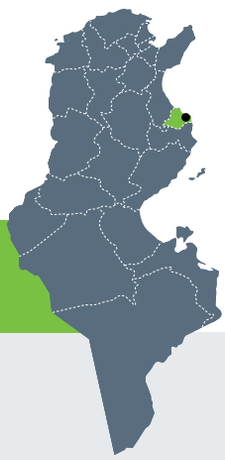
TCPP
TUNISIAN CLEANER PRODUCTION PROJECT

The Tunisian Cleaner Production Project (TCPP) is an initiative based on an approach laid by the United Nations Industrial Development Organization (UNIDO) with technical and financial support from Switzerland. The TCPP is co-financed by Switzerland's State Secretariat for Economic Affairs (SECO) and Tunis International Center for Environmental Technologies (CITET). CITET is in charge of its implementation with help from the Swiss environmental consulting firm, SOFIES.

With a budget of approximately 2.5 million €, the project is set to last 5 years (2010-2015). The TCPP's objective is to build national capacities in terms of environmental engineering tools, methods and technologies while strengthening the competitiveness of Tunisian companies.

The Finest Manufacturing (FIMA)

Moknine, Monastir



Case Study **Textile Sector**

Company Overview

Part of the DEMCO textile group, FIMA is in charge of dyeing, washing, bleaching, printing, and finishing jean clothing - primarily for kids.

The company does not yet possess a formal policy to deal with ecological concerns, but has expressed interest in preparing for upcoming energy audits.

FIMA is one of the 20 enterprises that integrated the first phase of the Project in order to improve environmental performance and productivity.

Source : F. Sciacca - Sofies

Benefits:
environment, competitiveness and capacity building

Experts identified several actions by which substantial economic and environmental gains can be made. Measures proposed can offer potential savings of up to 90,000 € per year with payback periods ranging from 4 months to 10 years.

First and foremost, installing meters for the purpose of exploiting consumption data can allow the company to properly gauge its production needs, reduce its water and electricity bills and start benchmarking in sight of eventual certifications.

In addition, several measures to improve the energy efficiency of production processes will significantly reduce the total energy bill and, therefore, CO_2 emissions of the company.

Lastly, managing to reuse more wastewater in the production cycle by ensuring its proper treatment can drastically reduce FIMA's water consumption and limit the quantity of daily effluents it produces.

Beyond the economic and environmental benefits, the proposed approaches allow the company to develop its know-how, integrating best practices into its workflow, gaining newfound resource autonomy as well as useful experience with efficiency raising procedures and technologies.

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Saving opportunities and environmental impacts

	Action	Savings (€/year)	Investment (€)	Payback Period	Resource savings and environmental impacts
1	Improving wastewater treatment plant**	72,700	~ 285,000	~ 4 years	Reduced water consumption and discharges.
2	Installing an automated accounting system**	1,300 - 2,600	To be determined	To be determined	Better resource management and consumption reduction.
3	Preheating feedwater via heat recovery**	4,300	To be determined	To be determined	Reduced gas consumption and thus CO_2 emissions.
4	Cutting energy loss of vapor production systems*	5,100	1,400	~ 3 months	Reduced gas consumption and thus CO_2 emissions.
5	Optimizing vapor production system	3,200	4,600	1.4 years	Reduced gas consumption and thus CO_2 emissions.

* Fully implemented ** Implementation initiated

Action 1

Supplementing the current processes of the treatment station with ultrafiltration and resin filtration steps aims to improve wastewater quality. This will allow FIMA to reuse it in production and save 500 m^3 of water per day.

Action 2

It is advised that an automated accounting system be synced with the installed meters in order to track intake and transform the information into easily digestible reports. Thanks to this system, the company can identify optimization measures that generally lead to savings of 2% of the total energy bill.

Action 3

The idea here is to recover thermal energy from wastewater dyeing machines to preheat feedwater. By installing a new heat exchanger and adapting the existing hot water system, the company will reduce by 5% its total consumption of steam, vector currently used for preheating and produced with gas.

Action 4

Fixing leaks and insulating boiler fronts, valves and conduits can cut costs by reducing losses in vapor distribution. Maximizing boiler efficiency with regular purges can also lead to important energy savings. Lastly, using the manufacturer's warranty to replace the economizer can save 5% in overall gas consumption and minimize the company's CO_2 emissions.

Action 5

Significant energy losses result from a non-optimized vapor heating system. Better calibrating temperature exchanges between hot vapor and water requiring heating can lead to significant savings. What's more, it is possible to set up a pressure cascade system by which 9 bar condensates can be revaporized at 4 bars and thus used to aliment the company's finishing processes such as ironing. This would reduce FIMA's vapor consumption by 3.8%, therefore diminishing gas use and CO_2 emissions.

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