

Environmental Bulletin of Thessaloniki “Makedonia” Airport (SKG)

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

“Macedonia” airport of Thessaloniki (SKG) is located in the coastal area of Micra, to the south east, and at a distance of 16 Km from the centre of the city of Thessaloniki. It is 2 km away from the old National Road Thessaloniki - Chalkidiki, in the broader area that is known as “Livadi”. The airport occupies approximately 1408 acres (5,700 stremmas) and is surrounded to the north-east by the Anthemoundas stream, to the south - south east by the National Road Thessaloniki - Michaniona, to the west - south west by areas of rural and semi-urban use and finally to the north - north west by the sea.

Administration

The airport administratively belongs to the Municipality of Thermi of the Regional Unit of Thessaloniki and more specifically to the community of Neo Rysio of the Department of Thessaloniki.

Environmental licensing

Approved Environmental Terms	
E.T. Decision Reference number	105214/17.11.2000 E.T. Amendment Decision Reference number
	125887/08.05.2007
	204012/05.10.2011
	12763/10.03.2016
	9322/9.05.2018

1.1. Airport Basic Data

Airport Basic Data					
Airport name IATA / ICAO	SKG / LGTS				
Airport position – Airport Reference Point (ARP)	Latitude: 40° 31' 11" N Longitude: 22° 58' 15" E				
Altitude:	7m				
Number of runways	2 (1 in operation, and 1 under construction)				
Operation hours (winter & summer)	0:01-24:00				
Runways	Length/Width			Code	
Runway	2,440 m x 50 m			10/28	
Runway	2,410 m x 60 m			16/34	
Full length of parallel taxiway	(ALPHA) 2,410 m, (FOXTROT) 2,440 m				
Number of taxiways	12				
Apron capacity	A	B	C	D	E
	-	-	16	2	1
Employees	High season (31.8.2019)			Low season (30.11.2019)	
Fraport Greece (FG) employees	69			68	
Employees of other companies	3491			3256	
Terminal					
➤ Total area (m ²)					26,527

Other buildings and service/storage areas	
➤ RFF (m ²)	1,056
Parking Areas	
Car parking spaces	2,000
Bus parking spaces	110
Taxi parking spaces	200

1.2. Airport Facilities

1.2.1. Fuel Handlers

Number of fuel handler companies			
Number of fuel handler companies operating at the Airport			3
Installations inside the airport	EKO	GISCO	HAFCO
Environmental Management System (EMS) (YES/NO)	YES	YES	YES

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)	44	53	287
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	55,738
Percent of increase or decrease in relation to the previous year	0.9%
Annual passenger traffic	6,897,057
Percent of increase or decrease in relation to the previous year	3.1%
Annual cargo transferred (tn)	5,145
Percent of increase or decrease in relation to the previous year	-5.5%
Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	No. of flights
A320	8,371
DH8D	2,131

¹ Military and training flights not included.

AT72	1,606
A319	1,224
AT45	1,060
B73H	969
A32A	909
A321	817
B733	567
AT43	538
Other	2,474
Prevailing aircraft types for domestic flights	
Aircraft type	No. of flights
B73H	10,133
A320	9,468
A319	3,397
B738	2,074
A32A	1,541
A321	1,435
B733	893
A32B	409
AT73	348
B73C	343
Other	5,031

