5th ANNUAL REPORT ON ENVIRONMENTAL STRATEGY

Cretan, Continental Greece and Ionian Sea Regional Airports - Cluster A

Fraport Regional Airports of Greece A S.A.

July 2020 - July 2021

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List of Abbreviations

ACA	Airport Carbon Accreditation
ACI	Airports Council International
AQMS	Air Quality Monitoring Station
CA	Concession Agreement
CCD	Concession Commencement Date
EASA	European Aviation Safety Agency
EBRD	European Bank for Reconstruction and Development
EC	European Community
EIB	European Investment Bank
ESMS	Environmental & Social Management System
E&S	Environmental and Social
FG	Fraport Greece
GG	Government Gazette
HRADF	Hellenic Republic Asset Development Fund
HAF	Hellenic Air Force
IFC	International Finance Corporation
ISO	International Organization for Standardization
MP	Measurement Point
NMT	Noise Monitoring Terminal
PCB	Polychlorine Byphenils
RFF	Rescue Fire Fighting
SEP	Stakeholder Engagement Plan
WWTP	Waste Water Treatment Plant

Executive Summary

The 5h "Annual Report on Environmental Strategy" depicts Fraport Greece's (FG) compliance to the Environmental Requirements set in the Concession Agreement, forty-one months after the Concession Commencement Date of the 11th of April 2017.

The Environmental Strategy outlines the methods to control environmental impacts during the implementation of infrastructure upgrades and growth in operations in response to the 2017 Master Plans. Additionally, it details the ongoing high quality environmental management of the airports.

Via a set of objectives and targets, with specific timeframe, this Environmental Strategy provides a framework to ensure that social, economic, and environmental goals are reflected in the development and daily operation of each airport.

The environmental aspects addressed are:

- sustainable development,
- soil management,
- surface and groundwater quality,
- biodiversity,
- cultural heritage,
- air quality,
- noise and
- waste management.

Potential impacts are presented for every environmental aspect, along with preventive actions.

1. Introduction

1.1. Fraport Greece - Overview

Fraport Greece (FG) was established in 2015 and is responsible for maintaining, operating, managing, upgrading and developing 14 regional airports in Greece over a period of 40 years.

The operational transfer of the airports to **FG** took place on April 11th, 2017. At the time of the Concession Commencement Date, full payment of the €1.234 billion upfront concession fee was made by **FG**, linked with the transfer of operations at the 14 airports. Along with the upfront concession payment, an annual fixed concession fee of initially €22.9 million and a variable annual concession fee of on average 28.5% of the operational profit will be paid every year.

Two separate, almost identical concessions were granted by the Greek State in an international tender process, each applying to seven of the 14 airports ("Cluster A" and "Cluster B").

FG consists of two concession companies with their corporate seats in Athens, one company for Cluster A named "Fraport Regional Airports of Greece A S.A." ("Fraport Greece A", FGA) and one company for Cluster B named "Fraport Regional Airports of Greece B S.A." ("Fraport Greece B", FGB).

Fraport Regional Airports of Greece Management Company S.A. (FGM), a third company with its corporate seat in Athens, is acting as management company and is responsible for central functions on behalf of Fraport Greece A and Fraport Greece B, such as employment of staff and contracting of advisors or suppliers.

The Athens headquarters employ more than 200 people and a total of 628 people are employed by **FG** at the 14 airports (November 2020).

The shareholders of **FG** are Fraport AG Frankfurt Airport Services Worldwide, Copelouzos Group and European Marguerite 2020 Fund.

Cluster A under the Concession Agreement of Cretan, Continental Greece and Ionian Sea Regional Airports, includes the following seven (7) airports:

- Thessaloniki (SKG)
- Kerkira (CFU)
- Zakinthos (ZTH)
- Kefallinia (EFL)
- Aktion (PVK)
- Kavala (KVA) and
- Chania (CHQ)

1.2. Concession Agreement Requirements

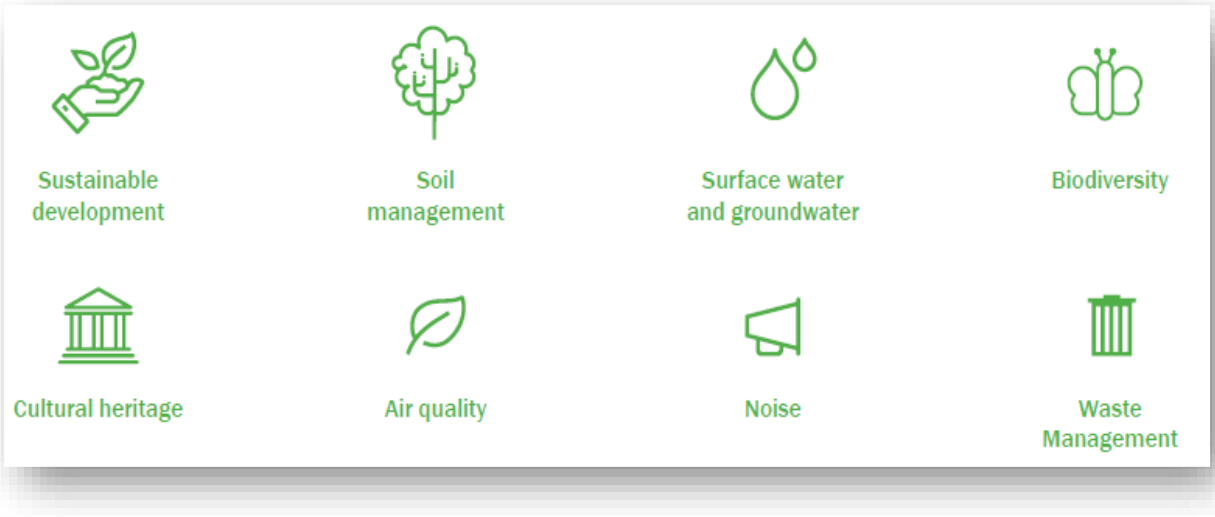
FG has entered into a 40-year Concession Agreement (CA) with the Hellenic Republic, represented by the Hellenic Republic Asset Development Fund (HRADF). The Concession Agreement was ratified by means of the Law 4389/2016 (GG 94/A/27.05.2016).

The Concession Agreement, according to Article 13. Environment Protection – 13.2 Environmental Requirements – §13.2.2 requires the Concessionaire to compile, throughout the Concession Period, an annual report on environmental strategy, which shall be submitted to the State within three (3) months of the Concession Commencement Date (CCD) and each anniversary thereof. The Concessionaire is also obliged to create and maintain an internet site where the aforementioned report shall be published.

1.3. Structure of the Environmental Strategy

The Environmental Strategy outlines the airports' methods to control environmental impacts during the implementation of infrastructure upgrades and growth in operations in response to the 2017 Master Plans and details the ongoing high quality environmental management of the airports. The objectives and time-framed targets outlined in this Environment Strategy provide a framework to ensure that social, economic, and environmental goals are reflected in the development and daily operation of each airport.

Environmental aspects addressed are:



For every environmental aspect, the potential impacts are presented, along with preventive measures.

2. FG's Environmental and Social Policy

The Management of **FG** has adopted an integrated environmental and social policy for all our business locations (headquarters and airports), having defined environmental and social protection as one of our main company goals. Environmental & Social Protection is the responsibility of all employees who need to realize the importance of their duties, take active participation in meeting the common goals and willingly commit to the results of their activities.

In this context:

- We are managing, operating and developing our units in an environmentally and socially responsible way in compliance with the applicable laws, regulations and other commitments.
- We are promoting greater environmental and social responsibility by training our employees and providing awareness programs for all concerned parties.
- We support a precautionary and socially responsible approach to environmental challenges in respect of cost-effectiveness, economic viability and sustainability.
- We encourage the development and dissemination of environmentally friendly practices and technologies by applying environmental and social criteria when selecting goods and services.
- We engage in a regular dialogue with our community stakeholder groups and we incorporate their concerns and points of view in our corporate decision-making process. We communicate closely with our partners in the air transport value chain and work together to develop joint strategies and concepts directed towards continual improvement of environmental performance.

To meet our goals and targets towards sustainability, we focus on the following key aspects:

1. Protection of natural environment, (including wildlife management);
2. Resource use and waste minimization;
3. Waste management (hazardous, non-hazardous);
4. Wastewater management;
5. Energy management, carbon emissions and climate change;
6. Pollution prevention and emergency response;
7. Noise management and control; and
8. Traffic management.

In the framework of the climate change aspect, we engage to manage and reduce our carbon emissions. In order to achieve this goal we calculate and report the direct and indirect Greenhouse Gas Emissions from all the emission sources in the airports' boundaries, based on the GHG Protocol (scope 1 and 2).

3. Legal & Stakeholders Requirements

3.1. Legal Requirements

National legislation, in accordance to the European Directives, govern largely the environmental aspects of airport activities and act as a foundation for environmental programming and performance.

