

BOOSTING CIRCULAR ECONOMY IN UKRAINE THROUGH RESOURCE EFFICIENT AND CLEANER PRODUCTION

IMPACTS AND LESSONS FROM COMPANY EXPERIENCES
UNDER THE EUROPEAN UNION'S EAP GREEN AND
EU4ENVIRONMENT PROGRAMMES

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ABOUT

Resource Efficient and Cleaner Production (RECP) allows businesses to apply integrated and continuous preventive environmental strategies to processes, products, and services to increase efficiency and reduce risks to humans and the environment. In short, RECP helps companies to minimize the environmental impact of their operations and cut their use of resources while raising productivity. With these goals in mind, an RECP demonstration project was established in Ukraine in 2013 under the “Greening Economies in the European Union’s Eastern Neighbourhood” (**EaP GREEN**) programme (2013-17), and continues to be part of its ongoing successor programme, the **EU4Environment Action (2019-2022)**. The European Union-backed project is executed by the United Nations Industrial Development Organization (UNIDO) and supported on the ground by the Ukrainian Resource Efficient and Cleaner Production Centre (RECP Centre). Under EaP GREEN, 48 Ukrainian small and medium-sized enterprises (SMEs) were helped to develop RECP action plans. Since then, others have joined in adopting RECP measures, which has brought them continuing improvements in environmental performance, lowered production costs, and a boosted productivity. This brochure highlights the direct impacts on the SMEs implementing the RECP methodology under the EaP Green programme, pointing to ways to tackle challenges, build on success stories, and sustain further progress.

Action implemented by:

1: Background

The inefficient use of natural resources remains a key contributor to climate change. It also leads to growing scarcities and accelerates environmental degradation, affecting both economic and social well-being. Ukraine is one of six Eastern Partnership (EaP) countries participating in the EU4Environment Action programme, which aims to preserve natural capital, increase environmental well-being and create opportunities for green growth. Building directly on its forerunner, EaP GREEN, and on other related programmes, EU4Environment seeks to drive action in areas such as innovative technology, green investment, new business models, and the Circular Economy. The RECP approach is fully aligned with these goals, in particular in relation to the principles of the Circular Economy, which works to keep resources in use for as long as possible, extracting their maximum value and relocating waste from the end of the supply chain to the beginning (thus giving a new life to used materials). The introduction of RECP in industry has been an integral part of UNIDO's work in Ukraine since 2013 through its central role in implementing the RECP demonstration projects funded by the regional programmes of the European Union: EaP GREEN (2013-2017) and EU4Environment (2019-2022). Under the direction of these programmes, UNIDO continues to implement the RECP methodology and the principles of Circular Economy in Ukraine. In 2015, a sample of 10 SMEs participating in the RECP project in Ukraine underwent an

initial assessment; this was followed up in 2020 under the EU4Environment Action with a more in-depth look at RECP results, lessons, and limitations faced in the three years after the EaP GREEN programme ended. The EU4Environment team analysed the information and data obtained from the group of SMEs to understand what action is further required to scale up the wider adoption of RECP in Ukraine.

2: The RECP process: From technical assessment to adoption

Under EaP GREEN, UNIDO worked closely with Ukrainian industries to develop business cases that demonstrated the benefits of adopting RECP measures in the short, medium, and long term. Specifically, the Organization carried out awareness-raising activities, trained national service providers, educated new experts, conducted in-plant assessments, and helped to establish four RECP Clubs in the Chernihiv and Kharkiv regions (designed to scale up RECP in key industries). The RECP assessments identified a variety of RECP options that companies were then able to implement based on their specific needs, resources, capacity, and priorities. Throughout this process, the activities were focused on knowledge sharing and on the application of the RECP methodology. The companies that took part in the EaP GREEN programme mainly operate in the construction materials industry, the manufacture of metal products, and in the food sector.

