



**TOGETHER**  
*for a sustainable future*

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## RECP Experiences at SOGAS (Slaughterhouse Company of Senegal)



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 SOGAS in Senegal.

### Achievements at a Glance

As part of the second Upgrading plan, mainly focused on pollution control and energy efficiency, the BMN has the mission to support the SOGAS in setting environmental standards and energy recovery of waste.

Thus the SOGAS, initially among the top 5 of the most polluting companies of the Hann Bay, is becoming a green company, which produces green energy through the establishment of a mechanization unit which allows it to:

- Cover nearly 50% of its power consumption by a CHP unit running on biogas with an output of 100 kW.
- Generate hot water for the purposes of the slaughterhouse (washing of the slaughterhouse cleaning work tools);
- Produce daily from 18 to 20 tons of bio fertilizers



Cold room



Liquid waste  
(blood, waste water)



Solid waste



Digester



Biogas Cleaner



CHP

## Overview

The SOGAS created in 1996 is a mayor actor in the meat sector in Senegal with the management of 8 regional slaughterhouses entrusted by the State through a concession contract. The SOGAS ensures a supply of 20,408 tons of meat in Dakar that corresponding to 73% of the total meat supply.

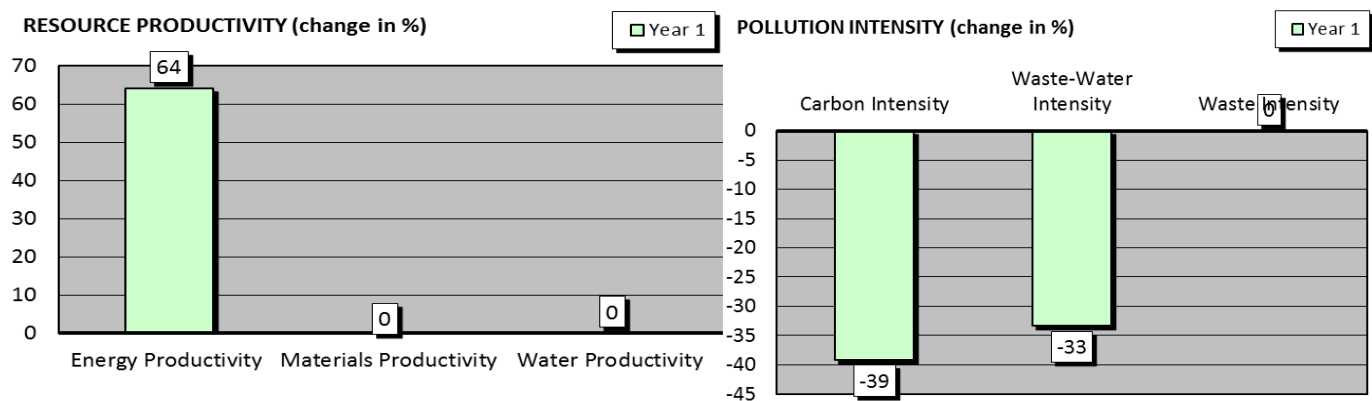
The SOGAS has made his first upgrading Plan in 2008 to modernize the slaughtering process as a flagship investment with an ultra-modern cattle slaughter line acquired over \$ 2 million. Despite its very modern facilities, the daily operations produces over 220 tons of waste (liquid as solid), which are a nuisance both environmentally and sanitary.

## Benefits

The choice of a biogas plant has allowed to reduce the energy bills and also solves environmental problems.

Absolute Indicator	Change (%) Year 1	Change (%) Year 2	Relative Indicator	Change (%) Year 1	Change (%) Year 2
<b>Resource Use</b>			<b>Resource Productivity</b>		
Energy Use			Energy Productivity		
Materials Use			Materials Productivity		
Water Use			Water Productivity		
<b>Pollution Generated</b>			<b>Pollution Intensity</b>		
Air emissions (global warming, CO <sub>2</sub> equivalent)			Carbon Intensity		
Waste-water			Waste-water Intensity		
Waste			Waste Intensity		
<b>Production Output</b>					

## 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

This project allow to increase the competitiveness of the companies while reducing the impact of the company on his environment.

Principal Options Implemented	Benefits			
	Economic		Resource Use	Pollution generated
	Investment [USD]	Cost Saving [USD/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)
Biogas plan with <ul style="list-style-type: none"> <li>- A Digester of 4000 m3</li> <li>- A CHP of 100 kW</li> </ul>	460,000	102,000	4 492 000 Mj/year corresponding to 360 MWh of electricity	Reduction in waste water : 8126 m3  Reduction solid waste : 1592 m3/year  Reduction in air emission : 346 tons/year

## Approach taken

After a first upgrading plan completed in 2005, the second upgrading plan was completed in 2012

With a 6 month assessment focused on energy efficiency and environment. The role of BMN was to provide his technical expertise in fields of energy environment and also to monitor the implementation of investments

## Business case

The upgrading plan helps to save 40% in electricity bills and also diversify sources of incomes through the promotion of bio fertilizer. The payback period is less than 5 years and the investments were implanted through a BOT contract. In addition 3 permanent jobs were created and improve the knowledge implementing biogas installations. Since this experiences, many projects are in progress with the assistance of the upgrading program.



# RECP Experiences



## Testimony Box

### National Cleaner Production Centre (NCPC)

The Senegalese Upgrading Program was created since 2004. It is funded by the Senegalese government, French Development Agency and the European Union, with the technical assistance of UNIDO.

The Upgrading office (BMN) is the body which is in charge of the implementation of the Program; its mission statement is to improve the competitiveness and the development of Senegalese companies.

Since 2010, the Upgrading office has introduced Environment and Energy Efficiency thematic. It supports companies in the private sector to a cleaner production approach, depollution and energy management.

The approach is to use Environment and Energy efficiency as lever of competitiveness at a strategic level. The companies can benefit from environmental and energy assessment and financial incentives to implement RECP investments.

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## 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](http://www.recenet.org), as well as on [www.unido.org/cp](http://www.unido.org/cp) and [www.unep.fr/scp/cp](http://www.unep.fr/scp/cp).