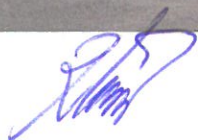


DUBROVNIK AIRPORT  
2012 – 2020 ENVIRONMENTAL PROTECTION STRATEGIC PLAN  
Summary



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November 2011.





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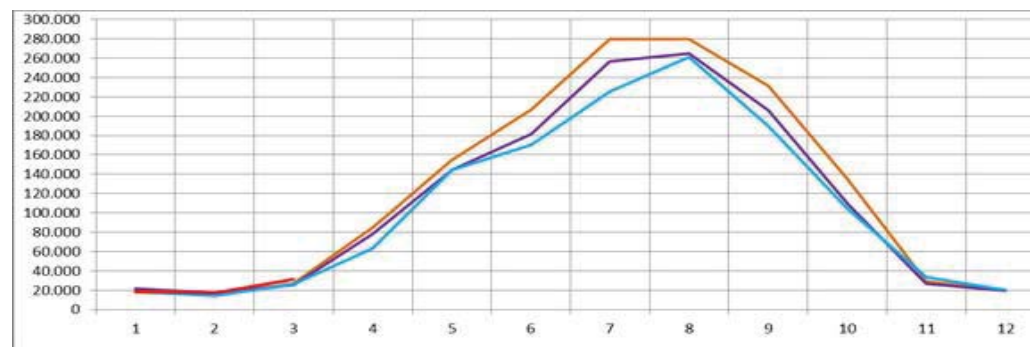


## 1. AIRPORT DETAILS, NUMBER OF PASSENGERS, GOODS, LANDINGS



Year	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
2008	20636	19561	41059	75192	138476	163203	191754	212773	176476	102895	27414	22035	1191474
2009	18516	15094	26642	69978	131377	151487	192788	216536	161892	94152	24309	19584	1122355
2010	18347	14067	26033	63582	144473	170127	225227	261159	189515	103976	33150	20406	1270062
2011	21288	17485	25228	77946	144253	181608	256305	264651	205936	109129			1303829

2008 – 2011 Monthly Passenger Flow *2008.2009.2010.2011.*



The history of Dubrovnik Airport extends through four periods starting with 1936, when the airport in Grude, Konavli was opened. After the Second World War the airport was rebuilt on a new location in Čilipi, where it has remained until the present day. The airport known under the name of 'Aerodrom Dubrovnik' was open for charter aircraft flights on 15<sup>th</sup> May 1962 and for regular air traffic on 15<sup>th</sup> July 1962.

The core business of the company 'Dubrovnik Airport Ltd.' seated in Čilipi includes airport activities such as services relating to domestic and international air transport of passengers and goods. Ground activities have been regulated with the Air Traffic Act (OG 69/09.), the Ordinance on Ground Handling Activities (OG 39/10.), the Airport Act (OG 19/98.) the Ordinance on Maintenance and Monitoring of Airports (OG 65/06.), the Ordinance on Ground Handling (OG 151/05.) and the CCAA Safety Directive (SD-2010-05).

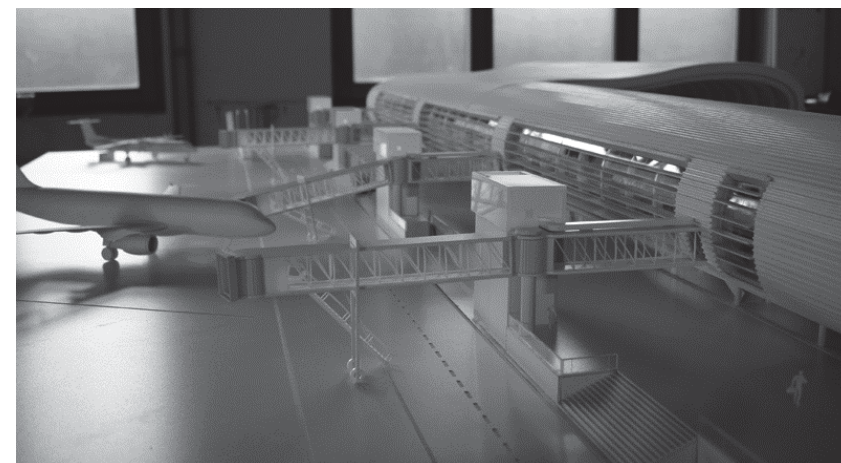
Dubrovnik Airport is 4E category airport with Runway length 3300 m and width 45m. The critical (the largest) aircraft type is Boeing 747-400.

