

ENVIRONMENTAL BULLETIN OF CHANIA “IOANNIS DASKALOGIANNIS” AIRPORT (CHQ)

Reference year 2021

Fraport Regional Airports of Greece A S.A.

Issue year: 2022

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1. INTRODUCTION

1.1. Location

Chania Airport is located at the centre of the Akrotiri peninsula, to the north-east of the town of Chania at a distance of approximately 15 km from the town, and operates within the military airport, in an area provided by HASGS for this purpose.

1.2. Administration

The Airport belongs to the Region of Crete, Regional Unit of Chania, and specifically to the Municipality of Chania, encompassing the former Municipalities of Akrotiri, El. Venizelos, Keramies, Nea Kidonia, Therisos, Souda and Chania.

1.3. Environmental licensing

Approved Environmental Terms	
E.T. Decision Reference number	51226/25.10.2016
E.T. Amendment Decision Reference Number	5100/05.03.2018

1.4. Airport Basic Data

Airport name IATA / ICAO	CHQ/LGSA
Airport location – Airport Reference Point (ARP)	Latitude: 35° 31' 53" N Longitude: 24° 09' 04" E
Altitude	149,4m
Number of runways	1
Operation hours (summer)	00:01 – 24:00
Operation hours (winter)	Monday 06:30 – 22:30 Tuesday/Thursday/Saturday 06:30 – 20:30 Wednesday 08:00 – 22:30 Friday/Sunday 09:00 – 22:30

Runways	Length/Width					Code
Runway	3,348m x 45m					11/29
Full length of parallel taxiway	3.348m					
Number of taxiways	6					
Apron capacity	A	B	C	D	E	
	-	-	8	-	2	

Employees	High season (31.08.2021)	Low season (30.11.2021)
Fraport Greece (FG) employees	40	36
Employees of other companies	867	622

Terminal	
➤ Total area (m ²)	36.195

Other buildings and service/storage areas	
➤ RFF Station (m ²)	Housed in HAF facilities

Parking Areas	
Car parking spaces	586
Bus parking spaces	56
Taxi parking spaces	66

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 2020	
Overall Annual Air Traffic Movements	16.157
Percent of increase or decrease in relation to the previous year	118.6%
Annual passenger traffic	1.795.236
Percent of increase or decrease in relation to the previous year	155,2%
Annual cargo transferred (tn)	207
Percent of increase or decrease in relation to the previous year	15%

Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	No. of flights
A320	1.490
A20N	945
B73H	643
AT76	580
A32A	476
AT75	396
DH8D	260
AT72	194
A321	94
A319	90
Other	469
Prevailing aircraft types for international flights	
Aircraft type	No. of flights
B73H	2.933
B738	2.475
A320	1.263
A20N	616
7M8	522
A32A	468
A321	422
A21N	308
A32B	294
A319	269
Other	950

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	3.323

Air traffic movements daily average number during the month with highest traffic	107
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2.3. Low season traffic data

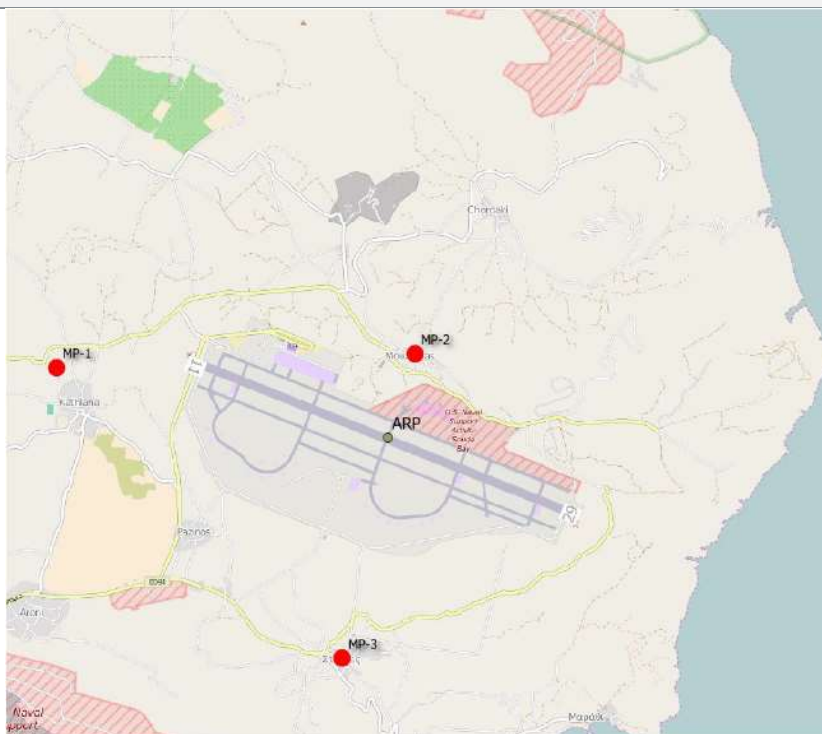
Low season traffic data (October-May)	
Lowest traffic month	February
Air traffic movements during the month with lowest traffic	216
Air traffic movements daily average number during the month with lowest traffic	8

