



Advancing resource efficient and cleaner production in Armenia

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.

"ERPIN" AGRICULTURAL COOPERATIVE - DAIRY PRODUCTION

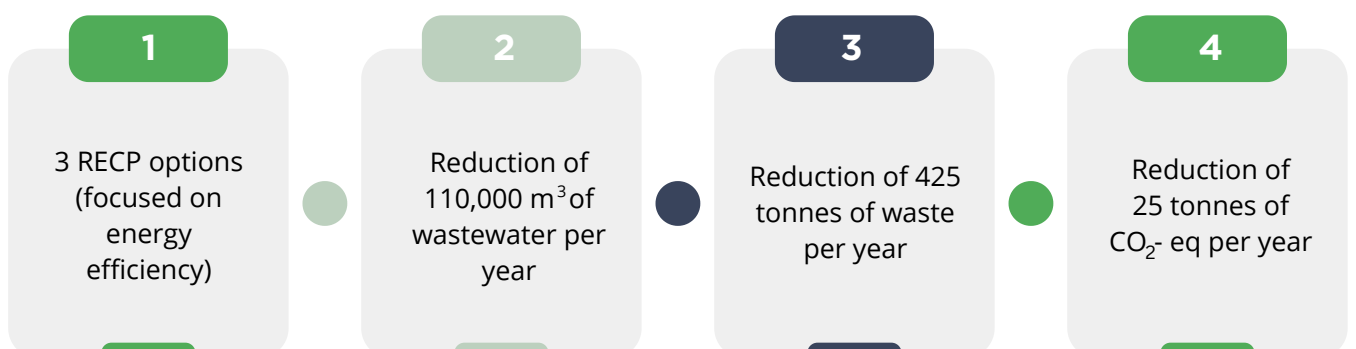


Company overview

Location: Yelpin
Key products: cheese
No. of employees: 7-11
Main markets: Armenia, Russia, the USA
Exportation quota (%): 35
Founding year: 2017
Certifications: HACCP

"Elpin" is a dairy producer from the Yelpin community of Vayots Dzor. The company was founded in 2017 by the president of the agricultural cooperation, Mr. Artur Nazaryan, who also provided the land and infrastructure. In addition to being specialised in cheese production (11 types), the company also shows great potential for expanding production to other dairy products, such as yoghurts, protein powder, and dry food for animals. The production process is based on the locally available inputs (milk and fine herbs). The company's main challenges are the excess waste (wastewater and solid residuals) from cheese production, which are disposed of in the precipitation basins without any treatment, as well as energy efficiency (as production is based on using gas, liquefied petroleum gas (LPG), and electricity from the grid). Motivated to minimise waste and the high energy costs, the company participated in the RECP Demonstration Project under EU4Environment (2019-2024). This publication shows the company's experience reported after the monitoring exercise conducted in 2022-2023.

BENEFITS



Action implemented by:

The project's approach

The RECP assessment examined the production site and identified several RECP options, out of which the following three were prioritised by the company. These include medium investments:

RECP Option 1. Treating and reusing residuals from cheese production: This measure consists of redirecting the residuals from cheese production (whey and cheese leftovers) to producing dry food for animals and protein powder, instead of simply discharging them as waste into the precipitation basins. This would result in an increased turnover and would simultaneously reduce the generation of waste.

RECP Option 2. Purchasing an AAFBR-5 wastewater treatment plant: This measure would provide a multi-staged treatment of the wastewater. Currently, wastewater is directly discharged into the precipitation basin, where it is only mechanically treated through a process of sedimentation, and later released into the environment. The reprocessed water would be used to cover the irrigation needs of the company's orchard.

RECP Option 3. Installing photovoltaic (PV) solar panels: This would significantly reduce company's dependence on gas and electricity from the grid (mostly used during the pasteurisation and refrigeration processes), and enable it to become energy self-sufficient.

SAVING ACHIEVEMENTS

Main RECP actions

OPTION 1	Treating and reusing residuals from cheese production
OPTION 2	Purchasing an AAFBR-5 wastewater treatment plan
OPTION 3	Installing photovoltaic (PV) solar panels

Economic key figures

RECP OPTIONS	INVESTMENT (EUR)	SAVINGS (EUR/YR)	PAYBACK PERIOD (YR)
Option 1:	35,000	26,500*	N/A
Option 2:	22,000	10,000**	N/A
Option 3:	20,000	17,000	N/A

* Gas accounts for 23,000 EUR and electricity, 3,500 EUR

** Technical water accounts for 2,000 EUR, irrigation water for 3,000 EUR, and water for the orchards accounts for 5,000 EUR

Resource savings

RECP OPTIONS	MATERIALS (TONNES/YR)	ELECTRICITY (KWH/YR)	FUEL (M ³ /YR)	WATER (M ³ /YR)
Option 1:	15	95	100	/
Option 2:	/	/	/	110,000
Option 3:	425	/	/	/

Total pollution reduction

RECP OPTIONS	TOTAL CO ₂ -EQ (TONNES/YR)	WASTEWATER (M ³ /YR)	WASTE (TONNES /YR)
Total:	25	110,000	425

“ Our company was facing an excessive amount of waste and high energy costs, as wastewater was directly discharged into the precipitation basins (where only a basic treatment of sedimentation was provided). Thanks to the RECP Demonstration Project, our company learned how to rationally use energy resources and, as a result, reduce waste and increase resource efficiency. As we plan to produce different byproducts from the residues resulting from cheese production and further minimise waste, the RECP project has inspired us to come up with new ideas regarding the future implementation of RECP measures, said the president of the Agricultural Cooperation, Mr. Artur Nazaryan. ”

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