5	31	18.8 1	24.2 9	15.4 6	31	60.2 8	83.0 3	31.2 4
Junio	30	13.06	30	1.2 9	2.4 3	0.5 5	30	23.1 0	26.7 1	20.1 0	30	60.7 0	74.7 7	26.1 9
Julio	31	28.98	31	1.2 9	2.1 1	0.4 8	31	25.9 2	27.9 6	23.8 0	31	62.3 8	74.6 7	49.6 3
Agosto	31	3.66	31	1.1 5	2.1 0	0.6 0	31	26.1 4	27.0 8	23.6 7	31	64.2 7	73.0 3	47.8 7
Septiembre	30	10.12	30	1.0 9	3.1 7	0.4 2	30	24.4 4	29.2 2	21.7 9	30	60.4 0	72.8 5	35.2 0
Octubre	31	355.8 8	31	0.8 4	2.2 0	0.1 2	31	20.9 8	23.3 1	18.0 4	31	68.2 0	78.7 2	51.3 2
Noviembre	30	352.8 9	30	1.2 4	4.3 1	0.2 0	30	15.5 3	21.2 2	11.2 6	30	58.4 4	79.6 8	33.0 5
Diciembre	31	359.4 4	31	1.4 7	7.2 2	0.2 3	31	13.1 4	16.6 8	9.75	31	67.9 1	80.2 9	46.9 5

NOTE: Data calculated on an hourly basis.

## Wind rose - MA.S.1. EM1 OFFICES -2016

### APV EM Sagunto Oficinas 01/01/2016 al 31/12/2016



52436 samples

Data X-minutal

Represented according to the Beaufort scale

% indicates the preponderance of the wind direction during the period



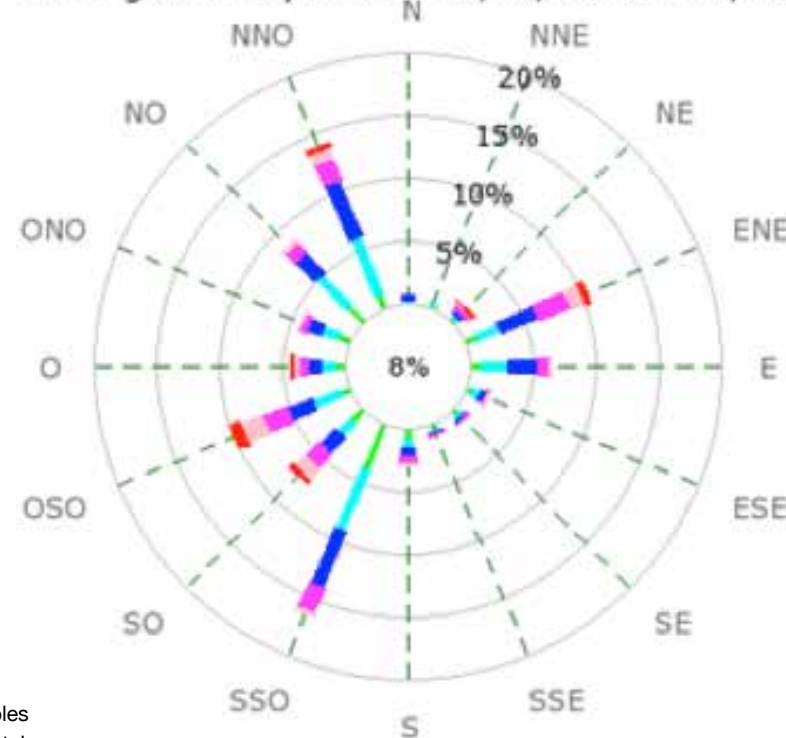
### Monthly statistics from the station MA.S.1. EAST BREAKWATER EM2 - 2016

	DD (°grados)		VV (m/s)				RS (w/m2)				PLU (l/m2)				Acumulado
	Muestras	Media	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.	
Enero	31	54.19	31	4.78	10.20	1.16	31	31.68	61.36	4.16	31	0.01	0.20	0.00	0.30
Febrero	29	40.35	29	5.60	11.14	1.88	29	67.36	113.90	10.09	29	0.09	1.20	0.00	2.50
Marzo	30	39.98	30	4.88	8.58	1.36	30	103.47	159.62	12.76	30	0.33	4.60	0.00	9.80
Abril	30	47.42	30	4.50	7.68	1.48	30	150.71	229.70	13.33	30	0.40	4.80	0.00	12.10
Mayo	31	34.38	31	3.66	8.24	1.28	31	192.04	261.99	17.20	31	0.67	12.50	0.00	20.70
Junio	30	3.82	30	3.11	7.74	1.09	30	215.37	272.50	90.65	30	0.00	0.00	0.00	0.00
Julio	31	9.78	31	3.04	5.28	1.19	31	182.95	227.77	58.82	31	0.00	0.10	0.00	0.10
Agosto	31	28.99	31	2.96	5.40	1.43	31	170.85	220.17	38.15	31	0.03	0.30	0.00	1.00
Septiembre	30	43.27	30	3.18	6.50	1.57	30	121.73	177.81	47.51	30	0.04	0.40	0.00	1.20
Octubre	31	37.56	31	3.09	5.97	1.21	31	61.52	102.32	7.51	31	0.06	0.60	0.00	1.80
Noviembre	30	18.03	30	4.91	9.57	1.57	30	39.85	72.10	4.13	30	0.19	2.00	0.00	5.60
Diciembre	31	345.62	31	3.35	11.70	0.66	31	52.40	95.54	4.00	31	18.79	208.00	0.00	582.50
Acumulado <b>637.60</b>															

NOTE: Data calculated on an hourly basis.

Wind rose – MA.S.1. EAST BREAKWATER EM2 –2016

APV EM Sagunto Dique Este 01/01/2016 al 31/12/2016



52469 samples

Data X-minutal

Represented according to the Beaufort scale

% indicates the preponderance of the wind direction during the period





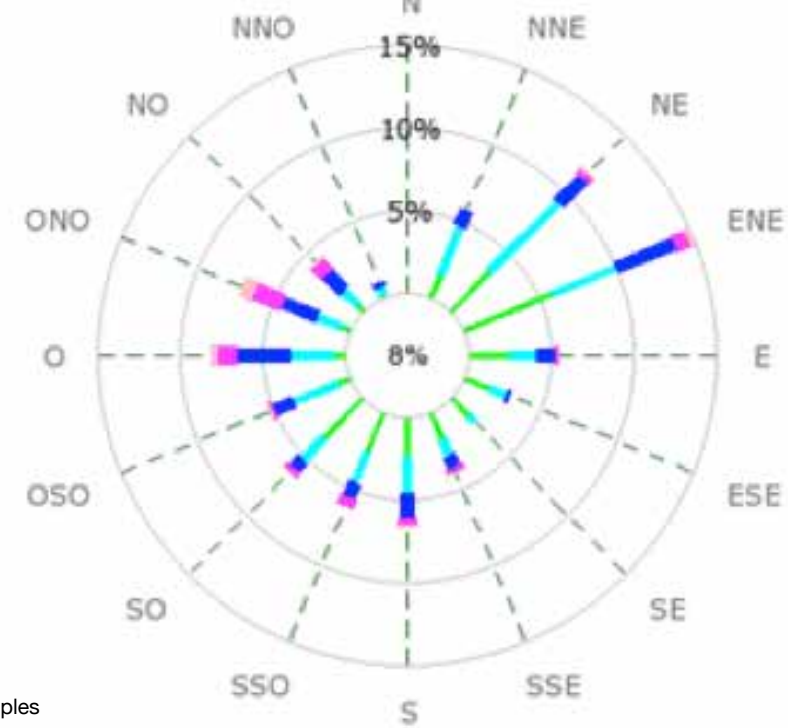
### Monthly statistics from the station MA.G.EM1. SERPIS QUAY -2016

	DD (°grados)		VV (m/s)				TMP (°C)				HR (%)				RS (w/m2)			
	Muestras	Media	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.	Muestras	Media	Máx.	Min.
Enero	31	41.47	31	2.65	5.31	0.88	31	14.82	21.95	8.62	31	56.68	84.52	32.20	31	97.85	156.03	48.85
Febrero	29	26.30	29	2.84	5.92	1.41	29	14.68	21.54	9.56	29	50.47	74.63	26.73	29	126.6	180.54	70.79
Marzo	30	13.83	30	2.68	3.87	1.75	30	14.53	20.14	11.10	30	62.23	91.35	38.04	30	193.1	269.75	72.24
Abril	30	0.59	30	3.00	5.26	1.38	30	16.64	21.15	13.45	30	73.26	96.03	52.99	30	237.7	351.27	62.53
Mayo	29	37.08	29	2.83	4.97	1.61	29	18.74	23.43	15.23	31	72.44	91.85	50.69	29	261.1	324.60	104.80
Junio	28	23.36	28	2.67	4.00	1.69	28	22.99	25.74	20.84	30	73.27	84.82	45.74	28	300.7	326.68	238.78
Julio	31	28.80	31	3.07	4.89	1.71	31	25.65	28.22	23.74	31	79.66	87.14	69.29	31	286	336.84	75.59
Agosto	31	24.46	31	2.99	5.03	1.50	31	25.74	27.22	23.51	31	81.15	90.86	59.19	31	276.7	308.42	117.47
Septiembre	30	4.29	30	2.67	4.58	1.73	30	24.38	29.26	21.45	30	74.45	88.99	48.99	30	236.6	280.81	147.52
Octubre	31	355.20	31	2.16	3.43	1.26	31	21.02	23.31	17.23	31	84.25	98.34	65.04	31	172.1	235.73	66.60
Noviembre	29	36.23	29	2.38	5.48	1.23	29	15.90	20.41	12.36	30	79.03	98.78	56.73	29	126.5	180.08	42.97
Diciembre	25	33.56	25	1.56	5.90	0.10	24	13.81	16.70	11.73	25	84.79	98.47	77.43	24	87.10	137.22	37.99

NOTE: Data calculated on an hourly basis.

Wind rose - MA.G.EM1. SERPIS QUAY -2016

### APV Muelle Serpis Gandía 01/01/2016 al 31/12/2016



49322 samples

Data X-minutal

Represented according to the Beaufort scale

% indicates the preponderance of the wind direction during the period

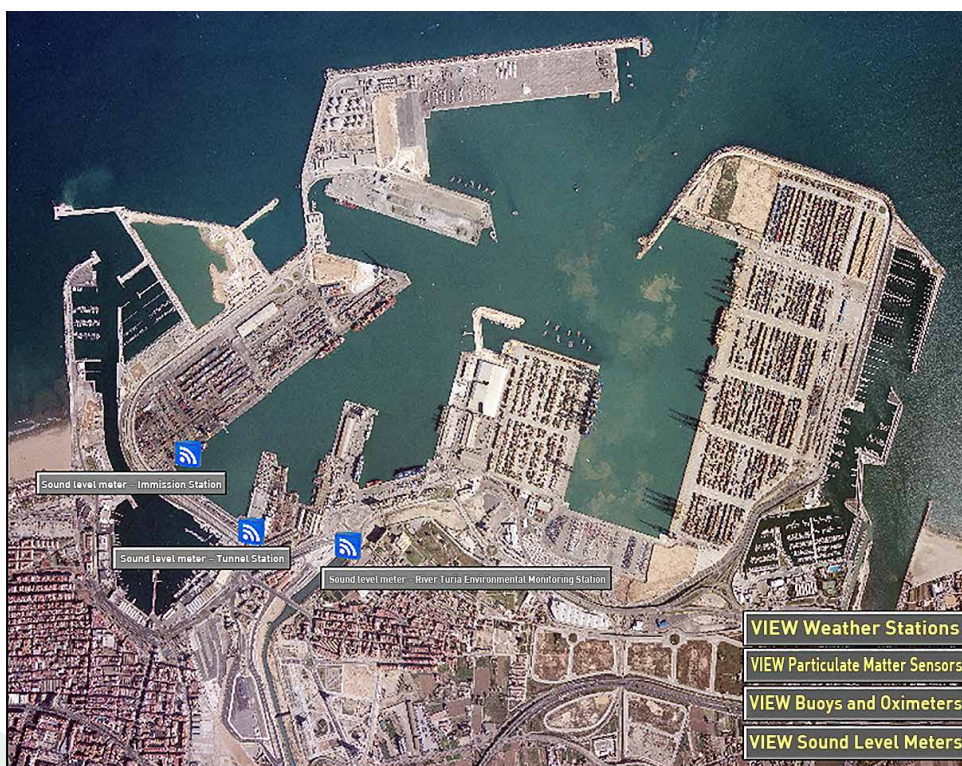


### 6.3. NOISE QUALITY CONTROL NETWORK

The Port Authority of Valencia checks and monitors noise emissions in the port area. Monitoring noise quality is another of the Environmental Policy Department's priority objectives.

