Environmental Bulletin of Chania

"Ioannis Daskalogiannis" Airport (CHQ)

Reference year 2018

Fraport Greece

May 2019

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Version Control

Version	Revision	Description of Revision	Date
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1. INTRODUCTION

Location

The airport of Chania 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.

Administration

The airport administratively 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.

Environmental licensing

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

1.1. Airport Basic Data

Airport Basic Data	
Airport name IATA / ICAO	CHQ/LGSA
Airport position – Airport Reference Point (ARP)	Latitude: 35° 31' 53" N Longitude: 24° 09' 04" E
Altitude:	149.4m
Number of runways	1
Operation hours	0:01 – 24:00

Runways	**Length/Width**			**Code**	
Runway	3,348m x 45m			11/29	
Full length of parallel taxiway	3,348				
Number of taxiways	6				
Apron capacity	A	B	C	D	E
	-	-	8	-	2
Employees	**High season**			**Low season**	
Fraport Greece (FG) employees	39			39	
Employees of other companies	270			59	

Terminal	
➢ Total area **(m^2)**	35,600

Other buildings and service/storage areas	
➢ RFF **(m^2)**	Housed in HAF facilities
Parking Areas	

Car parking spaces	580
Bus parking spaces	56
Taxi parking spaces	70

1.2. Airport Facilities

1.2.1. Fuel Handlers

Number of fuel handler companies			
Number of fuel handler companies operating at the Airport			2
Installations inside the airport	**EKO**	**GISCO**	**HAFCO**
Environmental Management System (EMS) ***(YES/NO)***	YES	YES	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)*	24	-	190
Environmental Management System (EMS) ***(YES/NO)***	YES	Not operating at the airport	YES

2. TRAFFIC DATA STATISTICS

2.1. Annual Traffic Data

Annual Traffic Data for the year 2018	
Overall Annual Air Traffic Movements[1]	19,604
Percent of increase or decrease in relation to the previous year	0.5%
Annual passenger traffic	3,008,687
Percent of increase or decrease in relation to the previous year	-1.1%
Annual cargo transferred (tn)	453
Percent of increase or decrease in relation to the previous year	1.1%

Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	**No. of flights**

[1] Military and training flights not included.

A320	2451
B73H	591
A32A	533
A321	469
AT75	258
A319	156
AT45	70
AT72	46
DH8D	34
AS55	20
Other	195

Prevailing aircraft types for international flights	
Aircraft type	**No. of flights**
B73H	5,675
A320	2,588
B738	1,506
A321	674
A319	554
A32B	547
B737	418
A21N	405
B73W	340
A32A	335
Other	1,739

2.2. High season traffic data

High season traffic data (June-September)	
Highest traffic month	July
Air traffic movements during the month with highest traffic	3,198
Air traffic movements daily average number during the month with highest traffic	103

2.3. Low season traffic data

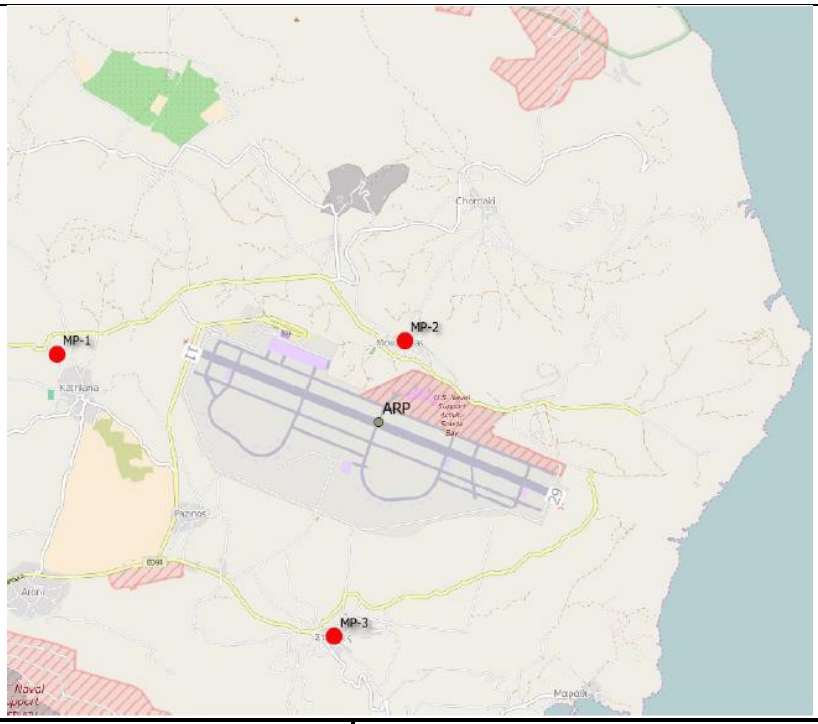
Low season traffic data (October-May)	
Lowest traffic month	February
Air traffic movements during the month with lowest traffic	296
Air traffic movements daily average number during the month with lowest traffic	11