The total fenced area of the airport is 193 hectares, with the passenger terminal total area of 24,138 m<sup>2</sup>. Other traffic, manipulative and parking areas cover a total area of 511,250 m<sup>2</sup> and green areas cover about 1,410,000 m<sup>2</sup>. Today, Dubrovnik Airport is equipped with the ILS and VOR/DME systems which enable taking off and landing under the most complex weather conditions both day and night. The lighting project and installation of the RWY 30 navigation equipment has enabled performance of all taking off and landing operations by night from the direction which has considerably weaker crosswind, which resulted in the minimization of the number of flights cancelled because of wind.

Dubrovnik Airport is the second busiest airport in Croatia, and is the most successful one according to the criterion of the number of passengers per employee (3,200 passengers per employee). The record annual traffic was recorded in 1987 when Dubrovnik airport registered 1,46 mil. Pax and 2,490 tons of cargo. In August 2010 the airport recorded 261,159 passengers, which was the record monthly traffic in the history of the airport. In 2010 Dubrovnik Airport registered its record post war annual traffic of 1,270,062 passengers and 406 tons of cargo and mail. It is expected to reach 1,8 mil Pax in Year 2015.

DUBROVNIK AIRPORT												
YEAR	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
A/C MOVEMENTS	4.926	6.762	6.739	7.711	10.204	12.277	14.365	14.855	15.047	14.822	14.342	15.539
PASSENGER TRAFFIC	218.120	395.548	461.322	507.459	716.592	880.967	1.083.240	1.120.453	1.143.168	1.191.474	1.122.355	1.270.062
Goods and mail (tons)	584	680	646	657	592	822	677	740	847	997	516	406

Construction of Dubrovnik Airport 2005 - 2015				
	2005	2010 Terminal A and B	2015 Terminal C	2015 Terminal ABC
Total Area	11,744 m <sup>2</sup>	24,138 m <sup>2</sup>	24,935 m <sup>2</sup>	49,073 m <sup>2</sup>
Floors	Ground Floor 1st Floor	Basement, 1st Floor, 2nd Floor, 3rd Floor	Basement, 1st Floor, 2nd Floor, 3rd Floor	Basement, 1st Floor, 2nd Floor, 3rd Floor
Pax Annual Capacity	1 mil	2+ mil	1 mil	3 mil
Pax Capacity per Hour	2,000 IATA Level D	2,100 IATA Level C	2,000 IATA Level D	4,000 IATA Level
No. of Check-in Desks	16+1	16+1+6	16+1	34+1+30=65
Agencies	180 m <sup>2</sup>	279 m <sup>2</sup>	209 m <sup>2</sup>	488 m <sup>2</sup>
Shops	400 m <sup>2</sup>	700 m <sup>2</sup>	3,057 m <sup>2</sup>	3,757 m <sup>2</sup>
Restaurants/Catering	800 m <sup>2</sup>	302 m <sup>2</sup>	1,936 m <sup>2</sup>	2,248 m <sup>2</sup>
Gates	8	7 + 2 Airbridges	6+ 2 Airbridges	11+4 Airbridges
Arrival Lounge	600 m <sup>2</sup>	1.600 m <sup>2</sup>	550 m <sup>2</sup>	2,150 m <sup>2</sup>
Departure Lounge	1,800 m <sup>2</sup>	2,630 m <sup>2</sup>	3,700 m <sup>2</sup>	6,330 m <sup>2</sup>
VIP Salon	91 m <sup>2</sup>	100 m <sup>2</sup>	60 m <sup>2</sup>	160 m <sup>2</sup>
Business Salon	20 m <sup>2</sup>	423 m <sup>2</sup>	216 m <sup>2</sup>	639 m <sup>2</sup>





