

# ENVIRONMENTAL BULLETIN OF AKTION AIRPORT (PVK)

## Reference year 2022

Fraport Regional Airports of Greece A S.A.

Issue year: 2023

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## 1. INTRODUCTION

### 1.1. Location

Aktion (PVK) airport is located in the west part of Sterea Ellada, at a distance of 4 km from Preveza, 16km from Vonitsa and 20 km from Lefkada. Cape Aktio is surrounded to the east by Amvrakikos Gulf and to the west by the Ionian Sea.

### 1.2. Administration

The airport administratively belongs to the Regional Unit (RU) of Aitoloakarnania of the Region of West Greece and the Ionian and more specifically to the Municipal Unit of Anaktorio of the Municipality of Aktio – Vonitsa, Local Community of Aghios Nikolaos Vonitsis..

### 1.3. Environmental licensing

Approved Environmental Terms	
E.T. Decision Reference number	11543/07.03.2017
E.T. Amendment Decision Reference Number	50502/08.12.2017
E.T. Amendment Decision Reference Number	133953/8672/16.12.2022

### 1.4. Airport Basic Data

Airport name IATA / ICAO	PVK / LGPZ
Airport location – Airport Reference Point (ARP)	Latitude: 38° 55' 32" N Longitude: 20° 45' 55" E
Altitude	3.32 m
Number of runways	2
Operation hours (summer)	Monday – Saturday 07:00 – 23:30 Tuesday 08:00 – 21:30 Πέμπτη 07:00 – 22:00 Wednesday / Friday 07:00 – 23:00 Sunday 08:00 – 23:45
Operation hours (winter)	Monday / Thursday / Friday / Saturday / Sunday 10:30 – 16:30 Tuesday 12:00 – 18:00 Wednesday 09:00 – 15:00

Runways	Length/Width			Code	
Runway	2,871m x 45m			07L-25R	
Runway	2,974 x 30m			07R-25L	
Full length of parallel taxiway	2,974m				
Number of taxiways	3				
Apron capacity	A	B	C	D	E
	-	-	3	-	1 (MARS)

<b>Employees</b>	<b>High season (31.08.2022)</b>	<b>Low season (30.11.2022)</b>
Fraport Greece (FG) employees	27	21
Employees of other companies	325	141

<b>Terminal</b>	
➤ Total area (m <sup>2</sup> )	9.649

<b>Other buildings and service/storage areas</b>	
➤ RFF Station (m <sup>2</sup> )	Housed in HAF facilities

<b>Parking Areas</b>	
Car parking spaces	81
Bus parking spaces	14
Taxi parking spaces	17

## 1.5. Airport facilities

### 1.5.1. Fuel Handlers

<b>Number of fuel handler companies</b>	
Number of fuel handler companies operating at the Airport	1

<b>Installations inside the airport</b>	<b>EKO</b>	<b>GISSCO</b>	<b>HAFCO</b>
Environmental Management System (EMS)	Not operating at the airport	YES	Not operating at the airport

### 1.5.2. Ground Handlers

<b>Number of ground handler companies</b>	
Number of ground handler companies operating at the Airport	3

<b>Installations inside the airport</b>	<b>SKYSERV</b>	<b>SWISSPORT</b>	<b>GOLDAIR</b>
Environmental Management System (EMS)	YES	YES	YES

## 2. TRAFFIC DATA STATISTICS

### 2.1. Annual Traffic Data

Annual Traffic Data for the year 2022	
Overall Annual Air Traffic Movements <sup>1</sup>	6.609
Percent of increase or decrease in relation to the previous year	46,2%
Annual passenger traffic	773.584
Percent of increase or decrease in relation to the previous year	107,9%
Annual cargo transferred (tn)	0
Percent of increase or decrease in relation to the previous year	-

Aircraft types	
<b>Prevailing aircraft types for domestic flights</b>	
Aircraft type	No. of flights
AT45	562
AT75	76
AT72	48
A320	23
GLEX	13
AT76	12
C56X	9
PC12	9
A32A	7
A109	6
Other	96
<b>Prevailing aircraft types for international flights</b>	
Aircraft type	No. of flights
A320	1.415
B73H	1.081
B738	568
A321	400
A32A	283
A319	282
A20N	236
A32B	214
A21N	212
7M8	154
Other	897

<sup>1</sup> Military and training flights not included.