Apart from national legislation, **FG**, abides by the E&S Designated Performance Requirement, which means the applicable Alpha Bank Performance Standards as per the 25.07.2016 E&S Policy, the IFC Performance Standards; the EBRD Designated Performance Requirements and the EIB. The environmental guidelines of each bank are publicly disclosed.

In the interest of responsible and sustainable environmental management, **FG** will endeavor to meet or exceed additional self-imposed standards, including the adoption of applicable international regulations. Tenants at **FG** airports are also required to uphold the same standards.

Table 1: Core Environmental Legislation as amended and in force

Greek Legislation No	GG	Content	European Legislation
General			
Law 1650/1986	A 160	Protection of the environment in Greece	
Law 4014/2011	A 209	New framework for the environmental permitting procedure	
Law 4685/2020	A 92	Modernization of the Environmental legislation	Directives 2018/844 and 2019/692
JMD 5825/2010	B 407	Building Energy Efficiency Code	Directives 91/2002/EC and 31/2010/EC
Waste Management			
Law 4042/2012	A 24	Protection of the environment through criminal law, on waste management	Directives 2008/99/EC (WFD) and 2008/98/EC
PD 82/2004	A 64	Management of used mineral oils	
PD 109/2004	A 75	Management of used vehicle tire	
JMD 41624/2057/E103/2010	B 1625	Management of batteries	
JMD 23615/651/Δ103/2014	B 1184	Management of Waste Electrical and Electronic Equipment (WEEEE)	
JMD 36259/1757/E103/2010	B 1312	Management of Construction and Demolition Waste (CDW)	
JMD 13588/725/1985	B 383	Measures conditions and restrictions on hazardous waste management.	Directive 91/156/EC

Greek Legislation No	GG	Content	European Legislation
Environmental & Aircraft Noise			
JMD 211773/2012	B 1367	Environmental and aircraft noise	Directive (END) 2002/49/EC
JMD 13586/724/2006	B 384	Environmental Noise	Directive (END) 2002/59/EC
PD 80/2004	A 63	Noise management at EU airports	Directive 2002/30/EC
PD 1178/81	A 291	Measurements and checks on aircraft noise	
Environmental Liability			
PD 148/2009	A 190	Environmental liability for the prevention and remedy of environmental damage.	Directive (ELD) 2004/35/EC
Air Pollutants			
JMD 14122/549/E.103/2011	B 488	Ambient air quality	Directive 2008/50/EC
JMD 22306/1075/Δ103/2007	B 920	Target values and limits for assessment of concentrations of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in atmospheric gases	Directive 2004/107/EC
Nature Conservation			
PD 67/81	A 43	Protection of wild flora and fauna	
Law 3937/2011	A 60	Conservation of Biodiversity	Directive 92/43/EC
Archaeology & Sites of Cultural Interest			
Law 3028/2002	A 153	Cultural heritage protection	
Wastewater			
JMD 145116/2001	B 354	Establishment of Measures, Conditions and Procedures for the Re-use of Waste Water and other provisions	
JMD 191002/2013	B 428	Amendment of JMD 145116/2011, which abolishes the relevant permit	
MD E1b/221/65	B 138	Emissions standards and limits of wastewater discharged into water intended for bathing and any other use except from water consumption. As modified by MD Γ4/1305/1974, Γ1/17831/1971, ΓΥΓ2/133551/2008	
Electromagnetic Fields			
Decision 661/2012	B 2529	Procedures on licenses of land based antennas	

3.2. Approved Environmental Terms

According to the applicable national legislation, each airport operates under Approved Environmental Terms, which ensure the optimal operation of the airport in regards to protecting the environment.

The terms set limits, guidelines and monitoring patterns adjusted to the specifications of each airport, in order to defend all environmental aspects.

Table 2: Approved Environmental Terms Decisions of Cluster A airports

Airport	Environmental Terms Approval
SKG	• **105214/17.11.2000** as it has been modified by the following: ○ **125887/08.05.2007** ○ **204012/05.10.2011** ○ **12763/10.03.2016** ○ **9322/09.05.2018**
CFU	• **11945/08.03.2017** as it has been modified by the following**:** ○ **7208/30.03.2018**
CHQ	• **51226/25.10.2016** ○ **5100/05.03.2018**
ZTH	• **43392/96/17.02.1997** as it has been modified and extended by the following: ○ **127597/02.07.2010** ○ **175512/15.10.2014** ○ **36893/24.11.2017**
EFL	• **32647/94/09.05.1995** as it has been modified and renewed by the following: ○ **106586/08.08.2006** ○ **151698/04.09.2015** ○ **24341/19.05.2017** ○ **39772/26.09.2017** ○ **36368/20.12.2017** ○ **85360/3423/07.03.2019**
PVK	• **11543/07.03.2017** as it has been modified by the following: ○ **50502/08.12.2017**
KVA	• **84821/95/08.07.1996** as it has been modified and renewed by the following: ○ **105624/14.11.2006** ○ **200818/23.07.2012** ○ **172044/09.04.2014** ○ **24353/19.05.2017** ○ **37774/20.12.2017**

3.3. Stakeholder Requirements

FG, as a community-based organization, values the relationships build with business partners and local communities. Meaningful Stakeholder Engagement is the basis for building strong, constructive, and responsive relationships that are essential for the successful management of a project's environmental and social impacts.

This is achieved by the establishment and implementation of a corporate Stakeholder Engagement Framework (SEF) defining the established and implemented process between FG, local and national-wide stakeholders during the whole life-cycle of the project.

Local (airport specific) Stakeholder Engagement Plans (SEPs) are in place for every FG operated airport, outlining how FG communicates and seeks feedback from stakeholders in each location. The local SEPs are designed to guide stakeholder consultations leading up to and during the period of the Imminent Works, as well as during the further stages of the operation of each airport. The overall goal is to implement a well-managed, open and meaningful stakeholder dialogue, sharing of information and knowledge to build long-term synergies and collaboration with local communities.

Each local (airport-specific) SEP contains the following information:

- key Imminent Works carried out or planned at each airport;
- updated list and classification of concerned (affected or interested) stakeholders;
- past stakeholder engagement events, incl. relevant feedback;
- provisioned dates and type of upcoming stakeholder engagement events;
- communication tools per event; and
- note about the grievance policy.

3.3.1. Stakeholders Identifications

The concerned stakeholders at each **FG** operated airport were identified during the project preparation phase, as well as via the relevant Social Baseline Studies conducted in years 2017-2018.

The current list of concerned stakeholders of each airport is listed in the relevant local SEP, which is a “live” document maintained by FG. Both the SEF and the site-specific (local) SEPs are regularly reviewed and updated as necessary, ensuring that FG is aware of those that should be involved in the engagement process.

The classes of stakeholders as per the relevant mapping of FG are the following:

- Local population (local community)
- Airport Users
- Local Authorities, Central Government and State Institutions
- Non-Governmental Organizations (NGOs)

- Professional Associations
- Scientific and Environmental Organizations
- Media
- Vulnerable Groups

3.3.2. Stakeholder Engagement during COVID-19 Period

In 2020, it was planned to carry out a number of Stakeholder Engagement events according to the relevant local SEPs. However, due to the COVID-19 pandemic and relevant restrictions, very limited events were managed to be carried out.

In 2021, efforts are being made to resume Stakeholder Engagement meetings at a local level. The possibility of digital stakeholder engagement events is under consideration.

4. Overview of Cluster A Regional Airports

Three months ahead of schedule, Fraport Greece delivered brand new and safe airports with new services and more amenities to the country, Greeks and travelers around the world.

Fraport Greece's investment started in April 2017 and was completed in January 2021, three months earlier than the contractual obligation (April 2021). The innovative investment program of 440 million euros of Fraport Greece for all 14 regional airports, transformed the airports. The total direct revenue at a depth of 40 years (duration of the concession) for the Greek State, according to the relevant economic models, will amount to about 10 billion euro. Indirectly, the more modern, comfortable, safe and friendly is the infrastructure of a tourist country, the more attractive its destinations become and therefore in turn will favor all the "related" industries such as hotels and in general accommodation, catering, museums and culture.

It is noteworthy that the work at the airports did not stop during the summer months for the first three years with high passenger traffic, while they continued in the midst of the pandemic, finally overcoming the countless difficulties and huge obstacles that arose.

More specifically, the airports where the upgrade works were completed first, were those of Zakynthos, Crete in Chania and Kavala. In Zakynthos, the terminal was renovated and remodeled, so check-ins increased by 35% and security points by 150%. At Chania airport, the airport was completely reorganized, the gates were increased by 25% and the security and control points were doubled. Similar renovation works were carried out in Kavala where among other things, the terminal was expanded by 1,955 sqm.

In the mainland, another airport that changed completely is that of Aktion which was expanded by 2,500sq.m, was renovated and now has 14 check-in, 7 departure gates and double security points. The projects that were completed at the "Anna Pollatou" airport of Kefalonia have given a new airport of 10,700 sqm, which implies increased check-in by 70%, with double security points and double departure gates.