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



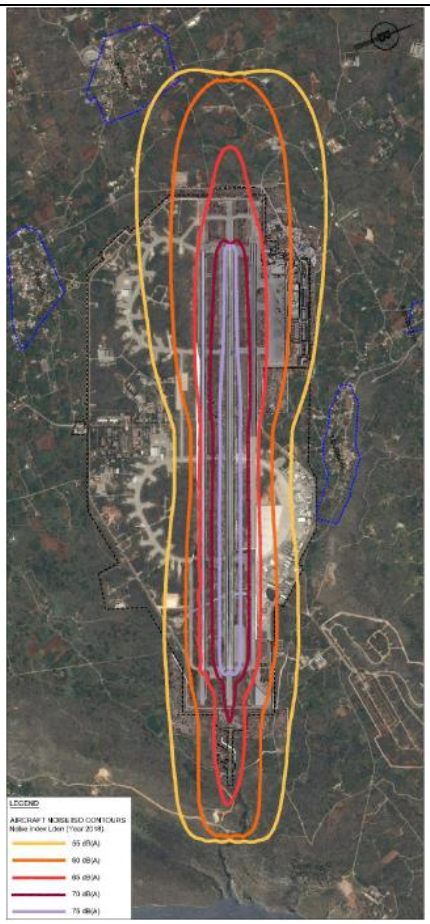
Measurement points coordinates	**Measurement points description**
1) Position: 35° 32' 16'' N 24° 06' 48'' E	Kathiana area, to the west of the runway at the centre of an oil plantation. Affected by arrivals RWY 11 and departures RWY 29.
2) Position: 35° 32' 21'' N 24° 09' 15'' E	Mouzoura area, to the north of the runway, at the roof of the cultural centre's building. Affected by all procedures to and from all directions
3) Position: 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 procedures to and from all directions
Measurement period	09.08.2018 – 10.08.2018
Noise indicators	Lden, Lnight

Summary of measurement results:

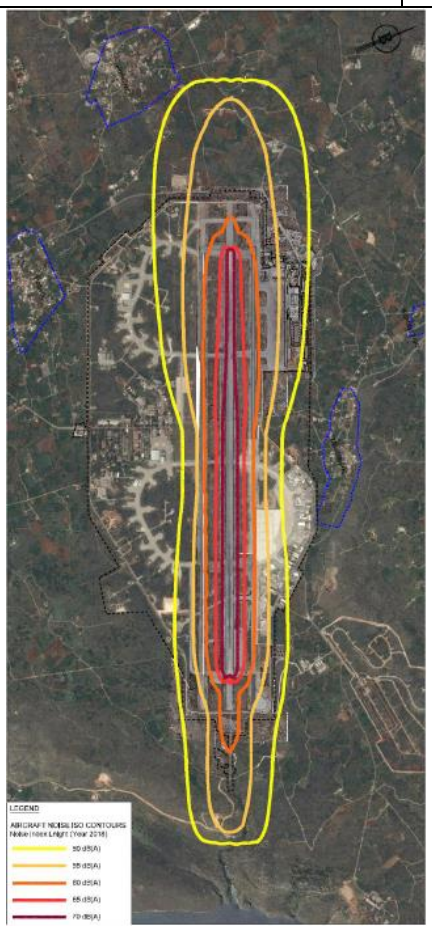
Noise levels are monitored according to the airport's monitoring program.
No exceedance of noise indicators levels Lden = 70 dB (A) and Lnight = 60 dB (A) was observed.

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	
Noise indicators and respective contours calculation:	L_{den}, L_{night}



L_{den}



L_{night}

Summary of results:

For the year 2018 no populations or buildings within residential areas 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]	**YES**

Measurement points

Measurement points coordinates	**Measurement points description**
1) Position: --° --' --" N --° --' --" E	Mouzoura area, approximately 700m to the north of the runway.
2) Position: --° --' --" N --° --' --" E	Sterna area, approximately 2km to the south of the runway.
3) Position: --° --' --" N --° --' --" E	Kathiana area, approximately 2.5km to the west of the runway.
Measurement period	08.08.2018 – 15.08.2018

Pollutants measured: PM_{10}, $PM_{2,5}$, NO_2, SO_2, C_6H_6, O_3

Summary of measurement results:

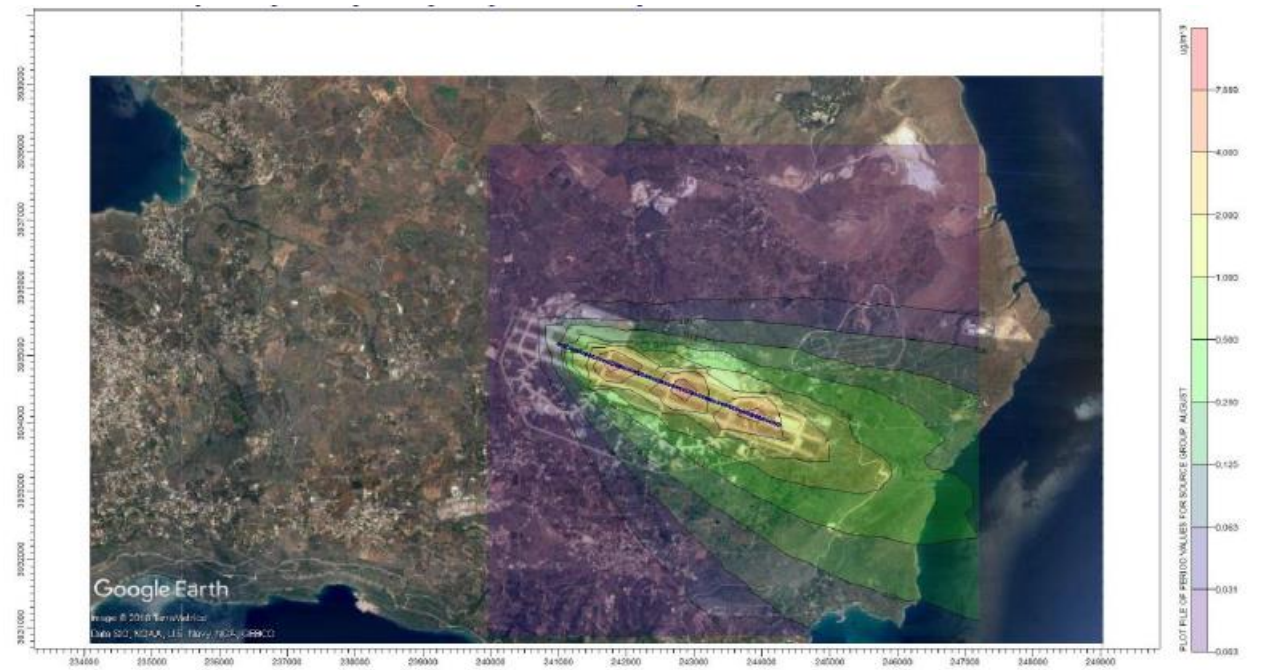
Air quality is monitored according to the airport's monitoring program.
No exceedance of the air quality limits was observed.
It is noted that some individual exceedances for the O3 pollutant mean values were recorded. As a result of its dependency on the solar radiation, ozone does not show a homogenous 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/NO]	**YES**

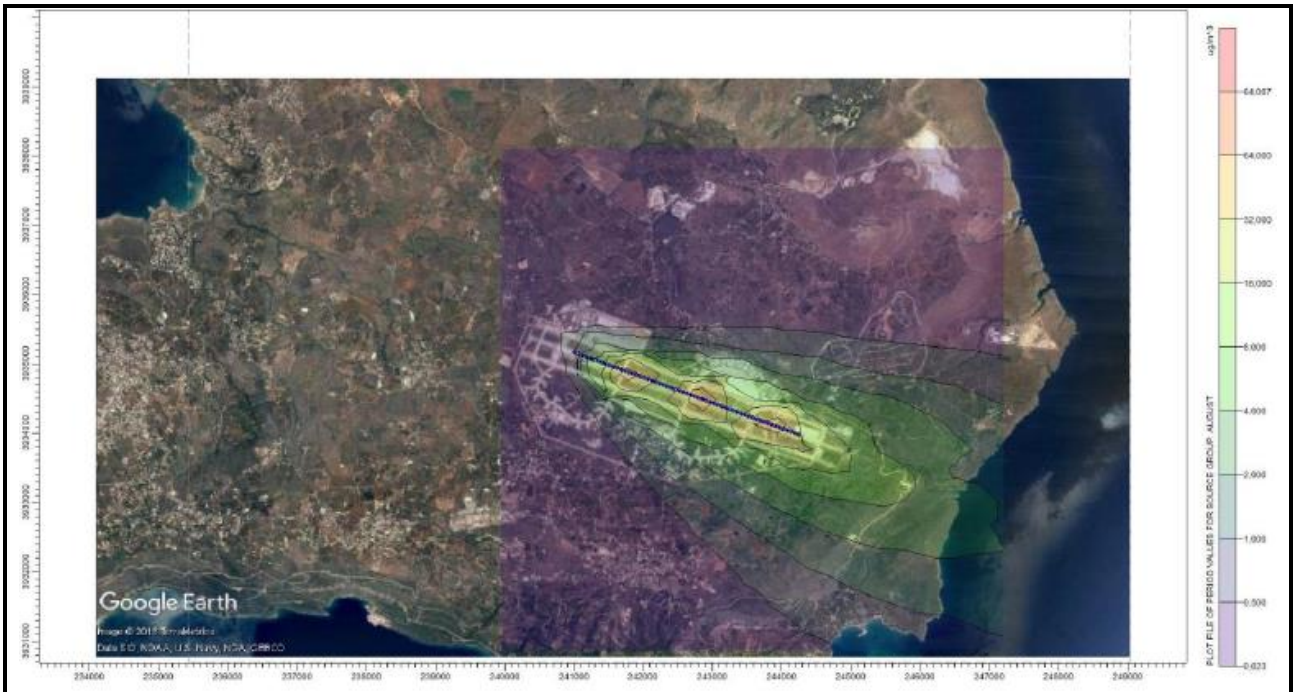
Software used: Emissions and Dispersion Modeling System (EDMS) - US Federal Aviation Administration & US EPA AERMOD

