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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 is an effective means to 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.

"SEMPA" LLC - PLASTICS PRODUCTION



Company Overview

Location: Ganja

Founding year: 2005

No. of employees: 23

Main markets: Azerbaijan, Georgia, Russia

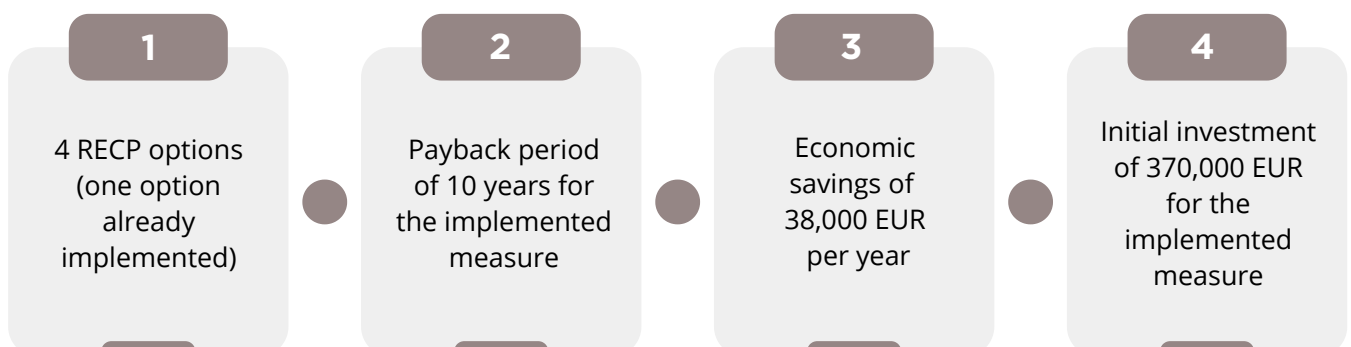
Key products: brass, polypropylene, and plastic pipe fittings

Certifications: DIN 8077/78, TC 11451/11755, AZS 064-2001 standards, and various compliance certificates



"Sempa" LLC specializes in producing and selling brass, polypropylene fittings, and plastic pipes. The pipes are resistant to toxic and chemical substances and do not corrode. Polypropylene pipes are also environmentally friendly and meet all personal safety requirements for the service staff. The service life of these pipes is 50 years, at a temperature of +200°C. They can be used in under-plaster assemblies, and can be easily connected to metal pipes using fittings produced by "Sempa" through the brass-polymer method. Motivated to address production costs and waste, the company participated in the RECP Clubs project under EU4Environment (2019-2024). This publication details the company's experience reported after the assessment exercise conducted in 2024.

BENEFITS



Action implemented by:



The project approach

The RECP assessment examined the production site and identified four RECP options, out of which the first one was prioritized and implemented by the company staff:

RECP Option 1: Recycling plastic waste: The company has facilities for collecting scrap metal as well as for mechanical processing (granulation). Hence, a recommendation was to recycle plastic waste (including waste film, polycarbonate, low-pressure polyethylene, polystyrene and expanded polystyrene, polyamide, and several others). This process consists of heating the waste, passing it through an extruder (available at the factory), granulating, and cooling it. The resulting granules can then be reused in the production of plastic goods. Additionally, the RECP team noted that there was no manufacturer of polypropylene tape in the Azerbaijani market, which represented a new opportunity for the company to increase its revenue.

RECP Option 2: Investing in heat recovery: The 5 kW compressor unit generates approximately 60% of heat during operation. By installing a heat exchanger in the cooling jacket, the heat can be harnessed to produce hot water to fulfill the enterprise's needs.

RECP Option 3: Minimizing technical waste: Although the waste and leftovers from the production processes are reused, this is costly in terms of energy, labour, and raw materials. A suggestion was to track residual materials (e.g., start pipes, stop pieces) in order reduce waste up to 2.5%.

RECP Option 4: Installing a cut-off switch for the compressor: Installing a cut-off switch would help prevent overheating and equipment damage, thereby avoiding costly repairs or replacements. It would also reduce energy consumption by shutting down the compressor, when not in use.

SAVING ACHIEVEMENTS

RECP measures

OPTION 1	Recycling plastic waste
OPTION 2	Investing in heat recovery
OPTION 3	Minimizing technical waste
OPTION 4	Installing a cut-off switch for the compressor

Economic key figures

RECP OPTIONS	INVESTMENT (EUR)	SAVINGS (EUR/YR)	PAYBACK PERIOD (YR)
Option I:	370,000	38,000	10

The introduction of RECP has been part of the EU-funded EU4Environment Action and executed by UNIDO. In this context, "Sempa" LLC joined the RECP Clubs training and assistance 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

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