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
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Measurement points



Measurement points coordinates	Measurement points description
Position 1: 35° 32' 16" N 24° 06' 48" E	Kathiana area, to the west of the runway at the centre of an oil plantation. Affected by arrivals RWY 11 and departures RWY 29.
Position 2: 35° 32' 21" N 24° 09' 15" E	Mouzoura area, to the north of the runway, at the roof of the cultural centre's building. Affected by all arrivals/departures to and from both directions
Position 3: 35° 30' 40" N 24° 08' 45" E	Sterna area, to the south of the runway, at the balcony of a public building. Affected by all arrivals/departures to and from both directions
Measurement period	15.07.2021 – 16.07.2021
Noise indicators	L _{den} , L _{night}

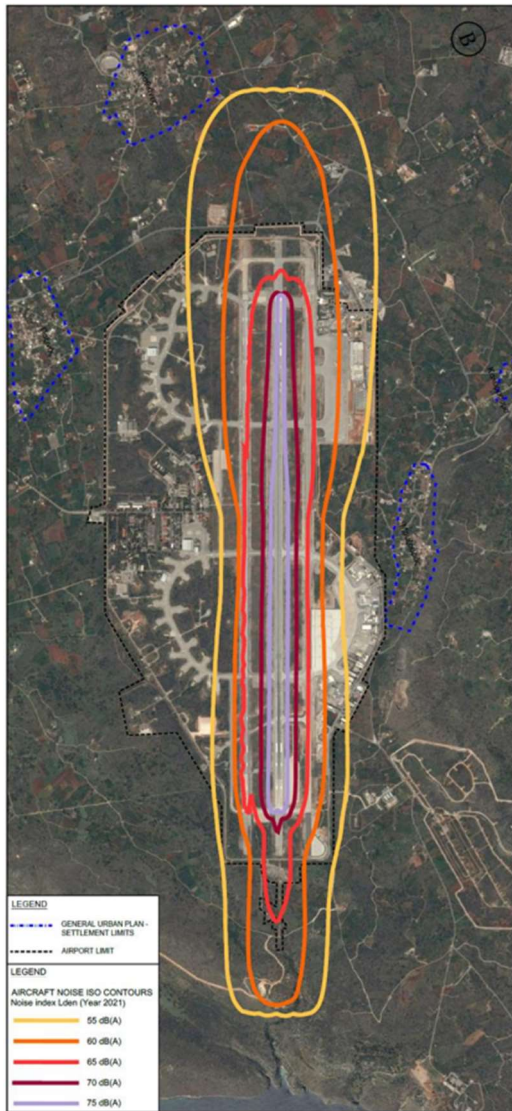
Summary of measurement results:

Noise levels are monitored according to the airport's monitoring program.
No exceedance of the noise indicators levels L_{den} = 70 dB(A) and L_{night} = 60 dB(A) was observed.

