Limak Kosovo International Airport J.S.C

CARBON FOOTPRINT REPORT

Level 2 – Reduction

2016

1. Introduction

There are many reasons Limak Kosovo International Airport decided to measure and manage its GHG emissions. Even that government regulation does not yet require us to take action on GHG emissions, there are several reasons why we voluntarily choose to take on the task. Improving building energy efficiency and reduce vehicle fuel use can provide cost savings, and it reduces the impact of carbon emission on the environment. As a major business in the neighborhood and community as well physically, visually, economically and environmentally, we have the opportunity to play a leadership role in addressing the environmental and social effects of our operations.

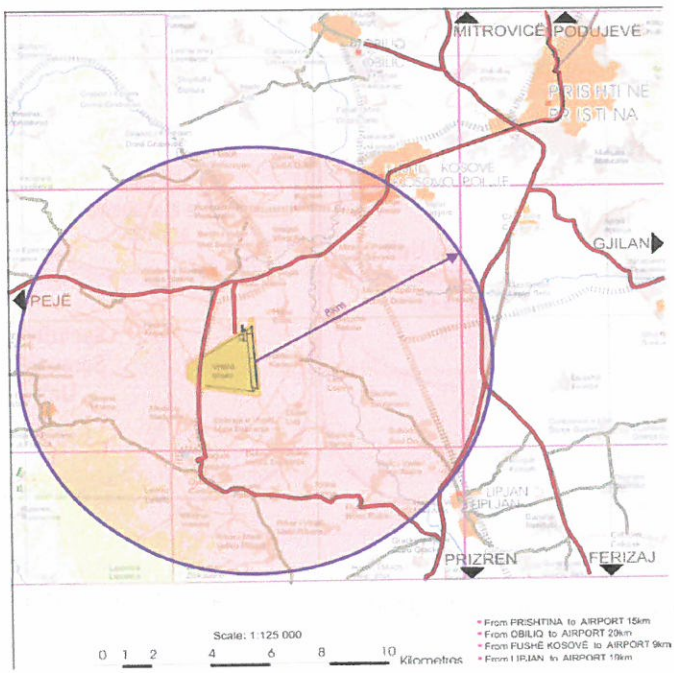
2. Organizational and Operational Boundaries

- **Organizational Boundaries**

Limak International Airport's operational structure can be understood by dividing operations into airside operations and landside operations. The Aerodrome land is 393.68 hectares referred to LKIA Aerodrome Services and Operations Manual (8th edition).

Limak International Airport has overall control of both operations expecting ATC tower activities that are controlled by authority of state.
LKIA airside operations: Runways, taxiways, aprons, aircraft remote parking position, aircraft ground power supply, planning and other airside activities and maintenance.
LKIA terminal and landside operations: Operation and maintenance of terminal building, including car park area, power distribution center, heating and cooling, water and wastewater treatment plant operation and their maintenance.

Plan of the aerodrome location in relation to Prishtina



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The Carbon Footprint Report is consistent with its requirements under the Airports Carbon Accreditation Scheme guidance at Level 1 and covers emissions sources identified under the Greenhouse Gas Protocol Scope 1 and 2. All emission sources under airside and landside operations that are in consistency with Scope 1 and 2 are responsibility of LKIA.
While operations that are mentioned at Scope 3 are not owned or controlled and they do not fall under the direct operational control of LIKA.

Below are units divining by airside and landside operations and activities for each unit.
(Fig.1. Carbon management organizational boundaries)

Fig.1. Carbon management organizational boundaries

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- **Operational Boundaries**

LKIA established and documented its operational boundaries which includes all operations that are owned and controlled by LKIA – Scope 1 & 2. Also, some operations that are not owned by LKIA - Scope 3 but that have influence. All these operations are mentioned at the Tab.1. LKIA operational boundaries
Also, a summary list of airport activities and facilities that fall within the guide and influence emissions that have primary responsibility for these activities or facilities. (Tab.2.LKIA list of activities and facilities – guide and influence)

LKIA sources and corresponding emissions					
No.	**Source**	**Emission Process**	**Emissions**		**Comments**
1	**Fuel combustion** Boiler/heater	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Direct **SCOPE 1**	
2	**Emergency power (Diesel Generators)**	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Direct **SCOPE 1**	Diesel generators for emergency power
3	**Aircraft** Jet Turboprop Piston	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Indirect **SCOPE 3**	During taxiing and queuing
		Non-combustion	Precursors and others (NMVOC)		
4	**Auxiliary Power Unit (APU)**	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Indirect **SCOPE 3**	
		Non-combustion	Precursors and others (NMVOC)		
5		Combustion			

