

MALÉ WATER



There aren't many places that evoke the image of paradise on earth in each of us.

The Maldives is surely one of them, especially the natural beauty of its landscapes, the beautiful white sandy beaches and spectacular coral sea.

The Maldives, an archipelago of 1,200 coral islands in the Indian Ocean, combine the experience of a dream vacation with breathtaking views and offer everything you need for a truly relaxing stay.

However, behind this "postcard" image, the Maldives conceal lesser known aspects, though equally important, for the economic development of this paradise on earth which attracts more than 10,000 tourists every week.

The Malé Water & Sewerage Company Pvt. Ltd. (MWSC) is an example of a hidden resource.

Founded in 1995, with the main goal of solving the growing water needs of its capital city, Malé, MWSC is now a leading light in the local economy.

What aided the rapid success of this company was the substantial and continued investment in advanced technologies, the implementation of its facilities' scheduled maintenance plans and the professional growth of the company staff.

Such a mix of resources allowed the Malé Water company to respond quickly and effectively to market demands in terms of quantity and quality of the product offered, demands that can be met even better thanks to the new complete 14,000 bph line, provided by SMI and recently installed in Malé for the bottling in PET containers of the Maldivian company's mineral water branded TaZa.

WATER SECTOR

Malé Water and Sewerage Company Pvt. Ltd.
Malé, Maldives
Group: Sewerage Company

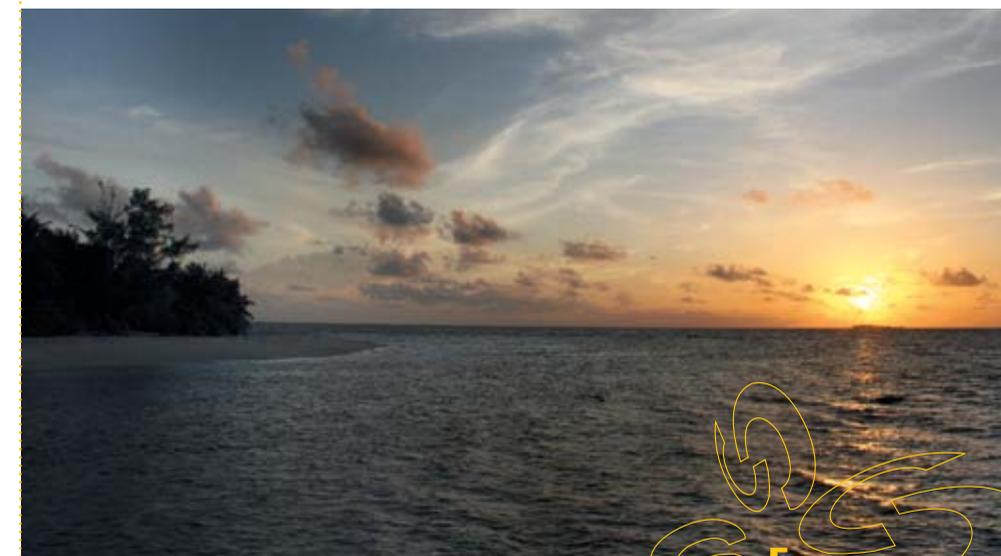
- 14,000 BPH PET LINE:
- Smiform ECOBLOC® 8-36-8 VMAG integrated system
- Rotative labeller
- Smiflexi LSK 25 F shrinkwrapper
- Smiflexi LWP 30 casepacker
- Conveyors Smiline & subsupplies
- Smipal APS 1035 P palletizer



VIDEO



GEO LOCATION





smi
now

MALÉ WATER

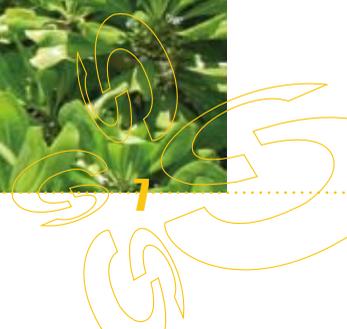
ENVIRONMENTALLY FRIENDLY MODERN TECHNOLOGIES

Nature directly affects all activities of Maldivian life, which revolves around the protection of its beauties to preserve the magic of the ecosystem of these beautiful islands.

The environmental protection issue holds great importance also within the industries located in the Maldives, among which MWSC is one of the main ones.

