

EL DAHOUARA

MINERAL WATER SECTOR

Sarl El Dahouara Eau Minerale
Dahouara, Souk Ahras, Algeria

- PET LINE for 16,000 bottles per hour:
- Smiform ECOBLOC® 8-42-8 HP VMAG integrated system
- Smiflexi SK 600F shrinkwrapper
- Smipack HA 60 handle applicator
- Smiline conveyor belts
- Smipal APS 3070 P palletizer
- inkjet, HP and LP compressor, inspection system, power distribution, labeller, turntable-based pallet wrapper



GEO LOCATION



Algeria is one of the largest food markets in North Africa.

The economic reforms initiated in this country in recent years are leading to the accelerated privatization of large public companies in this sector, setting the foundations for a strong growth in the years ahead.

The importance of the changes under way is confirmed by the increasing success of the "Djazagro" trade fair event, this year in its 13th edition, which is held every year in the city of Algiers.

For several years SMI has attended this event with its own stand, attracting many operators of the food and beverage sector, whether North-African bottling and packaging companies in search of latest generation bottling machines and technologies or manufacturers of same, in search of new business opportunities.

Besides the food sector, even the contiguous one, i.e. that of the



bottling of natural and carbonated beverages, is going through a phase of sustained growth in Algeria.

Among the most dynamic companies in the industry, Sarl El Dahouara Eau Minerale is the one that stands out.

This enterprise, headquartered in the town of Souk Ahras, has recently made a large investment by commissioning to SMI the design, construction and installation of a new production facility of 16,000 bottles per hour for the bottling and packaging of the Besbassa-branded natural water in 0.5 liter and 1.5 liter PET bottles.



ALGERIA

A RAPIDLY GROWING DYNAMIC MARKET

In the last decade, all Algerian companies operating in the bottled water industry have recorded significant growth rates, showing how the consumption of these products is booming and how these companies are increasingly attentive to the legislative, distributive, productive and economic aspects of their businesses. According to a market survey carried out by specialist firm Euromonitor

International, the per capita consumption of bottled water in Algeria rose from 48.4 liters in 2010 to 75.9 liters in 2014, with the expectation of attaining 120.6 liters per capita in 2018. This rapid growth is attributed mainly to the increased attention to health on behalf of 40 million Algerians, which inevitably leads to consuming more and more natural bottled mineral water through systems and

technologies that offer the highest level of product purity, safety and hygiene. As such, from the supply viewpoint, the investment in industrial high-tech systems is an obvious choice to expand market share and product range, offering increasingly conscious and demanding consumers products having higher and higher quality standards.



INSTALLATION / El Dahouara



In addition to this sector's "historical" companies, new operators keep showing up in the Algerian beverage market who are starting-up new production facilities, often from scratch, to seize the commercial opportunities offered by the current favorable situation and guarantee their future growth. Among the new leading lights in this sector you will find Sarl El Dahouara

Eau Minerale, which has decided to enter this business by purchasing the most sophisticated equipment available, to meet the demands of a booming market. The decision to collaborate with SMI was dictated by the expertise and experience that SMI can boast in the field of automatic bottling and packaging systems. After thorough analysis of this

Algerian company's business needs, SMI engineers developed some technical solutions able to satisfy both the present and future production requirements and marketing needs, thanks to the design of an original and captivating bottle for marketing the Besbassa water in the 0.5 and 1.5 liter PET formats.



Eau de source non gazeuse
Montagnes Dahouara source Ain Djemal

EL DAHOUARA EAU MINERALE INVESTS IN SMI ADVANCED TECHNOLOGY

The Besbassa mineral water, produced by El Dahouara, is bottled in 0.5 liter and 1.5 liter cylindrical PET containers by a Smiform stretch-blow moulding, filling and capping integrated system of the ECOBLOC® 8-42-8 HP VMAG series. The bottles are then conveyed to a rotary reel labeller and, subsequently, to a Smiflexi SK 600F shrinkwrapper that packages them in

film only packs. The 0.5 liter bottles are packaged in the 4x3 collation while the 1.5 liter ones in the 3x2 collation. Once shrink-wrapped in film only, the packs exiting from the packer are transferred to a Smipack HA 60 automatic handle applicator and then reach a Smipal APS 3070P automatic palletizing system. This system palletizes the packs on 1000x1200 mm pallets, inserting a

cardboard interlayer pad between one layer and another. All SMI machines are manufactured using high quality materials that ensure operational reliability and durability. The use of wear resistant components also reduces cleaning and maintenance, thus greatly reducing overall running costs. The Smiline conveyor belts, which handle all the 0.5 liter and 1.5 liter



From the left: Dief Allah Issam, El Dahouara Maintenance Engineer; Adel Rezqui, El Dahouara Technical Manager; Abdelkarim Mahiaoui, El Dahouara Technical Advisor; Charaf Rguibi, SMI Service Engineer; Hassani Abderahman, El Dahouara Automation Engineer.

loose containers and the finished packs, allow the production cycle to run smoothly and steadily, adjusting its flow to meet customer requirements.

