

# **Environmental Bulletin of Skiathos**

## **“Alexandros Papadiamantis” Airport (JSI)**

### **Reference year 2018**

Fraport Greece

May 2019



## Version Control

Version	Revision	Description of Revision	Date
0	0		27/05/2019



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## 1. INTRODUCTION

### Location

The airport of Skiathos with IATA code JSI has been operating since 1972 and is located at approximately 1km (north-east) from the town of Skiathos and at a very short distance of approximately 20m from the coastline of the island.

### Administration

The airport administratively belongs to the Municipality of Skiathos, of the Regional Unit of Sporades, Region of Thessaly.

### Environmental licensing

Approved Environmental Terms	
<b>E.T. Decision Reference number</b>	68597/24.06.1999
<b>E.T. Amendment Decision Reference number</b>	Ref. No οικ. 106193/11.07.2008
	Ref. No οικ. 120306/11.01.2010
	Ref. No. 37970/22.12.2017
	Ref. No οικ. 5778/13.03.2018
	Ref. No οικ. 6306/20.03.2018

### 1.1. Airport Basic Data

Airport Basic Data					
Airport name IATA / ICAO	JSI / LGSK				
Airport position – Airport Reference Point (ARP)	Latitude: 39° 10' 39" N Longitude: 23° 30' 13" E				
Altitude:	16.36m				
Number of runways	1				
Operation hours (high season)	Monday-Thursday & Saturday 06:00 – 22:00 Friday & Sunday 06:00 – 23:00				
Runways	Length / Width			Code	
Runway	1,628m x 30m			02/20	
Full length of parallel taxiway	-				
Number of taxiways	3				
Apron capacity	A	B	C	D	E
	-	-	3	1	-
Employees	High season			Low season	
Fraport Greece (FG) employees	18			17	
Employees of other companies	44			9	
Terminal					
➤ Total area (m <sup>2</sup> )	4,600				

Other buildings and service/storage areas	
➤ RFF (m <sup>2</sup> )	Temporarily housed in ISOBOX until completion of new RFF
Parking Areas	
Car parking spaces	130
Bus parking spaces	13
Taxi parking spaces	20

## 1.2. Airport Facilities

### 1.2.1. Fuel Handlers

Number of fuel handler companies				
Number of fuel handler companies operating at the Airport			1	
Installations inside the airport		EKO	GISCO	HAFCO
Environmental Management System (EMS)	(YES/NO)	YES	Not operating at the airport	Not operating at the airport

### 1.2.2. Ground Handlers

Ground Handlers				
Number of ground handler companies operating at the airport			3	
Installations inside the airport		SKYSERV	SWISSPORT	GOLDAIR
Vehicles (total number)		12	16	67
Environmental Management System (EMS)	(YES/NO)	YES	YES	YES

## 2. TRAFFIC DATA STATISTICS

### 2.1. Annual Traffic Data

Annual Traffic Data for the year 2018	
Overall Annual Air Traffic Movements <sup>1</sup>	4,171
Percent of increase or decrease in relation to the previous year	-2.2%
Annual passenger traffic	437,916
Percent of increase or decrease in relation to the previous year	3.3%
Annual cargo transferred (tn)	0
Percent of increase or decrease in relation to the previous year	0
Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	No. of flights

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

AT45	262
DH8D	225
AT46	128
AT75	120
A320	81
AT43	68
AT72	56
B9C	36
A32A	20
A319	19
Other	200
<b>Prevailing aircraft types for international flights</b>	
<b>Aircraft type</b>	<b>No. of flights</b>
B73H	372
A320	347
B737	325
A32B	324
B75W	266
B712	252
A321	200
B738	142
B733	118
F70	90
Other	520

**2.2. High season traffic data**

<b>High season traffic data (June-September)</b>	
Highest traffic month	August
Air traffic movements during the month with highest traffic	1,055
Air traffic movements daily average number during the month with highest traffic	34


**2.3. Low season traffic data**

<b>Low season traffic data (October-May)</b>	
Lowest traffic month	February
Air traffic movements during the month with lowest traffic	40
Air traffic movements daily average number during the month with lowest traffic	3





