



**FRAPORT TAV
ANTALYA HAVALİMANI**

**COMPANY CARBON REPORT
2009-2017**

COMPANY CARBON REPORT

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Preface

Climate Change is one of the most important environmental challenges of our century. In February 2009, our country assumed responsibility by signing the Kyoto Protocol in order to protect the climate by reducing of emissions of greenhouse gases. As known, in our country 14% of total greenhouse gas emissions from the transportation sector, while 4-5% of this ratio is due to the aviation sector.

<http://www.tuik.gov.tr/PreHaberBultenleri.do?id=13482>

We are as Fraport TAV committed to protect the Climate Change. With our responsive widening policy; Antalya Airport started the accreditation process in August 2009 and was accredited for Level-1 “Mapping” in 2010. Antalya was then accredited with Level-2 “Reduction” for the measures described in the Carbon Management in 2011. In one year time (2012) achieved the Level-3 “Optimization” by developing stakeholder engagement plan and reduced the emission. The Company renewed the Level-3 certificate for 2013 and 2014. In 2015 decided to offset of the entire Scope 1 and 2 emissions. And highly appreciated certifiiton with Neutrality 3+ Level valid 2018.

Among the Antalya Airport’s entire CO₂ emissions more than 75-80% comes from the operation of aircraft (taxi, takeoffs and landings as well as use of APUs), some amount of emission comes from passenger and staff access and ground vehicles fuel consumptions. Only 6% of total comes from activities of Fraport TAV (scope 1 + 2).

Fraport TAV Basic Principles for Carbon Reporting

The basic principles which are defined by ISO 14064 standards are implemented in the company.

-  Relevance
-  Completeness
-  Consistency
-  Transparency
-  Accuracy

Fraport TAV Commitment- Policy and Objectives

Fraport TAV is committed to reduce carbon emission. The top management and all team members at Fraport TAV have been aware of the threats posed by climate change for some time, but have been equally aware of the inherent opportunities available from engagement in high quality carbon management. Besides, Fraport TAV always to be active in encouraging emissions’ reductions to the third parties.

Long Term Targets



To reduce each year (pp) CO₂ - emissions by the end of 2024



To produce our own electricity by using friendly environment sources



Efficient process management

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Fraport TAV has built on three milestones of its carbon emissions policy. According to our policy, carbon targets have been defined as the *Long* and *Short* term.

- a) To reduce direct (Scope 1-2) emissions and avoid the generation of additional CO₂ emissions as a result of company activities
- b) To make collaboration with stakeholders to reduce indirect (Scope-3) emissions,
- c) To achieve Zero Carbon (Carbon Neutrality).

Fraport TAV is aware of the targeted management of CO₂ emissions and appropriate monitoring are a prerequisite.

To provide sustainable carbon management, the company activities have been focus on environmentally friendly buildings, infrastructure facilities, energy generation and consumption, water consumptions, wastewater treatment and staff business travelling. Besides, collaboration with stakeholders, leadership of the sectoral foundations.

Fraport TAV Accreditation Process

Determination of the Carbon Sources and Responsibilities

The Greenhouse Gas Protocol (GHG Protocol) defines emissions as direct or indirect.

Direct emissions, are owned or controlled by the reporting entity. Indirect emissions are a consequence of the activities of the reporting entity, but occur at sources owned or controlled by another entity.

Fraport TAV categorized these direct and indirect emissions into three broad scopes.

Scope 1

- ✚ Onsite power generation–Trigen Power Plant- uses LNG
- ✚ Heating and cooling energy
- ✚ Refrigeration leaks
- ✚ Onsite waste water treatment
- ✚ Ground vehicles (Own car onsite)

Scope 2

- ✚ Purchased electricity (Tenants-DHMI excluded)

Scope 3

- ✚ Business travel
- ✚ DHMI fire exercise
- ✚ Aircraft movements (ATM) ICAO Airport Air Quality Guidance Manual

Short Term Targets



To reduce scope 1-2 CO₂ emission per pax by %0,5 unit in 2018 compared to 2017



To support stakeholders engagement project



To produce 55% of total electricity consumption with TRIGEN in 2018



To perform 51% recycling of total waste produced in the airport

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(Doc No. 9889)

- ✚ Passenger and staff access
- ✚ Ground vehicles
- ✚ Other CO₂ emission sources

All these sources' data are collected systematically and insert to the model to calculate emissions by scopes. The calculated emissions added to the carbon footprint report.

