Environmental Bulletin of Skiathos

"Alexandros Papadiamantis" Airport (JSI)

Reference year 2019

Fraport Greece

May 2020

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Version Control

Version	Revision	Description of Revision	Date
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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	
E.T. Decision Reference number	68597/24.06.1999
E.T. Amendment Decision Reference number	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 (summer)	00:01 - 24:00				
Operation hours (winter)	Monday-Thursday & Saturday 09:30 - 17:30 Friday & Sunday 09:30 - 19:00				
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 (31.8.2019)**			**Low season (30.11.2019)**	
Fraport Greece (FG) employees	20			19	
Employees of other companies	351			140	

Terminal	
➢ Total area **(m^2)**	4,600
Other buildings and service/storage areas	
➢ RFF **(m^2)**	1,198
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	57
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[1]	4,179
Percent of increase or decrease in relation to the previous year	0.5%
Annual passenger traffic	446,219
Percent of increase or decrease in relation to the previous year	1.9%
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**
DH8D	463

[1] Military and training flights not included.

AT45	186
AT72	177
AT75	122
AT46	80
AT43	52
A319	18
DH8A	14
SR2	12
PA2	8
Other	129

Prevailing aircraft types for international flights	
Aircraft type	**No. of flights**
B73H	320
A320	302
A32B	282
B75W	238
B73W	216
B738	216
A319	214
B712	212
A321	208
A318	96
Other	614

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	1,034
Air traffic movements daily average number during the month with highest traffic	33

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	38
Air traffic movements daily average number during the month with lowest traffic	1

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

Measurement points

Measurement points coordinates	**Measurement points description**
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 balkony 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.
Measurement period	24.06.2019 – 25.06.2019
Noise indicators	Lden, Lnight

Summary of measurement results:

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

Aircraft noise levels calculation based on simulation software [YES/NO]	**YES**
Software used: IMMI Noise Prediction Software (CNOSSOS EU assessment method based on Directive 2015/996/EU)	
Noise indicators and respective contours calculation:	L_{den}, L_{night}

L_{den}

L_{night}

Summary of results:

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

Have air quality measurements at the airport's surrounding area been performed during the reference year? [YES/NO]	**NO***
Measurement points	
N/A	

Measurement points coordinates	**Measurement points description**
1) Position: --° --' --" N --° --' --" E	N/A
2) Position: --° --' --" N --° --' --" E	N/A
Measurement period	N/A

Pollutants measured: N/A

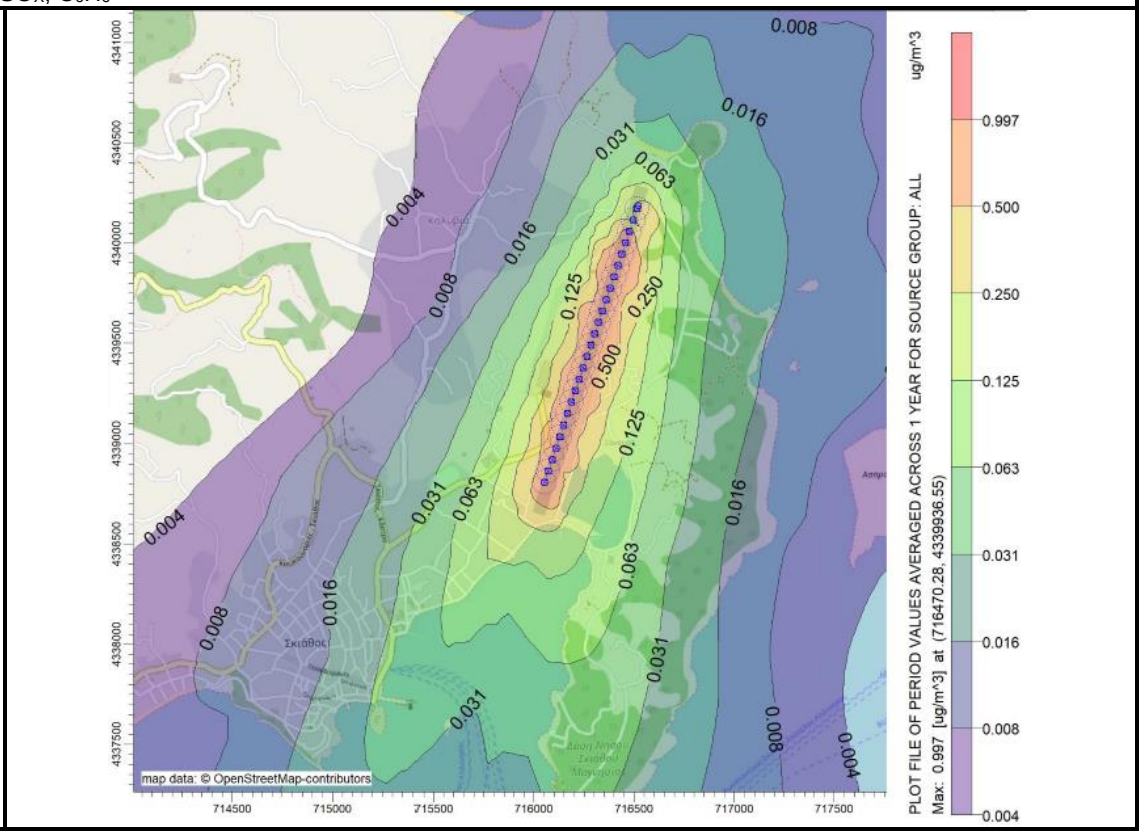
Summary of measurement results:

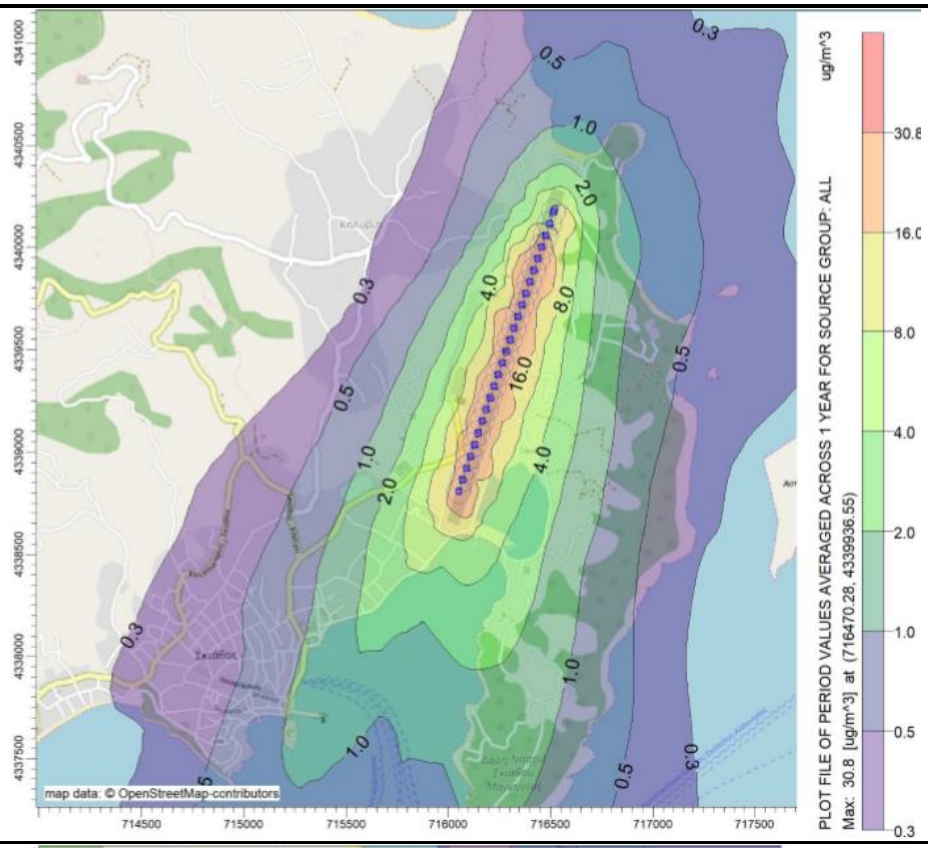
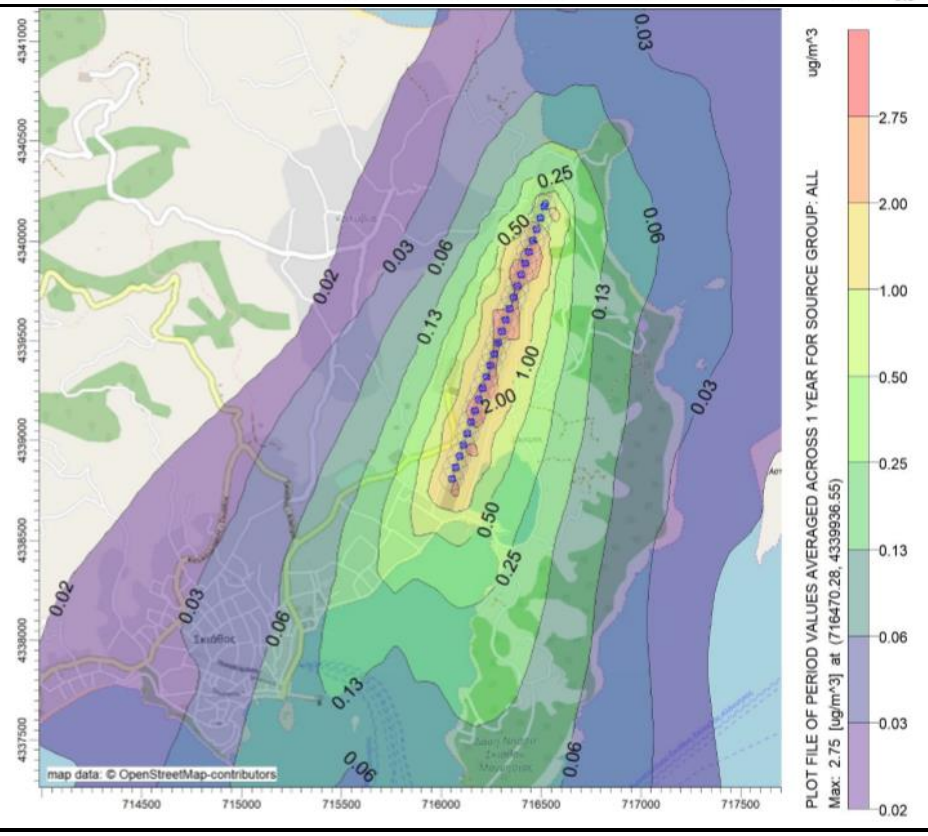
*Fraport Greece, during the years 2018-2019, has implemented a noise & air pollution monitoring program, according to the Approved Environmental Terms of the airport. The monitoring program included the implementation of special simulation tools in combination with confirmation measurements, of air pollution and noise, in representative positions around the airport.