## 2. MAIN ELEMENTS OF TRAFFIC AND ENVIRONMENTAL STRATEGY

Management of environment at the Dubrovnik Airport is based on the principles of sustainable development. The management system implemented complies with the ISO 14001 standard. Environmental aspects have been identified, monitoring and measurements have been established, low environmental impact programmes have been implemented and organization and responsibilities have been set and allocated. Environmental protection ensures overall protection of environmental quality, biological diversity and associated landscapes and the effective use of natural resources and energy in the most environmentally friendly way, which are the basic requirements for a healthy life and a base for sustainable development.

Dubrovnik Airport has continuously planned, implemented, checked and evaluated the efficiency of the activities taken, which were directed to environmental protection by meeting conditions integrated in international standards and Croatian regulations with the goal to improve environmental quality and provide control of any adverse impact on the environment.

By encouraging development and through the implementation of modern business processes and technologies whose goal is to decrease adverse impact on the environment, as well as by increasing the efficiency level of energy, raw materials and waste management, all actors in the business process shall become aware of a continuous need for environmental protection focused on prevention. To this end, special attention is paid to analysing experience of European and airports around the world, continuous improvement and training. The leaders in this sense are members of the Management Board.

Environmental management policy represents a framework for assessment of the level of general and special managerial goals achieved through the completion of set goals at all managerial levels. By implementing the procedures, the Management Board and the employees apply the measures of sustainable development systematically and comprehensively. These measures have been included in all the documents of the Dubrovnik Airport integrated environmental protection system

All management procedures relating to all important aspects of the environment, such as noise, waste, water and air have been described and regulated. Monitoring and measuring using internal and external independent audits and inspections have been conducted. Based on this the following corrective measures and improvements have been made:

### Airport environmental impact

- noise from aircraft and ground equipment and vehicles
- emissions from aircraft engines and vehicles at and around the airport
- planning of the purpose and use of the surrounding area
- treatment/recycling of the waste
- soil and water pollution at the airport and in its vicinity

The most important plans, principles and goals of Dubrovnik Airport Sustainable Development Strategy include:

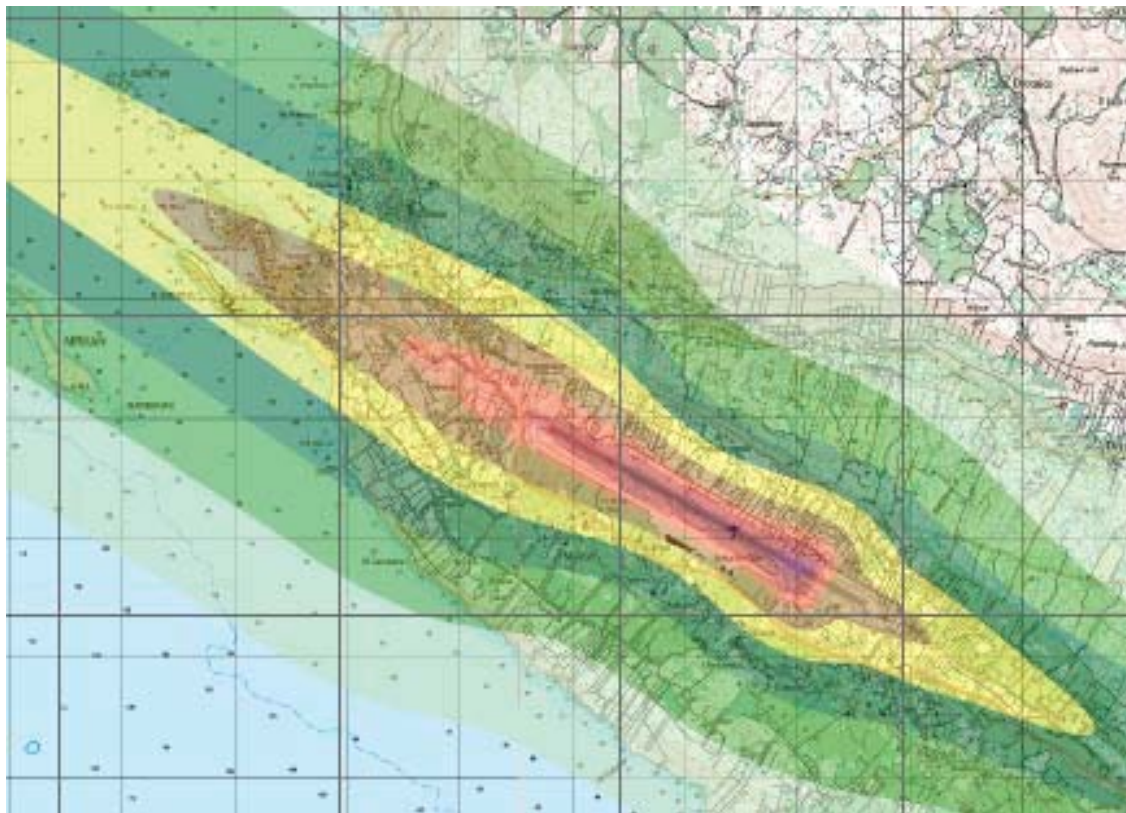
- a decrease in air, ground water and soil pollution,
- a decrease in irrational energy consumption,
- a decrease in irrational water consumption and the airport's impact on the environment
- better use of the solar and wind energy (production of electricity, solar lighting, heating and air-conditioning, hot water),
- greater use of electric vehicles, equipment and devices and the replacement of existing vehicles using electric drive or any other alternative fuel (gas, biodiesel),
- investigative strategies concerning the generation and decrease of volume of waste