## 2.2. High season traffic data

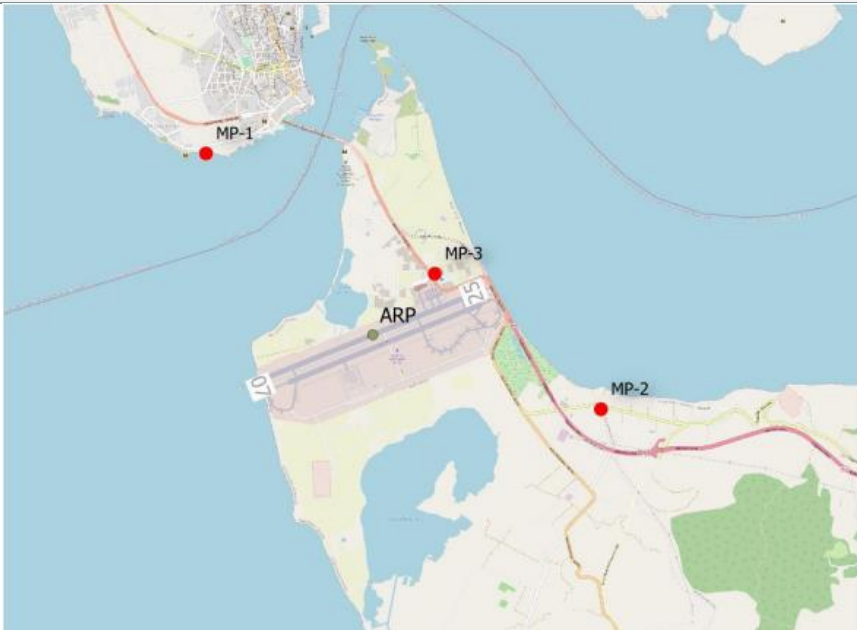
High season traffic data (June-September)	
Highest traffic month	August
Air traffic movements during the month with highest traffic	1.373
Air traffic movements daily average number during the month with highest traffic	44

## 2.3. Low season traffic data

Low season traffic data (October-May)	
Lowest traffic month	February
Air traffic movements during the month with lowest traffic	50
Air traffic movements daily average number during the month with lowest traffic	1

### 3. AIRCRAFT NOISE

#### 3.1. Noise measurements during the reference year

<b>Have noise measurements at the airport's surrounding area been performed during the reference year?</b>		YES
<b>Measurement points</b>		
		
<b>Measurement points coordinates</b>		<b>Measurement points description</b>
MP-1: 38° 56' 43" N 20° 44' 30" E		Located in Agio Georgiou in Preveza, northwest of the runway in the garden of a hotel. Affected by arrivals RWY 07 and departures RWY 25.
MP-2: 38° 55' 03" N 20° 47' 49" E		Located in Aktio, southeast of the runway on the roof of a house. Affected by departures on RWY 07 and arrivals RWY 25.
MP-3: 38° 55' 55.9" N 20° 46' 25.3" E		Located in Anaktorio, 300 meters north of the airport in the courtyard of a café. Affected by departures and arrivals in both directions.
<b>Measurement period</b>		26.06.2022 – 27.06.2022
<b>Noise indicators</b>		L <sub>den</sub> , L <sub>night</sub>

#### Summary of measurement results:

Noise levels are monitored according to the airport's monitoring program and new approved environmental terms. No exceedance of the noise indicators levels L<sub>den</sub> = 70 dB(A) and L<sub>night</sub> = 60 dB(A) was observed.



