



Port Environmental Review System (PERS)



Version 5 December 2016



Environmental Sustainability Report

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Environmental Sustainability Report

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1 INTRODUCTION

This report shows IPA SA's environmental performance during two last years period. Port of Igoumenitsa (IPA SA) implements a Port Environmental Review System (PERS) in order to achieve the objectives of sustainable development and environmental protection and participate. PERS is a tool for participating to the international network of environmentally responsible ports (ECOPORTS).

Port Environmental Report System shows Port's certified Environmental Management System, which is following the requirements of ISO 14001 & EMAS .

IPA develops an environmental management system by identifying significant aspects, policy and performance criteria.

This report is a detailed presentation on the actual performance on the major environmental aspects. Data outlining the footprint of Port's operation concerning environmental issues.

Information related to the port of Igoumenitsa is available on the web-page of the Port Authority www.olig.gr.



Picture 1: The city of Igoumenitsa



Mr. Andreas Ntais, CEO

Chairman of the Board of Directors, Mr Andreas Ntais states:

Igoumenitsa Port Authority (IPA) is respecting and promoting the following environmental principles:

- ***environmental responsibility:*** In addition to complying with law and regulations, **IPA** is assuming responsibility for the environmental impacts caused by its activities in rural or urban areas and the broader environment. In recognition of ecological limits, **IPA** is acting to improve its own performance, as well as the performance of others within its sphere of influence.
- ***precautionary approach:*** **IPA** is considering the long-term costs and benefits of a measure, not only the short-term costs.
- ***environmental risk management:*** **IPA** is implementing environmental programs using a risk based and sustainability perspective to assess, avoid, reduce and mitigate environmental risks and impacts from its activities.
- ***polluter pays:*** **IPA** is endeavouring to internalize the cost of pollution and quantifying the economic and environmental benefits of preventing pollution in preference to mitigating its impacts based on the “polluter pays” principle.

ANDREAS NTAIS , Chairman of Board of Directors & CEO

2 PORT FACILITIES

Port of Igoumenitsa lies on the west coast of Thesprotia County opposite of Corfu island, 53 km far from Ioannina city to south west direction, almost 20 km far from port of Kerkyra and 18 kilometers far from borders with Albania.

The Old Port

Until 1996, this natural harbour in the cove of Igoumenitsa bay was bounded by two piers, one in the north and one in the south. The north pier was 100 meters long and 30 meters wide. That is where the ferries on the Greece - Italy line anchored. The south pier was 100 m long and 125 m wide and was the main pier of the port. It served both ferries on the Greece-Italy line and the tankers and cargo ships arriving at the port. Today the old port is used to house the service department of the central harbor of Igoumenitsa and for its boats to dock.

The New Port

The creation of the new port of Igoumenitsa is part of a greater Strategic Plan for the Evolution of Transport Infrastructure (2010), planed by the Ministry of Economy and Finance. From this plan, the need for the construction of a closed high speed motorways' network came about, including:

- Egnatia Odos Motorway. Egnatia connects Igoumenitsa with Thessaloniki and the far eastern prefecture of Greece, Thrace which lies on the borders with Turkey.
- P.A.T.H.E (Road axes of PATRA – ATHENS – THESSALONIKI - EVZONI) and
- the western ax from the North to the South (lonia Odos) Igoumenitsa's new port was programmed in combination with the effort of reassuring the country's direct connections with the other EU countries.

The New Port has a total number of docks 12, while the total length of the platforms is 781 m (at each jetty) and the depth of the docks is 10.5 m.

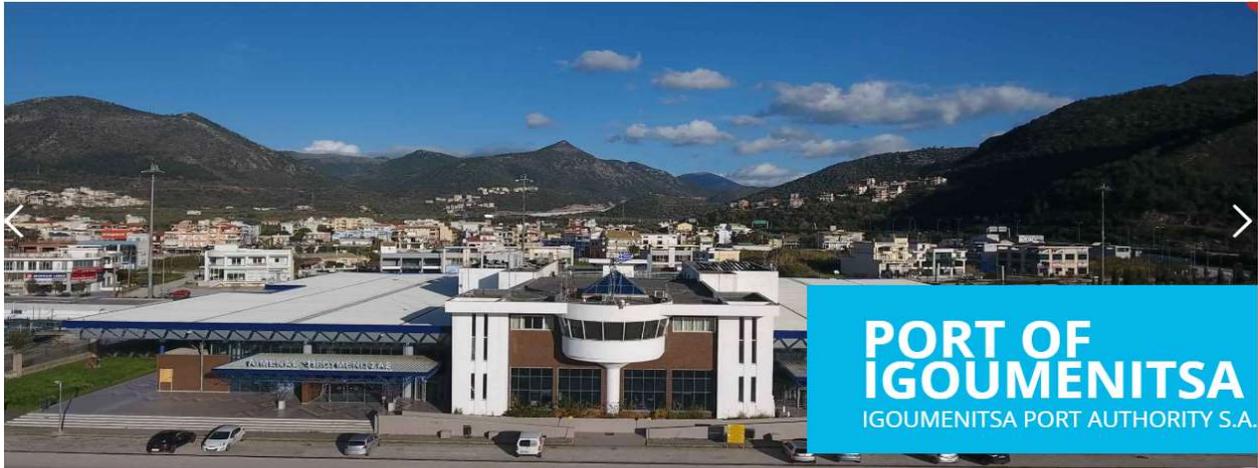
In the deliverable B phase there is also a 197.60 m long boating pier, capable of mooring 300,000 DWT (227 m long and 9.40 m long).

The maximum dimensions of ships that can serve the New Port are of total capacity: 54,310, LOA: 225m / Width: 30.39, draught: 10m / A1-A2-A3.