Hence, the adoption of cutting-edge manufacturing technologies, such as the machines that make up the bottling line recently provided by SMI, is one of the cornerstones of Malé Water's corporate social responsibility. Smiform's ECOBLOC® 8-36-8 VMAG integrated system installed at the mineral water factory of Malé is the heart of the new production line conceived, designed and implemented

by SMI to bottle up to 14,000 bottles per hour automatically. This is a state-of-the-art plant that makes use of compact machines and newly developed technical solutions to significantly reduce the production costs of every single still water bottle that leaves the factory and safeguard the integrity of the surrounding environment.



“ The environmental protection issue holds great importance also within the industries located in the Maldives ”



MWSC's new production line features very compact dimensions compared to traditional bottling plants, thanks to the fact that the ECOBLOC® integrated system brings together in a single machine the stretch-blow moulding, filling and capping functions for the 0.5-liter PET bottles.

This solution also allows reducing the purchasing, management and maintenance costs of the machines up to 20%.

Even the consumption of the water used to clean the system is reduced by 90% thanks to the "baseless" technology applied to the filler.

This solution offers the great advantage of leaving the machine's base (where dirt and waste from the production process usually build up) devoid of components and mechanical moving parts, making it easier to restore, carry out maintenance and clean that area.

Energy consumption can be significantly reduced thanks to the ARS (Air Recovery System) mounted on the stretch-blow moulding module, and also to less wear and tear of mechanical components, the use of more durable materials and high energy efficiency motors on the line's conveyor belts.

The Air Recovery System, available as accessory equipment, consists in two exhaust valves installed on every single stretch-blow moulding station; the first valve lets air into the system's recovery tank while the second discharges air that cannot be recycled.

This eco-friendly technology allows both the reduction of energy costs by as much as 20% and high-pressure compressed air consumption up to 40% compared to systems not equipped with such technology.

In fact, part of the air of the stretch-blow moulding circuit is recovered and

reused to feed the pre-blowing circuit at low pressure and the machine's service circuit.

The working pressure of the pre-blowing circuit is controlled by an electronic regulator while that of the service circuit is regulated by manual reducers.

If the pre-blowing or service circuit does not exploit all the air obtained through the recovery system, the latter can also be used to feed the low-pressure line of machine's external utilities.



VERSATILE AND COMPACT END OF LINE

SMI has paid special attention in designing the plant in Malé, implementing innovative solutions and choosing only latest generation machinery.

The secondary packaging is performed by a Smiflexi LSK 25F shrinkwrapper and an LWP 30 wrap-around case packer, which package Taza water's 0.33-liter, 0.5-liter and 1.5-liter PET bottles coming from the ECOBLOC® integrated system, alternately in shrink film only or in wrap-around cardboard boxes.

The decision to install two separate secondary packaging machines meets Malé Water & Sewerage Company's needs to have a comprehensive packaging line that is both reliable and flexible, which can easily adapt its production to changing market needs.

The LSK 25F shrinkwrapper packages the 0.5 and 0.33-liter PET bottles in the 6x4 collation in film only and the 1.5-liter bottle in the 4x3 collation in film only, while the LWP 30 case packer packages the 2 smaller bottles in 24-piece cardboard boxes in the 4x6 collation and the 1.5-liter bottle in the 3x4 collation.

The foregoing packages are then conveyed by Smiline belts to the inlet of the Smipal APS 1035 P automatic palletizing system, which stacks them on 1000x1200 mm pallets.

The automatic palletizer installed in the MWSC facility is a single-column system with two Cartesian axes, where the vertical axis consists of a fixed column on which the horizontal beam slides on guides with recirculating balls; instead, the horizontal work axis consists of the

beam on which the gripper slides also on guides with recirculating balls.

Packs arriving on the single-lane infeed belt (located at operator height) are grouped in the row pre-composition area and are arranged in one line, oriented in the same direction (all are fed either on the long side or the short side), therefore creating the palletizing row.

The row thus formed is picked up by the gripper that, with fast and precise movements, places it on the pallet in the desired point; the sequential repetition of this operation allows you to form a complete layer in a very simple way.

The middle column of the Smipal palletizers is driven by brushless motors which ensure precise and smooth movements in all the machine's operating axes, while system automation and control are performed by the PC-based MotorNet System®, which runs on Sercos fieldbus and "industrial Ethernet" communication protocol.

The use of this technology in the field of palletizing systems, characterized by repetitive actions, is synonymous with high reliability, less maintenance and low operating costs.

In addition, system management is facilitated by a simple and user-friendly human-machine interface panel, with advanced 3D graphics, touch-sensitive screen and a wide range of diagnostics and technical support in real time.

The APS 1035 P system installed by SMI in the Malé Water bottling facility is equipped with a pads magazine and a pad-inserter for inserting flat cardboard inter-pads between the layers of the plastic pallet.



