

# **Environmental Bulletin of Kefalonia “Anna Pollatou” Airport (EFL)**

## **Reference year 2019**

Fraport Greece

May 2020



## Version Control

Version	Revision	Description of Revision	Date
0	0		27/05/2020





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## 1. INTRODUCTION

### Location

The “Anna Pollatou” Kefalonia Airport (EFL) is located in the south part of the island of Kefalonia, south to Argostoli town, at a road distance of approximately 8 km from the centre of the town. The airport’s area is approximately 202 acres.

### Administration

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

### 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

### 1.1. Airport Basic Data

Airport Basic Data	
Airport name IATA / ICAO	EFL / LGKF
Airport position – Airport Reference Point (ARP)	Latitude: 38° 07' 12" N Longitude: 20° 30' 01" E
Altitude:	18m
Number of runways	1
Operation hours (summer)	March-May Monday/Tuesday/Thursday/Friday & Sunday 08:00-23:00 Wednesday 08:00-23:30 Saturday 07:00-23:30
	June – October Monday/Friday 07:00-23:00 Wednesday-Thursday & Sunday 05:30-23:30 Saturday 05:30-24:00
Operation hours (winter)	Monday 08:00 - 14:30 Tuesday/Wednesday 08:00 - 14:00 Thursday/Saturday 09:30 - 17:30 Friday 11:30 - 17:30 Sunday 13:30 - 19:30

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	-
<b>Employees</b>	<b>High season (31.8.2019)</b>			<b>Low season (30.11.2019)</b>	
Fraport Greece (FG) employees	26			23	
Employees of other companies	386			239	
<b>Terminal</b>					
➤ Total area (m <sup>2</sup> )					10,070
<b>Other buildings and service/storage areas</b>					
➤ RFF (m <sup>2</sup> )					1,236

<b>Parking Areas</b>	
Car parking spaces	130
Bus parking spaces	20
Taxi parking spaces	30

## 1.2. Airport Facilities

### 1.2.1. Fuel Handlers

<b>Number of fuel handler companies</b>			
Number of fuel handler companies operating at the Airport			2
<b>Installations inside the airport</b>	<b>EKO</b>	<b>GISCO</b>	<b>HAFCO</b>
Environmental Management System (EMS) (YES/NO)	YES	YES	Not operating at the airport

### 1.2.2. Ground Handlers

<b>Ground Handlers</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>
Vehicles (total number)	14	15	63
Environmental Management System (EMS) (YES/NO)	YES	YES	YES

## 2. TRAFFIC DATA STATISTICS

### 2.1. Annual Traffic Data

Annual Traffic Data for the year 2019	
Overall Annual Air Traffic Movements <sup>1</sup>	7,355
Percent of increase or decrease in relation to the previous year	2.6%
Annual passenger traffic	774,170
Percent of increase or decrease in relation to the previous year	1,6%
Annual cargo transferred (tn)	0.4
Percent of increase or decrease in relation to the previous year	-38.0%
Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	No. of flights
AT45	884
DH8D	472
AT75	286
A320	174
AT72	110
AT46	52
AT43	40
B463	31
B73H	26
A32A	22
Other	286
Prevailing aircraft types for international flights	
Aircraft type	No. of flights
B73H	1,828
A320	532
A32A	384
B738	322
A319	175
A321	172
A20N	156
A32B	122
B75W	122
B712	98
Other	1,061

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



**2.2. High season traffic data**

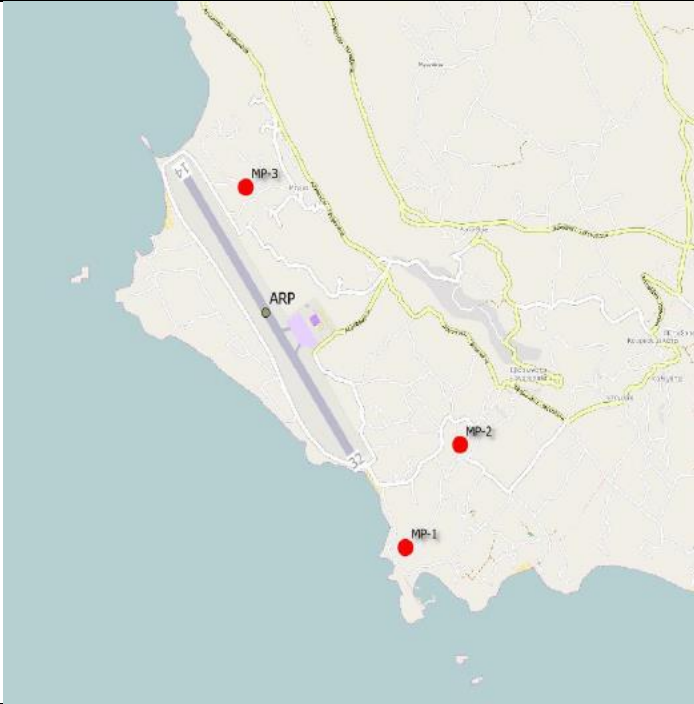
High season traffic data (June-September)	
Highest traffic month	August
Air traffic movements during the month with highest traffic	1,631
Air traffic movements daily average number during the month with highest traffic	53