- Land zone 21,000m², of which 13,000m² land port zone and 8,000 m² parking areas and other auxiliary areas.
- Land zone 17,000 m² , the second phase of the construction that is completed
- 12 mooring positions, able to service up to 7 ships at the same time. Each position has approximately 2000m² of land areas.
- Provision of water supply and electricity services to ships.
- Length of platforms: 781 m

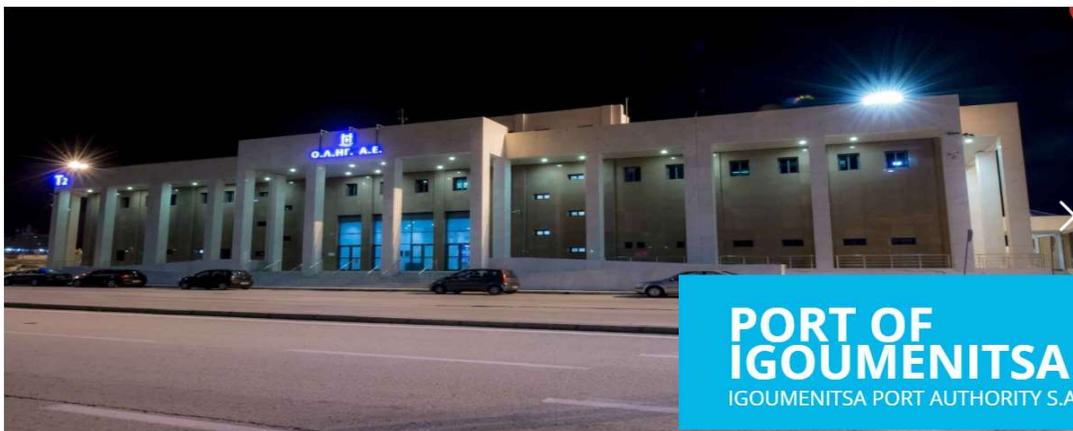
The channel is fully functional with a width of 170 meters, the length of which is 2,000 meters and the depth of 10.5m. The completion of the channel was an important issue for the operation of the port will now be allowed on large ships and cruise ships to approach and moor safely.

Igoumenitsa Port Authority S.A. based on its existing facilities provides the following for the service of ships performing international routes to and from Italian ports.



Picture 3: T1 Terminal

T1 Passenger Terminal Building: a total surface of 6,326 m². The Central Passenger Terminal T1 of the New Port has a modern waiting room, restaurant and shops for the service of passengers, info kiosks and a free wireless network. It provides passengers with a friendly environment and high quality services.



Picture 4: T2 terminal

T2 terminal building: 3.041,46 sq.m., where the offices of the Port Authority of Igoumenitsa are established at the present. Igoumenitsa Port Authority S.A basically provides services regarding the mooring of vessels and the transport of passengers and vehicles.

Port is servicing basically passengers, offering domestic or international coastal connection. Due to lack of storage facilities (Container Terminal, silos) and adequate infrastructure as well no cargo and goods are transferred, apart from those transported by trucks, and a few bulk loads.

Compliance of the Port with the ISPS International Code and Regulation (EC) 725/2004 on ship and port facility security: Implementation of security measures and procedures has already begun at the premises of New Port.

Passenger port

The port is mainly passengers' port, connecting Igoumenitsa with internal destinations (Corfu – Paxi – Patras) and external destinations (Italy). The internal destinations are served by the Old Port, while the external destinations by the New Port. The internal (domestic) lines served from and to Igoumenitsa are:

- Igoumenitsa– Corfu
- Igoumenitsa– Leukimi
- Igoumenitsa– Paxoi
- Igoumenitsa– Patra
- Igoumenitsa-Kefalonia (in the summer)

The external (foreign) lines served from and to Igoumenitsa are:

- Igoumenitsa– Ancona
- Igoumenitsa–Venice
- Igoumenitsa–Bari
- Igoumenitsa–Brindisi
- Igoumenitsa-Ravenna (occasionally)

Passenger transport service: In the framework of the provision of integrated quality services to the passengers and for the safety of the passengers in port area, IPA is planning to organize the passenger transport service with appropriate buses from the Passenger Stations on the ships and vice versa.

Commercial Port

The completed projects for the expansion of its infrastructure (Phase II), significantly has upgraded the dynamics and service quality mainly of the passenger but also of the tourist and cargo traffic of the port.

Moreover, in the context of its operational modernization in the field of security, IPA has placed particular emphasis on the investigation and study of issues related to the transport and storage of hazardous cargoes in order to achieve high safety standards (Presidential Decree 405/1996 - "Regulation for the loading, unloading, handling and stay of dangerous goods in ports and their transport Marine safety measures, obligations, restrictions and the classification of dangerous goods). In 2015, IPA has proceeded to the drawing up of a Port Regulation for the loading and unloading of dangerous goods, for their stay in a port area and for the adoption of special security measures.

Igoumenitsa as a Cruise Destination:

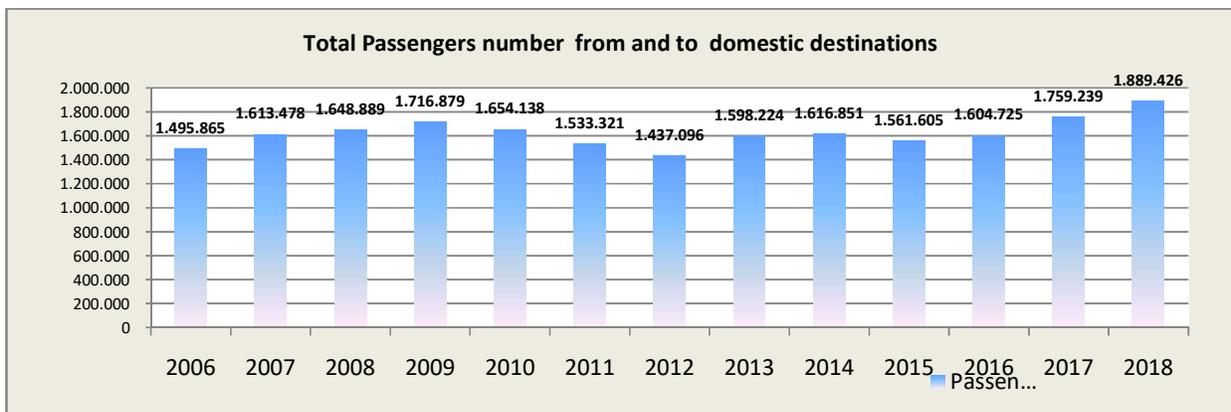
The aim of the port of Igoumenitsa is to be a cruise destination in the following years, thus highlighting the beauties of Thesprotia, as well as the areas of tourist interest and special natural beauty of the wider region of Epirus.