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	Ground Support Equipment (GSE) Baggage tractor Belt loader Air conditioner Cabin service truck, Surface coating/painting,etc.		Primary (CO_2, CH_4,N_2O, SF6,HFC, PFC) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Direct **SCOPE 1**	LKIA-owned equipment for the handling of aircraft on the ground.
		Non-combustion	Primary (SF6,HFC, PFC) Precursors and others (NMVOC and halogenated gases)		
6	**Ground Access Vehicle (GAV)** Airport property vehicles/landside vehicles Cargo trucks, etc.	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Direct **SCOPE 1**	All landside vehicles owned by LKIA
		Non-combustion	Primary (SF6,HFC, PFC) Precursors and others (NMVOC and halogenated gases)		
7	**Stationary Sources** Power/Electricity consumption	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Indirect **SCOPE 2**	Emissions made by electricity purchased by KEDS
		Non-combustion	Primary (SF6,HFC, PFC) Precursors and others (NMVOC and halogenated gases)		
8	**Fire Training**	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Direct **SCOPE 1**	Fire training equipment and materials
9	**Construction Activities** Runway extension or development New taxiways Terminal building or gate expansion, etc.	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Indirect **SCOPE 3**	All construction activities which are conducted by contractors
		Non-combustion	Primary (SF6,HFC, PFC) Precursors and others (NMVOC and halogenated gases)		
10	**Waste management activities**	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Indirect **SCOPE 3**	Off-site waste incineration or treatment from airport sources
		Non-combustion	Primary (SF6,HFC, PFC) Precursors and others (NMVOC and halogenated gases)		

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11	**Water treatment process**	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Direct **SCOPE 1**	LKIA owned wells and all water treatment system
12	**Transportation** Passenger privately owned vehicles Airport employee privately vehicles, shuttle buses (commuting)	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Indirect **SCOPE 3**	
		Non-combustion	Primary (SF6,HFC, PFC) precursors and others (NMVOC and halogenated gases)		
13	**Corporate Travel**	Combustion	Primary (CO_2, CH_4,N_2O) Precursors and others (H_2O, PM, SO_x, NO_x,CO, NMVOC)	Indirect **SCOPE 3**	Flights taken on airport company business

Tab.1. LKIA operational boundaries

Source	Control	Guide	Influence
SCOPE 1: Direct Emissions			
Transport	LKIA owned vehicles (Airside and landside)		
Stationary	LKIA owned generator set and heating		
Other	-CO 2 Fire extinguisher -Air-condition and refrigerants - Water and wastewater process		

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SCOPE 2: Indirect emissions			
Purchased Electricity	Emissions from purchased electricity from KEDS		
SCOPE 3: Other indirect emissions			
Transport	Business related flights Commuting Passenger travel		
Aircraft	Aircraft activities	Aircraft ground movement Auxiliary power unit Taxiing	LTO cycle and cruise
Construction	Construction activities	Runway extension or development New taxiways Terminal building or gate expansion	Management of construction activities that are done by contractor
Process emissions	Disposal of airport waste	Waste collection Use of paper Purchase of IT equipment	Management of waste where disposal are made by contractor

Tab.2. LKIA list of activities and facilities – guide and influence

The organizational and operational boundaries are remaining the same and have not been changed since the last report of 2015. LKIA pursuits of continual improvement. Limak Kosovo International Airport reviews its footprint boundary annually and regularly looks for opportunities to expand its scope of reporting.

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Methodology

Limak International Airport's Greenhouse Gas emission footprint is calculated using the guidance of Greenhouse Gas Protocol (http://www.ghgprotocol.org/) and all of process is done under the guidance manual: Airport Greenhouse Gas Emissions Management (http://www.aci.aero/Publications/Full-Publications-Listing/Guidance-Manual-Airport-Greenhouse-Gas-Emissions-Management) and Airport Carbon Accreditation Guidance Document (http://www.airportcarbonaccredited.org/).
Stationary combustion (fuel) and transport calculations are done by Greenhouse gas protocol tools. While the purchased electricity is calculated manual because of missing Kosovo as a region at the table. But its emission factor data is taken from The International Energy Agency (http://www.iea.org)

1.1. Base year

LKIA established 2014 as an historical base year for GHG emissions and removals for comparative purposes or to meet GHG programme requirements or other uses of the GHG inventory.
The new Terminal building started operating in 2013 because of that we took 2014 as more adequate base year as we possessed full data`s from January to December.