### 3. NOISE

Airport noise impact. As the map shows, 80% of traffic at Dubrovnik Airport exceeds level 30. Therefore it can be concluded that settlements placed along the landing corridor are more exposed because of the shallower approaching angle. Cavtat is located NW from the runway and the height the aircraft above during landing should be at about 250 m. Due to the immediate vicinity of settlements such as Zvekovica, Čilipi and Močići, noise impact should be more carefully studied. There were four proposed measuring stations of which three are inside the airport zone, one close to the runway level and two on levels 13 and 30 of the runway. These have been optimised for external operation. The fourth measuring station would be portable and its location would be determined according to data which has to be collected.

A noise measuring system has to be implemented at the Dubrovnik Airport. To this end, Dubrovnik Airport has had an implementation project of the environmental noise management system for Dubrovnik Airport created by company DARH 2 d.o.o. The project documentation was drawn up by using standard measuring methods and anticipated environmental noise used in professional practice and integrated in Croatian and EU legislation.



Environmental methods of reducing noise made by aircraft can be either:

- **TECHNOLOGICAL**; by silencing engines during use (Husk-kit), and the phasing out of noisier engines.
- **ORGANISATIONAL – TECHNOLOGICAL**; an approach which includes regulation of local traffic congestion and rationalisation of operational start-up and switch-off.

#### What has been completed

- Measuring of noise level and drawing up of the Dubrovnik Airport strategic noise map

#### Plans

- Installation of measuring stations
- integration of radars into the system
- implementation of CDA 6 procedures



#### 4. VODA

Air traffic cannot be considered a direct pollutant of water except in extraordinary event or accidents such as fuel and oil spills and pollution occurring during any irregular intervention. All manoeuvring surfaces are strictly controlled by set procedures and environmental protection measures.

**Ground water.** The well known large underground wells in Konavle receive water through permeable bituminous soil of the Trebišnjica valley. During wet seasons very large quantities of water flow from these wells.

**Surface water.** 'Konavosko polje' (The Konavle Field) covers the entire area of the water flows Kopačica and Ljuta and its tributary Konavočica. There is no surface water flowing around the airport.

**Rain water.** Rain water is drained from the entire apron and the passenger car and bus parking area through pipelines connected to separators which lead to the water body recipient. All rain water is drained through a separate rain water sewerage system to 3 separators, each of 2000 l/s capacity, and is drained into the surrounding terrain.

**Water supply.** The consumption of water is measured at two water meters. The consumption measured in 2010 was about 58,496 m<sup>3</sup> /year and 4,874 m<sup>3</sup> is used per month.