2.2. High season traffic data

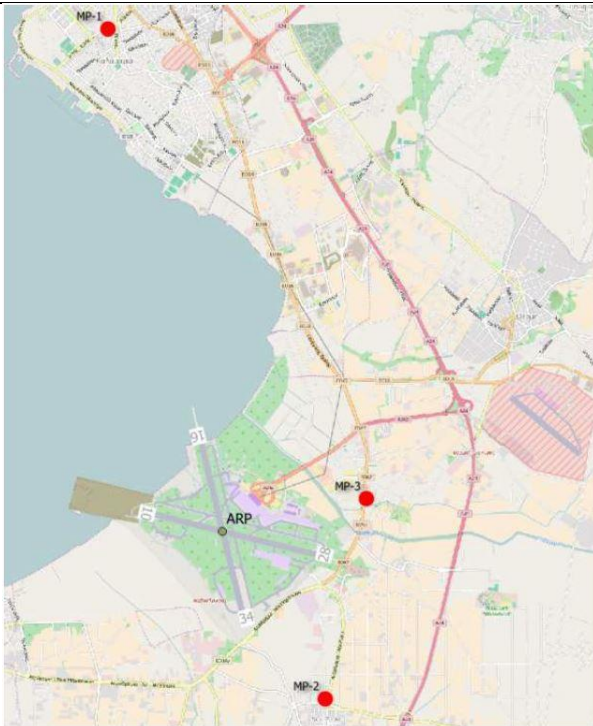
High season traffic data (June-September)	
Highest traffic month	August
Air traffic movements during the month with highest traffic	6,530
Air traffic movements daily average number during the month with highest traffic	211

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	3,086
Air traffic movements daily average number during the month with lowest traffic	110

3. AIRCRAFT NOISE

3.1. Noise measurements during the reference year

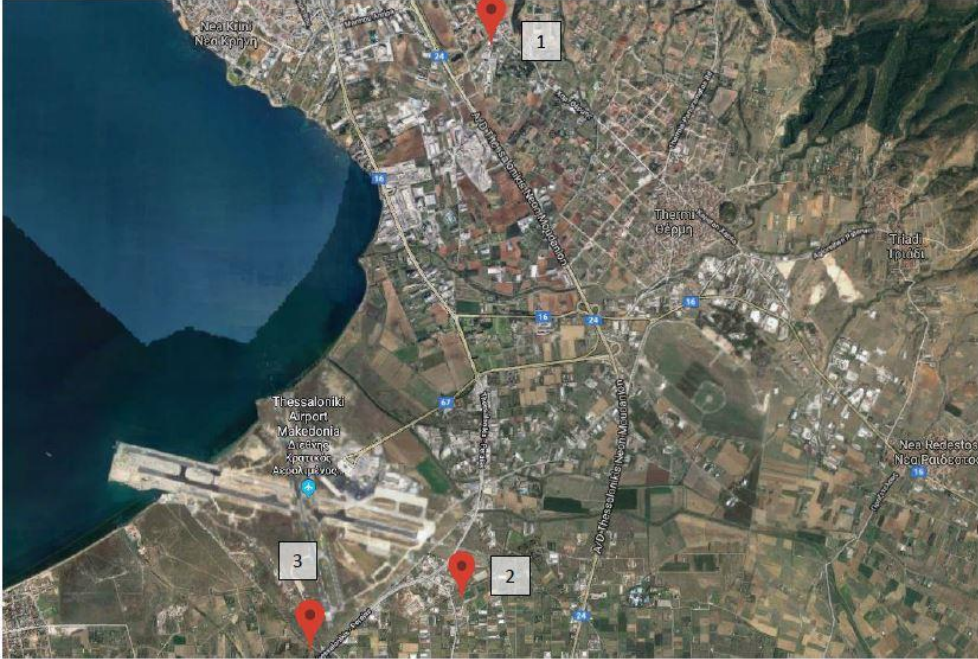
Have noise measurements at the airport's surrounding area been performed during the reference year? [YES/NO]		YES
Measurement points		
		
Measurement points coordinates	Measurement points description	
1) Position: 40° 35' 02" N 22° 57' 06" E	Kalamaria area, to the north of the runway on the roof of a public building. Affected by arrivals in runway 16 and departures from runway 34.	
2) Position: 40° 29' 54" N 22° 59' 17" E	Neo Rysio area, to the south-east of runway 16/34 on the roof of a public building. Affected by departures from runway 16 and arrivals in runway 32.	
3) Position: 40° 31' 26" N 22° 59' 42" E	On the roof of a school to the west of the runway. Affected by all procedures to all directions.	
Measurement period	26.06.2019 – 27.06.2019	
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