**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/NO]		YES
<b>Measurement points</b>		
		
Measurement points coordinates	Measurement points description	
1) Position: 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.	
2) Position: 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	

3) Position: 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.
<b>Measurement period</b>	25.07.2019 -26 07.2019
<b>Noise indicators</b>	Lden, Lnight
<b>Summary of measurement results:</b>	
Noise levels are monitored according to the airport's monitoring program. No exceedance of noise indicators levels Lden = 70 dB (A) and Lnight = 60 dB (A) was observed.	

**3.2. Noise levels calculation based on noise simulation software**

<b>Aircraft noise levels calculation based on simulation software [YES/NO]</b>	YES
<b>Software used:</b> IMMI Noise Prediction Software (CNOSSOS EU assessment method based on Directive 2015/996/EU)	
<b>Noise indicators and respective contours calculation:</b>	Lden, Lnight



Lden



Lnight

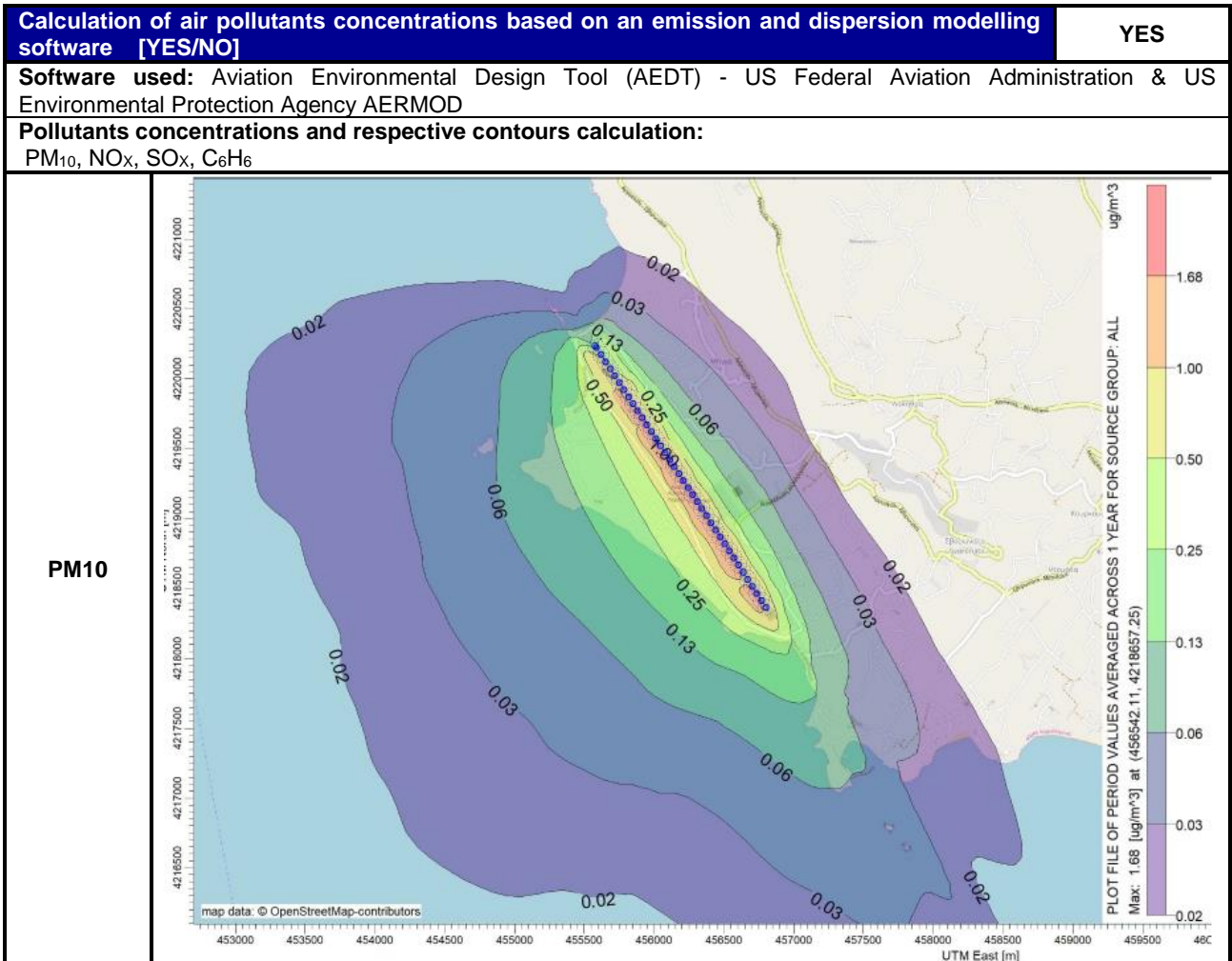
<b>Summary of results:</b>
For the year 2019 no populations or buildings inside official settlement boundaries were found to be exposed to noise levels higher than the limits Lden = 70 dB(A) and Lnight = 60 dB(A).