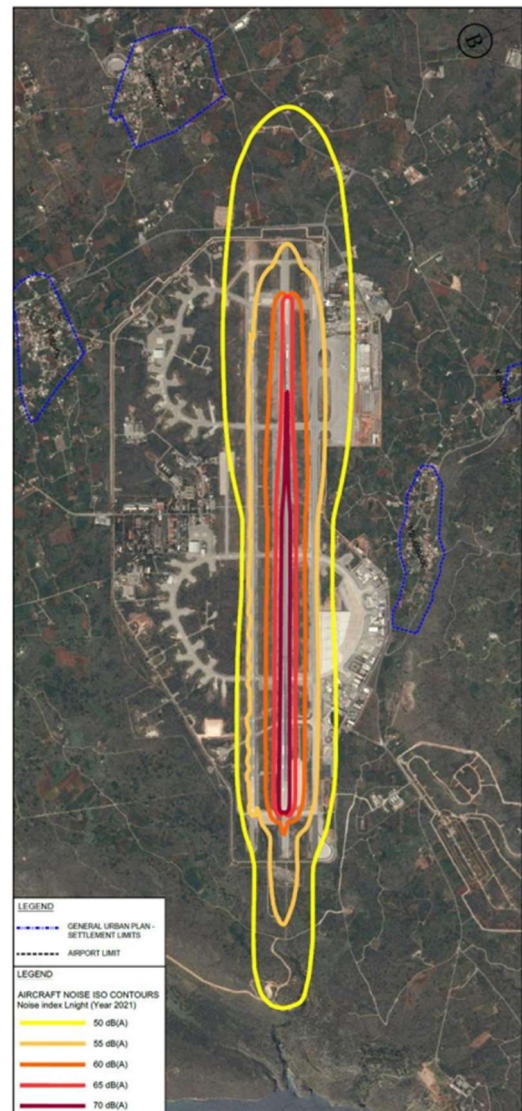
3.2. Noise levels calculation based on noise simulation software

Aircraft noise levels calculation based on noise simulation software	YES
Software used: IMMI Noise Prediction Software (Methodology CNOSSOS-EU according to Directive 2015/996/EU)	
Noise indicators and respective contours calculation: L _{den} , L _{night}	

Noise contours:



Lden



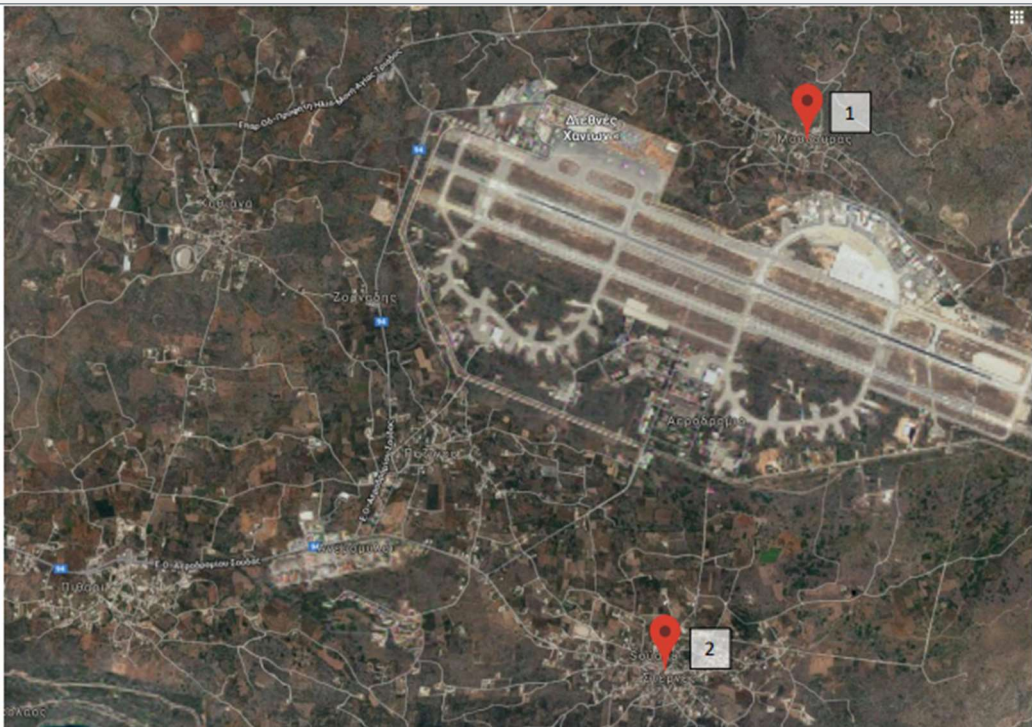
Lnight

Summary of results:

For the year 2021 no population or buildings within official settlement boundaries were found to be exposed to noise levels higher than the limits $L_{den} = 70 \text{ dB(A)}$ and $L_{night} = 60 \text{ dB(A)}$.