Igoumenitsa as a Cargo Port:

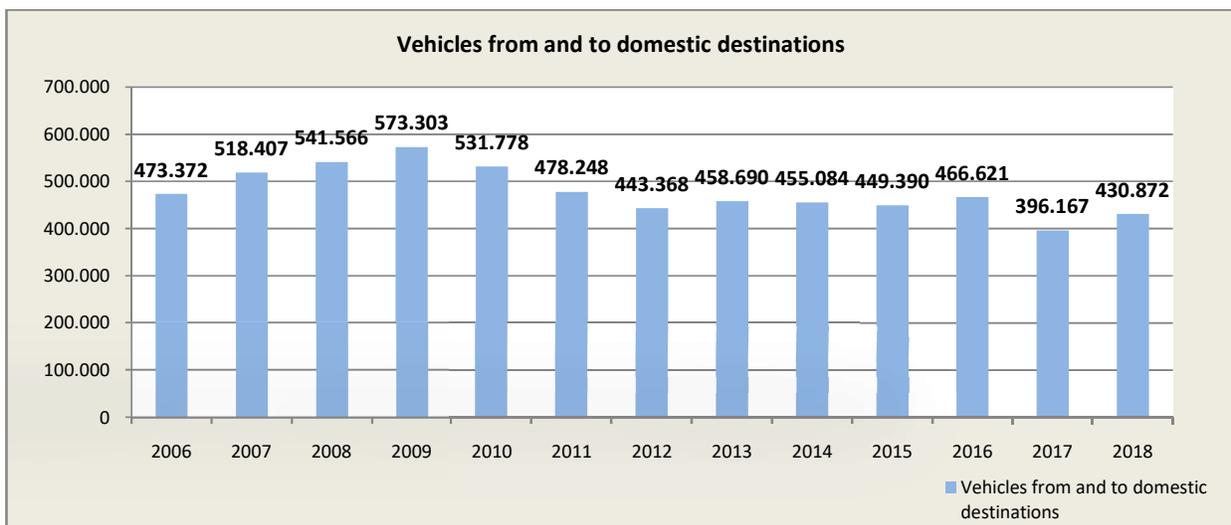
According to “STRATEGIC AND OPERATIONAL PLAN of IPA S.A. (2016 – 2019)” and based on the vision and key strategic axes of IPA master plan, the future operation of the Organization will focus on the following activities and as a Cargo Port, (Designated Unaccompanied Cargo, Cargo Center, Ro-Ro traffic)

3 PORT FIGURES

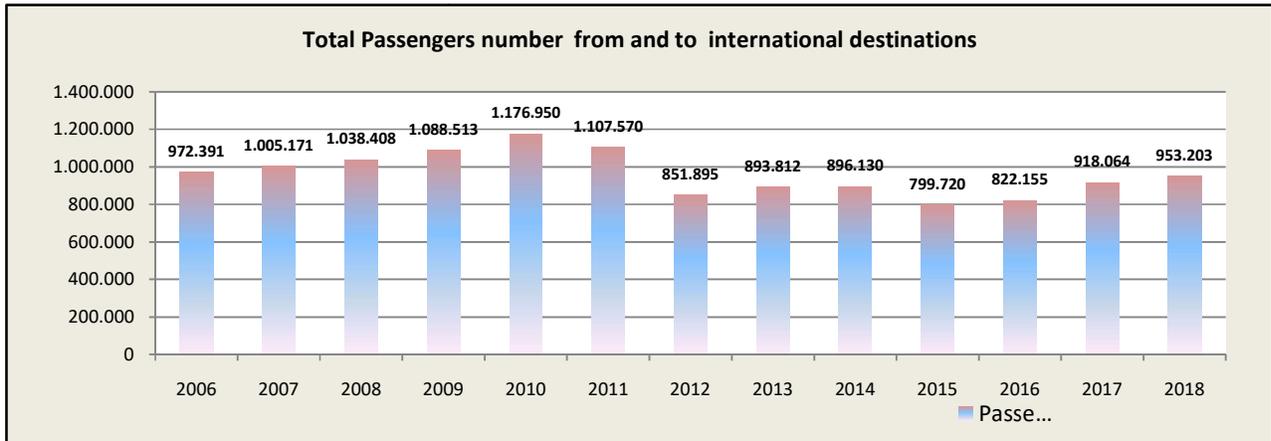
Port of Igoumenitsa’s main activity is passenger, vehicle and cargo service, supporting mercantile activities (via trucks traffic) for Northern Greece, Southern Balkans (mostly Bulgaria and Turkey) as well as the Middle East countries. Data of passenger and vehicles (trucks, auto, motorcycles) traffic through 12 last years are presented in the next tables and graphs:



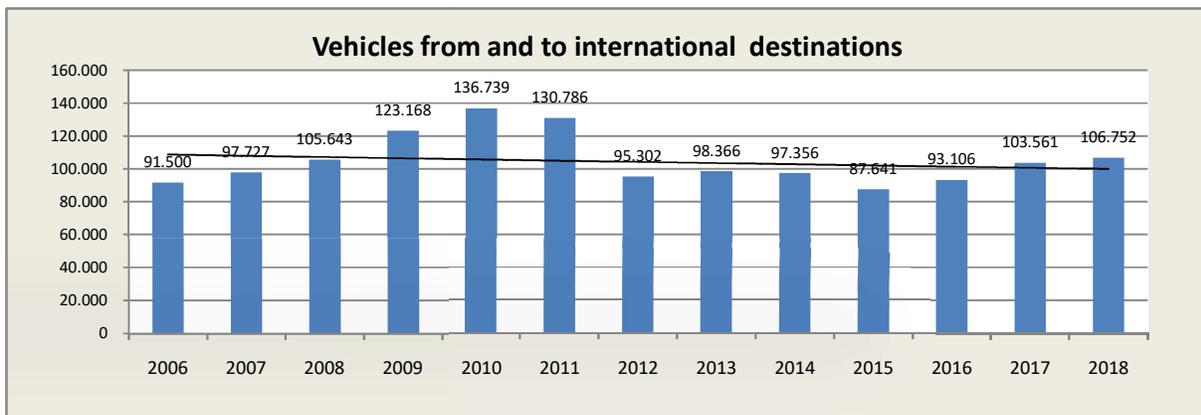
Graph1. Total passengers number from and to domestic destinations



