



**TOGETHER**  
*for a sustainable future*

## OCCASION

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## RECP Experiences at [Arabian Steel Pipes Manufacturing]

The efficient and environmentally sound use of materials, energy and water - coupled with the minimization of waste and emissions - makes good business sense. Resource Efficient and Cleaner Production (RECP) is a way to achieve this in a holistic and systematic manner. RECP covers the application of preventive management strategies that increase the productive use of natural resources, minimize generation of waste and emissions, and foster safe and responsible production. Benefits are eminent in many enterprises, regardless of sector, location or size, as demonstrated by the experiences of Arabian Steel Pipes Manufacturing Jordan.

### Achievements at a Glance

Resource Efficient and Cleaner Production (RECP) implementation in the Arabian Steel Pipes Manufacturing led to annual savings of USD 33'000, and improved product quality.

The audit focus areas were set to the galvanizing section and the cooling emulsion system. These focus areas were discussed and agreed upon with the company management during the meeting held with the CP team.

The focus areas were selected due to the following reasons:

1. Galvanizing plant: this plant has been selected in order to improve chemical consumption, wastewater management, and energy consumption and to minimize air pollution. Some chemicals and materials used in this line are expensive in addition, there is a room for improvement in many areas such as the technologies of some of its units are inefficient and old; like heating of the degreasing bath, drying of the pretreatment pipes which is operated by flue gas and the use of compressed air (for agitation) for the galvanization pretreatment baths. And also the wastewater resulted from this line is not complying with the Jordanian Standards (high Total Dissolved Solids (TDS)).
2. Cooling emulsion: it has been selected to improve cooling emulsion process due to its high amount of spillages and its expensive cost.


production capacity of 30000 tons per year. The company has a total of 125 employees working in its different departments. There are 13 workers in the production section (Tube Mill), 17 workers in the galvanization section and 4 laboratory workers

(wastewater and baths testing, preparation of baths solutions). In addition, the company got ISO 9000 since 1995 and ISO 14000 since 2003.

The company sells its products to the local market, in addition to Germany, France, Iraq, Syria, Libya, Sudan, Lebanon, Yemen and Saudi Arabia.

## Benefits

The CP team focused on the galvanizing unit, where many options have been identified. Some of these options have been implemented such as: minimizing losses from degreasing bath, repairing the isolation of the steam pipes, preventing leakages in steam valves and junctions, using a new additive material to prevent ash formation, using organic passivation material instead of chromium, and conducting training for employees to improve process quality control.

## 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

The results were achieved through the implementation of the following measures:

- Decrease the oil and water consumption.
- Improve the environmental conditions: reduce the probability of bacteria growth and thus reduce the toxic H2S emissions (rotten egg odour).
- Improve the environmental conditions inside the working area.
- Reduce occupational health risk.

Principal Options Implemented	Benefits		
	Economic		Resource Use
	Investment [USD]	Cost Saving [USD/yr]	Reductions in energy use, water use and/or materials use (per annum)

<p><b>Minimize energy and water losses from degreasing bath</b> By using blower instead of compressed air, installing temperature control device, and using plastic balls to cover the bath surface.</p>	3642.8	4171	260 m <sup>3</sup> of water/ year 19400 L of diesel/ year 9100 KWh/ year
<p><b>Minimize energy consumption of boiler</b> By repairing isolation of the steam pipes and preventing steam leakages from valves and junctions of the boiler.</p>	1657	2657	66 m <sup>3</sup> of water/ year 13100 L of diesel/ year
<p><b>Prevent ash formation</b> A new additive material is used to reduce ash formation and energy consumption.</p>	19700	26800	80 ton of ash/ year 1150 L of diesel/ year

## Approach taken

The CP program comprised of capacity building and in-plant application in a modular form in addition to experts mission. A joint team from RSS CP Unit and the Company worked cooperatively to implement CP assessment for the company. The work included detailed company visits, identifying and evaluating CP options, implementing a number of options and setting an action plan for the follow up of CP at the company.

Applying cleaner production principles that result in the best utilization of available resources and the production of products in an environmentally friendly manner, this reflects the determination of our team members in complying with company's mission of protecting the environment and serving the local community.

## Business case

RECP not only allows companies to achieve savings from decreased resource use, but also decreases pollution to the environment, which benefits the surrounding community.

<b>Testimony Box</b>
<b>National Cleaner Production Centre (NCPC)</b>
The CP-Unit of RSS was established in February 2004 with the support of the Swiss State Secretariat for Economic Affairs (SECO). CP-Unit is well recognized among the Arab world in CP services. During the past years, the CP-Unit has gained recognition through its comprehensive and diverse record of achievements
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# RECP Experiences



## 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.recpnet.org](http://www.recpnet.org), as well as on [www.unido.org/cp](http://www.unido.org/cp) and [www.unep.fr/scp/cp](http://www.unep.fr/scp/cp).