4. AIR QUALITY

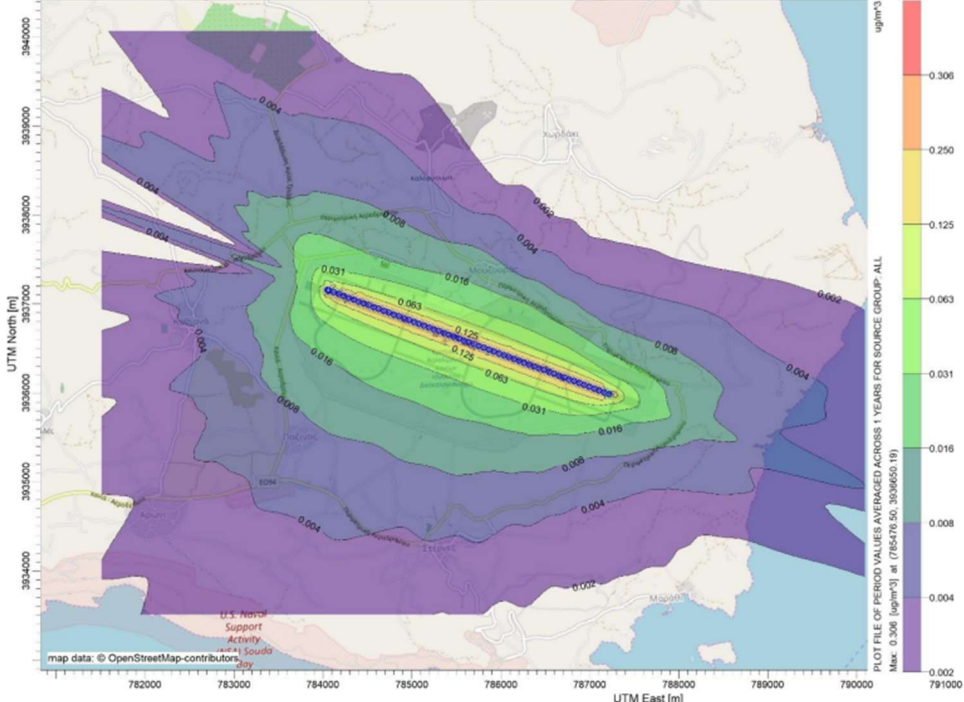
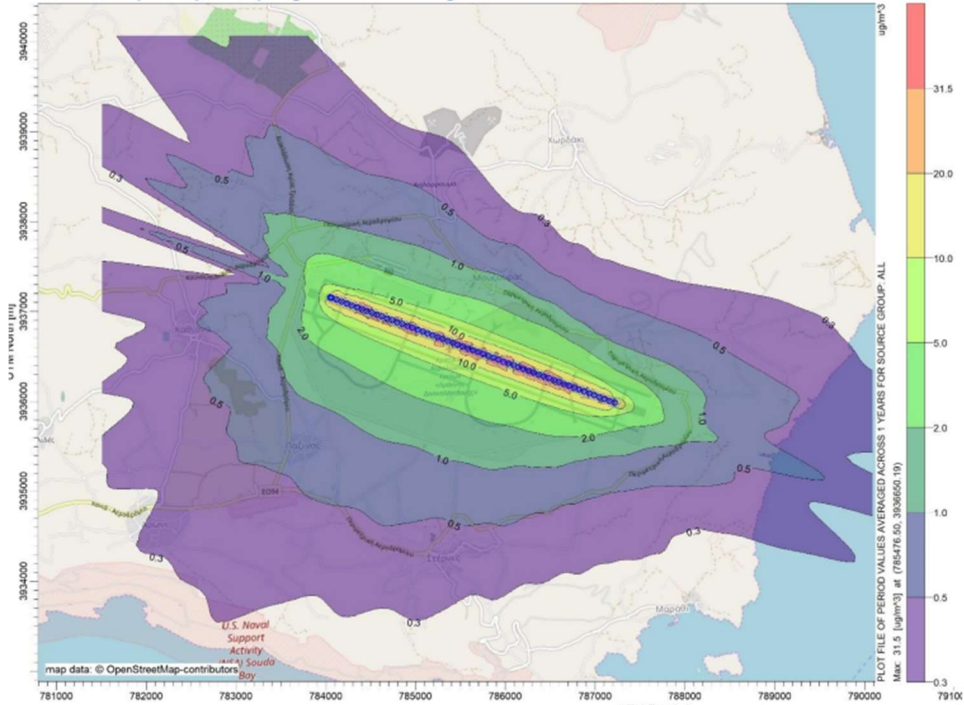
4.1. Air quality measurements during the reference year