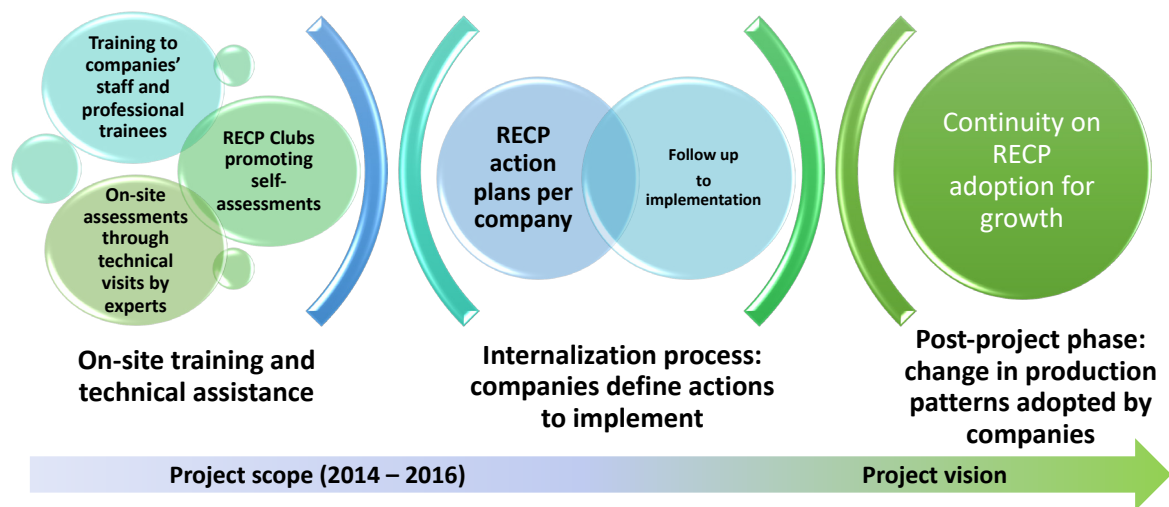


Fig. 1. The RECP promotion process conducted by UNIDO

Figure 1 describes the EaP GREEN programme's scope and expected vision after the initial interventions in the selected companies. As the implementation and adoption phases continued beyond the project, EU4Environment stepped in to evaluate the conditions surrounding the application of RECP measures in the three years after EaP GREEN ended (2018-2020). This information will help create a better country-tailored strategy to further support the extension and replication of RECP.

3: Post-project monitoring results

Once the technical assistance provided under EaP GREEN had been completed, the RECP Centre released two publications. [The first is an article](#) describing the measures identified and subsequently implemented to achieve RECP within the companies participating in EaP GREEN. [The second publication is an analysis](#) of how companies in Ukraine introduced and implemented RECP between 2013-2017. A new monitoring effort was then conducted under EU4Environment, leading to the following conclusions and progress:

- On average, the companies participating in the EaP GREEN programme implemented 43 per cent of their RECP action plans. This result compares to a 25 to 30 per cent

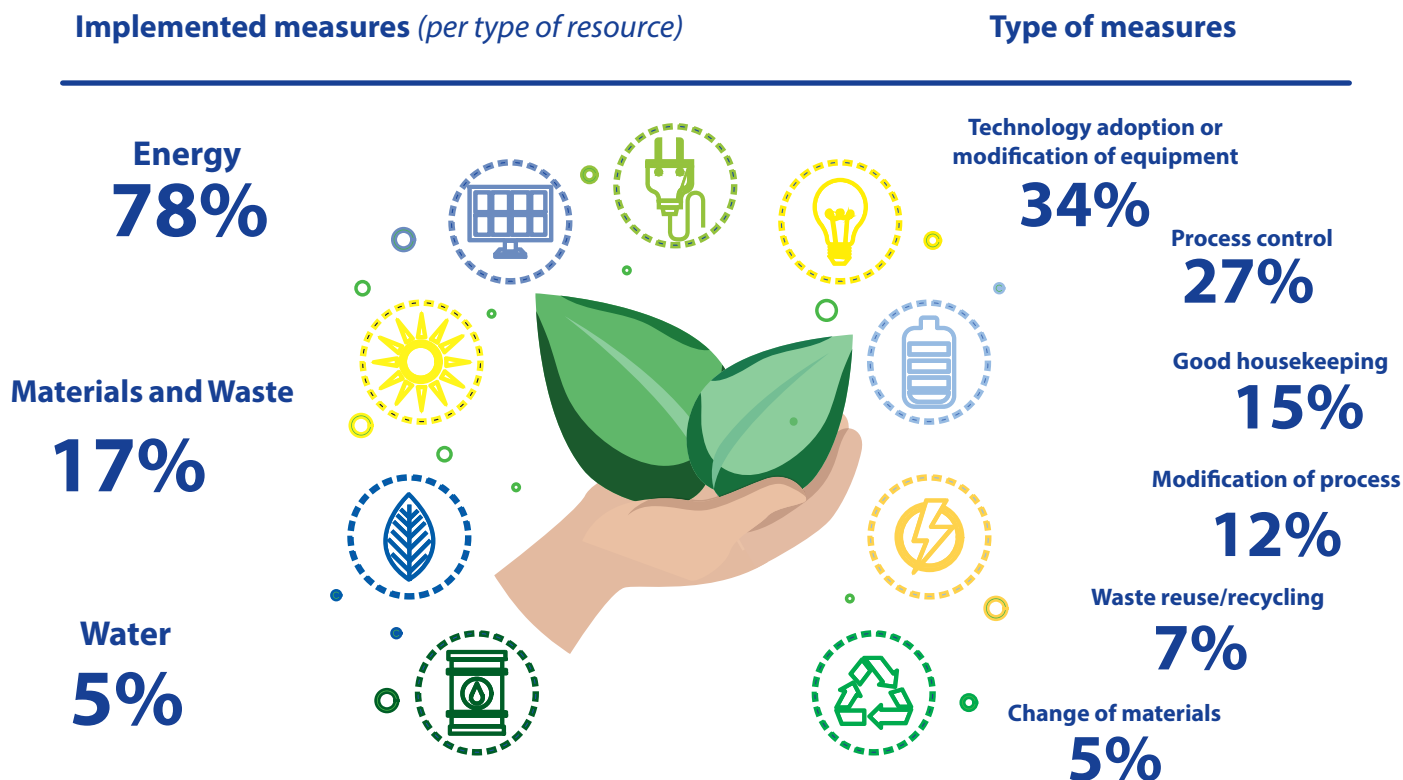
implementation rate identified in the initial assessment of companies carried out by the RECP Centre in 2017. The updated results show an ongoing and deepened commitment from companies to implementing RECP measures in the medium term, following on from the 2017 assessment process.

