

## RECP Experiences at Kakanj Cement

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 Kakanj Cement 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 in Kakanj Cement, a cement manufacturing industry, will achieve annual savings of EUR 689,977, with investment of EUR 642,392 and payback time of 11 months. Co-incineration of RDF as alternative fuel will contribute to reduction of carbon dioxide emissions by 11,5%. and ash waste reduction by 250 t/y, i.e 8,86 %. Application of the new system in the preparation of fuel for rotary kiln and installation of condensate recirculation system will result in water savings of 9,300 m<sup>3</sup>/y and gas savings of 521,008 m<sup>3</sup>/y.



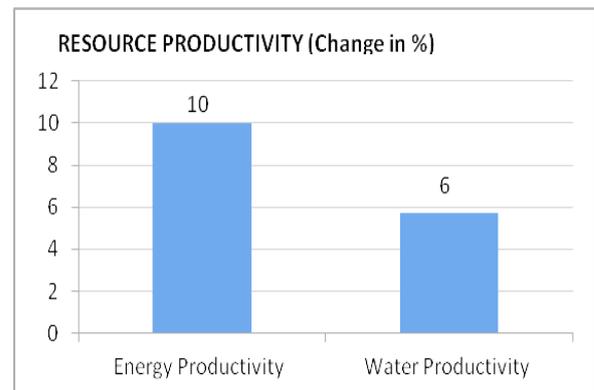
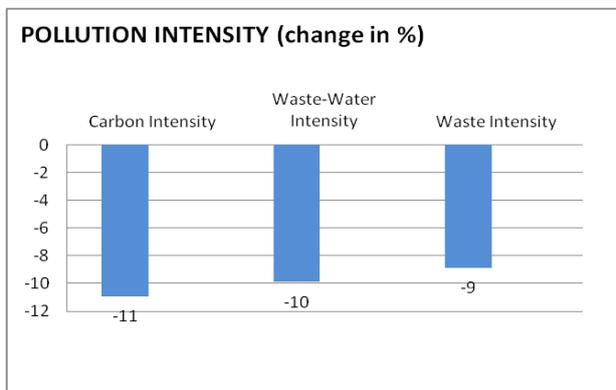
### Overview

Kakanj Cement was established in 1978. Since 2000, the company is a member of the Heidelberg Cement Group, one of the world's largest manufacturers of construction materials. This company employs 240 workers. The company implemented ISO 14001: 2004, ISO 9001: 2008, OHSAS 18001: 2007, EN 197-1 and EN 197-2. Kakanj Cement implements high environmental standards. Dust emissions do not exceed 10 mg / m<sup>3</sup>, which is much lower than the EU limit value of 50 mg / m<sup>3</sup>.

## Benefits

Absolute Indicator	Change (%)	Relative Indicator	Change (%)
Resource Use		Resource Productivity	
Energy Use	-9	Energy Productivity	10
Water Use	-5	Water Productivity	6
Pollution generated		Pollution Intensity	
Air Emissions (global warming, CO2 eq.)	-11	Carbon Intensity	-11
Waste-Water	-10	Waste-Water Intensity	-10
Waste	-9	Waste Intensity	-9

## 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)	Pay back 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)
Application of the system for dispensing alternative fuels SRF / RDF	511,292	563,779	2 years	Fossil fuel replacement by 30% of RDF	CO <sub>2</sub> 28,027 t CO <sub>2</sub> Ash Waste 250 t
Application of the new system for the preparation of fuel for rotary kiln and installation of condensate recirculation system	131,100	126,198	1,1 year	Water 9,300 m <sup>3</sup> Gas 521,008 Sm <sup>3</sup>	Wastewater 9,300 m <sup>3</sup>



# RECP Experiences



## Approach taken

The Company participated in the National Cleaner Production Program in Bosnia and Herzegovina as one of the ten selected companies. 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 wastewater. In consultation with expert teams the company management selected the RECP measures to be implemented. With the new system for the preparation of fuel for the kiln, the company will be able to reuse the condensate water from the boiler room, without the risk of contaminating the condensate water with the fuel. The company set a goal to achieve a share of 30% of SRF / RDF in the energy mix by 2020. Current percentage of alternative fuels in use is less than 10%. One of the preconditions to use RDF is the installation of the system for dispensing alternative fuels SRF / RDF.

### 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

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