### 3. AIRCRAFT NOISE

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

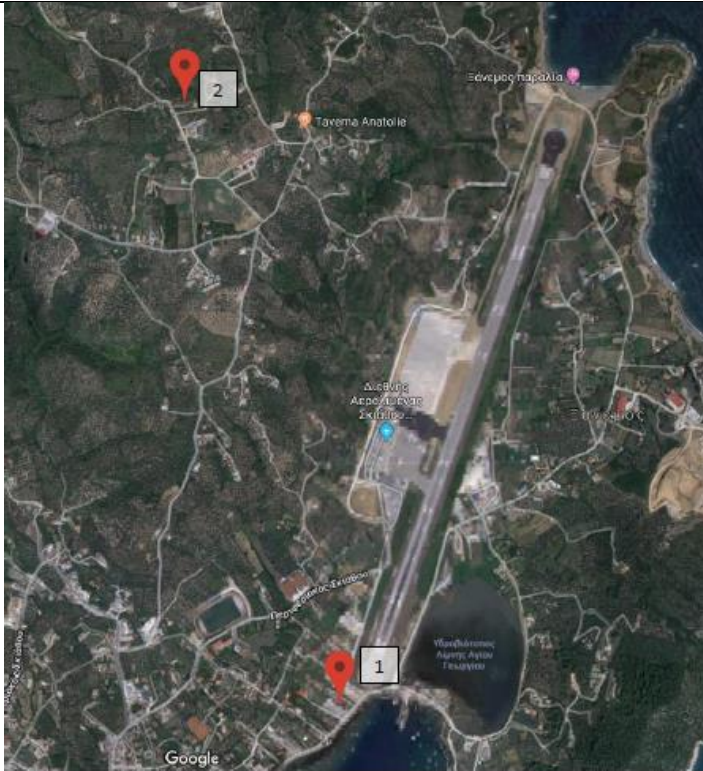
Have noise measurements at the airport's surrounding area been performed during the reference year? [YES/NO]		YES
<b>Measurement points</b>		
		
<b>Measurement points coordinates</b>	<b>Measurement points description</b>	
1) Position: 39° 11' 06" N 23° 29' 53" E	Kalivia area, northwest of the runway, on the roof of a restaurant. Affected by arrivals RWY 20 and departures RWY 02.	
2) Position: 39° 09' 54" N 23° 29' 30" E	Paraliakos area, to the south-west of the runway, at the balcony of a hotel very close to the port. Affected by arrivals RWY 02 and departures RWY 20.	
3) Position: 39° 09' 38" N 23° 30' 09" E	At the roof of a hotel in the peninsula to the south-east of the runway. Affected by arrivals RWY 02 and departures RWY 20.	
<b>Measurement period</b>	14.09.2018 – 15.09.2018	
<b>Noise indicators</b>	Lden, Night	
<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