1.2. Scope

Scope 1 and 2 are minimum requirements of GHG reporting. The report also include Scope 3 emissions, however they are not direct responsibility of Limak International Airport while their reporting is conceded discretionary.

✓ **SCOPE 1**

Direct emissions from sources that Prishtina International Airport owns or controls, as;

1. **Stationary Sources**
   - Heating facilities
   - Emergency generators
   - Firefighting exercises

2. **Mobile Sources**
   - Transport (landside and airside operations)

3. **Process Emissions**
   - Water management
4. **Other**
   - Leaks from plants

Wastewater treatment system emission is not calculated because of minor amount of emissions, while refrigerants (compounds used for refrigeration and air condition) are taking in account just in case of leaks.

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✓ **SCOPE 2**

Greenhouse gas emissions from purchased electricity, where emissions are generated externally but attributed to energy consumption at the airport.

✓ **SCOPE 3**

All other indirect emissions which are a consequence of the activities of the organization, but occur from sources not owned or controlled by the airport.

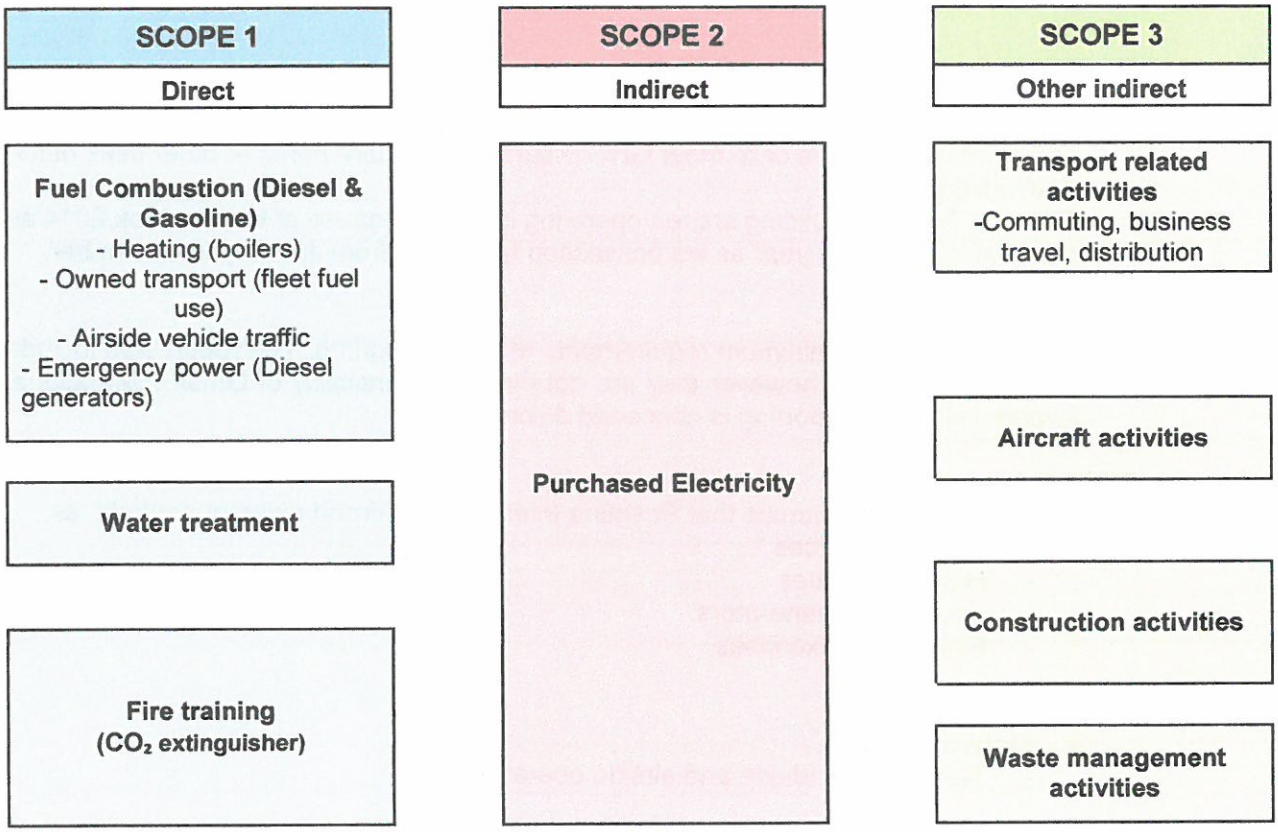

Fig.2. Emission sources

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3. Carbon Footprint Progress