- Most of the implemented measures were low-cost. On average, the companies spent 10 per cent of the planned investments on their RECP action plans. However, as some SMEs did not record the specific level of investment allocated to their RECP practices, there is currently no accurate assessment of the overall investment of economic resources in RECP.

- The RECP measures have delivered tangible cost savings, even only when employing good housekeeping practices, as almost 30 per cent of the total savings have been achieved with low-cost measures and short payback periods of less than two years.
- Total savings in 10 sampled companies amounted to €620,000 a year.
- Partly in response to the rising cost of energy, companies made energy efficiency the main focus of their RECP plans, with around 80 per cent of the implemented options being related to energy savings. The RECP potential also

indicates a significant saving opportunity in material flows, which has to date been given little attention.

- Finally, although companies are also adopting new technologies or modifying equipment, investment levels in these areas remain small. For example, only 14 per cent of the implemented options were made with investments costing between €5,000 – €20,000, indicating that the potential for more expensive solutions with higher impacts remains untapped.



4: Learning from partners' experiences

What do the SMEs say?

The need for ongoing training

In general, the surveyed enterprises showed a good understanding of the role, purpose, and benefits of the RECP methodology at senior management level. However, while a few enterprises maintained their original RECP-trained teams, rapid turnover of staff in most companies shows that there is a clear need for continuous hands-on training in addition to awareness-raising activities to ensure that the lessons learned on RECP are fully applied.

The limitations of self-funding

The companies implemented the selected RECP options at their own expense; thus, no application was made for external financing in the form of loans or credits. However, the preference for using company funds might have limited the capability of the SMEs to undertake more significant technological changes.

According to a survey reported by the National Bank of Ukraine¹, the main factors influencing the postponement of firms' decision to apply for credits were: high interest rates (top historical factor); collateral requirements; documentation processes; significant fluctuations in the hryvnia exchange rate; and uncertainty in companies' ability to meet liability requirements. Yet, the interest rates for credits for the private sector have significantly decreased in the last years, ranging from 16-22 per cent. In the past two years alone, the rates dropped further towards 12-15 per cent². Demand for loans from SMEs has also grown, accounting for 33 per cent of the total new business lending in 2018 (mainly targeting working capital). Nevertheless, businesses said that credits were still too expensive and challenging to obtain. In this context, there is an urgent need to carry out more specific and targeted improvements in the financing environment to enable companies to access bigger production-related investments.

1. Financing SMEs and Entrepreneurs 2020: An OECD Scoreboard

2. <https://tradingeconomics.com/ukraine/lending-interest-rate-percent-wb-data.html>

The continuous implementation of RECP

In general, companies have established regular good practices on resource saving as part of their culture, picking off low-hanging fruits such as insulating manifolds and steam pipes, repairing water mains, controlling and repairing energy-intensive equipment, replacing lights, and so on. However, the RECP measures requiring more in-depth analysis or technological transformation are still to be put in place. In most cases, the employees' involvement in identifying new RECP proposals was limited as no internal mechanisms were established to evaluate production processes on a continuous basis.