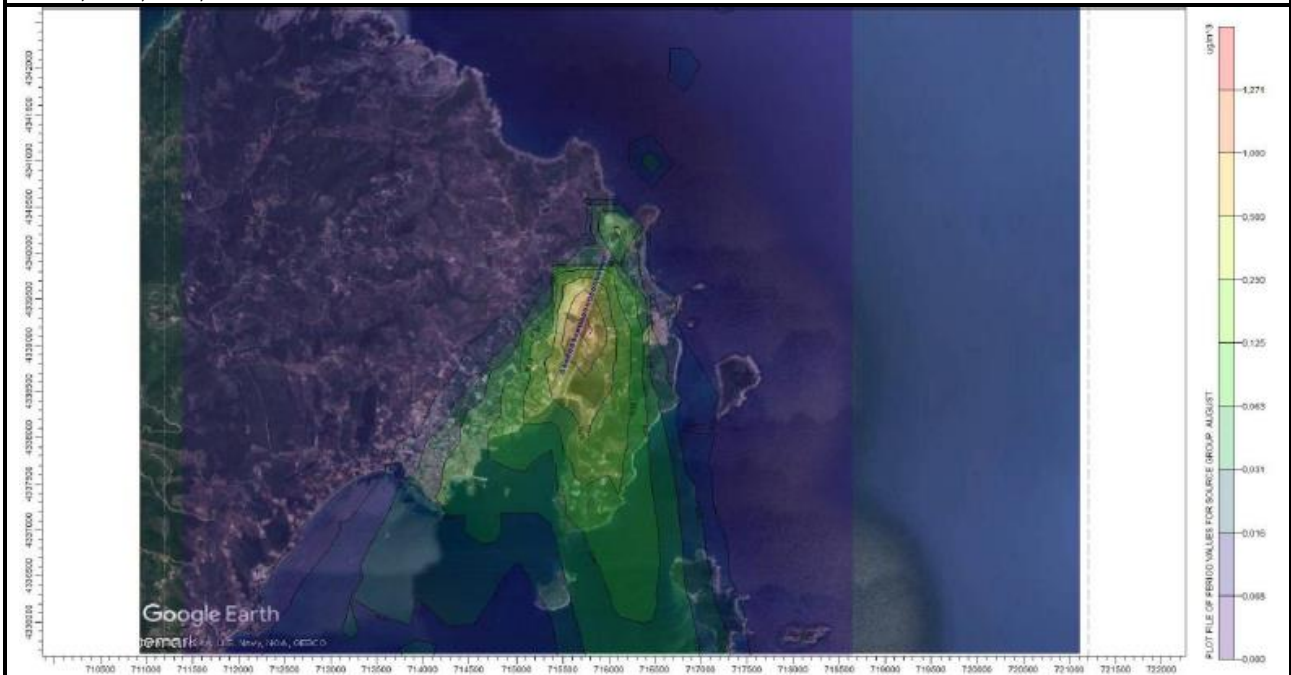
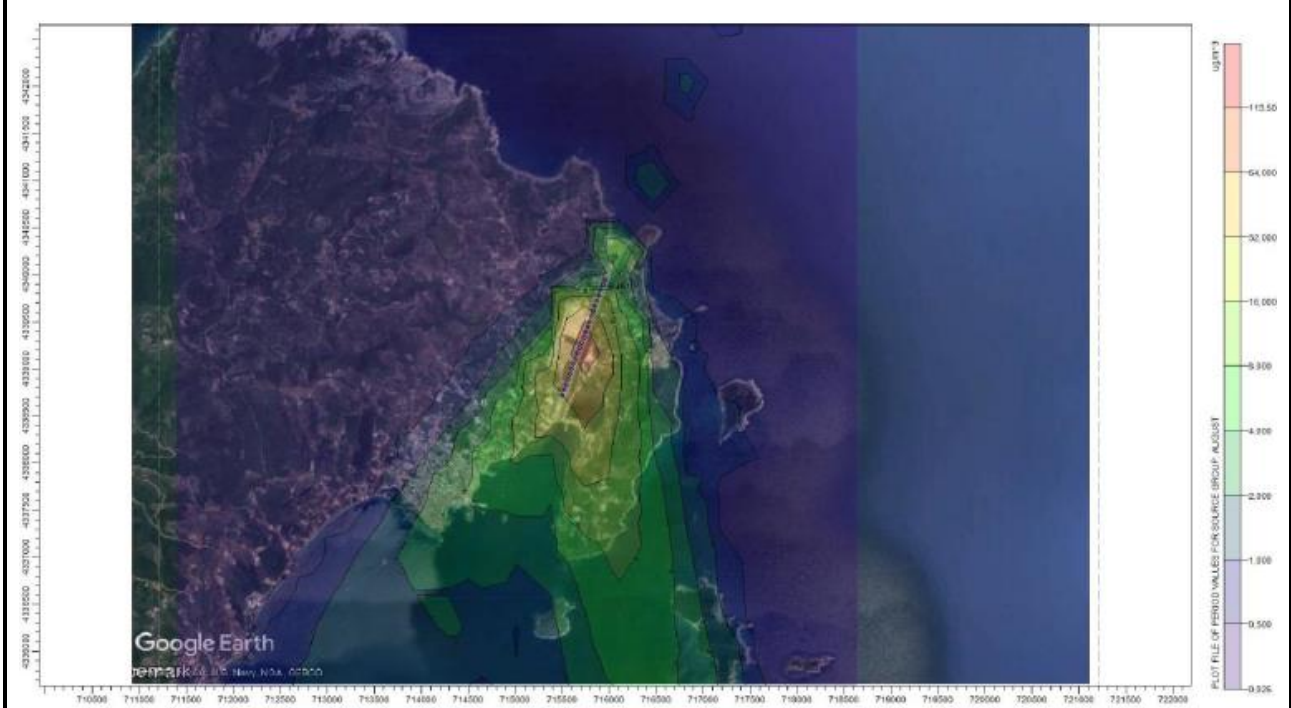
<b>Aircraft noise levels calculation based on simulation software [YES/NO]</b>		<b>YES</b>
<b>Software used:</b> IMMI Noise Prediction Software		
<b>Noise indicators and respective contours calculation:</b>		L <sub>den</sub> , L <sub>night</sub>
 <p style="text-align: center;"><b>L<sub>den</sub></b></p>	 <p style="text-align: center;"><b>L<sub>night</sub></b></p>	
<b>Summary of results:</b>		
For the year 2018 no populations or buildings within residential areas were found to be exposed to noise levels higher than the limits L <sub>den</sub> = 70 dB(A) and L <sub>night</sub> = 60 dB(A).		

