



## Advancing resource efficient and cleaner production in Ukraine

**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. In essence, RECP is all about producing with fewer resources and minimizing environmental impacts while increasing overall productivity.

For **Small and Medium-sized Enterprises (SMEs)**, the RECP methodology is an effective instrument in lowering production costs whilst improving their competitive advantage by applying environmentally friendly practices. The technical assistance and training provided to **UKRSTAL ZHYTOMYR, LLC** under EaP GREEN outlined a RECP action plan. Based on it, the company's team worked out new measures to save on resource consumption, reduce operational costs, and boost the production output. The identified RECP options aimed to reduce material consumption and the product prime cost; cut specific energy costs; mitigate environmental impact by decreasing air emissions; and reduce waste generation to a minimum.

### UKRSTAL ZHYTOMYR-STRUCTURAL STEEL FABRICATION PLANT, LLC STEEL BUILDING STRUCTURES

#### Company overview

**Address:** 87 Serhii Paradzhanov Str., Zhytomyr  
**Key products:** steel building structures  
**No. employees:** over 200  
**Main markets:** Ukraine  
**Export quota (%):** 53.8%  
**Founding year:** 1972  
**Certification:** ISO 9001, ISO 14001, ISO 18001, ISO 3834-2:2005



**UKRSTAL ZHYTOMYR, LLC** is a leading manufacturer of high-quality prefabricated structures, including girders (100 m length). The plant mainly produces metal frames for industrial and civil buildings. Overtime, it has accumulated sufficient experience in reconstructing facilities for metallurgical and chemical industries, as well as in manufacturing metal structures to build airports, stadiums, gyms, supermarkets, ice skating rinks, roads, railways, and bridges. The annual production capacity is 10,000 tonnes.

#### Benefits

- Implementation of 6 RECP options
- Fuel reduction (natural gas) of 10,328 m<sup>3</sup>/year
- Emission reduction of 50.9 tonnes of CO<sub>2</sub>-eq/year
- Cumulative estimated savings of 10,339 EUR/year
- Reduction of electricity use of 68,625 kWh/year (4.2 per cent of the total consumption)

*Thanks to the project and the RECP options, we became convinced that our industrial processes and operations can be improved through cleaner production. Moreover, the process led to reductions in waste generation and in environmental pollution, it saved our budget and helped generate additional income through a rational resources consumption, said **Oleksii Kashkariov, Production Manager***

Action implemented by:

# The project's approach



The **RECP assessment** examined the production sites, and identified 14 RECP options, out of which 6 have been implemented:

**RECP option 1. Installing voltage stabilizers on the lower side of the transformer and on the main switches.** This option helped to compensate for the loss of asymmetry in the energy grid.

**RECP option 2. Changing the circuit of transformers.** This option prevented loss of active and reactive power.

**RECP option 3. Replacing incandescent bulbs with LEDs.** LED bulbs are best known for their extremely long life and energy efficiency. They are much more efficient in terms of wattage consumption as compared to halogen or incandescent bulbs. The light output of a LED bulb is also much higher. This option optimized the lighting system and reduced costs.

**RECP option 4. Replacing hoses for compressed air transmission.** This option reduced electricity loss as the new hoses eliminated the compressed-air leakages.

## Saving achievements

### MAIN IMPLEMENTED ACTIONS

- Option 1:** Installing phase /voltage stabilizers on the transformer's lower side and on the main switches
- Option 2:** Changing the circuit of transformers
- Option 3:** Replacing incandescent bulbs with LEDs
- Option 4:** Replacing hoses for compressed air transmission
- Other options (x2)**



### ECONOMIC KEY FIGURES

	Saving (Euro/year)
<b>Option 1:</b>	5,082
<b>Option 2:</b>	1,990
<b>Option 3:</b>	190
<b>Option 4:</b>	191
<b>Other options (x2):</b>	2,886
<b>Total:</b>	<b>10,339</b>



### RESOURCE SAVINGS

	Electricity (kWh/year)	Fuel (m <sup>3</sup> /year)
<b>Option 1:</b>	46,790	-
<b>Option 2:</b>	18,325	-
<b>Option 3:</b>	1,750	-
<b>Option 4:</b>	1,760	-
<b>Other options (x2):</b>	-	10,328
<b>Total:</b>	<b>68,625</b>	<b>10,328</b>



## Next steps

The company intends to cut production costs by introducing the Automated System for Commercial Accounting of Power Consumption (ASCAPC), by modernizing the compressed air network, and applying modern welding mixtures. It plans to continue with the application of the RECP methodology, as it has been recognized as an important business strategy to reach this target.

*The participation in the project helped identify sensitive areas in the overall manufacture, and it outlined some key prospects: the introduction of an automated system for the commercial electric energy metering, the development of the compressed air network, and the application of modern welding mixtures, said **Oleksii Kashkariov, Production Manager***

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, UKRSTAL ZHYTOMYR, LLC joined the RECP training and assistance programme under EaP GREEN. Follow-up visits have been then conducted under the new Action to check the implemented RECP options after the EaP GREEN Programme ended. EU4Environment helps the six EaP partner 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).



**Contact:**  
**RECP Centre Ukraine,**  
 10G Starokyivska Str.,  
 Kyiv, 04116, Ukraine  
[info@recpc.org](mailto:info@recpc.org)

