



Resource Efficient and Cleaner Production Demonstration Project in Georgia



RECP CLUBS IN GEORGIA 2015-2016



SUCCESS STORIES

Tbilisi, 2017

Disclaimer

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INTRODUCTION

United Nations Industrial Development Organization (UNIDO) is implementing a Resource Efficient and Cleaner Production (RECP) Demonstration Project in Georgia (www.recp.ge). Objective of the project is to promote more efficient use of resources (energy, materials and water), improve environmental performance and reduce risks to human health in Georgian enterprises. The project is a component of the regional program of the European Union: Greening Economies in the European Union's Eastern Neighborhood (EaP GREEN).

The programme assists six countries of the European Union's Eastern Neighbourhood Partnership (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) in progressing faster towards a green economy framework. The EaP GREEN programme is mainly funded by the European Union and it is jointly implemented by four international organisations: Organisation for Economic Co-operation and Development (OECD), United Nations Economic Commission for Europe (UNECE), United Nations Environment Program (UN Environment), and United Nations Industrial Development Organization (UNIDO).

UNIDO-led Resource Efficient and Cleaner Production Demonstration Project in Georgia is co-funded by the Development Bank of Austria and Government of Slovenia.

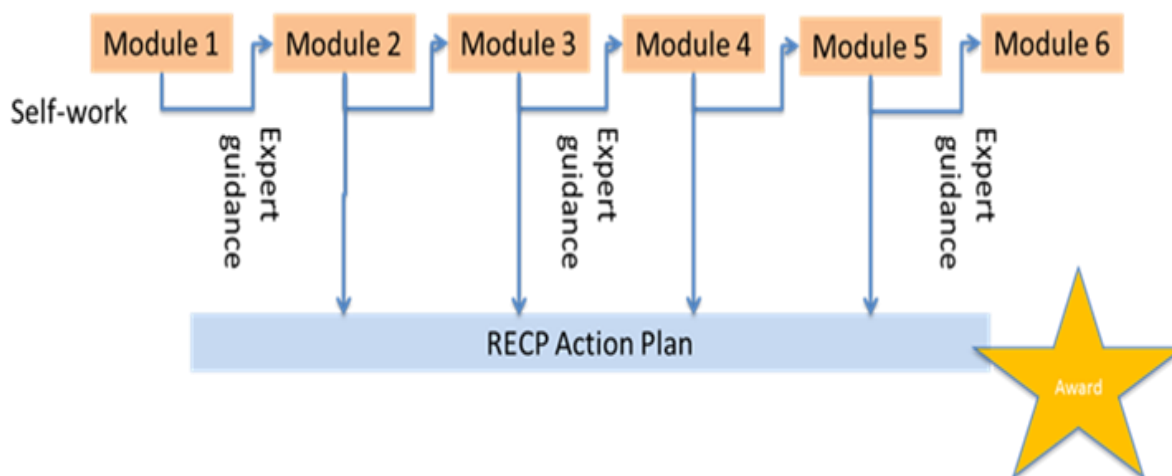
Among other activities, the RECP project supports the establishment of RECP Clubs in different regions of Georgia. The principal idea of a RECP Club is to bring together small and medium size enterprises (SMEs) on a regional level and take them jointly through an intensive training and coaching program, leading to a customized RECP action plan for all member companies upon completion of the clubs activities. In 2015-2016 four RECP Clubs were established in the Rustavi, Kutaisi and Kaspi municipalities and the Kakheti region involving 32 local SMEs.

RECP Club Activities:

❖ **Training of club member companies in RECP methodology.** Training in 6 modules with intervals of about 3 weeks over a period of 4 months was provided for each Club. These modules were organized by thematic areas:

1. Business Profile: profiling of the enterprise with a particular focus on identifying resource uses and environmental impacts and appraising these in both physical units as well as their monetary value;
2. Energy: understanding energy use in company and developing energy efficiency options for processes, utility systems and buildings management;
3. Materials and Waste: understanding main material flows in enterprise and associated waste streams, and developing materials efficiency and waste reduction options;
4. Water and Waste Water: understanding main water flows in enterprise and associated waste water streams and developing water efficiency and effluent reduction options;
5. Chemicals, Hazards and Emissions: understanding chemicals use and associated hazards and emissions, and developing options for sound and responsible chemicals use; and
6. Action Planning: bringing together options from different topics into an integrated approach for enterprise with short, medium and longer term goals and action.