Absolute Emissions 2016		
Metric tones CO_2		
Month	SCOPE 1	SCOPE 2
January	384.257	879.52
February	173.389	711.13
March	148.342	760.26
April	41.594	694.94
May	44.337	722.13
June	44.941	827.37
July	49.241	958.89
August	56.42	901.11
September	47.893	663.37
October	77.994	766.33
November	212.885	669.97
Decemember	350.877	797.82
TOTAL	1632.17	9352.84

During 2016 Limak Kosovo International Airport Measured Scope 1 and Scope 2 of its carbon footprint. Resulting to an absolute of **1632.17** Metric tons of CO2 for **Scope 1** and **9352.84** metric tons CO2 for **Scope 2.**

According to the temperatures this year was **6%** colder than last year, which excuses the growing emissions in **Scope 1** for **9%** from **2015** to **2016** which includes the fuel for heating.

A decreased number of emissions can be seen on **Scope 2** for **2%** between year 2015 and 2016.

Tab. 3 *Absolute emissions 2016*

Below are shown the absolute emissions of the past three years. As for the absolute values of 2015 and 2016 we have been decreasing our emissions.

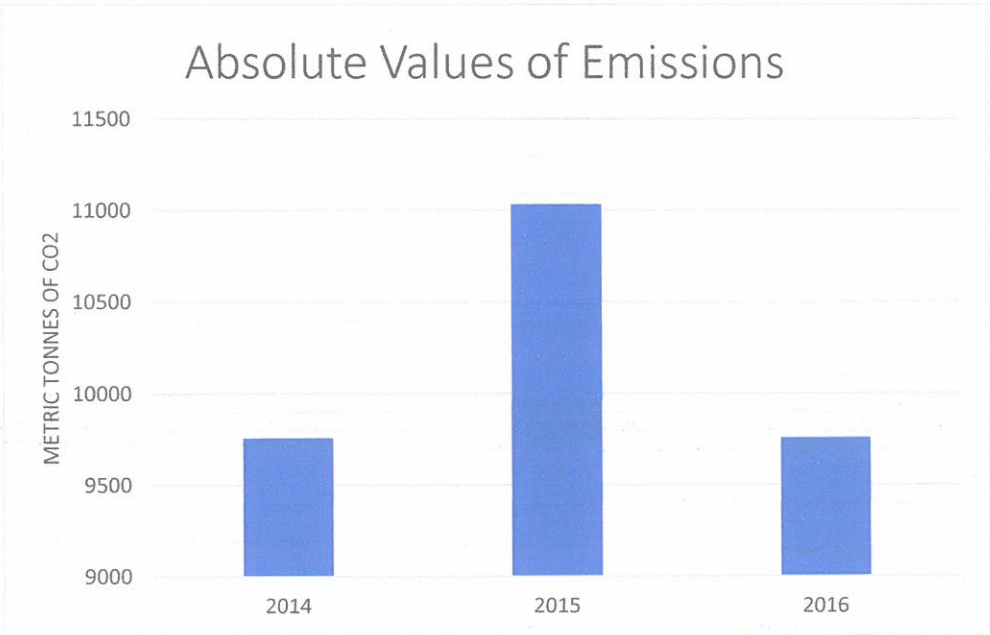

Fig. 3 *Graphic of Absolute emissions for the past three years*

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Total of Absolute Emissions (CO_2 metric ton)	
2015	
Scope 1	1494.94
Scope 2	9538.36
Total	**11033.3**

Total of Absolute Emissions (CO_2 metric ton)	
2016	
Scope 1	1632.17
Scope 2	9352.84
Total	**10985.01**

Tab. 4 *Total of absolute emissions (Scope 1 + Scope 2) for 2015 and 2016*

On the other hand, since the regulations of Airport Carbon Accreditation requests comparing emissions of actual year with the average of the previous recorded years, as shown below we can see that we have a small increase in emissions comparing the average of 2014 and 2015 to year 2016.