3.2. Noise levels calculation based on noise simulation software


<b>Aircraft noise levels calculation based on noise simulation software</b>		YES
<b>Software used:</b> IMMI Premium (according to CNOSSOS-EU and JMD ΥΠΕΝ/ΔΚΑΠΑ/13757/255/B/16.02.2022)		
<b>Noise indicators and respective contours calculation:</b> $L_{den}$ , $L_{night}$		
<p style="text-align: center;"><math>L_{den}</math></p>	<p style="text-align: center;"><math>L_{night}</math></p>	

**Summary of results:**

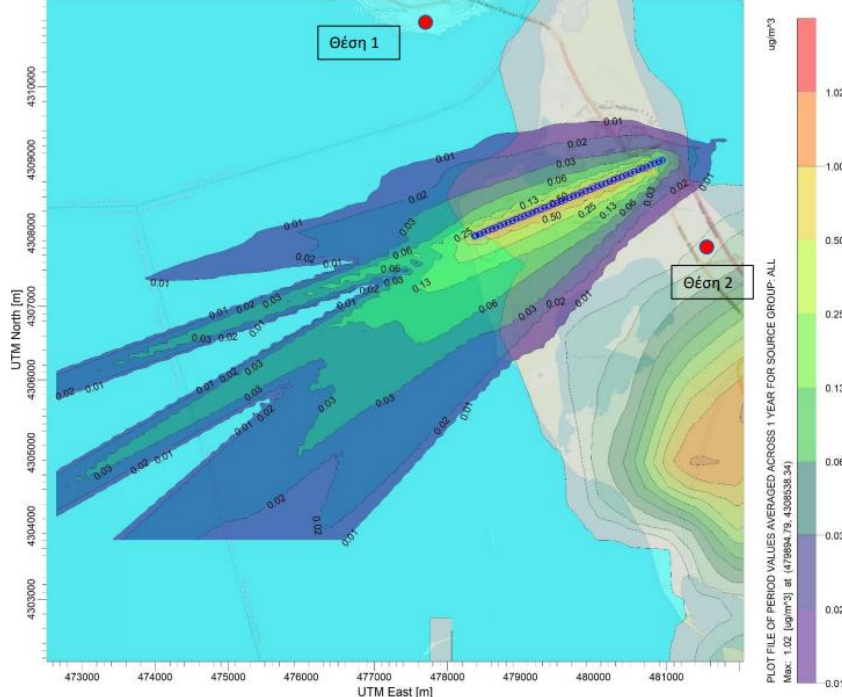
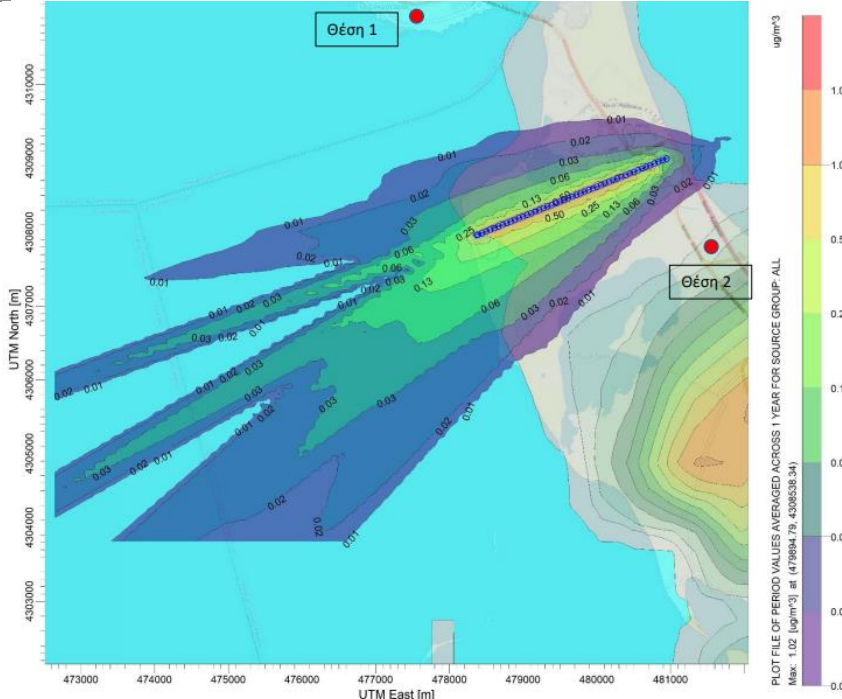
For the year 2022 no buildings inside official settlement boundaries were found to be exposed to noise levels higher than the limits  $L_{den}=70$  dB(A) and  $L_{night}=60$  dB(A).