The Port Authority of Valencia has three sound level meters to carry out this monitoring which are strategically sited on the port-city interface and enable noise quality to be analysed practically in real time.

The sites of the noise monitoring terminals are shown below:



#### 6.3.1. RESULTS OBTAINED IN 2016 ACCORDING TO REFERENCE STANDARD VALUES

Throughout 2016, monthly reports were drawn up about the evolution of the data recorded in order to identify trends. The graph below shows the annual average per station in 2016, using as a reference the noise quality objectives applicable to existing built-up areas in Table A of Annex II in Spanish Royal Decree 1367/2007, of 19<sup>th</sup> November, for the three evaluation periods (the annual average for daytime and evening should be less than 75 dB and for night-time it should be less than 65 dB):

Daytime 7:00-19:00				
Ld(dBa)	<60 dBa CULTURAL-EDUCATIONAL HEALTHCARE	<65 DBA RESIDENTIAL	<70 DBA TERTIARY	<75 DBA INDUSTRIAL
Level				
Immission station	62 dbA			
Tunnel	61 dbA			
River Turia station	60 dbA			
Evening 19:00-23:00				
Ld(dBa)	<60 dBa CULTURAL-EDUCATIONAL HEALTHCARE	<65 DBA RESIDENTIAL	<70 DBA TERTIARY	<75 DBA INDUSTRIAL
Level				
Immission station	61 dbA			
Tunnel	61 dbA			
River Turia station	58 dbA			
Daytime 7:00-19:00				
Ld(dBa)	<50 dBa CULTURAL-EDUCATIONAL HEALTHCARE	<55 DBA RESIDENTIAL	<60 DBA TERTIARY	<65 DBA INDUSTRIAL
Level				
Immission station	54 dbA			
Tunnel	51 dbA			
River Turia station	50 dbA			

Examination of the data in the annual period assessed (January-December 2016) shows that all stations measuring noise levels met the noise quality objectives for predominantly industrial use areas established by Spanish Royal Decree 1367/2007 of 19<sup>th</sup> October, which implements Spanish Law 37/2003, of 17<sup>th</sup> November, on noise, in terms of noise zoning, quality objectives and noise emissions.

### 6.3.2 STATIC MAPS.

Some years ago, the Port Authority of Valencia drew up static maps for the ports of Gandia, Sagunto and Valencia. In situ readings were taken at a number of representative sites in the port facilities during the day and night and these were then used to draw up the noise maps.

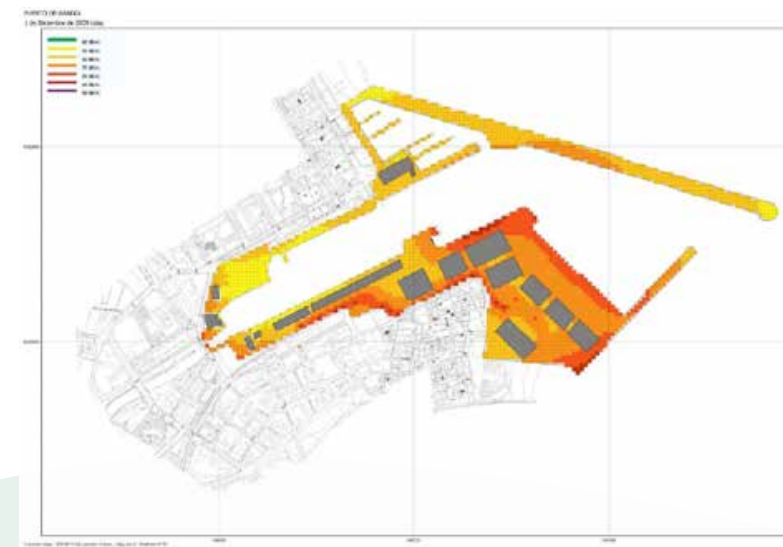
These maps showed that the impact of the noise generated in the area around the ports of Gandia, Sagunto, and Valencia were generally confined to the service area.

Creating the static map for the Port of Gandia involved taking readings for 10 minutes in each one-hour period at 32 monitoring sites. The readings were taken over two days, one with vessels in the port and the other without in order to analyse their impact on noise levels in the area.

Continuous readings were subsequently taken over 24 hours at two representative monitoring sites close to the port-city interface.



*Lday (No vessels in the port) Port of Gandia*



*Lday (Vessels in the port) Port of Gandia*



These maps showed that noise levels emitted to places outside the noise generating areas during the day, in the evening and at night, recorded from 30<sup>th</sup> November to 1<sup>st</sup> December 2009, fell within the limit noise immission values applicable to port infrastructure and operations as established in Spanish Royal Decree 1367/2007 for predominantly industrial use sectors.

### 6.3.3 PREDICTIVE MAPS.

The predictive maps at the ports of Sagunto and Valencia were updated in 2011. Work began on updating the predictive noise map for the Port of Gandia in 2012 and this was completed in late 2013. Version 8 of the Predictor software suite was used with the HARMONOISE NOMEPORTS model for these updates.

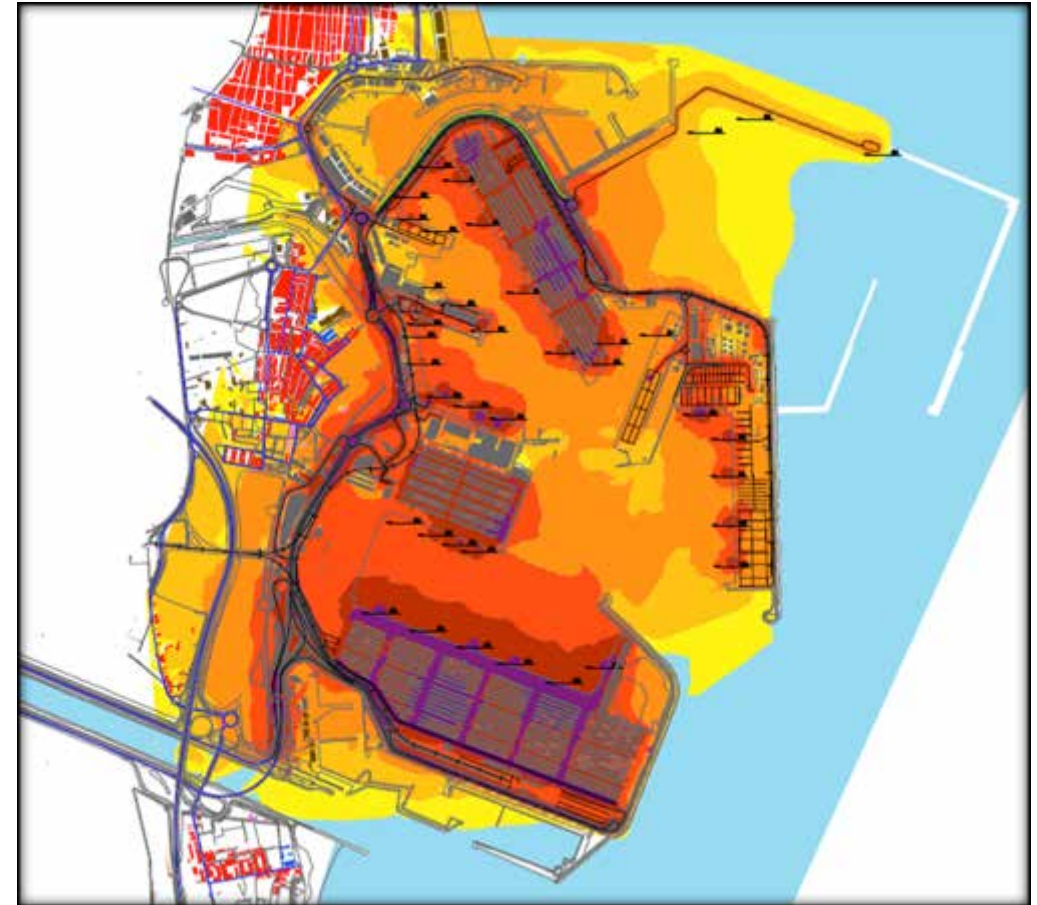
In the case of the Port of Valencia, the initial information used for the 2008 map was updated and adapted to new circumstances of the port (road traffic, the type of operations carried out, noise power of the machinery used in each area, work schedules and shifts, etc.) in order to make the calculations.

Based on all this information and after a modelling process, the software was used to draw a series of maps divided by operations, schedules, etc., which provide a tool for managing noise levels in the port area. An analysis of these maps leads to the following conclusions:

- The most significant noise source during the day/evening is road traffic.
- The most significant noise source during the day/evening is industrial noise.
- Average Lden<sup>1</sup>: most affected by industry.
- Trains have no significant impact on noise levels in the port.

The compliance maps show that at no point in the adjoining built-up area did noise levels from port activities exceed the 60 dB(A) established in Spanish Royal Decree 1367/2007 during the day, or the 50 dB(A) set for night-time.

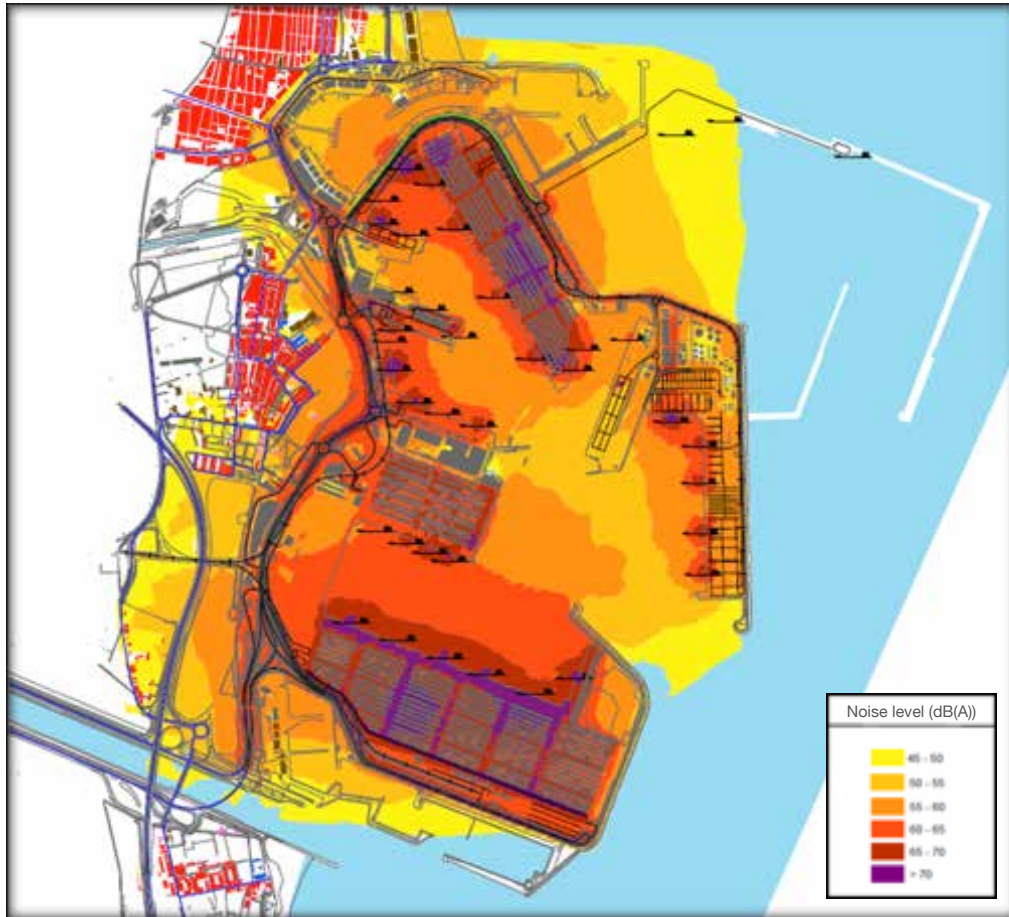
In 2016, the predictive noise map of the Port of Valencia was updated, including the new northern expansion. The new maps are presented below:



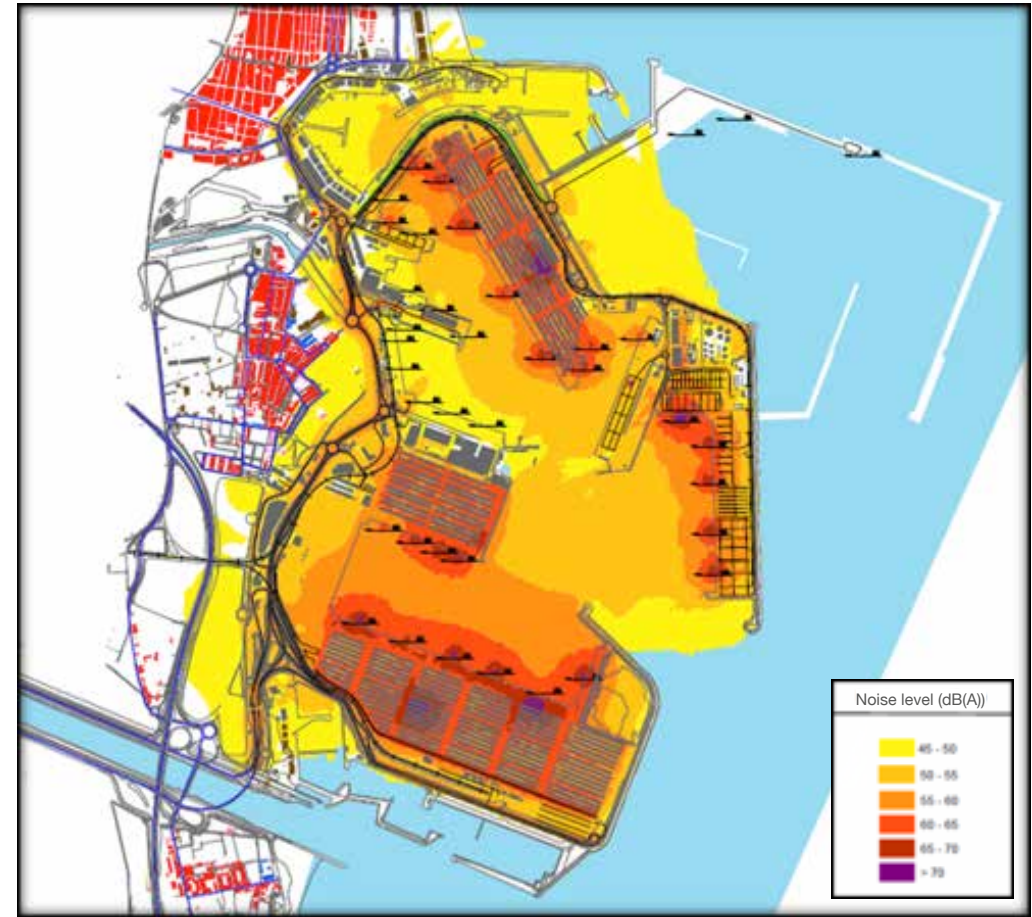
Lday Port of Valencia

1. Lden. Average noise generated during the day, the evening and at night-time.





*Levening Port of Valencia*



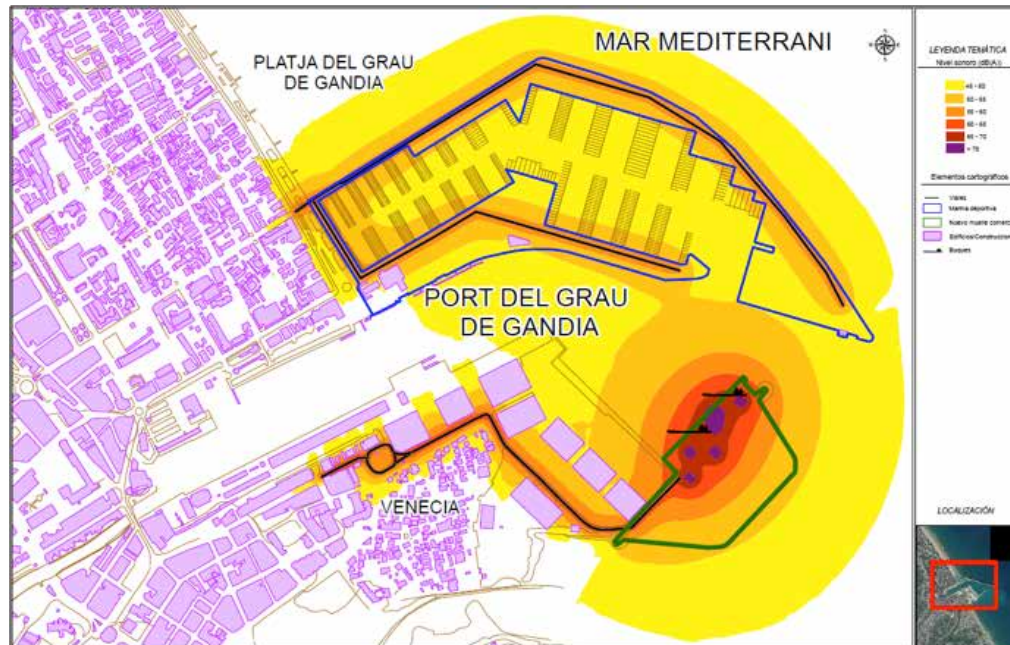
*Night Port of Valencia*

The main conclusion obtained from the above maps of the sound levels is that the residential areas closest to the port infrastructures are not exposed by the activity of the Port of Valencia at levels higher than those set out in table A1 of annex III of Royal Decree 1367/2007.

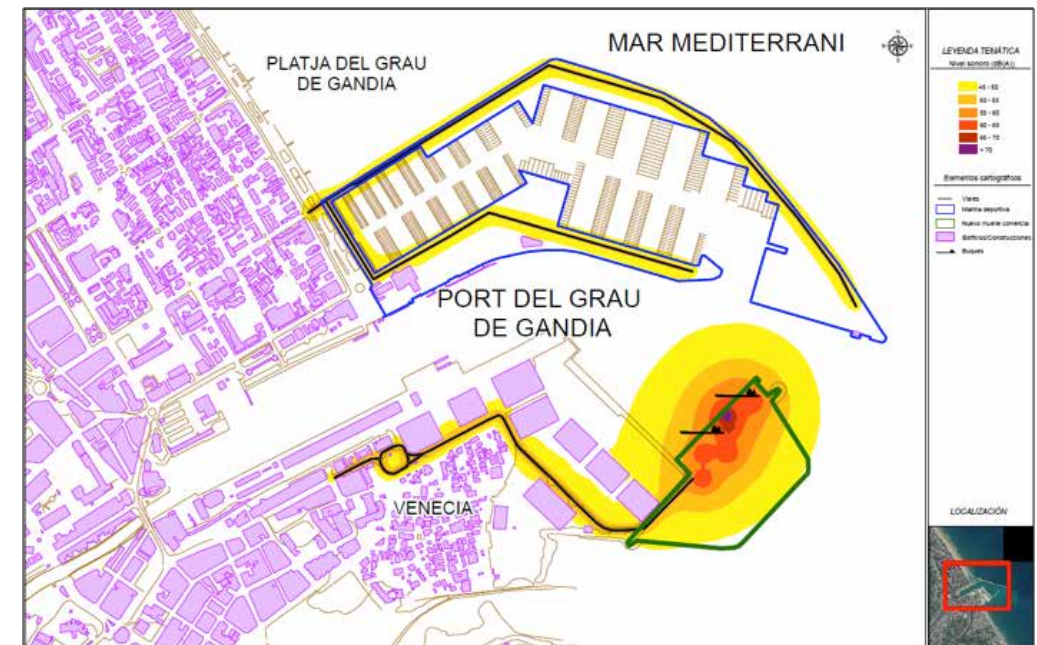




In addition, a predictive study was carried out in May 2013 of the new extension planned for the Port of Gandia. The maps for daytime and night-time are shown below:



Total Ld Port of Gandia



Total Ln Port of Gandia

The conclusion drawn from the above studies is that in no case do the noise levels obtained in the prediction exceed the noise quality objectives set out in Valencian Regional Government Law 7/2002 in adjacent or nearby areas.

### 6.4 WATER QUALITY.

#### 6.4.1 QUALITY OF WATER BODIES IN THE PORT FACILITY IN 2016

The Water Framework Directive (2000/60/EC) states that Member States must protect, improve and regenerate all bodies of surface water with the aim of achieving good surface water status at the latest 15 years after the date of the entry into force of the Directive, i.e. by 2015. The WFD goes on to say that Member States shall protect and enhance all artificial or heavily modified bodies of water, as is the case in the ports of Valencia, Sagunto, and Gandia, with the aim of achieving good ecological potential.

In 2013, ROM 5.1.13 was published on the quality of coastal waters in port areas, prepared by State Ports, which contains the standards and protocols for analysis and assessment of intra-port waters of the Ports of Valencia, Sagunto, and Gandia.

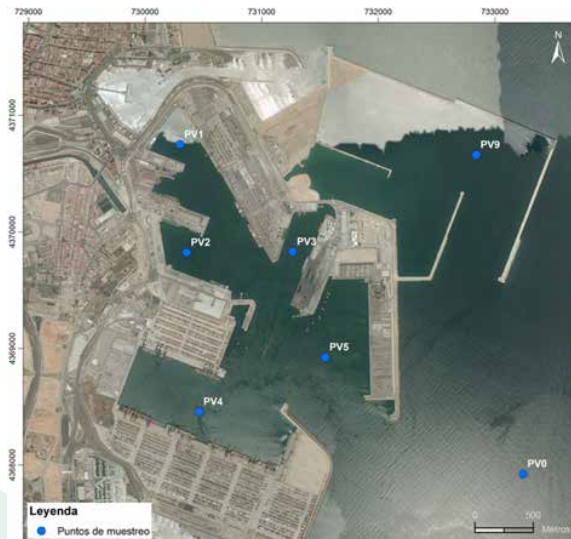
#### 6.4.2 AREAS OF STUDY

In 2016, regular sampling campaigns were conducted to monitor water quality in the three ports managed by the Port Authority of Valencia:

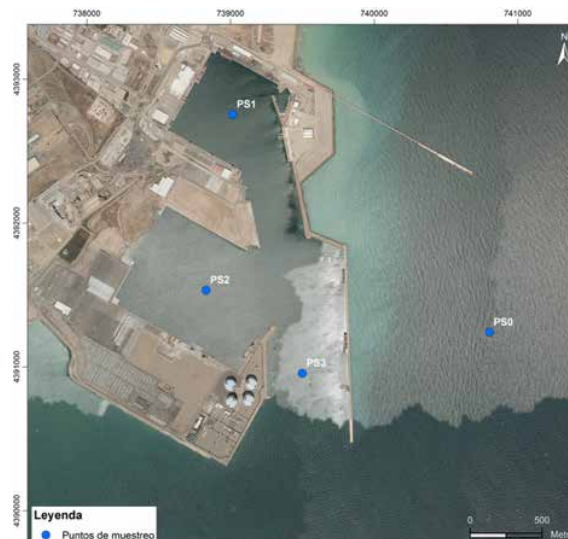
- Port of Valencia
- Port of Sagunto
- Port of Gandia

The areas of study include both intra-port waters (mass of water heavily modified by the presence of ports), as well as a control station representative of the extra-port waters (mass of coastal water) in each port.

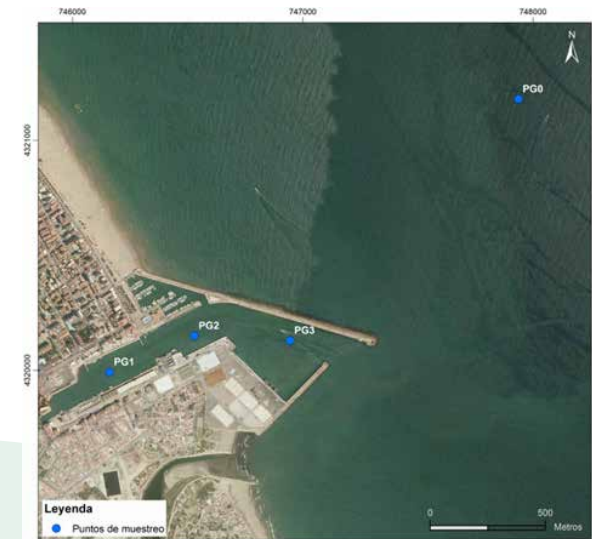
The sampling sites used in each of the port facilities are shown below:



Distribution of sampling points at the Port of Valencia



Distribution of sampling points at the Port of Sagunto



Distribution of sampling points at the Port of Gandia



### 6.4.3 DETERMINATION OF THE PORT AQUATIC MANAGEMENT UNITS (PAMU)

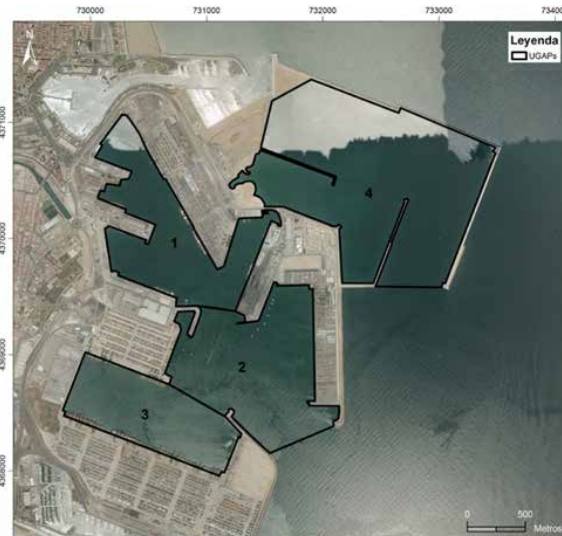
In order to assess the environmental quality of port waters following the criteria established in ROM 5.1-13 "Quality of coastal waters in port areas", the Port Aquatic Management Units (hereinafter PAMU) have been delimited and typified as a management instrument for the water environment in the port service area (PSA). In this context, these PAMUs are the basic units for the management of port water quality, and have been created according to the following aspects:

- Uses and activities that are developed in the PSA
- Physical and hydromorphological characteristics
- Hydrodynamic conditions.

