

ENVIRONMENTAL BULLETIN OF KEFALLINIA “ANNA POLLATOU” AIRPORT (EFL)

Reference year 2022

Fraport Regional Airports of Greece A S.A.

Issue year: 2023

BLANK PAGE

Contents

Contents	3
1. INTRODUCTION	4
1.1. Location	4
1.2. Administration	4
1.3. Environmental licensing	4
1.4. Airport Basic Data	4
1.5. Airport facilities	5
1.5.1. Fuel Handlers	5
1.5.2. Ground Handlers	5
2. TRAFFIC DATA STATISTICS	6
2.1. Annual Traffic Data	6
2.2. High season traffic data	7
2.3. Low season traffic data	7
3. AIRCRAFT NOISE	8
3.1. Noise measurements during the reference year	8
3.2. Noise levels calculation based on noise simulation software	8
4. AIR QUALITY	9
4.1. Air quality measurements during the reference year	9
4.2. Air pollutants emission and dispersion modelling	10
5. WASTE MANAGEMENT	11
6. ECOSYSTEM AROUND THE AIRPORT	12
6.1. Flora-Fauna	12
7. WILDLIFE HAZARD MANAGEMENT	13
8. CULTURAL HERITAGE	14
9. RESOURCES CONSUMPTION	15
9.1. Energy consumption	15
9.2. Fuel consumption	15
9.3. Heating oil or natural gas consumption	15
9.4. Fuel consumption for generator	15
9.5. Water consumption	15
10. GREENHOUSE GAS EMISSIONS & CARBON FOOTPRINT	16
11. ELECTROMAGNETIC RADIATION	17
12. HUMAN COMSUMPTION WATER MONITORING PROGRAM	18
13. RAINWATER	19
14. GROUNDWATER AND/OR SOIL AND/OR SOIL GAS MONITORING	20
15. SEWAGE TREATMENT AND DISPOSAL	21

1. INTRODUCTION

1.1. Location

Kefallinia Airport “Anna Pollatou” (EFL) is located in the south part of the island of Kefallinia, south to Argostoli town, at a road distance of approximately 8 km from the center of the town. The airport’s area is approximately 820 acres.

1.2. Administration

The Airport administratively belongs to the Municipal Unit of Argostoli of the Municipality of Kefallinia, in the Regional Unit of Kefallinia, Region of Ionian Islands, the seat of which is in Corfu.

1.3. Environmental licensing

Approved Environmental Terms	
E.T. Decision Reference number	32647/09.05.1995
E.T. Amendment Decision Reference Number	106586/08.08.2006
	24341/19.05.2017
	39772/26.09.2017
	36368/20.12.2017
	85360/3423/07.03.2019
	57139/3842/24.05.2023

1.4. Airport Basic Data

Airport name IATA / ICAO	EFL / LGKF
Airport location – Airport Reference Point (ARP)	Latitude: 38° 07' 12" N Longitude: 20° 30' 01" E
Altitude	18m
Number of runways	1
Operation hours (summer)	Monday-Wednesday & Friday-Sunday 08:00 – 23:00 Thursday 06:00 – 22:30
Operation hours (winter)	Monday 08:00 – 18:00 Tuesday 08:00 – 14:00 Wednesday 08:00 – 15:30 Thursday/Saturday 12:00 – 18:00 Friday 09:30 – 17:00 Sunday CLOSED

Runways	Length/Width			Code		
Runway	2,436m x 45 m			14/32		
Full length of parallel taxiway	N/A					
Number of taxiways	2					
Apron capacity	A	B	C	D	E	

	-	-	2	1 (MARS)	-
Employees	High season (31.08.2022)		Low season (30.11.2022)		
Fraport Greece (FG) employees	28		24		
Employees of other companies	365		197		

Terminal	
➤ Total area (m ²)	10.701

Other buildings and service/storage areas	
➤ RFF Station (m ²)	1.172

Parking Areas	
Car parking spaces	165
Bus parking spaces	16
Taxi parking spaces	27

1.5. Airport facilities

1.5.1. Fuel Handlers

Number of fuel handler companies	
Number of fuel handler companies operating at the Airport	2

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

1.5.2. Ground Handlers

Number of ground handler companies	
Number of ground handler companies operating at the Airport	3

Installations inside the airport	SKYSERV	SWISSPORT	GOLDAIR
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 ¹	7.937
Percent of increase or decrease in relation to the previous year	64,7%
Annual passenger traffic	817.212
Percent of increase or decrease in relation to the previous year	169,4%
Annual cargo transferred (tn)	0
Percent of increase or decrease in relation to the previous year	-83%

Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	No. of flights
AT76	980
AT45	426
AT72	158
AT46	112
DH8D	100
AT75	84
A320	44
A20N	41
C72R	23
E55P	17
Other	296
Prevailing aircraft types for international flights	
Aircraft type	No. of flights
B73H	1.589
A320	958
B738	615
7M8	422
A32A	328
A319	298
A321	200
A20N	183
A32B	151
E55P	71
Other	841

¹ Military and training flights not included.