## 4. AIR QUALITY

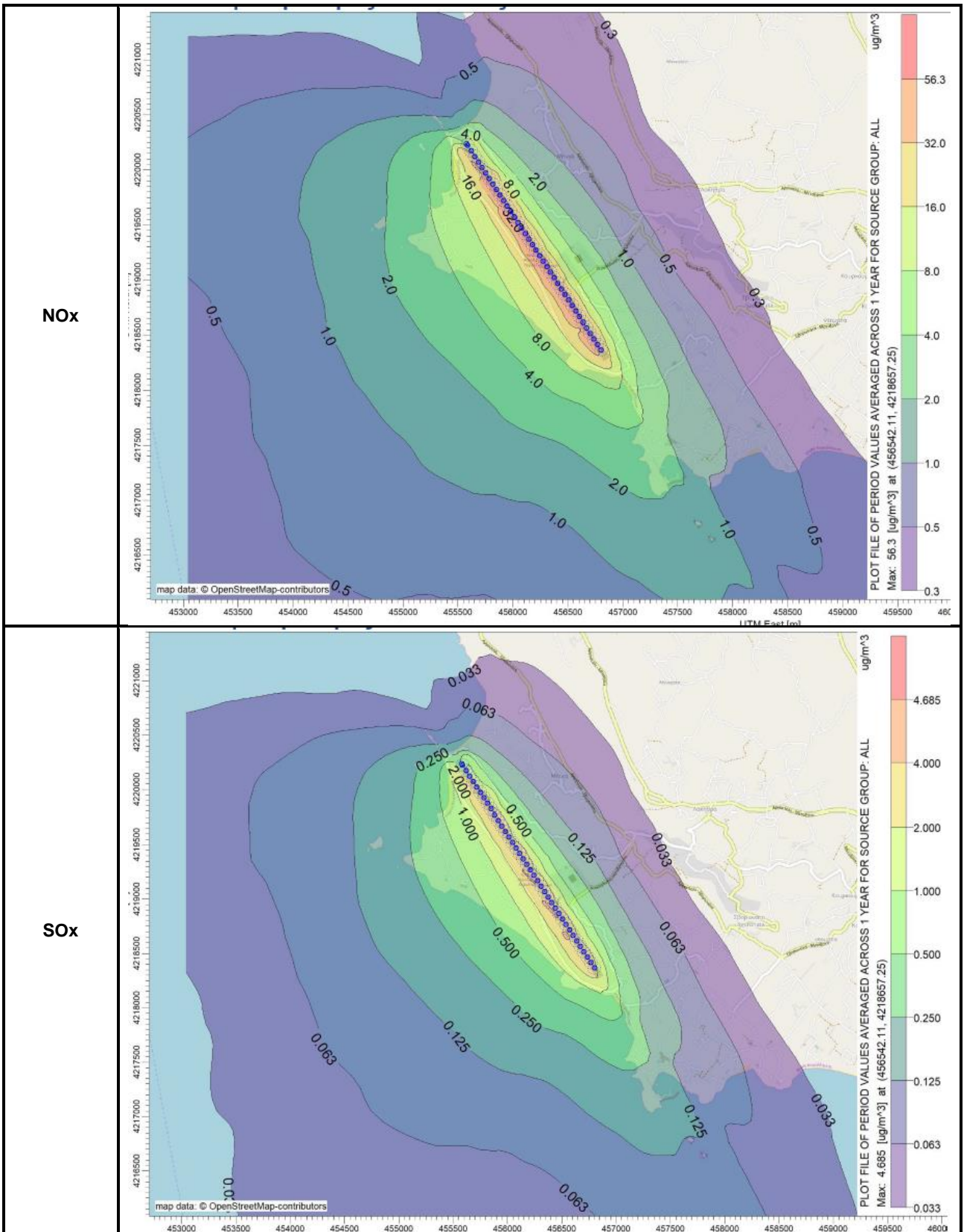
### 4.1. Air quality measurements during the reference year