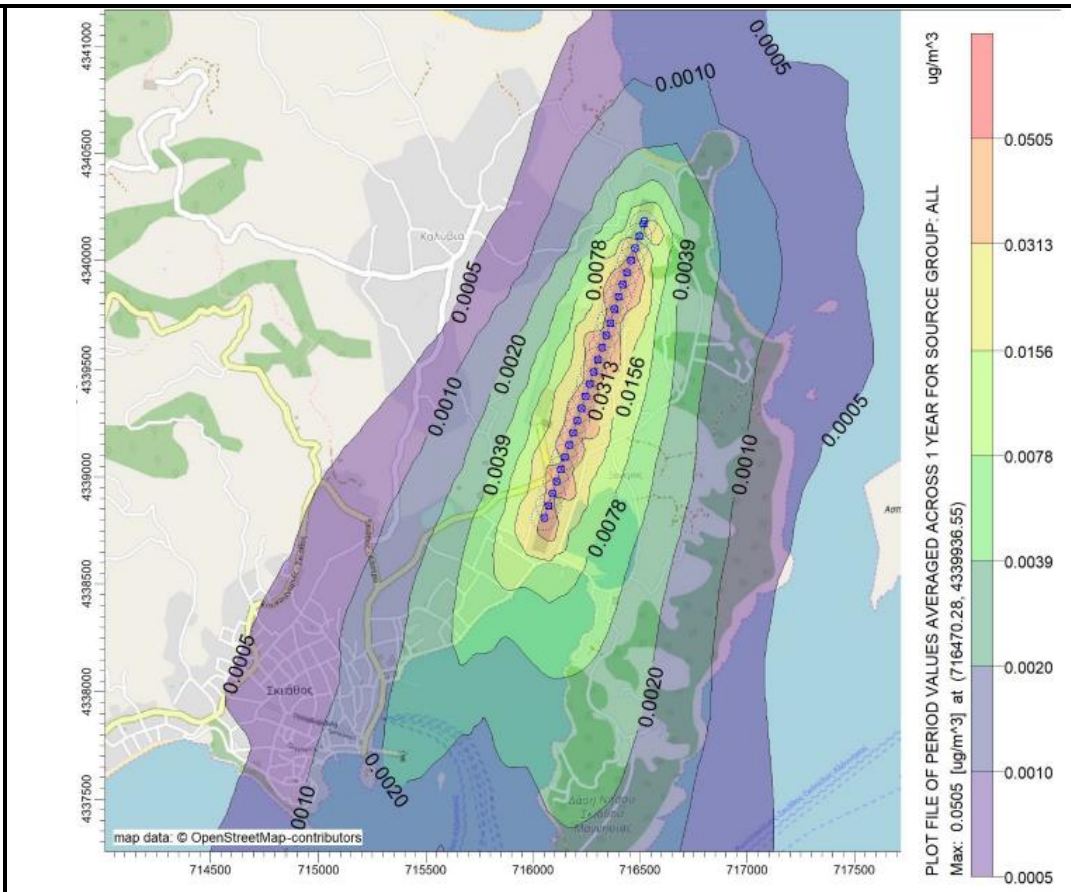
According to the abovementioned monitoring program, which is an annex of the approved Environmental Impact Assessment Study, and based on the results of the measurements for 2018, no air pollution measurements were programmed for the year 2019 at the airport. Instead, a computational approach with the 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.

