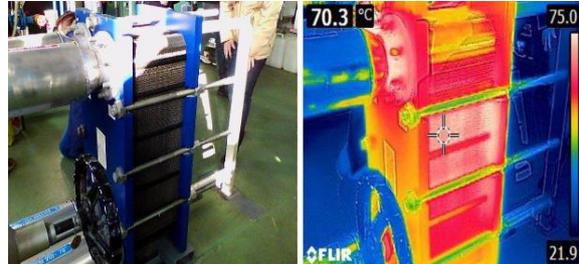


## RECP Experiences at Sarajevo International Airport

Efficient and environmentally sound use of materials, energy and water - coupled with the minimization of waste and emissions - makes good business sense. Using Resource Efficient and Cleaner Production (RECP) this can be achieved in a holistic and systematic manner. RECP applies preventive management strategies to improve natural resources productivity, minimize generation of waste and emissions, and foster safe and responsible production. As experiences of Sarajevo International Airport from Bosnia and Herzegovina show, benefits are obvious in many enterprises, regardless of their line of business, location or size.

### Achievements at a Glance

The Resource Efficient and Cleaner Production (RECP) project at Sarajevo International Airport, the main international airport serving the capital of Bosnia and Herzegovina, will achieve annual savings of EUR 703,366 with investment of EUR 4,295,844 and payback time of 6 years. Implementation of all suggested resource efficiency measures will reduce electric energy consumption by 24.3% and fuel consumption by 10.5%, which gives the total reduction of 16% compared to total energy consumption. Installation of photovoltaic power plant brings major reduction of carbon footprint (3,474.1 t CO<sub>2</sub>/a).



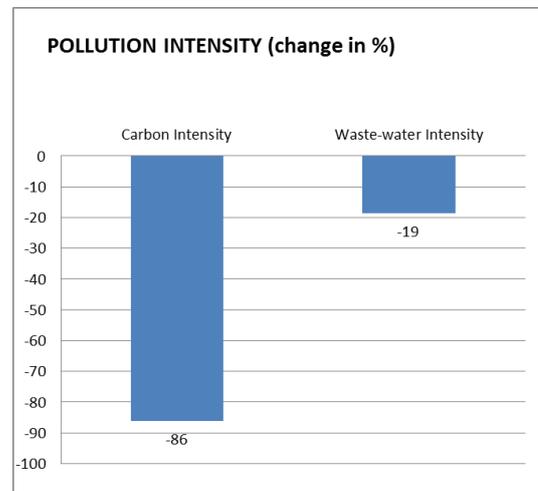
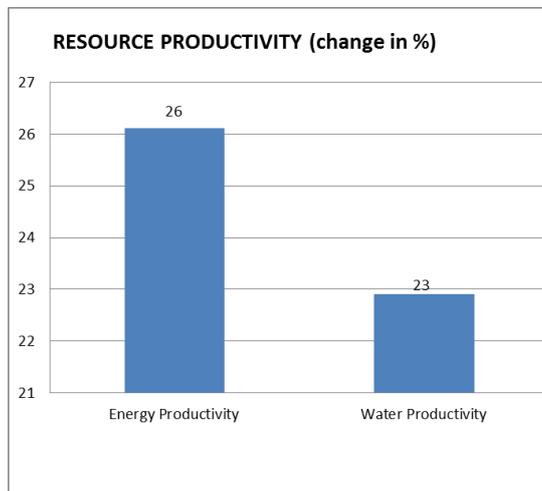
### Overview

Airport Sarajevo has approx. 400 employees, traffic capacity of 800,000 passengers a year, over 7,000 flights and over 2 million kg of cargo. It has 5 gates, 4 restaurants and bars, duty free, sanitary installations and cargo storage. The airport consumes 14,000 m<sup>3</sup>/y of water; 360,000 Sm<sup>3</sup> of gas and has significant amount of different type of waste. The company has 14001 in place, since 2004.

## Benefits

Absolute Indicator	Change (%)	Relative Indicator	Change (%)
Resource Use		Resource Productivity	
Energy Use	-21	Energy Productivity	26
Water Use	-19	Water Productivity	23
Pollution generated		Pollution Intensity	
Air Emissions (global warming, CO <sub>2</sub> eq.)	-86	Carbon Intensity	-86
Waste-Water	-19	Waste-Water Intensity	-19
Waste	0	Waste Intensity	0

## RECP profile



## Resource Efficient and Cleaner Production (RECP)

**Resource Efficient and Cleaner Production (RECP)** entails the continuous application of preventive environmental strategies to processes, products and services to increase efficiency and reduce risks to humans and the environment.

