

ENVIRONMENTAL BULLETIN OF SAMOS "ARISTARCHOS OF SAMOS" AIRPORT (SMI)

Reference year 2021

Fraport Regional Airports of Greece B S.A.

Isue year: 2022



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1. INTRODUCTION

1.1. Location

"Aristarchos of Samos" airport of Samos has been operating since 1963 and is located at 14 km from the town of Samos (Vathy) and at approximately 3km from the town of Pythagoreio. The airport is located to the south side of the island, near the settlement Potokaki.

1.2. Administration

The airport administratively belongs to the Municipal Communities Chora and Pythagoreio of the Municipal Unit Pythagoreio of the Municipality of Samos of the homonym Regional Unit, of the Region of North Aegean.

1.3. Environmental licensing

Approved Environmental Terms		
E.T. Decision Reference number	Ref. No оік 106454/14.03.2000	
E.T. Amendment Decision Reference	Ref. No оік. 131852/27.10.2010	
Number	Ref. No оік 3704/12.02.2018	

1.4. Airport Basic Data

Airport name IATA / ICAO	SMI / LGSM
Airport location – Airport Reference Point (ARP)	Latitude: 37° 41' 21" N Longitude: 26° 54' 44" E
Altitude	5.74 m
Number of runways	1
Operation hours (summer &winter)	00:01 – 24:00

Runways	L	.ength/Wid	th	Co	ode
Runway	2	2,044m x 45m		09)/27
Full length of parallel taxiway		N/A			
Number of taxiways		3			
A	А	В	С	D	Е
Apron capacity	-	-	4	4	-
Employees	High season (31.08.2021)			Low season (30.11.2021)	
Fraport Greece (FG) employees		26		2	.0
Employees of other companies		139		104	

Terminal	
➤ Total area (m²)	9.473



Other buildings and service/storage areas		
	➤ RFF Station (m²)	1.144

Parking Areas	
Car parking spaces	192
Bus parking spaces	14
Taxi parking spaces	36

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 2021	
Overall Annual Air Traffic Movements ¹	4.628
Percent of increase or decrease in relation to the previous year	41,4%
Annual passenger traffic	270.298
Percent of increase or decrease in relation to the previous year	87,3 %
Annual cargo transferred (tn)	157
Percent of increase or decrease in relation to the previous year	-14,6 %

Aircraft types			
Prevailing aircraft types for domestic flights			
Aircraft type	No. of flights		
DH8D	1.476		
AT45	740		
AT75	378		
AT72	248		
EC35	88		
A320	82		
AT76	50		
A32A	22		
AT46	22		
CL60	19		
Other	317		
Prevailing aircraft types for international flights			
Aircraft type	No. of flights		
B73H	357		
A320	234		
7M8	135		
B738	108		
A20N	88		
A319	26		
C56X	18		
A32B	14		
A32A	14		
B737	14		
Other	178		

¹ Military and training flights not included.



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	780	
Air traffic movements daily average number during the month with highest traffic	25	

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	182	
Air traffic movements daily average number during the month with lowest traffic	7	



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?		
Measurement points		
N/A		
Measurement points coordinates Measurement points description		
N/A	N/A	
Measurement period	N/A	
Noise indicators	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.

At the end of the two year period of the program in April 2020, in implementation of the Environmental Terms, 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 (ref. number 39833/833/29.4.2020).

According to the program, which is also an appendix in approved Environmental Impact Study, in 2021 noise measurements are not foreseen.



3.2. Noise levels calculation based on noise simulation software

Aircraft noise levels calculation based on noise simulation software	
Software used: N/A	
Noise indicators and respective contours calculation: N/A	
Noise contours: N/A	

Summary of 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.

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According to the program, which is also an appendix in approved Environmental Impact Study, in 2021 noise modeling was not foreseen.



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?		NO*
Measurement points		
N/A		
Measurement points Measurement points description		
N/A	N/A 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. At the end of the two year period of the program in April 2020, in implementation of the Environmental Terms, 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 (ref. number 39833/833/29.4.2020).

According to the program, which is also an appendix in approved Environmental Impact Study, in 2021 air pollution measurements are not foreseen.



4.2. Air pollutants emission and dispersion modelling

Calculation of air pollutants concentrations based on an emission and dispersion modelling software			
Software us	ed: N/A		
Pollutants concentrations and respective contours calculation: N/A			
PM ₁₀	N/A		
NOx	Dx N/A		
SOx	SOx N/A		
Benzene (C ₆ H ₆)	N/A		

Summary of 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.

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According to the program, which is also an appendix in approved Environmental Impact Study, in 2021 the air pollution simulation was not foreseen.