The wider benefits of RECP

When it comes to managing areas beyond production processes (such as management systems, marketing, and certifications), some SMEs quickly picked up the implications of resource efficiency and introduced new means to track resource consumption and improve their management systems. Moreover, many companies were also able to identify new RECP options tailored for their specific business. Still, reliance on external support to conduct a systematic application on RECP is widespread. In the absence of specific programmes to support this, these companies are unlikely to continuously apply the

RECP methodology. More involvement in monitoring and follow-up procedures (as well as application for certifications) is required to integrate RECP into the core strategies of businesses.

In summary, some of the biggest barriers identified when implementing RECP action plans were:

- Limited own financing to implement the RECP options, and unwillingness to access borrowed funds due to the high interest rates and unattractive loan conditions.
- Increased economic instability nationwide and the risks of capital investment.
- Frequent change of technical staff which impeded a regular implementation schedule.
- Lack of motivation and incentive tools for company workers when undertaking improvement processes, which resulted in pessimism and reduced interest from operators and key technical staff.
- Inadequate training within SMEs and the subsequent lack of understanding of how to implement some of the proposed measures.
- Changes in top management or owners that generated doubts and uncertainties regarding what RECP means for the company and the prospects it offers.

What does the RECP Centre in Ukraine say?

Our mission

The RECP Centre promotes an economically, socially, and environmentally viable future that fosters a sustainable development approach among companies in Ukraine. The Centre was established in 2013 with support from UNIDO and the Governments of Switzerland and Austria. In its everyday activities, the Centre provides services to industries and related stakeholders to support the incorporation of sustainable practices in priority sectors such as metal-processing, food, building materials, and light industries. The RECP Centre also served as the service unit of UNIDO for the EaP GREEN programme, and performs the role of a National Implementing Partner for UNIDO within the EU4Environment Action.

Our experience

According to the RECP Centre's experience in Ukraine, international cooperation programmes have played a crucial role in the last 10 years in creating knowledge and a demand for RECP services in industries (inexistent before). Entrepreneurs have shown an increased interest in taking part in programmes that facilitate training and technical assistance for their industrial plants and enterprises. They are motivated by the expected benefits and the successful experiences of the demonstration companies. However, there is a gap between their participation and the capacity to demand continued RECP services using their own resources. Two types of challenges then arise: on the one hand, the economic challenges in the country increase the interest of companies in prioritizing investment in RECP projects. On the other hand, there is a lack of incentive mechanisms needed to facilitate a continued engagement in RECP practices. This opens new areas of development needed to keep enhancing the local environment for RECP adoption in SMEs.

4: The way forward

The EU4Environment Action is replicating and scaling up successful models for capacity building on RECP, building on the increasing interest of the private sector. Based on the post-EaP GREEN monitoring efforts and findings described before, the following measures would be helpful in encouraging the wider adoption of RECP in Ukrainian companies:

Extended national capacity for continuous education and training of professionals on RECP:

The integration of the RECP methodology in academic and vocational programmes in the country would improve companies' access to qualified professionals to undertake RECP projects. In this regard, the EaP GREEN

programme supported the creation of a [RECP Study Book](#) for universities. Since the programme ended, the book has been used for RECP courses in six universities. Nevertheless, these efforts need to be established on a permanent basis in the academic and continuing education sectors.

Piloting feasible technological investments as part of the demonstration projects: By investing in RECP pilot projects in industries to demonstrate their profitability and risk management, demonstration projects can further incentivize entrepreneurs to prioritize and step into more ambitious RECP action plans.

Strengthened capacity to unlock financing and green credit mechanisms: While the need for green credits has already been on the table for several years, the capacity to bridge supply and demand still requires a boost. On the one hand, green credit mechanisms adapted to the SMEs' context are needed. On the other hand, SMEs often lack the capacity to improve creditworthiness and properly evaluate themselves to present attractive business plans for RECP investments. Other incentive mechanisms are required to reduce risks and costs, as well as to improve communication between banks and SMEs. Options like non-refundable grants, guarantee funds, start-up funding, and technology development funds need to be explored.