## 4. AIR QUALITY

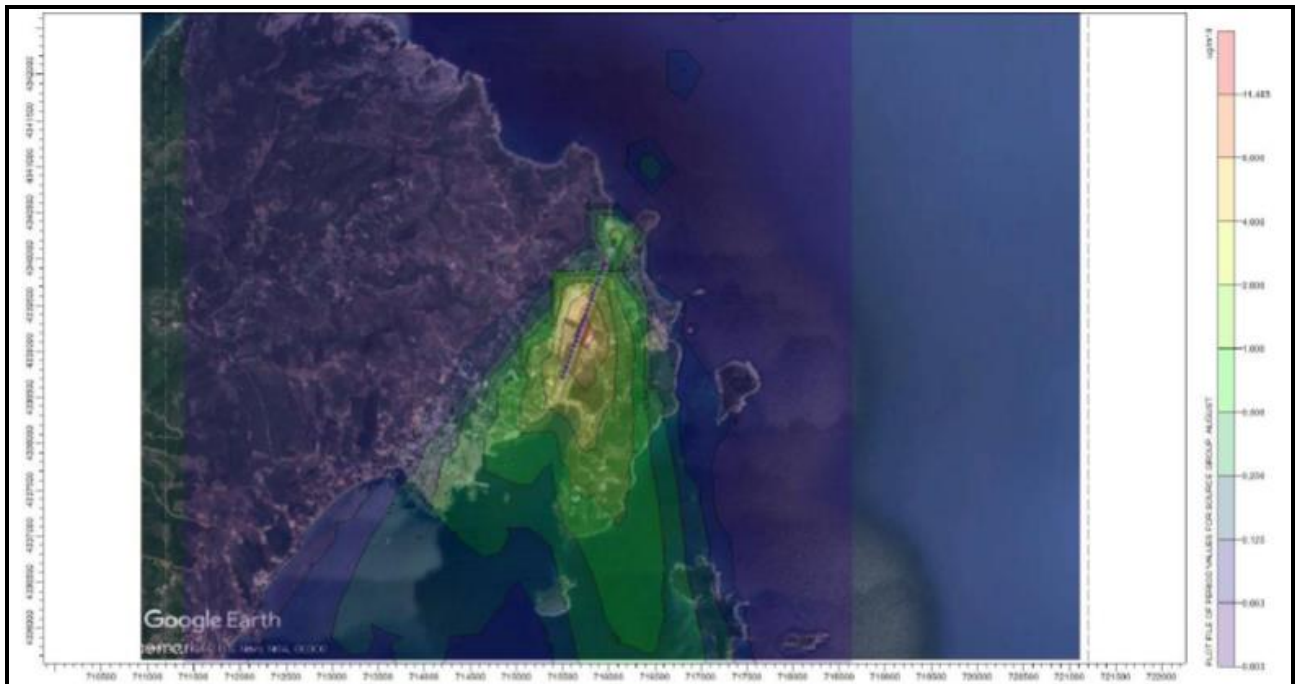
### 4.1. Air quality measurements during the reference year