Table 5: Total Volume of Water 2006-2010

Year	Water Consumption in m <sup>3</sup> /year
2006.	78.132
2007.	59.040
2008.	82.903
2009.	46.825
2010.	58.496



Waste water uses internal sewerage system to drain through separate systems into two absorbing wells with spillway for faecal water, connected to the waste water treatment plant, and one impermeable septic tank used to the aircrafts' chemical toilets. The renovated part of the airport is connected to a bio-aeration basin with a capacity of 1433 EKS which is used for the biological treatment of waste water (about 60% of waste water total volume). The quantity of inlet water is measured with two meters. Outlet quantities which are treated are controlled by the number of pump operating hours.

Waste water sampling and analysis is conducted in compliance with the Ordinance on Limit Values of Waste Water Emission (OG 87/10). Considering the very low quantities of industrial water and total waste water (up to 75 m<sup>3</sup> /day) , the testing is conducted twice a year. Total quantities of outlet water include the quantities supplied from the city pipeline decreased by the quantities used for watering green areas and any possible losses.

Outlet water quantity amounts to 40,000-60,000 m<sup>3</sup> /year, of which about 6,000-10,000 m<sup>3</sup> is used for watering the green areas. Water from the waste water treatment plant is filtered, therefore clean and used for watering the surrounding greenery. All other waters cover sanitary waste water. The only companies that have industrial waste water are Kitchen and Catering, but the quantities are low. They are generated only during operation of these two units and are discharged into the system through a grease separator.

Any existing irregularities of the water system can appear only due to the following reasons: low level of maintenance of the sedimentation tank and oil separator, or human mistakes when using oils and other fuels.

Standing water on free areas can be entirely eliminated with strict discipline and by keeping the area tidy, which means that pollution can only be the result of human action or an extraordinary event or accident.

### *Completed*

- drainage from runway and other such surfaces directly into the surrounding terrain
- two waste water treatment plants/separators for the apron (their planning documentation is currently being made)
- a bio waste water treatment plant for terminals and other facilities
- continuous measuring and monitoring of waste waters
- three separators installed to collect rain water from the manipulation areas in front of the passenger terminal, from the surfaces intended to bus and rent-a-car parking and INA air-service

### *Measures and Plans for the Future*

- installation of tap sensors to decrease water consumption,
- saving and reasonable use of water,
- construction of a biological waste water treatment plant for two septic tanks or connecting to the existing system, treatment and reuse of waste water (the planning documentation is currently being made)
- planned drainage from the remaining operational surfaces (passenger parking, internal pump stations, fuel transfer)
- construction of the apron waste water treatment plant for the aircraft and workshops.



### *Prevention and Protection*

In the event of ecological accident or an extraordinary situation the Contingency Plan shall be observed. The Airport's professional fire fighting brigade has been trained to respond to such events, and the head of the brigade shall command any action.

Implementation of the Contingency Plan shall be conducted by employees who were specially trained by relevant institutions. Their employees shall be acquainted with the Plan during special practical exercises. These exercises serve to refresh knowledge and to check up on the practical skills of the employees.

Since the beginning of Airport operation, there have been no incidents at the Dubrovnik Airport. In addition, due to the fact that all precautions were taken this area can be considered a low-risk area.



## 5. WASTE

Annual quantities of waste depend on the volume and number of passengers and the type of service provided. Waste at the airport is the result of aircraft, passenger and cargo ground handling, reconstruction and construction of new facilities. There is an amount of about 160 tons of municipal, inert waste generated at the airport every year.

The basis of the environmental protection policy has been integrated in the Environmental Protection Act (OG 110/07) and the Croatian Environmental Protection Strategy (OG 46/02). Waste management is an important element in environmental protection and has been stipulated by the Croatian Waste Act (OG 178/04, 111/06 and 60/08), the Croatian Waste Management Strategy (NN 130/05) and the Croatian Waste Management Plan for the Period from 2007 to 2015 (OG 85/07). The Croatian Waste Management Strategy has set the goal of waste management which is in compliance with the waste management policy applicable throughout the EU.