Carbon Footprint Mapping

Carbon mapping is the act of identifying the sources of carbon emission caused by the activities of the enterprise and calculating the total amount of emission. Mapping was started in 2009 and completed in April 2010 by receiving the "Level-1: Mapping" certificate.

Carbon emission is calculated with respect to the GHG (sera gases) ISO 14064 standard. The yearly carbon emission that is produced as a result of Fraport TAV' s activities is obtained both as an absolute value, and as a relative ratio. “**Unit ton**” is used when the CO₂ emission is calculated in absolute value; whereas “**% kg per pax**” is used for relative ratio.

In order to calculate the emission rate that is output due to our company's tasks and responsibilities rising from the managerial contract, the resources have been separated into "Framework 1” and “Framework 2”.

Carbon Management Plan (CMP)

The “Carbon Management Plan” (CMP) that is prepared as one of the requirements of Level-2 is revised in every three years. Verification is performed each year within the scope of the "Green Airport Project". The company draws the outline of handling energy management, decreasing carbon emission; cooperating with other stakeholders, and defining short-term and long-term carbon targets. The CMP preparation is extensively described in article 2.5 of the ACI ACAS guiding document.

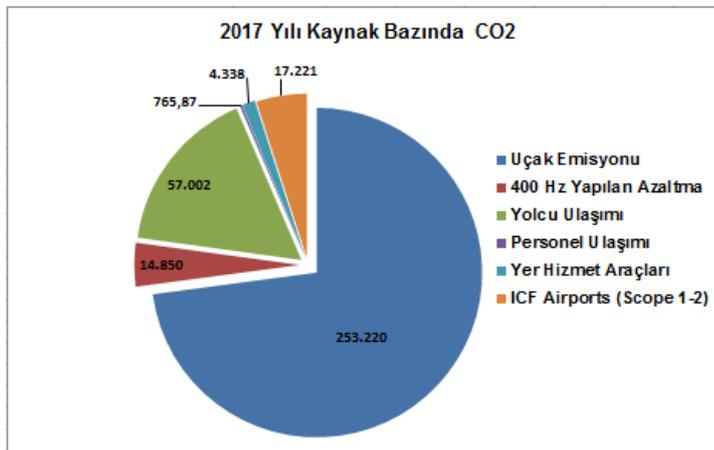
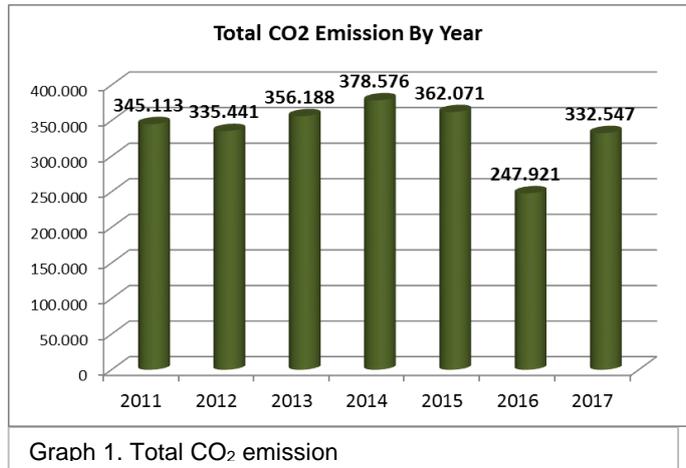
Carbon Footprint Report (CFR)

The "Carbon Footprint Report" (CFR) is prepared each year within the scope of ISO 14064-1 and ACAS guiding document and it is verified according to ISO 14064-3 by means of an independent audit firm in every two years. The inputs of the report include all the following data: emission-causing energy consumption which is in project scope, emission rates created by air conditioning (heating/cooling), waste decomposition and waste water treatment levels, material usage, business trips of employed personnel, vehicles used for transferring to/from airport, fuel consumption of company vehicles. The ACI ACAS guiding document is the main reference when preparing the CFR.