THE MALDIVES BETWEEN PAST AND PRESENT

“ Malé is one of the smallest cities in the world since it was built on an island of only 2 Km² ”

SMI ASIA SERVICES SDN BHD



SMI is constantly committed to ensuring its Asian customers fast and efficient local support, able to respond adequately to the specific demands of a rapidly evolving market. This commitment led SMI, in 2012, to the decision of setting up the SMI Asia Services Sdn Bhd company, based in Kuala Lumpur, Malaysia. The Malaysian branch of the SMI Group is located between the port of Kuala Lumpur (Port Klang) and the city center, and occupies a two-story building housing a warehouse of 700 m² and commercial/administrative offices covering an area of 300 m². In Malaysia, SMI Asia Services directly employs a team of 16 people, including 8 technicians in charge of the after-sales service, and manages others who work in the neighboring states of the Philippines, India and Indonesia. The new facility in Kuala Lumpur was founded to meet the goal of improving the technical-sales service offered to the many existing customers in Southeast Asia (who own a total of over 300 SMI packaging machines) as well as the potential ones. The countries covered by the Malaysian branch of the SMI Group are: Malaysia, Indonesia, Singapore, Thailand, Myanmar, Cambodia, Laos, Vietnam, Philippines, India, Bangladesh, Sri Lanka and Maldives. The capillary network of motorways and airports makes Kuala Lumpur a hub for the communications and logistics of the whole Indo-Chinese area and allows SMI Asia Services to carry out technical assistance and the supply of spare parts promptly and efficiently. The professionalism and helpfulness of the staff of the SMI Group Asian branch are an important resource for the quality of service offered to the customers in the area, who can speak with the SMI team in English, Indonesian, Malay, Mandarin Chinese, Italian and Tamil.

The origins of the Maldivian Islands are lost in time. All archeological findings in the Maldives date back to periods after 1500 BC. It is argued that the archipelago was uninhabited before then. The current population (about 350,000 inhabitants) descended from the peoples of the Buddhist religion who migrated from southern India and Sri Lanka around the fourth and fifth centuries. When the Arabs began to frequently travel the trade routes to south-east Asia, the Maldives became an important stopover. Arab traders exerted a strong cultural influence on the local population which gradually converted to Islam in the eleventh century. In 1153 the Maldives became a sultanate. In the sixteenth century, European powers began to threaten these islands; the first to conquer the archipelago were the Portuguese, who created a settlement in 1558. However, they were driven out in 1573 by the indigenous people of Devehi led by Muhammad Thakurufar Al-Azam. The sultanate then remained independent until 1887, the year in which it was declared a British protectorate. The independence from the United Kingdom was ratified on 26 July 1965 and in 1968 the sultanate became a Presidential Republic. Malé, the capital of the Maldives, is one of the smallest cities in the world since it was built on an island of only 2 Km². The term Malé is derived from the Sanskrit "Maaliu", which means "big island" or "main island"; in the past, the city was called "Mahal" or "island

of the palace" as it was the center of power that ruled the Maldives. Unlike all the other islands of the archipelago, famous throughout the world for their long white beaches and pristine turquoise sea, Malé is characterized by a highly urbanized city center with paved roads and tall buildings, home to government offices and trade companies. In the old bazaar area, center of wholesale and retail trade, the alleys are so narrow that a vehicle might not even pass. Space available to citizens has now reached the least bearable, to the point that a new island was built from scratch, Hulhumalé, by reclaiming the reef of the Hulhulé islet that houses the city's international airport. This islet, renamed "Ibrahim Nasir International Airport" in 2011 in



THE ADVANTAGES OF SMI'S "LINE ENGINEERING" SOLUTION

The solution of the complete line installed at MWSC in the Maldives consists in a system created ad hoc, able to fully satisfy the technical and economic expectations expressed by the customer to SMI's engineers in the preliminary stages of the new project.

After careful analysis of Malé Water's needs, the experts of SMI's System Engineering Dept. submitted a proposal to the Maldivian company tailored to the parameters formulated by the company for the new production facility in Malé, in particular the aspects related to management simplicity and cost-efficiency, system compactness and relating low maintenance.

For these reasons, the line engineering solution proposed by SMI envisages integrating systems, which manage and control the plant, into a few logical touch-screen units to

allow the management of the entire bottling line by only a few operators. Thanks to this compact configuration, which features greater physical proximity between the individual machines, it was also possible to centralize the storage of all the raw materials needed to make up for the plant's daily output, with the great advantage of simplifying and speeding up their supply.