The same applies to "Ioannis Kapodistrias of Corfu which was delivered in the second quarter of 2020. The new terminal with an area of 10,355 sqm hosts 28 check-in, 8 checkpoints and 12 departure gates.

The largest airport under the management of Fraport Greece, the emblematic airport "Macedonia" of Thessaloniki for the upgrade of which 100 million euros and 222.9000 man-days were invested, now has a new terminal of 34,033 sqm which is connected to the pre-existing one with impressive flyovers. The total area of the "Macedonia" airport terminal has doubled offering more amenities and options. New check-in areas, double departure gates, new restaurants and stores compose an airport environment reminiscent of Europe's most popular airports.

4.1. Continental Greece

4.1.1. Thessaloniki Airport "Makedonia" (SKG)

Thessaloniki Airport "Makedonia" third largest in Greece by the number of passengers and the second largest in terms of air traffic movements. The airport incorporates both civilian and military use.

While near the airport of Thessaloniki there are no protected areas of environmental significance, Thermaikos Gulf is a "sensitive recipient" and requires special attention in the overall environmental management.

Prehistoric settlement "Touba Livadaki" is sited within airport limit at the military area.

Figure 1: SKG airport location - https://www.skg-airport.gr/en

4.1.2. Kavala Airport "Megas Alexandros" (KVA)

Kavala Airport "Megas Alexandros" is located approx. 15 km South-East of the Kavala town. and incorporates both civilian and Military use.

The airport is in close proximity to Nestos Delta (Natura GR1150001 (SPA), GR1150010 (SCI, SAC)) that consists of agricultural land with few freshwater lagoons separated from the sea by narrow sandy strips.

Figure 2: KVA airport - https://www.kva-airport.gr/en

4.1.3. Aktion Airport (PVK)

Aktion Airport is located on a peninsula between three touristic locations: Preveza (4km), Vonitsa (16km) and Lefkada Island (20km).

From the naval battle of Aktion, where Octavian defeated Marcus Antonio's and Cleopatra's troops, the airport today has a strong military presence as it is a NATO air force base.

While taking off passengers can admire the National Wetland Park of Amvrakikos an area of significant ecological value as well as the Natura GR2310006, (SCI, SAC).

Figure 3: PVK airport - https://www.pvk-airport.gr/en

4.2. Ionian Sea

4.2.1. Kerkira Airport "Ioannis Kapodistrias" (CFU)

Kerkira Airport "Ioannis Kapodistrias" is an Ionian island airport located in Kerkira, three kilometres south of Kerkira town, in the coastal sea area between Kanoni and Mesoggi villages. The island of Kerkira is one of the most popular tourist destinations in Europe, attracting visitors from the UK, Scandinavia, Germany, Italy and Austria.

Airport's surroundings offer a variety of environmental and cultural attractions with Chalkiopoulou Lagoon (SCI, SAC) and Kola Lake around the runway, Pontikonisi Peninsula (Particular Natural Beauty Area) and the old Kerkira Town right out of the terminal exit.

Figure 4: CFU airport - https://www.cfu-airport.gr/en

4.2.2. Kefallinia Airport "Anna Pollatou" (EFL)

Kefallinia Airport "Anna Pollatou" is located near Svoronata village, about 8 kilometres south of Argostoli, the capital of Kefallinia.

The marine area in the southeast airport boundary and up to Argostoli is a Natura area GR2220004 (SCI, SAC) mainly due to the phanerogam Posidonia Oceanica.

Figure 5: EFL airport - https://www.efl-airport.gr/en

4.2.3. Zakinthos Airport "Dionisios Solomos" (ZTH)

Zakinthos Airport "Dionysios Solomos" is located near the town of Kalamaki. The airport is around 4 km from the capital of the island, the town of Zakinthos.

Zakinthos main emblem the sea turtle Caretta-Caretta nests in the Lagana Bay in the southern boundary of the airport (National Marine Park of Zakinthos' and Natura GR2210002 (SCI, SAC) area. In order to protect the species, the airport does not operate during night-time (22:00-05:00).

Figure 6: ZTH airport - https://www.zth-airport.gr/en

4.3. Crete

4.3.1. Chania Airport "Ioannis Daskalogiannis" (CHQ)

Chania Airport "Ioannis Daskalogiannis" is located in the Akrotiri peninsula in the north-west of the Island of Crete, is about 15 km from the town of Chania. The airport includes both civilian and military areas. Near the airport of Chania there are no protected areas of environmental significance.

Figure 7: CHQ airport - https://www.chq-airport.gr/en

5. Sustainable Development

5.1. Overview & Objectives – Environmental & Social Management System

Company Objectives:

The objective of **FG** is the safe, secure, and efficient management of the seven (7) Greek Regional Civil Airports of Thessaloniki (SKG), Kerkira (CFU), Zakinthos (ZTH), Kefallinia (EFL), Aktion (PVK), Kavala (KVA) and Chania (CHQ).

FG provides the infrastructure and the necessary services for meeting, sending off and serving of airplanes, passengers, visitors, baggage, cargo and mail according to the best practices and the applicable legislation.

FG aims to create a pleasant passenger experience for airport users, thus creating new business opportunities for concessionaires and service providers; as well as to make our airports attractive and environmentally friendly destinations for passengers, tour operators and airlines in the region.

We constantly improve the quality of our services, productivity and environmental performance in order to keep our market place in the long term.

FG ensures that:

- We communicate our environmental policy to all employees and persons working on our behalf.
- We communicate this policy and the results of our activities to our Shareholders and to Second and Third parties as appropriate, and to the Public.
- We maintain and continuously improve our environmental policy and management system.
- We set objectives and targets for the environment.
- The environmental policy is reviewed on an annual basis.

Requirements

FG has incorporated, as applicable, international environmental and social standards (EIB, EBRD, IFC, etc.), as well as policies and guidelines of its shareholders (mostly Fraport AG) in the development of its own respective Environmental & Social Management System (ESMS) in order to address the environmental and social impacts and issues associated with each airport project.

In the context of the ESMS, which has been based on the ISO 14001 standard, **FG** has identified the key environmental and social aspects for the following areas:

- Pollution Prevention: noise, vibrations, storm water, wastewater, non-hazardous waste, hazardous waste, hazardous materials (handling & storage), soil/groundwater protection (leaks & spills), air emissions.

- Community Health, Safety & Security
- Biodiversity Conservation
- Resource Efficiency (water, energy, raw materials)
- Cultural Heritage

for which, it takes the appropriate control and monitoring measures.

Also, through the development of the airport masterplans, **FG** minimized the need for land acquisition and mitigated or eliminated any degradation or disturbance of landscape features, disturbance of wildlife habitats or altering of heritage buildings and monuments.

FG, through promotion of sustainable growth of air-travel, is supporting local communities by boosting regional financial activity and job creation. The Project is enhancing sustainable local working conditions and hiring, both by **FG** and business partners.

The ESMS is in compliance with all ordinances, statutes and regulations of the Greek State Agencies and European Union policy and legislation related to the protection of the environment, as required for enterprises as ours.

All major contractors, the ground handling services providers as well as the fuel handlers in the airports hold ISO 14001 certification or equivalent.

For construction projects the contractors must elaborate and enforce a project specific Health Safety & Environmental Plan.

5.2. Environmental Dimension as incorporated in Planning & Designs

Airport tenants, contractors and operators are required to ensure appropriate systems and procedures are in place to manage specific environmental risks associated with their activities from resources consumption. Tenants are encouraged to conserve energy through KENAK, the Greek state “Regulation on the Energy Performance of Buildings” and the technical guidelines issued by the Technical Chamber of Greece to be applied to all new and extensively renovated airports buildings. Recommendations are provided to tenants during audits on methods to reduce their energy and resource consumption and waste generation.

Energy

Energy conservation as already incorporated in the design is achieved through:

- Terminal use minimization during winter period by isolating unnecessary parts of the buildings with minimal use.
- Protection of the building against outdoor adverse conditions by enhancing shell insulation specification, solar protection glazing and / or external shading.
- Use of natural light preferred where possible.
- High efficiency chilled and hot water production equipment.

- Adjustable energy consumption to variable load demand (variable flow systems).

Water Conservation and Quality

- Monitoring to track water consumption.
- Spill traps/management, oil separators and closed fuel delivery systems as foreseen in the environmental terms.
- Refurbishment of existing Waste Water Treatment Plants and connection to local sewage network for SKG, CHQ and KVA.

Resources (materials and waste management)

Selection of materials that reflect our sustainability approach consider, when possible, the following criteria:

- Reuse of building & appropriate excavation materials onsite.
- Use of lower biochemical oxygen demand (BOD) de-icing materials.
- Use of nontoxic pest-control products.

6. Soil Management

6.1. Overview

FG's objective is to protect soil from airport activities and appropriately manage and/or rehabilitate any contaminated sites.

The majority of contaminated sites are associated with historic activities on and off each airport including spills, landfill activities and constituents of firefighting foams.