2.2. High season traffic data

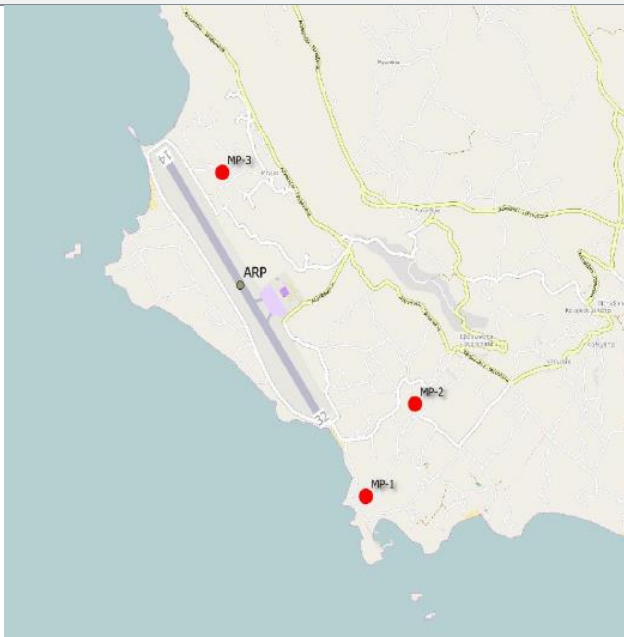
High season traffic data (June-September)	
Highest traffic month	August
Air traffic movements during the month with highest traffic	1.807
Air traffic movements daily average number during the month with highest traffic	58

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	92
Air traffic movements daily average number during the month with lowest traffic	3

3. AIRCRAFT NOISE

3.1. Noise measurements during the reference year

Have noise measurements at the airport’s surrounding area been performed during the reference year?		YES
Measurement points		
		
Measurement points coordinates		Measurement points description
Position 1: 38° 06' 18" N 20° 30' 46" E		Ammes beach area, south of the runway in a hotel garden. Affected by arrivals in runway 32 and departures from runway 14.
Position 2: 38° 06' 41" N 20° 31' 04" E		Livathou area, south-east of the runway in the garden of a hotel. Affected by arrivals in runway 32 and departures from runway 14
Position 3: 38° 07' 41" N 20° 29' 56" E		Minies area, to the east of the runway, at the yard of a private house. Affected by arrivals in runway 14 and departures from runway 32.
Measurement period		22.06.2022 - 23 06.2022
Noise indicators		L _{den} , L _{night}

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_{den} = 70 dB(A) and L_{night} = 60 dB(A) was observed.

3.2. Noise levels calculation based on noise simulation software

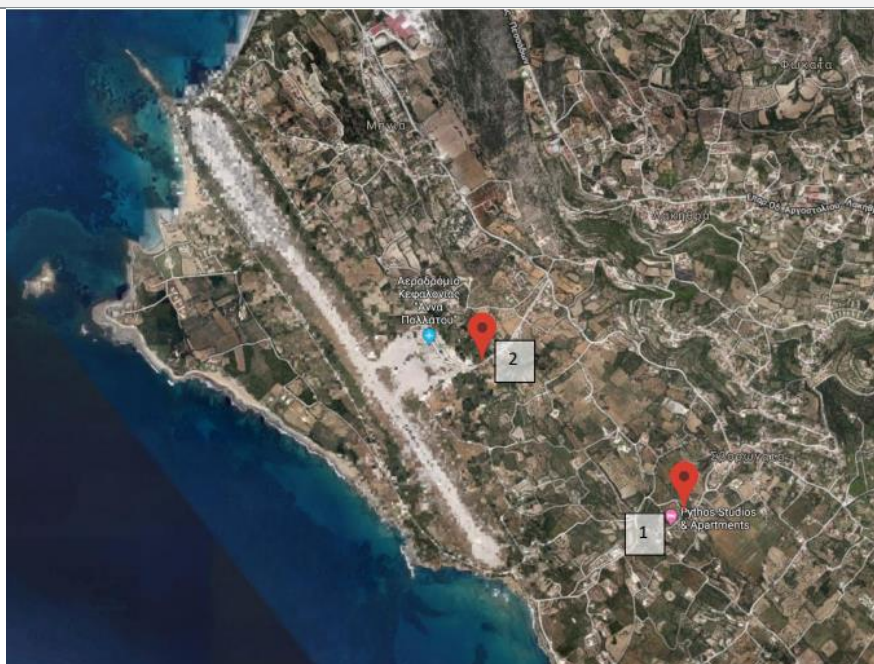
Aircraft noise levels calculation based on noise simulation software	NO
Software used: : N/A	
Noise indicators and respective contours calculation: N/A	
Summary of results:	
According Approved Environmental Terms, in 2022 the aircraft noise simulation was not foreseen.	

