



■ Located in Mojo de' Calvi (Orobic Alps), 50 km north of Bergamo, amid rocky peaks, lush forests and clean air, is a plant at the cutting-edge of technology established from a collaboration between SMI and the local "Stella Alpina" spring. Both companies' "DNA" is made up of a strong commitment to innovation and respect for the environment, hence the idea to devise, also in collaboration with the companies SIAD and P.E., a new production line which would use more

advanced technological solutions to significantly lower the costs of production for every single bottle of still or sparkling water and would respect the surrounding environment, allowing maximum product traceability thanks to laser marking.



SACS project:

the compact line which makes savings and respects the environment.

■ The new "SACS" ("Stella Alpina Cost Saving") line was devised, designed and created by SMI - over a surface area of just 800m² - to produce up to 14,400 bottles per hour in a more efficient and economical way compared to the pre-existing bottling plant at that spring.

The project "master plan" includes the following objectives:

» **up to a 30% reduction in primary packaging material**, that is, the plastic used to produce PET bottles.

SMI achieved this objective by designing two new "ultra-light" containers, one for 0.5L and the other for 1.5L, obtained by stretch-blow moulding preforms of 11g and 23g respectively, both with Alaska267 thread (previously, Stella Alpina used 15-16g preforms for 0.5L bottles and 30-31g preforms for 1.5L bottles). The particularly attractive design of the bottle was designed to allow for ergonomic handling of the container, improving its intrinsic properties in terms of solidity and manageability, encouraging its use even outside the house.

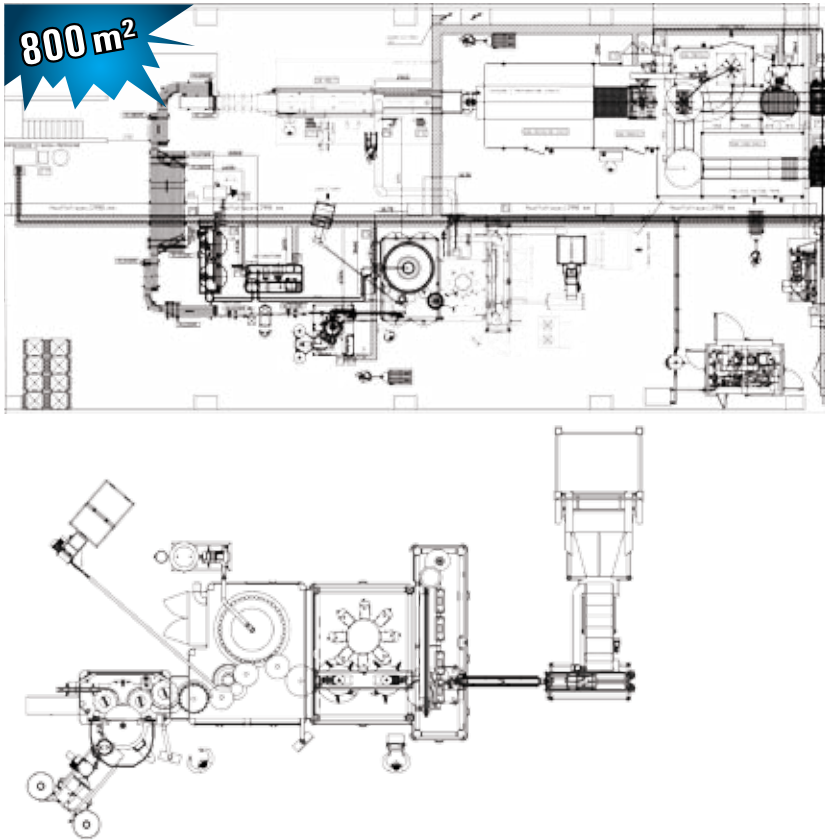
The SACS project includes the use of a new generation PE. labeller based upon "Adhesleeve" technology which allows for pre-glued labels to be applied without having to use hot glue;