Graph2. Total vehicles number from and to domestic destinations

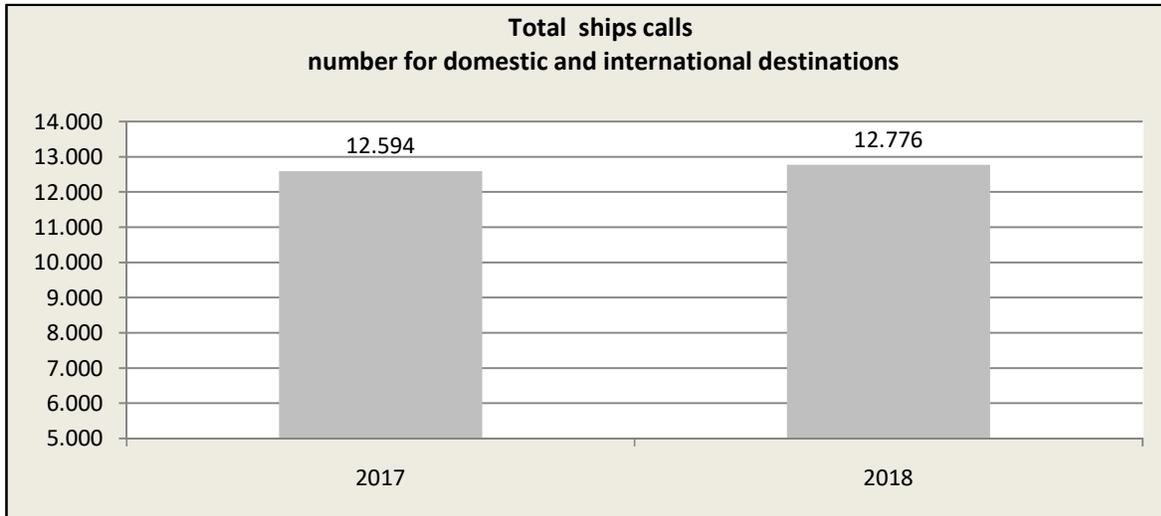


Graph3. Total Passengers number from and to international destinations

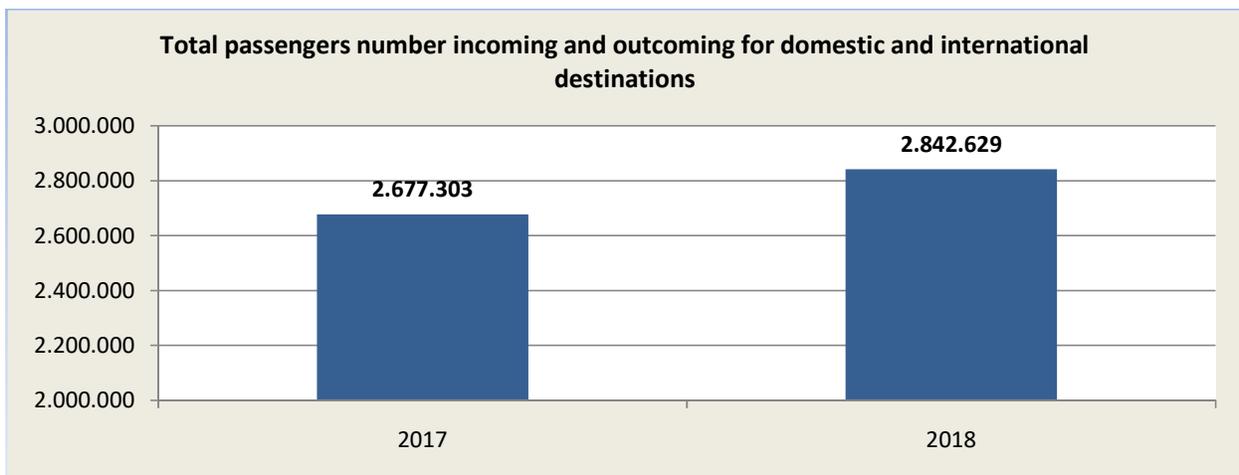


Graph4. Total Vehicles number from and to international destinations

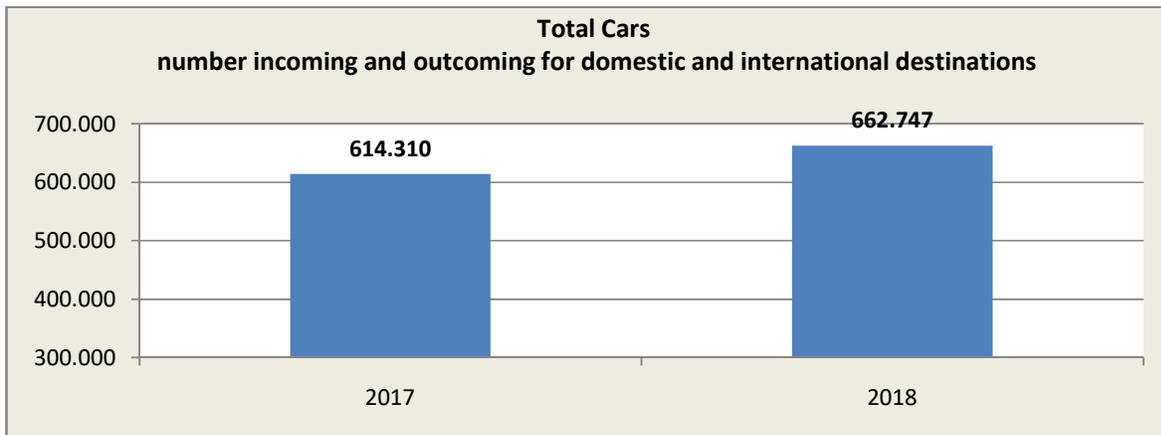
Total respective data for domestic and international operation of Port for the last two years 2017, 2018 are presented in the following graphs:



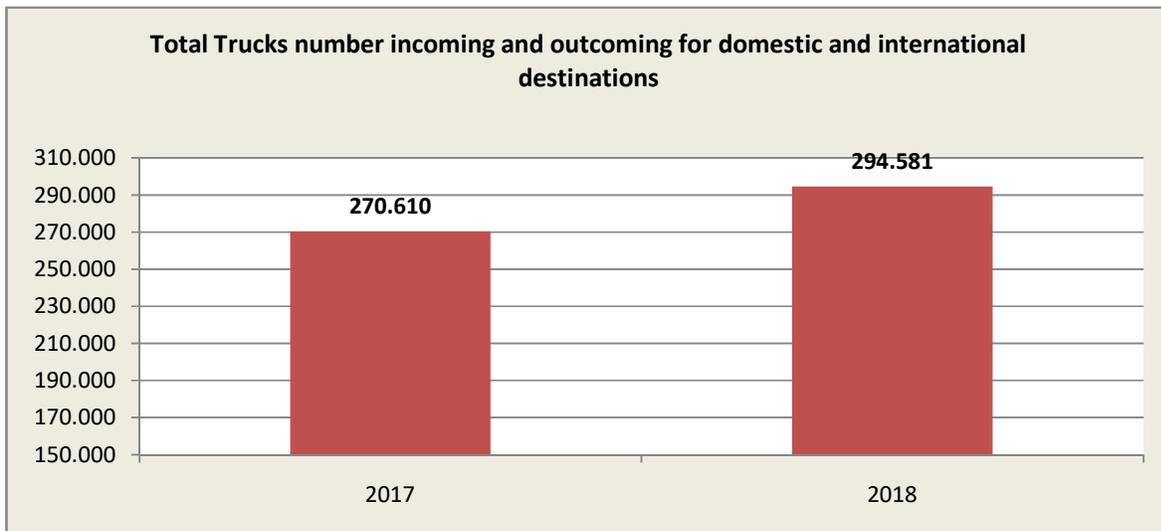
Graph5. Total ships calls for 2017, 2018



