



-The RECP methodology-

Resource Efficient and Cleaner Production (RECP) is the integrated and continuous application of preventive environmental strategies to **processes, products, and services** to increase efficiency and reduce risks to humans and the environment. RECP is all about producing with fewer resources while minimizing environmental impacts and increasing overall productivity. For **Small and Medium-sized Enterprises (SMEs)**, the RECP methodology is an effective instrument to lower production costs whilst improving the SMEs' competitive advantage and applying environmentally friendly practices. As well, RECP is considered an effective tool to introduce and promote Circular Economy principles among SMEs.

LTD "LAGI"

- non-alcoholic beverages -

Company overview

Address: Tbilisi, Beliashvilistr. 40

Key products: soft drinks

No. employees: 22

Main markets: USA, Canada, Israel, Singapore, Kazakhstan, Russia, Azerbaijan, Armenia, Latvia, Lithuania, Estonia

Founding year: 2001



Bottling factory **LTD "Lagi"** is a Tbilisi-based beverage producer of natural soft drinks. The company's productivity is at around 2 million 0.5-litre bottles of soft drinks per year. When establishing the company, the management's drive was to reignite the old Georgian traditions of making carbonated soft drinks by using tinctures from locally harvested, high-quality fruits and vegetables. Once the company achieved its goal, LTD "Lagi" steadily became a leader in the production of carbonated soft drinks in Georgia. Nowadays, the company produces around 10-12 kinds of various soft drinks (primarily lemonade). In their production, traditional Georgian recipes are still used, alongside new recipes. Since 2003, the company also exports its products to 11 countries across three continents. To produce 1.5 million bottles, LTD "Lagi" needed 14,511 m³ of natural gas, 47,153 kWh of electricity, and 3,109 m³ of potable water. Motivated to decrease its energy consumption, and improve its environmental and technical performance, the company joined EaP GREEN in 2015. This publication shows the company's experience reported after the monitoring exercise conducted in 2020, five years after the programme ended.

Benefits

- Implementation of 4 RECP options (focused on resource and energy efficiency)
- Appropriate payback period for the required investment
- Reduction of water consumption per tonne of product: 9%
- Reduction of thermal energy consumption per tonne of product: 24%
- Energy savings that generated a reduction of 7.25 tonnes of CO₂ eq/year
- Reduction of annual consumption of natural gas: 36,000 cubic meters

Action implemented by:



The project's approach

During the **RECP monitoring**, the production site was examined and several RECP options were identified, out of which the following four were prioritized and gradually implemented by the company staff. Some of them were low-cost measures, whilst others required considerable investments:

RECP option 1. Replacement of the old boiler. In order to increase energy efficiency and decrease the energy consumption of the steam boiler, the old boiler was replaced with a new one, which led to an efficiency increase of up to 85-90 per cent.

RECP option 2. Insulation of the steam pipelines. To avoid heat losses from the distribution system, the steam pipes were insulated with thermal insulation material.

RECP option 3. Insulation of the steam traps. As the old steam distribution system constantly needed fresh water, whilst the used steamed water was lost through the sewage system, to correct the thermal losses and extend the lifetime of the boiler, a steam recovery system was installed with thermally insulated traps. These, in turn, allow the device to avoid steam losses and recirculate the used water.

RECP option 4. Installation of a tank for reusing water in syrup cooling. To decrease the use of fresh water and wastewater, a water tank was installed to collect and reuse (as well as circulate) the fresh water.

Saving achievements

RECP MEASURES

Option 1: Replacement of the old boiler

Option 2: Insulation of the steam pipelines

Option 3: Insulation of the steam traps.

Option 4: Installation of a tank for reusing water in syrup cooling



ECONOMIC KEY FIGURES

	Investment (Euro)	Saving (Euro/year)	PBP (years)
Option 1:	8,500	770.5	11
Option 2:	125	19.6	6.4
Option 3:	250	154	1.6
Option 4:	2,000	717	2.8
Total:	10,875	1,661.1	



RESOURCE SAVINGS

	Water (m ³ /year)	Fuel (natural gas) (m ³ /year)
Option 1:	-	29,300
Option 2:	-	740
Option 3:	-	5,860
Option 4:	500	-
Total:	500	35,900

TOTAL POLLUTION REDUCTION

	CO ₂ -eq (t/year)	Wastewater (m ³ /year)
Total:	7.5	500



Company insight

Within the RECP Project, LTD "Lagi" focused on improving its efficiency and better managing the plant's resource use. In the near future, the company also plans to increase its production quality and capacity, and to invest in staff awareness events (on energy and resource use and the minimization of waste).

The company had a high energy consumption when producing the necessary steam needed for the production processes. This also resulted in a high generation of wastewater. In parallel, LTD "Lagi" needed high quantities of cool water to produce syrup. Before the RECP Project, our main issues were in terms of energy efficiency and the wastewater recycling. The main lessons learned from the RECP experience was the importance of energy efficiency and the reuse of wastewater and other resources. As next steps, besides increasing production capacity, we plan to change the plant's location to Natakhtari, said Mr. George Giorgadze, Chief Technologist

The introduction of RECP has been part of the EU-funded programmes: **EaP GREEN** (2013-2017) and **EU4Environment Action** (2019-2022) executed by UNIDO. In this context, LTD "Lagi" joined the RECP training and assistance programme under EaP GREEN, and was monitored under EU4Environment. Follow-up visits have also been conducted under EU4Environment, to check on the implemented RECP options after the EaP GREEN Programme ended. EU4Environment helps the EU's Eastern Partnership countries preserve their natural capital and increase people's environmental well-being by supporting environment-related action, demonstrating and unlocking opportunities for greener growth, and setting mechanisms to better manage environmental risks and impacts.

For more details, visit: www.eu4environment.org



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