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Advancing resource efficient and cleaner production in Azerbaijan

-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.

“Zagatala Tea” LLC - Food production -

Company overview

Location: Gazangul
Key products: green tea and black tea
No. employees: 13
Main markets: Ukraine, Azerbaijan, Russia
Founding year: 2000



Located in the historic town of Zagatala in northwest Azerbaijan, “**Zagatala Tea**” LLC is a producer of green and black tea. The company performs a full range of tea processing operations, including withering, steaming, rolling, fermentation, drying, sorting, and packaging. Like many other food processing enterprises, Zagatala Tea is one of the sole employers in its area. In addition to its main business, the company also supports local small and medium farmers by helping them grow tea bushes over an area of 80 hectares. After a standstill in the 1990s and 2000s, the company has been steadily increasing its production. Tea processing requires significant quantities of energy and water. The primary challenges faced by the company are the oversized and deteriorated utilities and building structures, as well as some process machines that are more than 40 years old. Reducing the excess use of water and energy, along with improving process control and the quality of operations, are an effective way to cut production costs and reduce waste generation. Originally, the company planned to undertake a complete renovation, but the high costs made this option unrealistic. Motivated to plan for a step-by-step production upgrade combined with several good housekeeping measures, the company participated in the EaP GREEN programme in Azerbaijan in 2017. This publication showcases the company’s experience, as monitored under the EU4Environment Action in 2022-2024.

Benefits

- Improved process control leading to reduced water consumption and energy loss
- Low-cost measures
- Immediate savings
- Improved product quality
- Increased production output without significant additional investments

Action implemented by:





The project's approach

The RECP assessment examined the production site and identified several opportunities that benefit both the company and the environment. While some of the opportunities may require large investments or in-depth studies, most are relatively straightforward, and can be implemented by the company itself, as they have a relative payback period of less than two years:

RECP Option 1: Effectively using sunlight in the fermentation process. The fermentation process requires a stable room temperature of 20-21°C. Previously, this temperature was maintained by heating in the winter and air conditioning in the summer. By preventing direct sunlight, which places an extra workload on air conditioners, the use of electric power has been significantly reduced. Additionally, carefully curtaining the fermentation rooms lowered the average temperature by 5-10°C.

RECP Option 2: Reducing heat losses in the withering process. The withering process smooths the leaves to prevent the uncontrolled breaking during production, and is carried out on a special withering pipe. Heat is delivered from a remotely located boiler house. By insulating the heating mains, heat losses were significantly reduced.

RECP Option 3: Improving the control of the surplus air intake in the boiler's combustion chamber. The RECP assessment identified significant losses related to a poor control over surplus air intake in the boiler's combustion chamber. By improving the control of the surplus air ratio and optimising the specific use of natural gas at various loads, the efficiency of the combustion process was improved, resulting in reduced natural gas consumption.

These measures have not only improved the efficiency and sustainability of the company's operations but also generated substantial cost savings.

The follow-up RECP strategy

By working closely with the experts from the EaP GREEN programme in Azerbaijan, the company discovered significant opportunities to improve its energy efficiency and make economic savings at relatively low costs. As a result, the company continued to develop and implement RECP measures. While the initial RECP projects arising from the EaP GREEN programme were low- or no-cost, the company is now planning and implementing a range of larger RECP measures:

- Replacing the obsolete tea rolling machine (a modern machine would help cut electricity costs by 5-6 times and simultaneously improve process quality)
- Installing a new, efficient dryer that utilises solar energy
- Installing a new, modern separation machine: This would significantly reduce the quantity of tea powder and waste
- Replacing the outdated boiler plant: This would reduce the consumption of natural gas
- Installing photovoltaic (PV) solar panels: These would help provide solar power for the tea rolling machine

These RECP measures are expected to further enhance the company's operational efficiency, reduce environmental impact, and generate substantial cost savings

The company's experience

Our company was pleased to take part in the EaP GREEN programme which introduced the concept of cleaner production and resource efficiency. The programme inspired us to closely examine our costs and efficiency, revealing that our losses were higher than expected. This realization motivated us to take action. As a result, we have not only reduced our production costs but also become more competitive. Consequently, we are experiencing growing demand for our products and we are planning to implement new RECP measures and look forward to participating in similar capacity-building projects and programmes, said Parviz Shabanov, the Technical Director of Zagatala Tea LLC.

The introduction of RECP has been part of the EU-funded programmes: **EaP GREEN** (2013-2017) and **EU4Environment Action** (2019 - 2024), and executed by UNIDO. In this context, "**Zagatala Tea**" LLC joined the RECP training and assistance programme under EaP GREEN and was monitored under EU4Environment. Follow-up visits have also been conducted under EU4Environment, to check the implemented RECP options after the EaP GREEN Programme ended. EU4Environment helps the 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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