Pollutants concentrations and respective contours calculation:
PM_{10}, NO_X, SO_X, C_6H_6



PM10

NOx



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**
Municipal solid waste	Collection and emptying of garbage bins by an FG contractor inside the airport	Collection and management by the Company DEDISA S.A.
Recyclables	Collection and emptying of garbage bins by an FG contractor inside the airport	Collection and management by the Company ECOPLAN Ltd.
Used oils	Collection by licensed collector "Cytop S.A."	Collection and management by licensed collector "Cytop S.A."
Electric & electronic waste	Collection by alternative management system "Appliances recycling S.A."	Collection and management by alternative management system "Appliances recycling S.A."
Accumulators	Collection by alternative management system "Re-Battery S.A."	Collection and management by alternative management system "Re-Battery S.A."
Small batteries	Collection in special bins of the company AFIS S.A. inside the airport	Collection and management by alternative management system "AFIS S.A."
Used tires	Collection by alternative management system "ECOELASTIKA S.A."	Collection and management by alternative management system "ECOELASTIKA S.A."

Notes:
1. Ground handlers and fuel handlers manage all the categories of waste they produce independently **2.** 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
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

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

7. WILDLIFE HAZARD MANAGEMENT

Wildlife hazard management	
Extent of the problem (bird species):	**Birdstrikes**
-	-
Adopted measures :*	
*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? [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**
January	410,143.50
February	350,482.35
March	355,404.15
April	457,729.80
May	672,749.25
June	765,371.70
July	929,862.45
August	973,167.15
September	828,037.35
October	672,709.20
November	430,708.95
December	382,670.85
Total annual electric energy consumption (in Kwh)	7,229,036.70

9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	9	
Number of firefighting vehicles at the airport	Management by HAF	
Total annual fuel consumption	Diesel (lt)	7,578.90
	Unleaded gasoline (lt)	32.28

9.3. Heating oil or natural gas consumption

Heating oil or natural gas consumption	
Total annual heating oil consumption (lt)	19,488.00
Total annual heating natural gas consumption (m^3)	-

9.4. Water consumption

Water consumption	
Period	***Consumption* [m^3]**
January – March	4,740
April - June	3,583
July - September	6,190
October - December	6,401
Total annual consumption (m^3)	20,914

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)
	2018
Direct emissions form heating fuel (scope 1)	52.0
Direct emissions from fuel used for fleet vehicles (scope 1)	20.3
Direct emissions from fuel used for firefighting vehicles (scope 1)	*
Direct emissions from fuel used for generators (scope 1)	18.6
Indirect emissions from electricity consumption (scope 2)	4,402.5
Total (t)	**4,493.4**
Kg CO2 /passenger	1.49

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

*HAF is responsible for the management of the airport's RFF vehicles.

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/NO]***	YES
(if YES) Sampling frequency:	Quarterly
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. DEYA of Chania has granted a suitability certificate/declaration concerning the airport's supplied 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

13. GROUNDWATER MONITORING PROGRAM

Groundwater quality	
Is sampling of the airport's groundwater performed? ***[YES/NO]***	YES
(if YES) Sampling frequency:	According to the frequency specified by the ETs.
Parameters analysed: pH, Conductivity, DO, TPH, BTEX, Heavy metals,	
Summary of results: 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
Short description:	
Blue water	
Collection and disposal: Collection in tank and transport with tank trucks to the local WWTP.	

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