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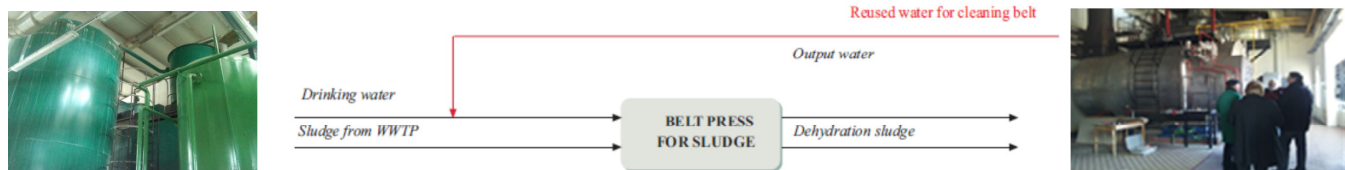
RECP Experiences at SIRELA Bjelovar

The efficient and environmentally sound use of materials, energy and water - coupled with the minimization of waste and emissions - makes good business sense. Resource Efficient and Cleaner Production (RECP) is a way to achieve this in a holistic and systematic manner. RECP covers the application of preventive management strategies that increase the productive use of natural resources, minimize generation of waste and emissions, and foster safe and responsible production. Benefits are eminent in many enterprises, regardless of sector, location or size, as demonstrated by the experiences of Sirela, Bjelovar Croatia.

Achievements at a Glance

The Resource Efficient and Cleaner Production (RECP) project in DUKAT factory SIRELA included the Waste Water Treatment Plant. RECP implementation in the SIRELA led to annual savings of EUR 115,000, by investing EUR 15,000 and payback time of 55 days.

RECP project in SIRELA resulted in reduction of waste water amount by 55.800 m³/year (27%), waste water pollutant load (COD) by 18% and savings of fresh (drinking) water by 55,800 m³/year.



Overview

DUKAT is the biggest producer of milk and dairy products in Croatia. DUKAT factory SIRELA in City of Bjelovar (established 1950) is the biggest Croatian cheese producer, with tradition of (First Dairy Association of Bjelovar) founded 1901.

After privatization in 1992, SIRELA became a joint stock company, and later on the DUKAT Group member. SIRELA's product range today includes almost 70 products, mostly cheeses, which thanks to the Dukat distribution system can be found throughout Croatia and Bosnia and Herzegovina, and also in the markets of Slovenia, Macedonia, Italy, Denmark, USA and other countries.

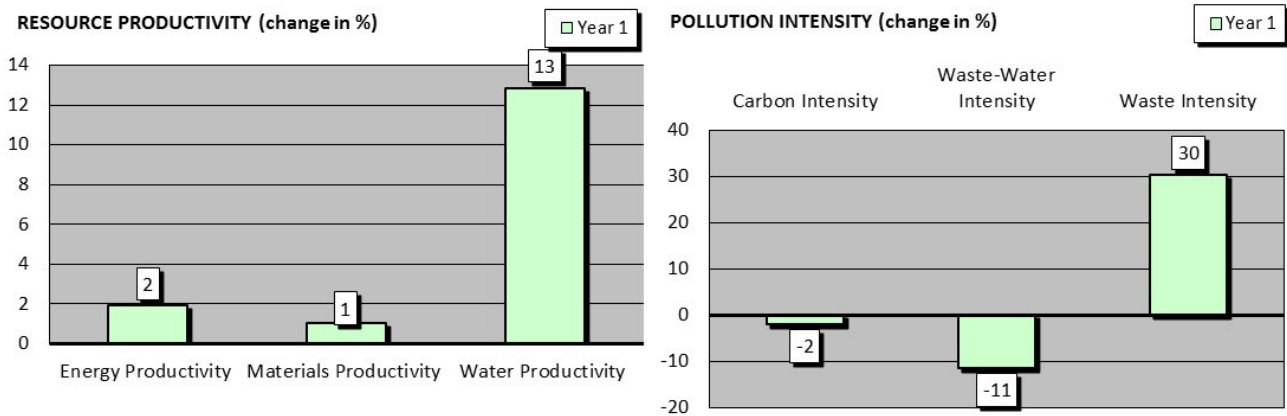
Benefits

The factory implemented the following measures to achieve its pollution prevention and water and energy saving objectives:

- Reducing water consumption in the WWTP by replacing the use of drinking water for cleaning the belt press for sludge in the WWTP with purified water from the plant.
- Reducing cooling water consumption, with recirculation and repeated cooling in the evaporation condenser.
- Reducing water consumption by using condensers.
- Installation of "washing pistols" on washing hoses.

