

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.



## Möevenpick Hotel

Sousse, Sousse

### Case Study

### Hotel Sector

## Company Overview

The Möevenpick Resort officially opened in April 2010. It counts 400 employees, 628 rooms, 1200 beds and has an average turnover of 8 million €.

The hotel has drafted an environmental policy and is setting the foundations for ecologically responsible management practices (water, energy, and waste management as well as the use of best available technologies and green products).

The Möevenpick resort is part of a group of 20 enterprises that has integrated the first phase of the Project in order to further improve environmental performance and productivity.



Source : M. Fritsch - emac

## Benefits : environment, competitiveness and capacity building

The team of experts has identified several measures that primarily target the hotel's energy and water consumption while instilling best practices. If combined, the first three measures can save the company close to 75,000 € per year and have payback periods between 1.5 and 4.4 years.

The first measure deals with tracking consumption. Setting up a resource monitoring system has the potential to save 2% on water, gas and electricity bills while also helping minimize waste and fine-tuning performance levels over the long term.

Experts also proposed optimizing the hotel's air-conditioning system, which can reduce the annual electric bill by over 10,000 € and cut nearly 90 t of CO<sub>2</sub> emissions every year.

Installing an ozone sanitation system can improve pool water, reduce the hotel's water consumption (as well as the volume of wastewater discharge), and save over 50,000 € per year.

Finally, experts proposed the implementation of a improved waste management system as well as a cleaner production training program to build the hotel staff's capacities in terms of sustainable practices. What's more, recommended measures greatly helped the hotel to obtain the Green Globe certification.

## Saving opportunities and environmental impacts

|   | Action  | Savings (€/year) | Investment (€)   | Payback Period   | Resource savings and environmental impacts  |
|---|---|------------------|------------------|------------------|---|
| 1 | Installation of an energy and water monitoring system**                 | 12,160           | 53,100           | 4.4 years        | Reduced energy and water consumption (2%).  |
| 2 | Installation of ozone sanitation system**                               | 51,180           | 120,000          | 2.3 years        | Reduction in water (31,940 m <sup>3</sup> /year) and chemical consumption (2,930 kg/year).  |
| 3 | Improving air-conditioning system                                       | 11,100           | 17,140           | 1.5 years        | Reduction in electricity consumption and therefore CO <sub>2</sub> emissions.               |
| 4 | Setting up a waste management system*                                   | To be determined | To be determined | To be determined | Reduction in waste production and increase in quantity of materials recycled.               |
| 5 | Training program integrating Cleaner Production measures into workflow* | To be determined | To be determined | To be determined | Reduction in water/energy consumption and waste production, higher environmental awareness. |
| 6 | Installation of solar photovoltaic panels                               | 520              | 7,080***         | 12.4 years**     | Reduction in electrical consumption (14,793 kWh/year) and thus 4t CO <sub>2</sub> per year. |

\* Fully implemented \*\* Implementation planned \*\*\* Scenarios taking into account existing subventions and an annual 5% raise in energy prices

### Action 1

The installation of 25 water, 10 gas and 25 electricity meters allow constant monitoring of resources in a manner that can help the hotel identify leaks, losses, and the potential for process optimization. This could allow the hotel to cut its water and energy bills by 2%, for annual savings of more than 12,000 €.

### Action 2

Installing an ozone sanitation system will avoid the use of chemicals such as chlorine and bromine while diminishing water consumption for rinsing pool filters and wastewater discharge<sup>2</sup>. Ozone - a more effective disinfectant without irritant properties – will also improve pool water quality and filtration.

### Action 3

Energy savings can be achieved by optimizing the air-conditioning system. Measures include setting limits on the hotel's 628 thermostats, regulating the production of cold and its delivery in the rooms according to the demand, and using the cooling potential of outside air.

### Action 4

The hotel complemented its waste management strategy by introducing indicators, tracking waste flows, opting for minimalistic packaging made from recyclable materials, and outwardly communicating to suppliers its expectations as regards sustainability. The hotel should also invest in the proper infrastructure (recycling bins, trash compactors, labeling) and set up a waste management training program for its staff members.

### Action 5

The idea here is to harmonize the cleaner production measures with the Green Globe certification by training all personnel on best practices related to waste management, water and energy.

### Action 6

A pilot solar photovoltaic installation of 39.5 m<sup>2</sup> has a long payback period, but can bring benefits in terms of image and become more and more profitable with the raise of energy prices.