Graph 6. Total passengers number for 2017, 2018



Graph 7. Total cars number for 2017, 2018



Graph 7. Total trucks number for 2017, 2018

4 ENVIRONMENTAL POLICY

The **IGOUMENITSA PORT AUTHORITY S.A. (I.P.A. S.A.)** is constantly striving to improve the quality of the services provided for **mooring of ships and boats, the transport of passengers, vehicles and cargo on domestic and international routes and on cruise ships** in a way that contributes to sustainable development and environmental protection.

In this context, **I.P.A. S.A.** implements an Environmental Management System in accordance with **ISO 14001: 2015** and **Regulation (EU) 2017/1505 (EMAS) & PERS (Port Environmental Review System)** with the aim of preventing environmental pollution, limiting the impact climate change, aim at the sustainable use of resources and the protection of the biodiversity and ecosystems of the region in which it operates.

In this effort, the management of the organization is committed to:

- **fully comply** with current international, European and Greek environmental legislation and all relevant generally accepted best practices for the management of Ports
- **implement** ESPO (European Sea Port Organisation) policy and guidance documents
- **inform, educate and encourage** all staff and users of the Port for their involvement in environmental protection activities of competence
- **systematically identify, evaluate and control** all environmental aspects and impacts arising from its activities and services.
- **minimize and safe disposal** of waste generated by the activities of the organization,
- **establish, document and review** environmental objectives by applying stable procedures or environmental programs such as avoiding soil, sea and air pollution from hazardous and non-hazardous waste from ships and boats, and from port operations, promoting packaging recycling, minimizing electricity, fuel and water consumption, improving aesthetic area, informing stakeholders, disseminating environmental policy and reducing carbon footprint
- **inform suppliers and contractors** who cooperate with the company for the Environmental Policy that is being implemented and to ensure that they comply with relevant environmental management principles
- **aim at creating and maintaining** an open and creative relationship of trust with the local community and the general public
- **strive for the continuous improvement** of the organization's environmental performance
- **publish** an annual environmental report available to the public.

The organization's Environmental Policy is communicated to all employees, it is available to the public and those working on behalf of the company and reviewed and amended periodically by the top management of the organization. **DATE : 20/04/2018**

Environmental Policy Approved and Signed
by the IPA'S CEO

ANDREAS NTAIS , Chairman of Board of Directors & CEO

5 ENVIRONMENTAL MANAGEMENT

Impacts related to Port's activities

IPA has great concern about the activities that take place under its responsibility or inside its area of authority and have direct interaction with environment. The most significant environmental issues are:

- **Waste management.**Wastes that are collected from ships belong to many different categories (cargo or fuel residues, electrical equipment, domestic waste, wastewater) and their quantities are significant
- **Water consumption** .Water is the most valuable natural resource and an organization has to care primarily about the effective control and reduction of consumption
- **Energy and Resources consumption.** Natural Resources conservation is a crucial issue for the quality of local and broader environment
- **Air emissions.** Various sources of air pollutants emissions exist in a port and their register is essential
- **Noise.** Noise should be monitored and controlled in ports, where activities, such as people and vehicles gathering and construction projects take place

Port Authority of Igoumenitsa, according to the directions of the European communities and the Greek legislation, provides services for the facilitation of receiving waste and ship residuum. In that way it, affectively, contributes to the protection of the environment. The proper equipment to manage pollution emergencies in the marine environment is purchased and adequate emergency plans have been composed for the preparedness of Port Authorities.

Additionally, IPA has scheduled and performs monitoring of air emissions and noise, as well as water consumption.

Objectives for improvement and Performance Indicators

IPA SA, focusing on its reported significant issues, has taken all the required measures to control them and improve its environmental performance. Port's specific environmental objectives and related environmental management programs are:

S/N	Environmental Objective	Environmental Program
1.	Reduction of Water consumption	Monitoring and control of water consumption
2.	Environmental Policy communication and improvement of environmental performance	Reduction of complaints related to environmental issues
3.	Sea and soil pollution prevention caused by solid and liquid ships waste/ compliance with environmental legislation	Monitoring and management of ships solid and liquid waste
4.	Soil pollution prevention caused by hazardous waste	Monitoring and management of organization's hazardous waste
5.	Reduction of electrical energy consumption	Monitoring and control of electrical energy consumption
6.	Awareness, training and encouragement of involved personnel and contractors and bodies	Environmental training of involved personnel and contractors and bodies

Identification of stakeholders and their needs

IPA has identified the interested parties and their needs and expectations. The following table describes the stakeholders and their needs. If interested parties and their requirements are not identified there is a danger of falling short of their expectations.

STAKEHOLDERS	NEEDS AND EXPECTATIONS
TOP MANAGEMENT	Financial strength combined with the sustainable development of the company and compliance with the legal framework
HUMAN RESOURCES	Implementation of the company's activities in a safe environment and without environmental impact
	Continuous education and environmental awareness
PASSENGERS, VISITORS, SHIPPING COMPANIES	Environmentally friendly services according to legislation
PRODUCTS & SERVICE PROVIDERS	Compliance with environmental obligations
INSPECTION BODIES / LEGISLATIVE BODIES	Compliance with environmental obligations and legislation
LOCAL SOCIETY	Extroversion to the local community
	Motivation of neighboring businesses for environmental actions.

6 ENVIRONMENTAL PERFORMANCE

IPA SA believes that sustainable development and environmental protection is based on meaningful performance indicators.

Igoumenitsa Port Authority SA has identified performance indicators in order to monitor and assure its progress in achieving compliance with legislation and improving environmental quality through the actions on its environmental aspect.

