ECOPORTS

ESPO

Port Environmental Review System (PERS)

Version 5 December 2016

VOLOS PORT ORGANISATION S.A. * GREECE *

Environmental Sustainability Report

Issue: 2nd
Date of Issue: 30/01/2023

Approved and Signed by the VPA'S CEO
VOLOS PORT AUTHORITY S.A.

ΟΡΓΑΝΙΣΜΟΣ ΛΙΜΕΝΟΣ ΒΟΛΟΥ Α.Ε. Α.Μ.Α.Ε. 49973/32/Β/11/30 ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ

SOKRATIS ANAGNOSTOU, CEO

Environmental Sustainability Report

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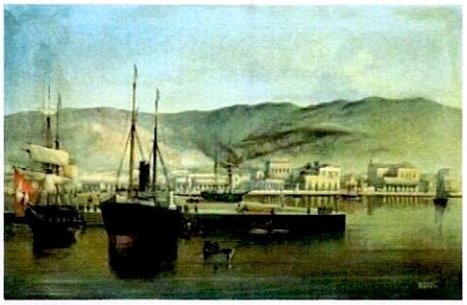
Environmental Sustainability Report

2021-2022



Chief Executive Officer: Mr. Sokratis Anagnostou, states:

- **Volos Port Authority S.A. (VPA S.A.)** is respecting and promoting the following environmental principles:
- ***environmental responsibility*:** In addition to complying with law and regulations, **VPA S.A.** 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, **VPA S.A.** is acting to improve its own performance, as well as the performance of others within its sphere of influence.
- ***precautionary approach:*** **VPA S.A.** is considering the long-term costs and benefits of a measure, not only the short-term costs.
- ***environmental risk management*:** **VPA S.A.** 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*:** **VPA S.A.** is endeavouring to internalize the cost of pollution and quantifing the economic and environmental benefits of preventing pollution in preference to mitigating its impacts based on the"polluter pays" principle.

Mr. Sokratis Anagnostou CEO

1 PORT SERVICES

The Volos Port Authority S.A basically provides services as a passenger port, commercial port and cruise port.

The main services are the following:

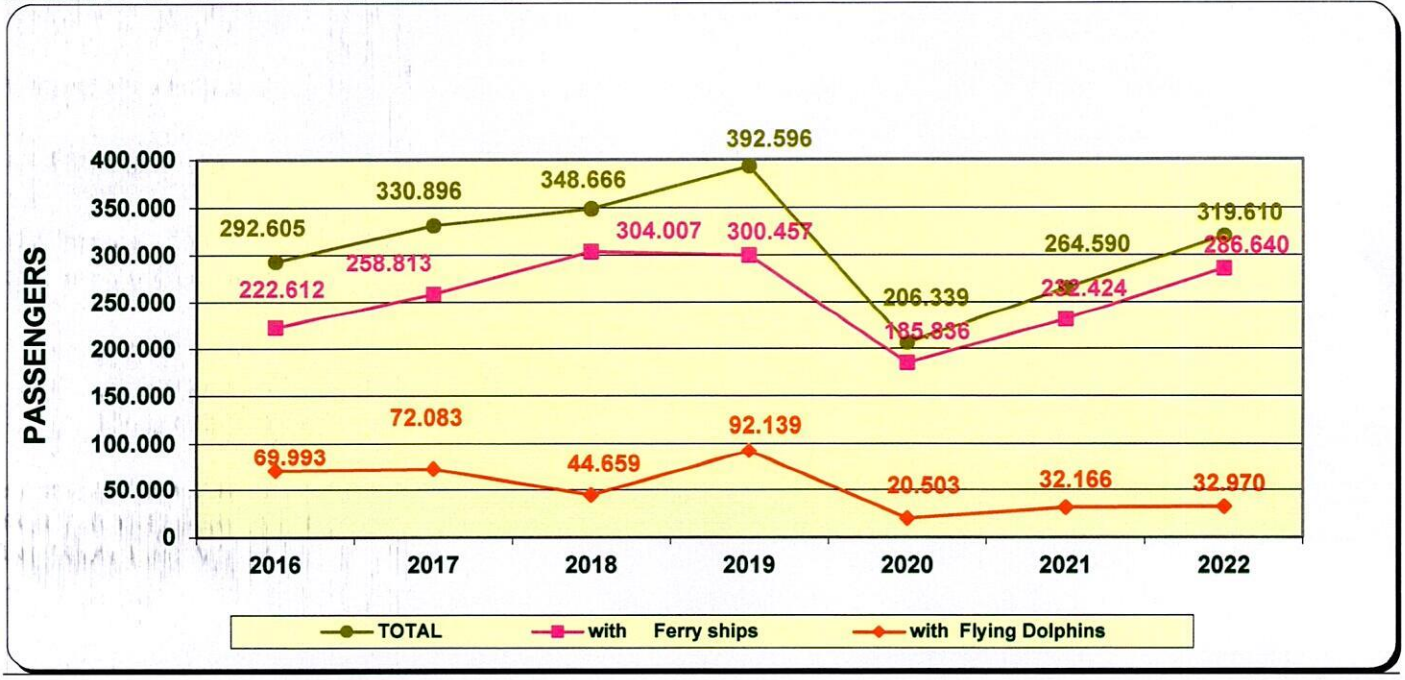
- Loading and unloading of ships,
- Storage of loads,
- Rental of spaces (open and covered),
- Vehicle parking spaces,
- Passenger ship service,
- Service for yacht owners,
- Water and electricity supply to ships.

1.1. Passenger port

The internal (domestic) lines served to Northern Sporades and the islands: Skopelos, Skiathos, Alonnisos. The ships that are routed on these lines are:

- Conventional E / G - O / G ships
- E / G - O / G high speed ships that operate on the lines of the Sporades
- Flying dolphins that carry only passengers and are active on the lines of the Sporades all year round.

PASSENGERS WITH FERRY SHIPS AND FLYING DOLPHIN
FOR THE TIME PERIOD 2016 - 2022 (JANUARY - DECEMBER)
INTERNAL LINE VOLOS - NORTHERN SPORADES

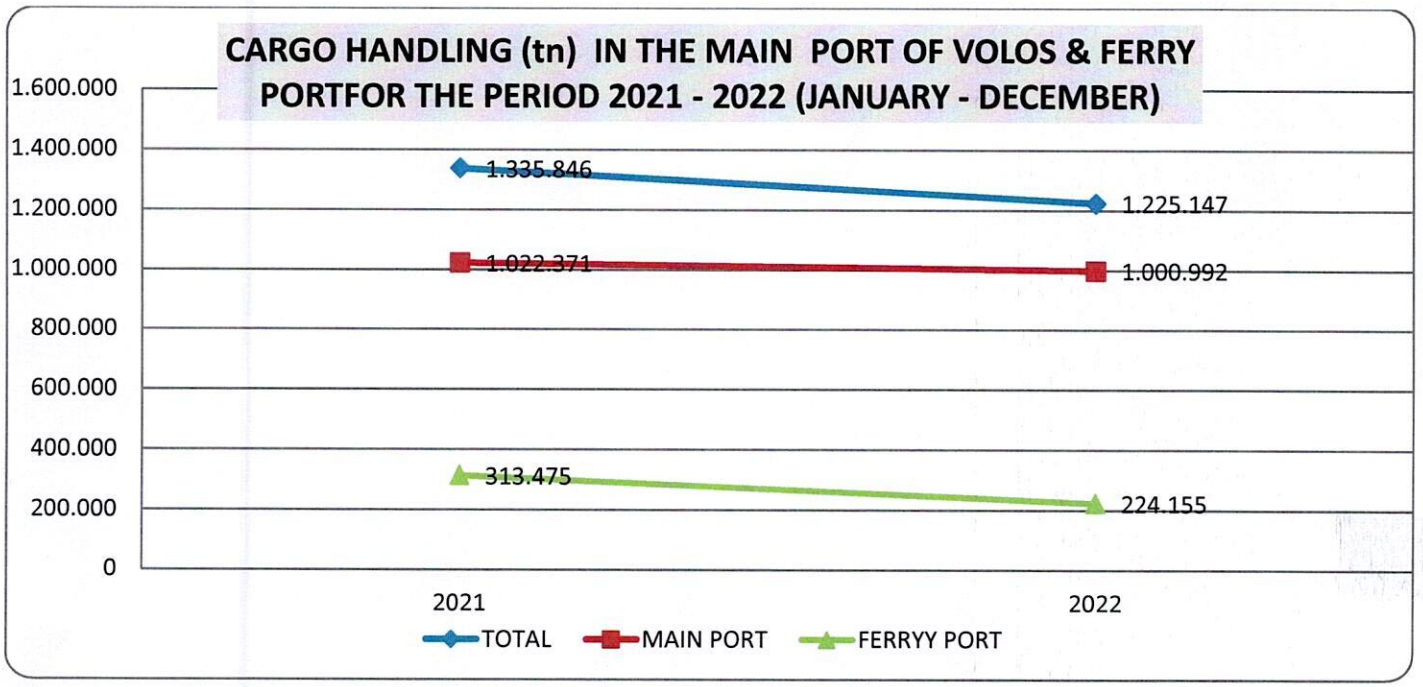


Graph 1. Passengers with ferry ships and flying dolphins

1.2. Commercial Port

The Port of Volos provides services to ships for the transportation of cargo, such as: wheat, corn, wood, chemicals (in containers), animal feed, food (in containers), cottons, fertilizers, minerals, scrap, industrial equipment, aggregate etc. The activities of the commercial port that take place in piers No. 1 and No. 2, in the constructed part of pier No. 3 and in the pier of the railway ferry include:

- Loading and unloading of bulk cargo
- Loading and unloading of general cargo
- Loading and unloading of containers
- Service of small cargo ships (motorships), transporting domestic goods.
- Quay that performs small-scale repairs inside the hull for emergencies.
- Storage of goods in warehouses