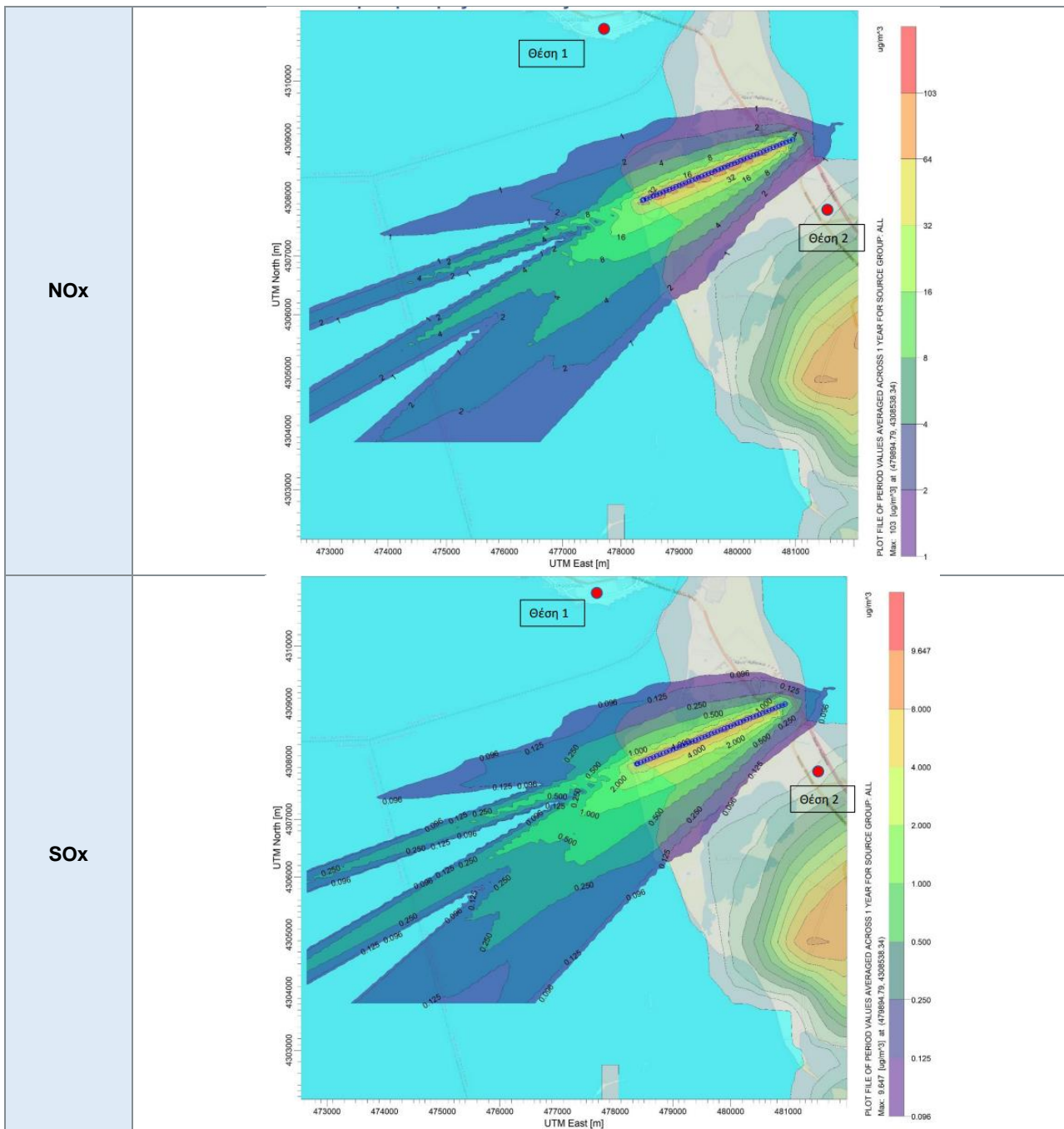
## 4. AIR QUALITY

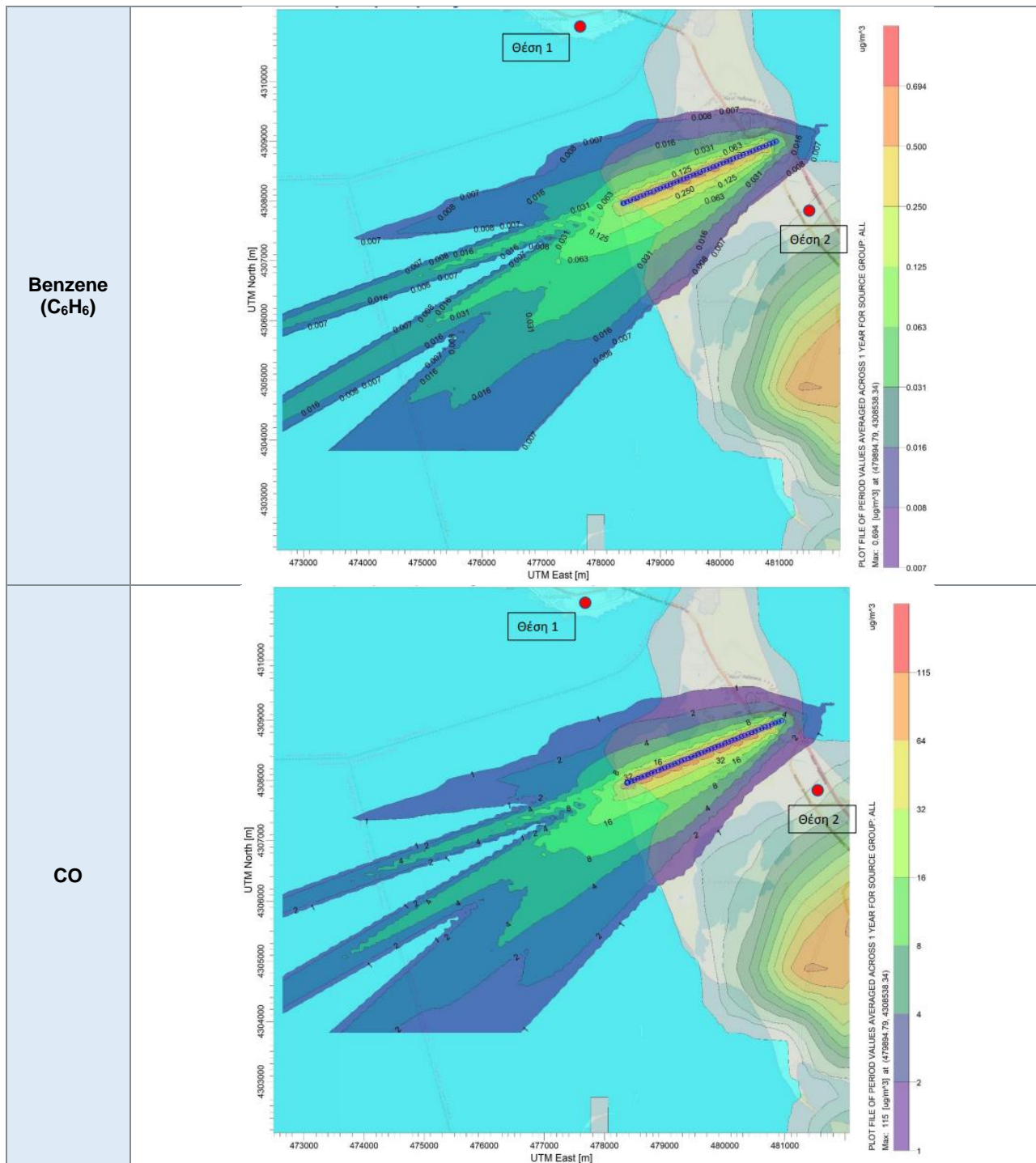
### 4.1. Air quality measurements during the reference year