Some activities that could affect soil are:

- Construction and earthworks.
- Grounds maintenance including vegetation removal and weed control.
- Storage, handling, use and disposal of hazardous materials.
- Aircraft refuelling, vehicle and aircraft wash down.
- Aircraft, vehicle, mechanical plant and electrical equipment maintenance.
- Car parking.
- Waste management infrastructure, storage and disposal.
- Surrounding land use.

These activities could cause:

- Contamination from spillage, leakage, seepage, or residual runoff from hardstand areas.
- Migration of existing contamination from the original source through natural pathways or disturbance during construction.
- Erosion.

6.2. Soil Management Action Plan

FG is regularly inspecting the airport, tenant, contractor and operator activities. Where there is soil or groundwater contamination caused by their operations, airport operators are required to undertake relevant measures to monitor, manage or remediate the contamination (obligation imposed by the Approved Environmental Terms).

According to article, 13.4 of the Concession Agreement **FG**, aims to remediate any identified pre-existing contamination within the concession sites.

Actions to manage potential impacts to soils include:

- Periodic measurement campaigns to evaluate soil pollution and surveys of polluted sites as well as to monitor potential pollution
- Remediation of polluted zones.

- Activities with the potential to contaminate soil or groundwater will undergo a risk assessment to inform appropriate management procedures.
- Procedures and resources in place to immediately treat accidental spillages

Table 3: Targets for soil management

Target	Timeframe
Coastline Monitoring for erosion	In Thessaloniki as appropriate after the completion of State Works

6.3. Achievements

Some of the achievements so far include:

✓ Soil remediation in identified contaminated areas by the Environmental Baseline Survey conducted pre-CCD has been successfully completed in Thessaloniki (SKG), Kerkira (CFU), Kavala (KVA), Zakinthos (ZTH), Aktion (PVK) and Kefallinia (EFL) Airports.

The techniques used were both in-situ and ex-situ, depending on the area and extent of contamination. The in-situ technique was performed in order to remediate the soil's vadose zone that would prevent any further contamination of the groundwater by leaching processes. The target limits, in order to deem the remediation successful were set by HCAA in cooperation with the National Technical University of Athens (NTUA).

The ex-situ technique included removal of the contaminated soil and rehabilitation to its prior condition.

A grand total of nearly 450tn of contaminated soil were removed from SKG, KVA, CFU and PVK. These quantities were collected by a licensed collector, were treated as contaminated soil (European Waste Catalogue code 17 05 03*) and were disposed and recovered as per the relevant legislation for hazardous waste.

Fuel handler's sites in Kerkira (CFU) and Thessaloniki (SKG) Airports perform in situ remediation, where required, with the necessary equipment, also abiding by the set limits by HCAA and NTUA.

✓ **FG** through the Soil Erosion and Sedimentation Plan has managed a high percentage of re-use of excavation and demolition materials for backfilling or use of aggregates.

7. Surface Water & Groundwater

7.1. Overview

FG's objective is to protect surface water and groundwater from airport activities and appropriately manage or rehabilitate any contaminated sites.

The majority of the airports of Cluster A, with the exception of Chania (CHQ), are near coastal areas and are typical of coastal environments. Being close to the sea, surface and groundwater levels and quality can be susceptible to quality and quantity alterations affected by sea level rise, tidal influences and flooding.

In addition, some activities that could affect water quality may be:

- Changes to the drainage network, leading to increased flow velocities or reduced flood storage capacity.
- Development that creates increased impermeable areas and increased runoff.
- Construction, earthworks and vegetation removal.
- Weed and pest control.
- Aircraft refuelling.
- Equipment refuelling.
- Vehicle and aircraft cleaning.
- Aircraft, vehicle and equipment maintenance.
- Collection, storage, handling, use and disposal of hazardous materials.
- Waste management infrastructure and storage.
- Upstream land uses.
- Known and potentially contaminated sites.
- Potential malfunction of sewerage collection and wastewater treatment.

These activities may cause:

- Pollution from spillage, leakage or seepage into storm water infrastructure.
- Disturbance of known and potentially contaminated sites.
- Changes to the upstream or downstream flooding regime and possible disturbance of local water drills.
- Increased flow velocities, leading to erosion.
- Creation of mosquito-breeding habitat leading to public health risks.
- Attraction or spread of pest animals and weeds.
- Possible disturbance of local fauna and flora.

7.2. Water Management Plan

FG is developing water management procedures aiming to eliminate any potential surface and groundwater environmental disturbance.

Potable, surface and groundwater quality is monitored at various sites regarding various physicochemical parameters by sampling:

- terminal water network
- monitoring boreholes
- surface water across the airports (open drainage system).

All chemical analyses are conducted at licensed and certified laboratories.

Measures to manage potential impacts to surface water and groundwater quality include:

- Implementation of water protection measures as described in the Environmental Terms for each airport.
- Spill response and reporting procedures.
- Waste handling procedures.
- Installation and maintenance of storm water treatment devices (oil-separators and sand traps).
- Tenant and construction audits with routine inspections.
- Incorporation of existing surface water and groundwater information during planning of the new developments (imminent works).
- Drainage infrastructure designed and modelled to prevent potential flood impacts.

Table 4: Target for water management

Target	Timeframe
Water management procedures	Ongoing - Annually

7.3. Achievements

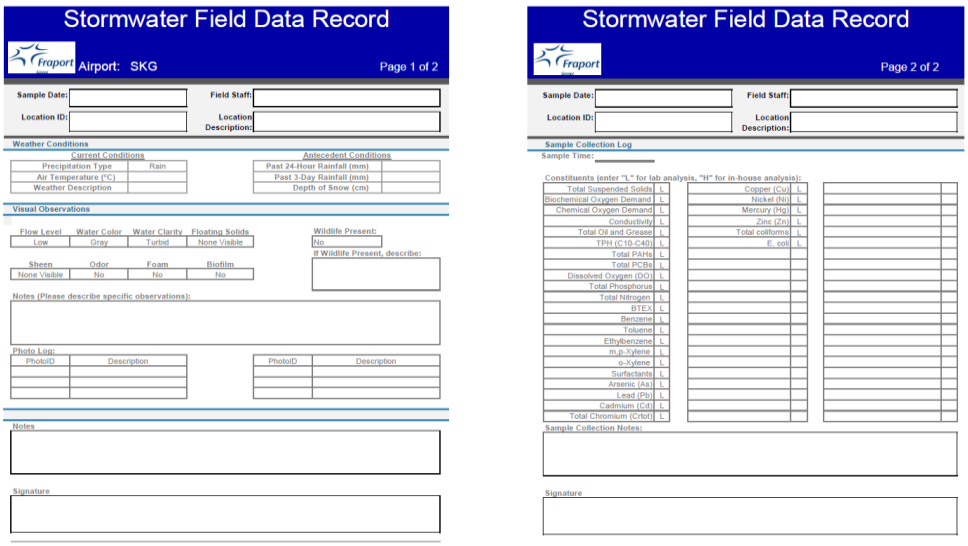
- ✓ Water Quality Monitoring Program**:** which consists of chemical analyses of surface and groundwater samples in predefined positions within the airport throughout the year.
  - The chemical analyses are performed by certified laboratories. The FG personnel that conducts the sampling also has received appropriate training.
  - A total of 18 samples of surface runoffs and 14 samples from monitoring wells in all 7 Cluster A airports are analysed for various chemical parameters including but not

limited to pH, BOD_5, COD, DO, TSS, TN, TP, heavy metals, TPH, PAHs, oil & fats, BTEX and PCBs.

- Fuel handlers conduct their monitoring analyses as per the Environmental Terms requirements. **FG,** in cooperation with the Fuel Handlers, monitors the results and undertakes proper actions if necessary.

Figure 8: PVK storm water run-off sampling

Figure 9: SKG storm water runoffs sampling, with the use of a bailer



Stormwater Field Data Record

Airport: SKG — Page 1 of 2

Sample Date: | Field Staff: | Location ID: | Location Description:

Weather Conditions

Current Conditions		Antecedent Conditions	
Precipitation Type	Rain	Past 24-Hour Rainfall (mm)	
Air Temperature (°C)		Past 3-Day Rainfall (mm)	
Weather Description		Depth of Snow (cm)	

Visual Observations

Flow Level	Water Color	Water Clarity	Floating Solids
Low	Gray	Turbid	None Visible

Sheen	Odor	Foam	Biofilm
None Visible	No	No	No

Wildlife Present: No

If Wildlife Present, describe:

Notes (Please describe specific observations):

Photo Log:

PhotoID	Description	PhotoID	Description

Notes

Signature

Stormwater Field Data Record

Page 2 of 2

Sample Date: | Field Staff: | Location ID: | Location Description:

Sample Collection Log

Sample Time:

Constituents (enter "L" for lab analysis, "H" for in-house analysis):

Total Suspended Solids	L	Copper (Cu)	L		
Biochemical Oxygen Demand	L	Nickel (Ni)	L		
Chemical Oxygen Demand	L	Mercury (Hg)	L		
Conductivity	L	Zinc (Zn)	L		
Total Oil and Grease	L	Total coliforms	L		
TPH (C10-C40)	L	E. coli	L		
Total PAHs	L				
Total PCBs	L				
Dissolved Oxygen (DO)	L				
Total Phosphorus	L				
Total Nitrogen	L				
BTEX	L				
Benzene	L				
Toluene	L				
Ethylbenzene	L				
m,p-Xylene	L				
o-Xylene	L				
Surfactants	L				
Arsenic (As)	L				
Lead (Pb)	L				
Cadmium (Cd)	L				
Total Chromium (Cr(tot))	L				

Sample Collection Notes:

Signature

Figure 10: Storm water field data record. Airport Engineers have received relevant training in order to perform the sampling. Post sampling the airport staff fills in the relevant form.