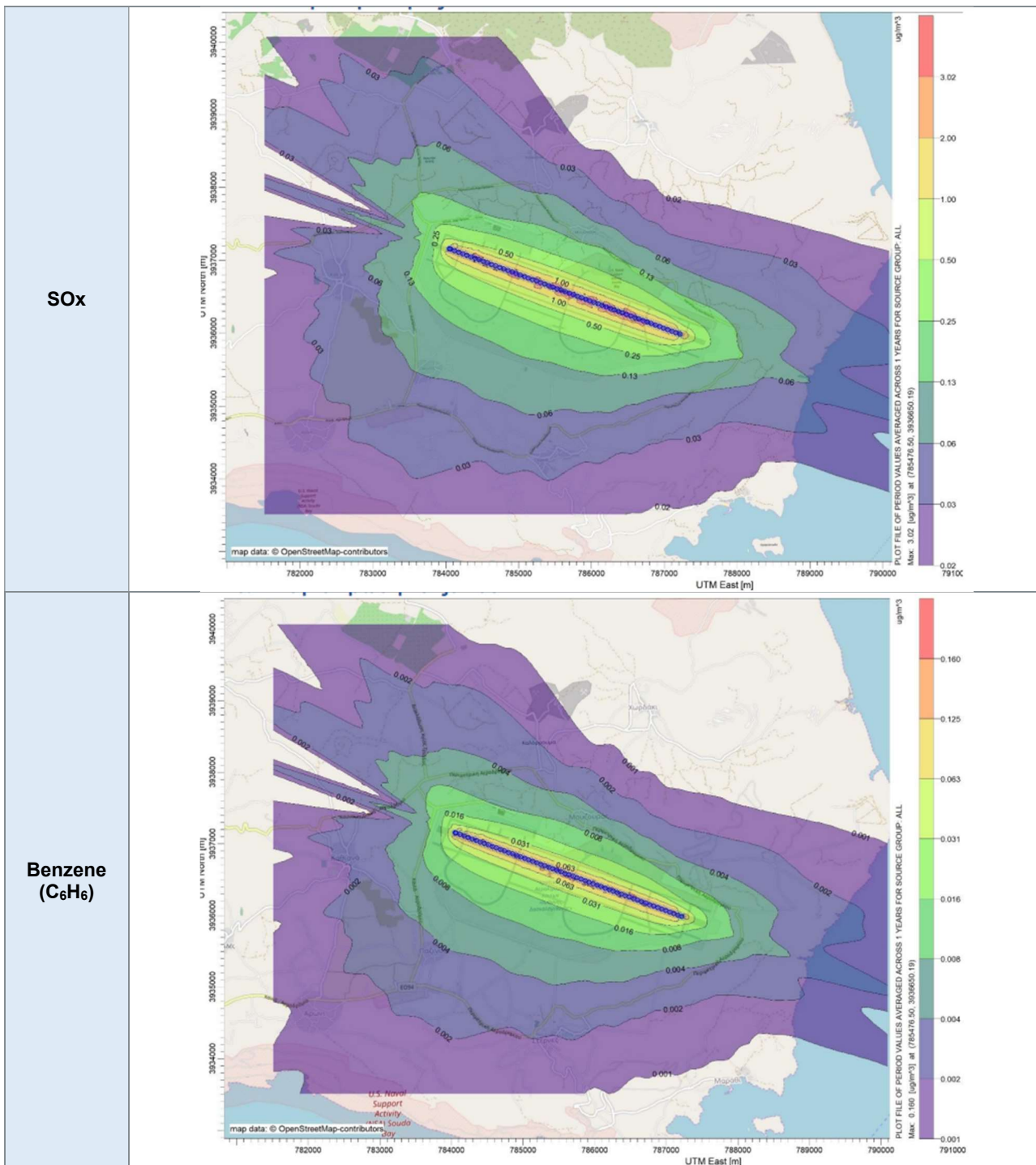
Have air quality measurements at the airport’s surrounding area been performed during the reference year?		YES
Measurement points		
		