Modules 2-5 formed the core and focused on the enterprise's technical processes, whereas module 1 and 6 provided introduction and capstone respectively and were focused on management and information systems.



The RECP trainings helped the companies to understand opportunities and benefits of RECP application for companies; implications of intensive use of energy, water and materials; why efficient use of energy, water and materials is needed; how to build company's energy and water profile; why it is important to properly manage materials and waste; how to avoid/reduce/recycle waste; how to manage/reduce chemicals and hazardous waste; what an action plan is and why it is needed; how to build RECP action plan.

❖ **On site guidance to the RECP Clubs members.** Between the trainings the Clubs Facilitator undertook technical visits in each company for quick scan, review of gathered data, and root source and cause analysis to support the identification and evaluation of RECP measures. Email and phone contact were maintained to support and coach the companies during project implementation.

❖ **Development of RECP action plans.** By the end of the training program each club member company had developed a **RECP action plan** including low, medium and high cost RECP measures. These measures were designed to help the club member companies to save energy, water and materials, reduce negative impacts on the environment and human health, increase their profit, improve compliance with the Georgian environmental legislation and increase access to financial resources to invest in cleaner technologies.

❖ **Award.** Upon completion of the training program and submission of RECP Action Plans each club member companies were awarded with UNIDO certificates for successful participation in the RECP Clubs program.

❖ **Monitoring of Implementation of RECP Action Plans.** RECP Clubs' Facilitator visited all the RECP Club member companies in the end of 2016 to monitor the progress achieved by the companies in RECP action plan implementation and report on achieved results. As demonstrated by the undertaken monitoring visits, most of the RECP measures either have been implemented by the companies or were in progress.

RECP Clubs 2015-2016

32 companies from the municipalities of Rustavi, Kaspi, Kutaisi and the Kakheti region completed the RECP training program and developed RECP action plans in 2015-2016. For successful participation in the RECP clubs program the companies were awarded with UNIDO certificates.

Rustavi RECP Club member companies

1. LLC Alpha Pet;
2. Mn Chemical Georgia;
3. LLC Highway+;
4. LLC New Delta;
5. LLC Progress;
6. LLC Progress Bakary;
7. LLC Rustavi Azot;
8. LLC Tetri Qudi.



Kakheti RECP Club member companies

1. LLC Aisi - Gurjaani Ice-cream;
2. LLC Crystal;
3. LLC Gemo;
4. Individual Entrepreneur Lazariashvili
5. LLC Nektari-2008;
6. LLC Ofazi;
7. LLC Techno Win;
8. Individual Entrepreneur Tukhashvili.



Kaspi RECP Club member companies

1. LLC Akhasheni-2005;
2. LLC Arenamsheni ;
3. LLC Ceramics of Metekhi;
4. Individual Entrepreneur Gogiashvili;
5. LLC Igoeti-2012;
6. Individual Entrepreneur Jojishvili;
7. LLC T.M.T.



Kutaisi RECP Club member companies

1. LLC Antre Batono;
2. LLC Atinati;
3. LLC Gurmani;
4. LLC I.L.J.;
5. Individual Entrepreneur Khurtsidze;
6. LLC Kolkhida;
7. LLC Onima;
8. LLC Sofika;
9. LLC JT Design Metal.



by the RECP Club Member Companies

RECP Club member companies achieved significant economic and environmental benefits through the implemented RECP measures. These achievements in terms of energy, water and materials savings, CO₂ emissions reduction, investment costs and gained economic benefits are presented in the tables below.

Rustavi RECP Club			
	Investment	Saving	Benefit
Energy	23 350 €	59 9417 kWh/y	29 088 €/y
Water	0 €	13 575 m ³ /y	4 751 €/y
Material	0 €	0 t/y	0 €/y
CO ₂ Emission Reduction		35 t/y	

Kakheti RECP Club			
	Investment	Saving	Benefit
Energy	575 €	71 824 kWh/y	5 490 €/y
Water	0 €	10 904 m ³ /y	5 750 €/y
Material	0 €	45 t/y	8 167 €/y
CO ₂ Emission Reduction		6 t/y	-

Kutaisi RECP Club			
	Investment	Saving	Benefit
Energy	6 495 €	170 234 kWh/y	13 441 €/y
Water	0 €	4 042 m ³ /y	4 643 €/y
Material	1 500 €	9 845 t/y	11 480 €/y
CO ₂ Emission Reduction		12 t/y	