Absolute Indicator	Change (%) Year 1	Relative Indicator	Change (%) Year 1
Resource Use		Resource Productivity	
Energy Use	-6,06	Energy Productivity	2
Materials Use	-5,25	Materials Productivity	1
Water Use	-15,18	Water Productivity	13
Pollution Generated		Pollution Intensity	
Air emissions (global warming, CO ₂ equivalent)	-6,08	Carbon Intensity	-2
Waste-water	-15,18	Waste-water Intensity	-11
Waste	24,79	Waste Intensity	30
Production Output	-4,27		

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

The results were achieved through the implementation of the following measures:

Principal Options Implemented	Benefits			
	Economic		Resource Use	Pollution generated
	Investment [EUR]	Cost Saving [EUR/yr]	Reductions in energy use, water use and/or materials use (per annum)	Reductions in waste water, air emissions and/or waste generation (per annum)
Reducing water consumption in the WWTP by replacing the use of drinking water for cleaning the belt press for sludge in the WWTP with purified water from the plant.	15,000	115,000	Reducing water consumption of 50,000 m ³	Reducing waste water of 50,000 m ³
Reducing cooling water consumption, with recirculation and repeated cooling in the evaporation condenser.			Reducing water consumption of 5,000 m ³	Reducing waste water of 5,000 m ³
Reducing water consumption by using condensers.			Reducing water consumption of 750 m ³	Reducing waste water of 750 m ³
Installation of "washing pistols" on washing hoses.			Reducing water consumption of 50 m ³	Reducing waste water of 50 m ³

Approach taken

RECP is a great cost-saving tool that has enabled the company to reduce CO₂ emission and savings in utility raw materials/chemicals. The implemented measures lead to reduction of waste water amount by 15,18 % and waste water pollutant load (COD) by 18%, savings of fresh (drinking) water by 15,18%.

Business case

In the case of SIRELA resource efficient and cleaner production methodology was used, but adopted to the conditions and needs of the plant. The company continues to work on RECP activities, especially related optimization of water consumption.



RECP Experiences



Testimony Box

National Cleaner Production Centre (NCPC)

Croatian Cleaner Production Centre (CRO CPC) was founded as non-governmental, non-profit institution in year 2000.

It is a member of the Global Network for Resource Efficient and Cleaner Production (RECP net).

Centre's core business lies in providing consulting services and trainings related to environmental protection, with a focus on:

- Training and implementation of cleaner production in industrial companies and service sector
- Implementation of Environmental Management System and HACCP
- Best Available Technology Assessment (BAT; BREF)
- Implementation of Corporate Social Responsibility (CSR) and monitoring of achievements by utilising UNIDO REAP software tool
- Consultancy services for the industry (Environmental Impact Assessments, Environmental permits)

For the work and achievements in the field of environmental protection the Croatian Cleaner Production was awarded with the National Environmental Award in 2004.

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English Abstract (where applicable)

ABOUT RECP EXPERIENCES

Through the joint Resource Efficient and Cleaner Production (RECP) Programme, the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Programme (UNEP) cooperate to improve the resource productivity and environmental performance of businesses and other organizations in developing and transition countries. The Programme is implemented in partnership with the Global Network for Resource Efficient and Cleaner Production (RECPnet). This series of enterprise success stories documents the resource productivity, environmental and other benefits achieved by enterprises in developing and transition countries through the implementation of RECP methods and practices.

These successes were achieved with the assistance of the National Cleaner Production Centres, which are part of RECPnet established with support of the UNIDO and UNEP. The success stories employ the indicator set described in *Enterprise Level Indicators for Resource Productivity and Pollution Intensity*, UNIDO/UNEP, 2010. The primer with accompanying calculator tool and further case studies are available at www.recenet.org, as well as on www.unido.org/cp and www.unep.fr/scp/cp.