

RECP Experiences at J & S Ferretería Industrial Chemical Innovation Case

This experience was developed as part of the project *Innovative Solutions for environmentally sound management of Chemicals and chemical wastes supported by UNIDO*. The aim of this project is to facilitate the implementation of innovations in the production and application of chemicals to achieve a reduction in the consumption of chemicals, energy and water; improvements in the safe management of chemicals and risk reduction related to chemical accidents. Resource efficient options and technologies will be addressed as well as replacement of hazardous chemicals by chemicals with lower risk, as demonstrated by the experiences of Peru.

Achievements at a Glance

J & S Ferreteria Industrial (Universal Colors) was able to reduce its solvents consumption by 80% as a result of the RECP programme. New and more environmental friendly paints were developed through the substitution and reduction of hazard chemicals and solvents. RECP enabled the company to reduce solvent emissions, improve working conditions and access new markets.



Universal Colors products



Tests with the new varnish



The ecological product line from Universal Colors

Overview

The J & S Ferretería Industrial (Universal Colors) is a Peruvian company dedicated to the formulation and manufacture of paints, latex, coatings, sealants and varnishes for construction and industrial use. Over the past 10 years, the enterprise has developed traffic, marine, domestic and automotive paints for peruvian market. The company has 15 workers and has assets of around USD 2,000,000.

The main target of the Resource Efficient and Cleaner Production (RECP) programme implemented at J & S Ferretería Industrial was the formulation of new and more environmental friendly paints by the substitution or reduction of hazardous chemicals and solvents.

Benefits

Universal Color was able to develop a water-based varnish for metallic surfaces that is effective for the aim of the end-user enterprise.

Achievements of the new product were:

- A water-based product with good covering properties for metallic surfaces.
- Lower content of solvent, preliminary formulation achieved more than 50% of reduction.


- Lower risk for handling and storage, diminishes risk of accidents for employees and improve working conditions.
- Reduction of solvent emissions – better working climate for the end-users.
- Access to new markets, potentially increase revenue and expand market share.

Resource Efficient and Cleaner Production (RECP)

Resource Efficient and Cleaner Production (RECP) entails the continuous application of preventive environmental strategies to processes, products and services to increase efficiency and reduce risks to humans and the environment.

RECP addresses three sustainability dimensions individually and synergistically:

- *Production efficiency*
 - > Through improved productive use of natural resources by enterprises
- *Environmental management*
 - > Through minimization of the impact on nature by enterprises
- *Human development*
 - > Through reduction of risks to people and communities from enterprises and supporting their development



Success Areas

An alternative formulation, water-based varnish for metallic surfaces, was developed by Universal Colors. This product was presented as a substitute for common varnishes available in the national market; which have a high solvent content and are considered hazardous for its volatility and inflammability.

To incentive the use of cleaner products and promotes the introduction of low environmental impact paints, the NCPC presented an end-user enterprise interested in reducing the impact of solvent-based varnishes. The two companies are working together to adapt the alternative formulation to the necessities of the client. The aim is to develop a high quality product that fulfills the standards of the former product and reduces significantly the solvent content in metallic varnishes.

Table 1: Results of the development of new formulations

Clean Technology	Environmental/Safety benefits	
	Chemical consumption (gallon)	
	Solvents [% w/gal] old/new	% reduction
Water-based varnish for metallic surfaces	50 % / 10 - 15%	80 %



RECP Experiences



Approach taken

J & S Ferreteria Industrial was approached to conduct an innovation assessment to determine the three basic technical components of increasing material and energy efficiency to produce more products with correspondingly less waste and pollutants, a reduction in toxicity of materials used and safety and risk reduction. Particular focus lied on the innovative solutions in these areas which were generated, implemented, monitored and documented together with the company representative.

Business case

The implementation of RECP programme allowed the company to see other markets that value low environmental impact paints; as a result, J & S Ferreteria Industrial has the potential to increase its competitiveness and profitability. Company plans are to produce free Lead paints for domestic use in order to achieve future quality standards that the health authority will require.

Testimony Box
National Cleaner Production Centre (NCPC)
The CER Peru was established in 2002, and is hosted by the non-governmental organization Grupo GEA. The centre offers services in the areas of Resource Efficient and Cleaner Production (RECP), Corporate Social Responsibility (CSR) and carbon neutral markets. By mid-2010, the centre had conducted cleaner production assessments, including carbon footprint measurements, in 55 enterprises and helped 28 enterprises with CSR related strategic planning. The centre was is actively working with ministries and local governments and participates in the administration of the Green Credit Trust Fund (supported by the Swiss State Secretariat for Economic Affairs) which has financed investments in 23 enterprises - amounting to a total of USD 8.75 million.
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ABOUT RECP EXPERIENCES

Through the joint Resource Efficient and Cleaner Production (RECP) Programme, the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Programme (UNEP) cooperate to improve the resource productivity and environmental performance of businesses and other organizations in developing and transition countries. The Programme is implemented in partnership with the Global Network for Resource Efficient and Cleaner Production (RECPnet). This series of enterprise success stories documents the resource productivity, environmental and other benefits achieved by enterprises in developing and transition countries through the implementation of RECP methods and practices.

These successes were achieved with the assistance of the National Cleaner Production Centres, which are part of RECPnet established with support of the UNIDO and UNEP. The success stories employ the indicator set described in *Enterprise Level Indicators for Resource Productivity and Pollution Intensity*, UNIDO/UNEP, 2010. The primer with accompanying calculator tool and further case studies are available at www.recenet.org, as well as on www.unido.org/cp and www.unep.fr/scp/cp.