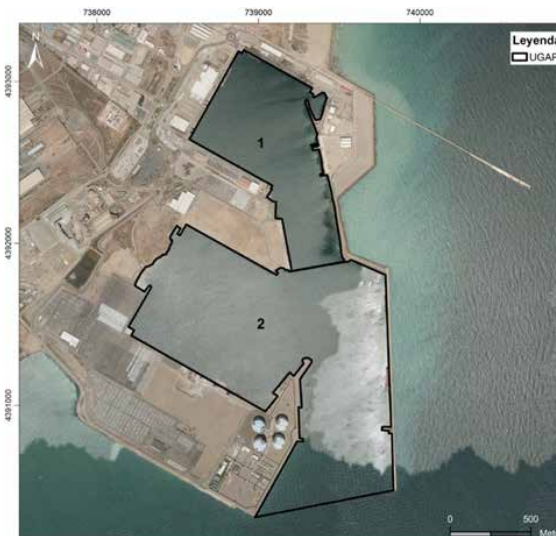
All PAMUs have been typified as:

CATEGORY	CLASS	TYPE
Coastal waters	Heavily modified waters	CM3: Mediterranean coastal waters with low renewal rate

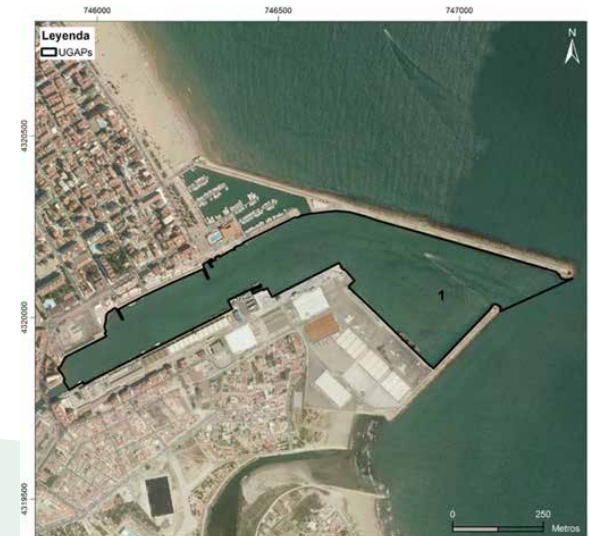
The PAMUs for each port are listed below:



PAMUs established for the Port of Valencia



PAMUs established for the Port of Sagunto



PAMU established for the Port of Gandia

## 6.4.4 VARIABLES STUDIED

For each PAMU, the monitoring of the quality of the intra-port waters has been carried out based on the indicators considered for the evaluation of environmental quality in ROM 5.1.13, which are the following:

- Quality indicators of CF sediment: Organic Quality Index (ICO)
- Indicators of biological water quality: phytoplankton (concentration of chlorophyll a) and benthic invertebrates (BOPA)
- Indicators of QF water quality indicators: turbidity, oxygen saturation, total hydrocarbons, faecal contamination and nutrients
- Chemical quality of water and sediment: priority substances and other pollutants

The variables analysed both in situ and in the laboratory during 2016 are shown below:

SAMPLE	IN SITU MEASUREMENTS	ANALYSIS IN LABORATORY	SAMPLE POINTS
Water column	<ul style="list-style-type: none"> <li>- Chlorophyll a</li> <li>- Temperature</li> <li>- Salinity</li> <li>- Dissolved oxygen</li> <li>- Turbidity</li> <li>- Total hydrocarbons</li> </ul>	<ul style="list-style-type: none"> <li>- Faecal contamination: E. coli and intestinal enterococci.</li> <li>- Nutrients: nitrates, nitrites, ammonium and phosphates.</li> </ul>	PORT OF VALENCIA: PV1, PV2, PV3, PV4, PV5, PV9 and PV0.
			PORT OF SAGUNTO: PS1, PS2, PS3 and PS0.
			PORT OF GANDIA: PG1, PG2, PG3 and PG0.
Sediment	<ul style="list-style-type: none"> <li>- Potential Redox</li> </ul>	<ul style="list-style-type: none"> <li>- Total organic carbon</li> <li>- Kjeldahl Nitrogen</li> <li>- Total phosphorus</li> <li>- Benthic invertebrates (BOPA)</li> </ul>	PORT OF VALENCIA: PV2, PV3, PV4, PV5, PV9, PV0
			PORT OF SAGUNTO: PS1, PS2, PS3, PS0
			PORT OF GANDIA: PG1, PG2, PG3, PG0.

SAMPLE	ANALYSIS IN LABORATORY	SAMPLE POINTS
Water column	Compounds of tributyltin (TBT's), 1,2-Dichloroethane, Alachlor, Aldrin, Arsenic, Atrazine, Cadmium, Chlorfenvinphos, Chloroalkanes C10-13, Chlorpyrifos, Copper, Chromium VI, Total DDT, Di (2-ethylhexylphthalate (DEHP), Dichloromethane, Dieldrin, Brominated diphenyl ethers, Diuron, Endosulfan, Endrin, Hexachlorobenzene, Hexachlorobutadiene, Hexachlorocyclohexane, Isodrin, Isoproturon, Mercury, Nickel, P, P'- DDT, Pentachlorobenzene, Pentachlorophenol, Lead, Selenium, Simazine, Terbutilazine, Carbon tetrachloride, Trichloromethane (chloroform), Trifluralin, Zinc	PORT OF VALENCIA: PV5
	Compounds of tributyltin (TBT's), 1,2-Dichloroethane, Arsenic, Cadmium, Cloroalkanes C10-13, Copper, Chromium VI, Total DDT, Di (2-ethylhexylphthalate (DEHP), Dichloromethane, Brominated diphenyl ethers, Hexachlorobenzene, Hexachlorobutadiene, Mercury, Nickel, p, p'-DDT, Lead, Selenium, Terbutilazine, Carbon tetrachloride, Trichloromethane, Zinc	PORT OF SAGUNTO: PS3
	Nonphenolol, Octogeneal	PORT OF GANDIA: PG3
		PORT OF VALENCIA: PV1, PV2, PV3, PV4, PV5 and PV9.
Sediment	Cadmium, Lead, Copper, Nickel, Zinc, Arsenic, Mercury, Chromium VI, Polychlorinated Biphenyls (PCBs), Tributyl Tin Compounds (TBTs), HAPs	PORT OF SAGUNTO: PS1, PS2 and PS3.
		PORT OF GANDIA: PG1, PG2 and PG3.
		PORT OF VALENCIA: PV5
		PORT OF SAGUNTO: PS3
Sediment		PORT OF GANDIA: PG3

In situ continuous readings of the various hydrological variables were taken throughout the water column with the aid of a high-precision CTD oceanographic profiler (an SBE 19Plus V2). A laboratory accredited by ENAC, the Spanish National Accreditation Body, carried out the laboratory tests

The sampling level, the sampling method and the analysis method of the variables studied are detailed below:

VARIABLE	UNITS	SAMPLE LEVEL	SAMPLING METHOD	ANALYSIS METHOD
Temperature	° C	Water column profile	SBE 19plus V2 multi-parameter profiler	Thermometry
Salinity	PSU	Water column profile	SBE 19plus V2 multi-parameter profiler	Conductimetry
Dissolved oxygen	mg/l and % sat.	Water column profile	SBE 43 sensor fitted to an SBE 19plus V2 multi-parameter profiler	Polarographic method
Turbidity	NTU	Water column profile	Sensor Seapoint fitted to an SBE 19plus V2 multi-parameter profiler	Nephelometry
Chlorophyll a	µg/l	Water column profile	Cyclops-7 sensor fitted to an SBE 19plus V2 multi-parameter profiler	Fluorometry
Nutrients	µg/l	Integrated in the water column	Hydrographic hose	Spectrophotometry UV-VIS
Faecal pollution: intestinal enterococci/e. coli	UFC/ 100 ml	Surface	Sterile bottle	ISO 7899-2/ ISO 9308-1
Total hydrocarbons	ppb	Water column profile	Cyclops-7 sensor (ultraviolet) fitted to a multi-parameter profiler	Fluorometry
Polychlorinated biphenyl (PCBs)	µg/l	Integrated in the water column	Hydrographic hose	Chromatography CG/MS

VARIABLE	UNITS	SAMPLE LEVEL	SAMPLING METHOD	ANALYSIS METHOD
Compounds of Tributyltin (TBTs)	µg/l	Integrated in the water column	Hydrographic hose	Chromatography CG/MS
Nonphenolol, Octogeneal	µg/l	Integrated in the water column	Hydrographic hose	Chromatography CG/MS
Biocides: aldrin, dieldrin, endrin, isodrin, alachlor, atrazine, chlorfenvinphos, hexachlorocyclohexane, chlorpyrifos, dcmu, endosulfan, isoproturon, simazine, trifuralin, pentachlorobenzene, pentachlorophenol	µg/l	Integrated in the water column	Hydrographic hose	Chromatography CG/MS
Bromodiphenyl ethers: 2,2', 4,4', 5,5'-Hexabromodiphenyl ether (PBDE 153); 2,2', 4,4', 5,6'-Hexabromodiphenyl ether (PBDE 154); 2,2', 4,4', 5-Pentabromodiphenyl ether (PBDE 99); 2,2', 4,4', 6-Pentabromodiphenyl ether (PBDE 100); 2,2', 4,4'-Tetrabromodiphenyl ether (PBDE 47); 2,4,4'-Tribromodiphenyl ether (PBDE 28)	µg/l	Integrated in the water column	Hydrographic hose	Chromatography CG/MS

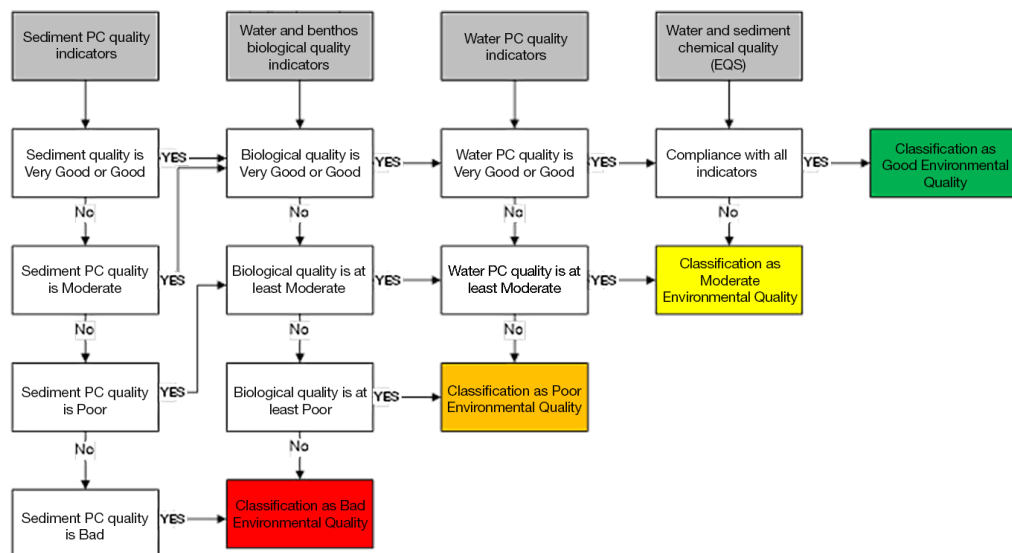
VARIABLE	UNITS	SAMPLE LEVEL	SAMPLING METHOD	ANALYSIS METHOD
Chloroalkanes: Chloroalkanes (C10-C13)	µg/l	Integrated in the water column	Hydrographic hose	Chromatography CG/MS
Phthalates: Bis (2-ethylhexyl) phthalate	µg/l	Integrated in the water column	Hydrographic hose	Chromatography CG/MS
Trihalomethanes Chloroform.	µg/l	Integrated in the water column	Hydrographic hose	Chromatography CG/MS
Organochlorines: 1,2-Dichloroethane; Dichloromethane.	µg/l	Integrated in the water column	Hydrographic hose	Chromatography CG/MS
Heavy metals: Arsenic, Cadmium, Copper, Chrome VI, Mercury, Nickel, Lead, Selenium, Zinc	µg/l	Integrated in the water column	Hydrographic hose	Inductive coupling plasma spectrometry (ICP / MS)
VOCs: Hexachlorobutadiene, Carbon tetrachloride	µg/l	Integrated in the water column	Hydrographic hose	Chromatography CG/MS

VARIABLE	UNITS	SAMPLE LEVEL	SAMPLING METHOD	ANALYSIS METHOD
Cadmium, Lead, Copper, Nickel, Zinc, Arsenic, Mercury, Chromium VI	mg/kg	Sediment	Draga Van Veen	Inductive coupling plasma spectrometry (ICP / MS)
Polychlorobiphenyls (PCBs)	mg/kg	Sediment	Draga Van Veen	Chromatography CG/MS
Tributyl tin compounds (TBTs)	mg/kg	Sediment	Draga Van Veen	Chromatography CG/MS
HAPs	mg/kg	Sediment	Draga Van Veen	Chromatography CG/MS
COT	mg/kg	Sedimento	Draga Van Veen	IR spectroscopy
Kjeldahl Nitrogen	mg/kg	Sediment	Draga Van Veen	Volumetric titration
Total phosphorus	mg/kg	Sediment	Draga Van Veen	Spectroscopy
Benthonic invertebrate fauna (BOPA)		Sediment	Draga Van Veen	Optical Microscopy



## 6.4.5 WATER QUALITY MONITORING RESULTS IN 2016

The environmental quality of heavily modified PAMUs is evaluated based on the hierarchical integration of the quality elements indicated in the following figure:



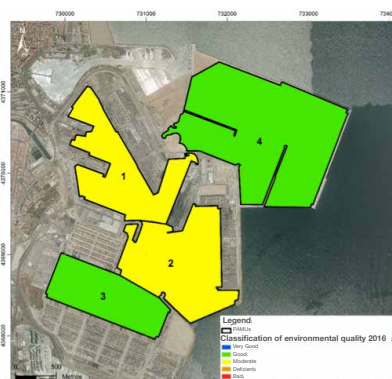
As shown in the figure, the final classification of the water bodies can be: Good, Moderate, Deficient or Poor.