Kaspi RECP Club			
	Investment	Saving	Benefit
Energy	11 895 €	164 112 kWh/y	14 128 €/y
Water	500 €	4 132 m ³ /y	8 419 €/y
Material	10 000 €	507 t/y	16 546 €/y
CO ₂ Emission Reduction		12 t/y	

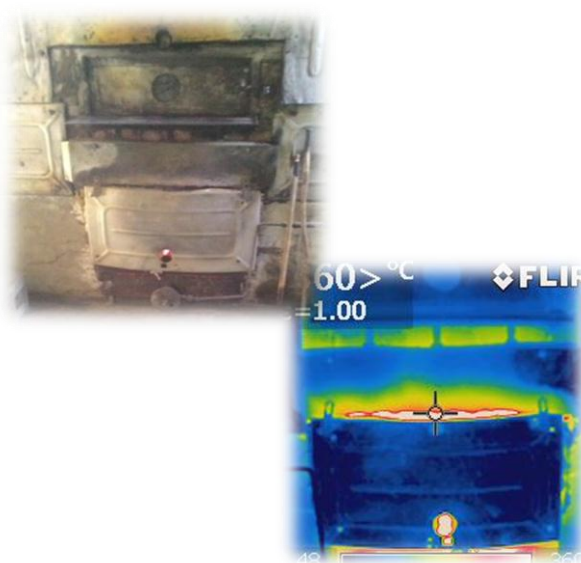
RECP Clubs in Georgia			
	Investment	Saving	Benefit
Energy	42 315 €	1 005 587 kWh/y	62 149 €/y
Water	500 €	32 653 m ³ /y	23 563 €/y
Material	11 500 €	562 t/y	36 192 €/y
CO ₂ Emission Reduction		65 t/y	
TOTAL	54 315 €		121 904 €/y

1 005 587 kWh energy, 32 653 m³ water and 562 t materials were saved by all RECP Club member companies together in 2016. Cost of the RECP measures implemented by the SMEs amounted to 54 315 Euros. These RECP investments helped the companies to save totally about 121 904 Euros and reduce 65 t CO_{2eq} emissions.

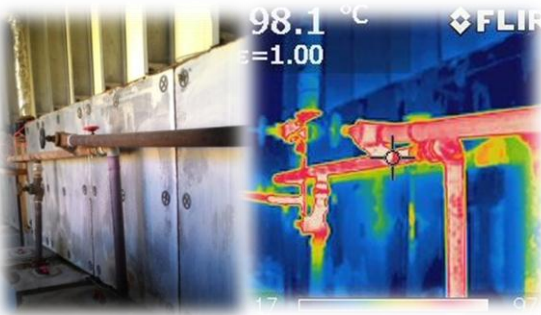
SUCCESS STORIES

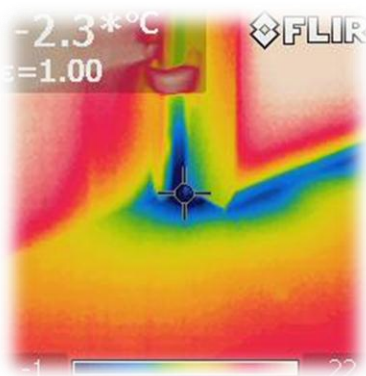
Monitoring visits conducted in RECP Club member companies in 2016 found that majority of the RECP Club member companies had started implementation of the RECP measures as provided in their RECP action plans developed with active involvement of the companies' management and technical personnel assisted by the Clubs facilitator and the national experts. This publication provides information on the achievements of selected RECP Club member companies from the Rustavi, Kutaisi, Kaspi municipalities and the Kakheti region in implementation of the RECP action plans.