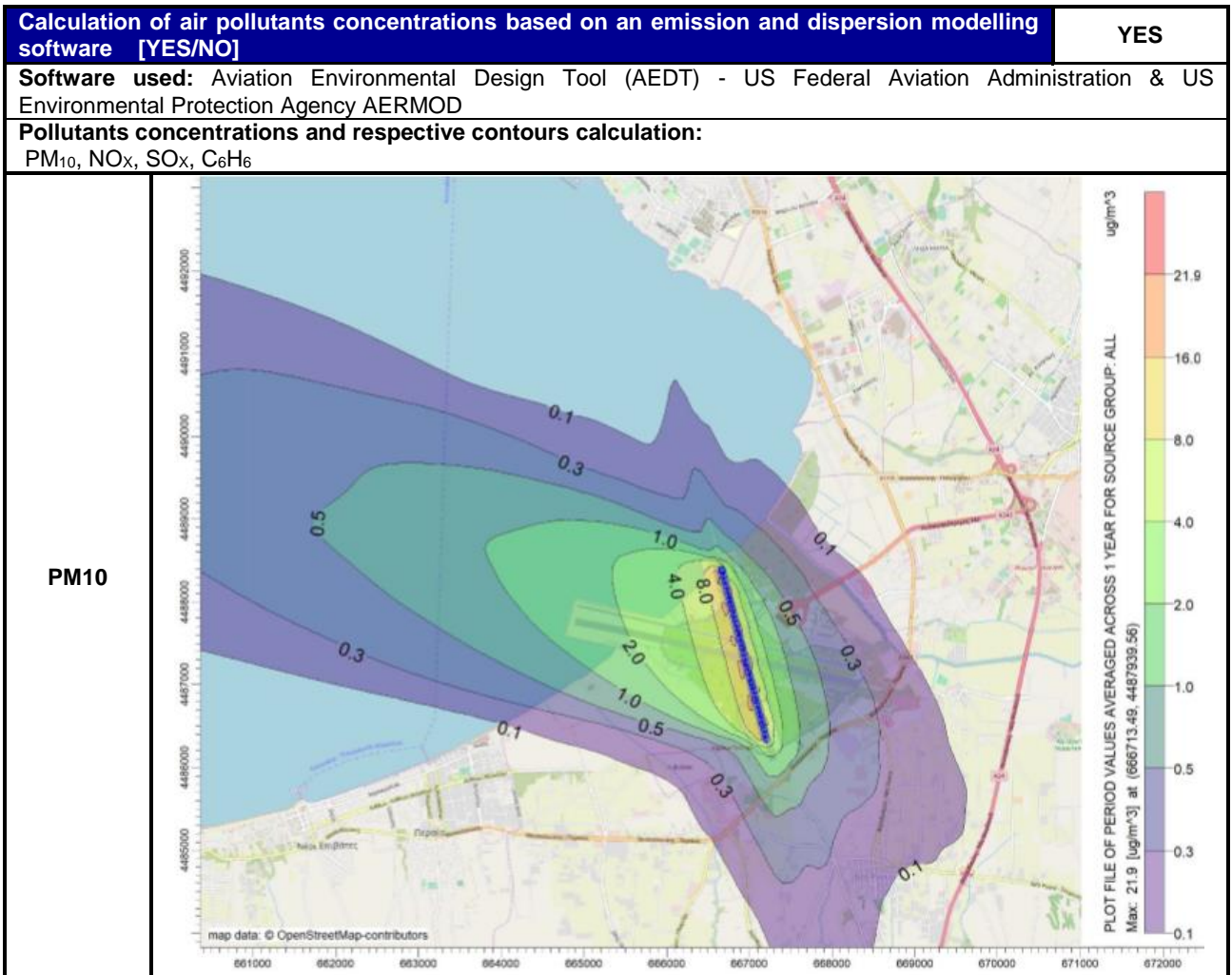
Aircraft noise levels calculation based on simulation software [YES/NO]	YES*
Software used: IMMI Noise Prediction Software (CNOSSOS EU assessment method based on Directive 2015/996/EU)	
Noise indicators and respective contours calculation:	L _{den} , L _{night}
 <p style="text-align: center;">L_{den}</p>	 <p style="text-align: center;">L_{night}</p>
Summary of results:	
<p>*During the reference year 2018 the total aircraft movements of Thessaloniki airport exceeded the limit of 50.000 movements, which is set in the legislation in order to be classified as a “major airport, and more specifically they were 56.186 movements.</p> <p>In implementation of articles 7 & * of JMD 13586/724/2006 as modified and in force, the Strategic Noise Map and the respective Action Plan for Thessaloniki “Makedonia” Airport was submitted for approval to the Ministry for Environment and Energy (reference number 97123/2146/24.10.2019).</p> <p>According to the 2018 Strategic Noise Map the noise limits set in JMD 211773/27-4-2012 are met and no exceedance is recorded.</p> <p>Based on the results of the Action Plan the exclusive use of the new runway 10/28 the acoustic environment of the area is overall upgraded significantly as depicted from the population and sensitive receptors exposure</p> <p>In any case, the Action Plan will be updated after the start of the operational use of the new runway.</p>	