RECP addresses three sustainability dimensions individually and synergistically:

- *Production efficiency*
  - > Through improved productive use of natural resources by enterprises
- *Environmental management*
  - > Through minimization of the impact on nature by enterprises
- *Human development*
  - > Through reduction of risks to people and communities from enterprises and supporting their development



## Success Areas

RECP measures	Benefits				
	Economic			Resources	Waste flow
	Investment EURO	Savings (EURO/year)	Payback period	Reductions in energy use, water use and/or materials use (per annum)	Reductions in waste water, air emissions and/or waste generation (per annum)
Installation of photovoltaic power plant on covered parking	3,888,376	526,446	7 years and 5 months	Electric energy 2,210,000 kWh	3,474.1 tCO <sub>2</sub>
Printing photovoltaic thin film on glass facade	239,445	95,776	2 years and 6 months	Electric energy 363,800 kWh	571.9 tCO <sub>2</sub>
Replacement of 40 reflectors with Tungsten halogen light bulbs	5,113	1,018	5 years	Electric energy 8,800 kWh	13.8 tCO <sub>2</sub>
Replacement of lightning of Coca-Cola advertisement	123	204	7 months	Electric energy 2,600 kWh	4.1 tCO <sub>2</sub>
Replacement of fluorescent tube T12 with T8 at Terminal B	2,396	14,462	2 months	Electric energy 186,700 kWh	293.5 tCO <sub>2</sub>

RECP measures	Benefits				
	Economic			Resources	Waste flow
	Investment EURO	Savings (EURO/year)	Payback period	Reductions in energy use, water use and/or materials use (per annum)	Reductions in waste water, air emissions and/or waste generation (per annum)
Turning off all the laser printers during night and weekends.	0	263	0	Electric energy 3,400 kWh	5.3 tCO <sub>2</sub>
Setting up computer equipment in the energy saving mode	0	63	0	Electric energy 800 kWh	1.3 tCO <sub>2</sub>
Central printing system in Administrative building	4,090	15,814	3 months	Electric energy 8,400 kWh	13.2 tCO <sub>2</sub>
Replacement of 18 pumps with frequency controlled pumps in substation of Terminal B	11,412	1,350	8 years and 6 months	Electric energy 17,400 kWh	27.4 tCO <sub>2</sub>
Installing daylight and motion sensors	10,000	26,215	2 months	Electric energy 112,800 kWh	177.3 tCO <sub>2</sub>
Installing water-water heat pump for heating and cooling purposes of Administrative building	101,400	6,511	15 years and 7 months	Fuel 18,770 m <sup>3</sup>	41.8 tCO <sub>2</sub>
Hydraulic balancing and correction of the internal temperature of the Terminal B's heating system	12,782	9,742	1 year and 4 months	Fuel 25,405 m <sup>3</sup>	56.6 tCO <sub>2</sub>
Installing motion sensor faucets	6,902	964	7 years and 2 months	Water 1,298 m <sup>3</sup>	Waste water 1,298.0 m <sup>3</sup>
Installing dual-flush systems	13,805	4,538	3 years	Water 3,450 m <sup>3</sup>	Waste water 3,450.0 m <sup>3</sup>



# RECP Experiences



## Approach taken

The Company participated in the National Cleaner Production Program in Bosnia and Herzegovina. The RECP assessment was performed by the company team and national experts trained in RECP methodology. The RECP assessment was supervised by international experts. The purpose of assessments made at the beginning of the project was to prepare a material balance, an energy balance and balances of water consumption and waste water. In consultation with expert teams the company management selected the RECP measures to be implemented. Presented measures for lightning efficiency improvement contribute in overall electric energy consumption savings by 44%. Hydraulic balancing and correction of the internal temperature of the Terminal B's heating system will influence the most on fuel consumption reduction, with relatively short payback period. Turning off all the laser printers during night and weekends; and setting up computer equipment in the energy saving mode are no-cost measures that bring electric energy consumption saving, consequently money savings. Installing motion sensor faucets and dual-flush systems contribute to significant water consumption reduction, also improving resource efficiency.

## Testimony Box

### National Cleaner Production Program in Bosnia and Herzegovina

The program is designed to foster expertise, service delivery capacity and implementation of RECP practices and policies in the country, building on UNIDO's experience in supporting National Cleaner Production Programmes (NCPPs) and Centres (NCPCs), in collaboration with UNEP, under the global joint RECP Programme. The program that was officially launched in 2015, contributes to improve the resource efficiency and environmental performances of businesses and other organizations in Bosnia and Herzegovina. With the application of a systematic RECP approach, the project aims at providing:

- Training to national experts on UNIDO's RECP methodology
- Assessment services to companies
- Information dissemination and awareness raising

## Contact Details

### National Cleaner Production Program

Podgaj 14, 71000 Sarajevo

Bosnia and Herzegovina

[www.ncpp.ba](http://www.ncpp.ba)

Phone: +387 33 279 100

fax: +387 33 279 108