In fact, the area in which the preforms, caps, labels and other raw materials are loaded and the area where the finished products are unloaded have been positioned on the same side of the line.

Now, only one area is needed to handle pallets, raw materials, packs, etc. and the transit of vehicles used for these logistics operations, with the added advantage of making the entire production process smoother and more continuous.



INSTALLATION / Malé Water

Interview

THE WORD TO THE CUSTOMER

Interview with Ahmed Mujthaba, Engineering Manager of Malé Water & Sewerage Company (MWSC)



The mission of Malé Water & Sewerage Company (MWSC) is to offer a wide range of reliable, environmentally-sustainable water services, respectful of the surroundings. Could you explain how you pursue these objectives on a daily basis?

"For over 15 years MWSC has been providing water services of the highest quality, the result of the company's efficient management, high level of professionalism and responsibility of all the people who work there; other factors equally important in the pursuit of our mission are the constant introduction of advanced technologies in the production processes and the implementation of scheduled maintenance programs for the systems, together with the growth of the individual skills of the entire company staff thanks to the many in-house training programs".

Malé Water & Sewerage Company has recently invested in a new line for bottling TaZa still water in PET bottles provided by SMI. What are you asking your bottling and packaging machine suppliers in terms of efficiency, flexibility and innovation?

From the left:

Khamar Shahimi, SMI Asia's Service Manager; Abdulla Nazih, Project Development Manager of MWSC; Davide Danna, SMI Asia's Managing Director; Ahmed Mujthaba, Engineering Manager of MWSC and Mircea Vrednicu, SMI's Service Area Manager.

"MWSC is an industry leader in the bottling of mineral water and, as such, wants to provide its consumers with a high quality product at a competitive price.

To achieve this goal, the new bottling line must be able to operate at maximum performance for long periods of time, minimizing downtime for repairs and maintenance.

The technological innovations available in the bottling system that SMI supplied to us ensure optimal management both of the raw materials and the production cycle and, therefore, a satisfactory level of profitability of operations".



What are the factors that have led Malé Water to expand its facilities by choosing SMI technology?

"The need to increase our production capacity is derived both from changes in the lifestyle of the local people, who



increasingly favor the consumption of bottled drinks, and the strong demand generated by the international tourism the Maldivian Islands attract.

These factors offer great opportunities for development for the bottled water market and Malé Water wants to be ready to play a leading role in the years to come.

Therefore, MWSC chose to upgrade its production facilities by installing a new fully automated bottling line, choosing SMI, one of the leading manufacturers in the bottling & packaging machine market sector, as the supplier of the entire system.

In particular, we enjoyed the benefits of the technology used in Smiform's ECOBLOC® integrated system, which allows us to group together in a single machine all the primary packaging functions and manage them easily and efficiently thanks to a user-friendly HMI".

Which should be the role of MWSC's ideal supplier during the process



of strong growth that you are experiencing?

"Malé Water's ideal supplier must ensure high efficiency of the systems provided and an impeccable after-sales service, with special attention to the easy availability of parts and on-line assistance; in addition, it is important that our trusted suppliers enable us to maximize our production facilities for many years, thanks to technical training programs which keep them updated with the technological developments in this sector".

Malé Water & Sewerage Company contributes to the ongoing development of the Maldivian society, improving the quality of life of local populations through the provision of water services of the highest quality. How important is the eco-friendliness of the products offered by your trusted suppliers for your business?

"As said before, MWSC is one of the leading companies in the Maldives and, therefore, the use of environmentally friendly technologies fall within our social responsibility.



In order to respect this essential principle, Malé Water asked SMI to provide a bottling line designed especially focusing on environmental compatibility and energy efficiency.

SMI has fully centered this target by implementing a number of innovative solutions on its own machines such as, for example, the compressed air recovery system mounted on the Smiform stretch-blow moulder, which allows to recover a portion of high-pressure compressed air and, therefore, consume less electric energy in the PET bottle production process.

Choosing eco-friendly production systems is one of the company's footholds of our company's expansion program, which fully embraces the goal of the Maldives to become a "carbon-free" country by 2020".

How important is it for Malé Water for SMI to be present with a branch in Asia?

"As our company is based in the Maldives, in the middle of the Indian Ocean, it is clearly very important to be able to count on the support of a SMI representation in Asia that is able to respond more quickly to our needs, especially as concerns the supply of spare parts, than what the SMI headquarters in Italy would be able to.

In fact, the time difference between Europe and Asia can make communication difficult during emergencies, so being able to have a direct service in Asia greatly simplifies this type of problem. A big plus for Malé Water".