Have air quality measurements at the airport's surrounding area been performed during the reference year?		YES
<b>Measurement points</b>		
		
<b>Measurement points</b>	<b>Measurement points description</b>	
Point 1	Hotel's parking area, northwest of the airport	
Point 2	Private land, southeast of the airport	
<b>Measurement period:</b>	23.10.2022 – 07.11.2022	
<b>Pollutants measured:</b>	PM <sub>10</sub> , PM <sub>2,5</sub> , NO <sub>2</sub> , SO <sub>2</sub> , C <sub>6</sub> H <sub>6</sub> , O <sub>3</sub> , CO	
<b>Summary of measurement results:</b>		
Air quality is monitored according to the airport's monitoring program, and the new approved environmental terms. No exceedance of the air quality limits was observed for NO <sub>x</sub> , SO <sub>2</sub> , CO, O <sub>3</sub> , C <sub>6</sub> H <sub>6</sub> , PM <sub>10</sub> και PM <sub>2,5</sub>		

4.2. Air pollutants emission and dispersion modelling

<b>Calculation of air pollutants concentrations based on an emission and dispersion modelling software</b>		YES
<b>Software used:</b> Aviation Environmental Design Tool (AEDT) - US Federal Aviation Administration & US Environmental Protection Agency AERMOD		
<b>Pollutants concentrations and respective contours calculation:</b> PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>x</sub> , SO <sub>x</sub> , C <sub>6</sub> H <sub>6</sub> , CO		
<b>PM<sub>10</sub></b>		
<b>PM<sub>2.5</sub></b>		





**Summary of results:**

Air quality is monitored according to the airport's monitoring program.  
No exceedance of the air quality limits was observed.

## 5. WASTE MANAGEMENT

Waste	Collection	Management/Disposal
<b>Recyclables (paper, plastic, metals, glass)</b>	Separate collection by the Municipality of Vonitsa	Disposal in material recovery facility for recycling
<b>Residues (Mixed Waste) and Bulky Waste</b>	Collection by the Municipality of Vonitsa	Disposal in landfill

### Notes:

1. Regarding the different categories of the MSW (recyclables, mixed waste, bulky waste), the Airport Users handle their waste together with Fraport Greece A (central management).
2. Regarding the 'alternative management' waste categories (Waste lubricant oil WLO, WEEE, etc.):
  - i. Waste Lubricant Oil (WLO): Collection and management by authorized collector "CYTOP S.A."
  - ii. Waste Electrical & Electronic Equipment (WEEE): Collection and management by alternative management system "Appliances Recycling S.A."
  - iii. Accumulators: Collection and management by alternative management system "Re-Battery S.A."
  - iv. Small batteries: Collection and management by alternative management system "AFIS S.A."
  - v. Used tires: Collection and management by alternative management system "ECOELASTIKA S.A."
3. The total quantities of the hazardous waste further to the above-mentioned and produced at the airport, are managed by licensed private companies which have a contract with Fraport Greece A, according to the provisions of the legislation in force.
4. The total quantities of the produced waste by category resulting from all activities of the airport, the collectors and final recipients, are recorded by Fraport Greece A and submitted in the Electronic Waste Registry of the Ministry for Environment and Energy via the Annual Waste Producer Report according to the provisions of the legislation in force.

## **6. ECOSYSTEM AROUND THE AIRPORT**

### **6.1. Flora-Fauna**

<b>Flora</b>	
Are there protected zones of vegetation/habitats in the broader airport area?	YES
In the broader area of Amvrakikos bay, sites that belong to the "NATURA 2000" network exist, such as the broader area of the delta of the rivers Louros and Aracthos, the lagoons (Rodia, Tsoukalio, Logarou, and other smaller ones), and the marine area that surrounds them (GR2110001, GR2110004), as well as the lakes Voulkaria and Saltini.	
<b>Fauna</b>	
Are there protected species of fauna/birds in the broader airport area?	YES
The protected bird species that have been observed at the vicinity of Aktio Airport since April 2017 are presented below: White stork ( <i>Ciconia ciconia</i> ) Griffon vulture ( <i>Gyps fulvus</i> ) at Kleisoura area, southeast of Aktio Airport The field survey dates will gradually increase during the following years.	