Support locally made technology to provide appropriate, adapted, and cost-effective advanced equipment: Aid for investing in educational programmes and technology-related start-ups, along with support for innovation in local machinery and information technology (IT) industries would mean a more efficient and cost-effective national technology market, reducing the need for

importing more expensive alternatives.

Development of incentive mechanisms to scale up RECP in the company management systems: Recognitions, awards, national and international certifications and other voluntary schemes with potential to open new markets could be developed to incentivize companies to introduce RECP into their management system. This requires advanced cooperation models between consultancy and service providers for a continued training of industry staff (such as institutionalizing RECP Clubs or similar capacity-building programmes and strengthening the capacity of the RECP Centre).

Raising awareness on the advanced opportunities of RECP: The link between RECP adoption and the opportunities for accelerating industry growth needs to be continuously promoted. Development of green markets, recycling, green products design, and other strategies built on an in-depth adoption of RECP should continue to be implemented in Ukraine.

Learn more

EaP GREEN Programme

www.green-economies-eap.org

EU4Environment Action

www.eu4environment.org

RECP Centre Ukraine



RECP Success stories



ABOUT

The **EU4Environment Action** funded by the European Union aims to preserve and better use the natural capital, increase people's environmental well-being, and stimulate a greener economic growth in the six Eastern Partnership countries. Its initiatives help deliver policy and legislative changes, make planning and investment greener, and stimulate the uptake of innovative technologies by adopting new business models and creating green jobs. The Action involves five implementing organizations - OECD, UNECE, UNEP, UNIDO, and the World Bank – that focus on producing tangible results in line with the goals, priorities, and the overall cooperation targets defined by the Partner countries.

UNIDO, under the Result 2 Component: Circular Economy and New Growth Opportunities, manages the outputs 2.1 'Resource Efficient and Cleaner Production and eco-innovation among SMEs are scaled up', and 2.2 'Concepts and tools of the EU Single Market for Green Products initiative are introduced and promoted'.

Action implemented by:



6. TESTIMONIALS

Eight companies sharing their post-EaP GREEN experiences

Running a company efficiently requires regular monitoring over the resource consumption; we believe every business has to increase resource efficiency and motivate its employees to invest in a rational resources consumption, said **Artem Serhiienko, Director of KHARKIV-FORMA**

Thanks to the project and the RECP implementation, we became confident that our industrial processes and operations could be improved through cleaner production. Moreover, this not only decreased waste generation and environmental pollution, but also brought budget savings and generated an additional income for the company through rational resources consumption, said **Oleksii Kashkariov, Head of Production Technical Preparation Department, UKRSTAL DNIPRO, PJSC**

List of the participating companies



ALITONI, LLC, SHOE PRODUCTION

Key products: shoe blanks and insoles
Location: Chernihiv oblast



KHARKIV-FORMA, PLASTIC AND POLYMER MOULDING MANUFACTURING COMPANY

Key products: Moulds for fences, facade and paving tiles, monuments, gardens, architecture elements, etc.
Location: Kharkiv



RAKHNY BRICK PLANT, LLC CONSTRUCTION MATERIALS

Key products: Hyper-pressed facing bricks
Location: Vinnytsia oblast



SBK-OZERA-SLOBOZHANY CON- STRUCTION CERAMICS, PJSC CONSTRUCTION MATERIALS

Key products: Porous ceramic blocks
Location: Kyiv oblast



SONET, LLC, CONSTRUCTION MATERIALS AND METALWORK INDUSTRY

Key products: 'HostRock' heat-ventilated facades and lifting equipment (elevators)
Location: Kyiv oblast



UKRSTAL DNIPRO - STRUCTURAL STEEL FABRICATION PLANT, PJSC, STEEL CONSTRUCTION

Key products: construction steel
Location: Dnipro



UKRSTAL ZHYTOMYR-STRUCTURAL STEEL FABRICATION PLANT, LLC, STEEL BUILDING STRUCTURES

Key products: steel building structures
Location: Zhytomyr



YOUNG UKRAINE, LTD FURNITURE PRODUCTION

Key products: office chairs and components
Location: Chernihiv oblast



Cooperation with the RECP Project team created a positive motivating attitude, a desire to deeply examine the company, and to identify ways to improve the efficiency of both materials and energy consumption; we intend to regularly raise awareness of our employees on rational resource management, said **Olena Ivasenko, Director of ALITONI, LLC**

We have learned the key lesson. A comprehensive approach for production assessment and small investments in resource efficiency can really grant tangible benefits, said **Viktor Kondratiuk, Director of Rakhny Brick Plant, LLC**