Measurement points	Measurement points description	
Position 1	Mouzoura area, approximately 700m to the north of the runway.	
Position 2	Sterna area, approximately 2km to the south of the runway.	
Measurement period:	22.03.2021 – 06.04.2021	
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 for PM₁₀, PM_{2,5}, NO₂, SO₂ & C₆H₆. It is noted that some individual exceedances for the O₃ 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.

4.2. Air pollutants emission and dispersion modelling

Calculation of air pollutants concentrations based on an emission and dispersion modelling software	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 ₆ H ₆	
PM₁₀	
NO_x	



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	Collection	Management/Disposal
Recyclables (paper, plastic, metals, glass)	Temporarily not performed in 2020	-
Residues (Mixed Waste) and Bulky Waste	Collection by Chania Solid Waste management Body (DEDISA SA)	Disposal in a mechanical recycling-composting facility for material recovery and disposal in landfill afterwards

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?	NO
<i>(if YES)</i> Short description:	
Fauna	
Are there protected species of fauna/birds in the broader airport area?	NO
During the wildlife surveys there were no observations of protected species. The field survey dates will gradually increase during the following years.	

6.2. Ecologically fragile areas

There are no such areas within a distance of 20km approximately from the airport.

7. WILDLIFE HAZARD MANAGEMENT

Wildlife strikes and wildlife hazard management measures	
Wildlife species that suffered a strike	Strikes (%)
-	-
Wildlife strike risk mitigation measures*:	
*The Hellenic Air Force (HAF) is responsible for the management of birdstrike risk.	
Reference year summary results:	
-	

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)	5.474.850

9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	5	
Number of firefighting vehicles at the airport	Management by HAF	
Total annual fuel consumption	Diesel (lt)	5.830,43
	Unleaded gasoline (lt)	110,29

9.3. Heating oil or natural gas consumption

Heating oil or natural gas consumption	
Total annual heating oil consumption (lt)	0
Total annual heating natural gas consumption (m ³)	N/A

9.4. Fuel consumption for generator

Water consumption	
Total annual consumption (lt)	16.425

9.5. Water consumption

Water consumption	
Total annual consumption (m ³)	9.238

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)
	2021
Direct emissions form heating fuel (scope 1)	0,0
Direct emissions from fuel used for fleet vehicles (scope 1)	15,8
Direct emissions from fuel used for firefighting vehicles (scope 1)	-
Direct emissions from fuel used for generators (scope 1)	43,8
Indirect emissions from electricity consumption (scope 2)	3.299,7
Total (t)	3.359,3
Kg CO₂ /passenger	1,87

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 was certified during the year 2020 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 Chania
Is sampling of the airport's water network performed?	YES
(if YES) 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.	

12. 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. 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 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:	According to the Environmental Terms
Parameters analyzed: TPH, BTEX, MTBE, PAH	
Summary of results:	
<p>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. Regarding soil gas the Directive of the Munich Environmental Protection Department in force by 10.02.1998, which is the most widely accepted, is adopted as a basis for comparison.</p>	

14. SEWAGE TREATMENT AND DISPOSAL

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

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	N/A
Treatment method	N/A
Disposal of treated wastewater	N/A
Sludge disposal	N/A
Sampling frequency of WWTP effluent	N/A
Parameters analyzed	N/A
Summary of quality of WWTP effluent	N/A