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 & Energy, with proposals for the most suitable in terms of effectiveness, air pollution & noise monitoring program for the years ahead.

4.2. Air pollutants emission and dispersion modelling

Calculation of air pollutants concentrations based on an emission and dispersion modelling software [YES/NO]	**YES**
Software used: Aviation Environmental Design Tool (AEDT) - US Federal Aviation Administration & US Environmental Protection Agency AERMOD	
Pollutants concentrations and respective contours calculation: PM_{10}, NO_X, SO_X, C_6H_6	
PM10	

NOx	 map data: © OpenStreetMap-contributors PLOT FILE OF PERIOD VALUES AVERAGED ACROSS 1 YEAR FOR SOURCE GROUP: ALL Max: 30.8 [ug/m^3] at (716470.28, 4339936.55) ug/m^3 30.8 16.0 8.0 4.0 2.0 1.0 0.5 0.3
SOx	 map data: © OpenStreetMap-contributors PLOT FILE OF PERIOD VALUES AVERAGED ACROSS 1 YEAR FOR SOURCE GROUP: ALL Max: 2.75 [ug/m^3] at (716470.28, 4339936.55) ug/m^3 2.75 2.00 1.00 0.50 0.25 0.13 0.06 0.03 0.02

Benzene (C_6H_6)	
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 the Municipality of Skiathos	Disposal at material recovery facility for recycling
Residues (Mixed Waste) and Bulky Waste	Collection by the Municipality of Skiathos	Disposal in 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."

Waste management		
Waste	**Collection**	**Management/Disposal**
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 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	
Flora	
Are there protected zones of vegetation/habitats in the broader airport area? ***[YES/NO]***	NO
(If YES) Short description:	
Fauna	
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	
Extent of the problem (animal species):	**Strikes (%)**
Larus michahellis (Yellow-legged gull)	14%
Apus apus (Common swift)	14%
Hirundo rustica (Barn swallow)	14%
Passer domesticus (House sparrow)	14%
Phasianus colchicus (Pheasant)	14%
Turkey	14%
Hare	14%

Adopted measures :
• 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 • Systematic grass cutting at the airside • Fence maintenance • 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 & Energy "*Monitoring and trapping birds and mammals population at the 14 regional airports operated by Fraport Greece*" (Permit: 165654/142, 12/2/2018) • 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 Skiathos, 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**

(if YES) 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)	1,525,702

9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	8	
Number of firefighting vehicles at the airport	3	
Total annual fuel consumption	Diesel (lt)	7,983
	Unleaded gasoline (lt)	150

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 cooling is achieved via heat pumps

9.4. Water consumption

Water consumption	
Period	***Consumption* [m^3]**
Total annual consumption	5.000*

*Estimation

10. GREENHOUSE GAS EMMISIONS & CARBON FOOTPRINT

Greenhouse gas emissions that were included in the carbon footprint calculation are the CO_2 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)
	2019
Direct emissions form 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)	12.0
Direct emissions from fuel used for generators (scope 1)	3.5
Indirect emissions from electricity consumption (scope 2)	973.4
Total (t)	**998.5**
Kilos CO_2/ passenger	2.24

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 was certified during the reference year 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? ***[YES/NO]***	YES
(if YES) Sampling frequency:	Quarterly
Summary of results: The results of the microbiological and chemical analyses of the water supplied from the airport boreholes show that the water parameters analysed are **within the legislative limits** 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
Rainwater quality		
Is sampling of the airport's rainwater performed? **[YES/NO]**		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. 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
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: Groundwater quality is monitored according to the airport's monitoring program. The results of the analyses from the airport's borehole indicate that the water is suitable for human consumption and no pollution is present. Due to the high depth of the aquifer it was not possible to take water samples from the fuel handler's monitoring boreholes. According to the fuel handler's environmental monitoring reports and based on the limits set in various European countries in the absence of legislative EU limits and relevant national specifications/limits, the environmental condition of soil-gas is adequate and no remediation measures are necessary	

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
Short description:	
Blue water	
Collection and disposal: Collection in septic tank and disposal to the municipal sewage network.	
Waste water treatment plant description (where applicable)	
Description of characteristics and condition of the airport's WWTP including possible problems. Type and frequency of the effluent quality measurements	
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