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
--	------------

Measurement points



Measurement points	Measurement points description
Position 1	At a distance of approximately 2 km, in the parking area of apartments
Position 2	At a distance of approximately 400m from the airport, in the parking area
Measurement period:	04.10.2022 – 19.10.2022 07.12.2022 – 23.12.2022
Pollutants measured:	PM ₁₀ , PM _{2,5} , NO ₂ , SO ₂ , C ₆ H ₆ , O ₃ , CO

Summary of measurement results:

Air quality is monitored according to the airport’s monitoring program and new approved environmental terms. No exceedance of the air quality limits was observed.

4.2. Air pollutants emission and dispersion modelling

Calculation of air pollutants concentrations based on an emission and dispersion modelling software	NO
Software used: N/A	
Pollutants concentrations and respective contours calculation: N/A	
Summary of results:	
According Approved Environmental Terms, in 2022 the air quality simulation was not foreseen.	

5. WASTE MANAGEMENT

Waste	Collection	Management/Disposal
Recyclables (paper, plastic, metals, glass)	Separate collection by Kefallinia solid waste management body (EDAKI AE OTA)	Transport to Kefallinia landfill and transshipment for recycling
Residues (Mixed Waste) and Bulky Waste	Collection by Kefallinia solid waste management body (EDAKI AE OTA)	Disposal at mechanical recycling-composting facility of Kefallinia or Kefallinia landfill for material recovery or final disposal respectively.

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 in most cases (central management), while in a few other cases they handled them autonomously. The implementation of a fully central system by Fraport Greece A is expected.
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

Flora	
Are there protected zones of vegetation/habitats in the broader airport area?	YES
<p>(if YES) Short description: Kefallinia Airport “Anna Pollatou” is near to the Natura 2000 sites:</p> <ul style="list-style-type: none"> • GR2220004 Paraktia Thalassia Zoni Apo Argostoli Eos Vlachata (Kefalonia) and Ormos Mouna (Area: 3,679.27 ha), an important shore for the reproduction of the loggerhead turtle <i>Caretta caretta</i> • GR2220002 Ethnikos Drymos Ainou (Area: 2,903.14 ha) 	
Fauna	
Are there protected species of fauna/birds in the broader airport area?	YES
<p>(if YES) Short description: Kefallinia Airport “Anna Pollatou” is near to the:</p> <ul style="list-style-type: none"> • Important Bird Area GR085: Mounts Agia Dynati and Kokkini Rachi, Kefalonia (Area: 17,303.83 ha) • Ionian Archipelago Important Marine Mammal Area (Area: 960,600ha) where the species <i>Delphinus delphis</i> and <i>Monachus monachus</i> are recorded • Hellenic Trench Important Marine Mammals Area (Area: 5660000ha) where the species <i>Physeter microcephalus</i> and <i>Ziphius cavirostris</i> are recorded <p>The protected bird species that have been observed at Kefallinia airport since April 2017 are presented below: European roller (<i>Coracias garrulous</i>), Glossy ibis (<i>Plegadis falcinellus</i>), Great egret (<i>Casmerodius albus</i>), Marsh harrier (<i>Circus aeruginosus</i>), Montagu’s harrier (<i>Circus pygargus</i>), Pallid harrier (<i>Circus macrourus</i>), Red-footed falcon (<i>Falco vespertinus</i>), Purple heron (<i>Ardea purpurea</i>), Shelduck (<i>Tadorna tadorna</i>), Squacco heron (<i>Ardeola ralloides</i>)</p>	