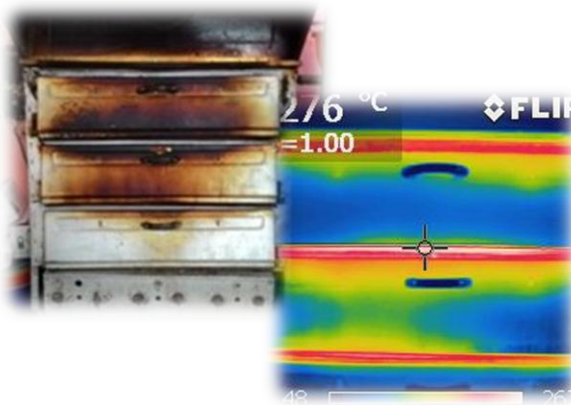
FOOD PRODUCTION SECTOR

Kakheti RECP Club															
Individual Entrepreneur Lazariashvili – Bakery															
Individual Entrepreneur Lazariashvili is a small size bakery. Flour, salt and yeast are used for the production. The company employs 6 persons. 	<table><tr><th colspan="2">RECP MEASURES</th></tr><tr><td colspan="2"> ❖ Switching off the furnace between the baking intervals ❖ Accurate usage of water in the dough kneading process ❖ Replacement of incandescent light bulbs with CFLs/LED bulbs ❖ Sell old bread at lower price </td></tr><tr><td rowspan="5">ACHIEVED RESULTS</td><td>Energy saving - 19 574 kWh/y</td></tr><tr><td>Water saving - 22 m³/y</td></tr><tr><td>Material saving s- 1.8 t/y</td></tr><tr><td>CO₂ Emissions reduction – 1 110 kg/y</td></tr><tr><td>Annual savings- 3 829 GEL</td></tr><tr><td>INVESTMENT</td><td>50 GEL</td></tr><tr><td>PAYBACK</td><td>-</td></tr></table>	RECP MEASURES		❖ Switching off the furnace between the baking intervals ❖ Accurate usage of water in the dough kneading process ❖ Replacement of incandescent light bulbs with CFLs/LED bulbs ❖ Sell old bread at lower price		ACHIEVED RESULTS	Energy saving - 19 574 kWh/y	Water saving - 22 m ³ /y	Material saving s- 1.8 t/y	CO ₂ Emissions reduction – 1 110 kg/y	Annual savings- 3 829 GEL	INVESTMENT	50 GEL	PAYBACK	-
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PAYBACK	-														

Kakheti RECP Club	
Nektari-2008 – Soft drinks production	
Nektari-2008 is a medium size company producing lemonade. Various types of aroma and sweeteners are used for production. The company employs 20 persons. 	RECP MEASURES
	❖ Rational use of water for cleaning and proper use of water pump
	❖ Rational use of raw materials (Reduce share of sweetener)
	❖ Replacement of incandescent light bulbs with CFLs/LED bulbs
	ACHIEVED RESULTS
	Energy saving - 30 600 kWh/y
	Water saving- 3 440 m ³ /y
	Materials saved -10.9 t
	CO ₂ Emissions reduction - 2 260 kg/y
	Annual savings- 12 900 GEL
	INVESTMENT
	300 GEL
	PAYBACK
	0 years

Kakheti RECP Club	
Tetri Qudi Ltd – Mushrooms production	
Tetri Qudi is a medium size company engaged in mushrooms production. The company employs 35 persons. Straw and mycelium/spawn are used for production. 	RECP MEASURES
	❖ Insulation of the pipes and fixing the damaged insulation
	❖ Reduction of time of the compost loading
	❖ More efficient use of water
	ACHIEVED RESULTS
	Water saving - 7 000 m ³ /y
	Energy saving - 181 254 kWh/y
	CO ₂ Emissions reduction-10 310 kg/y
	Annual savings- 21 380 GEL
	INVESTMENT
	10 000 GEL
	PAYBACK
	0.5 years

Kutaisi RECP Club		
Onima – meat processing		
Onima is a medium size company producing various types of sausages. The product is sold locally. Fresh and frozen meat, fat and soybean mince are used for production. 	RECP MEASURES	
	❖ Replacement of incandescent light bulbs with CFLs/LED bulbs; ❖ Repair sealing on the refrigerator's door ❖ Start rational use of water	
	ACHIEVED RESULTS	Energy saving - 12 900 kWh/y
		Water saving - 480 m ³ /y
		CO ₂ emissions reduction - 954 kg/y
Annual saving - 4 515 GEL		
INVESTMENT	1 100 GEL	
PAYBACK	0.3 years	