The control of the entire line provided by SMI to Sarl El Dahouara Eau Minerale is entrusted to a latest generation automation system that, combined with the use of sophisticated sensors,

allows to maintain high levels of operating efficiency throughout the production cycle.





THE ADVANTAGES OF THE ECOBLOC® INTEGRATED SOLUTION

The Smiform ECOBLOC® integrated system offers numerous benefits to the end user. First of all, the stretch-blow moulding, filling and capping modules are combined into a single block within the machine's modular and compact structure, allowing the removal of the connecting conveyors, which are needed in traditional solutions to connect the blow moulder with the filling/capping monobloc. Similarly, the integration of multiple functions into a single system reduces electric power consumption thanks to a smaller number of motors, lowers the company's running and maintenance costs thanks to a reduced number of mechanical moving components and, finally, protects the environment thanks to the use of eco-friendly technologies.

In addition, ECOBLOC® systems are designed according to innovative criteria that favor ease of use and maintenance.

For example, the filling module is equipped with a "baseless" structure that houses the motors and transmission components in the upper part of the system, thus leaving the machine's base completely clear.

This technical choice ensures extreme ease of operator access to the filling carousel, maximum cleanliness in the area underneath the bottles, time-saving maintenance and reduced use of water when washing the system.

The ECOBLOC® system installed in the Sarl El Dahouara Eau Minerale plant is also equipped with the ARS Air Recovery System, which reduces up to 40% the consumption of high pressure compressed air used during the stretch-blow moulding process of the PET bottles, and up to 20% of the electrical energy necessary to run the machine.

The automation and control of the stretch-blow moulding, filling and



capping modules of the Smiform ECOBLOC® integrated system are governed by a single system that allows the management of the

equipment by only one line operator through a simple and user-friendly man-machine interface.



RELIABILITY AND PRECISION IN END OF LINE OPERATIONS

The project engineering study of Sarl El Dahouara Eau Minerale's new line paid special attention to the end of line packaging machines, i.e. a Smiflexi SK 600 F shrinkwrapper and a Smpal APS 3070 P automatic palletizing system.

Equipped with a simple dual inlet, the APS palletizer installed at the bottling plant in Souk Ahras is capable of managing 1000x1200 mm pallets, created by stacking packs of 6 or 12 bottles arriving from the automatic packer located upstream of the palletizer.

The dual inlet system, made up of two double rubber-coated cadencing



belts, groups the packs in the layer preparation zone and then palletizes them at the max speed of about 70 packs per minute.

Thanks to a roller belts system, the full pallets are then transferred to the automatic turntable system, which wraps them in wrap-around film.

“ the per capita consumption of bottled water in Algeria rose from 484 liters in 2010 to 75.9 liters in 2014 ”





The central column of the APS 3070 P palletizing system is run by brushless motors, which guarantee highly dynamic, reliable and accurate movements of the operating axes.

Automation and control rely on the PC-based system called MotorNet System®, configurable with Servos fieldbus and industrial Ethernet communication network.

The use of this technology within palletizing systems, characterized by repetitive movements, is synonymous with high reliability, reduced maintenance and low running costs.



INSTALLATION / Et Bahouara



“ high reliability, reduced maintenance and low running costs ”

SOUK AHRAS, WHERE HISTORY IS THE LEADING LIGHT

The name of the town of Souk Ahras derives from the Arabic word "souk", which means market, and from the Berber word "ahra", which means lion, referring to the lions that lived in the surrounding woods until their extinction in 1930; hence, Souk Ahras means "the lion market". This city, known in Roman times by the name of Tagaste, was for centuries the cultural and artistic center of ancient civilization, the remains of which are still partially visible today. The plains, rivers and mountains surrounding Souk Ahras form a

stronghold that features valuable evidence of over 500 years of Roman rule. A centuries-old olive tree would bear witness that Augustine of Hippo was born here on 13 November 354, the first theologian and father of the Catholic Church, bishop of the nearby city of Hippo (modern-day Annaba), where he died in 430 while Hippo was under siege by the Vandals, revered as a saint by the Christian Church since ancient times. The modern Souk Ahras, populated by about 150,000 inhabitants, developed especially in the twentieth century, following the start-up of a number of mining

companies and the construction of the railway that began in the middle of the eighteenth century after the French colonization of Algeria. The area surrounding the ancient Tagaste is rich in water sources. In fact, this city is located south-east of Annaba (ancient Hippo) in a basin surrounded by wooded mountains such as the Jebel Beni Salah or the Djbel Ouled Moumen and benefits both from the semi-humid climate brought from the nearby coast of the Mediterranean Sea, 80 km north of Souk Ahras, and from the semi-arid climate from the south, from the Sahara desert.