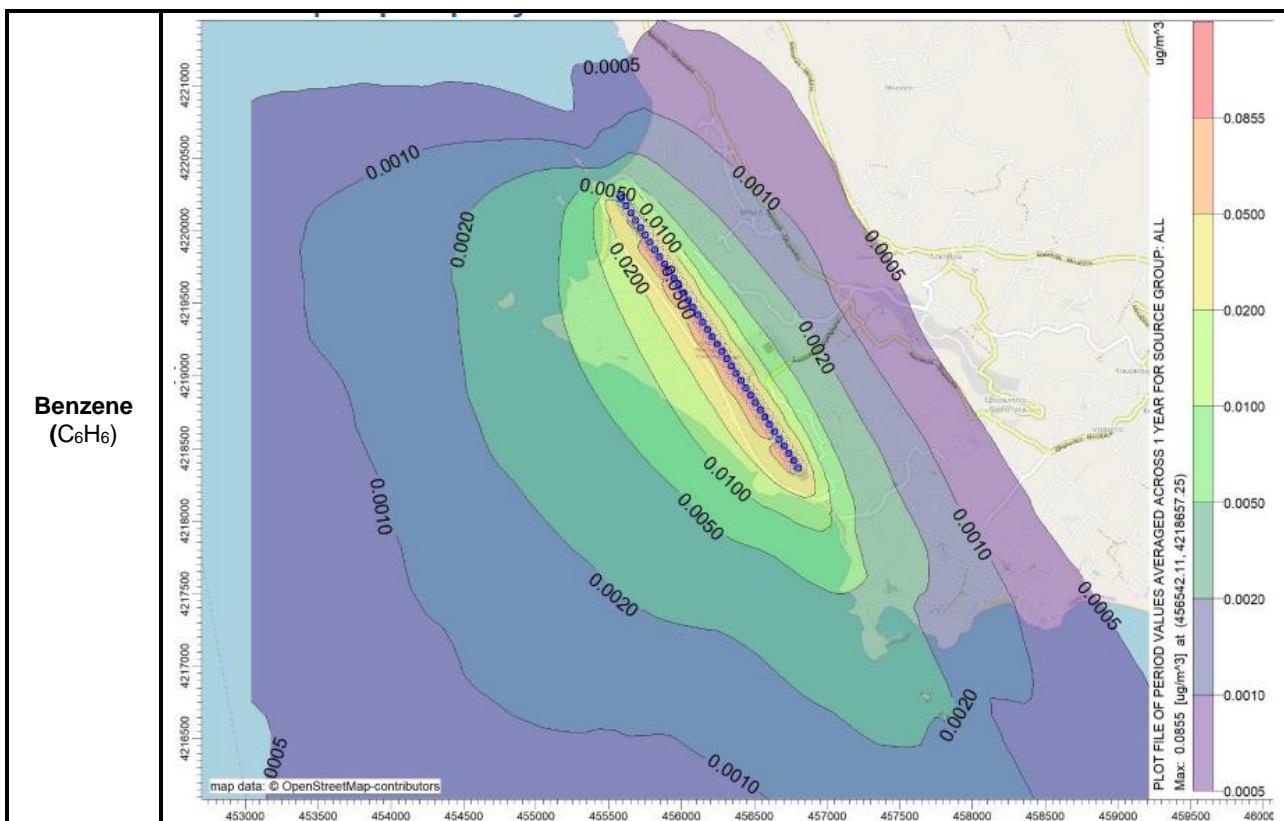
<b>Have air quality measurements at the airport's surrounding area been performed during the reference year? [YES/NO]</b>		<b>NO*</b>
<b>Measurement points</b>		
N/A		
<b>Measurement points coordinates</b>	<b>Measurement points description</b>	
1) Position: --° --' --" N --° --' --" E	N/A	
2) Position: --° --' --" N --° --' --" E	N/A	
<b>Measurement period</b>	N/A	
<b>Pollutants measured: N/A</b>		
<b>Summary of measurement results:</b>		
<p>*Fraport Greece, during the years 2018-2019, has implemented a noise &amp; air pollution monitoring program, according to the Approved Environmental Terms of the airport. The monitoring program included the implementation of special simulation tools in combination with confirmation measurements, of air pollution and noise, in representative positions around the airport.</p> <p>According to the abovementioned monitoring program, which is an annex of the approved Environmental Impact Assessment Study, and based on the results of the measurements for 2018, no air pollution measurements were programmed for the year 2019 at the airport. Instead, a computational approach with the use of air pollution simulation software was planned, the results of which are presented in paragraph 4.2. The results of the 2018 air pollution measurement are available at the respective environmental bulletin, which is published at the company's website.</p> <p>At the end of the two year period of the program, in May 2020, a Technical Evaluation Report was submitted to the Directorate for Climate Change and Air Pollution of the Ministry for Environment &amp; Energy, with proposals for the most suitable in terms of effectiveness, air pollution &amp; noise monitoring program for the years ahead.</p>		