✓ All the Waste Water Treatment Plants (WWTP) have undergone heavy maintenance works while the detail design includes either the connection to the Municipal Sewage Network or the construction of new high end on site facilities.

- Chania (CHQ) and Kavala (KVA) Airports have been connected to the local sewage network since 2018,
- Aktion (PVK) has undergone additional works

- Kefallinia (EFL), has a new Wastewater Treatment Plant of tertiary treatment and the treated effluent will be re-used within the airport for enrichment of the underground aquifer.

✓ Groundwater remediation in identified contaminated areas by the Environmental Baseline Survey have been successfully completed in Thessaloniki (SKG), Kerkira (CFU), Kavala (KVA), Zakinthos (ZTH) Airports.

The in-situ technique was performed in order to remove dissolved contaminants, such as petroleum hydrocarbons and chlorinated hydrocarbons, form the groundwater. The technique is based on the logic of "pump and treat". The target values, in order to deem the remediation successful were set by HCAA in cooperation with the National Technical University of Athens (NTUA).

Fuel handler's sites in Kerkira (CFU) and Thessaloniki (SKG) Airports also performed in situ remediation, with the necessary equipment, also abiding by the set target values by HCAA and NTUA.

✓ Installation of oil-water separators at Thessaloniki (SKG) and Kerkira (CFU) airports. The category I oil water separators allow a residual oil content of 5mg/l and are called coalescing separators. Coalescing is achieved by using a coalescing material such as corrugated plates or filter materials. At SKG airport six (6) oil water separators have been installed in airside area, whereas at CFU airport two (2) type I separators have been installed covering both aprons.

8. Biodiversity

8.1. Overview

FG values greatly the protection of the ecosystems and plans to**:**

- Appropriately manage biodiversity values across the network of its 14 airports.
- Reduce probable impacts to surface water (lakes, lagoons and sea) and groundwater from airport operations.
- Protect and enhance the ecological values of conservation areas.

Wildlife Hazard Management & Biodiversity Conservation

Each airport has its own Wildlife Hazard Management Programme (WHMP), tailor made to the local environmental conditions. The WHMP refers to:

- Wildlife hazards identification on and off-airport (up to an area of 13km radius).
- Risk assessment of wildlife strikes.
- Actions to eliminate the wildlife strike risk.

The Biodiversity Conservation Action Plan 2021-2025 is included in the Biodiversity Conservation Programme of the 14 FG airports.

An annual report for each FG airport is submitted to the Hellenic Civil Aviation Authority (HCAA), including data related to:

- Monthly distribution of wildlife hazards on airport.
- Statistics analysis of wildlife strikes.
- Wildlife strike risk assessment.
- Wildlife management measures (including conservation and control).

FG manages biodiversity at the airports and works to reduce the potential impact of its operations on the biodiversity of the surrounding area.

Some activities likely to affect biodiversity at each airport may be:

- Grounds maintenance activities including vegetation clearing.
- Vehicle movements.
- Aircraft movements.
- Construction and demolition works.

These activities could result in:

- Biodiversity loss.
- Fragmentation of habitat from clearing associated with new developments.
- Foraging or breeding habitat.

8.2. Biodiversity Conservation Action Plan

Actions that can be protective of biodiversity values are:

- Extend wildlife monitoring to include less charismatic species, such as insects, amphibians, invertebrates and reptiles and enter all data into the database of the Biodiversity Management System.
- Systematic monitoring of bird species and populations on and off-airport (up to an area of 13km radius) with emphasis on bird behavior (e.g. nesting, roosting, flight behavior).
- Enrichment of wildlife monitoring methods with field surveys and wildlife trail camera traps.
- Grassland management could be targeted towards enhancing the grass areas on airport; attention should be paid on the number and abundance of protected flora species or wildflowers and on practices against the growth of invasive species.
- Continuous training and seminar awareness of the FG Operations Personnel on Wildlife Hazard Management & Biodiversity Conservation.
- Enhancement of bird species identification skills from the operations airside personnel, with regular support from the Wildlife Hazard Management Team.

Table 5: Targets for biodiversity conservation

Target	Timeframe
Land use monitoring on and off-airport	Ongoing - within 4th year of operations
Wildlife surveys on and off-airport	Ongoing – within 4th year of operations

Detailed reference of the actions for the achievement of the above mentioned targets are included in the Biodiversity Conservation Programme.

8.3. Achievements

Some of the achievements so far include:

- ✓ Conception and planning of the Biodiversity Conservation Programme.
- ✓ Expert herpetologist Mr. Strachinis during a teleconference informed FG personnel about the identification and safe relocation of snakes found indoors. He pointed out the ecological importance of snakes for flora, fauna and human beings. The snakes protect the crops and improve the public health, by feeding on animals such as rodents, insects and arthropods that could transmit zoonotic diseases to human beings.
- ✓ Design and placement of a poster to inform airport users and passengers for the safe handling of stray animals at the airport area.
- ✓ Organization and delivery of webinars to the FG personnel in order to be informed about wildlife hazard management and biodiversity conservation.
- ✓ Attendance to the Environmental Strategy Committee Meetings of ACI Europe.

✓ The below table includes some of the bird species observed at Cluster A airports and their vicinity by Fraport Greece personnel, during the period 11/7/2020-11/07/2021.

Table 6: Remarkable observations of bird species at Cluster A airports (11/7/2020-11/07/2021)

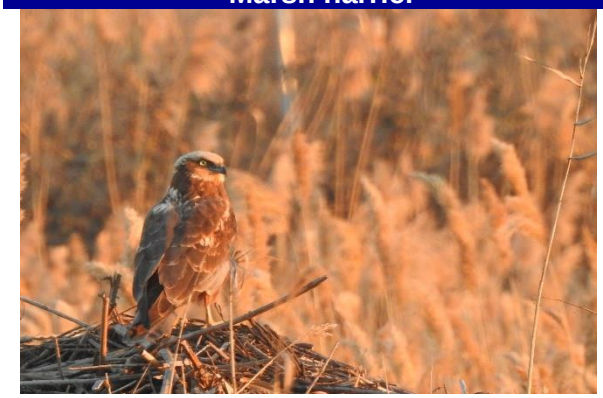
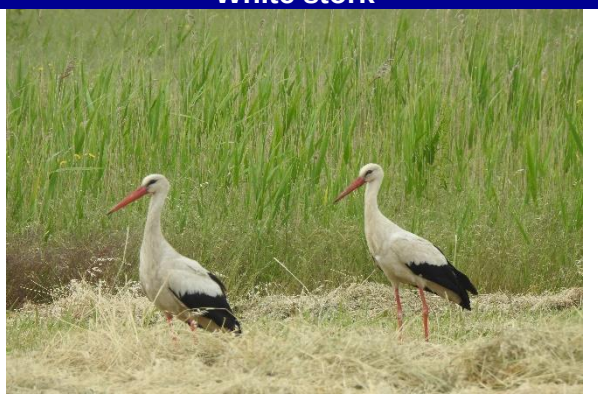
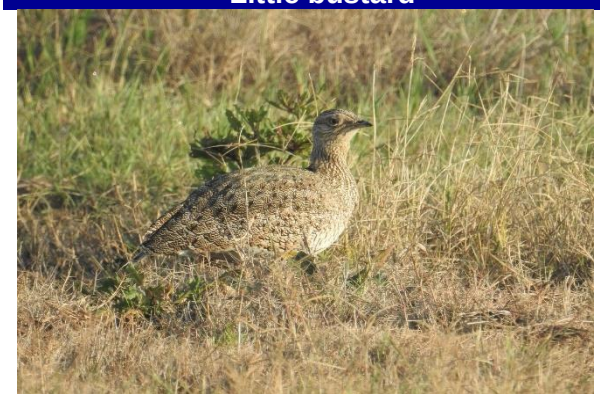
Airport	Date	Bird species
Thessaloniki "Makedonia"	30 July 2020	Eurasian curlew *(Numenius arquata)*
	16 October 2020	Common cuckoo *(Cuculus canorus)*
	15 December 2020	Little bustard *(Tetrax tetrax)*
	13 January 2021	Peregrine falcon *(Falco peregrinus)*
	19 April 2021	Black stork *(Ciconia nigra)*
Kavala "Megas Alexandros"	11 August 2020	Collared pratincole *(Glareola pratincola)*
	29 September 2020	Eurasian hobby *(Falco subbuteo)*
	25 November 2020	Northern lapwing *(Vanellus vanellus)*
	26 January 2021	Eurasian sparrowhawk *(Accipiter nisus)*
	9 May 2021	Black tern *(Chlidonias niger)*
Kerkira "Ioannis Kapodistrias"	29 September 2020	Hoopoe *(Upopa epops)*
	10 October 2020	Common kingfisher *(Alcedo atthis)*
	6 February 2021	Northern lapwing *(Vanellus vanellus)*
	24 March 2021	Golden plover *(Pluvialis apricaria)*
	26 March 2021	Osprey *(Pandion haliaetus)*
Kefallinia "Anna Pollatou"	18 September 2020	Grey heron*(Ardea cinerea)*
	22 September 2020	Montagu's harrier *(Circus pygargus)*
	19 February 2021	Great egret *(Casmerodius albus)*
	25 April 2021	Little egret *(Egretta garzetta)*
	28 May 2021	European roller *(Coracias garrulus)*
Zakinthos "Dionisios Solomos"	2 February 2021	Common kingfisher *(Alcedo atthis)*
	2 February 2021	Zitting cisticola *(Cisticola juncidis)*
	5 April 2021	Marsh harrier *(Circus aeruginosus)*
	7 May 2021	Little stint *(Calidris minuta)*
	15 May 2021	White stork *(Ciconia ciconia)*