## 7. WILDLIFE HAZARD MANAGEMENT

<b>Wildlife strikes and wildlife hazard management measures</b>	
<b>Wildlife species that suffered a strike</b>	<b>Strikes (%)</b>
-	-
<b>Wildlife strike risk mitigation measures*:</b>	
*The Hellenic Air Force (HAF) is responsible for the management of birdstrike risk.	
<b>Reference year summary results:</b>	
-	



## 8. CULTURAL HERITAGE

<b>Have new cultural heritage properties been discovered during the reporting period?</b>	NO
<i>(if YES)</i> Details provided in the table below:	

Location	Date of discovery	Type of discovery	Additional protection measures taken

## 9. RESOURCES CONSUMPTION

### 9.1. Energy consumption

Energy consumption (monthly electric energy consumption, in Kwh)	
Total annual electric energy consumption (in Kwh)	1.811.332,86

### 9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	8	
Total annual fuel consumption	Diesel (lt)	3.286,31
	Unleaded gasoline (lt)	868,21

### 9.3. Heating oil or natural gas consumption

Heating oil or natural gas consumption	
Total annual heating oil consumption (lt)	-*
Total annual heating natural gas consumption (m <sup>3</sup> )	N/A

*\*Heating and air conditioning is performed via heat pumps*

### 9.4. Fuel consumption for generator

Fuel consumption	
Total annual consumption (lt)	500,01

### 9.5. Water consumption

Water consumption	
Total annual consumption (m <sup>3</sup> )	15.323,00

## 10. GREENHOUSE GAS EMISSIONS & CARBON FOOTPRINT

Greenhouse gas emissions that were included in the carbon footprint calculation are the CO<sub>2</sub> emissions included in scope 1 & 2 of the GHG protocol:

- Scope 1: Direct GHG emissions that occur from sources that are owned and/or controlled by the airport,
- Scope 2: Indirect GHG emissions from the generation of purchased electricity, steam, heat or cooling consumed by the airport.

Source Flows	Total CO <sub>2</sub> Emissions (t)
	2022
Direct emissions form heating fuel (scope 1)	0,0
Direct emissions from fuel used for fleet vehicles (scope 1)	10,9
Direct emissions from fuel used for generators (scope 1)	1,3
Direct emissions from refrigerants (scope 1)	387,8
Indirect emissions from electricity consumption (scope 2)	760,8
<b>Total (t)</b>	<b>773,0</b>
<b>Kg CO<sub>2</sub> /passenger</b>	<b>1,00</b>

### Notes:

Fraport Greece A is committed to the monitoring, management and reduction of its airports carbon footprint. In order for this target to be achieved:

- Direct and indirect carbon emissions from all the emission sources in the airports' boundaries are calculated and reported, based on the GHG Protocol (scope 1 & 2)
- The airport is certified according to ACA (Airport Carbon Accreditation), Level-1

## 11. ELECTROMAGNETIC RADIATION

The measurements were carried out at 6 different points around the antenna array located at the airport on 14/12/2022 (measurement start time 08:30, measurement end time 12:30).

### 1) Zone 27 MHz – 3 GHz

Measurement point	Amperage E	Power Density
	(V/m)	(W/m <sup>2</sup> )
1	1.1768115	0.0036735
2	0.5140975	0.0007011
3	0.5000326	0.0006632
4	0.7625062	0.0015423
5	1.6203413	0.0069644
6	1.4848104	0.0058480

### 2) Zone 420 MHz – 6 GHz

Measurement point	Amperage E	Power Density
	(V/m)	(W/m <sup>2</sup> )
1	1.4873217	0.0058678
2	1.2946522	0.0044461
3	0.4981686	0.0006583
4	0.8283055	0.0018199
5	1.8164603	0.0087523
6	2.0746729	0.0114174

#### Notes:

At this measurement campaign, no exceedances were found. The defined limits of exposure to electromagnetic radiation, are respected, as they are determined by the relevant legislation.