Have air quality measurements at the airport's surrounding area been performed during the reference year? [YES/NO]		YES
<b>Measurement points</b>		
		
Measurement points coordinates	Measurement points description	
1) Position: --° --' --" N --° --' --" E	At a distance of 200 meters approximately from the end of the south section of the runway	
2) Position: --° --' --" N --° --' --" E	"Kalyvia" area to the west and at a distance of approximately 1,200 meters from the end of the runway.	
Measurement period	09.07.2018 – 16.07.2018.	
<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>		
<b>Summary of measurement results:</b>		
<p>Air quality is monitored according to the airport's monitoring program.</p> <p>No exceedance of the air quality limits was observed.</p> <p>It is noted that some individual exceedances for the O<sub>3</sub> pollutant mean values were recorded. As a result of its dependency on the solar radiation, ozone does not show a homogenous trend during the year. Increased ozone concentrations are recorded usually at the end of spring and beginning of summer, especially during the days with high sunlight. Therefore these momentary exceedances are considered to be individual occurrences not related to the airport's operation.</p>		

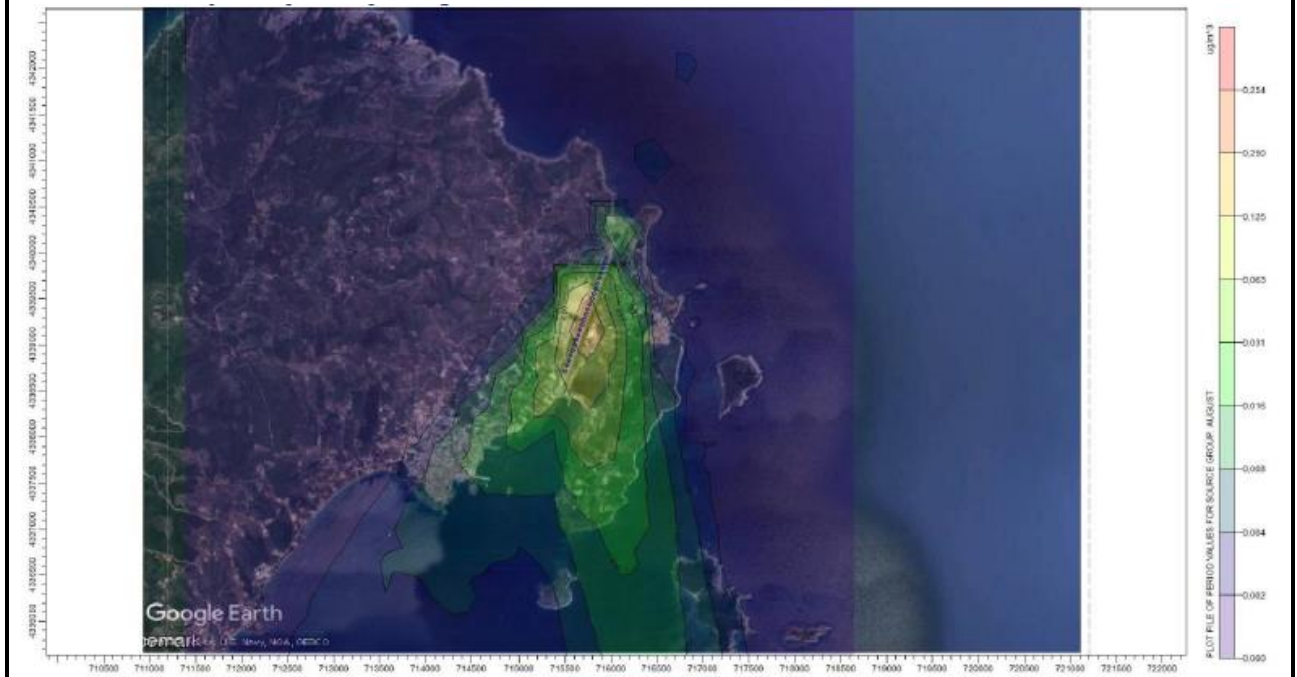
4.2. Air pollutants emission and dispersion modelling

