

## 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 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.

### "KARA YEV KAREN" LLC - DAIRY PRODUCTION



#### Company overview

**Location:** Vanadzor

**No. of employees:** 7

**Main markets:** Armenia

**Founding year:** 1996

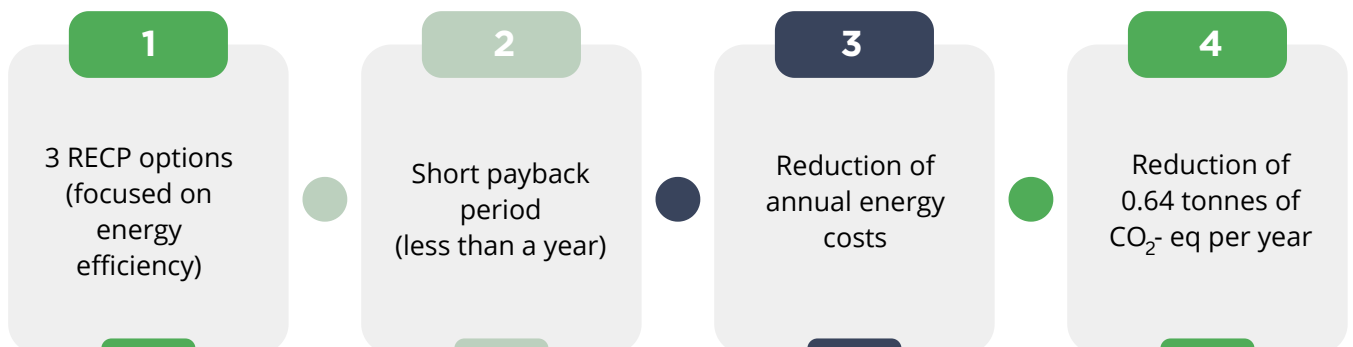
**Certifications:** ASTM (National and Eurasian)

**Key products:** fermented probiotic, buttermilk, butter, yoghurt, cream, cheese



"Kara Yev Karen" is a dairy producer from Vanadzor. The company's main output is the fermented probiotic "Narine", used in the nutrition of infants and toddlers. Moreover, the company is the only distributor of baby food in the regions of Lori, Shirak, and Tavush Marzes. The enterprises also produces buttermilk, yoghurt, cheese, and butter, to name a few. Financing is based on mid-term loans and self-financing, therefore, the enterprise is interested in reducing its annual costs, especially in terms of electricity consumption and the use of plastic containers. Future plans include the market expansion by introducing new products. Motivated to address its high annual 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 prioritized by the company. These include low-cost measures:

**RECP Option 1. Insulation of the steam pipes and the hot surface equipment:** This measure consists of insulating the steam pipes and the hot surface equipment, especially the three-phase boiler, as it accounts for the highest electricity consumption during the milk pasteurization process. This would result in the reduction of thermal energy losses and, therefore, lower annual energy costs.

**RECP Option 2. Reducing the use of plastic containers in packaging:** This measure consists of reducing the use of the plastic containers of 0.5kg and 1kg (specifically used for packing fermented cream). The measure would lower the generation of plastic waste, as well as the costs of purchasing new plastic containers. Moreover, the company would be able to focus more on producing butter, for which the demand has significantly increased.

**RECP Option 3. Treatment and reuse of production residuals:** This measure consists of redistributing the residuals from the cheese production process (mostly whey) to a pig farm and use it as a supplement in the nutrition of pigs. Furthermore, the quality of the wastewater would increase, since the concentration of residuals would be significantly reduced. The measure would also result in an increased income from selling the residuals as byproducts on the market.

## SAVING ACHIEVEMENTS

### Main RECP actions

<b>OPTION 1</b>	Insulation of the steam pipes and the hot surface equipment
<b>OPTION 2</b>	Reducing the use of plastic containers in packaging
<b>OPTION 3</b>	Treatment and reuse of production residuals

### Economic key figures

RECP OPTIONS	INVESTMENT (EUR)	SAVINGS (EUR/YR)	PAYBACK PERIOD (YR)
Option 1:	62	1,404	<1
Option 2:	135	600	<1
Option 3:	/	496	<1

### Resource savings

RECP OPTIONS	MATERIALS (UNITS/YR)	ELECTRICITY (KWH/YR)	WASTE (TONNES/YR)
Option 1:	/	1,650	/
Option 2:	3,000 containers	/	/
Option 3:	/	/	1.6

### Total pollution reduction

RECP OPTIONS	TOTAL CO <sub>2</sub> -EQ (TONNES/YR)
Total:	0.64

“ Our company wanted to address the excessive consumption of energy, and optimize the production processes. There was an excessive use of electricity due to the lack of thermal insulation of the equipment, and the uncontrolled discharge of residuals that could be used further or sold on the market. Thanks to the RECP Demonstration Project, we learned how to rationally use our resources and to increase energy efficiency. As we plan to expand the production line and introduce new products, the RECP Project has inspired us to come up with new ideas regarding the future implementation of RECP measures, said a member of staff. ”

The introduction of RECP has been part of the EU-funded EU4Environment Action and executed by UNIDO. In this context, **Kara Yev Karen** 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](http://www.eu4environment.org)

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