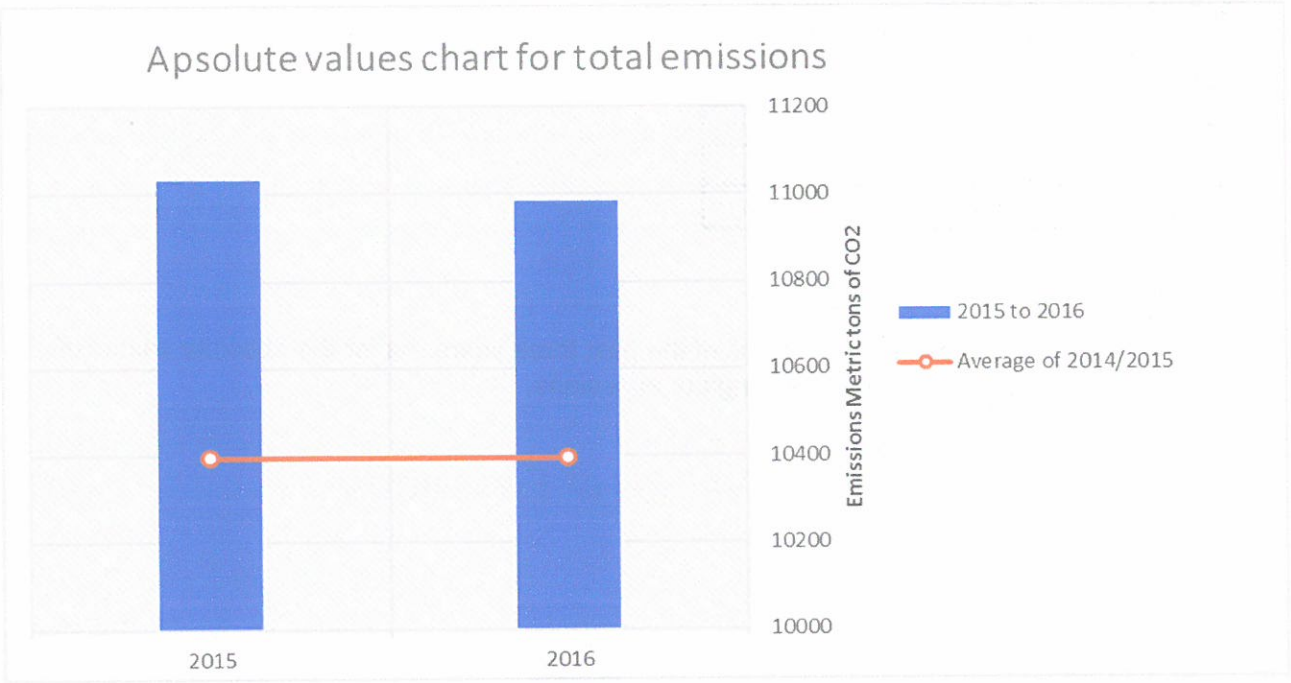

Fig. 4 *Graphic of Absolute values for total emissions compared to average of 2015 and 2014*

Year	Emissions Metric tones of CO2	Average
2014	9757.6	10395.5
2015	11033.3	

Tab. 5 *Average of absolute emissions for 2014 and 2015*

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However, the above-mentioned increase is normal compared to the number of passengers that increased drastically to 12.6%. So, if we compare our emissions according to relative data (tonsCO2/passengers) as shown below we made reductions of 11% .