Progress on the performance indicators is monitored and reviewed each year in order to ensure that environmental performance is in the desirable levels.

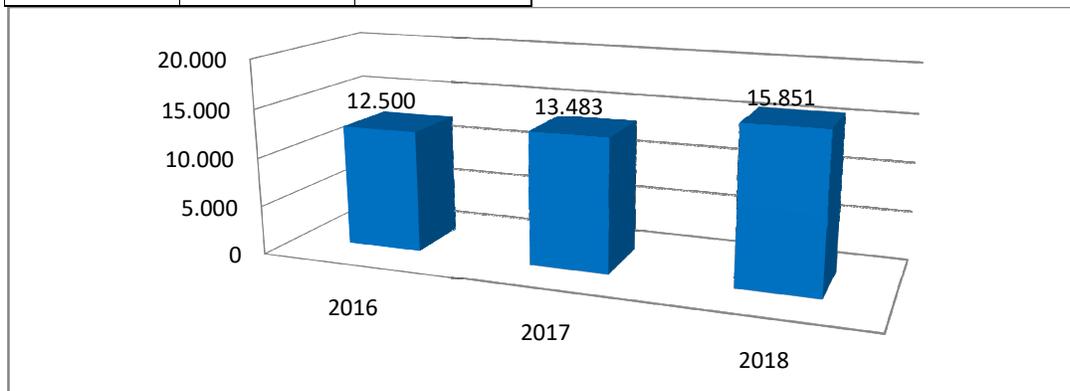
Concerning its major objectives for environmental improvement, Port of Igoumenitsa presents data of its last period of operation.

S/N	Environmental Objective	Environmental Indicators
7.	Reduction of Water consumption	E.P.I. 0501 TOTAL WATER CONSUMPTION:
8.	Environmental Policy communication and improvement of environmental performance	
9.	Sea and soil pollution prevention caused by solid and liquid ships waste/ compliance with environmental legislation	E.P.I. 01: WASTE QUANTITY (dangerous) SHIP AND VESSELS
10.	Soil pollution prevention caused by hazardous waste	E.P.I. 01 QUANTITY OF SOLID WASTE (NON-DANGEROUS) FROM SHIPS AND VESSELS E.P.I. 02 QUANTITY OF LIQUID WASTE (DANGEROUS) FROM SHIPS AND VESSELS E.P.I. 03 QUANTITY OF RECYCLED BATTERIES E.P.I. QUANTITY OF LAMPS DELIVERED
11.	Reduction of electrical energy consumption	E.P.I. 04 TOTAL ELECTRICITY CONSUMPTION
12.	Awareness, training and encouragement of involved personnel and contractors and bodies	

Water

For reducing water consumption and improving flow control and network status monitoring, Port of igoumenitsa has installed water monitoring system. Results have been already reported.

Water consumption (m ³)		
2016	2017	2018
12.500	13.483	15.851



Graph 8. Water consumption (m³)

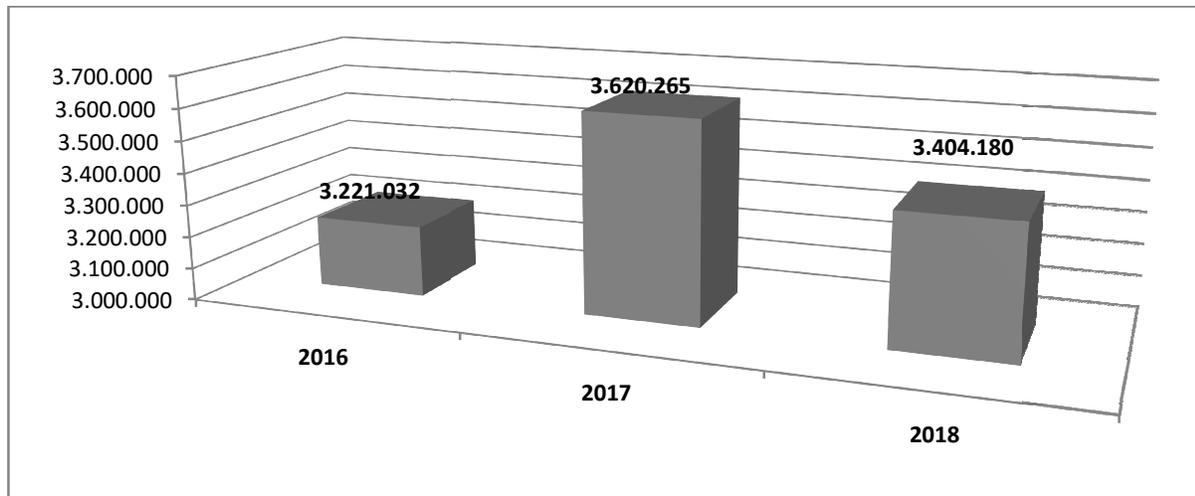
E.P.I. 0501 TOTAL WATER CONSUMPTION:

The annual target is reduction of the water consumption is 5% per year. There is an increase of the consumption due to the number of the passengers and ships and the technical projects.

Energy

Energy saving is a major concern for Port of Igoumenitsa and actions of installing equipment of lower consumption are scheduled and taken. Energy consumption is monitored and controlled, while there is reduction of electricity consumption.

Electricity consumption (KWh)		
2016	2017	2018
3.221.032	3.620.265	3.404.180



Graph 9. Electricity consumption (KWh)

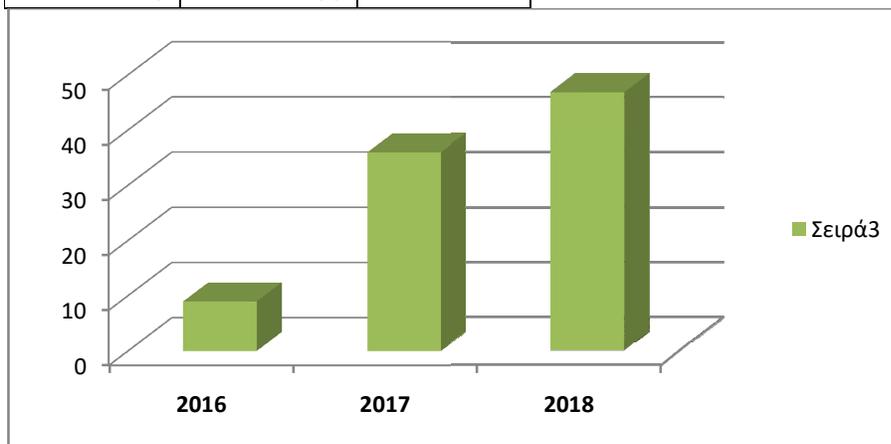
E.P.I. 04 TOTAL ELECTRICITY CONSUMPTION

The annual target is reduction of the total electricity consumption is 5% per year, so last year the target is achieved.