<p><b>Calculation of air pollutants concentrations based on an emission and dispersion modelling software [YES/NO]</b></p>	<p><b>YES</b></p>
<p><b>Software used:</b> Emissions and Dispersion Modeling System (EDMS) - US Federal Aviation Administration &amp; US EPA AERMOD</p>	
<p><b>Pollutants concentrations and respective contours calculation:</b> PM<sub>10</sub>, NO<sub>x</sub>, SO<sub>x</sub>, C<sub>6</sub>H<sub>6</sub></p>	
	
<p><b>PM10</b></p>	
	
<p><b>NOx</b></p>	





**SOx**



**Benzene**

**Summary of results:**

Air quality is monitored according to the airport's monitoring program.

No exceedance of the air quality limits was observed.

It is noted that the simulation of the ozone cycle is a difficult procedure the results of which are greatly dependent from the meteorological conditions and solar radiation data used in the photochemical model. The simulation of the specific pollutant is not possible.

## 5. WASTE MANAGEMENT

Waste management		
Waste	Collection	Management/Disposal
<b>Municipal solid waste</b>	Collection and emptying of garbage bins by an FG contractor inside the airport	Collection and management by the Municipality of Skiathos
<b>Recyclables</b>	Collection and emptying of garbage bins by an FG contractor inside the airport	Collection and management by the Municipality of Skiathos
<b>Used oils</b>	Collection by licensed collector "Cytop S.A."	Collection and management by licensed collector "Cytop S.A."
<b>Electric &amp; electronic waste</b>	Collection by alternative management system "Appliances recycling S.A."	Collection and management by alternative management system "Appliances recycling S.A."
<b>Accumulators</b>	Collection by alternative management system "Re-Battery S.A."	Collection and management by alternative management system "Re-Battery S.A."
<b>Small batteries</b>	Collection in special bins of the company AFIS S.A. inside the airport	Collection and management by alternative management system "AFIS S.A."
<b>Used tires</b>	Collection by alternative management system "ECOELASTIKA S.A."	Collection and management by alternative management system "ECOELASTIKA S.A."

Notes:
<ol style="list-style-type: none"> <li>1. Ground handlers and fuel handlers manage all the categories of waste they produce independently</li> <li>2. The total quantities of the produced waste by category resulting from all activities of the airport are recorded by Fraport Greece B and submitted in the Electronic Waste Registry via the Annual Waste Producer Report as provided for by the applicable legislation.</li> </ol>

## 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]	NO
(If YES) Short description:	
<b>Fauna</b>	
Are there protected zones of fauna/birds in the broader airport area? [YES/NO]	NO
(If YES) Short description:	

### 6.2. Ecologically fragile areas

The airport is outside the limits of the protected areas included in the National Protected Areas Network.

On the island of Skiathos there is only one area included in the NATURA 2000 network. The said area is called “Skiathos: Koukounaries and Broader Sea Area” with code GR1430003 which is listed as Site of Community Importance (SCI) and Special Area of Conservation (SAC), according to Directive 92/43/EC. The said area is at a distance of approximately 8.5km from the airport.