The table below presents the results obtained for each PAMU and port, with the different indicators:

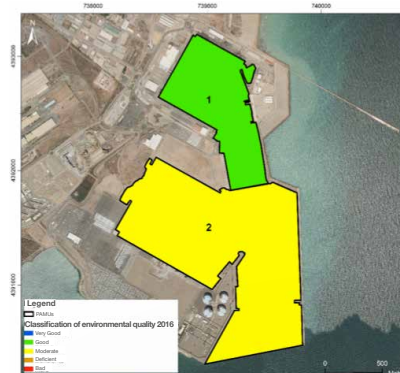
PORT	PAMU	Sediment quality QF indicators	Indicators of water and benthos biological quality	Water Quality CQ Indicators	Chemical quality of water and sediment	CLASSIFICATION OF ENVIRONMENTAL QUALITY
VALENCIA	PAMU 1	GOOD	GOOD	GOOD	MODERATE	MODERATE
	PAMU 2	GOOD	GOOD	GOOD	MODERATE	MODERATE
	PAMU 3	GOOD	GOOD	GOOD	GOOD	GOOD
	PAMU 4	GOOD	GOOD	GOOD	GOOD	GOOD
SAGUNTO	PAMU 1	GOOD	GOOD	GOOD	GOOD	GOOD
	PAMU 2	GOOD	GOOD	GOOD	MODERATE	MODERATE
GANDIA	PAMU 1	GOOD	GOOD	MODERATE	MODERATE	MODERATE

Based on the results of the monitoring of each of the indicators, we can conclude that the classification of environmental quality is GOOD at two PAMUs of the Port of Valencia and one at the Port of Sagunto, and MODERATE for all other PAMUs at the ports of Valencia, Sagunto and Gandia, thus the water quality is improved over the previous year.

The results obtained for each PAMU and port are shown below:



Evaluation of the Port of Valencia



Evaluation of the Port of Sagunto



Evaluation of the Port of Gandia

The PAV also endeavours to minimise any possible impact on water quality through schemes such as clearing floating waste from the port's water surface. To that end, in 2003, the Spanish Maritime Safety Agency, which belongs to the Directorate General for Merchant Shipping gave the vessel LIMPIAMAR III to the Port Authority of Valencia, which took over this service. The service is currently outsourced to a private company.

The vessel is mainly intended to collect solid and liquid floating waste and to assist with tackling episodes of accidental marine pollution.

In 2016, the LIMPIAMAR III removed and handled a total of 209 m<sup>3</sup> of floating waste, largely plastics, wood and other by-products.



### 6.5 DREDGING MANAGEMENT.

The accumulation of sand and lime deposits in the entrance channels to the ports and in the construction of new quays means that from time to time the Port Authority of Valencia carries out maintenance dredging to enable access and manoeuvrability in the ports it manages.

No dredging operations were carried out in 2016.

### 6.6 ENVIRONMENTAL SURVEILLANCE PLAN

In 2008, work began on the Port of Valencia extension. In line with the requirements set out in the project's Environmental Impact Statement (EIS) of 30th July 2007, the works have a comprehensive Environmental Surveillance Plan to ensure compliance with corrective and preventive measures in the construction and operational phases, and guarantee that impact levels do not exceed those specified in the impact assessment.

Therefore, the Plan monitors the following environmental factors:

- Water and sediment quality
- Marine ecosystem
- Fishing resources
- Evolution of shellfish resources
- Monitoring birdlife
- Air pollution
- Noise pollution
- Monitoring archaeological field surveys
- Coastal dynamics.

In addition, and to comply with the EIS's requirements, a study was carried out in 2008 into the project's possible effect on the dispersion of discharge from the Cabañal overflow channel and the Vera sewer outlet. The study found there was no change in the initial situation.

In April 2012, the first phase of the extension works was completed with the main result being the enclosure of waters in the new dock. In August 2012, work began on the 'Cruise Quay – Phase 1' and was completed in December 2013.

Environmental monitoring of the aforementioned vectors continued throughout 2016, although work reduced considerably during this period.

The Environmental Surveillance Plan has been monitored since the works began in 2008, and the data gathered and set out in the reports for 2008-2016 show that the environmental impact of the operations is within the forecast margins and therefore they do not significantly affect the surrounding area.

### 6.7 SOIL MANAGEMENT.

During 2016, the PAV did not carry out any specific environmental characterization study of the soil or groundwater at the Ports of Valencia, Sagunto and/or Gandia.

In the area of Security, Environment and Facilities of the PAV, environmental checks of the concessions were performed, carrying out the following actions:

- Compilation of the **Soil Situation Reports** submitted by the concessionaire/ authorised companies subject to the provisions of *Spanish Royal Decree 9/2005, of 14<sup>th</sup> January, establishing the list of activities that potentially pollute the soil and*

*the criteria and standards for the declaration of contaminated soils (hereinafter, Royal Decree) before the competent environmental body.*

- Request for more detailed **supplemental reports, data or analysis** to assess soil contamination, in accordance with the provisions of Article 3.3 of the Royal Decree, which the environmental body has requested, either ex officio or through the Integrated Environmental Authorisation.
- Inform through the **PAV Internal Viability Reports** of the obligations that companies must fulfil in relation to the soil.

### 6.8 VISUAL IMPACT.

The Port Authority of Valencia paid special attention once again to the port facility's green areas. In 2016, the total surface area of green areas at the Port of Valencia was 37,121.44 m<sup>2</sup>, of which 20,432.33 m<sup>2</sup> correspond to grass areas and 16,689.11 m<sup>2</sup> to garden areas without grass.

The total surface area of gardens and green areas at the Port of Gandia was 1,675.00 m<sup>2</sup>, of which 425.00 m<sup>2</sup> were grass lawns and 1,250.00 m<sup>2</sup> garden areas, including trees, shrubs, ground cover plants, flowers, palm trees and hedges.

The total surface area of gardens and green areas at the Port of Sagunto was 7,369.00 m<sup>2</sup>, of which 3,059.00 m<sup>2</sup> were grass lawns and 4,310.00 m<sup>2</sup> garden areas, including trees, shrubs, ground cover plants, flowers, palm trees and hedges.

Sprinkler and drip irrigation systems are used to maintain these green areas, which contributes to reducing water consumption.

### 6.9 OTHER ACTIONS.

#### 6.9.1 ACTIONS CARRIED OUT IN 2016

This section lists the specific activities carried out during 2016 at the environmental level.

- Collaboration with WPCI/PIANC on the working group WG174 **"Sustainability Reporting for Ports"**
- Edition of **"Libro vivir el Puerto ambientalmente. Un recorrido por los puertos de Sagunto, Valencia y Gandia"** (Book on Living the Port Environmentally. A tour of the ports of Sagunto, Valencia and Gandia)
- The PAV participated in the workshop PRE COP 13, **"Constructing a strategy for the integration of Biological Diversity in the planning and development of Port Cities by 2020"**, Boca del Río, Veracruz, Mexico.
- Participation during September in **"Ecofira 2016: International Environmental Solutions Fair"** held in Valencia.
- Improvement of the water quality of the old Turia river bed: installation of **a new barrier and daily collection of floating waste**





## 7. EMERGENCY RESPONSE

One of the Port Authority of Valencia's priorities is to ensure the ports of Sagunto, Valencia, and Gandia maximise safety levels, whilst also maintaining efficient cooperation channels with other organisations which have jurisdiction in police, civil defence, fire prevention, sea rescue, and pollution prevention matters.

Therefore, it is essential to make the spectacular increase in port traffic in the ports managed by the PAV compatible with safeguarding the integrity of people, the environment, infrastructure, and goods, in the defence of the public interest.

To achieve this objective, the Port Authority has its own Port Police service, a fire station which works closely with the Valencia City Council, equipment to handle fuel spills operated by specialist staff, and an emergency ambulance amongst other resources, which are operational 24 hours a day, 365 days a year. These resources and contact with other authorities which may be called upon to intervene are coordinated by the PAV's Emergency Control Centre.

Through this Centre, the Port Authority of Valencia supervises dangerous goods operations, handles emergencies, and takes part in preventive industrial, operational, occupational, and environmental safety operations at the ports of Sagunto, Valencia, and Gandia, both on land and in port waters.

INCIDENTS	2012	2013	2014	2015	2016
Urgent medical assistance	170	179	209	236	218
Total number of spills	15	37	32	20	20
Minor spills in the water	9	11	16	16	12
Minor spills on land	6	26	6	4	8
Recovery of objects	14	14	12	20	11
Port closure	9	6	6	9	16
Fires	15	7	11	6	1

The Control Centre's staff and equipment are on permanent alert to intervene immediately in any incident that may take place. In the meantime, the Centre's equipment is constantly maintained, procedures are improved, staff are trained, and technological innovations are implemented.

The most important training courses include emergency drills and exercises which are regularly carried out. In 2016, the following drills were carried out.

EMERGENCY DRILLS	2012	2013	2014	2015	2016
<b>1. PAV Emergency Plans</b>					
<b>1.1.- Led by the PAV:</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>7</b>	<b>7</b>
Fire drills	2	5	1	5	6
Fuel spills	1	0	2	1	1
Other	2	1	3	1	--
<b>1.2. In conjunction with other organisations</b>	<b>9</b>	<b>2</b>	<b>5</b>	<b>1</b>	<b>3</b>
In different terminals	6	2	3		1
In conjunction with other entities	--	--	--	--	2
In conjunction with mooring services	3	--	2		--
<b>2. Port Security Drills</b>	<b>19</b>	<b>20</b>	<b>27</b>	<b>20</b>	<b>11</b>
<b>Total</b>	<b>33</b>	<b>28</b>	<b>38</b>	<b>28</b>	<b>21</b>

The following training initiatives have been carried out:

- A 40-hour English Seaspeak course for CCE controllers
- Four training sessions related to the Port Self-Protection Plan for the staff of Bombers Valencia with practice sessions on board tugboats, etc...

The following drills related to the PAV Emergency Plans were also carried out:

1<sup>st</sup> Quarter:

- Fire on board the Lioba barge.
- Oil spill on the Galp dock
- Accidental Maritime pollution. Regional exercise.



### 2<sup>nd</sup> Quarter:

- Fire in the APM workshop building at the Valencia Terminal
- Fire started at the South Warehouse at the Port of Gandia
- Evacuation of the office building at the Port of Sagunto after bomb threat
- Oil spill at the Cepsa asphalt terminal at the Port of Valencia

### 3<sup>rd</sup> Quarter:

- There were no drills during the vacation period

### 4<sup>th</sup> Quarter:

- Large-scale maritime pollution, organized by the Ministry of Agriculture
- Fire in the Port of Valencia workshops
- Fire in the basement of the Port of Valencia management building
- Fire in the Clock tower at the Port of Valencia





# 8. INNOVATION AND COOPERATION PROJECTS



To implement responsible environmental policies at the PAV, it is essential to acquire technical and practical knowledge which can be gained by taking part in cooperation and innovation projects. The PAV deploys the fruits of its participation in these projects directly, by implementing the lessons learned in its own management activities and indirectly, by making the knowledge acquired available to third parties for implementation.

