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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.

"MUR HAR" LLC - FOOD PRODUCTION

Company overview



Location: Shirak marz, Gyumri

Key products: bread, baked goods, lavash, brandy extract

No. of employees: 35

Main markets: Armenia

Founding year: 2001

Founded in 2001, "**Mur Har**" LLC specialises in bakery products, offering 40-50 varieties, including Armenian lavash, matnakash, bread, rolls, cookies, pies, pastries, and muffins. In 2021, the company introduced a new product, tannin, used for aging cognac. This is exclusively derived from oak wood, and plays a crucial role in the oxidation and formation of new aromatic substances during the maturation of brandy alcohol. Currently, tannin is primarily sold to Armenian companies producing cognac. From 2024 onwards, the company will also export tannin to France. Motivated to address production costs, "Mur Har" LLC participated in the RECP Green Clubs project under EU4Environment (2019-2024). This publication details the company's experience reported after the assessment exercise conducted in 2024.

BENEFITS

1

5 RECP options
focused on
energy and
resource
efficiency

2

Potential energy
savings of
185,690 kWh
annually

3

Average payback
period of
5.2 years

4

Potential
emissions
reduction of
64.3 tonnes of
CO₂ annually

Action implemented by:

The project's approach

The RECP assessment examined the production site and identified several RECP options, out of which the following four were prioritised by the company. These include medium and low-cost measures:

RECP option 1: Installing photovoltaic (PV) solar panels and purchasing an electric vehicle (EV): A PV solar system with a capacity of 60 kWp would be sufficient to cover the needs of the company (considering the electricity demand of EVs). EVs have low maintenance costs due to fewer moving parts compared to internal combustion vehicles; their servicing requirements are also lower than those for conventional petrol or diesel vehicles.

RECP option 2: Energy savings improvements (thermal insulation of doors and windows, replacing incandescent light bulbs with LED ones, and installing new windows): The installation of new windows and replacement of inefficient incandescent and luminescent lamps with LED bulbs could lead to 70-80% economic savings. Additionally, the thermal insulation of the building would reduce unwanted heat loss or gain, and could decrease the energy demands of heating and cooling systems.

RECP Option 3: Producing rusk from returned dry bread: It is estimated that 0.6 m³ of the dry and stale bread is returned daily, with 60% being suitable for rusk (paksimath) preparation, with the remaining amount being suitable to be used as livestock feed.

RECP Option 4: Generating useful by-products from the waste of oak wood chips: Useful by-products such as wood briquettes and medicine could be produced from the waste resulting from the oak wood chips, although this would require significant changes to the production site.

SAVING ACHIEVEMENTS

Main RECP actions

OPTION 1	Installing PV solar panels and purchasing an EV
OPTION 2	Energy savings improvements
OPTION 3	Producing rusk from returned dry bread
OPTION 4	Generating useful by-products from the waste of oak wood chips

Economic key figures

RECP OPTIONS	INVESTMENT (EUR)	SAVINGS (EUR/YR)	PAYBACK PERIOD (YR)
Option 1:	165,000	23,640	6.95
Option 2:	15,500	1,630	9.5
Option 3:	24,000	11,700	2.1
Option 4:	-	2,600	9.5

Resource savings

RECP OPTIONS	WATER (M ³ /YR)	ENERGY (KWH/YR)
Option 1:	-	184,000
Option 2:	-	1,290
Option 3:	49.5	-
Option 4:	200	-

Total pollution reduction

RECP OPTIONS	TOTAL CO ₂ -EQ (TONNES/YR)
Total:	64.3

“ Our company was struggling to manage the excess wastewater generated from the production processes, as well as the high energy costs due to the inefficient use of resources and equipment. Thanks to the RECP Green Clubs, we learned how to use resources rationally and we can now plan to introduce new products in the nearby future, said the CEO of “Mur Har” LLC, Mr. Armen Muradyan. ”

The introduction of RECP has been part of the EU-funded EU4Environment Action and executed by UNIDO. In this context, “Mur Har” LLC joined the RECP Green Clubs programme. 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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United Nations Industrial Development Organization
Ms. Tatiana Chernyavskaya
EU4Environment Project Manager
Tel: +43 1 26 0 26 5520
E-mail: t.chernyavskaya@unido.org



Contact:
REC Caucasus Armenia National Office
Aygestan str. 7, building N 2, 0070, Yerevan
Web: www.recp.am
Tel: +374-115-75-148