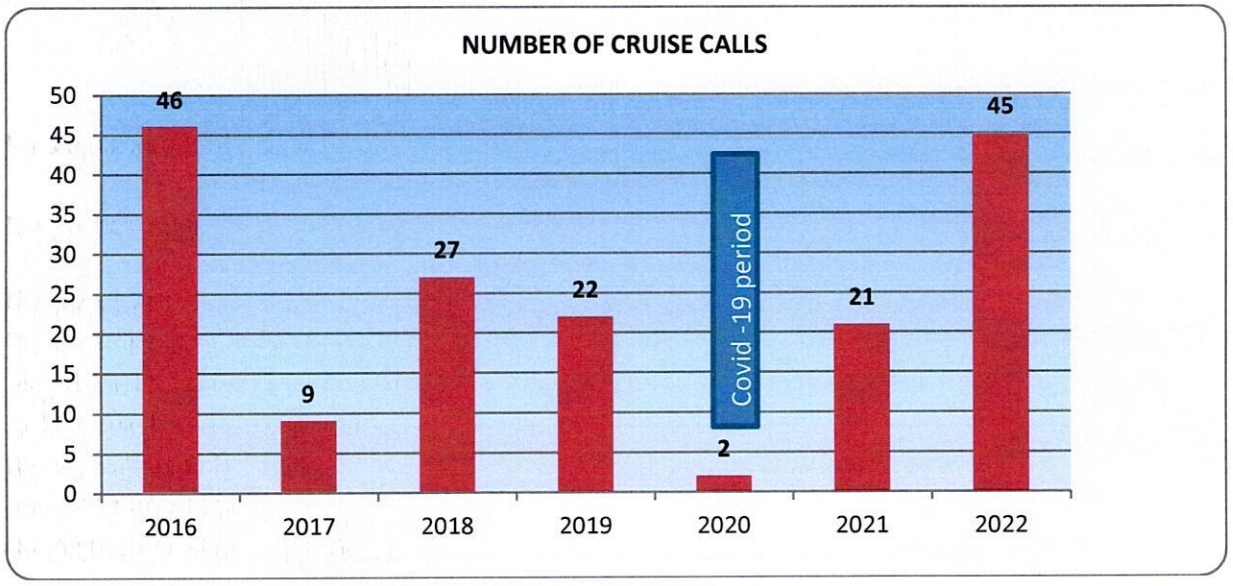


Graph 3a. Cargo Transportation In The Main Port Of Volos & Ferry Port For The Time Period 2021 - 2022 (January - December)

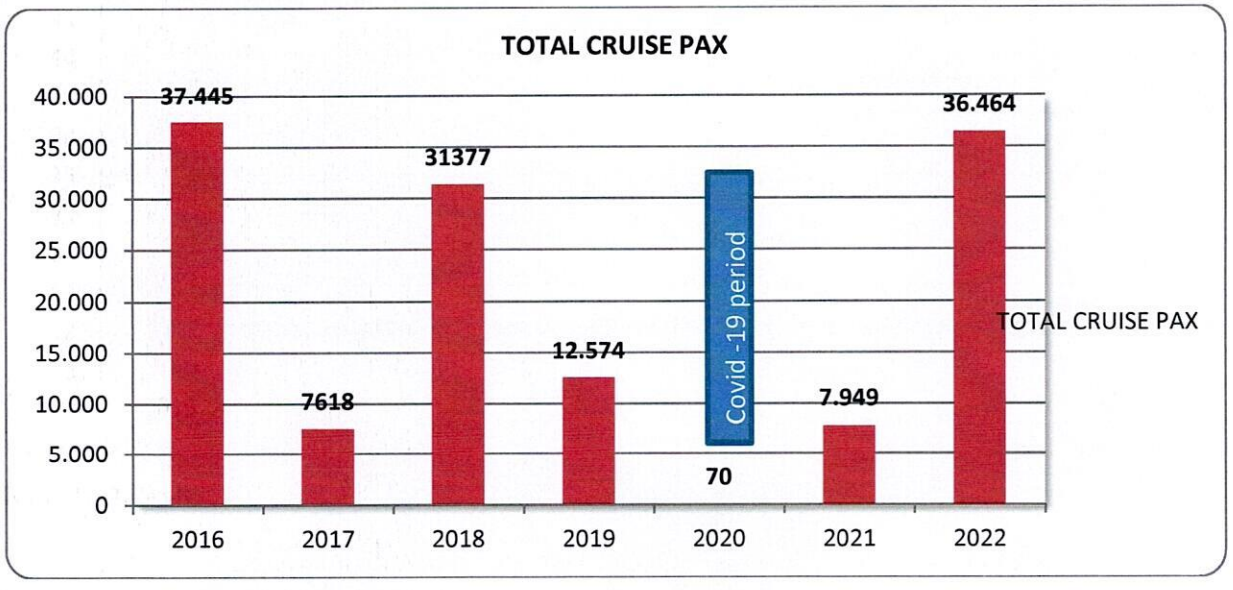
1.3. Volos as a Cruise Destination

The Port of Volos provides excellent services to cruise ships and it was announced as a home port in 2019.

The port has a 445 m long pier and 11 m draft, with the capacity to accommodate 2 cruise ships up to 250m long. The port operates a fully integrated security system based on an approved Port Facility Security Plan in accordance with the ISPS Security Code. It also has a passengers Station of 500 m2 fully equipped to serve cruise passengers, Parking coach and Taxi. It provides full range of services to cruise ships and passengers.
The Volos Port Authority in tandem with the local-national carriers and the local community, conduct continuous and concerted efforts for the improvement of the existing infrastructures, along with the further promotion of our area, aiming to its strengthening at the international status cruise industry.



Graph.4 Total cruise pax



Graph.5 Total cruise calls

2 ENVIRONMENTAL POLICY

The **VOLOS PORT AUTHORITY S.A. (V.P.A. S.A.)** is constantly striving to improve the quality of the services provided for **Loading and Unloading of ships – Storage of Cargo- Servicing of Ships – Hiring of mooring place,** in a way that contributes to sustainable development and environmental protection.

In this context, **V.P.A. S.A.** implements an Environmental Management System in accordance with **ISO 14001: 2015** & **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:

- **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 Organization) 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 by encouraging and monitoring the environmental management of them (contractors, tenants, operators and service providers)
- **Aim at creating and maintaining** an open and creative relationship of trust with the local community and the general public by taking into consideration their needs and expectations .
- **Strive for the continuous improvement** of the organization's environmental performance
- **Publish** an annual environmental report available to the public.
- **Communicate this policy** to all relevant stakeholders such as service providers, industry, local community, environmental research institutes and organizations

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 : 30/01/2023

Environmental Policy

Approved and Signed by the VPA'S CEO

3 ENVIRONMENTAL MANAGEMENT

3.1. ORGANISATION STRUCTURE & DEVELOPMENT

Volos 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 VPA SA are defined due to port's environmental policy and significant environmental aspects.

The Top Management 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 . 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.

Volos Port Authority SA continues to grow and the new investment programs have been approved by the competent authorities. Also VPA S.A. actively participates and exploits the development opportunities offered by EU programs to promote its strategic aspirations.

3.2. IDENTIFICATION OF STAKEHOLDERS AND THEIR NEEDS

VPA S.A. 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 risk 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, CARGO 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.

Table 1. Stakeholders and their needs

3.3. IMPACTS RELATED TO PORT'S ACTIVITIES

VPA S.A. 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:

- ***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
- ***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

3.4. OBJECTIVES FOR IMPROVEMENT AND PERFORMANCE INDICATORS

VPA S.A., 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	Responsible person
1	Reduction of emissions of gaseous pollutants and particles during the loading / unloading of Cereals from PV Vehicles on ships, through the Storage Silo	• Air quality control environmental program	The storage silo is out of order.
2	Reduction of nuisance from the operation of the electromechanical equipment and the traffic of vehicles within the Commercial Port.	• Noise level control environmental program • Implementation of a program for maintenance and certification of electromechanical equipment. • Study, design and installation of perimeter tree planting.	Environmental Management Representative, Manager of electromechanical equipment and maintenance
3	• Reduction of PM10 air particles, • avoidance of sea pollution • reduction of noise pollution from Scrap landing activities	• Seawater monitoring environmental program • Implementation of the Pollution Emergency Response Plan in the Area of Jurisdiction of VPA SA • Air quality control environmental program • Noise level control environmental program • Radioactivity control of hazardous materials environmental program	Environmental Management Representative, Manager of electromechanical equipment and maintenance
4	Avoidance of pollution by berthing of small boats and small-scale maintenance	• Seawater monitoring environmental program • Air quality control environmental program • Noise level control environmental program	Environmental Management Representative, Manager of electromechanical

	activities.		equipment and maintenance
5	Avoidance of pollution from the deposition of batteries.	Used Battery management and recording of quantities	Environmental Management Representative
6	Complete implementation of ship waste management and port waste management / port lubricating oils	• Assign to authorized companies of ship waste and waste facility • Recording of quantities through the management system	Environmental Management Representative
7	Awareness of staff about the environmental management system and environmental policy	• Training of the staff on basic principles of environmental management and alternative waste management • Emergency Exercise of marine pollution from an oil spill	Environmental Management Representative
8	Awareness-information of suppliers-contractors for the environmental management policy	Awareness of new supplier-contractor in meetings with the Operating Department & the Transaction Office.	Manager of Exploitation Department and Traffic Office
9	Complete cleaning and tidying of Pier No1 from materials that are not used.	Awareness of interested parties	Environmental Management Representative
10	Reduction of electrical energy/Carbon emissions	Energy saving program training, Recording the results and keeping a register of measurements	Manager of electromechanical equipment and maintenance
11	Recycling light bulbs	Recording of quantities	Environmental Managemen Representative
12	Reduction of hazardous waste from iron-powder processing of steel industry.	Control of hazardous waste from iron-powder processing of steel industry.	Environmental Managemen Representative
13	Reduction of air pollution from the activity of inert materials handling at the Railway Ferry Pier	• Air quality control environmental program	Environmental Managemen Representative
14	Recycling of used tires	Recording of quantities	Environmental Managemen Representative
15	Complete establishment of a air pollution monitoring program in the area of the Commercial Port	• Air quality control environmental program • Updating the register of records on a daily / monthly basis.	Environmental Managemen Representative