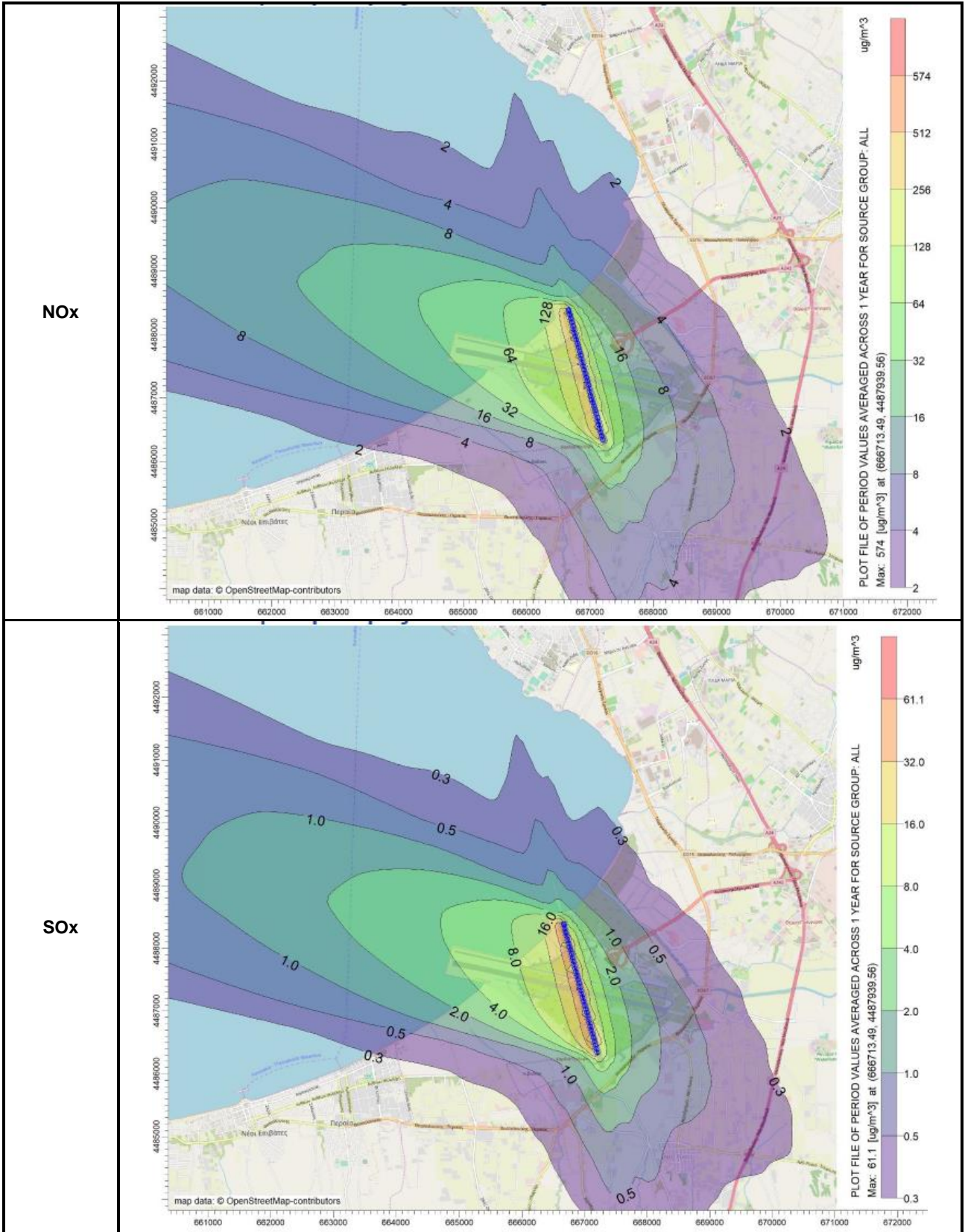
4. AIR QUALITY

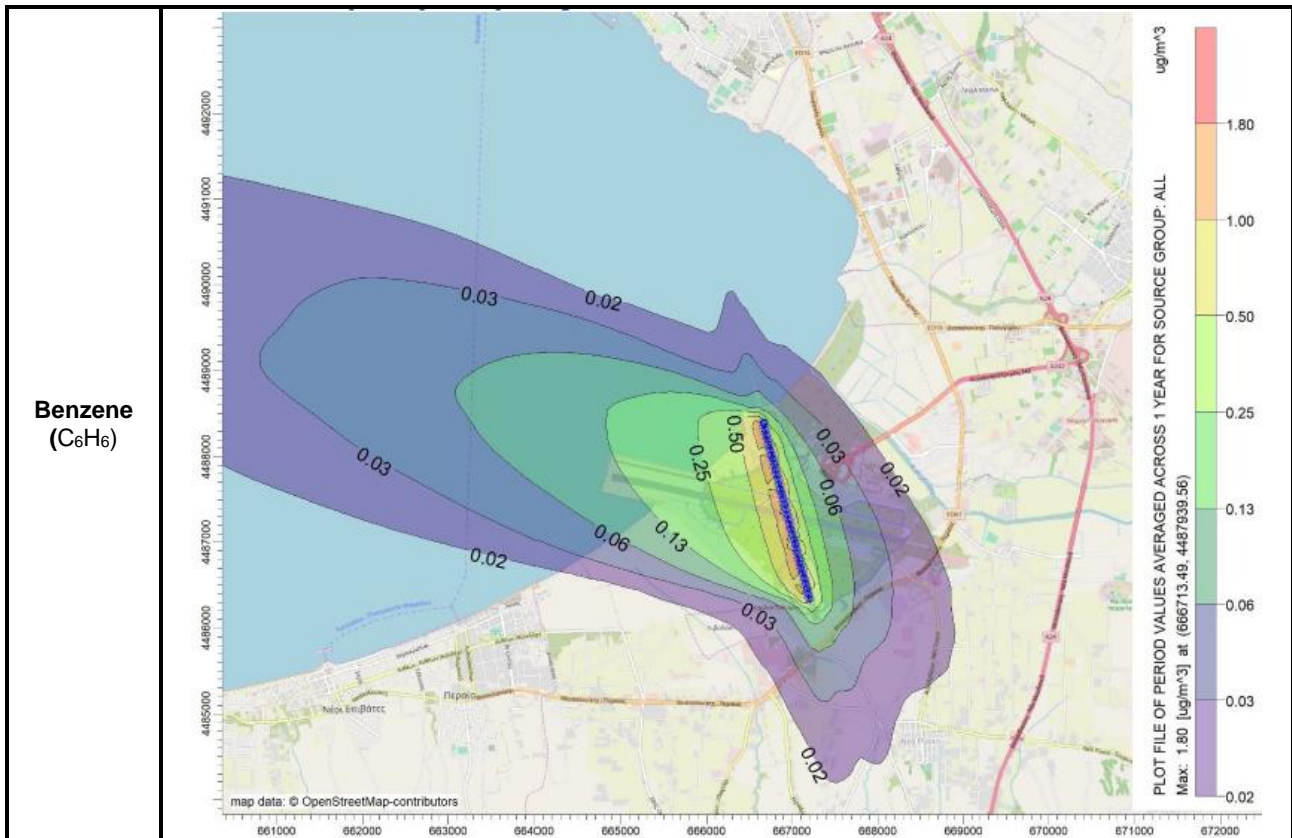
4.1. Air quality measurements during the reference year