Ship Waste

Port of Igoumenitsa assures that solid & liquid waste is collected by approved waste management contractors and provides all required reception facilities.

Ship solid hazardous waste (tn)		
2016	2017	2018
9	36	47



Graph 10. Ship solid hazardous waste (tn)

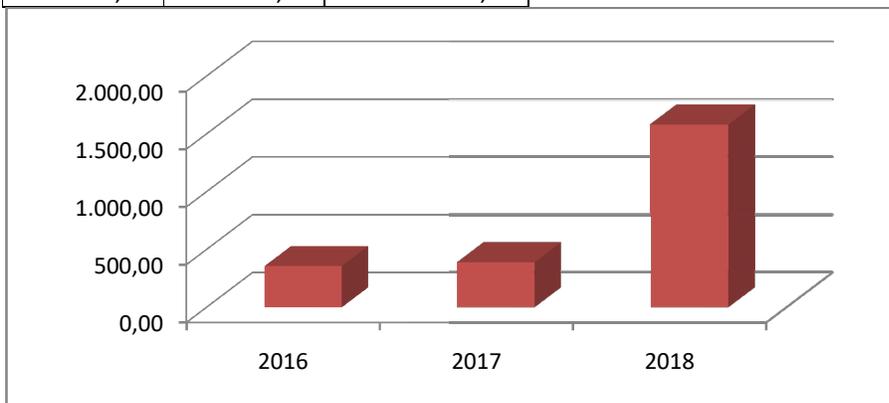
E.P.I. 01: WASTE QUANTITY (dangerous) SHIP AND VESSELS

The annual target is the increase of waste from vessels .

Ship Waste

Liquid hazardous waste from ships includes oil residues, lubricant oil and waste mixtures from oil separators. Collected quantities and corresponding factor (per ship) have increased last two years.

Ship liquid hazardous waste (m3)		
2016	2017	2018
358,05	391,44	1.582,65



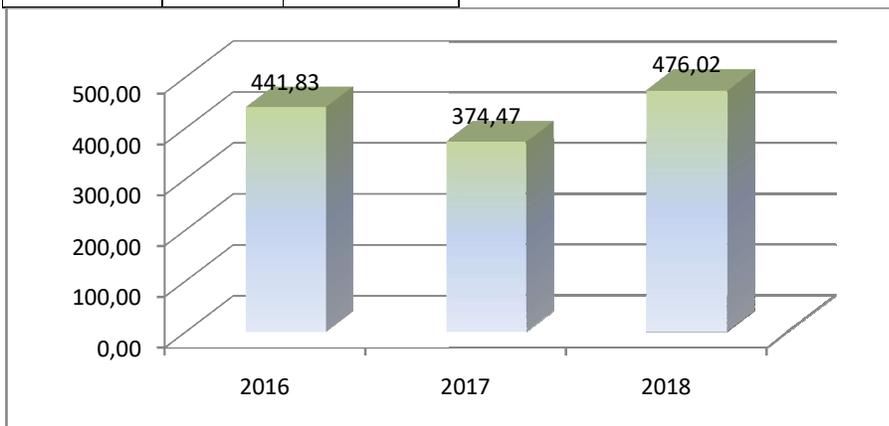
Graph 11. Ship liquid hazardous waste (m3)

E.P.I. 02 QUANTITY OF LIQUID WASTE (DANGEROUS) FROM SHIPS AND VESSELS

The annual target is the increase of the quantity of waste from vessels.

Ship Waste

Ship solid non hazardous waste (tn)		
2016	2017	2018
441,83	374,47	476,02



Graph 12. Ship solid non hazardous waste (tn)

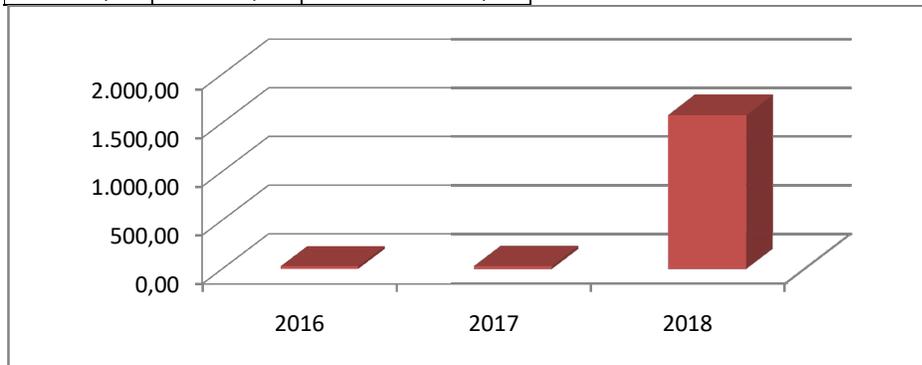
E.P.I. 01 QUANTITY OF SOLID WASTE (NON-DANGEROUS) FROM SHIPS AND VESSELS

The annual target is the increase of the quantity of waste with motivating for vessels

Port Operation Waste

Port of Igoumenitsa concerns and gives priority in separation, collection and proper management of non hazardous solid waste and hazardous solid waste, including paints, maintenance and medical waste.

Solid hazardous waste (batteries) (kg)		
2016	2017	2018
28,50	29,00	1.580,00



Graph 13. Solid hazardous waste (batteries) (kg)



E.P.I. 03 QUANTITY OF RECYCLED BATTERIES: The annual target is the increase by 5%.

Electrical waste is another flow that Port of Igoumenitsa manages properly and separately. Old lamps and similar equipment are collected and transported to recycling facilities. Furthermore, Port of Igoumenitsa supports recycling of special types of waste such as printing toners.

Solid hazardous waste (Lamps and electrical equipment) (kg)		
2016	2017	2018
28,50	415,00	0,00

E.P.I. QUANTITY OF LAMPS DELIVERED: The annual target is the increase by 5%.