Table 2. Environmental Objective / Environmental Program

Environmental Objectives	Environmental Performance Indicators
DUST	
To minimise the dust from the bulk cargo and scrap handling. To ensure compliance with the relevant limit values.	▪ Reduction of PM-10 concentrations
NOISE	
To ensure compliance with the relevant limit values.	▪ Level of noise at port limits
SEA WATER QUALITY	
To minimise water contamination from port activities	▪ Level of water quality parameters in port seawater
WASTE	
To ensure compliance with relevant Hellenic legislation on common, recyclable and ships' waste management	▪ Quantity (%) of port waste separated for recycling ▪ Existence of ship waste reception facilities
WATER / ENERGY CONSUMPTION	
To monitor and reduce resources (water, oil, electricity, natural gas) consumption	▪ Total energy use ▪ Total Carbon emissions
RISK / EMERGENCIES	
To prevent and minimise the impacts of oil and hazardous substances spills To prevent and minimize risk from emergency situations (fire etc)	▪ Presence and efficiency of an oil and HNS substances spill response plan. ▪ Number of drills for emergency situation (port contingency plan) ▪ Number of drills for fire
AWARENESS OF INTERESTED PARTIES	
Awareness of staff/contractors/ about the environmental management system and environmental policy	▪ Number of training programs

Table 3. Environmental Objectives & Environmental Performance Indicators

4 ENVIRONMENTAL PERFORMANCE

VPA S.A. believes that sustainable development and environmental protection is based on meaningful performance indicators.

VPA S.A. 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, **VPA S.A.** presents data of its last period of operation.

4.1. Air quality control environmental program

VPA S.A. has installed since 2014, in the Commercial Port, a system for monitoring and measuring air pollutants.

The pollutants whose concentrations are measured and recorded are: PM10, PM2,5, PAHs, NOx, O3, BETX, SO2 and metals / minerals such as Cr , Mn, Fe, Ni, Zn, As, Cd, Pd) and the results are announced on the website of the Organization through the posting of reports on the online measurements of pollutants per quarter, summary reports of measurements on a semi-annual basis and full reports with the total of measurements on an annual basis.

The full reports include an evaluation of the measurements and a detailed comparison of the results with the annual and daily allowable limits set by Directive 2008/50 / EC "on ambient air quality and cleaner air for Europe".

These measurements are made in collaboration with the Accredited "Laboratory for Environmental Pollution Control - Airborne Particle Measurement Team, EERP - OMAS" of the Department of Chemistry of the Aristotle University of Thessaloniki. The monitoring and control program of the air quality in the area is implemented in the context of an effort of continuous improvement and implementation of possible corrective actions, in case of exceeding the legal limits of the measured parameters and evaluation of the system data, as data for studies in their long-term impact on the environment.

The air pollution measuring station (APMS) is installed in a small building that provided by VPA SA and is located at the western site of the port area.

The NOX, O3, BTEX analyzers are placed inside the cabin, in an air-conditioned room space. The automatic PM10/PM2.5 counter and the PM10 sampler are mounted on special landscaped outdoor seating, to the side and front of the lodge. The nozzles and the heads of all measuring/sampling devices are at an appropriate height from the ground in accordance with the requirements of Directives 2008/107/EC and 2004/50/EC [1.5 m (breathing zone) to 4 m above ground].

Picture 2: Small Building where the air pollution station is installed

The equipment in the air pollution measuring station is the following:

- NO_X Analyzer
- O_3 Analyzer
- Aromatic analyzer BTEX hydrocarbons
- Meter PM10 / PM2.5
- Meteorological station with wind speed direction sensor, temperature humidity sensor, barometric pressure sensor
- Software for collection and recording of measurements
- PM10 sampler

Picture 3: Sampler PM10

Picture 4: NOX Analyzer

Picture 5: Meter PM10 / PM2.5

According to the final report (01.06.21-31.05.22), the results of air measurements are the following:

- The average hourly value of NO_2 for the time period of the measurements was 21.3 μg/m3, much lower than the annual limit (40 μg/m3), while no exceedance was observed hourly limit of 200 μg/m3 (the maximum hourly value for the period of measurements was 102.5 μg/m3).
- The average benzene value was 1.4 μg/m3, also well below the annual limit (5 μg/m3).
- SO2 was recorded for the period from 01.06.2021 to 18.11.2021. The average daily price SO_2 for this time period was 16.0 μg/m3 and no exceedance was observed of the daily limit of 125 μg/m3 (the maximum daily value for this time period was 91.5 μg/m3). Also, no breach of the hourly limit of 350 was observed μg/m3 (the maximum hourly value for this period was 126.5 μg/m3). The higher SO_2 values were recorded in the months of July and August.
- The average value of the daily concentrations of the particulate fraction PM_{10} was 30.4 $\mu g/m^3$, less than the annual limit (40 $\mu g/m^3$),
- The average value of the daily concentrations of the particulate fraction $PM_{2.5}$ was 19.8 $\mu g/m^3$, below the annual limit (25 $\mu g/m^3$).
- For O3, the average value of the daily maximum rolling m.o. 8 hours was 73 $\mu g/m^3$ while the corresponding maximum value was 124.5 μg/m3 which was the only value exceeded of the target value of 120 μg/m3.

The concentrations of the metals/metalloids determined in the samples PM10 where analyzes were completed. The average concentrations of the legislated metals are below the target values of Directive 2004/107/EC (6, 5, 20 and 500 ng/m3 for As, Cd, Ni, Pb, as average annual value).

According to the INTERIM REPORT (01.06.22-30.11.22), the results of air measurements are the following:

- The average hourly value of NO2 for the time period of the measurements was 13.6 μg/m3, much lower than the annual limit (40 μg/m3), while none was observed exceeding the hourly limit of 200 μg/m3.
- The average benzene value was 3.0 μg/m3, also below the annual limit (5 μg/m3).
- The average value of the daily concentrations of the particulate fraction PM10 was 22.4 μg/m3, lower than the annual limit (40 μg/m3), while 3 exceedances of the daily limit for PM10 (50 μg/m3): 2 in June (54-59 μg/m3) and 1 in October (58 μg/m3).
- The mean value of the daily concentrations of the particulate fraction PM2.5 was 13.8 μg/m3, below the annual limit (25 μg/m3).
- For O3, the average value of the daily maximum rolling m.o. 8 hours was 83 μg/m3 while the corresponding maximum value was 122 μg/m3 which was the only value exceeding the target value of 120 μg/m3

The concentrations of the metals/metalloids determined in the PM10 samples Average concentrations of legislated metals are below from the target values of Directive 2004/107/EC (6, 5, 20 and 500 ng/m3 for As, Cd, Ni, Pb, as average annual price).

4.2. Noise level control environmental program:

Since 2012, **VPA S.A.** has procured a sound measuring device and implements a measurement program in 6 representative positions of its area of responsibility, duration 30 ', 4 times / year, which is intense activity and consequently increased noise sources. The results are evaluated and compared with the limit values set by the Approval of Environmental Terms for the operation of the Port of Volos while they are recorded and posted on the website of the Organization.

As part of the continuous improvement of the program, **VPA S.A.** has added, since 2019, additional sound measurements related to the 24-hour control of the noise level, at a fixed point in the Commercial Port, once a month. It is important to note that **VPA S.A.**, in cases where it has planned activities that are estimated to be potentially increased noise generation, conducts additional measurements, close to this activity, in order to implement corrective actions, if required. The metering equipment used is suitable, certified and verified by its manufacturer.

In 2021 and 2022, took place measurements of noise at 6 different points of Volos port area. The results were quite satisfactory, as the all measurements were below the limit.

Picture 6: Noise monitoring points

	Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Upper Limit (dB)	55	55	55	55	65	65
DATE OF MEASUREMENT: 29/01/2021	57,6	52,4	54	55	59,2	59,8
DATE OF MEASUREMENT: 28/05/2021	56,3	53,8	52,7	53,9	54,3	60,8
DATE OF MEASUREMENT: 31/08/2021	64,1	52,5	48,8	51,5	53,4	51,6
DATE OF MEASUREMENT: 25/11/2021	57,2	52,6	54,7	51,7	59,2	60,3
DATE OF MEASUREMENT: 11/2/2022	51,4	52,4	54,8	53,7	58,9	56,9
DATE OF MEASUREMENT: 01/06/2022	54,3	52,2	54,5	53	56,9	57,6
DATE OF MEASUREMENT: 26/08/2022	54,1	54,8	52,9	51,9	51,8	54,5
DATE OF MEASUREMENT: 22/11/2022	53,7	54,2	51,7	51,8	53,7	55,2

Table 4. Noise monitoring

4.3. Sea water pollution monitoring

Laboratory analyzes are carried out on seawater at labeled points of the map mentioned below.

Picture 6: Sea water monitoring points

The two tables below show the monitoring parameters . The results are very satisfactory and within the legislative limits.

Colour
pH value
Disolved oxygen DO
Arsenic
Cadmium
Chromium Cr
Copper Cu
Lead Pb
Mercury
Nickel Ni
Sn
Zinc Zn
Suspend Solids (SS)
TPH (Total Petroleum Hydrocarbons)
PAHs (Polycyclic Aromatic Hydrocarbon)
Conductivity COND
Turbidity TURB
Temperature Temp
Depth of measurement DEP
Salinity SAL
Total dissolved solids TDS
Density dt
Redox potential ORP
Enterococi
Escherichia coli
Total coliforms

Table 4. Sea water monitoring physicochemical parameters

Enterococi
Escherichia coli
Total coliforms

Table 5. Sea water monitoring microbiological parameters

4.4. Radioactivity control of hazardous materials environmental program

The control of the level of radioactivity in moving products in the Commercial Port (such as scrap metal, blast furnace ash) is a key priority of the Organization and is controlled with the radioactivity measuring device, which has been procured in recent years for this purpose. The products are either imported or exportable and the frequency of measurement of radioactivity depends entirely on the quantity traded. The control is carried out observing all the necessary protection measures of those involved. The metering equipment used is certified and calibrated by its manufacturer. The Environmental Manager is responsible for the measurements to each scrap cargo.