Kutaisi RECP Club					
Antre Batono - Bakery					
Antre Batono is a bakery. The product is sold locally. Wheat flour and cheese is used for production. There works 25 people. 	RECP MEASURES ❖ Insulation of oven walls and repair doors' sealing; ❖ Installation of thermostats on ovens; ❖ Installation of proper fan ❖ Start rational use of water				
	ACHIEVED RESULTS <table><tr><td>Energy saving-20 420 kWh/y</td></tr><tr><td>Water saving - 40 m³/y</td></tr><tr><td>CO₂ emissions reduction- 1 510 kg/y</td></tr><tr><td>Annual saving- 4 320 GEL</td></tr></table>	Energy saving-20 420 kWh/y	Water saving - 40 m ³ /y	CO ₂ emissions reduction- 1 510 kg/y	Annual saving- 4 320 GEL
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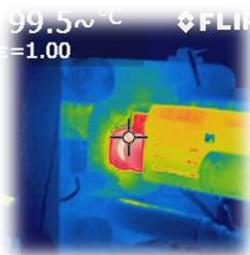
Kutaisi RECP Club	
I.L.J.-Bilberry Production	
I.L.J. is a small size company engaged in the production of dried bilberry. Annual production output amounts to 5 tons. The product is exported. Fresh bilberry is used for production. The company employs 15 persons. 	RECP MEASURES
	❖ Repair sealant on the drying chamber ❖ Insulation of the drying chamber walls ❖ Installation of a thermostat on the dryer ❖ Replacement of incandescent light bulbs with LED bulbs
	ACHIEVED RESULTS
	Energy saving – 13 015 kWh/y CO ₂ emissions reduction - 962 kg/y Annual saving- 2 470 GEL
	INVESTMENT 1 340 GEL
	PAYBACK 0.5 years

Kaspi RECP Club	
T.M.T. -Cannery	
T.M.T. is a medium size company which produces various types of canned fruits and vegetables. The company sells its products in Georgia and also exports to other countries. The company employs 30 persons. 	RECP MEASURES
	❖ Repaired sealing on the boiling pots; ❖ Start rational use of water; ❖ Start accurate handling of glass ware; ❖ Replacement of the incandescent light bulbs with CFLs; ❖ Replacement of the boiler with modern one
	ACHIEVED RESULTS
	Energy saving-19 122 kWh/y Water saving- 340 m ³ /y Material saving - 0.1 t/y CO ₂ emissions reduction -1 360 kg/y Annual saving- 4 150 GEL
	INVESTMENT 5 340 GEL
	PAYBACK 1.4 years

CHEMICALS PRODUCTION SECTOR

Rustavi RECP Club					
ALPHA PET LTD – Production of PET Pre-forms					
Alpha Pet is a small size enterprise producing pet pre-forms for plastic bottles. Polyethylene-teraphtalate is used for the production. The product is sold locally and is also exported. The company employs 15 persons. 	RECP MEASURES				
	❖ Cover raw materials with water proof film to keep it dry ❖ Usage of the heat generated in the technological process for space heating				
	<table><tr><td rowspan="3">ACHIEVED RESULTS</td><td>Energy saving -41 000 kWh/y</td></tr><tr><td>CO₂ Emissions reduction – 3,034 kg/y</td></tr><tr><td>Annual savings- 5,330 GEL</td></tr></table>	ACHIEVED RESULTS	Energy saving -41 000 kWh/y	CO ₂ Emissions reduction – 3,034 kg/y	Annual savings- 5,330 GEL
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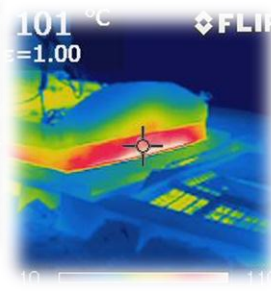
Rustavi RECP Club					
HIGHWAY +LTD – Asphalt. Bitumen, Pebble					
Highway+ is medium size company and produces asphalt. Bitumen, pebble, sand and limestone powder as filler are used for production. 	RECP MEASURES				
	❖ Replacement of incandescent light bulbs with energy saving bulbs ❖ Insulation of heater & heating pipes				
	<table><tr><td rowspan="3">ACHIEVED RESULTS</td><td>Energy saving -76 755 kWh/y</td></tr><tr><td>CO₂ Emissions reduction – 4 330 kg/y</td></tr><tr><td>Annual savings - 6 103 GEL</td></tr></table>	ACHIEVED RESULTS	Energy saving -76 755 kWh/y	CO ₂ Emissions reduction – 4 330 kg/y	Annual savings - 6 103 GEL
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Kutaisi RECP Club				
Individual Entrepreneur Khurcidze				
Individual Entrepreneur Khurcidze is a small size company engaged in plastic items production. The products are sold locally. Polypropylene is used for production. The company employs 4 persons. 	RECP MEASURES ❖ Insulation of thermoplast machine ❖ Development of water cooling system to increase productivity& quality ❖ Replacement of incandescent light bulbs with LED.			
	ACHIEVED RESULTS <table><tr><td>Energy saving - 3 070 kWh/y</td></tr><tr><td>CO₂ emissions reduction - 227 kg/y</td></tr><tr><td>Annual saving – 3 200 GEL</td></tr></table>	Energy saving - 3 070 kWh/y	CO ₂ emissions reduction - 227 kg/y	Annual saving – 3 200 GEL
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	CO ₂ emissions reduction - 227 kg/y			
	Annual saving – 3 200 GEL			
INVESTMENT 1 120 GEL				
PAYBACK 0.5 years				