### *Waste Types and Volume*

The process itself produces waste material which is delivered for further processing to companies dealing with trade, purchase and processing of secondary raw materials:

- Paper and cardboard paper 21.60 t/year
- Municipal, inert waste 160.51 t/year

Hazardous waste collected and delivered for further processing:

- Different used oils and lubricants 1.520 t/year
- Electrical waste 0.199 t/year
- Lead batteries 0.840 t/year

Organic waste is regularly collected and temporarily stored in refrigerated container.

### **Key steps and initiatives in waste management:**

- To investigate new waste reduction strategies
- To investigate the existing and the future sustainability opportunities and to develop new goals
- To reduce hazardous waste (by selecting oil or water based paints, etc)

Primary selective collection of secondary raw materials in their respective containers placed around the airport premises enable selection of paper, cardboard paper, plastic waste (PET) and metal (metal tins).



### **Future Obligatory Measures**

Implementation of primary recycling or selective collection measures on the point of generation at the airport can be summarized as:

- a permanent increase of recycling useable waste, necessary placement of more recycling bins for selective collection of paper, glass, plastic and metal
- the purchase of equipment for selective collection of green waste generated on public surfaces and used for composting (during the season) in special bins
- the installation of a cooling container for waste food.

## 6. ENERGY

Dubrovnik Airport is an important economic and strategic actor in the Dubrovnik and Neretva County and is the key factor of connecting the south of Croatia with the inland (Zagreb, the capital) and other European and world cities. In 2010, it was the leading airport of the region with traffic of 1,270,062 passengers. In the following decade the number of passengers is planned to increase to over 2,000,000. In order to provide high quality services to passengers and the regular operation of all its systems, the airport needs a lot of energy.

### *Technology and Consumption*

**Electricity (Lighting and Air-Conditioning).** Dubrovnik Airport facilities include three smaller buildings. Air-conditioning is provided with three separate systems with several smaller, individual units. In summer, Terminals A and B are air-conditioned through the central machinery room. There are two TRANE RTAB 213 Cooling Stations installed, each with power rated power at 192 kW. Units are electrically powered. The second installed system is a TRANE CXA 200S Heat Pump power rated at 57.2 kW and 19 kW consumption. The system conditions offices of the administration building using electricity. A third system conditioning the Load Control Premises is a Daikin Europe UWY 8 HW1 power rated at 18 kW and 6.5 kW consumption. The TRANE RTA 217 System, power rated at 682 kW, was manufactured in 2006 and is used to condition the premises of the terminal. The cooling station uses the R134A cooling medium. Electricity is also used for lighting and operation of other instruments and devices at the airport. Electricity is supplied via two interconnected substations, through a computerized system, with individual consumer units that can be switched off separately, when necessary.

### *Dubrovnik Airport Energy Consumption from 2006 to 2010*

	Electricity	Fuel/energy for heating	Fuel/energy for ground support equipment
2006.	3.382.361 kWh	152.000 l	89.193 l
2007.	3.375.820 kWh	114.100 l	114.687 l
2008.	3.600.440 kWh	144 800 l	126 351 l
2009.	4.333.740 kWh	109 380 l	109 372 l
2010.	4.979.358 kWh	114 585 l	112 207 l

**Heating Energy.** The central system includes a central boiler room with three Paromat-Simplex Hot-Water Boilers, power rated at 575 kW each and one Vitoplex 100 sx 1 power rated at 895 kW. In winter, the central boiler room heats the entire passenger terminal.

**Mechanical Energy.** Vehicles and equipment for aircraft handling use generators whose exhaust gases meet the EURO 3 and EURO 4 standards. All vehicles and handling equipment which have internal combustion engines generate glasshouse gases which result from combustion of fossil fuel used extensively at the airport. Introduction of electric vehicles would considerably reduce CO<sub>2</sub> emission (this form of drive is currently used for only 1% of its capacities).