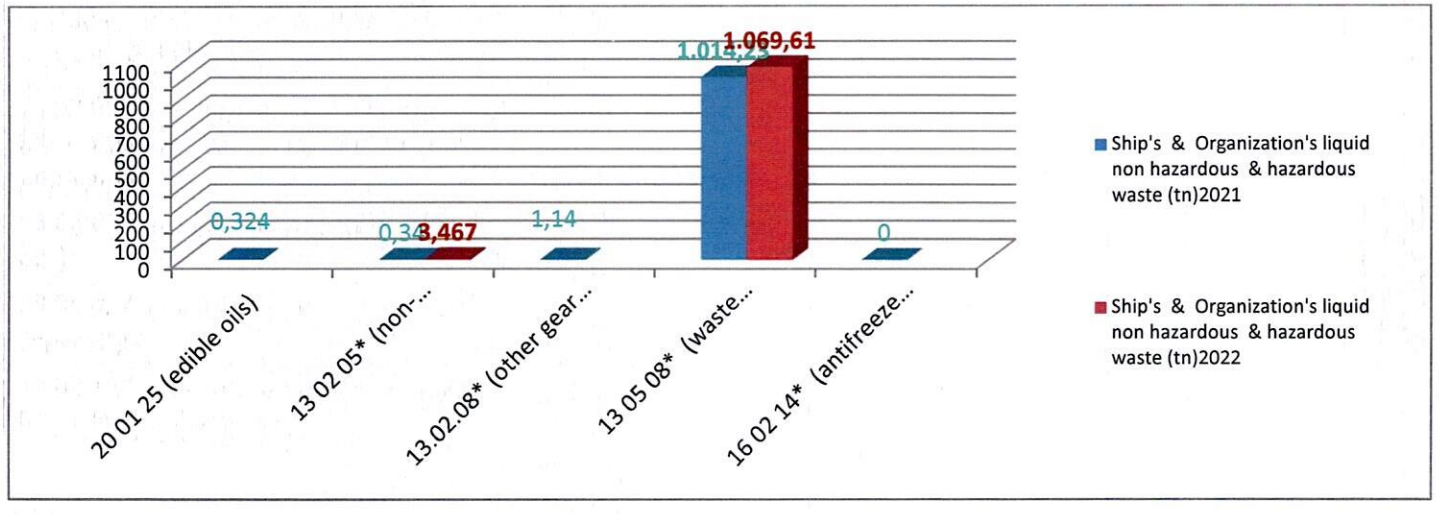
4.5. Ship Waste & Port Operation Waste

VPA S.A. assures that solid & liquid waste is collected by approved waste management contractors and provides all required reception facilities. **VPA S.A.** concerns and gives priority in separation, collection and proper management of non hazardous solid waste and hazardous solid waste, including paints, maintenance waste.

Liquid hazardous waste from ships & organization's activities includes oil residues, lubricant oil and waste mixtures from oil separators. Liquid non hazardous waste is edible oils from cooking etc.

European Waste Catalog of Waste	Ship's & Organization's liquid non hazardous & hazardous waste (tn)2021	Ship's & Organization's liquid non hazardous & hazardous waste (tn)2022
20 01 25 (edible oils)	0,324	0
13 02 05* (non-chlorinated oils, engine oils & lubricantsnon-chlorinated oils, engine oils & lubricants)	0,34	3,467
13.02.08* (other gear and lubrication engine oils)	1,14	
13 05 08* (waste chambers & oil / water separators)	1.014,23	1.069,61
16 02 14* (antifreeze fluids containing hazardous substances)	0	0

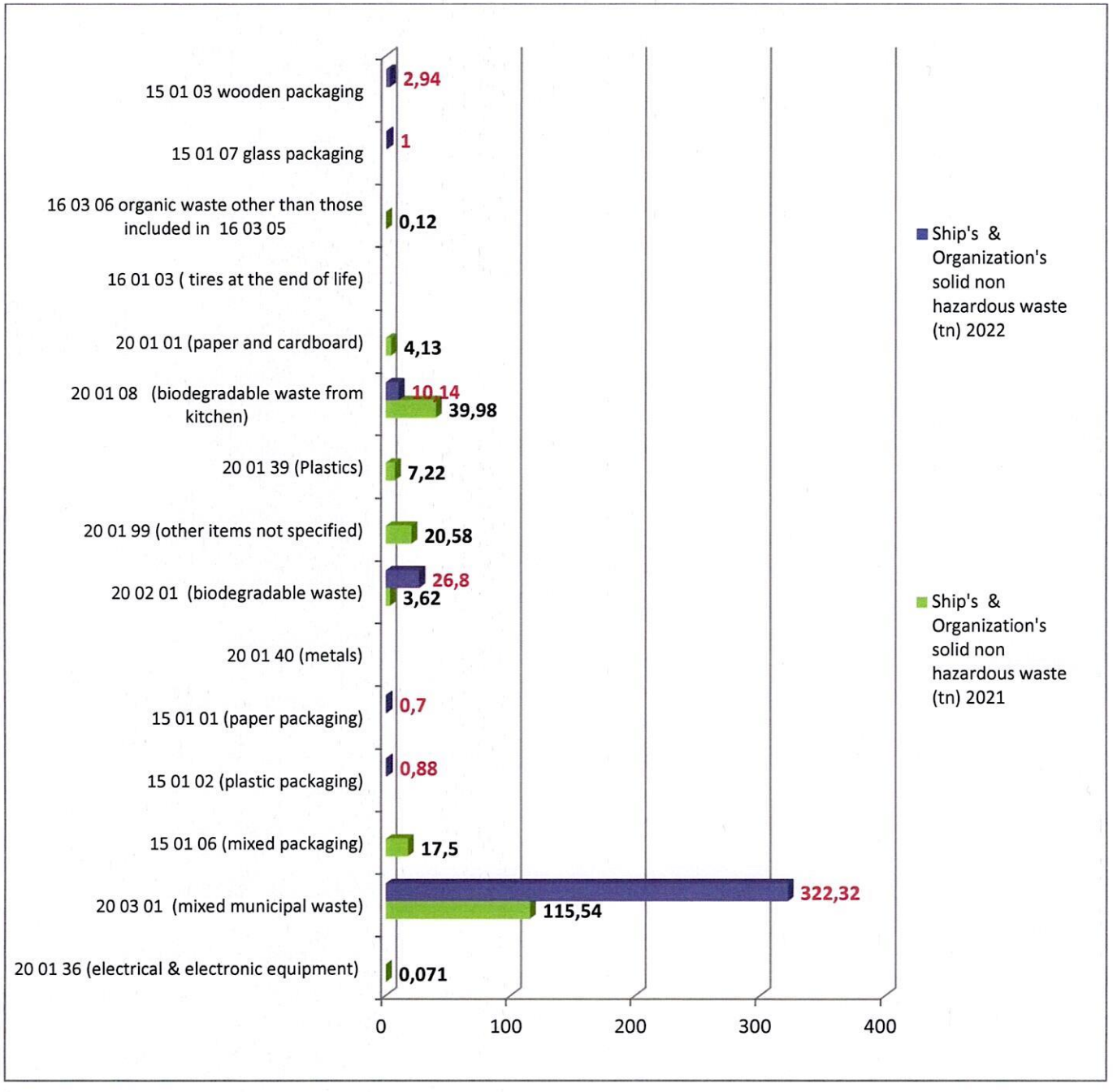
Table 6. Ship's & Organization's liquid non hazardous & hazardous waste (tn) 2021-2022



Graph 7. Ship's & Organization's liquid hazardous and non hazardous waste (tn) 2021-2022

European Waste Catalog of Waste	Ship's & Organization's solid non hazardous waste (tn) 2021	Ship's & Organization's solid non hazardous waste (tn) 2022
20 01 36 (electrical & electronic equipment)	0,071	0
20 03 01 (mixed municipal waste)	115,54	322,32
15 01 06 (mixed packaging)	17,5	
15 01 02 (plastic packaging)	0	0,88
15 01 01 (paper packaging)	0	0,7
20 01 40 (metals)	0	0
20 02 01 (biodegradable waste)	3,62	26,8
20 01 99 (other items not specified)	20,58	0
20 01 39 (Plastics)	7,22	0
20 01 08 (biodegradable waste from kitchen)	39,98	10,14
20 01 01 (paper and cardboard)	4,13	0
16 01 03 (tires at the end of life)	0	0
16 03 06 organic waste other than those included in 16 03 05	0,12	0
15 01 07 glass packaging	0	1
15 01 03 wooden packaging	0	2,94

