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EU4Environment
Green Economy in Eastern Partner Countries

# Advancing resource efficient and cleaner production in Georgia

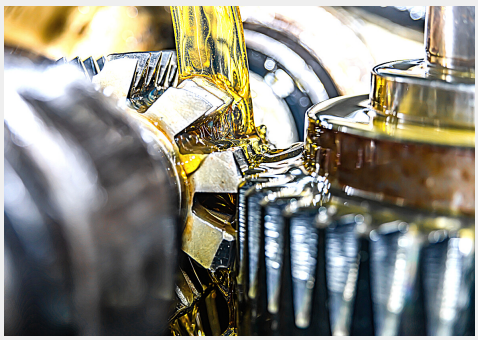
## -The RECP methodology-

**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.

## PRODUCER OF LUBRICANTS

**Company overview**

**Key products:** greasing materials (engine oil M14B-2, lubricants)
**Main markets:** Georgia



This Georgian company was part of the EaP GREEN programme in 2013-2017 and the 2019-2020 RECP monitoring under the EU4Environment Action.

The company produced greasing materials, in particular the engine oil M14B-2, as well as other lubricants. Its annual production was around 600 tonnes of engine oil and 66 tonnes of lubricants. For this, the company used around 188,245 kWh of electricity, 63,168 $m^3$ of natural gas, and 3,900 $m^3$ of water. Motivated to improve its energy efficiency, resource usage, and the overall environmental performance of the production site, 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 3 RECP options (focused on energy efficiency)**
- **Short payback period for the required investment**
- **Reduction of electricity consumption per tonne of product: 8.5%**
- **Reduction of thermal energy consumption per tonne of product: 13%**
- **Energy savings that generated a reduction of 19 tonnes of $CO_2$-eq per year**

# The project's approach

During the **RECP monitoring**, the production site was examined and several RECP options were identified, out of which the following three were prioritized and gradually implemented by the company staff. All suggested RECP recommendations included low and medium-cost measures:

**RECP option 1. Thermal insulation of metal pipes.** To avoid heat losses from the piping system, a thermal insulation material was applied to the metal pipes carrying hot oil from the boiler to the mixer.
**RECP option 2. Installation of an electric mixer.** To optimize electricity consumption in the mixing process, an electric mixer (with an electric motor of 7.5 kW and a capacity of 10 tonners) was installed.
**RECP option 3. Replacement of the old (self-made) boiler.** To increase the energy efficiency of the boiler and decrease energy consumption (per production unit), the old, self-made, natural gas boiler was replaced with a modern one (that includes a high-speed heat exchanger and an electric pump with a frequency regulator).

## Saving achievements

### RECP MEASURES

**Option 1:** Thermal insulation of metal pipes
**Option 2:** Installation of a 10 tonnes mixer with a 7.5 kW engine
**Option 3:** Replacement of the old (self-made) boiler

### ECONOMIC KEY FIGURES

| | Investment *(Euro)* | Saving *(Euro/year)* | PBP *(years)* |
|---|---|---|---|
| **Option 1:** | 890 | 990 | 0.9 |
| **Option 2:** | 2,300 | 1,248 | 1.8 |
| **Option 3:** | 10,900 | 2,160 | 5.0 |
| **Total:** | **14,090** | **4,398** | |

### RESOURCE SAVINGS

| | Electricity *(kWh/year)* |
|---|---|
| **Option 1:** | 27,300 |
| **Option 2:** | 14,770 |
| **Option 3:** | 57,400 |
| **Total:** | **99,470** |

### TOTAL POLLUTION REDUCTION

| | $CO_2$-eq *(t/year)* |
|---|---|
| **Total:** | **18.99** |

## Company insight

The company's team was able to follow a systematic approach to develop a RECP action plan and gained substantial knowledge to introduce RECP as a methodology for continuous improvement. Thanks to this experience, several RECP measures were developed to improve efficiency and resource use. As next steps, the company aimed to increase its production capacity, staff awareness, as well as to improve the management of resources, energy, and reduce the generation of waste.

Motivated to address its high power consumption, the company joined the RECP Demonstration Project to develop solutions related to energy efficiency. Ever since, the company staff invested in regularly upgrading the technological equipment and in monitoring the operations in the production line.

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, the company 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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