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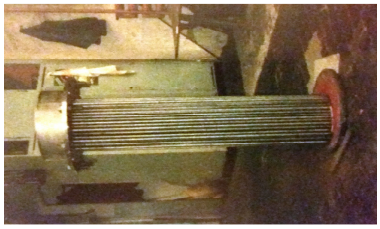
RECP Experiences at HEP d.d. TE – TO Zagreb

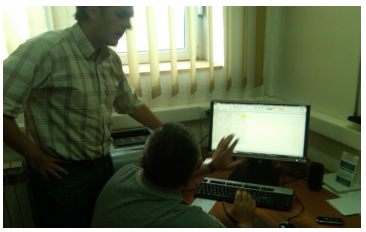
The efficient and environmentally sound use of materials, energy and water - coupled with the minimization of waste and emissions - makes good business sense. Resource Efficient and Cleaner Production (RECP) is a way to achieve this in a holistic and systematic manner. RECP covers the application of 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 Croatian Electric Utility Company (HEP d.d.), Cogeneration Plant TE-TO Zagreb, Croatia.

Achievements at a Glance

The Resource Efficient and Cleaner Production (RECP) project in Croatian Electric Utility Company, Cogeneration plant TE-TO Zagreb was oriented to the thermal unit of Cogeneration Plant. RECP implementation in TE-TO Zagreb led to annual savings of 99,000 US$ by investing 3,959 US$ and payback time of 15 days.

RECP project in TE TO resulted in reduction of water amount by 13,017 m^3/year (0,017%) by reducing of steam losses and utilizing steam energy of blowdown exhaust at Unit C.





Overview

Croatian Electric Utility Company is a limited liability company licensed to perform two energy businesses: electricity production for tariff customers and production of heat energy for the district heating systems in the cities of Zagreb, Osijek and Sisak. The main activity of the TE- TO Cogeneration Plant Zagreb is the production of electricity and heat.

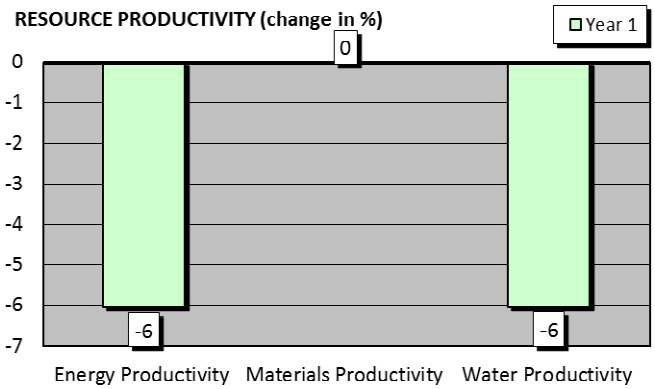
Benefits

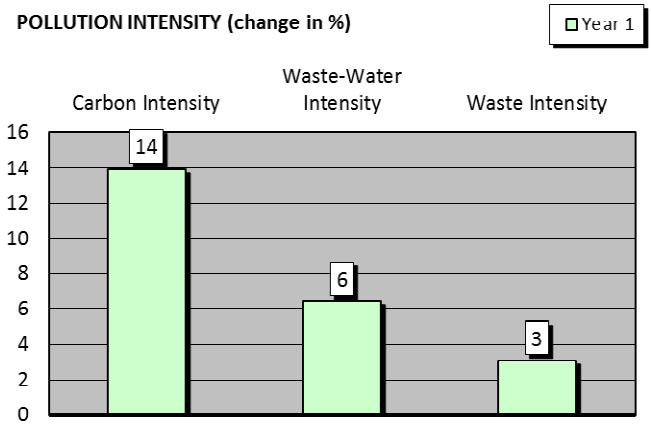
The project is focused on the Unit C of 120 MW installed electrical capacity and 200 MW installed thermal capacity. The exact location where the cleaner technology project was implemented is at clean drains flash tank (high/low pressure). Result is reduction of steam losses and utilizing steam energy of blowdown exhaust at Unit C.

Absolute Indicator	Change (%) Year 1	Relative Indicator	Change (%) Year 1
Resource Use		**Resource Productivity**	
Energy Use	-18,50	Energy Productivity	-6
Materials Use	0,00	Materials Productivity	0
Water Use	-18,517	Water Productivity	-6
Pollution Generated		**Pollution Intensity**	
Air emissions (global warming, CO_2 equivalent)	-12,73	Carbon Intensity	14
Waste-water	- 18,517	Waste-water Intensity	6
Waste	-21,05	Waste Intensity	3
Production Output	-23,42		

RECP Experiences

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 measure:

Principal Options Implemented	Benefits			
	Economic		Resource Use	Pollution generated
	Investment [US$]	Cost Saving [US$/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)
Utilizing steam energy of blowdown exhaust at Unit C	3,950	99,000	Reducing water consumption of 13,017 m^3	Reducing air emissions

Approach taken

RECP is a great cost-saving tool that has enabled the company to reduce CO_2 emission and savings in utility raw materials/chemicals. The implemented measures lead to reduction of fresh water amount by 0.017%.

Business case

In the case of TE TO 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, which are integral part of certified EMS according to ISO 14001.

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 (RECP*net*). 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 RECP*net* 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.recpnet.org, as well as on www.unido.org/cp and www.unep.fr/scp/cp.