

# PREMA<sup>®</sup> Case Study for PIDA<sup>\*</sup>

**Company:** Nubar Printing House

**Date:** August 04, 2007

**Measure:**

**Reduction of paper waste by improving material handling**

\*PIDA is the Egyptian Printing Industry's Development Association

## In Brief

Nubar Printing House is an Offset Printing House with three locations in Cairo: two in Shubra, and one in El Obour City. Though the company is one of the most innovative ones in Cairo, offering a broad range of products, many internal production processes have not been changed for years. In the course of the PREMA Workshop, several problems and their causes have been identified. The main problems are the high rate of material and particularly paper consumption, the damage of semi-products and a lack of quality control. This case study presents the measure **reduction of paper waste by improving material handling**.

## Information on the Enterprise

Nubar Printing House is an Offset printing house with currently three locations in Cairo: two in Shubra, and one in El Obour City. The company is one of the most innovative printers in Cairo, offering a broad range of products for national and international customers. It currently employs 150 people.

## Application of PREMA<sup>®</sup> (GHK and EoCM)

During the Good Housekeeping (GHK) workshop within the PREMA programme, the participants visited all involved companies, including Nubar Printing House. As all participants are working in the same sector, the visited companies benefited from the participants' expertise. The company assessment of the participants was structured according to the provided checklists for all aspects within the printing sector. Several problems and causes could be identified and measures formulated. Most important for Nubar were the material handling and waste issues. The Network Meetings and the Environmental oriented Cost Management (EoCM) helped to refine the financial calculation and support the implementation of the measures.

## The Problem and its Causes

According to the accounts, the printing house has a paper consumption of approximately 15 t/ day or 4500 t/ year. Due to the wrong handling of the paper during storage, production and packaging, 0.8 ton paper waste per day is produced, which will sum up to nearly 300 t/year. This means a waste rate of 6.7 %, based on the total amount of processed paper. This case study presents the measure **reduction of paper waste by improving material handling**. One reason for the wrong handling can already be found at the storage, where shelves are lacking and piles often fall over. Another problem is the transport of semi-products and the packing of the products with insufficient protection at both ends of packages, so that a number of copies at both ends get destroyed.



100 semi-products are bound together with a plastic thread. First 2-3 sheets on each side are bent and cannot be further processed (loss of 6 % of semi-products!). Paper piles are tipped over in the storage area. Papers are stored and transported on inappropriate devices or bend during transport.

### Actions taken in the Enterprise

- Storage area is improved by shelves etc.
- Wooden Boxes are used for the transport of semi-products.
- Cardboards are used as protection for the packaging.
- All workers are trained on the proper handling of paper throughout the production process.
- The measures were implemented immediately after the GHK workshop.

### Economic Benefits

The annual waste generation amounts to 300 t/ year, which equals 1.8 Mio. LE/ year. As parts of the paper is sold to recyclers 180 000 LE can be currently recovered, so that the costs for the waste paper is approx. 1.6 Mio. LE/ year or more than 5 300 L.E. per ton paper waste. The improved manual handling of paper results in a significant reduction damaged paper and hence a decrease of paper waste from 6.7 % to 5 % per year, i.e. a saving of approx. 76 t/ year. The total savings of paper costs amount to more than 405 000 L.E. per year. Since most of the paper is actually procured by the customers, the savings are realised partially directly by them. This means that Nubar itself does not have the full savings, but can make use of a competitive advantage.

Since the improved material handling means reducing also the damaged semi-products and final products, it also reduces the costs for all other input materials, including labour and machine running times. As highlighted above, these costs account for approx. 30-50% of the overall process costs per job, which means approx. 94 000 L.E. annually. These cost savings can be fully reaped by Nubar.

Investment Costs	0	
Annual Savings	405 000 LE	
	94 500 LE	Assuming 30% non-paper costs in final products, half of these costs for semi-products, and a waste allocation as follows: 25% in storage, 50% semi-products, 25% final products.
Annual Costs	Negligible	losses from less sale of recycling paper
Payback Period	Immediate	

1 LE = 0.1341 Euro (27.2.2007)

### Environmental Benefits

Paper is a material which is produced with high water and energy input: on average approx. 50 cubic meters of water and 4000 kWh of electricity and 2.5 tons of wood are required to produce one ton of virgin paper. A reduction of paper waste and correspondingly required input by 76 tons leads to a reduction of 190 tons of wood, 3'800 cubic meters of water and more than 300'000 kWh electricity which equals approx. 234 tons of the greenhouse gas carbon dioxide and more than 7 tons of sulphur dioxide which causes acid rain formation.

In addition, the waste is reduced, leading to less waste disposal requirements. Furthermore, the reduction of other production material and also of energy for the machines is a positive environmental effect from this measure.

### Organisational Benefits

After the information and discussion with the staff, the workers are more conscious about paper consumption and take more attention to the proper handling.

### Improvements in the Field of Health and Workplace Safety

There is no direct influence on the health of workers or workplace safety.

### For further Information

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