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.

"SPETZTEKHOSNASTKA" LTD - METAL AND PLASTIC PRODUCTION

Company overview
Location: Kamianske
Key products: metal and plastic products
No. of employers: 615
Main markets: Ukraine, EU, USA, Canada, Mexico, China, Israel
Exportation quota (%): 30
Founding year: 1989
Certifications: ISO 9001, FSSC 222000, ISO 14001, IATF 16949, DSTU ISO EN 13485

"Spetztekhosnastka" is an enterprise specialised in the production of moulds for casting plastic products, spare parts for injection moulding machines (IMM), a diverse range of rigid plastic packaging for food and paint industries, plastic components for the manufacturing of European cars, medical products made out of plastics and metal, and various other metal products. Motivated to continuously develop and improve resource efficiency and competitiveness, both nationally and internationally, 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.

BENEFITS FROM IMPLEMENTING RECP OPTIONS

1. Implementation of 2 RECP options (focused on energy consumption)
2. Short payback period (less than three years on average)
3. Reduction of wastewater by 2,880 cubic meters per year
4. Reduction of 13 tonnes of CO₂-eq per year

Action implemented by:
The project's approach

The RECP assessment examined the production site and identified several RECP options, out of which the following two were prioritised. The suggested RECP recommendations included medium and low-cost measures:

**RECP Option 1. Reconstructing the chamber for the pallets phytosanitary treatment:** This involves replacing the current heat generator (based on electric heat guns) with an electric steam generator. Installing a new heater would help transfer the heat from the steam into the air, creating an artificial airflow, and replace the thermal insulation of the pallet phytosanitary treatment chamber. This would increase the efficiency of the chamber by 15.8% and reduce the processing time by three times.

**RECP Option 2. Installing a water-cooled chiller for the condenser:** Installing a water-cooled chiller for the condenser would help reduce the consumption of drinking-quality water used for cooling down the dry cleaning machines and recirculating the water supply. Moreover, the heat generated from the condenser could be transferred to the domestic hot water system (DHW). The measure would significantly reduce the water needed for cooling, and decrease electricity consumption when it comes to heating the hot water system.

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**SAVING ACHIEVEMENTS**

**Main RECP actions**

**OPTION 1**  
Reconstructing the chamber for pallets phytosanitary treatment

**OPTION 2**  
Installing a water-cooled chiller for the condenser

**Economic key figures**

<table>
<thead>
<tr>
<th>RECP OPTIONS</th>
<th>INVESTMENT (EUR)</th>
<th>SAVINGS (EUR/YR)</th>
<th>PAYBACK PERIOD (YR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1</td>
<td>5,410</td>
<td>1,935</td>
<td>2.8</td>
</tr>
<tr>
<td>Option 2</td>
<td>8,209</td>
<td>3,120</td>
<td>2.6</td>
</tr>
</tbody>
</table>

**Resource savings**

<table>
<thead>
<tr>
<th>RECP OPTIONS</th>
<th>WATER (M³/YR)/%</th>
<th>ELECTRICITY (KWH/YR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1</td>
<td>2,880/11.2</td>
<td>21,750/0.23</td>
</tr>
<tr>
<td>Option 2</td>
<td></td>
<td>9,206/0.09</td>
</tr>
</tbody>
</table>

**Total pollution reduction**

<table>
<thead>
<tr>
<th>RECP OPTIONS</th>
<th>TOTAL CO₂-EQ (TONNES/YR)</th>
<th>WASTEWATER (M³/YR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>13</td>
<td>2,880</td>
</tr>
</tbody>
</table>

“...Our company joined the project to find development and resource efficiency opportunities in order to become more competitive on international and domestic markets. Thanks to the RECP Demonstration Project, we learned how to update our in-house methodology to detect the inefficient use of resources within the production processes. As we plan to modernise our company, the RECP Project has inspired us to come up with new ideas and approaches regarding the implementation of RECP measures in the future, said the chief engineer, Mr. Yuriy Neklesa.

The introduction of RECP has been part of the EU-funded EU4Environment Action and executed by UNIDO. In this context, Spetztekhosnostka 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.

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