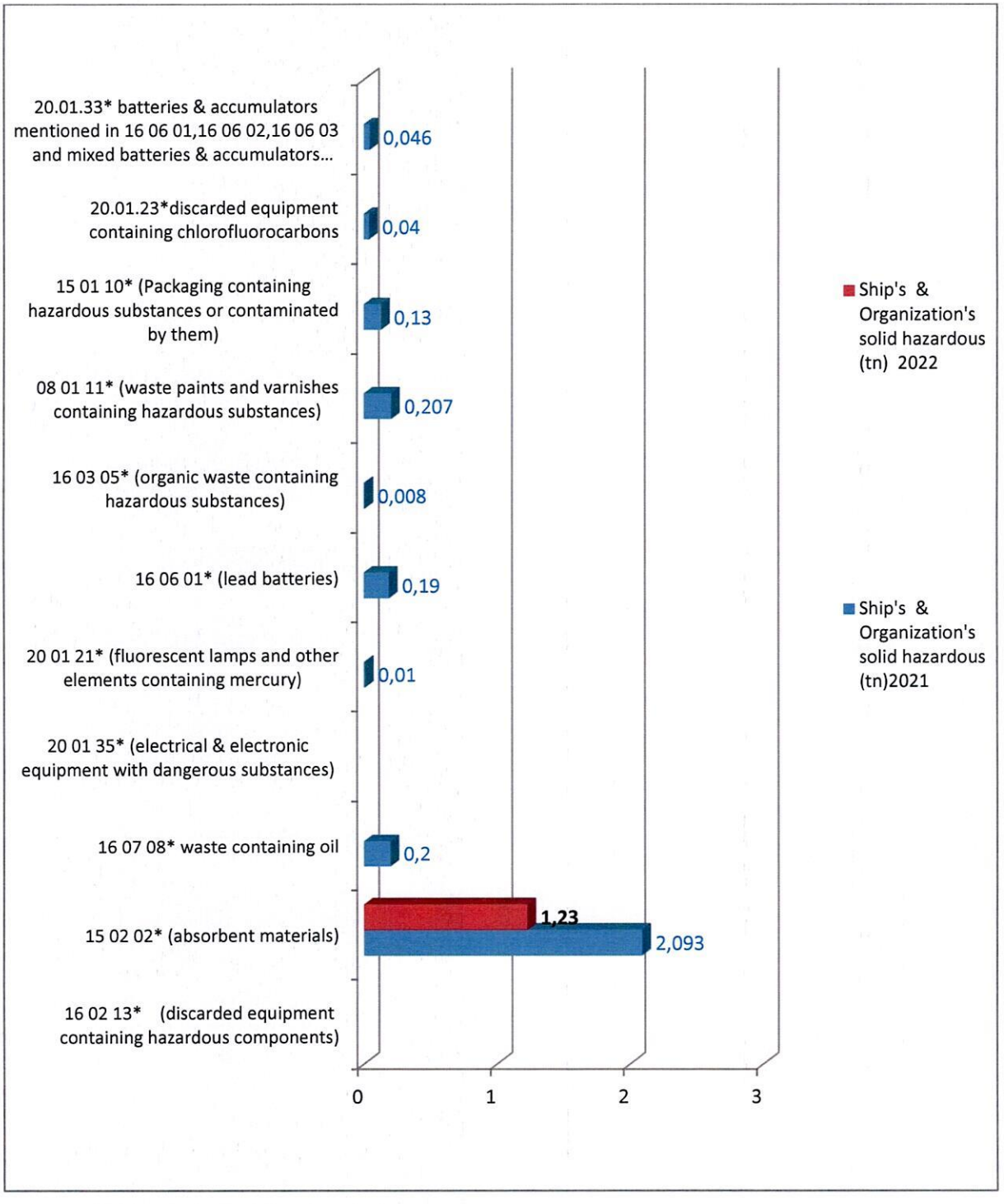
Table 7. Ship's & Organization's solid non hazardous (tn) 2021-2022



Graph 8. Ship's & Organization's solid non hazardous waste (tn) 2021-2022

European Waste Catalog of Waste	Ship's & Organization's solid hazardous (tn)2021	Ship's & Organization's solid hazardous (tn) 2022
16 02 13* (discarded equipment containing hazardous components)	0	0
15 02 02* (absorbent materials)	2,093	1,23
16 07 08* waste containing oil	0,2	0
20 01 35* (electrical & electronic equipment with dangerous substances)		0
20 01 21* (fluorescent lamps and other elements containing mercury)	0,01	0
16 06 01* (lead batteries)	0,19	0
16 03 05* (organic waste containing hazardous substances)	0,008	0
08 01 11* (waste paints and varnishes containing hazardous substances)	0,207	0
15 01 10* (Packaging containing hazardous substances or contaminated by them)	0,13	0
20.01.23*discarded equipment containing chlorofluorocarbons	0,04	0
20.01.33* batteries & accumulators mentioned in 16 06 01,16 06 02,16 06 03 and mixed batteries & accumulators containing said batteries	0,046	0

Table 8. Ship's & Organization's solid hazardous waste (tn) 2021-2022



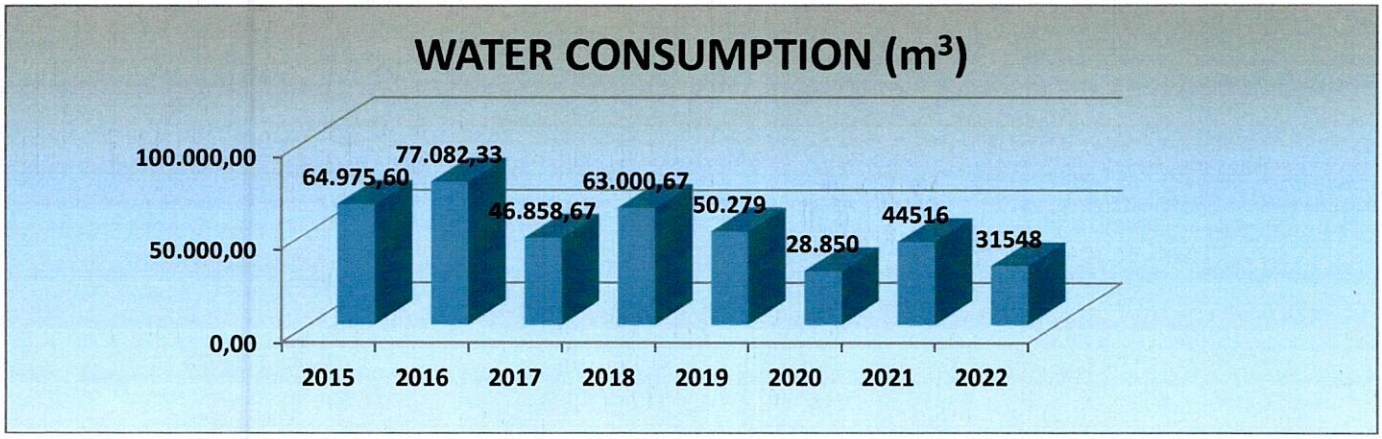
Graph 9. Ship's & Organization's solid hazardous waste 2021-2022

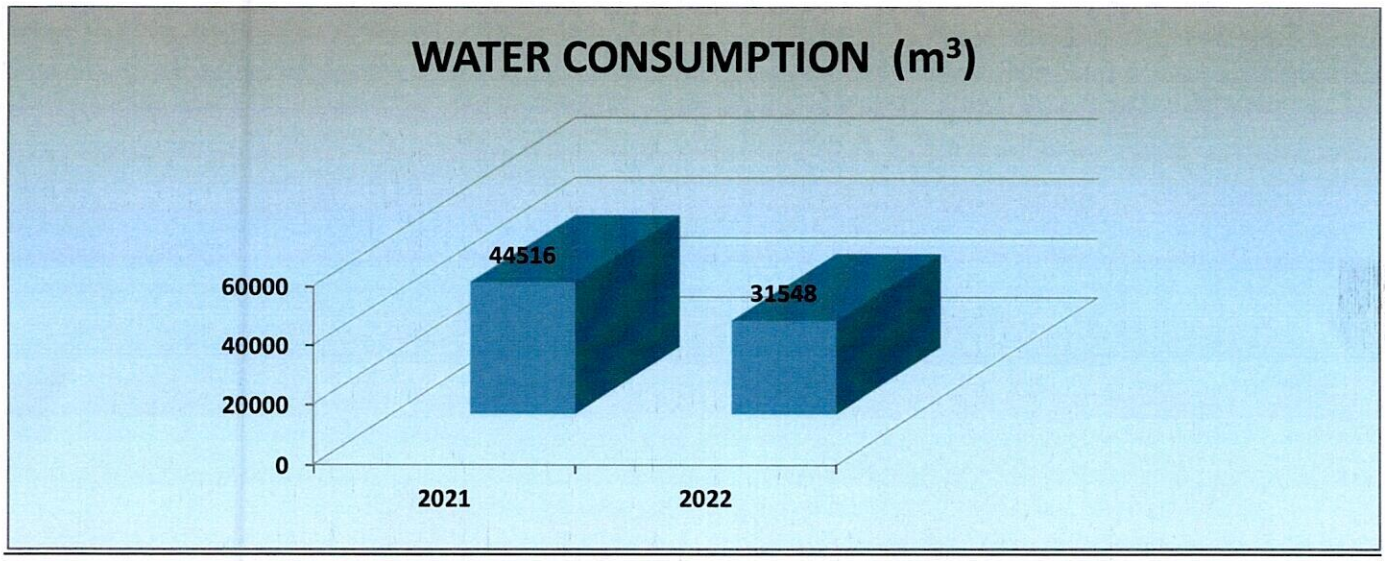
4.6. Consumption of Water

For reducing water consumption and improving flow control and network status monitoring, **VPA S.A.** has installed water monitoring system, electronic hydrometers for monitoring possible water leaks with immediate notification and prompt intervention to correct the problem. Results have been already reported for the time period 2015-2020.

Water consumption (m^3)							
2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
64.975,6	77.082,33	46.858,6667	63.000,67	50.279	28.850	44.516	31.548

Table 09. Water consumption (m3)





Graph 10. Water consumption (m^3)

TOTAL WATER CONSUMPTION: The annual target is reduction of the water consumption is 5% per year.