## 12. HUMAN COMSUMPTION WATER MONITORING PROGRAM

Human consumption water quality	
Water supply (public water network or airport's boreholes)	Municipal network of Lefkada & Aetoloakarnania
Is sampling of the airport's water network performed?	YES
<b>(if YES)</b> Sampling frequency:	Quarterly
<b>Summary of results:</b> The results of the microbiological and chemical analyses show that the parameters analyzed as regards the airport's water network are <b><u>within the legislative limits</u></b> defined by the Ministerial Decision Γ1 (δ)/ΓΠ οικ. 67322/ GG 3282 B/19-9-2017 regarding the quality of human consumption water.	

### 13. RAINWATER

<b>RAINWATER (collection, treatment disposal and recipient)</b>		
<b>Area</b>	<b>Collection/treatment/disposal</b>	<b>[YES/NO]</b>
Apron and manoeuvring area	Collected in drainage ditches leading to the sea	YES
Other runoffs (runway etc.)	Collected in drainage ditches leading to the sea	YES
Treatment of rainwater by oil-separator		NO

<b>Rainwater quality</b>	
Is sampling of the airport's rainwater performed?	YES
<b>(if YES)</b> Sampling frequency:	Yearly
<b>Parameters analyzed:</b> pH, conductivity, TSS, DO, NO <sub>3</sub> , NO <sub>2</sub> , Oil & grease, BOD, COD, Total Petroleum Hydrocarbons (TPH), PAHs, BTEX, Heavy metals, PCBs, Detergents	
<b>Summary of results:</b>	
Surface rainwater quality is monitored according to the airport's monitoring program. Due to the absence of designated recipients and relevant national quality limits for surface rainwater, the Environmental Health & Safety Guidelines of the International Finance Corporation (IFC) are adopted. Surface rainwater monitoring for 2022, was not performed.	

## 14. GROUNDWATER AND/OR SOIL AND/OR SOIL GAS MONITORING

Groundwater and/or soil and/or soil gas quality	
Is sampling of the airport's groundwater and/or soil and/or soil gas performed?	YES
<b>(if YES)</b> Sampling frequency:	Yearly
<b>Parameters analyzed:</b> TPH, BTEX, MTBE	
<b>Summary of results:</b>	
Groundwater quality is monitored according to the airport's monitoring program from boreholes managed by Fraport Greece. Groundwater monitoring for 2022 was not performed. According to the approved environmental terms, monitoring of groundwater and air from the Fuel Handlers is not foreseen for the year 2022.	

## 15. SEWAGE TREATMENT AND DISPOSAL

<b>Sewage</b>	
Sewage network to the municipal waste water treatment plant (WWTP)	NO
Autonomous airport's waste water treatment plant (WWTP)	YES*

<b>Blue water</b>
<b>Collection and disposal:</b> Collection in watertight tank and disposal to the municipal sewage network.

<b>Waste water treatment plant description (where applicable)</b> <i>Description of characteristics and condition of the airport's WWTP including possible problems. Type and frequency of the effluent quality measurements.</i>	
Degree of treatment of airport's WWTP	Tertiary treatment & chlorination
Treatment method	Prolonged ventilation
Disposal of treated wastewater	Drain ditch to the Ionian Sea based on Joint Ministerial Decision KYA 328925/7912 (Government Gazette 35/Δ/2017)
Sludge disposal	Landfill
Sampling frequency of WWTP effluent	Monthly based on the decision determining the recipient
Parameters analyzed	BOD, COD, TSS, T. Coliforms, E.Coli, pH, Dissolved Oxygen, Grease and Oils, Residual Chlorine
Summary of quality of WWTP effluent	The WWTP effluent quality is within the limits set out in the decision specifying the recipient

*\*Due to the maintenance/upgrade works the WWTP operation has ceased and sewage is transported to Vonitsa WWTP via tank trucks. The WWTP restart is scheduled for 2023.*