THE CITY OF ANNABA, THE ANCIENT HIPPO

Annaba, formerly Hippo, in Latin "Hippo Regius", is one of the major tourist attractions in the western Mediterranean thanks to its beautiful beaches, hotels and nightlife. This coastal city of 350,000 inhabitants, not far from the border with Tunisia, also boasts many places of religious interest as it had hosted, at the beginning of its history, an important and influential Christian diocese before the city was destroyed by the Vandals and the subsequent, massive Islamization in the seventh century. Ancient Hippo was founded

by the Phoenicians and later became a Roman colony. It is known mainly because Christianity took refuge here when Saint Augustine was bishop and also because it was an important Byzantine center until the arrival of the Arabs. Today, the monuments of the imperial age, the forum, the baths of Septimius Severus and the spas in the south, the theater and the remains of the urban and suburban villas are all an amazing witness to its glorious past.



ALGERIA AND THE MAGHREB

As easily understood by its assonance, Algeria is named after its capital Algiers, city founded by the Berbers on the ruins of a Roman city.

Algeria is located within a vast region of North Africa known by the name of Maghreb (in Arabic "al-Maghrib", meaning "place of the sunset" because it is situated in the westernmost part of the Arab countries), with which one indicates the westernmost area of North Africa that overlooks the Mediterranean Sea and the Atlantic Ocean.

Two systems converge in this vast region, made up of reliefs and folds and formed in two different phases of the Alpine orogeny: the Tell Atlas (mountain range located primarily in northern Algeria but extending for a short distance also in western Tunisia) and the Saharan Atlas; plains and fertile highlands, rich in flora and fauna, reach within these two giant natural barriers.

The Maghreb includes the coast of Morocco, Algeria and Tunisia and today is the African continent's area of greatest economic development.

Note that the aforesaid Arabic expression "al-Maghrib" is the proper name of the State of Morocco.

The Maghreb economy is relatively prosperous, also thanks to dense commercial relations with the European Union. Among the main resources of the North African states in this area, in addition to agriculture, industry and mining, is its tourism, which is a very important sector for the economy of Morocco and Tunisia.



THE WORD TO THE CUSTOMER

Interview with Tayeb Djebbar,
Owner of Sarl El Dahouara Eau Minerale



What are the factors that led Sarl El Dahouara Eau Minerale to invest in the new production line supplied by SMI?

"Since our company was faced with a rapidly expanding market, which offers excellent opportunities for the marketing of bottled mineral water, we decided to invest in the new 16,000 bottles per hour bottling line provided by SMI.

This plant is dedicated to the packaging of the Besbassa-branded

mineral water, a spring water of excellent quality and increasingly appreciated by the market.

As our company could not remain motionless in the face of the growing market demand, it built a modern and efficient bottling plant, able to cover the current and future needs of this sector".

What are the strengths of your company?

"Sarl Dahouara Eau Minerale is a young enterprise, recently established to meet the growing market demand for bottled water.

Our strengths are the excellent quality of the water we produce, the entrepreneurial spirit that drives the company, leading it to continuous investment in new technologies, and our internal organization that pursues ongoing improvement of the production processes".

What are you asking your bottling and packaging machine suppliers in terms of flexibility, innovation and efficiency?

"Companies working with Sarl Dahouara must ensure maximum efficiency of our production facilities, both during their daily operation and, above all, in case failures or malfunctions occur, events that must be promptly solved through a technical after-sales service which we expect to be efficient and able to intervene rapidly".

How do you see the future of the beverage market in Algeria?

"The beverage market in Algeria has been growing strongly for several years and we think this will continue for a relatively long time thanks to the abundance of water sources in the Algerian territory and the improved economic conditions of local consumers.

A considerable contribution to the increase in the consumption of bottled water and related products will come not only from the restaurant industry, also developing strongly, but also from the Algerian population's greater attention to health and personal well-being".