- ✓ On 18th May 2021, a ringed White stork was observed at Kavala airport. According to the recovery details, provided by the Hellenic Bird Ringing Center, the bird was ringed at Maggana-Xanthi, on the 11th June 2019.
- ✓ The below table includes some of the snake species observed at Cluster A airports by Fraport Greece personnel, during the period 11/7/2020-11/07/2021.

Table 7: Snake species observed at Cluster A airports (11/07/2020-11/07/2021)

Airport	Date	Snake species
Thessaloniki "Makedonia"	4 July 2020	Caspian whipsnake *(Dolichophis caspius)*
Kavala "Megas Alexandros"	20 August 2020	Grass snake *(Natrix natrix)*
	27 August 2020	Caspian whipsnake *(Dolichophis caspius)*

Table 8: Bird species observed at Cluster A airports (11/7/2020-11/07/2021)

Great egret	Grey heron
Marsh harrier	**White stork**
	
Little bustard	**Common kingfisher**
	

9. Cultural Heritage

9.1. Overview

The sustainable and respectful management of the heritage values will be achieved by:

- Developing and maintaining a detailed knowledge of the heritage values that exist within and in the proximity of FG's concession areas;
- Identifying heritage values early on in the development process so that those heritage values can be considered, remain undisturbed and protected;
- Developing and submitting applications under relevant legislation, in consultation with relevant stakeholders, to impact those heritage values when that cannot be avoided;
- Developing and implementing procedures for appropriately managing heritage values using the guiding principles of avoid, protect and mitigate;
- Ensuring compliance with heritage legislation, associated statutory approvals and the provisions of the concession agreement; and
- Educating **FG** staff of the heritage values that exist within and in the proximity of **FG's** concession areas and the appropriate actions when interacting with these values.

9.2. Cultural Heritage Management Plan

FG's management of cultural heritage is following procedures laid out in the Concession Agreement, consistent with the following practices:

- ❖ Test excavations to determine the existence of Antiquities.
- ❖ Vibration monitoring where necessary.
- ❖ Maintain the existing building structure, envelope, and interior non-structural elements of a historic building or contributing building in a historic district.

Some of the airports of Cluster A are in proximity of cultural heritage important values (e.g. proclaimed archaeological sites, churches, monasteries, sites of important aesthetic value etc.). Especially in the case of Kerkira (CFU) the proclaimed archaeological site of "Old Kerkira Town or Palaiopoli" (GG 178/AAP/2012) boundaries lie within the NE boundary of the concession area.

Activities with the potential to affect cultural heritage at the airports include any ground disturbing activities that could damage known or unknown heritage value. These would include:

- Grounds maintenance activities including vegetation clearing and slashing.
- Construction and demolition works.

Table 9: Cultural Heritage targets

Target	Timeframe
Develop and maintain a heritage database within and in the proximity of FG's concession areas.	Achieved and revised as necessary
Increasing awareness by FG staff and airport tenants of the diverse heritage values within FG's concession areas, the importance of these values and the process to protect these values.	Ongoing

9.3. Achievements

- ✓ Catalogue with relevant heritage sites for each airport.
- ✓ The catalogue was part of the Heritage Action Plan that was implemented by **FG** and includes the following (where applicable) per airport:
  - ✓ Archaeological places and their relevant protection zones.
  - ✓ Places of significance to the cultural and spiritual beliefs.
  - ✓ Artefacts and the remains of important structures.
  - ✓ Sites of exceptional beauty and traditional settlements.
  - ✓ Architectural landmarks & buildings of beauty and/or importance.
- ✓ Chance Finds procedure, (part of the Heritage Action Plan) aims to address the possibility of Antiquities becoming exposed during ground altering activities within the Concession Areas of the 14 Regional Airports and to provide protocols to ensure that the Antiquities are documented and protected as required.

  The purpose of the procedure is to:

  - ➢ avoid significant adverse impacts to antiquities
  - ➢ describe the provisions for managing chance finds through a chance find process which will be applied in the event that cultural heritage is subsequently discovered.

  This procedure includes guidelines and minimum requirements for the Contractor and other parties to define their own chance find procedures according to the nature and scale of their construction works.

  - ✓ Vibration monitoring in SKG showcased that there are no impacts of the airport operation in the archaeological site of Touba-Livadaki located within the airport.

10. Air Quality

10.1. Overview

FG manages airport operations in a way that prevents air emissions causing a nuisance or harm to neighbouring receptors.

Some activities that generate air emissions include:

- Aircraft ground operations including refuelling.
- Vehicle and equipment operations.
- Use of air-conditioners, pumps and generators.
- General Aviation maintenance, including spray painting and paint stripping activities, workshop activities and cleaning operations using organic solvents.
- Use of ground power units and auxiliary power units.
- Grounds maintenance, including vegetation removal and weed control.
- Construction and demolition works.

These activities could cause:

- Air emissions, including greenhouse gases and potentially ozone depleting substances.
- Reduced visibility (mainly from dust or smoke).
- Public nuisance or health issues.
- Offensive or concerning odours (e.g. fuel odours).

10.2. Protective Actions

Measures to manage potential impacts to air quality include:

- Environmental awareness and inductions.
- Monitoring plan and implementation of the measures imposed by the Environmental Terms. The plan includes type and frequency of monitoring parameters and monitoring equipment. The gathered data are being evaluated, air pollutant contours are being calculated, and the subsequent trends are being presented. Relevant measures will be adopted in case of limits exceedance.
- Appropriate collection and disposal of ozone- depleting substances from air-conditioning units.
- Maintenance of vehicles and equipment to prescribed standards.

Airport tenants, contractors and operators are required to ensure appropriate systems and procedures are in place to manage specific air quality environmental risks associated with their activities.

FG commits to a target of **16% reduction of CO_2 direct and indirect emissions by year 2030** compared to 2018 and commits to support the verification, final design and completion of the projects needed to achieve this goal.

Taking into account the need for higher energy reduction commitments (i.e. ACI's Net-Zero 2050 pledge), the action plan for carbon management proposes two investments that not only fulfill but also exceed the initial target:

1. Upgrade of the airports' Energy Management System to achieve the 16% CO_2 reduction target.
2. Installation of photovoltaics in all airports except CHQ due to lack of available space for additional CO_2 reductions.

Table 3: Targets for air quality

Target	Timeframe
Ensure appropriate servicing and maintenance of equipment	Ongoing – Throughout the concession period
Air monitoring plan for all airports	Ongoing
Quantification of CO_2	Annually
Action plan for carbon management in order to reduce every airport's carbon footprint and reach 16% reduction of CO_2 emissions by 2030	Initiate in 2021, in order to meet the first reduction goal, which will be set for 2030

10.3. Achievements

- ✓ In the years 2018 and 2019, **FG** implemented an Interim Monitoring Plan for Air Quality in cooperation with the National and Technical University of Athens. The Plan was submitted to the Ministry of Environment and Energy as an Annex to the Modification EIA studies.
- ✓ In April 2020 **FG** submitted to the Ministry of Environment, as per the approved Environmental Terms, a technical report proposing the most suitable and effective monitoring system for Air Pollution. The parameters analyzed included results of the monitoring campaigns of the past two (2) years and the corresponding simulation models (using the software a) US FAA Emissions & Dispersion Modeling System (EDMS) and b) US EPA AERMOD).