4.2. Air pollutants emission and dispersion modelling









**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 management		
Waste	Collection	Management/Disposal
Recyclables (paper, plastic, metals, glass)	Separate collection by Kefalonia solid waste management body (EDAKI AE OTA)	Disposal at Kefalonia landfill and transshipment for recycling
Residues (Mixed Waste) and Bulky Waste	Collection by Kefalonia solid waste management body (EDAKI AE OTA)	Disposal at Kefalonia landfill

**Σημειώσεις:**

1. Regarding the different categories of the MSW (recyclables, mixed waste), Airport Users handle their waste autonomously. The implementation of a central system by Fraport Greece 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.”

Waste management		
Waste	Collection	Management/Disposal
v. Used tires: Collection and management by alternative management system "ECOELASTIKA S.A."		
3. The total quantities of the produced waste by category resulting from all activities of the airport are recorded by Fraport Greece A and submitted in the Electronic Waste Registry via the Annual Waste Producer Report as provided for by the applicable legislation.		

## 6. ECOSYSTEM AROUND THE AIRPORT

### 6.1. Flora-Fauna

ECOSYSTEM AROUND THE AIRPORT	
<b>Flora</b>	
Are there protected zones of vegetation/habitats in the broader airport area? [YES/NO]	YES
<i>(If YES)</i> Short description: The Kefalonia airport is located outside protected areas as per L. 3937/2011. However, its south part is adjacent to the coastal Special Area of Conservation (SAC) GR2220004 "Coastal marine zone from Argostoli to Vlachata (Kefalonia) and Mounda bay" of the Natura 2000 network.	
<b>Fauna</b>	
Are there protected zones of fauna/birds in the broader airport area? [YES/NO]	YES
<i>(If YES)</i> Short description: The Kefalonia airport is adjacent to the coastal Special Area of Conservation (SAC) GR2220004 "Coastal marine zone from Argostoli to Vlachata (Kefalonia) and Mounda bay" of the Natura 2000 network, where individuals of monk seal, of a dolphin species and of the Caretta caretta turtle are found.	

### 6.2. Ecologically fragile areas

The Kefalonia airport is adjacent to the coastal Special Area of Conservation (SAC) GR2220004 "Coastal marine zone from Argostoli to Vlachata (Kefalonia) and Mounda bay" of the Natura 2000 network.

## 7. WILDLIFE HAZARD MANAGEMENT

Wildlife hazard management	
<b>Extent of the problem</b> (animal species):	<b>Strikes (%)</b>
<i>Larus michahellis</i> (Yellow-legged gull)	33%
<i>Falco tinnunculus</i> (Common kestrel)	17%
<i>Hirundinidae spp.</i> (Swallows)	17%
<i>Anthus campestris</i> (Tawny pipit)	17%
Rabbit	17%
<b>Adopted measures :</b>	
<ul style="list-style-type: none"> <li>• Drainage ditches are periodically checked and if necessary cleaned, to ensure efficient water run-off and, thus, reducing the attractiveness of the airside to the wildlife</li> <li>• Systematic grass cutting at the airside</li> <li>• Fence maintenance</li> <li>• Trapping of mammals (mainly stray cats and dogs) that may be found at the manoeuvring area by the use of trap and under the permit received by the ministry of Environment &amp; Energy "Monitoring and trapping birds and mammals population at the 14 regional airports operated by Fraport Greece" (Permit: 165654/142, 12/2/2018)</li> </ul>	