7. WILDLIFE HAZARD MANAGEMENT

Wildlife strikes and wildlife hazard management measures	
Wildlife species that suffered a strike	Strikes (%)
Gulls	55%
Small passerines	36%
Birds of prey	9%
Wildlife strike risk mitigation measures:	
<p>The presence and behavior of wildlife species at Kefallinia airport is monitored in regular intervals, daily, from dawn to dusk. Some of the wildlife control methods applied at Kefallinia airport are: distress calls (bioacoustics), digital sounds, anti-bird laser, etc. Preventive long-term actions that are mainly related to habitat management measures (e.g. grass cutting, water body management) are also taken to further reduce the presence of species constituting a risk to flight safety. In addition, a NOTAM is published and regularly updated.</p>	

8. CULTURAL HERITAGE

Have new cultural heritage properties been discovered during the reporting period?	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)	1.616.901,74

9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	12	
Total annual fuel consumption	Diesel (lt)	10.181,20
	Unleaded gasoline (lt)	208,81

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 ³)	N/A

*Heating and air conditioning is performed via heat pumps

9.4. Fuel consumption for generator

Fuel consumption	
Total annual consumption (lt)	0

9.5. Water consumption

Water consumption	
Total annual consumption (m ³)	15.323,00

10. GREENHOUSE GAS EMISSIONS & CARBON FOOTPRINT

Greenhouse gas emissions that were included in the carbon footprint calculation are the CO₂ 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 ₂ Emissions (t)
	2022
Direct emissions form heating fuel (scope 1)	0,0
Direct emissions from fuel used for fleet vehicles (scope 1)	27,7
Direct emissions from fuel used for generators (scope 1)	0,0
Indirect emissions from refrigerants (scope 1)	-
Indirect emissions from electricity consumption (scope 2)	679,1
Total (t)	706,8
Kg CO₂ /passenger	0,86

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 12/12/2022 (measurement start time 10:00, measurement end time 13:30).

1) Zone 27 MHz – 3 GHz

Measurement point	Amperage E	Power Density
	(V/m)	(W/m ²)
1	4.6612173	0.0576325
2	3.8673491	0.0396731
3	0.2874760	0.0002192
4	0.2581686	0.0001768
5	0.1899802	0.0000957
6	0.2664919	0.0001884

2) Zone 420 MHz – 6 GHz

Measurement point	Amperage E	Power Density
	(V/m)	(W/m ²)
1	5.0839568	0.0685603
2	3.6431745	0.0352070
3	0.3347304	0.0002972
4	0.1790303	0.0000850
5	0.3479218	0.0003211
6	0.3138302	0.0002613

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 Water & Sewage Company (DEYA) of Kefallinia
Is sampling of the airport's water network performed?	YES
<i>(if YES)</i> Sampling frequency:	Quarterly
Summary of results: The results of the microbiological and chemical analyses show that the parameters analyzed as regards the airport's water network are <u>within the legislative limits</u> 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

RAINWATER (collection, treatment disposal and recipient)		
Area	Collection/treatment/disposal	[YES/NO]
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

Rainwater quality	
Is sampling of the airport's rainwater performed?	YES
(if YES) Sampling frequency:	Yearly
Parameters analyzed: pH, conductivity, TSS, DO, NO ₃ , NO ₂ , Oil & grease, BOD, COD, Total Petroleum Hydrocarbons (TPH), PAHs, BTEX, Heavy metals, PCBs, Detergents	
Summary of results:	
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
(if YES) Sampling frequency:	Yearly
Parameters analyzed: TPH, BTEX, MTBE (groundwater) & volatile hydrocarbons, aliphatic, aromatic and chlorinated (soil gas)	
Summary of results:	
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

Sewage	
Sewage network to the municipal waste water treatment plant (WWTP)	NO
Autonomous airport’s waste water treatment plant (WWTP)	YES*

Blue water
Collection and disposal: Collection in watertight tank and disposal to the municipal sewage network.

Waste water treatment plant description (where applicable) <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	Membrane bioreactors
Disposal of treated wastewater	Reuse via an aquifer recharge field with the method of soil infiltration
Sludge disposal	Landfill
Sampling frequency of WWTP effluent	According to Table 3 of the Annex of JMD 145116/2001
Parameters analyzed	BOD5, SS, TN, TP, T. Coliforms, Turbidity, NH ₄ , pH, residual Cl ₂
Summary of quality of WWTP effluent	Limits for aquifer recharge as set in Table 3 of the Annex of JMD 145116/2001 according to the Environmental Terms Approval Decision no. 85360/3423/07.03.2019

**The data above refer to the new WWTP constructed in the context of the Imminent Works. During 2022 sewage was transferred via tank trucks to the local WWTP, due to technical issues. The WWTP restart is scheduled for 2023.*