



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 means to lower production costs whilst improving the SMEs' competitive advantage and applying environmentally friendly practices. RECP is also an effective tool to introduce and promote Circular Economy principles among SMEs.

"CAUCASPACK" LLC - PET & PP FILMS PRODUCTION



Company overview

Location: Rustavi, Lower Kartli

Key products: PET & PP films

No. of employees: 92

Main markets: 50% Georgia, 50% export

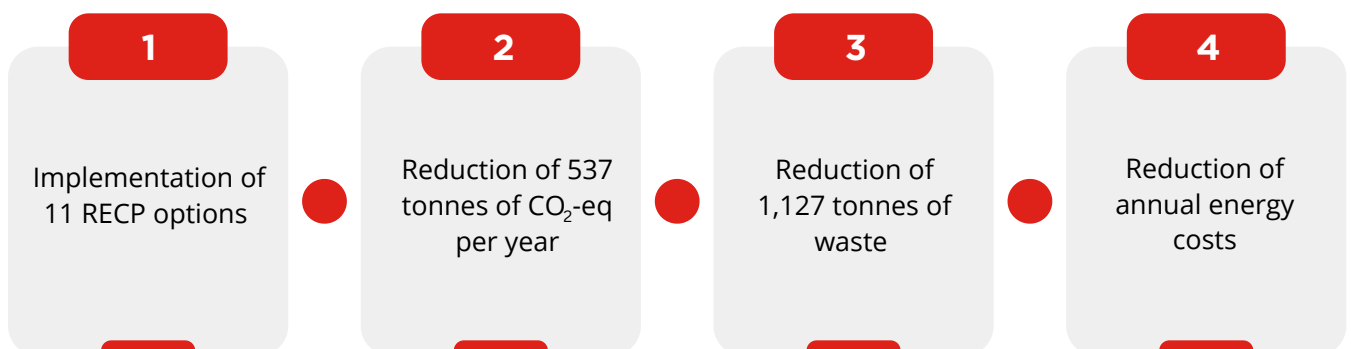
Founding year: 2007

Certifications: HACCP, ISO 9001, BRC Global Standard



"Caucaspack" is a manufacturer of polyethylene terephthalate (PET) and polypropylene (PP) films. Its staff was actively involved in the activities related to the RECP Clubs, including the training course on business environmental profile, energy efficiency, water efficiency and wastewater minimization, materials efficiency and waste minimization, the responsible use of chemicals, hazardous waste, and means to reduce emissions. The course resulted in the development of the RECP Action Plan which included eleven RECP options. Due to the pandemic, it was challenging for the enterprise to allocate internal financial resources and find investments or appropriate loans to implement the RECP measures. Motivated to improve resource efficiency and reduce energy consumption, the company participated in the RECP Clubs programme under EU4Environment (2019-2024). This publication shows the company's experience reported after the monitoring exercise.

BENEFITS FROM IMPLEMENTING RECP OPTIONS



The project's approach

The RECP assessment examined the production site and identified several RECP options, out of which the following eleven were prioritized:

- RECP Option 1.** The installation of a photovoltaic (PV) system: this PV system, with a capacity of 175 kWp, would ensure the electricity needs of the company and significantly reduce CO₂-eq emissions.
- RECP Option 2.** The thermal insulation of the building's roof and walls: replacing single-glazed windows with double-glazed polyvinyl chloride (PVC) ones (reducing, thus the demand and loss of heat, as well as CO₂-eq emissions).
- RECP Option 3.** Establishing an additional warehouse to store raw materials: this would save the energy used for drying the raw materials.
- RECP Option 4.** The installation of an insulated ventilation system: this would have a capacity of 20 kW and would be equipped with a recuperator and inverter motor.
- RECP Option 5.** Inspecting air pipelines, fixing leaks, and replacing air compressors.
- RECP Option 6.** The installation of a SCADA system for monitoring and analysing energy data.
- RECP Option 7.** Replacing the diesel engines of the forklifts with electric ones (this would reduce fuel needs, as well as CO₂-eq emissions).
- RECP Option 8.** The installation of solar-based water heaters: this would save the energy required for heating water and reduce emissions.
- RECP Option 9.** Reusing polyethylene (PE) bags for storing PVC bottles and the sale of unused bags.
- RECP Option 10.** Collecting and recycling defective polypropylene (PP) film (considering the costs of recycling).
- RECP Option 11.** Collecting and recycling defective polyethylene plastics (PEP) film (considering the costs of recycling).

SAVING ACHIEVEMENTS

RECP measures

OPTION 1	The installation of a photovoltaic system
OPTION 2	The thermal insulation of the building's roof and walls
OPTION 3	Establishing an additional warehouse for storage
OPTION 4	The installation of an insulated ventilation system
OPTION 5	Replacing pipelines, fixing leaks, and replacing the air compressors
OPTION 6	The installation of a SCADA system for monitoring and analysis
OPTION 7	Replacing the diesel engines of the forklifts with electric ones
OPTION 8	The installation of solar-based water heaters
OPTION 9	Reusing PE bags for storing products and the sale of unused bags
OPTION 10	Collecting and recycling defective PP film
OPTION 11	Collecting and recycling defective PEP film

Economic key figures

RECP OPTIONS	INVESTMENT (EUR)	SAVINGS (EUR/YR)	PAYBACK PERIOD (YR)
Option 1:	157,000	23,000	6.8
Option 2:	4,800	7,531	0.6
Option 3:	8,000	2,991	2.7
Option 4:	13,000	1,976	6.6
Option 5:	12,000	6,027	2.0
Option 6:	15,000	16,434	0.9
Option 7:	14,000	7,703	1.8
Option 8:	1,500	1,358	1.1
Option 9:	/	5,240	/
Option 10:	17,123	82,977	/
Option 11:	88,910	383,590	/

Resource savings

RECP OPTIONS	ELECTRICITY (KWH/YR)	MATERIALS (T/YR)
Option 1:	297,500	/
Option 2:	307,589	/
Option 3:	38,600	/
Option 4:	25,500	/
Option 5:	77,770	/
Option 6:	212,054	/
Option 7:	/	/
Option 8:	17,520	/
Option 9:	/	/
Option 10:	/	182
Option 11:	/	945

Total pollution reduction

RECP OPTIONS	TOTAL CO ₂ -EQ (T/YR)	WASTE (T/YR)
Option 1:	41.7	/
Option 2:	62.1	/
Option 3:	5.4	/
Option 4:	3.6	/
Option 5:	10.9	/
Option 6:	29.7	/
Option 7:	381.2	/
Option 8:	2.5	/
Option 9:	/	0.7
Option 10:	/	182
Option 11:	/	945

The introduction of RECP has been part of the EU-funded EU4Environment Action and executed by UNIDO. In this context, **Caucaspac** joined the RECP training and assistance programme to be monitored under EU4Environment. Follow-up visits have also been conducted to check on the implementation of the recommended RECP options. 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 © – 2023 – UNIDO. All rights reserved. Licensed to the European Union under conditions. This publication has been produced with the assistance of the European Union. Its contents are the sole responsibility of UNIDO and do not necessarily reflect the views of the European Union.