- Systematic monitoring and census of bird species populations on and off-airport (in a distance of 13km from the airport) and mapping of their habitat and the areas that are attractive to birds
- Seminar awareness video on the identification and safe removal of reptiles and information about the snake species at Kefallinia, under the collaboration with the Lalitsa Non-Profit Association
- Awareness video on the safe handling of stray dogs

**Reference year summary results:**

Hellenic Civil Aviation Authority receives annual reports referring to the risk assessment of the wildlife hazard as well as to the wildlife hazard management at the 12 regional airports operating by Fraport Greece. Aktion Airport and Chania Airport “Ioannis Daskalogiannis” are excluded, in accordance with the Concession Agreement, Annex 20, paragraph 6.3.3 & 6.3.4.

## 8. CULTURAL HERITAGE

Have new cultural heritage properties been discovered during the reporting period? [YES/NO]				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)	
MONTH	Kwh
Total annual electric energy consumption (in Kwh)	1,620,838

### 9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	14	
Number of firefighting vehicles at the airport	5	
Total annual fuel consumption	Diesel (lt)	7,944
	Unleaded gasoline (lt)	261

### 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 cooling is achieved via heat pumps

#### 9.4. Water consumption

Water consumption	
Period	Consumption [m <sup>3</sup> ]
Total annual consumption	11,846

### 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)
	2019
Direct emissions from heating fuel (scope 1)	0.0
Direct emissions from fuel used for fleet vehicles (scope 1)	9.6
Direct emissions from fuel used for firefighting vehicles (scope 1)	12.2
Direct emissions from fuel used for generators (scope 1)	0.0
Indirect emissions from electricity consumption (scope 2)	1,034.1
<b>Total (t)</b>	<b>1,055.9</b>
<b>Kg CO<sub>2</sub> /passenger</b>	<b>1.36</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 planned was certified during the reference year according to ACA (Airport Carbon Accreditation)

### 11. HUMAN CONSUMPTION WATER MONITORING PROGRAM

Human consumption water quality	
Water supply (public water network or airport's boreholes)	Municipal Water & Sewage Company (DEYA) of Kefalonia
Is sampling of the airport's water network performed? [YES/NO]	YES
(if YES) Sampling frequency:	Quarterly
<b>Summary of results:</b> The results of the microbiological and chemical analyses show that the parameters analysed as regards the airport's water network are <b>within the legislative limits</b> defined by the Ministerial Decision Γ1 (δ)/ΓΠ οικ. 67322/ GG 3282 B/19-9-2017 regarding the quality of human consumption water.	

## 12. RAINWATER

RAINWATER (collection, treatment disposal and recipient)		[YES/NO]
Area	Collection/treatment/disposal	
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/NO]		YES
(if YES) 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. According to FG's analyses results and based on the abovementioned specifications, the airport's rainwater environmental condition is adequate and no further treatment measure is necessary.		

## 13. GROUNDWATER MONITORING PROGRAM

Groundwater quality	
Is sampling of the airport's groundwater performed? [YES/NO]	YES
(if YES) 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> Groundwater quality is monitored according to the airport's monitoring program. In addition, the fuel handling companies monitor the quality of groundwater according to the environmental terms. According to FG's analyses results, the environmental monitoring reports of the fuel handlers, and based on the New Dutch List (2009) which is adopted in the absence of relevant national specifications/limits, the environmental condition of the ground water is found adequate and no further decontamination measures are necessary.	

## 14. SEWAGE TREATMENT & DISPOSAL

Sewage	
Sewage network to the municipal waste water treatment plant (WWTP)	NO
Autonomous airport's waste water treatment plant (WWTP)	YES
<b>Short description:</b>	
Blue water	
<b>Collection and disposal:</b>	
Collection in a tank and disposal for further treatment to the airport's WWTP	

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	Secondary treatment
Treatment method	Prolonged ventilation
Disposal of treated wastewater	Irrigation in a tree-planted area
Sludge disposal	Landfill
Sampling frequency of WWTP effluent	Monthly
Parameters analysed	BOD, COD, SS, TN, TP, T. Coliforms, E.Coli, pH, residual Cl <sub>2</sub>
Summary of quality of WWTP effluent	The WWTP effluent observes the limits set out in JMD 145116/2001 and particularly Table 1 of the annex of limited irrigation