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Antalya Airport's Yearly Emission Data

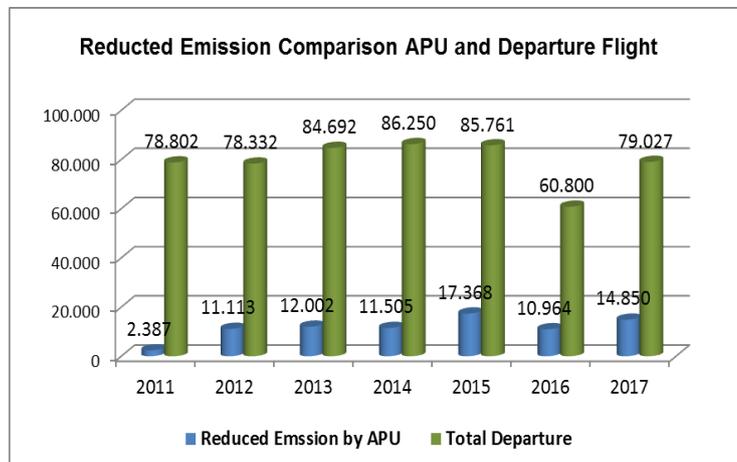
Total CO₂ Emission is calculated on yearly basis. **Graph 1** shows total emission in Antalya Airport. While the total emission in 2011 was 345,113 tCO₂, in 2016 was 247.921tCO₂. The differans is not only reduced number of flight but also carbon reduction engagements colloborative works with stakeholders.



Graph 2 demonstrates the largest share (73%) in total emission belongs to the Air Traffic Movements (ATM). Fraport TAV is shared 6% of total emission. The figures are indicated that the highest emission arises from electricity consumption, which is purchased and used for Fraport TAV's activities.

Stakeholders Engagements and Scope 3 Emission Reduction

Fraport TAV has clearly demonstrated its commitment to widening the scope of its carbon management programme to include stakeholders at the airport since its initial Stakeholder Engagement Plan was developed in 2011 and revised in 2015. As indicated in Graph 3 the saved CO₂ emission improved year by year comparison the departed aircraft. The Graph 3 shows how much CO₂ removed from the atmosphere by this way. In the beginning (2011) of the project per departure flight was saving **30** kgCO₂, in 2016 saved **180** kgCO₂. Thanks to Fraport TAV **Bridge**



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Package Project to decrease of aircraft emission during the ground time.

Fraport TAV has identified relevant stakeholders in airlines, ground handling companies, aircraft re-fuelling companies, staff and passenger access bus providers as well as training aimed at internal and third party staff, and has prioritized the areas of greatest potential carbon savings' potential from Scope 3 emissions' sources.

CO2 Reduction Implementations at Fraport TAV

- # Lighting, heating and cooling systems work by editing the values of working hours are tracked from the automation system.
- # The usage of less carbon emissions of the fuel (natural gas).
- # Heating and Cooling on a regular basis by measuring the energy loss is prevented.
- # Light sensors are used,
- # LED used for Lighting
- # Fuel consumption is monitored from the automation of systems. Operational planning is an important tool.
- # Vehicle and equipment maintenance is done periodically and regularly monitored by internal or external audit teams.
- # The control of chimney emissions and filters are done periodically.
- # All existing monitors in the company had exchanged with more saving once.
- # Public monitors are used in save modes and love energy consuming.
- # Fraport TAV provide the access facilities to employees. In addition, Fraport TAV offers public transportation to all employees. Only allowed to use euro diesel on these buses.
- # The Waste Water Treatment System is operated with full efficiency. pH value of effluent water is measured every day and its laboratory analysis is conducted monthly basis.
- # Waste Management Plan is prepared to provide recycling efficiency.
- # Terminal operating systems are established as a tool for energy saving.
- # Energy Management Team has been set to walking check and developed saving projects.
- # Effective periodic maintenance is implemented for all existing systems.
- # Training and social activities is a continuous process in order to improve environmental awareness.

Some Examples of Press Release

Fraport TAV carbon management media news

interpress MEDYA TAKİP MERKEZİ 1940
KENTİÇİ TOPLU TAŞIMA
YEREL HAFTALIK GAZETE
İSTANBUL
LOJİSTİK - KARGO

Tarih: 15.06.2013
Sayfa: 9
Tiraj: 2000
StxCm: 100

En çevreci havalimanı Antalya

2011 yılında Avrupa Havalimanları Birliği (ACI Europe) tarafından "10-25 milyon yolcu" kategorisinde; "Avrupa'nın En İyisi" seçilen **ICF Airports Antalya Havalimanı**, optimizasyon seviyesine ikinci kere ulaştı...