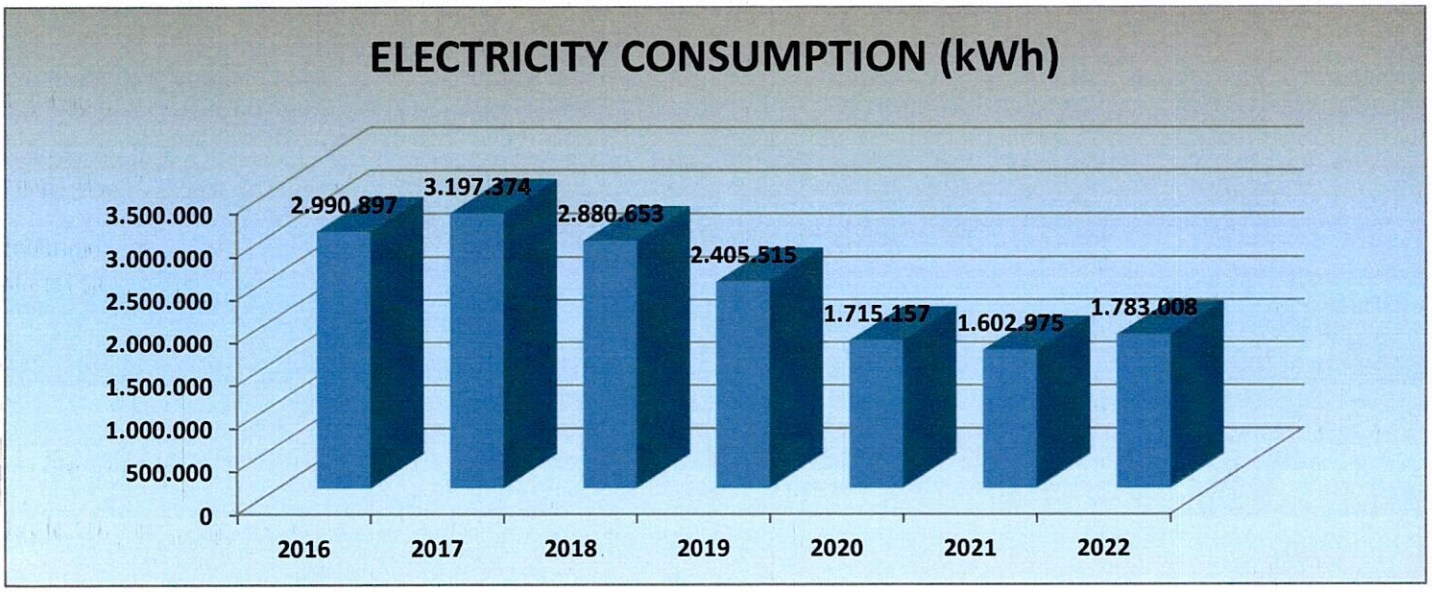
4.7. Consumption of Energy

Energy saving is a major concern for **VPA S.A.** and actions of installing equipment of lower consumption are scheduled and taken. The organization has installed **since August 2020 photovoltaic systems** with **160.000 KWh**.

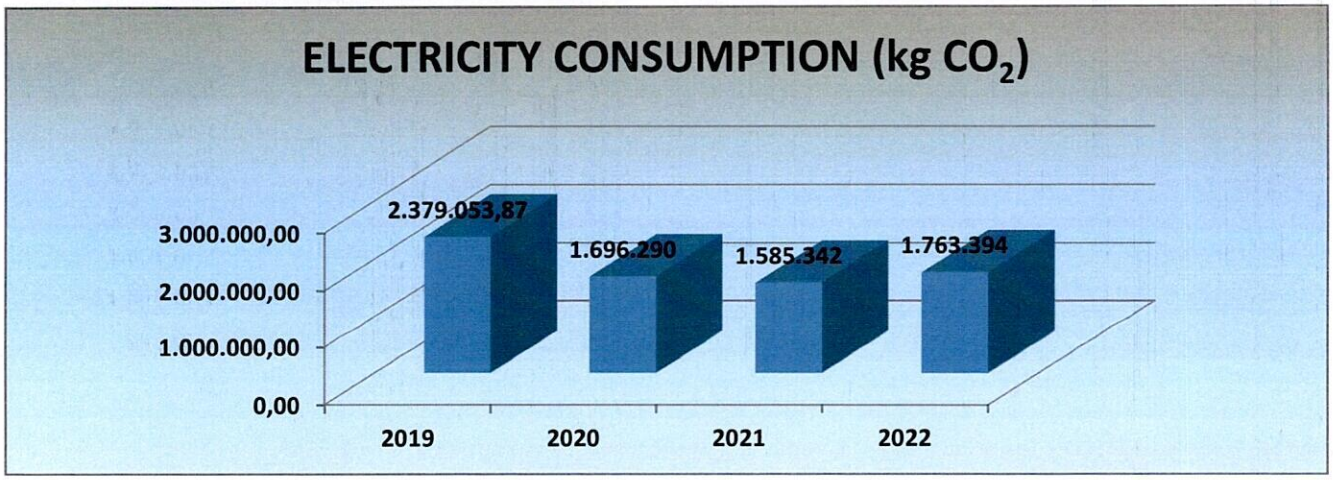
Electrical energy consumption is monitored and controlled, while there is reduction of electricity consumption, due to the photovoltaic systems.

Electricity consumption (KWh)						
2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
2.990.897,05	3.197.373,71	2.880.653,20	2.405.514,53	1.715.157	1.602.975	1.783.008

Table 10. Electricity consumption (KWh)



Graph 11. Electricity consumption (KWh)

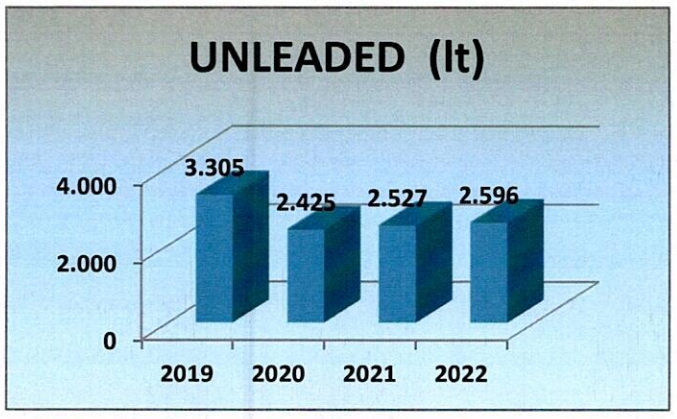


Graph 12. Electricity (kg CO_2)

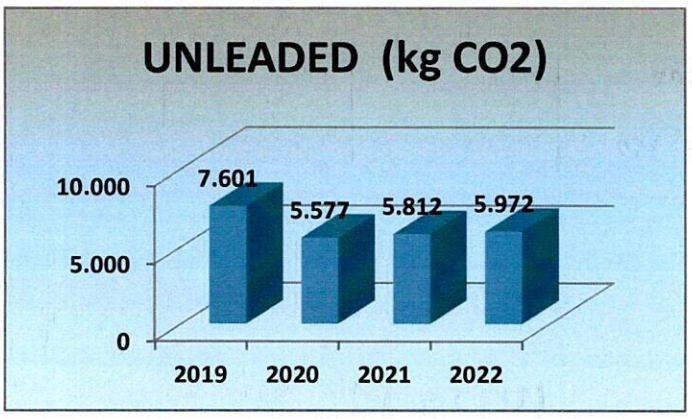
Also the unleaded fuel consumption is monitored and controlled, for the period **2021-2022**.

UNLEADED FUEL (LT)				UNLEADED FUEL (kg CO2)			
2019	2020	2021	2022	2019	2020	2021	2022
3.305	2.425	2.527	2.596	7.601	5.577	5.812	5.972

Table 11. Unleaded Fuel



Graph 13. Unleaded consumption (lt)

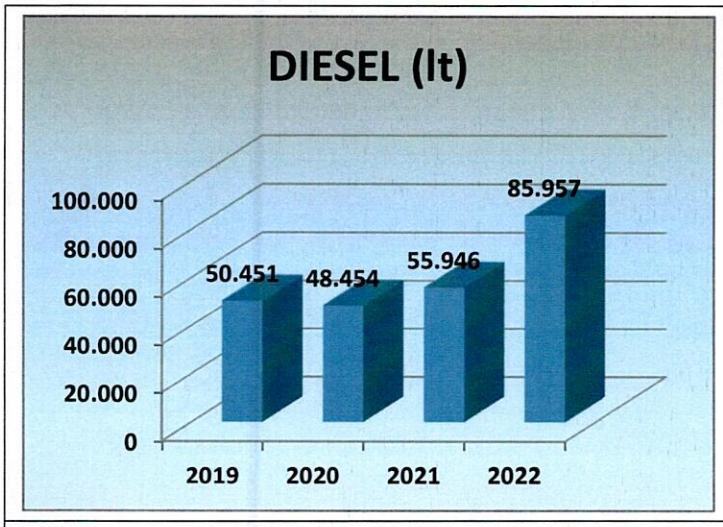


Graph 14. Unleaded (kg CO_2)

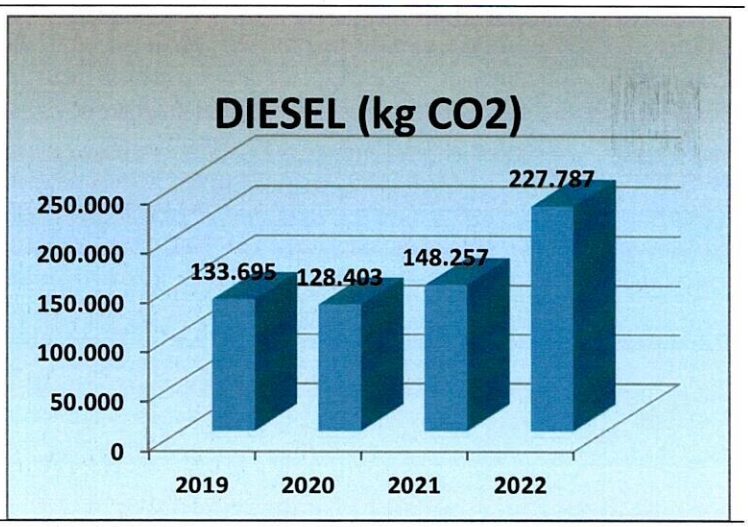
Also the diesel fuel consumption is monitored and controlled, for the period **2021-2022**:

DIESEL FUEL (LT)				DIESEL FUEL (kg CO2)			
2019	2020	2021	2022	2019	2020	2021	2022
50.451	48.454	**55.946**	85.957	133.695	128.403	148.257	227.787

Table 12. Diesel



Graph 15. Diesel consumption (lt)