The PAV encourages participation in all innovative programmes and projects whose objectives dovetail with those stated in its Environmental Policy. This participation brings with it updated knowledge of the latest trends, techniques, and technologies available to control and monitor the environmental status of the PAV's ports, as well as the subsequent transfer of this knowledge to the port community.

### 8.1 COMPLETED PROJECTS

To date, the PAV has participated in the following projects:

#### ECOPORT PROJECT (1998)



The ECOPORT Project, entitled "Moving towards an environmentally-friendly port community", was funded by the European Union's Environmental LIFE Programme.

The aim of the project was to develop a method to enable environmental management systems to be introduced in PAV-managed port facilities. The project finished in January 2001.

#### INDAPORT PROJECT (2000)



The Indaport project (Environmental Indicator System for Ports), which was funded by the Spanish Ministry of Science and Technology's Technological Research Promotion Programme (PROFIT), generated an environmental indicator system, which could be reproduced in other port environments. The project finished in December 2003.

#### HADA PROJECT (2002)



The Hada Project (Automatic Tool for Environmental Diagnosis), funded by the European Union, through its LIFE programme, enable the development of a system to control air and noise pollution in ports associated, in turn, with a decision-making system. The project finished in June 2005.

#### ECOPORTS PROJECT (2002)



This project, funded by the European Commission's Fifth Framework Programme, finished in May 2005. It consisted of creating a series of environmental management tools applied to the port industry, which were grouped together to make a coherent Environmental Management and Information System (EMIS). The PAV played an important role in the project, as the leader in one of the tasks, by developing a guide to implement environmental management systems in port communities.

### SECURMED PROJECT (2004)



The Securmed project (an interregional and transnational view of maritime security and environmental protection in the Western Mediterranean) finished in October 2007. It was funded by the European Commission's Interreg IIIB programme. The project centred on studying the security systems implemented in the ports of the regions participating in the project, as well as sharing experiences in initiatives carried out to ensure correct environmental management in the port industry

### SIMPYC PROJECT (2005)



The main objective of the Simpyc project (Environmental Integration System for Ports and Cities), led by the PAV, and funded by the European Commission under the LIFE Environment programme, was to find solutions to environmental problems arising in the port-city interface, with special attention being paid to monitoring and controlling air and noise pollution, and the impact on landscapes. The project finished in January 2008.

### MADAMA PROJECT (2005)



The MADAMA project (Risk Management Systems for Dangerous Goods Transport in Mediterranean Area) was funded by the European Commission under the Medocc Interreg IIIB programme. Its objective was to understand, define, and standardise the actions required to control and protect the dangerous goods transport chain in the Mediterranean. The Port Authority of Valencia's partners in the project were the Balearic Islands' Regional Ministry of Public Works and Transport, the Aristotle

University of Thessalonica, and the regions of Tuscany, Emilia Romagna, Provence-Alpes-Côte d'Azur, and Crete. The project studied various systems to control and monitor dangerous goods that are transported around the Mediterranean. MADAMA finished in March 2008.

### NOMEPORTS PROJECT (2005)



The Nomeports project, funded under the European Commission's LIFE programme, had a timeline of 42 months and finished in September 2008. The Port Authority of Valencia took part in the project, together with the European ports of Amsterdam, Civitavecchia, Copenhagen/Malmö, Hamburg and Leghorn, to develop a noise control tool for port areas.

The project's main objective was to create noise control tools that were adapted to the reality of ports, in line with the guidelines set out by European Directive 2002/49/EC on the assessment and management of environmental noise. To achieve this, detailed predictive noise maps were drawn up for the Port of Valencia, action plans to reduce noise levels from port activities were developed, and a best practice guide was created. The studies carried out took into account at all times Spanish Royal Decree 1367/2007, of 19th October, which developed Spanish Law 37/2003, of 17th November, on noise, in terms of noise zoning, quality objectives, and noise emissions, which implements the European directive on environmental noise.

### ELEFSINA BAY 2020 PROJECT (2007)



The Elefsina Bay 2020 project, co-funded by the European Commission's LIFE programme under reference number LIFE 05 ENV/GR/000242, finished in October

2008. The objective of this project was to promote sustainable development and the implementation of environmental management systems in the ports located in Elefsina Bay (Greece). The main activities in the project were to reduce pollution and the risk of shipping accidents involving dangerous goods, and to integrate the port into the city by building pedestrian areas and points of archaeological interest in nearby areas.

The Port Authority of Valencia had an advisory and supporting role in this project for the implementation of environmental management systems, contributing the experience of its Ecoport model, as well as the know-how it has acquired in national and international environmental projects. The other partners in the project were the Port Authority of Elefsina, the municipal authorities of Elefsina, Aspropyrgos, and Western Attiki, the University of Athens, the Port Institute Foundation for Studies and Cooperation (FEPORTS), the Mediterranean SOS Network, Hellenic Shipyard, and Titan Cement.

The project finished in 2010, and has led to several initiatives being implemented at the Port of Elefsina, such as the introduction of an EMS in some of the port companies, and improvements in port-city relations.

### ECO-LOGISTYPORT PROJECT (2008)



The Eco-logistypport project (Environmental Training for Port and Logistics SMEs in the Valencian Region) was part of the Empleaverde programme, and was funded by the European Social Fund, the Biodiversity Foundation, and the Universidad Politécnica de Valencia, in conjunction with the Port Authority of Valencia and ITENE.

Its objective was to develop several free initiatives for small and medium-sized companies in the port and logistics sector, and especially for their staff, by providing them with training on implementing environmental management and energy efficiency systems.

The actions carried out in the framework of the project were training and consultancy courses, in line with the "Ecoport Guide to Implementing an

Environmental Management System by Stages in Port Facilities". This was an excellent opportunity for participating companies and their staff, as they were given the necessary environmental training free of charge. This provided port community and logistics companies with the opportunity to adapt to new requirements in terms of environmental protection easily and with no direct costs. The project was awarded in 2008, although it did not start until January 2009, and finished in October 2010.

### IMPROVING ENVIRONMENTAL MANAGEMENT AT THE PORTS IN THE GULF OF HONDURAS (2008)

In 2008, the Port Authority of Valencia, together with the Valenciaport Foundation and the consultancy firm ALATEC, completed the project entitled "improving Environmental Management at the Ports of the Gulf of Honduras", which was funded by the Interamerican Development Bank and the Spanish Agency for International Cooperation.

During the project, an assessment was made of the environmental risks apparent in the five ports that make up the gulf network (Puerto Cortés in Honduras, Puerto Barrios and Santo Tomás de Castilla in Guatemala, and Big Creek and Belize City in Belize), environmental investment plans were drawn up for each port, and pilot projects to mitigate the impact of port activities in the gulf were identified, designed and supervised. In addition to the objective to improve environmental management in the aforementioned ports, the project has also helped to protect the Mesoamerican Barrier Reef System (MBRS), the second barrier reef system in the world, which is of huge strategic importance to the region and to world biodiversity.

### EFICONT (2009)



The EFICONT project got off the ground in January 2009 and lasted for 24 months. It was funded by the Spanish Development Ministry through the Spanish National R&D&I Plan. The main objective of this important research project was to introduce

a set of significant improvements in terms of energy efficiency, operational planning and management to the current operating model of port container terminals (PCTs).

The Port Authority of Valencia took part in the project together with the Valenciaport Foundation, the Universidad Politécnica de Valencia, the Electric Technology Institute, Dragados S.P.L., MSC Terminal Valencia S.A., TCV Stevedoring Company S.A., Konecranes, and Maritime Consulting and Management.

This programme came under a Spanish sub-programme for sustainable mobility and modal changes in transport. It was aligned with the priority entitled “Improving operations and energy efficiency at transport terminals”. Similarly, the project also dovetailed with the objectives of the Strategic Plan for Infrastructure and Transport (PEIT), and with those of the Spanish Ministry of Development.

During the project, the PAV took part in the working meetings held to follow up the tasks and compliance with the planned objectives. Accordingly, the PAV drew up a report on possible action plans to make its activities more efficient in terms of energy use. The project finished on 31<sup>st</sup> December 2010.

### CLIMEPORT PROJECT (2009)



Climeport (Mediterranean Ports’ Contribution to Climate Change Mitigation), was an environmental project led by the PAV, and in which the Mediterranean’s main ports took part. In 2010, the tasks proposed under the programme were carried out. The project had a total budget of €1,600,000, 76% of which was funded by the European Union, through the MED programme.

The partners involved included the port authorities of Algeciras, Marseilles (France), Piraeus (Greece), Koper (Slovenia), Leghorn (Italy), and Valencia, whilst the technological partners were the Energy Technology Institute (ITE), the Valencian Energy Agency (AVEN), and the Slovenian Energy Agency.

The work carried out produced an inventory of the greenhouse gases (GHG) produced in port activities from road and rail traffic, and from vessels berthed at the ports. In addition, the carbon footprint of the participating ports was calculated, and an inventory of best practices to reduce GHGs was put together.

The tasks carried out in 2013 included the design and implementation of the following pilot projects:

1. Creation of a computer tool to calculate the carbon footprint of the port facilities
2. The development of criteria regarding consumption and greenhouse gas emissions to be taken into account when purchasing supplies, contracting providers and awarding concessions, etc.
3. Improving energy efficiency in port authorities and companies, through the ISO 50001 standard.

The project finished in March 2013.

### GREENCRANES PROJECT (2012)



The GREENCRANES project (Green Technologies and Eco-Efficient Alternatives for Cranes and Operations at Port Container Terminals) had a total budget of €3,688,000, 50% of which was funded by the European Union through the Trans-European Transport Network (TEN-T) programme. The project’s objective was to demonstrate the viability of new technologies and alternative fuels through pilot schemes implemented in port container terminals (PCTs). The ultimate goal was to provide decision-making criteria and recommendations which can be used to draft European policies and enable the logistics and port industry to make informed decisions.

The project was coordinated by the Valenciaport Foundation, and its partners included the PAV, Noatum, ABB, Konecranes, the Port Authority of Koper (Slovenia), and the Italian Ministry of Infrastructure and Transport, the Port Authority of Leghorn, RINA SpA, Global Service Srl, and the Faculty of San t’Anna (Italy).



The main outcome of the project was the design of two port machinery prototypes powered by natural gas. In addition, the feasibility of using this type of fuel in container terminal machinery operations was also studied.

The project finished in November 2014.

### GREENBERTH PROJECT (2013)



The GREENBERTH project (Promotion of Port Communities' SMEs role in Energy Efficiency and GREEN Technologies for BERTHING Operations) has a budget of €1,616,115 and is 75% funded by the European Union's regional funds under the MED programme. It is set to last for 30 months.

GREENBERTH is led by the PAV, and partnered by the Mediterranean's leading ports, such as Marseilles (France), Leghorn and Venice (Italy), Koper (Slovenia), and Rijeka (Croatia). The project also has technological partners which include FEPORTS (the Valencian Region Port Institute for Studies and Cooperation), the University of Cadiz, and the Centre for Research and Technology Hellas/Hellenic Institute of Transport (CERTH/HFT).

The basic aim of the Greenberth project is to encourage SME access to opportunities in the port sector in the application of solutions to improve energy management and the implementation of renewable energies, with a special focus on port-vessel operations.

Up until now, work has involved writing and supplementing reports assessing the current situation of the port sector in terms of energy consumption, including an energy efficiency diagnosis, a needs assessment and work on the participation of SMEs.

In addition, energy plans will be devised for Mediterranean ports and an action plan will be drawn up for the application and transfer of the available technology

which will include three pilot projects to improve energy management in the ports, based on a study of various available technologies (Replacement of traditional engines in port fleets with more efficient, less polluting engines; Implementation of the On-Shore Power-Supply technology (OPS) to vessels and replacing traditional engines with more efficient, less polluting engines in port terminal machinery and truck fleets.

The project was completed in June 2015.

### MONALISA 2.0 PROJECT (2013)



The project's main objective is to promote Motorways of the Sea (MoS) through the application of various measures aligned with the EU's policies on shipping.

The PAV participates in this project by coordinating the vessel components in the maritime section, and the port facility component in the land section for accidents or incidents focusing not only on large passenger vessels but also on other vessels or facilities at risk.

The results aimed for in the project are to draw up documents on contingency plans in ports and the guidelines to be followed, as well as carrying out a pilot experiment consisting of a mass port evacuation exercise and drawing up the corresponding report on this drill.

MONALISA 2.0 has 39 members from 10 EU countries. The project is 50% funded by the EU through the Trans-European Transport Network Executive Agency and has a budget of 24,317,000 €.

The project finished in December 2015.

### 8.2 CURRENT PROJECTS

#### CORE LNG AS HIVE PROJECT (2014)



The CORE LNG AS HIVE project (Core Network Corridors and Liquefied Natural Gas) has a budget of €33,295,760, with 50% funding from the EU through its CEF programme (Connecting Europe Facility).

