



## 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.

### "PRYVATNA DRUKARNIA" PE - PRINTING INDUSTRY



#### Company overview

**Location:** Khmelnytskyi

**Key products:** cardboard packaging

**No. of employees:** 110

**Main markets:** Ukraine

**Founding year:** 1992

**Certifications:** ISO 9001



**ПРИВАТНА  
ДРУКАРНЯ**

**"Pryvatna Drukarnia" PE (Private Enterprise)** is a printing company that employs a full technological cycle for the production of cardboard packaging. Its output serves a wide range of industries, including light industry (underclothes packaging), food, cosmetics, and pharmaceuticals. The production process only uses eco-friendly and certified resources, tested and verified under national and international standards. Moreover, the enterprise demonstrates inclusivity by incorporating the Braille writing system into its packaging, making it accessible to consumers with visual impairments. Motivated to improve material and energy efficiency, the company participated in the RECP Clubs programme under EU4Environment (2019-2024). This publication shows the company's experience reported after the monitoring exercise conducted in 2023.

### BENEFITS FROM IMPLEMENTING RECP OPTIONS

1

3 RECP options  
focused on  
energy efficiency

2

Short payback  
period  
(less than two  
years, on  
average)

3

Reduction of  
electricity  
consumption by  
16,976 kWh per  
year

4

Reduction of  
7.1 tonnes of  
CO<sub>2</sub>-eq per year

Action implemented by:

# The project's approach

With the support of the RECP self-assessment tool and the contribution of the RECP experts, the company developed its RECP Action plan, identifying several RECP options, out of which three were prioritised, and the first two were implemented:

**RECP Option 1. Reducing the pressure in the compressed air system:** Lowering the pressure in the compressor helped decrease electricity consumption, as the peak consumption occurred when the pressure was highest. This change resulted in a 7% reduction in electricity consumption for every 1 bar reduced.

**RECP Option 2. Using a "free-cooling" system in the printing machine:** Replacing the compressor cooling system with a 'free-cooling' system during the cold period reduced electricity consumption. The removal of the compressor equipment from the printing machine allowed for indirect cooling, lowering the temperature of the water circulating in the 'free-cooling' system using another coolant of lower temperature (ethylene glycol, which does not freeze at low temperatures).

**RECP Option 3. Installing an air-to-air heat pump:** Installing an air-to-air heat pump to regulate the temperature of the paper storage room at a constant of 18°C would help prevent the deterioration of the paper quality. Moreover, it would significantly reduce paper waste (116 tonnes per year) due to ineligibility for printing.

## SAVING ACHIEVEMENTS

### Main RECP actions

OPTION 1	Reducing the pressure in the compressed air system
OPTION 2	Using a "free-cooling" system in the printing machine
OPTION 3	Installing an air-to-air heat pump

### Economic key figures

RECP OPTIONS	INVESTMENT (EUR)	SAVINGS (EUR/YR)	PAYBACK PERIOD (YR)
Option 1:	/	365	/
Option 2:	1,520	446	3.4
Option 3:	26,321	105,730	0.25

### Resource savings

RECP OPTIONS	ELECTRICITY (KWH/YR)/%	MATERIALS (TONNES /YR)/%
Option 1:	7,644/0.9	/
Option 2:	9,332/1.1	/
Option 3:	/	116/3.3*

\*5% during the heating period

### Total pollution reduction

RECP OPTIONS	TOTAL CO <sub>2</sub> -EQ (TONNES/YR)
Total:	7.1

“ After participating in the EU4Environment Action, we learned about alternative sources of energy (such as outdoor air for the operation of the air-to-air heat pump and free-cooling systems) which could be used for the operation of the engineering equipment, including microclimate systems and cooling systems for printing elements, instead of relying on classic energy sources. Additionally, our company gained new knowledge in searching for information on the implementation of modern technologies in this industry, and aims to improve production processes, reduce resource consumption, and find new sources of financing for the RECP options. Our participation in the RECP Clubs programme allowed us to get to know other colleagues from the region, discuss common problems, and find ways to solve them, said the production certification expert, Ms. Vlada Maslova. ”

The introduction of RECP Clubs programme has been part of the EU-funded EU4Environment Action and executed by UNIDO. In this context, "Pryvatna Drukarnia", PE joined the Clubs 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](http://www.eu4environment.org)

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