### *Measures for Sustainable Development in the Future Period*

Measures for sustainable energy development and reduction of CO<sub>2</sub> emissions in transport and energy consumption, in compliance with the recommendation of the EC and applicable for the particular situation, have been divided into:

- green public procurement,
- measures for airport vehicles: gradually replace the existing vehicles and equipment with low-emission vehicles and equipment,
- the use of renewable energy sources (solar, wind, biomass, gas, etc.),
- implementation of energy efficiency measures and
- replacement and implementation of cogeneration and third-generation systems.



## 7. AIR

The emission of harmful gases into the atmosphere is very important for environmental protection. Aircraft pollute the air and endanger large areas. The requirements of the environment and those of the aircraft industry are growing proportionally.

The harmfulness and impact of gases from Airport's boiler plant on the atmosphere has been reduced to the minimum. ING-ATEST measurements have proven that the impact of the Dubrovnik Airport boiler plant on the air is low and meets the strictest standards. The cooling stations use approved freon gas which has been officially approved for use in Croatia until 2026. Measures proposed to further reduce the emission of harmful gases into the atmosphere include reduced engine operation, the use of electric vehicles, aircraft supply involving minimum movement of vehicles and the installation of air quality measuring devices.

Dubrovnik Airport has recorded an increase in traffic and it can be assumed that pollution will increase as well. Since no analysis have been conducted so far, the level of pollutants is impossible to determine. However, a thorough analysis of the microclimate has shown that the 'airing' level of this area is high which results in a minimal impact in terms of pollution by Dubrovnik Airport on the surrounding air at the passenger traffic volume in 2011. of 1.3 mil.

### Emission into Air

The harmful impact of emissions on local air quality relates mostly to human health. The pollutant gases similar to the greenhouse gases are: nitrogen oxides (NO<sub>x</sub>): nitrogen monoxide and nitrogen dioxide, carbon monoxide (CO), sulphur oxides (SO<sub>x</sub>) and partially combusted hydrocarbons (HC). Particulate Matter (PM) size 2.5 microns – Pm<sup>2.5</sup> and 10 microns PM<sub>10</sub> have the highest dangerous impact on health compared to other harmful emissions. The generation of these pollutants is supported by other sources relating to the airport, such as the combustion of fossil fuels in aircraft ground handling equipment (buses, fuel tanks, tractors, etc.), different ground vehicles (cars, taxis, buses), power supply plants and auxiliary GPUs. They do not produce a large CO<sub>2</sub> impact on the local air quality because this gas is primarily considered to be a greenhouse gas. To evaluate the quality or pollution of local air, emissions of harmful gases developed during landing and take-off cycles are analysed. These emissions mostly appear up to an altitude of 3000ft (915m) above the airport. There are several methods of acting which result in the reduction and diminution of harmful emissions. The general directions for both greenhouse gases and other gases that influence local air quality are: technology and standards, operative measures and market measures. In order to know how to act, it is necessary to determine the level of air pollution around the airport.

ACI (Airport Council International) has established Airport Carbon Accreditation (ACA) programme in 2009 to start monitor and report on voluntary basis CO<sub>2</sub> emissions at the airport. Dubrovnik Airport is member of this programme from the beginning. There are 4 levels defined in ACA Programme: 1. Mapping, 2. Reduction, 3. Optimisation, 4. Neutrality

### Monitoring and Current Measuring of all CO<sub>2</sub> emissions at the Airport

more details at <http://www.airportcarbonaccreditation.org/>

Airport	Year	PAX	t CO <sub>2</sub>	kg CO <sub>2</sub> / Pax
DBV Airport	2009	1.122.335	2.194,2	<b>1,955</b>
DBV Airport	2010	1.270.062	2.255,4	<b>1,776</b>
ACA 17 airports	2010	N/A	803.050,0	<b>2,6</b>

Tablica 6: Measured and reported to ACA programme CO<sub>2</sub> emissions of hot water boilers

2009.	Running hours	Consumption of fuel (tons)	Measured CO <sub>2</sub> emissions / tons	Reported CO <sub>2</sub> emissions to ACA /tons
Boiler 1	1235	28,30	75,368	90,136
Boiler 2	1320	30,88	82,226	98,353
Boiler 3	1370	50,20	133,692	159,887
<b>Total</b>	<b>3925</b>	<b>109,38</b>	<b>291,286</b>	<b>348,376</b>

Based on the law and Register on Environment Pollution the Airport has had the CO<sub>2</sub> emissions from three chimneys of the airport central boiler room monitored by approved company (ING ATEST). The quantities of the CO<sub>2</sub> were within allowed limitations.

