

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

Aquasim SPA

Food and beverages sector

Context

Number of employees:	400
Key products:	A range of mineral water products in glass packaging 25 cl and 100 cl and in PET with 50 cl, 100 cl, 200 cl and 500 cl capacity.
Main markets:	Local
Management standards:	In the process of setting up a food safety system in accordance with ISO 22000 standard

Aquasim SPA subsidiary of the SIM group since 2005, is mainly active in using the MOUZAIA sparkling mineral water source. This source is the only naturally gaseous mineral source in the region, it is located 45 km west of Algiers and has been operating since 1949. The company produces flavoured mineral water and sodas in glass and PET packaging. The total production of the Aquasim unit is 100,000 m³ annually.

“Conscious of the purity and therapeutic benefits of its naturally sparkling spring water, Aquasim is committed to protecting and managing resources to sustainably protect its water, from source to consumer.”

Yacine Kafi
General Manager

Benefits



Graphic: UNIDO

The implementation of the TEST approach within the Aquasim company has identified savings of 181,871 euros annually for a total investment of 301,428 euros. The average return time on investment for the identified RECP measures is on average 1.7 years.

The implementation rate of the 12 measures identified is currently 33%, based on a 71% retention rate. The resource savings is 0.06% in sugar consumption, 22.4% in water conservation, and on 5.6% reduction on the annual energy consumption.

In addition, the company invested in a new 6.5-litre mineral water production line. This investment, which saves 24,000 m³ of water annually, takes into account the recommendations made for the former existing line, i.e. there are no more loss of plugs and handles noticed at this stage of the process.

Similarly, the company has also embarked on a process of setting up a food safety system in accordance with the ISO 22000 standard and updating its environmental management 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
Increase capacity of the refrigeration unit for CO ₂ saturation	50,000	77,968	0.6	100 m ³ water 1.5 t raw materials	-	Total: 910 t CO ₂ 33,118 m ³ waste water
Optimizing NEP	-	9,417	immediate	7,500 m ³ water	-	
New process line, mineral water production of 6.5 litre	192,857	22,420	8.5	24,000 m ³ water	-	
Energy efficiency	58,571	72,066	0.8	1,518 m ³ water	2,265	
TOTAL	€ 301,428	€ 181,871	1.7	1.5 t raw materials 33,118 m³ water	2,265 MWh	

¹ Numbers based on production value from 2016

Increasing the capacity of the refrigeration unit for CO₂ saturation

During the process stage of preparation of syrup & carbonation on the flavoured water and juice production lines (glass and PET), there was noted a loss of sugar due to the non-saturation of CO₂. One of the main actions is to increase capacity of the refrigeration unit to avoid power cuts. This procedure saves 1.5 t of sugar annually and generates 77,968 euros savings per year.

Optimizing the NEP

This action consists of using industrial water for the NEP of the mineral water production line 6.5 litres except at the last stage, washing with spring water. The economic gain of this action rises to 9,417 euros annually without any investment and a spring water conservation of 7,500 m³ per year.

New 6.5 litres mineral water production line

In order to meet the strong demand of the 6.5 litre mineral water market, the Aquasim management has chosen to invest in a new production line to increase a part of the production capacity and to solve the leakage problems of the old line. The savings are 22,420 euros annually with a reduction in liquid waste estimated at 24,000 m³/h.

Energy efficiency

The main measures identified in the context of energy efficiency are: / Installation of compensation batteries / Integration of a third compressor of 40 bars in the sequencer / Improvement of the combustion efficiency of the steam boilers and distribution network of the steam. / Substitution of fuel boiler, gas oil through natural gas and installation of a heat saver. The total energy gain is 2,265 MWh corresponding with a reduction of 910 t of CO₂ annually and a gain in water consumption of 1,518 m³ per year.

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