

As part of the SwitchMed programme, UNIDO supports industries in the Southern Mediterranean through the transfer of environmental sound technologies (MED TEST II) to become more resource efficient and to generate savings for improved competitiveness and environmental performance.

Algeria

Setifis Bottling Company (SBC)

Food and beverages sector

Context

Number of employees: 330

Key products: Carbonated, Non-Carbonated and Flavoured Beverages; Fruit Juice

Main markets: Local

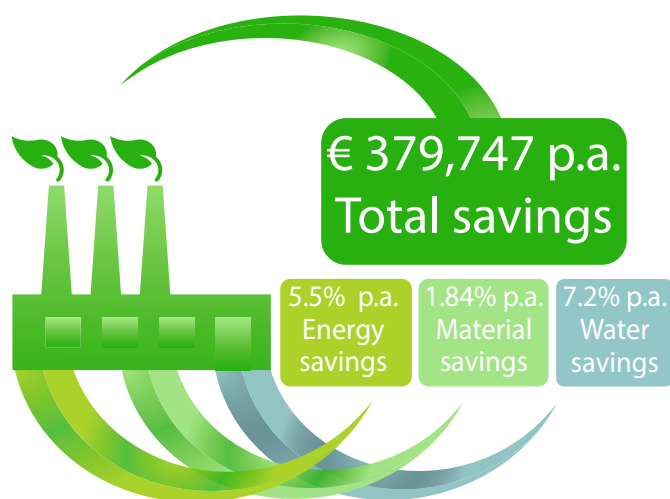
Management standards: ISO 9001/ ISO 14001/ OHSAS 18001/ ISO 22000 Certified and AIB International

Setifis Bottling Company (SBC), is a private Algerian company founded in 2000 and belongs to one of the most prestigious Algerian industrial groups with a capital of 1,000,000,000 DZD. It is located in the Sétif industrial zone where it develops and packages fruit juices, non-carbonated and carbonated beverages, packaged in PET bottles and cans. SBC markets a wide range of beverages that are present on the Algerian market through its three flagship products JUFRE; BONJOS and FARHA.

“We are a certified ISO 14001 2015 version company, and the TEST approach allowed us to improve our procedures for identifying significant environmental aspects, determining our objectives, and developing our management programs. We intend to continue our improvement efforts by setting up an energy management system in accordance with the ISO 50001 standard and to maintain the company’s commitment to the social responsibility (CSR) approach.”

Fouad Zaïr
Chief Management Systems Department

Benefits



Graphic: UNIDO

The MED TEST II project identified total annual savings worth 379,747 euros as a result of saving measures in raw material, water and energy consumption. The identified RECP measures require an overall investment of 727,273 euros giving an average return on investment of 1.9 years.

The payback periods for the identified measures vary between two months and 4.6 years. 53.3 % of the identified 15 measures were selected for implementation by the management while 40% of the measures were retained for further studies.

The identified RECP measures will save 1.84% on raw material costs, 5.5% on energy costs, and 7.2% on water expenditures.

The environmental gains will result in a 26.8% reduction in CO₂ emissions, a 16.5% reduction in solid waste generation, and a 42% reduction of wastewater. Encouraged by the results of the TEST project, the company plans to integrate the MFCA tool as complementary analysis tools into the company’s accounting system.

Saving opportunities¹

Action	Economic key figures			Resource savings & Environmental impacts per year		
	Investment euro	Savings euro / Yr.	PBP Yr.	Water & Materials	Energy MWh	Pollution reduction
Optimizing the consumption of electrical energy	35,124	20,500	1.7	-	1,469	Total: 2,993 t CO ₂
Raw material savings	65,620	128,990	0.5	285 m ³ water 129 t raw materials	-	24.6 t solid waste
Reduced waste of packaging materials	8,264	20,071	0.4	16.5 t raw materials	-	105 t DCO
Reduction, recycling and reuse of CO ₂	616,529	188,429	3.3	2,010 t raw materials	-	22,322 m ³ waste water
Water and chemical products savings	1,736	21,757	0.1	22,017 m ³ water 19.7 t raw materials	-	
TOTAL	€ 727,273	€ 379,747	1.9	2,175 t raw materials 22,302 m³ water	1,469 MWh	

¹ Numbers based on production value from 2016

Optimizing energy consumption

The elimination of compressed air leaks, the installation of variable speed drives for air compressors, and the reduction of their operating pressures, as well as the elimination of active energy consumption in peak hours by planning cleaning phases during these hours, allow an energy saving of 1,469 MWh annually or a reduction of 4.61% of the total energy consumption.

Raw material savings

To reduce the loss of materials, including juice concentrates and sugar, the company has initiated a series of measures, which are:

- the reinforcement of the preventive and curative maintenance of the filler;
- the recycling of the under-filled juice bottles;
- the improvement of the dimensional control of the particles of fruit at the origin of the clogging in the region of the filler;
- the automation of the transfer system from the syrup of the syrup room to the mixers and finally the improvement of the quality of the caps to prevent non-compliant bottle closures.

These measures result in savings of 121 t of raw materials, 8.09 t of packaging material and a reduction of pollution in waste water of 105 t, expressed in COD, or 42% of the total flow.

Reduced waste of packaging materials

To minimize wastage of preform PET, mainly during blowing operations, the following measures are implemented:

1. Preventive maintenance of blowtorch clamps and regular cleaning of the sensors;

2. Realization of a tempered storage area of the preforms to stabilize the inlet temperature of the preforms in the blowing machine;
3. Review, in consultation with suppliers, technical specifications and inspection procedures upon receipt of preforms. These measures make it possible to avoid 11.2% of waste.

Reduction, recycling and reuse of CO₂

Two important and innovative measures have been selected by SBC in order to reduce the CO₂ consumption. The first is to install a CO₂ recovery unit from the combustion gases of boilers. The recovered CO₂ is then treated to obtain food grade CO₂ that will be used in the carbonation of beverages. The second measure will install a food grade nitrogen generator that will be used in liquid sugar shoots to replace CO₂. These measures ensure total coverage of CO₂ needs and reduce annual GHG emissions by 2,010 t of CO₂, or 18% of the company's total emissions.

Water and chemical products savings

The main measures determined within this framework are:

1. 1 / The optimization of the CIP program according to the volume of production, the type of product, the temperature and concentration of solutions, laboratory controls and preventive measures;
2. The use of pressure washers (Kärcher type) as well as pressure guns at the tip of hoses and hose assemblies for various cleaning. These measures allow annual savings of water, chemical products (such as NaClO, NaOH, HNO₃, APA) and the volume of wastewater to be treated.

For more information, contact:



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