According to the details included in Table 6 it is clear that higher CO<sub>2</sub> emissions were reported than really generated (57,096 t CO<sub>2</sub> or about 16,39%). Table ACA provides approximate values as a result of defined factors for CO<sub>2</sub> emissions. The resulting differences can be due to the new burners, regular maintenance, good combustion and good ratio of air and fuel mixture

#### Improvements and Sustainable Development Implementation Measures:

- require the switching off of engines when in the vicinity of entrance/exit zone,
- less use of engines operating at higher revolution per minute while taxiing in order to reduce CO and HC emissions, and to shorten taxiing time,
- better use of alternative fuels for GSE, and replace APU with 400 Hz directly from a power supply,
- the encouragement of the development of operative measures and to improve flight control and
- the installation of air quality measuring equipment and the creation of a carbon emission imprint

DUBROVNIK AIRPORT  
YEAR 2010.





## 8. SOIL

**Geology and Soil.** Konavle is a karst area with mostly carbonate rocks with karst pits, caves, trenches and valleys. The same applies to the Čilipi zone where Dubrovnik Airport is located. This hilly area is a part of an interior karst area. The sea coast is long, steep and rocky, sometimes with cliffs almost 300 m high (near Poljice). This part was registered as the geomorphological and higraphic reserve of Konavoske stijene (The Konavle Rocks).

**Airport Activities.** Dubrovnik Airport has tried to maintain the current status of environmental protection and natural balance. To this end, in 2009 it created a Game Animal Protection Programme based on international and Croatian laws and regulations on air-traffic that govern such conditions and standards. Numerous activities are currently being implemented to prevent game and other animals from entering the Airport area. Animals detected inside the area are expelled from the premises. This protection is a part of the activities performed by the fire fighting and technical department, and is conducted using gas canons, rocket guns and vehicles equipped with sirens.

**Possible pollution zones.** There is no direct impact on soil except in the case of an extraordinary event or an accident such as fuel or oil spills or any other irregular intervention. The Airport has a controlled water drainage system used to remove water from runway and other such surfaces. This water is led trough an oil and grease separator before being discharged into the ground.

In the event of an environmental incident, the Airport has a well developed contingency plan, a list of dangerous items and possible sources of danger, a structure for the implementation of measures and an environment treatment and recovery plan, all of which are based on training and exercises. In addition to their primary activity the fire fighting and rescue team responds in cases of environmental, soil and water recovery incidents.



## 9. ENVIRONMENT, SURROUNDING AREAS - PROGRAMMES

Dubrovnik Airport has made great efforts and invested large funds into the maintenance of environmental protection and natural balance at and around the Airport. With every investment activity the Airport observes site geographic characteristics, the flora and fauna of the area, natural structures and cultural monuments such as the Đurovića Cave underneath the Apron.

Dubrovnik Airport is planning to further reduce energy consumption per every traffic unit (passenger, transported cargo or mail, square metre of newly built area). The goals of Dubrovnik Airport Management Board are optimum management, further reduction of losses and usage of high efficiency devices.



### Programmes and Measures

- Reduce energy consumption.

Reduce fuel consumption for the entire ground handling equipment and optimise the movement and parking of the apron ground handling units.

- Reduce water consumption.

Continue checks of losses in pipelines and search other options for further savings and increase the use of water from the bio lagoon.

- Air Purity

Start with permanent surveillance and the measuring of air emissions. After completed analysis, improvement and reduction measures shall be proposed. Plan, purchase and install the necessary equipment.

- Condition of Waste Water

Continuation of construction and connecting of sanitary waters to the lagoon is planned. In addition, other manoeuvring areas shall be directed to separators.

- Noise Protection

- To purchase and install measuring stations taking into consideration the already completed noise map