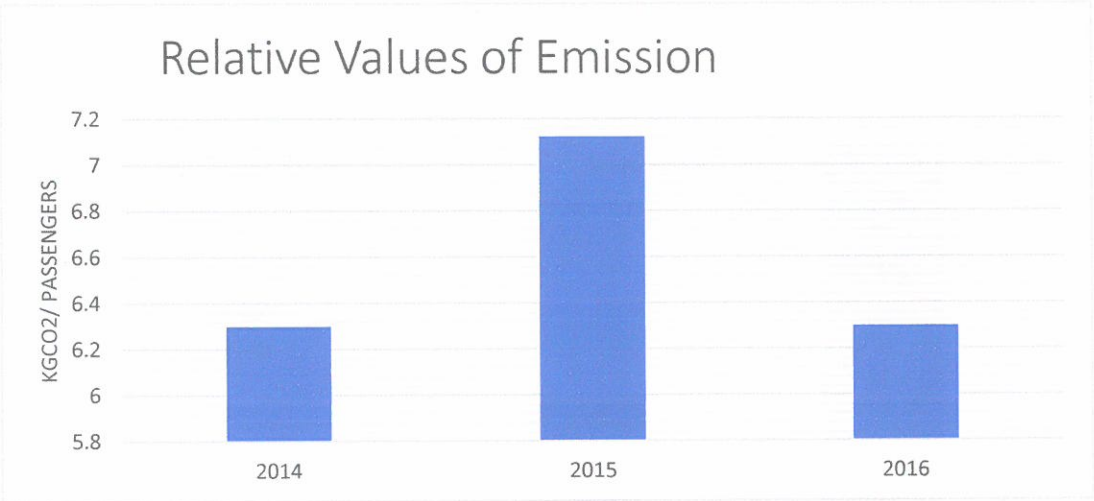

Fig. 5 *Graphic of Relative emissions for the past three years*

Total of Relative Emisisons	
2015	
tons CO2/passenger	0.0071
kg CO_2 / passenger	7.122

Total of Relative Emisisons	
2016	
tons CO2/passenger	0.0063
kg CO_2 / passenger	6.2991

Tab. 6 *Total of relative emissions (Scope 1 + Scope 2) for 2015 and 2016*

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As well, comparing our Relative Emissions of 2016 with the average of 2014 and 2015 we have reductions of 10%.

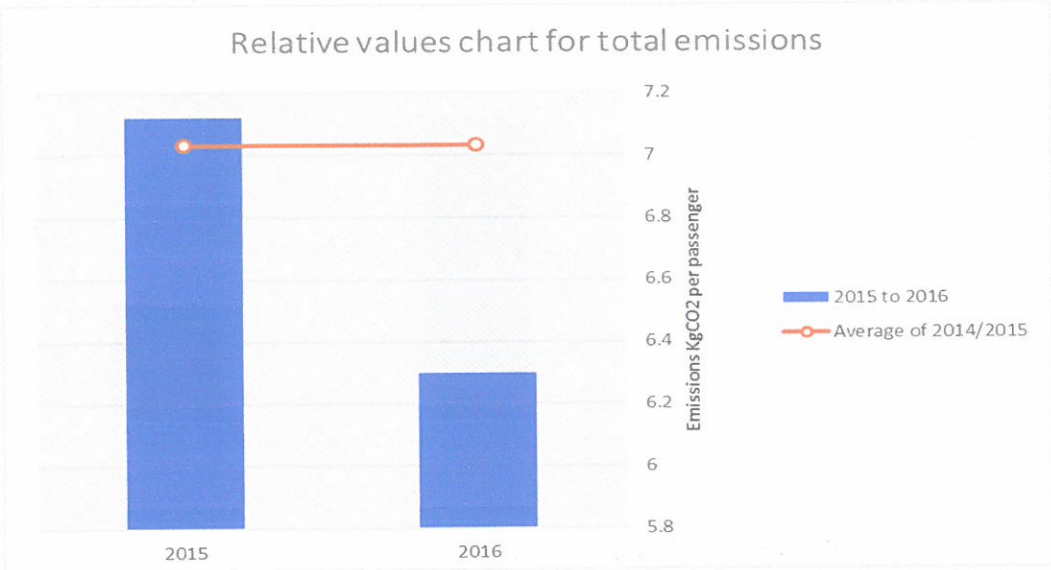

Fig. 6 *Graphic of Relative values for total emissions compared to average of 2015 and 2014*

Results are shown below

Year	Emissions kg CO2 per passenger	Average
2014	6.9462	7.0341
2015	7.122	

Tab. 7 *Average of relative emissions for 2014 and 2015*

Pristina International Airport aims to embed carbon reduction throughout the organization as part as its aim to become a sustainable organization. Not only that, but measures to manage ecosystem carbon can offer great potential benefits. This opportunity to contribute to so many important environmental goals will not be missed by Pristina International Airport.

Results of avr. 2014 and 2015 compared to 2016	
Absolute emissions results (kg Co2)	6%
Relative emissions results (kg CO2/pax)	-10%

Tab. 8 *Results of the average emissions of year 2014 and 2015 compared to 2016 for absolute and relative values*

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