5. WASTE MANAGEMENT

Waste	Collection	Management/Disposal
Recyclables (paper, plastic, metals, glass)	Separate collection by the Municipality of Samos	Disposal at material recovery facility (OEDA Samos) and transshipment for recycling
Residues (Mixed Waste) and Bulky Waste	Collection by the Municipality of Samos	Disposal in landfill (OEDA Samos)

Notes:

- Regarding the different categories of the MSW (recyclables, mixed waste, bulky waste), the Airport Users handle their waste together with Fraport Greece B (central management).
- 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 B, 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 B 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 AIRORT

6.1. Flora-Fauna

Flora	
Are there protected zones of vegetation/habitats in the broader airport area?	NO
(if YES) Short description:	
Fauna	
Are there protected species of fauna/birds in the broader airport area? (if YES) Short description: The protected bird species that have been observed at Samos airport since April 2017 are presented below: Black-crowned night heron (Nycticorax nycticorax), Black stork (Ciconia nigra), Cretzschmar's bunting (Emberiza caesia), Eurasian bittern (Botaurus stellaris), Eurasian skylark (Alauda arvensis), European kingfisher (Alcedo atthis), European roller (Coracias garrulous), European turtle-dove (Streptopelia turtur), Garganey (Anas querquedula), Glossy ibis (Plegadis falcinellus), Great egret (Casmerodius albus), Lesser grey shrike (Lanius minor), Marsh harrier (Circus aeruginosus), Montagu's harrier (Circus pygargus), Pallid harrier (Circus macrourus), Purple heron (Ardea purpurea), Short-toed snake eagle (Circaetus gallicus), Spur-winged lapwing (Vanellis spinosus) Other protected animal species observed at Samos airport: Golden Jackal (Canis aureus)	YES

6.2. Ecologically fragile areas

Samos Airport is located outside the limits of the protected areas included in the National Protected Areas Network and is at long distance from them



7. WILDLIFE HAZARD MANAGEMENT

Wildlife strikes and wildlife hazard management measures		
Wildlife species that suffered a strike Strikes (%)		
Crested lark (Galerida cristata)	25%	
Small passerines (Passeriformes spp.)	25%	
Tree pipit (Anthus trivialis)	25%	
Yellow-legged gull (Larus michahellis)	25%	

Wildlife strike risk mitigation measures:

- Inspections of the manoeuvring area for wildlife monitoring and control at regular intervals
- Drainage ditches are regularly monitored and when necessary cleaned, to ensure efficient water run-off and, thus, reducing the attractiveness of the airside to the wildlife
- Regular grass cutting at the airside. Samos airport is equipped with tractor
- Fence maintenance
- Systematic monitoring of bird species populations and their habitat on and off-airport (at a distance of 13km from the airport)
- Holding of the wildlife strike committee meeting, to raise awareness across the airport users and local authorities
 about the risk of the wildlife strikes on aircraft and the measures applied to mitigate such a risk

Reference year summary results:

Hellenic Civil Aviation Authority (Safety and occurrence management division) 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 "loannis 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?	
(if YES) Details provided in the table below:	

Location	Date of discovery	Type of discovery	Additional protection measures taken

^{*}Following the earthquake of 30.10.2020 the St. Pelagia temple within the airport boundaries has partly collapsed.



9. RESOURCES CONSUMPTION

9.1. Energy consumption

Energy consumption (monthly electric energy consumption, in Kwh)	
Total annual electric energy consumption (in Kwh)	1.416.000

9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport 5		
Number of firefighting vehicles at the airport	4	
Total annual fuel consumption	Diesel (It)	7.472,38
	Unleaded gasoline (It)	64,50

9.3. Heating oil or natural gas consumption

Heating oil or natural gas consumption	
Total annual heating oil consumption (It)	_*
Total annual heating natural gas consumption (m³)	N/A

^{*}Heating and air conditioning is performed via heat pumps

9.4. Fuel consumption for generator

Water consumption	
Total annual consumption (It)	0

9.5. Water consumption

Water consumption	
Total annual consumption (m³)	-

No available data due to hydrometer failure under the responsibility of the Municipality of Samos.



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 CO₂ Emissions (t) 2021
Direct emissions form heating fuel (scope 1)	0,0
Direct emissions from fuel used for fleet vehicles (scope 1)	15,4
Direct emissions from fuel used for firefighting vehicles (scope 1)	4,7
Direct emissions from fuel used for generators (scope 1)	0,0
Indirect emissions from electricity consumption (scope 2)	853,8
Total (t)	873,9
Kg CO ₂ /passenger	3,23

Notes:

Fraport Greece B 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 planned was certified during the year 2020 according to ACA (Airport Carbon Accreditation)



11. HUMAN COMSUMPTION WATER MONITORING PROGRAM

Human consumption water quality	
Water supply (public water network or airport's boreholes)	Municipality of Samos network
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, NO₃, NO₂, 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 (groundwater) and Volatile hydrocarbons, aliphatic, aromatic and chlorinated (soil gas)	

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 the environmental monitoring reports of the fuel handlers, and based on the New Dutch List (2013) which is adopted in the absence of relevant national specifications/limits, the environmental condition of the ground water & soil gas is found adequate and no decontamination 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.



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 netwo	ork.

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 analyzed	N/A
Summary of quality of WWTP effluent	N/A