  The proposal included three (3) groups with different monitoring:

  - ❖ Permanent air quality monitoring stations (AQMS) at SKG (one station) and CFU (one station). The installation took place in February 2021. The monitored pollutants are Sulphur dioxide (SO_2), nitrogen dioxide (NO_2), benzene (C_6H_6), particulate matter (PM_{10} & $PM_{2,5}$) and ozone (O_3) and parameters such as wind velocity, wind direction, temperature, relevant humidity, atmospheric pressure. The daily average concentrations for the measured parameters are automatically calculated by the

AQMS' software. In addition, graphs are generated from the software showing the concentrations' daily averages of each pollutant. The data are stored in an online server and are monitored by the **FG** HQ environmental team.

- ❖ Annual monitoring campaigns with mobile stations at CHQ, EFL and ZTH. The campaign includes measurement of the same pollutants in specific points around the airport area.
- ❖ Monitoring campaigns with mobile stations every three (3) years at PVK and KVA. The campaign includes measurement of the same pollutants in specific points around the airport area.

✓ Given the situation with the COVID-19 coronavirus pandemic and the consequent decrease of air traffic and having informed the competent Ministry of Environment & Energy, the measurements of gaseous pollutants were carried out during the peak period of the reference year only at CFU, EFL, CHQ and ZTH.

The results of the monitoring program are included in the Annual Environmental Bulletins and published on FG website as per the requirements of the Environmental Terms for each airport of Cluster A.

✓ **Quantification of Greenhouse Gas emissions (baseline)** for the all seven (7) airports.

The methodology followed for the quantification of GHG emissions was based on:

- Airport Carbon Accreditation Guidance Document, Issue 11, February 2019.
- ISO 14064-1 Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.
- Greenhouse Gas Protocol, WRI (GHG Protocol Corporate Accounting and Reporting Standard, Revised Edition, and GHG Protocol Project Quantification Standard).
- Guidance Manual: Airport Greenhouse Gas Emissions Management, ACI, 2009.

The emissions include the GHG emissions for all direct emissions (Scope 1) and indirect emissions from consumption of purchased electricity, heat or steam (Scope 2) produced within the boundaries of each airport based on the definitions of the HG protocol.

The following table shows the total emissions (Scope 1 and 2) per airport for the year 2020:

Table 11: Total CO_2-emissions 2020 per airport

Airport	IATA Code	Total emissions (t CO_2)
Thessaloniki	SKG	7.147,10
Kerkira	CFU	2.896,00
Chania	CHQ	1.644,70
Zakinthos	ZTH	909,60
Kefallinia	EFL	799,00
Aktion	PVK	1.009,00
Kavala	KVA	3.241,60
Total Emissions Cluster A		**17.647,00**

✓ Thessaloniki, Chania and Kefallinia have earned the accreditation level 1 of MAPPING. The remaining airports have also received Greenhouse Gas emissions verification statement according to ISO 14064.

Figure 11: AGMS at Neo Rysio (Basketball court, MP01) at Thessaloniki (SKG) airport

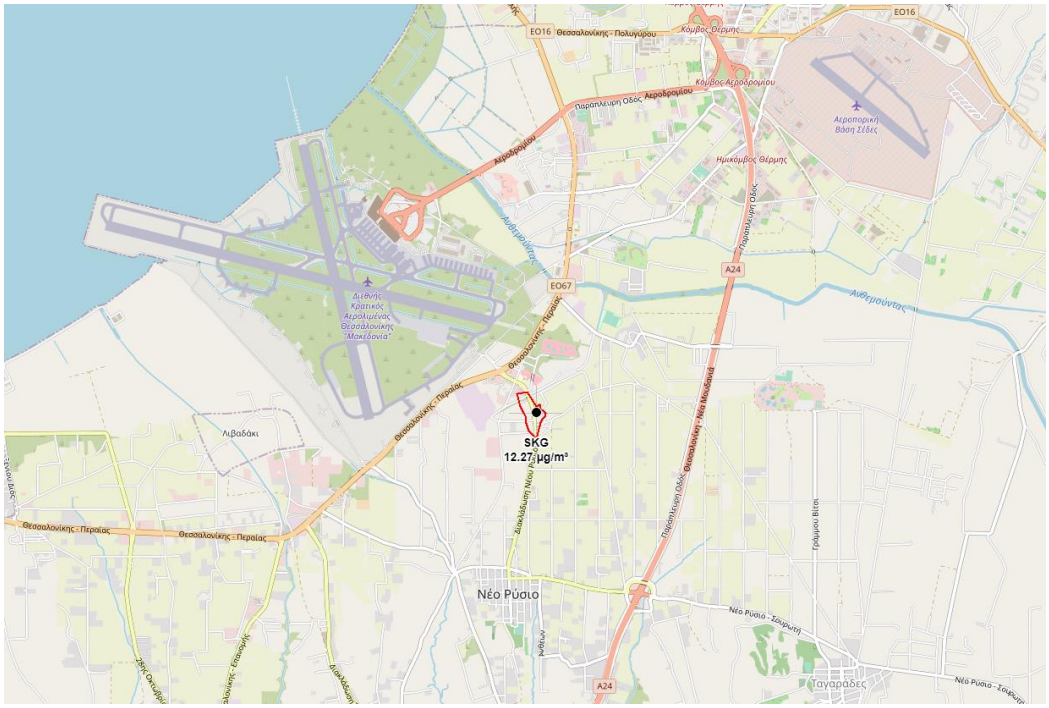


Figure 12: NO_2 concentration for May 2021, from the online application from the Thessaloniki (SKG) permanent AQMS

11. Noise

11.1. Overview

Noise requirements apply to noise associated with ground-based airport activities and aircraft landing and take-off procedures as well as ground running and idling on aprons.

Noise receptors surrounding the airport that could be affected are predominantly the surrounding or adjacent in some cases, urban areas and local fauna.

During maintenance and imminent works, noise is carefully managed to reduce off-site impacts.

FG manages noise in such a manner to ensure it does not cause nuisance to, or adversely affect, neighbouring receptors. Activities that generate noise may be:

- Aircraft landing and take-off procedures.
- Aircraft ground running and idling on aprons.
- Aircraft maintenance and testing activities.
- Fixed and mobile equipment.
- General airport and infrastructure maintenance activities.
- Internal road network traffic.
- Tenant and operator activities.
- Construction and demolition works (temporary only for the duration of imminent or future works implementation).

These activities could cause:

- Nuisance to airport operators and the community
- Disruption in roosting and breeding behaviour of local fauna.

11.2. Noise Management Plan

FG is producing a noise management plan during the operational period, for each airport.

The Monitoring Plan and the implementation of the proposed measures is imposed by the Environmental Terms. The plan includes type and frequency of monitoring parameters and monitoring equipment. The gathered data are evaluated, noise contours are calculated, and the subsequent noise trends are presented. Corrective actions are implemented in case of limit exceedance.

Measures to manage potential impacts from noise emissions include:

- Environmental awareness and inductions.
- Recording, investigation and follow-up of noise enquiries.
- Implementing operational procedures for noise- generating activities.

- Tenant and construction audits.
- Aircraft ground running policy and review of the policy in response to airport operational matters and tenant feedback.
- Regular servicing and maintenance of vehicles and equipment.

Table 4: Targets for noise management

Target	Timeframe
Noise Monitoring Plan	Ongoing
Timely investigation of any reported inappropriate noise generation	When required

11.3. Achievements

- ✓ In the years 2018 and 2019, FG implemented an Interim Monitoring Plan for Noise in cooperation with the National and Technical University of Athens. The Plan was submitted to the Ministry of Environment and Energy as an Annex to the Modification EIA studies.
- ✓ SKG Strategic Noise Mapping**:** SKG exceeded 50.000 ATMs in 2018 and as a result, a Strategic Noise Mapping was required according to the Directive 2002/49/EC. The mapping was completed within 2019 and was submitted to the Ministry of Environment and Energy for approval. The strategic noise mapping has a duration of five (5) years.
  The Strategic Noise Mapping was performed in accordance with the CNOSSOS EU methodology.
  The mapping consisted of annual noise contours and a detailed analysis of the affected sensitive receptors such as schools, hotels, hospitals, cultural centers, and churches.
  The results of the mapping indicated that there are no exceedances in the legislative noise limits. No residents and no sensitive receptors are affected by noise exceeding the legislative limits. There are no recorded residents in the noise contours of L_{den} 60-65 dB(A) and L_{den} 65-75 dB(A) and no residents **in the noise** contours of L_{night} 55-60 dB(A), L_{night} 60-65 dB(A) and L_{night} >65 dB(A).
  Once the new runway 16-34 is complete and operational, the strategic noise mapping will be updated accordingly.
- ✓ In April 2020 FG submitted to the Ministry of Environment, as per the approved Environmental Terms, a technical report proposing the most suitable and effective monitoring system for Noise. The parameters analysed included results of the monitoring campaigns of the past two (2) years and the corresponding simulation models.
  The proposal included three (3) groups with different monitoring:
  - ❖ Permanent noise monitoring terminals (NMT) at SKG (four NMTs) and CFU (two NMTs). The installation took place in February 2021. The data is stored in an online server and are monitored by the FG HQ environmental team.
  - ❖ Annual monitoring campaigns with mobile stations at CHQ, EFL and ZTH.