Have air quality measurements at the airport's surrounding area been performed during the reference year? [YES/NO]		YES
Measurement points		
		
Measurement points coordinates	Measurement points description	
1) Position: --° --' --" N --° --' --" E	At the parking area of the National Center of Research and Technological Development, at a distance of 5.5 km approximately.	
2) Position: --° --' --" N --° --' --" E	In the facility of the roofed stadium of Neo Rysio. The stadium is at a distance of 1 km from the end of runway 28.	
3) Position: --° --' --" N --° --' --" E	750 meters from the end of runway 34.	
Measurement period	16.07.2019 – 23.07.2019	
Pollutants measured: PM ₁₀ , PM _{2,5} , NO ₂ , SO ₂ , C ₆ H ₆ , O ₃		
Summary of measurement results:		
Air quality is monitored according to the airport's monitoring program. No exceedance of the air quality limits was observed.		

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 the Municipality of Thermi	Disposal at material recovery facility or transshipment for recycling
Residues (Mixed Waste) and Bulky Waste	Collection by the Municipality of Thermi	Disposal mixed MSW treatment plant or 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.”

Waste management		
Waste	Collection	Management/Disposal
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 nearest protected area is the “Lagoon of Aggelochori” at a distance of approximately 12km from the airport.

7. WILDLIFE HAZARD MANAGEMENT

Wildlife hazard management	
Extent of the problem (animal species):	Strikes (%)
<i>Falco tinnunculus</i> (Common kestrel)	25%
Not identified*	9%
<i>Burhinus oedicephalus</i> (Eurasian stone-curlew)	8%
<i>Columba livia</i> (Pigeon)	7%
Hedgehog	6%
<i>Larus michahellis</i> (Yellow-legged gull)	5%
<i>Chroicocephalus ridibundus</i> (Black-headed gull)	3%
<i>Anas platyrhynchos</i> (Mallard)	3%
<i>Hirundo rustica</i> (Barn swallow)	3%
<i>Apus apus</i> (Common swift)	3%
<i>Perdix perdix</i> (Grey partridge)	2%
<i>Athene noctua</i> (Little owl)	2%