Kaspi RECP Club	
Individual Entrepreneur Jojishvili	
Individual Entrepreneur Jojishvili produces plastic household items. The products are sold locally. 30 people are engaged in the production. 	RECP MEASURES
	❖ Introduction of hot water energy recovery system ❖ Eliminate leakages in the cooling process ❖ Reuse of the defected products ❖ Replacement of incandescent light bulbs with LED bulbs
	ACHIEVED RESULTS
	Energy saving – 13 500 kWh/y
	Water saving- 1 500 m ³ /y
Material saving - 6 t/y	
	CO ₂ emissions reduction-1,000 kg/y
	Annual saving - 18 765 GEL
INVESTMENT	9 150 GEL
PAYBACK	0.5 years

Kaspi RECP Club		
Individual Entrepreneur Gogiashvili		
Individual Entrepreneur Gogiashvili processes Crude zeolite. The product is sold locally. The company employs 10 persons. 	RECP MEASURES	
	❖ Replacement of damaged conveyor belt ❖ Start rational use of water	
	ACHIEVED RESULTS	Energy saving – 7 800 kWh/y
		Water saving- 15 m ³ /y
		Material saving - 285 t/y
		CO ₂ emissions reduction - 580 kg/y
		Annual saving – 10 790 GEL
	INVESTMENT	8 000 GEL
	PAYBACK	0.7 years

CONSTRUCTION MATERIALS PRODUCTION SECTOR

Rustavi RECP Club	
NEW DELATA LTD – nails, annealed wire & lattice grid producer	
New Delta Ltd produces nails, annealed wire and lattice grids. Crude wire rod is used in the production. The company employs 55 persons. 	RECP MEASURES ❖ Repair the wire annealing furnace ❖ Replacement of incandescent light bulbs with LED bulbs
	ACHIEVED RESULTS Energy saving – 109 730 kWh/y CO₂ Emissions reduced – 8 120 kg/y Annual savings- 14 260 GEL
	INVESTMENT 15 400 GEL
	PAYBACK 1.1 year

Kutaisi RECP Club		
JT Design Metal		
JT Design Metal is a small size company engaged in metal assembling and painting. The company employs 15 people. 	RECP MEASURES	
	❖ Insulation of walls of the dryer ❖ Control the dryer's doors opening time and duration ❖ Installation of thermostat to adjust temperature inside the dryer ❖ Replacement of incandescent light bulbs with LED bulbs ❖ More accurate metal cutting ❖ Rational use of water and paints	
	ACHIEVED RESULTS	Energy saving-21 645 kWh/y
		Water saving - 200 m ³ /y
		Material savings- 2.6 t/y
		CO ₂ emissions reduction-1 600 kg/y
		Annual saving-6 866 GEL
INVESTMENT	2 200 GEL	
PAYBACK	0.3 years	

Kakheti RECP Club		
Techno Win - concrete tiles & metal constructions producer		
Techno Win is a medium size company producing pieces of concrete tiles and metal constructions. Cement, sand, steel and paint are used in the production. The company employs 30 persons. 	RECP MEASURES	
	❖ Rational use of water for concrete mixing ❖ More precise steel cutting ❖ Accurate usage of paints ❖ Proper handling of tiles in the molds	
	ACHIEVED RESULTS	Water saved - 600 m ³ /y
		Material saving - 3.5 t/y
		CO ₂ Emissions reduction – N/A
		Annual savings- 10 200 GEL
	INVESTMENT	0
PAYBACK	NA	

Contact information

Project Manager: Carolina Gonzalez

E-mail: c.gonzalez-mueller@unido.org

Project International Coordinator: Tatiana Chernyavskaya

E-mail: t.chernyavskaya@unido.org

Industrial Resource Efficiency Division, Department of Environment

United Nations industrial Development Organization (UNIDO)

www.unido.org/eapgreen

Project Coordinator in Georgia: Malkhaz Adeishvili

E-mail: madeishvili@caucasus.net

RECP Georgia project website:

www.recp.ge

EaP GREEN program webpage:

www.green-economies-eap.org

