

Advancing resource efficient and cleaner production in Ukraine

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 can effectively 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.

LIGOS LLC - FOOD PRODUCTION

Company overview



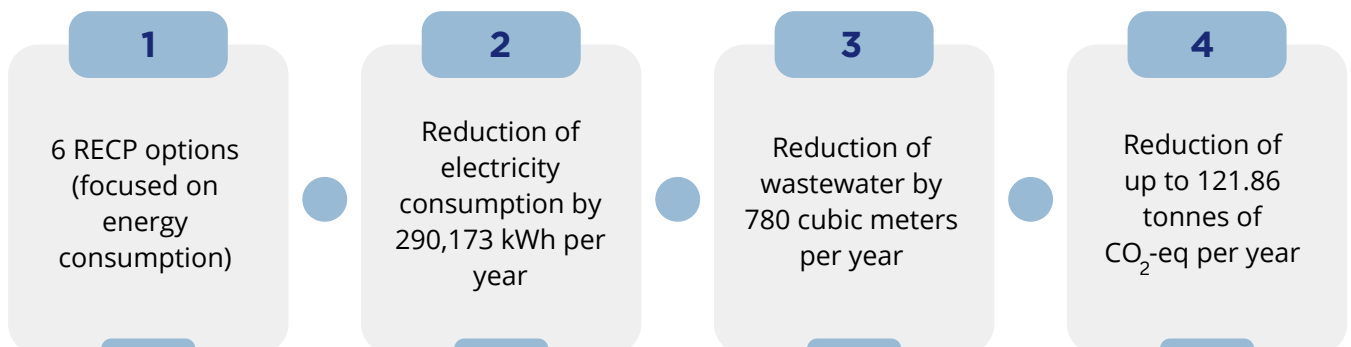
Location: Ivano-Frankivsk
Key products: croissants
Main markets: Ukraine, EU, USA, UK, Middle East, New Zealand, Azerbaijan, Georgia
No. of employees: 514
Exportation quota (%): 50
Founding year: 1997
Certifications: IFS Food V6



Ligos, LLC specialises in the production of baked goods. Since 2001, the company has been the first national producer of croissants in Ukraine. The goods are produced under its own trademark, as well as for large retail chains and private brands. The company acquired its first certification on the safety and quality of products in 2014, when under the food standard IFS Food V6. Motivated to conduct a comprehensive analysis of its resource consumption, the company participated in the RECP Demonstration Project under EU4Environment (2019-2024). This publication shows the company's experience reported after the monitoring exercise completed in 2023.

“ Our company joined the project in order to assess the efficiency of all types of resources, and to analyse the generation of waste, emissions, and effluents. We were motivated to increase the share of compensation for energy consumption from non-traditional sources, reduce energy consumption for auxiliary processes, and reduce the consumption of packaging materials. Thanks to the RECP Demonstration Project, we learned that monitoring and analysis of resource efficiency should be an important process in the daily processes of the company, said the head of the economic department at Ligos, LLC, Mr. Andrii Popadynets. ”

BENEFITS



Action implemented by:

The project's approach

The RECP assessment examined the production site and identified several RECP options, out of which six were prioritised, with the following three being described below. The suggested RECP recommendations included medium-cost measures:

RECP Option 1. Retrofitting the air cooling system with a water heat exchanger: This measure consists of installing a water heat exchanger in front of the air-cooled chiller used for cooling the indoor air of the shop. This would heat the water from the municipal network before it is delivered to the hot water supply system, and significantly reduce energy costs by 8,710 EUR per year.

RECP Option 2. Using sprayers to manually wash the containers: This measure consists of replacing the ball valves with fittings on the hot water hoses, incorporating spray nozzles with pressure valves. It would reduce water consumption and the electricity need to heat up the water.

RECP Option 4. Installing additional photovoltaic (PV) solar collectors: This measure consists of installing additional solar collectors on the roof of the production building, covering an area of 20 square meters. It would significantly reduce the electricity need to heat up the premises and water.

SAVING ACHIEVEMENTS

Main RECP actions

OPTION 1	Retrofitting the air cooling system with a water heat exchanger
OPTION 2	Using sprayers to manually wash the containers (partly implemented measure)
OPTION 3	Connecting the washing machines to the hot water supply system
OPTION 4	Installing additional PV solar collectors
OPTION 5	Installing a PV solar plant
OPTION 6	Utilising the heat from the croissants production

Economic key figures

RECP OPTIONS	INVESTMENT (EUR)	SAVINGS (EUR/YR)	PAYBACK PERIOD (YR)
Option 1:	12,000	8,710	1.6
Option 2:	300	3,000	0.1
Option 3:	200	1,230	0.2
Option 4:	6,700	1,188	2.8
Option 5:	40,300	5,241	4.1
Option 6:	8,000	4,032	2.3

Resource savings

RECP OPTIONS	ELECTRICITY (KWH/YR)/%	WATER (M ³ /YR)/%
Option 1:	108,000/4.46	/
Option 2:	37,200/1.53	780/12.25
Option 3:	15,241/0.63	/
Option 4:	14,732/0.61	/
Option 5:	65,000/2.68	/
Option 6:	50,000/2.06	/

Total pollution reduction

RECP OPTIONS	TOTAL CO ₂ -EQ (TONNES/YR)	WASTEWATER (M ³ /YR)
Total:	121.86	780

The introduction of RECP has been part of the EU-funded EU4Environment Action and executed by UNIDO. In this context, **Ligos, LLC** joined the RECP Demonstration Project 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.



United Nations Industrial Development Organization
 Ms. Tatiana Chernyavskaya
 EU4Environment Project Manager
 Tel: +43 1 26 0 26 5520
 E-mail: t.chernyavskaya@unido.org



Resource Efficient and Cleaner Production Centre
 10G Starokyivska Str.
 Kyiv, 04116, Ukraine
 Tel: +380 44 227 83 78
 E-mail: info@recpc.org