<i>Delichon urbicum</i> (Common house martin)	2%
<i>Glareola pratincola</i> (Collared pratincole)	2%
Turtle	2%
Bat	2%
DNA analysis results pending**	2%
<i>Buteo buteo</i> (Common buzzard)	1%
<i>Falco tinnuncilus</i> (Common kestrel), <i>Columba livia</i> (Pigeon)	1%
<i>Falco tinnuncilus</i> (Common kestrel), <i>Perdix perdix</i> (Grey partridge)	1%
<i>Galerida cristata</i> (Crested lark)	1%
<i>Oenanthe oenanthe</i> (Wheatear), <i>Hirundo rustica</i> (Barn swallow)	1%
<i>Pica pica</i> (Magpie)	1%
<i>Ciconia ciconia</i> (White stork)	1%
<i>Egretta garzetta</i> (Little egret)	1%
Small passerine	1%
<i>Passer domesticus</i> (House sparrow)	1%
<i>Haematopus ostralegus</i> (Oystercatcher)	1%
<i>Turdus philomelos</i> (Song thrush)	1%
<i>Tyto alba</i> (Barn owl)	1%
<i>Hirundinidae spp.</i> (Swallows)	1%
<i>Chloris chloris</i> (Greenfinch)	1%
<i>Anthus pratensis</i> (Meadow pipit)	1%
Fox	1%
Hare	1%
Adopted measures :	
<ul style="list-style-type: none"> • Pyrotechnics application by the use of signal pistols, as an additional short-term measure to disperse birds from the manoeuvring area • 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 • Habitat management works to drain a small wetland area at the northeast side of the airside • 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 “<i>Monitoring and trapping birds and mammals population at the 14 regional airports operated by Fraport Greece</i>” (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 Thessaloniki, under the collaboration with the Lalitsa Non-Profit Association • Awareness video on the safe handling of stray dogs • Holding of the wildlife strike committee, to raise awareness across the airport users and local authorities about the risk of the wildlife strikes on aircraft and the measures obtained to eliminate such a risk 	
Reference year summary results:	
<p>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.</p>	

*“Not identified” refers to birdstrikes evidence (e.g. blood or part of feathers) that does not allow the bird species identification

**“DNA analysis results pending” refers to birdstrikes evidence (e.g. blood or part of feathers) that are laboratory analysed for bird species identification, since an effect on flight was caused

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)	11,031,572

9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	39	
Number of firefighting vehicles at the airport	10	
Total annual fuel consumption	Diesel (lt)	61,374.41
	Unleaded gasoline (lt)	1,036.43

9.3. ‘Heating oil or natural gas consumption

Heating oil or natural gas consumption	
Total annual heating oil consumption (lt)	4,904
Total annual heating natural gas consumption (m ³)	2,488

9.4. Water consumption

Water consumption	
Period	Consumption [m ³]
Total annual consumption	92,145

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)
	2019
Direct emissions from heating fuel (scope 1)	548.4
Direct emissions from fuel used for fleet vehicles (scope 1)	138.6
Direct emissions from fuel used for firefighting vehicles (scope 1)	27.5
Direct emissions from fuel used for generators (scope 1)	31.8
Indirect emissions from electricity consumption (scope 2)	7,038.1
Total (t)	7,784.4
Kg CO₂ /passenger	1.13

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 ISO 14064 regarding greenhouse gas emission by an independent certification body
- The airport 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)	Airport boreholes
Is sampling of the airport's water network performed? [YES/NO]	YES
(if YES) Sampling frequency:	Monthly
Summary of results: The results of the microbiological and chemical analyses show that the parameters analysed as regards the airport's water network 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		NO*
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 relevant national quality limits for surface rainwater, the specificationsd of ref. num. 30/4942οικ./1.10.2001 treated wastewater disposal permit issued by the Prefectural Authority of Thessaloniki and 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.		

*Oil separators installation is planned by the end of Imminent Works

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. 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 decontamination measures are necessary, except from four areas identified from the 2017 Environmental Baseline Study, which were under remediation during the reference year.	

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
Short description: The airport waste water is collected via an integrated sewage network and taken to the WWTP within the airport.	
Blue water	
Collection and disposal: Collection in a tank in the WWTP facility and disposal within the WWTP of the airport for further treatment.	

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	Thermaikos gulf according to the terms of disposal permit no 30/4942οικ./1.10.2001 of the Prefectural Local Administration of Thessaloniki
Sludge disposal	Use in agriculture, based on decision ref. no 12/12177/27.10.2010 of the Prefectural Local Administration of Thessaloniki
Sampling frequency of WWTP effluent	Monthly based on the disposal permit
Parameters analysed	BOD, COD, SS, TN, TP, T. Coliforms, E.Coli, pH, Residual Cl ₂ , grease, oils
Summary of quality of WWTP effluent	The WWTP effluent observes the limits set out in the disposal permit no 30/4942οικ./1.10.2001 issued by the Prefectural Administration of Thessaloniki.