Empty cartridges	
2017	2018
67,00	57,00

Air emissions

Regular monitoring of CO and NO₂ takes place since 2013. The last year equipment for continuous measuring and reporting of air emissions (CO, NO₂, O₃ and SO₂) has been installed in port's facilities. **Mean values of air emissions are below limits specified in Greek and European Legislation (Greek Decision 14122/549/E.10/2011).**

Noise

Passenger ports are places where activities, such as people and vehicles gathering, raise noise levels.

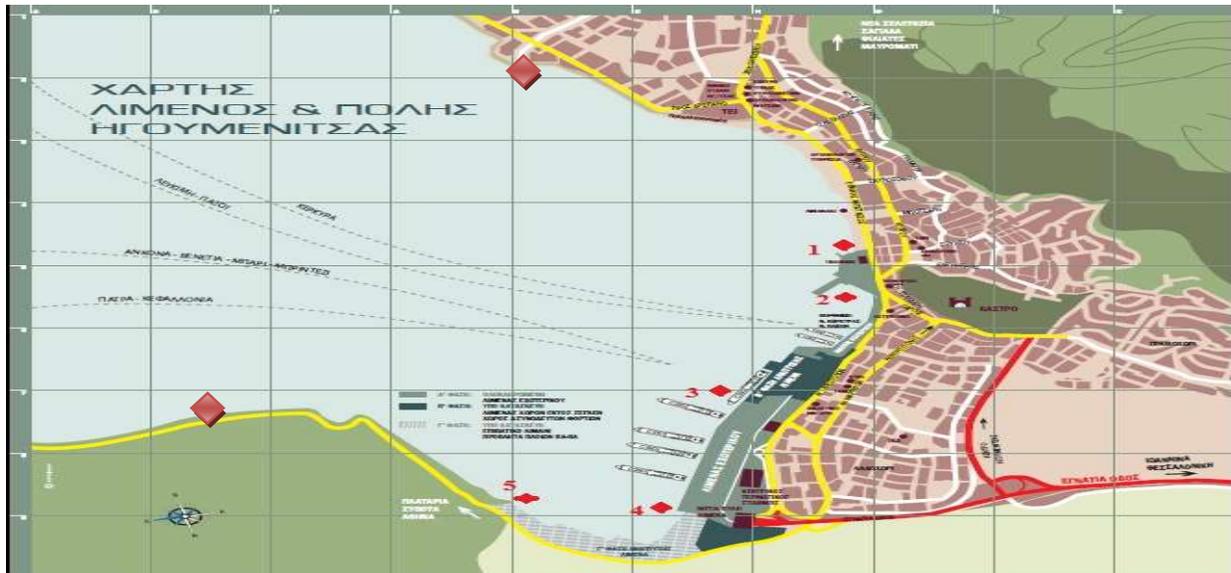
Last period noise has been measured in Port's area. Results show that mean values of noise are below 55db, which is the limit in Greek legislation for areas where industrial and urban environment equally coexist.

Principle of Port's Top Management is the conservation of natural character of local environment. Port will be equipped with noise measuring device for continuous monitoring of noise in port's areas.

Sea water measurements

Laboratory analyzes are carried out on seawater at labeled points of the map mentioned below. The results are very satisfactory and within the legislative limits

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- *pH 25 oC*
- *Temperature*
- *Turbidity -*
- *Total dissolved solids - TDS*
- *Conductivity - E.C. (20 °C)*
- *Salinity*
- *SOLUBLE OXYGEN -D.O*
- *MLSS*
- *Intestinal Enterococci*
- *E. coli*
- *Total Coliforms*
- *Dissolved hydrocarbons / Mineral oils*
- *Benzene*
- *Toluene*
- *Ethylbenzene I*
- *o-xylene*
- *m-xylene*
- *p-xylene*
- *Arsenic -As*
- *Chromium -Cr*
- *Mercury -Hg*
- *Lead -Pb*
- *Cadmium-Cd*

ORGANISATION STRUCTURE & DEVELOPMENT

Igoumenitsa Port Authority SA has the structure needed to achieve its goals based on its Policy for Environmental protection and sustainable development.

The volume and the categories of resources for environmental management of IPA SA are defined due to port's environmental policy and significant environmental aspects.

Chairman of IPA SA in collaboration with the appointed Management Representative for environmental management ensures that human and material resources required for the effective operation of the Environmental Review and Management System are recognized and readily available.

Environmental management is integrated through all departments responsible for activities with environmental impacts (Port Services Directorate with Port Support Department, Civil Engineering Projects Directorate.)

All Port's Environmental Aspects are controlled, assuring that commitments to environmental compliance, pollution prevention and continual improvement in the pursuit of a new goal of a sustainable port environment are fulfilled.

Igoumenitsa Port Authority SA continues to grow and the new investment programs have been approved by the competent authorities. Also IPA S.A. actively participates and exploits the development opportunities offered by EU programs to promote its strategic aspirations. So IPA S.A. participates in two projects of the European Commission's Connecting Europe Facility (CEF), in order to strengthen transnational relations. One of the main challenges for Igoumenitsa Port Authority SA is to effectively manage any impacts on the port, community and environment. So the program POSEIDON MED II fulfills the need to adopt this action follows from the European Union Directive on the reduction of emissions of pollutants, namely sulfur, from maritime transport by 2020.

More specifically, ports should have to carry out all the pre-requisite studies to begin the implementation of the construction of the port and land infrastructure. So, the result sought is until 2020, the Port of Igoumenitsa would be able to supply ships with LNG. The studies to be carried out under this action, either by IPA or by other members of the Consortium.

In 2018, CERTH (National Center for Research and Technological Development - CERTH, www.certh.gr) as part of the Poseidon Med II project of the CEF TRANSPORT Maritime of the Seas (MoS) Program (2014-EU-TM-0673-S) according to with Activity 10 of the Grand Agreement, has undertaken the activity of measuring gaseous pollutants in the ports participating in the program, namely Piraeus, Patra, Igoumenitsa, Heraklion and Limassol.

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So CERTH implemented this action gradually with measurements with a mobile van (Mobilab) with equipped mobile air pollution monitoring station in both, Low Season 17/05/2018 until 25/05/2018 and High Season 25/8/2018 until 31/8/2018. The air sensors can monitor these air pollutants:

- O₃,
- CO,
- NO₂,
- NO,
- SO₂
- PM_{2,5} PM₁₀

Two reports were edited with the atmospheric pollutant measurement charts and the comparison of values with legislation limits.





7 Contact Information

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Environmental Manager

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For further information on our environmental management and performance visit our website:

<http://www.olig.gr>