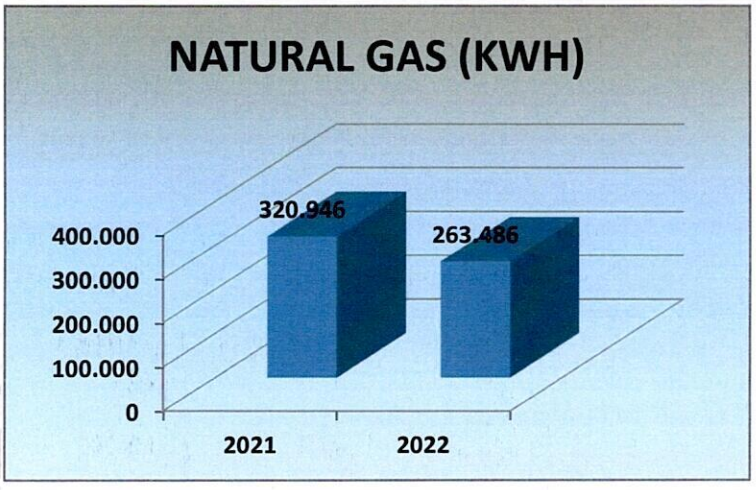


Graph 16. Diesel (kg CO_2)

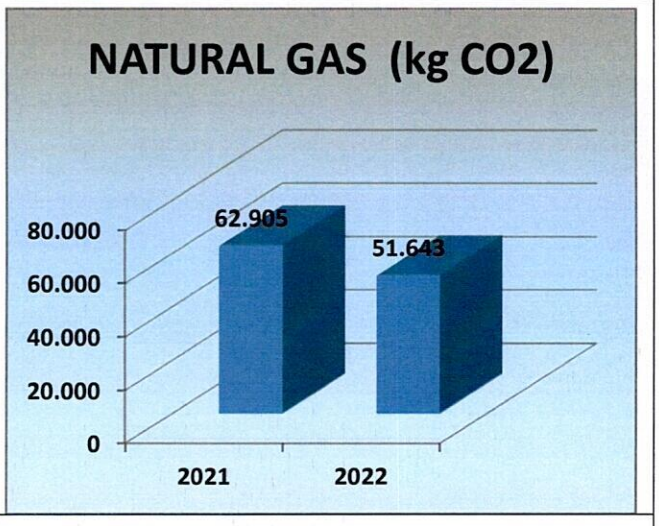
Also the natural gas consumption (for heating) is monitored and controlled, for the period **2021-2022**. There is an increase in consumption due to low temperatures and due to open room ventilation due to pandemic measures.

NATURAL GAS (kWh)		NATURAL GAS (kg CO2)	
2021	2022	2021	2022
320.946	263.486	62.905	51.643

Table 13. Natural gas



Graph 17. Natural Gas (KWh)

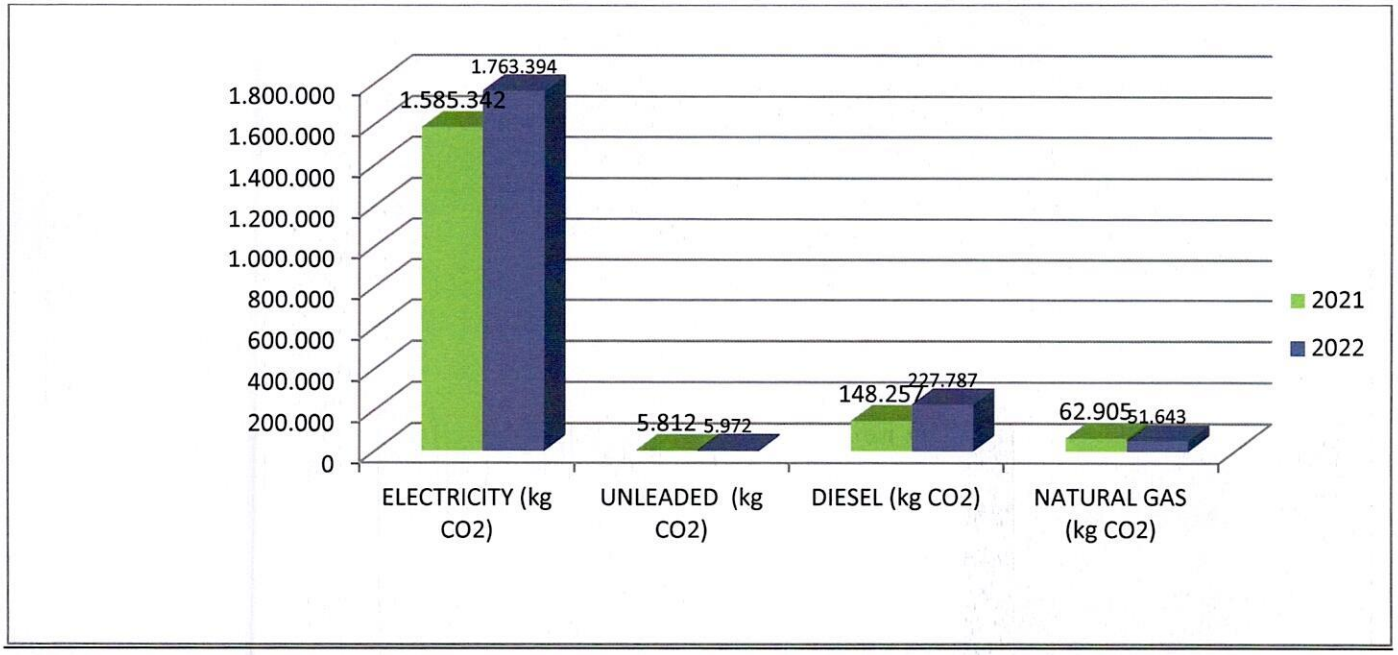


Graph 18. Natural Gas (kg CO_2)

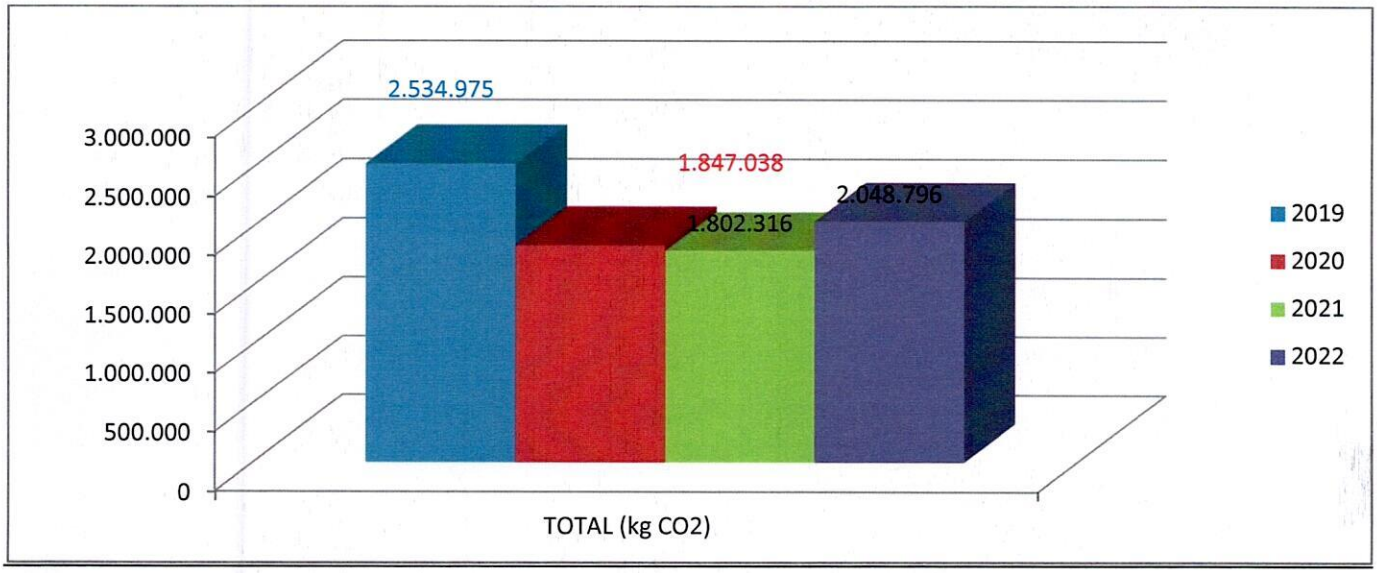
The emissions CO_2 for each energy source & total emissions CO_2 for the period **2021-2022**:

YEAR	ELECTRICITY (kg CO2)	UNLEADED (kg CO2)	DIESEL (kg CO2)	NATURAL GAS (kg CO2)	TOTAL (kg CO2)
2019	2.379.054	7.601	133.695	14.625	2.534.975
2020	1.696.290	5.577	128.403	16.769	1.847.038
2021	1.585.342	5.812	148.257	62.905	1.802.316
2022	1.763.394	5.972	227.787	51.643	2.048.796

Table 14. Emissions for each energy source



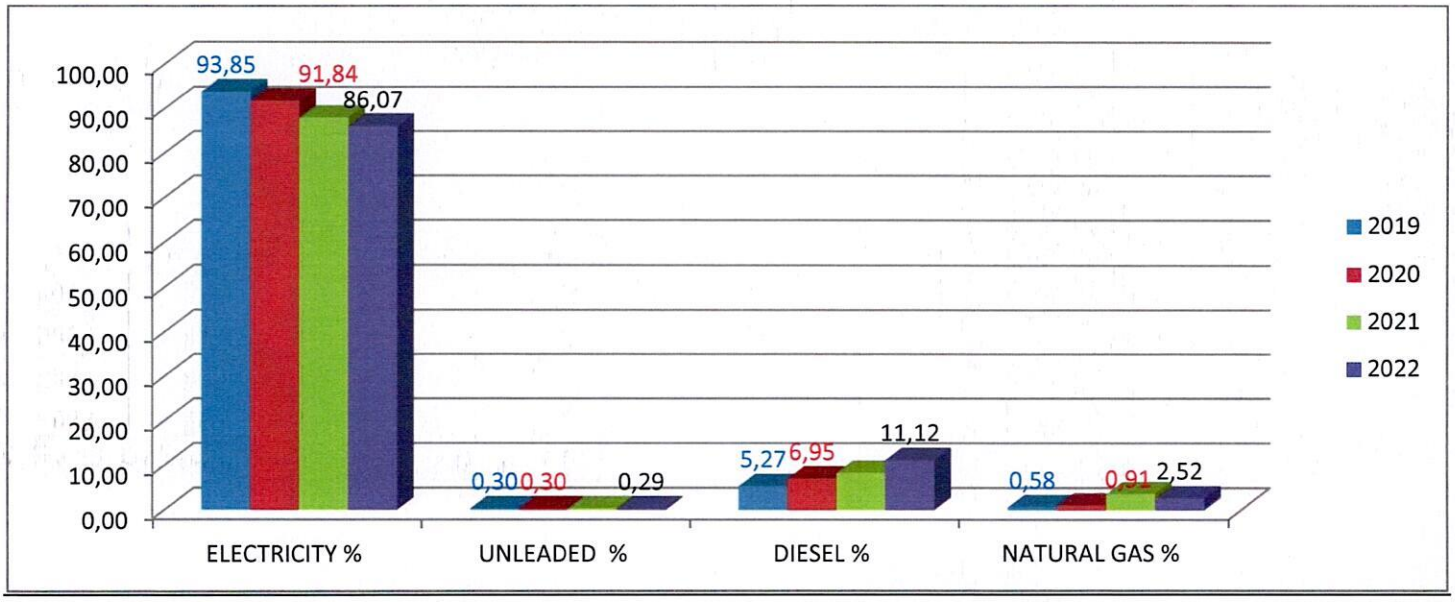
Graph 19. Emissions CO_2 for each energy source (kg CO_2)