The main objective of this project is to provide Spain and Portugal with a suitable infrastructure and operational framework for the deployment of a global LNG supply network for use in transport within the network formed by the Mediterranean and Atlantic corridors, and the connection zone through the Strait of Gibraltar.

The project consortium is composed of different types of representatives (public and private) from different sectors (energy, education, transport...), thus allowing different interests to be considered and ensuring the market-oriented approach of the work included in this proposal.

The pilot actions to be implemented include the following:

- Adaptation of the SAGGAS terminal at the Port of Sagunto to supply LNG to ships as fuel.
- Basic project to convert tugboats from diesel to LNG.
- Basic project to install a LNG/CNG supply plant at the Port of Valencia.

The project is expected to be completed in December 2020.

#### GAINN4SHIP INNOVATION PROJECT (2015)



The GAINN4SHIP INNOVATION Project (LNG Technologies and Innovation for Maritime Transport for the Promotion of Sustainability, Multimodality and Efficiency of the Network) has a budget of €15,025,564 with 50% funding from the EU through its CEF programme (Connecting Europe Facility).

GAINN4SHIP INNOVATION aims to implement European environmental regulations through the conversion of Diesel engines to LNG (Liquefied Natural Gas) engines on Fast-Ferry vessels that provide regular service in the Canary Islands. This project includes final engineering projects on the prototype LNG-fuelled vessels and their adaptation to the current vessels.

The expected results include:

- definition of environmental indicators for vessels adapted to the use of LNG,
- definition of technical fuelling solutions;
- control of methane emissions into the atmosphere of the prototype vessels adapted to LNG;

The project will finish in December 2018.

#### GAINN4MOS PROJECT (2015)



The GAINN4MOS Project (Sustainable LNG Operations for Ports and Shipping – Innovative Pilot Actions) has a budget of € 41,314,934, with 50% funding from the EU through its CEF programme (Connecting Europe Facility).

GAINN4MOS aims to improve the Motorways of the Sea (MoS) network in 6 member states (Spain, France, Croatia, Italy, Portugal and Slovenia) through engineering studies to rehabilitate existing vessels and/or undertake new constructions, development of LNG port infrastructures, fuelling stations and a large number of pilot projects.

GAINN4MOS includes 14 detailed engineering studies on LNG infrastructures and stations for the provision and conversion of vessels and/or the construction of new ships and 11 prototypes (4 reconversions and 7 LNG supply stations in nodal ports).

The project will finish in September 2019.

### 8.3 INVOLVEMENT IN COOPERATION PROJECTS

As part of the objectives included in its Environmental Policy, the PAV is committed to cooperating with third parties in disseminating and sharing the knowledge it has accumulated in protecting the port environment and in extending environmental management to other areas. Accordingly, it takes part in cooperation projects sharing its knowledge and thus contributing to improving the environment.

#### Participation in the EUROPHAR EEIG



The PAV has been a member of the EUROPHAR European Economic Interest Group since 1997 and is currently head of the group. The Group's members include the Port Authorities of Toulon in France, as well as Genoa, Livorno, Piombino and Salerno in Italy. Other Spanish, French and Italian companies and institutions are also part of the Group, mainly linked to the fields of security and environmental port protection.

EUROPHAR is a privileged tool for the communication and promotion of the PAV's policies in the international arena, as well as a cooperation tool for the development of R&D projects. In recent years, EUROPHAR has participated in numerous projects,

such as the SIMPYC Project and the SUPPORT project (Security Upgrade for PORTS), under the 7th Programme, which ended in 2014. Also worth mentioning is its participation in the GREENCRANES and GREENBERTH projects as part of the Advisory Board.

In 2016, EUROPHAR participated in the MEDUSA project (Multi-order dependency approaches for managing cascading effects in ports' global supply chain and their integration in risk assessment frameworks), together with the University of Piraeus (Greece), Singular Logic, University of Cyprus and the Austrian Technological Institute, collaborating in the design of the supply chain risk analysis programme.

This project started in July 2014 and ended in June 2016. EUROPHAR has participated in the definition of various scenarios (container traffic, Liquefied Natural Gas supply and vehicle transport) that have allowed the development and definition of a methodology for the management of "cascade effect" risks and threats in the maritime sector.

In addition to the above, EUROPHAR has supported different project initiatives such as the SAURON safety project whose objective is to improve the management and visualization of risk in the physical combination and cyber-security in the port environment.

Finally, it should be noted that with all its experience, EUROPHAR is an international reference in the fields of environmental protection and port security at the European level.

### 8.4 TRAINING

The PAV aims to provide the necessary environmental training and awareness, as set out in its environmental policy. This is understood not only as a way of improving staff skills, but also as a means to acquire new knowledge and abilities that will make the ports of Sagunto, Valencia and Gandia more competitive. Thus, training courses and sessions are scheduled every year to enhance knowledge in line with the environmental activities carried out. As far as possible, and as set out in the



ECOPORT II project, these activities are carried out in conjunction with the rest of the port community.

Various training documents on environmental aspects were drawn up, as part of the Ecoport II project's training plan. In June 2016, the environmental aspects document was presented to all the companies of the Ecoport group: Requirements of the new

ISO 14001:2005, and in December of the same year, the document on environmental aspects: spills.

In February 2016, training was provided on environmental matters for the 85 components of the Port Police. This training was led by the staff of the Environmental Department.





# 9. COMMUNICATION AND PUBLICATIONS

The proximity of the Port Authority of Valencia to its stakeholders means it is more readily aware of their demands and concerns, and also serves as a springboard for designing and developing specific actions to comply with its commitments. One of the PAV's objective is to provide as many professionals and organisations as possible with access to information about the areas they operate in.

### 9.1 COMMUNICATION

The PAV uses various communication channels to make this information available to its stakeholders. These include the following:

#### The Port Authority of Valencia's web site

The PAV's web site ([www.valenciaport.com](http://www.valenciaport.com)) continues to be one of the organisation's major communication platforms across the range of activities it covers, including environmental aspects.

#### The Ecoport II Project's web site

The web site of the Ecoport II project ([www.ecoport.valenciaport.com](http://www.ecoport.valenciaport.com)) aims to be a focal point for members of the port community to exchange information about environmental performance initiatives and to share tools promoted by the PAV to enhance the performance of those involved.

#### Informative mailings

An environmental advice series is sent monthly to both the PAV staff through the employee web site and to the PAV port facility concessions.

### 9.2 ENVIRONMENTAL INSIGHT SESSIONS

The PAV was in permanent contact with institutions, customers, and other stakeholders about the environmental activities of its ports in 2016.

The Port Authority played host to 200 visits, all of which featured an Environmental component. During the year, approximately 7,440 people came to the PAV from various organisations and centres, including, among others, a delegation from Saudi Arabia, a delegation of the European Parliament, the Ambassadors of Egypt and Vietnam in Spain, the Chairman of the Port Authority of Alexandria a delegation from Angola and Directors of the Dynasol Group, Carrefour, Masymas, Mitsubishi, Coeval and a Delegation from Inves Hong Kong.

There were also technicians visiting from: the Universidad Politécnica de Valencia, the European University of Valencia, the Chamber of Valencia, the Spanish Railway Foundation and the Spanish Institute of Management.

### 9.3 COOPERATION AND PARTICIPATION IN FORUMS AND SEMINARS

In 2016, the PAV took part in a great number of congresses and conferences about the environment in relation to ports, both national and international. These included:

- 24<sup>th</sup> Master's degree in Port Management and Intermodal Transport -Valenciaport Foundation (Valencia, April 2016)
- Master's degree in Port Management and Intermodal Transport (Madrid, April 2016)
- Presentation of the Core LNGas Hive project (Madrid, May 2016)
- Online Course: Energy Management in Port Environments - Valenciaport Foundation (Valencia, June 2016)
- Environmental Sensitivity - Universidad Cartagena de Indias (Cartagena de Indias, October 2016)
- Medports Conference (Marsella, November 2016)

### 9.4 PUBLICATIONS

The publications produced by the PAV include monographs and specific guides on particular subjects, others providing information on its activities, as well as periodicals and posters. The publications released in 2016 are shown first, followed by those published in previous years.

#### 2016 Publications

##### 2015 Environmental Report

As a key element of its environmental communication, once again the Port Authority of Valencia has published the Environmental Report that includes the actions that have been carried out in environmental matters during 2015.



#### Other information tools in 2016

##### Guide for the Calculation and Management of the Carbon Footprint in Port Facilities by levels

This guide was published to support port companies in calculating and reducing their greenhouse gas emissions and has been drafted by a team from the Port Authority of Valencia, the Universtat Politècnica de València and the Valenciaport Foundation, which has spent the year working on its drafting.



The extensive document includes the methodology for calculating and managing the carbon footprint, adapted to the needs of the port community and based on the study of good energy-environmental practices and successful energy efficiency projects over the last 8 years implemented in the ports of Valencia, Sagunto and Gandia.

The Guide proposes the inventory and study of the different emissions sources of greenhouse gases produced by the consumption of fossil fuels, and the indirect emissions from electricity consumption. It also includes other emissions derived from activity in the terminals.

##### Book: “Living the Port Environmentally. A tour of the ports of Sagunto, Valencia and Gandia”

The Port Authority of Valencia, aware of the social, economic and environmental value of the Ports of Sagunto, Valencia and Gandia, published this book “Living the Port Environmentally”, to discuss its responsible management of these historic spaces, vital in the development of both the municipalities in which they are located, as well as their citizens, workers and employees, through their environmental protection and their integration into the society to which they belong.



With this book, the PAV provides a transparent and integrative vision of all the actions that it carries out for the sustainable development of its ports, so that the port activities fulfil the maximum levels of respect and environmental protection current and without compromising their economic, social and environmental capacity.

##### Environmental newsletters

The Port Authority of Valencia began publishing an environmental newsletter three times a year in 1998, which features all the latest national and international news and information of environmental interest in the port industry.

In 2016, continuing the trend of recent years, the environmental newsletters have become one of the port industry's preferred channels to remain up to date with the latest environmental information. The newsletter contains the following information:



- An editorial on environmental issues.
- An article written by an expert in environmental issues in the shipping-port industry.
- An op-ed by a port community company.
- News in brief on environmental issues in ports.
- Environmental legislation developments.
- Forthcoming events.



The following newsletters were published in 2016:

- Environmental Newsletter No. 47, published in March 2016
- Environmental Newsletter No. 48, published in September 2016
- Environmental Newsletter No. 49, published in November 2016

### Pre-2016 Publications

The publications produced by the PAV included:

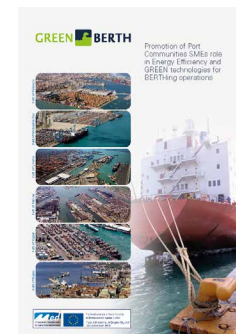
#### Environmental Initiatives brochure

In 2011, the Port Authority of Valencia published an Environmental Initiatives brochure in Spanish and English, which details the activities the PAV carries out to protect the environment, as well as its response to the commitments taken on in its Environmental Policy.



#### Greenberth project brochure and newsletter

Brochures and a newsletter were published as part of the Greenberth project to promote the initiative in various national and international forums.



#### E4Port Guide to the Implementation of Energy Management Systems in Stages in Port Facilities

This guide sets out a specific method to assess significant energy aspects that are applicable to port activities, as well as a three-tiered management model for concessionaires and port service providers to implement energy management systems in line with current standards.



#### ECOPORT Guide to Implementation of Environmental Management Systems in Stages in Port Facilities.

The port community is made up of many different-sized companies, and diverse environmental realities and activities, which means that adopting an environmental management system can require different measures of varying complexity in each case. In order to enable companies to participate in this project, bearing in mind their individual characteristics, the PAV has developed a guide which divides the requirements of an environmental management system into five stages, in line with the ISO 14001 standard and the EMAS II Regulation.



In this method, companies are assessed according to their environmental situation, they start off from the stage which best fits this situation, and work



progressively towards reaching higher levels until they arrive at the last stage, which ensures full implementation of an environmental management system. Companies are therefore provided with low-cost, easy access to this system.

### Eco-efficiency guides

The Port Authority of Valencia (PAV) has published five eco-efficiency guides to promote sustainability criteria in the companies located in the ports managed by the PAV (Sagunto, Valencia, and Gandia). The guides feature various proposals and programmes which enable goods and services to be produced using fewer natural resources, thus reducing pollution through environmentally and economically efficient procedures. These guides were compiled after a detailed eco-efficiency and sustainability study in the PAV-managed ports, and enable eco-efficiency criteria to be applied in the following areas: energy eco-efficiency, the creation of a greenhouse gas inventory, water use, the generation of waste, and the use of materials in public works.