- ❖ Monitoring campaigns with mobile stations every three (3) years at PVK and KVA.

✓ Given the situation with the COVID-19 coronavirus pandemic and the consequent decrease of air traffic and having informed the competent Ministry of Environment & Energy, the measurements were carried out, during the peak period of the reference year, only at SKG and CFU.

✓ In addition to the measurements, noise level predictions were performed using simulation software and noise contour maps are created (Lden and Lnight) to identify population and buildings within settlement boundaries that are subject to noise levels higher than the limit values.

✓ The results of the monitoring program are included in the Annual Environmental Bulletins and published on FG website as per the requirements of the Environmental Terms for each airport of Cluster A.

Figure 13: Noise monitoring terminal at Thessaloniki (SKG) airport (MP01)

Figure 14: Noise monitoring terminals for Thessaloniki airport (SKG)

- ✓ FG has set up a communication channel for the public via two email accounts (info@fraport-greece.com & environmental@fraport-greece.com) where complaints (e.g. for noise) or even proposals for improvement are received. After a complaint is received the Quality, Environment, Health and Safety and Department undertakes the actions to verify the source of the problem and implement all necessary corrective actions.

12. Waste Management

12.1. Overview

FG ensures that management (collection, storage, and safe post-management) of waste materials (hazardous and non-hazardous) is carried out in accordance with applicable legislation, standards and State planning for waste management.

Recycling and re-use are both of great importance for **FG** and will be implemented throughout the operational period, including construction works.

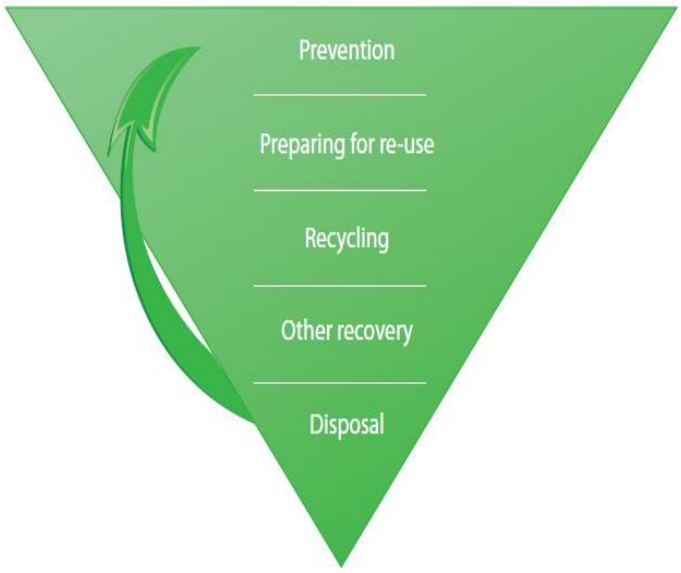


Figure 15: FG's waste management hierarchy

The main objective is to promote waste minimization where possible.

With regards to Municipal Solid Waste (MSW), sorting at the source is implemented in all airports, with focus on the four (4) basic categories of recyclables (paper, plastics, metals and glass), residual MSW and bulky waste. Separate biowaste management is being under development.

Airport operations inevitably produce solid waste on a daily basis from a variety of sources involving personnel, passengers, tenants and handlers. Also, a variety of hazardous materials are used such as lubricant and mineral oils, batteries and accumulators, tires, waste from Electric and Electronic Equipment (WEEE), etc.

All kinds of waste have the potential to cause harm to persons, property and the environment. As a result, they should be handled in an appropriate manner. Where feasible, **FG** is substituting, reducing or eliminating the use of hazardous materials and those used are appropriately recycled according to relative legislation.

Airport users who produce or receive waste from individuals or other parties retain the responsibility for its management. Therefore, they are asked to ensure that the management of waste is safely carried out, through direct cooperation with an authorized public or private waste collector or through FG's central waste management system, where applied.

Some activities related to hazardous materials may be:

- Bulk fuel storage and handling including aviation, unleaded and diesel fuels.
- Aircraft refuelling, vehicle and aircraft wash down.
- Vehicle refuelling at the service station.
- Aircraft, vehicle and mechanical plant and electrical equipment maintenance.
- Construction, earthworks and demolition.
- Quarantine operations.
- General airport operation, construction, maintenance and landscaping including weed and animal pest control.

These activities could cause:

- Release of hazardous materials, leading to water, land and air contamination.
- Human and ecosystem health impacts.

12.2. Waste Management Plan

Waste Management procedures have been developed so that all waste streams are properly identified, segregated and treated, along the following lines:

- Separation of solid waste types at the point of generation (sorting at source). Use of separate collectors (bins, containers, press-containers) for separation of paper and cardboard, metals, plastics, glass, and biowaste, where feasible.
- Dedicated areas for the collection and storage of recyclable materials
- Hazardous waste disposed and recycled properly by certified handlers.
- Waste containers around the airport for passengers and tenants - transferred to onsite waste containers and then transported to offsite treatment or disposal facilities.

FG's Health and Safety procedures – detail procedures have been developed in relation to storage, handling and disposal of waste, asbestos and other hazardous materials, maintenance of asbestos register, Health and Safety incident reporting, etc.

Airport users and contractors are also required to ensure appropriate systems and/or procedures are in place to manage specific environmental risks associated with their activities and abide by the relevant legislative requirements for waste management.

Hazardous materials in relation to **FG's** activities are managed under different mechanisms depending on the nature of the activity.

These mechanisms are included in:

- Environmental Management Plan – includes procedures for spill response, interceptor trap maintenance, environment incident reporting, tenant audits, etc.
- Airport Emergency Response Plan – detailed procedures for dealing with major incidents in relation to hazardous materials, fuel and oil spills.

In regards to asbestos materials an Asbestos Management Plan is being implemented were the following actions are included:

- ❖ Labelling of the materials as asbestos containing materials.
- ❖ Notification of the personnel working in the vicinity of these materials.
- ❖ No disturbance of the asbestos materials.
- ❖ Proactive painting of the external surfaces with plastic painting (optional).
- ❖ Optimal solution: Programmed removal of the asbestos materials by a specialized and licensed company.
- ❖ Following asbestos removal the premises must be assessed conducting visual inspection and air monitoring in accordance with relevant Greek legislation for issuing Clearance Certificates – Certificates of Reoccupation. The assessment should be carried out by independent laboratory accredited by Hellenic Accreditation System (ESYD) for asbestos air sampling and analysis. The Hazardous Substances Management Plan (HSMP) forms part of the comprehensive suite of management plans that have been prepared for the construction phase of the Project. This document outlines the hazardous substances that are to be used or stored as part of the construction activities, and how the risks associated with these substances are to be managed.

  The plan has been prepared for two distinct purposes:

  - to provide information to the construction team as to acceptable management methodologies during the construction phase, and
  - to provide information to the consenting authorities to demonstrate that the possible risks as a result of storage and use of hazardous substances have been considered and will be appropriately managed by the construction team.

Table 5: Targets for waste management

Target	Timeframe
5% increase of 2021 MSW recovery rate comparing with 2020 (Cluster A)	Ongoing
Monitor chemical storage and handling practices during internal and tenant audits.	As per internal and tenant audit schedule
Monitor availability of up-to-date Materials Safety Data Sheets at points of use during internal and tenant audits.	As per internal and tenant audit schedule

12.3. Achievements

- ✓ Cooperation with private and public authorities for the integrated management of non-hazardous waste, with focus on sorting at source of paper and cardboard, plastics, metals, glass and biowaste, in order to maximize materials recovery.
- ✓ Cooperation with Alternative Management Systems for the recycling of hazardous waste such as oils, batteries, tires, electronic and electrical equipment.
- ✓ Equipment for storage of Hazardous Waste for all 7 airports.

  Part of the overall waste management and it's main objectives FG proceeded to purchasing of new containers for the storage of hazardous waste until they are safely removed from the airports and dispatched for recycling.

  The containers were for the following types of waste:

  - Large Batteries and Accumulators
  - Used mineral oils

  For the barrels of the used mineral oils, oil spill pans were also purchased in order to minimize the risk of a spillage. Informative stickers were also purchased for each of the containers.
- ✓ Hazardous Waste Collection Points. Conceptual design and basic engineering design for the installation of Hazardous Waste Collection Points that will facilitate the collection and temporary storage of the various hazardous waste streams to their transportation to off-site treatment/disposal facilities.
- ✓ Sampling of equipment containing PCB and safe removal and management. Electrical devices that were recorded as possibly obtaining PCB's were sampled by licensed companies. Upon confirmation that were PCB free, the devices were managed accordingly.

Figure 16: Barrels for used oils stored indoors. The used oils are collected for recycling by the respective Alternative Management System

Figure 17: Large batteries and accumulators container ready to be sent for recycling

13. Conclusion

In an **industry highly impacted by COVID-19 pandemic, FG** continues to actively monitor and report on progress against the goals and the lessons learned and will seek regular feedback and input on how to improve.