## 7. WILDLIFE HAZARD MANAGEMENT

Wildlife hazard management	
<b>Extent of the problem</b> (bird species):	<b>Birdstrikes</b>
<i>Corvus cornix</i> (Crow)	2
<i>Phasianus colchicus</i> (Common pheasant)	1
<i>Larus michahellis</i> (Herring gull)	3
<b>Adopted measures :</b>	
The following reports have been submitted to the Department of Airports Operation of the Hellenic Civil Aviation Authority:	
<ol style="list-style-type: none"> <li>1. “Wildlife hazard risk identification and management, Fraport Regional Airports of Greece A S.A., Reference period: 11 April - 31 December 2017”</li> <li>2. “Wildlife hazard risk identification and management, Fraport Regional Airports of Greece B S.A., Reference period: 11 April - 31 December 2017”. These reports provide information about: <ul style="list-style-type: none"> <li>• Bird and other animal species management is done by FG in all airports with the exception of Aktion and Chania airports where wildlife hazard management belongs to the Hellenic Air Force</li> <li>• Birdstrikes or other species strikes on aircrafts data refer to the period between April 11-December 31 2017</li> <li>• Birdstrikes or other species strikes on aircraft risk evaluation (strikes indicator is taken under account (birdstrikes number to the total ATMs)</li> <li>• Wildlife hazard management measures</li> </ul> </li> </ol>	
<b>Reference year summary results:</b>	
The number of strikes of birds or other animals to aircrafts cannot reduce the population of even endangered species, since only a limited number can be involved in a strike event (stochastic events). The loss of a limited number of animals cannot change the population status of the species.	

## 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
January	43,967.00
February	45,265.60
March	50,316.60
April	43,094.80
May	76,269.00
June	126,203.80
July	160,431.80
August	175,126.60
September	127,027.80
October	51,930.40
November	38,045.00
December	57,185.60
<b>Total annual electric energy consumption (in Kwh)</b>	<b>994,864.00</b>

### 9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	9	
Number of firefighting vehicles at the airport	2	
Total annual fuel consumption	Diesel (lt)	6,645.21
	Unleaded gasoline (lt)	204.41

### 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> )	-

### 9.4. Water consumption

Water consumption	
Period	Consumption [m <sup>3</sup> ]
Total annual consumption	7,000*

\*Estimation



## 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)
	2018
Direct emissions from heating fuel (scope 1)	0.0
Direct emissions from fuel used for fleet vehicles (scope 1)	9.7
Direct emissions from fuel used for firefighting vehicles (scope 1)	8.5
Direct emissions from fuel used for generators (scope 1)	1.9
Indirect emissions from electricity consumption (scope 2)	605.9
<b>Total (t)</b>	<b>626.0</b>
<b>Kilos CO<sub>2</sub>/ passenger</b>	<b>1.43</b>

### Notes:

Fraport Greece B 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 ISO 14064 regarding greenhouse gas emission by an independent certification body

## 11. HUMAN CONSUMPTION WATER MONITORING PROGRAM

Human consumption water quality	
Water supply (public water network or airport's boreholes)	Airport boreholes
Is sampling of the airport's water network performed? <i>[YES/NO]</i>	YES
<i>(if YES)</i> Sampling frequency:	Quarterly
<b>Summary of results:</b> The results of the microbiological and chemical analyses of the water supplied from the airport boreholes show that the water parameters analysed 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		YES

### 13. GROUNDWATER MONITORING PROGRAM

Groundwater quality	
Is sampling of the airport's groundwater performed? <b>[YES/NO]</b>	YES
<b>(if YES)</b> Sampling frequency:	According to the frequency specified by the ETs.
<b>Parameters analysed:</b> pH, Conductivity, DO, TPH, BTEX, Heavy metals,	
<b>Summary of results:</b> Groundwater quality is monitored according to the airport's monitoring program. Due to the low level of the aquifer it was not possible to take underwater samples	

### 14. SEWAGE TREATMENT & DISPOSAL

Sewage	
Sewage network to the municipal waste water treatment plant (WWTP)	YES
Autonomous airport's waste water treatment plant (WWTP)	NO
<b>Short description:</b>	
<b>Blue water</b>	
<b>Collection and disposal:</b> Collection in septic 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	N/A
Treatment method	N/A
Disposal of treated wastewater	N/A
Sludge disposal	N/A
Sampling frequency of WWTP effluent	N/A
Parameters analysed	N/A
Summary of quality of WWTP effluent	N/A