### Environmental Risk Assessment in Port Facilities Guide

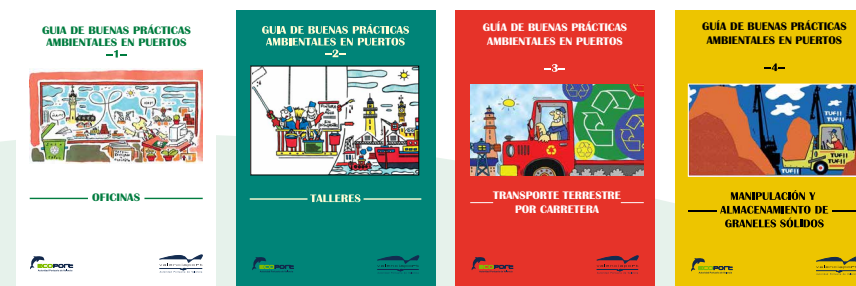


This guide aims to be an efficient, user friendly tool for companies in the ports of Sagunto, Valencia and Gandia that wish to carry out their own environmental risk assessment, according to the UNE 150.008 standard.

### Best Environmental Practice Guide

In 2000, a series of Best Environmental Practice guides began to be compiled in the framework of the Ecoport project, in order to raise awareness among the groups working in the port facilities about the importance of applying environmentally friendly criteria in the workplace. Each guide focuses on a specific port activity and provides useful tips to be applied in the standard procedures corresponding to their particular field, as well as the legislation applicable to each case. The guides published so far include:

- Offices (published in 2000, reprinted in 2006 and 2009)
- Workshops (published in 2000, reprinted in 2006 and 2009)
- Road haulage (published in 2004, reprinted in 2009)
- Solid bulk handling and storage (published in 2005, reprinted in 2009)



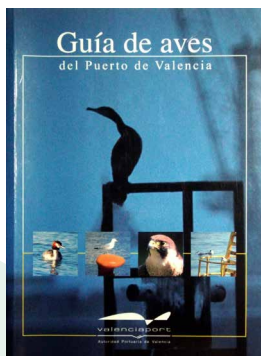
### Port Authority of Valencia's Environmental Report (annual since 2001)

In 2002, the publication of the Port Authority of Valencia's Environmental Report (the first Spanish port to do so) detailed all the environmental activities carried out in 2001 and aimed to take the lead in informing society as part of its continuous improvement process.

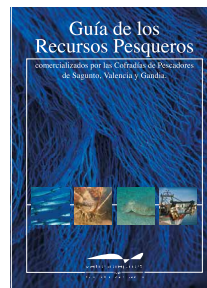
Since then, the Port Authority of Valencia has published these reports on a yearly basis, highlighting the organisation's special interest in respecting and protecting the environment. The reports set out the main environmental protection activities carried out in the ports of Sagunto, Valencia, and Gandia, as well as the main environmental parameters and indicators associated with them. They also provide a detailed description of the results obtained.

### Port of Valencia Birdlife Guide

Though the publication of the Port of Valencia Birdlife Guide, the PAV aims to disseminate the wide variety of birds that can be seen in the port environment, providing experts with basic knowledge they can use to study and monitor these species, whilst helping the general public to identify the birds that fly over our ports during the different seasons.



The idea for this guide came from the Ecoport project and its publication meets two objectives, firstly, to respond to society's request for information on the biodiversity of our port, and secondly, to comply with the commitment to "promote awareness and provide suitable training for employees, thus encouraging the development of this policy", as stated in the PAV's Environmental Policy.

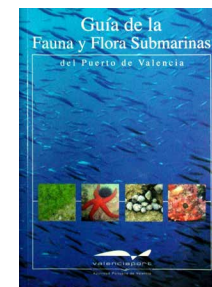


### Fishing Resource Guide

This guide compiles the species that are sold by the Sagunto, Valencia, and Gandia fishing guilds. A special feature of the guide is that it presents the different species in their natural habitat.

### Port of Valencia Underwater Flora and Fauna Guide.

In line with its environmental policy commitments, the PAV carried out a study of the underwater flora and fauna at the Port of Valencia, in conjunction with the University of Valencia. The special morphological characteristics of the port environment, the wide variety of commercial activities and the shipping traffic in this deep-sea port make this study an efficient tool to get an insight into the biodiversity of the port facility. The study also showcases the wealth and importance of the living beings that inhabit the port enclave, as well as providing a starting point to subsequently establish the possible effects of port activities on the flora and fauna.



The guide was published as a result of this study and all the images it contains were all taken at the Port of Valencia. The species featured are the most representative in the area under study, but only represent a small part of the extraordinarily broad catalogue of the species living in port waters.



### DVD of the Port Authority of Valencia's Environmental Activities

A DVD has been made of the main environmental activities undertaken by the Port Authority of Valencia in the ports it manages (Sagunto, Valencia, and Gandia) to showcase the most relevant environmental activities and the results obtained, thus contributing to enrich the environmental knowledge of the various players taking part in port activities, and helping other port authorities which have similar environmental problems.





# 10. GREEN ACCOUNTING

## 10.1 ENVIRONMENTAL SPENDING

In 2016, the PAV spent €3,803,891.78 on protecting and improving the environment. The breakdown of these costs is shown in the following table:

ENVIRONMENTAL EXPENSES AND COSTS	FINANCIAL YEAR 2016	FINANCIAL YEAR 2015
STAFF COSTS	251,268.22	262,769.32
OTHER OPERATING EXPENSES	3,274,163.75	3,288,227.90
Collection of waste generated by vessels	2,638,057.12	2,578,266.19
Repairs and upkeep	373,346.94	352,315.33
Independent professional services	115,352.31	178,760.74
Supplies and materials consumed	11,535.40	11,707.60
Other services and other expenses	135,871.98	167,178.04
DEPRECIATION AND AMORTISATION CHARGE	278,459.81	286,832.73
<b>TOTAL ENVIRONMENTAL COSTS AND EXPENSES</b>	<b>3,803,891.78</b>	<b>3,837,829.95</b>

## 10.2 TANGIBLE AND INTANGIBLE ASSETS

The PAV made the following investments in intangible and tangible assets for improving the environment. The breakdown of these assets is shown in the table below:

ENVIRONMENTAL ASSETS (Gross amounts)	31/12/2015	PERIOD ADDITIONS (+)	DISPOSALS (-)	31/12/2016
MARITIME ACCESSES	3748162.71	-	-	3748162.71
BREAKWATER AND DOCK WORKS	148247.29	-	-	148247.29
BERTHING WORKS	91772.15	-	-	91772.15
GENERAL FACILITIES	285057.81	-	-	285057.8
PAVEMENTS AND ROADS	5899.45	-	-	5899.45
FLOATING MATERIAL	126147.18	-	-	12647.18
SUNDRY EQUIPMENT	469527.68	3871.14	-	473398.82
COMPUTER SOFTWARE	14909.00	-	-	14909
INDUSTRIAL PROPERTY	3270.00	-	-	3270
LAND	63534.43	-	-	63534.43
<b>TOTAL ENVIRONMENTAL ASSETS</b>	<b>4956527.70</b>	<b>3871.14</b>	<b>-</b>	<b>4960398.84</b>
DEPRECIATION AND AMORTISATION OF ENVIRONMENTAL ASSETS	31/12/2015	PERIOD ADDITIONS (+)	DISPOSALS (-)	31/12/2016
MARITIME ACCESSES	1056257.89	78185.16	-	1134443.05
BREAKWATER AND DOCK WORKS	53478.28	2969.26	-	56447.56
BERTHING WORKS	55201.74	3068.88	-	58270.62
GENERAL FACILITIES	147364.55	16541.04	-	163905.59
PAVEMENTS AND ROADS	4350.09	395.58	-	4745.67
FLOATING MATERIAL	49804.26	9546.18	-	59350.44
SUNDRY EQUIPMENT	465943.63	3979.29	-	469922.92
COMPUTER SOFTWARE	14909	-	-	14909
INDUSTRIAL PROPERTY	3270	-	-	3270
<b>TOTAL DEPRECIATION AND AMORTISATION OF ENVIRONMENTAL ASSETS</b>	<b>1850579.44</b>	<b>114685.41</b>	<b>-</b>	<b>1965264.85</b>





# 11. SUSTAINABILITY INDICATORS

Our Environmental Reports always include a summary of the environmental indicators used to provide information about the PAV’s activities.

The PAV has been working with three groups of indicators since 2011. The **first group** comes from the Global Reporting Initiative (GRI) method, adapted to the characteristics of port activities, as defined in the Mesoport project.

The **second group** is made up of the indicators established in EMAS III Regulation (EC) 1221/2009. The PAV is also working on a **third group** of sustainability indicators which are included in the PAV’s Sustainability Report and were created by the State-owned Ports Body’s Sustainability Working Group. These indicators aim to standardise criteria for reporting on the sustainable behaviour of the Spanish port system, but are not included in this Statement.

This Statement only lists the most relevant indicators from the **first group**, and those from the **second group**, as required by EMAS III Regulation (EC) 1221/2009.

## First group

<b>A 14</b>	Total number and volume of significant accidental spills.
See Chapter 7. Emergency response	
<b>A 15</b>	Initiatives to mitigate environmental impacts of port authority activities
<p>Water quality:</p> <ul style="list-style-type: none"> <li>- Cleaning floating waste from the water surface: using the Limpiamar III vessel. See Chapter 6, section 6.4.3. 2016 water quality monitoring results.</li> <li>- Combating pollution caused by fuel spills: through the emergency plans. The PAV has equipment to mitigate the effects of pollution. See Chapter 7. Emergency response</li> <li>- Water quality control network. See Chapter 6. State of the environment, section 6.4. Water Quality.</li> </ul> <p>Air quality: See chapter 6. State of the environment, section 6.2. Air quality control:</p> <ul style="list-style-type: none"> <li>- Control networks, Chapter 6. State of the environment:</li> <li>- Noise quality control network, section 6.3.</li> <li>- Air quality monitoring, section 6.2.</li> </ul> <p>Waste management:</p> <ul style="list-style-type: none"> <li>- A Waste Transfer Centre (CTR) which facilitates waste collection. See Chapter 6. State of the environment, section 6.1.2. Waste from the port facility.</li> <li>- The PAV has an indirectly managed port service to collect Marpol I, IV and V waste. See Chapter 6. State of the environment, section 6.1.3. Ship-generated waste.</li> </ul> <p>Innovation and cooperation projects: See Chapter 8. Innovation and cooperation projects</p> <p>Certifications: See Chapter 4. Description of the PAV’s Environmental Management System, section 4.2. Certifications:</p> <ul style="list-style-type: none"> <li>- UNE EN ISO 14001:2004 Environmental Management Standard since 2006.</li> <li>- UNE EN ISO 50001:2011 Energy Management Standard since 2016.</li> <li>- EMAS III certification since 2008.</li> <li>- PERS (Port Environmental Review System) certificate last renewed in 2015.</li> </ul>	
<b>A 17</b>	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.
No fines or non-monetary sanctions for non-compliance with environmental laws and regulations have been imposed	

## Second group:

See Chapter 5. Management of natural resources, section 5.5. Summary of Indicators.





## 12. RECOMMENDATIONS FOR IMPROVEMENT

In the last section of the present statement, the Port Authority of Valencia would like to promote the improvement of our environment as far as possible, encouraging readers, whether they are an industry, a government body, a local resident or any other stakeholder interested in the management system, to implement best practices which will undoubtedly result in current and future generations being able to enjoy clean and healthy port facilities:

- Reduce the waste you generate at source whenever possible.
- Reuse what may look like waste in another part of the process.
- Separate different types of hazardous waste and non-hazardous waste.
- Manage this waste correctly through duly authorised transport and waste management companies.
- Do not throw unauthorised substances into the sewer system.
- Check your vehicles. Remember they need regular servicing. This will reduce fuel consumption and prevent unwanted emissions.
- The sea belongs to everyone. Do not throw any solid or liquid substances into port waters.
- Water is a precious resource. Only use the water you need, no more. Use drip irrigation systems for your plants, use low-flush toilets, and reuse water whenever you can.

We must not forget that:

**“WE ARE NOT ONLY THE INHERITORS OF THE EARTH, THE RIVERS, THE MOUNTAINS AND THE WIND; WE ARE THEIR GUARDIANS AND TRUSTEES” Kyoto Protocol**



# 13. VERIFICATION AND VALIDATION



This environmental statement was verified in an internal audit by C Más Innovación de Sistemas, S.L. on 11<sup>th</sup> May and 3<sup>rd</sup> June 2016, and in an external audit carried out by Lloyd's Register Quality Assurance on 13<sup>th</sup>, 14<sup>th</sup> and 15<sup>th</sup> September 2016.

Verification body: Lloyd's Register Quality Assurance España, S.L. N°: ES-V-0015  
Verifier: Fernando Adam Matamala

This is the seventh annual statement registered with the Valencian Regional Government under number E/CV/000023.