2009 yılından beri Avrupa Havalimanları Birliği projesi kapsamında karbon emisyonunu azaltma çalışmalarını sürdüren **ICF Airports Antalya Havalimanı**, 2010'da "Mapping" Seviye 1, 2011'de "Reduction" (karbon emisyon azaltımı) Seviye 2 ve 2012'de de "Optimizasyon" Seviye 3 safhasına ulaştı. **ICF Airports** 2013 yılında ise bu başarıyı sürdürerek Seviye 3 belgesini yeniledi.

Avrupa yolcu trafiğinin yüzde 27,7'ini taşıyan bu seviyede akademi edilebilir Frankfurt, Münih, Amsterdam, Zürich, Ginevre, Manchester, Roma, Heathrow, Donetsk, Charles de Gaulle ve Orio al Serio'dur.

ICF Airports Antalya Havalimanı, 2011 yılından bu yana kendi faaliyetlerinden kaynaklanan CO₂ salınımını diğerlerinin yanı sıra iş ortaklarının da CO₂ emisyonlarını dışlamak için önemli işbirlikleri yapmıştır. 2012 yılında 3. Seviye karbon akreditasyon alanı almaması ile **ICF Airports Antalya Havalimanı**, gerekli tüm iş ortaklarından kaynaklı CO₂ emisyonunu 10 bin t CO₂ azaltarak olarak belirlendi.

ICF Airports Antalya Havalimanı, hedefi doğrultusunda sene boyunca tüm iş ortakları ile beraber hayata geçirilen enerji tasarrufları, enerji sistem iyileştirmeleri, oturma süğütünü için kullanılan enerji ve yakıt miktarında ve araç emisyonlarında azaltma çalışmalarını aynı zamanda yaygın bilgilendirmeye eğilimleri sonucu kendi faaliyetlerinden kaynaklı kişi başı CO₂ emisyon miktarını 0,799 dan 0,785 kg CO₂ düşürmeyi başarmıştır. Bu başarıya kavuşarak uçakların yerde motor susturup -400Hz enerji kullanım seviyesi ile 3'üncü basamakla kaymaklı CO₂ emisyon azaltımı 10 Bin 097 t CO₂ güç yükseltilmiş bir misyonla gerçekleştirilmiştir. Sürdürülebilir çevre stratejisi ve entegre yönetim sistemleri politikalarında İş Sağlığı ve Güvenliği, Kalite, Çevre ve Müşteri Memnuniyeti ve Şirket Yönetimi alanlarında dört farklı TSE belgesine sahip havalimanı olan **Antalya Havalimanı**, bu seviyeye yükselerek Türk havalimanı sektörünü Avrupa'da temsil ediyce...

ACA history of ICF Airports

Fraport TAV carbon management media news

interpress MEDYA TAKİP MERKEZİ 1940
KENTİÇİ TOPLU TAŞIMA
YEREL HAFTALIK GAZETE EK
İSTANBUL
LOJİSTİK - KARGO

Tarih: 12.06.2013
Sayfa: 4
Tiraj: 441.551
StxCm: 52

Antalya havalimanı çevreci

ICF Airports Antalya Havalimanı, Avrupa Havalimanları Birliği'nin (ACI Europe) "Karbon Akreditasyon" programında üçüncü etap olan "optimizasyon" seviyesine ikinci kez ulaştı. **ICF Airports** tarafından yapılan yazılı açıklamada, ICF Airport **Antalya Havalimanı**'nın Türkiye'de bu seviyeye ulaşan tek havalimanı olma özelliğinin yanı sıra Avrupa'da ise 12 havalimanından biri olarak Türkiye'yi temsil ettiği bildirildi. Açıklamaya göre, 2009 yılından beri Avrupa Havalimanları Birliği projesi kapsamında karbon emisyonunu azaltma çalışmalarını sürdüren **ICF Airports Antalya Havalimanı**, 2010 yılında "Mapping Seviye 1", 2011 yılında "Reduction" (karbon emisyon azaltımı) Seviye 2' ve 2012 yılında "Optimizasyon Seviye 3" safhasına ulaşmıştı. **ICF Airports** 2013 yılında da başarısını sürdürerek Seviye 3 belgesini yeniledi.

12.06.2013

ACA history of ICF Airports