Graph 20. Total Emissions CO_2 (kg CO_2)

YEAR	ELECTRICITY %	UNLEADED %	DIESEL %	NATURAL GAS %
2019	93,85	0,30	5,27	0,58
2020	91,84	0,30	6,95	0,91
2021	87,96	0,32	8,23	3,49
2022	86,07	0,29	11,12	2,52

Table 15. Emissions CO_2 for each energy source %



Graph 21. Emissions CO_2 for each energy source (%)

Energy source	Emitted pollutants per unit of energy ($kgCO_2/kWh$)	Density ρ (kg/lt)	NCV (Net Calorific Value) (kWh/kg)	Source of bibliography
Natural gas	0,196	0,59/0,7338 (kg/Nm^3)	13,67	Guide of Energy Audits in buildings, industry and transport, Table 3.4 p. 29
Electrical energy	0,989			
Energy source	**Emitted pollutants per unit of energy ($kgCO_2/lt$)**	**Density ρ (kg/lt)**	**LCV (kWh/kg)**	**Source of bibliography**
DIESEL	2,65	0,84	11,75	Guide of Energy Audits in buildings, industry and transport, p. 55,138
UNLEADED	2,3	0,74	12,222	Guide of Energy Audits in buildings, industry and transport, p. 27,138

Table 16. Conversion table for each energy source

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

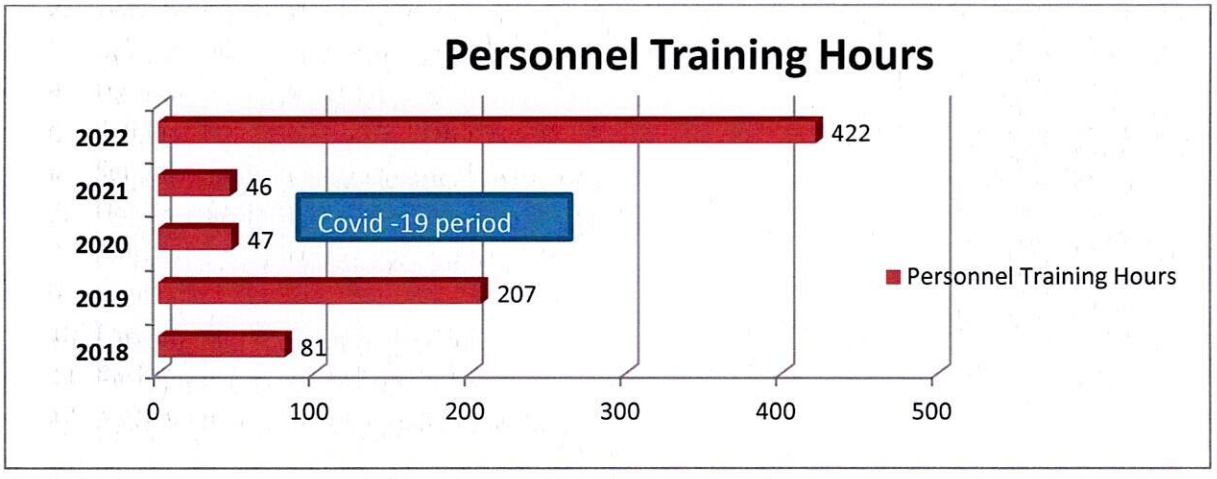
TOTAL EMISSIONS CO_2 : The annual target is reduction of the total electricity consumption is 5% per year, so last year the target is achieved.

5 Awareness of Interested Parties

Significant training programs were implemented to raise awareness and preparedness of the port staff and people working for the port. The following catalogue describes the training programs 2021 - 2022 of the Personnel Training

1. Use of fire-fighting equipment
2. Webinar on Environment and Health in Seaport Cities
3. Marine Pollution Prevention Workshop at the Commercial Port
4. Hazardous Waste Management
5. Seminar on Waste Management, Use of Waste Management Equipment, CPR
6. Seminar on Waste Management, Use of Waste Water Treatment
7. Health & Safety seminar (first aid, emergency plan, fire safety)
8. Employee health & safety seminar (first aid, emergency plan, fire safety)
9. Evacuation exercise
10. Forward unloading of bulk cargo
11. Basic principles of environmental management and alternative waste management
12. Marine and coastal pollution prevention exercise

The training hours have been increased in 2022 and there is a goal to remain to the high level (more than 200 training hours per year)



Graph 22. Personnel Training Hours per year

6 Environmental Actions

JULY 2021 - Volos Port Authority in the #gopafree programme - Recycling bins for cigarette waste were placed

The Volos Port Authority is a pioneer, as it is the first port to join forces with the Urban Non-Profit Company CigaretCycle, and joins the #gopafree cigarette waste recycling program.

The program, involves placing special recycling bins for cigarette waste, collecting them and transporting them overseas, where they are processed to convert harmful materials and substances into fertilizer and recycled product.

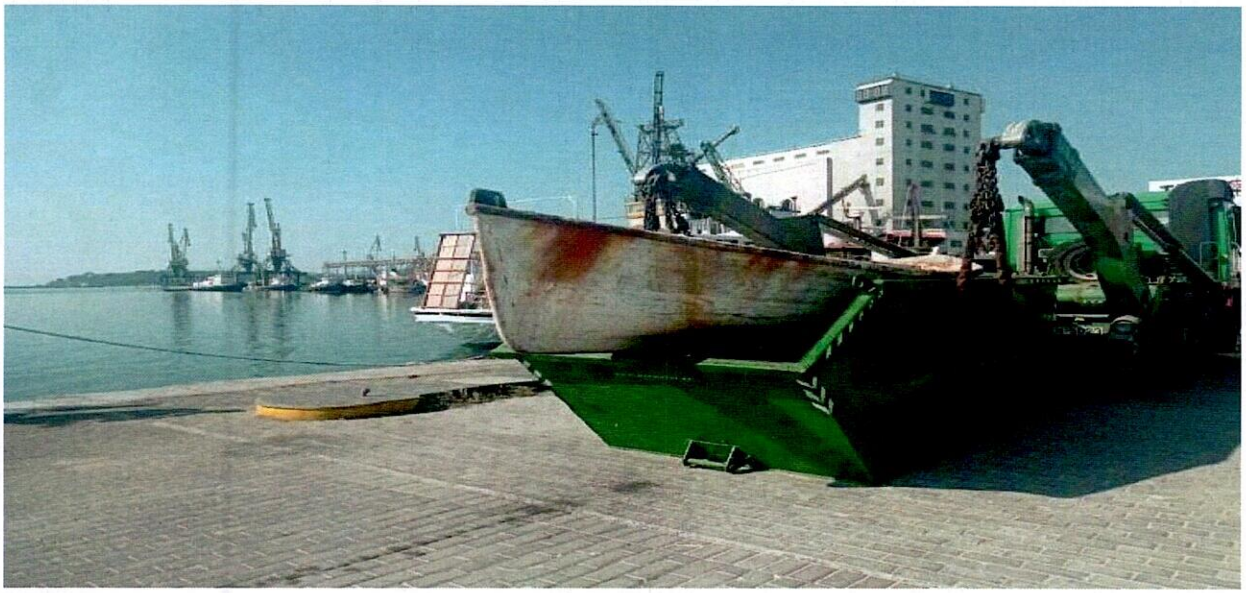
CIGARET CYCLE

May 2022 - Cleaning operation at the customs pier

A cleaning operation took place on Monday 16 May 2022, at the customs pier.

The Volos Port Authority, proceeded with the cleaning, following communication and information of the CEO of VPA SA Socrates Anagnostou, with the President of the Volos Fishing Association Christos Xiradakis and the President of the Panhellenic Union of Medium Fishery Owners Ioannis Bountoukos.

Torn nets, garbage and even a boat were some of the objects removed from the pier area with a special truck of the company that the Volos Port Authority cooperates with, for the cleaning of the sea area.



JULY 2022 - Cleaning of the seabed at the port of Volos

Putting into practice its commitment to a sustainable and viable aquatic environment, BioMar Hellenic S.A., in cooperation with a certified diving crew and a waste collection and transport company, and after consultation with the Volos Port Authority and the Central Port Authority of Volos, implements an important action for the protection of the marine ecosystem of the Pagasitikos in the marine area under the jurisdiction of the Volos Port Authority.

The action concerns the cleaning of the seabed in the port of Volos and is expected to last several days throughout the summer. The removal of waste from the seabed started with great success on Monday 11/07/2022 from the customs dock where more than 2 tons of materials and objects such as trolleys, bicycles, chairs, batteries, car tires, waste of fishing equipment, plastic packaging and large objects

7 Contact Information

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https://www.port-volos.gr