» **up to a 50% reduction in secondary packaging material**; SMI achieved this objective by equipping its own shrinkwrapper with a new knife with a motorised blade controlled by digital servo-drivers, which allows for the use of shrink film with a thickness less than 30 micron (as against the 50 - 60 micron previously



SACS PROJECT



used by Stella Alpina) for the 3x2 format of 0.5L bottles;

» **up to a 20% reduction in the purchase, running and maintenance costs** of the machines on the bottling and packaging line. More specifically, SMI's designers focused upon creating a very compact system, made up essentially of just two blocks: the unit for primary packaging and another for secondary packaging. The former is made up of a system of stretch-blow moulding, filling / capping

and labelling, known as ECOBLOC® PLUS, which combines in a single machine the aforementioned functions and allows, therefore, for the complete cycle of primary packaging to be managed by a single system, from the preform to the filled, capped and labelled bottle. Also, in the ECOBLOC® PLUS system, bottle movement occurs through direct star-star transfer, allowing for significant savings in terms of initial investment, maintenance costs and energy consumption.

The secondary packaging unit, designed by SMI from scratch, is an innovative shrink film packaging system which includes thrust integration between the shrinkwrapper and the palletiser; this solution has allowed for the area occupied by the end of line machines to be contained and involves a drastic reduction in connecting conveyors between the shrinkwrapper and palletiser;





» **up to a 90% reduction in water** used for cleaning the plant, thanks to the fact that the “baseless” technology applied to the filler allows for the base of the machines to be “freed” from moving components and mechanical parts, where dirt and waste from the production process usually accumulates;

» **up to a 15% reduction in energy consumption** of the whole production line; this objective was achieved by SMI thanks to:

- SIAD “oil free” high pressure compressor integrated into the blow moulding system;
- ARS air recovery system, assembled as standard on

the blow moulder, which allows for up to a 40% reduction in consumption of high pressure compressed air;

- recovery of heat from the blow moulder and air compression systems, partly used for pre-heating the preforms and partly discharged to the shrinking oven in the end of line shrinkwrapper;
- use of lighter preforms (11g for 0.5L bottles and 23g for 1.5L bottles) and thinner shrink films (less than 30 micron) which require less heat during the stretch blow-moulding and shrinking processes and therefore allow for a significant reduction in the electrical energy required

- to heat the blow moulder and shrinkwrapper ovens;
- less wear on the components, thanks to the reduction in moving parts and the use of more resistant materials;
- use of high energy efficiency motors on the conveyors.

» **up to a 50% reduction in CO2 emissions**, thanks to a reduction in energy consumption throughout the whole plant deriving from the use of machines with high energy efficiency, the lightening of the primary and secondary packaging and the future use of "green" polymers.



▪ ECOBLOC® PLUS - The ideal solution for producing up to 36,000 bph.

Smiform's ECOBLOC® PLUS, created in collaboration with PE. Labellers, is a modular system which combines, in a single machine, the functions of stretch-blow moulding, filling/capping and labelling, intended for PET bottling plants for up to 36,000 bottles per hour.

The integration between a rotary blow moulder, an electronic filler/capping machine and an "adhesleeve" labeller allows for a significant reduction in the bulk of the system, thanks to the transfer of the bottles from one area to another directly, by synchronising the outlet and inlet stars on the various modules.

In addition, the integration in one single block of the shrinkwrapper - with handle applicators incorporated - and the palletiser system allows for the end of line machines to be significantly compacted and for the packaged packet conveyors to be removed.

Smiform's ECOBLOC® PLUS systems are suited for bottling still and sparkling soft drinks, oil and milk, in containers from 0.2 to 3 litres, whose traceability in the phases of production, distribution and consumption is guaranteed by a newly-designed laser marking system.



The machine integration, the reduction in moving parts, the system's centralised automation and the use of materials which are lighter than conventional materials allow for production efficiency to be improved, for purchasing, running and maintenance costs to be contained, and for savings to be made on packaging and energy consumption.

Smiform's ECOBLOC® systems stand out for their compactness and the absence of hot glue during the labelling phase ("Adhesleeve" technology by PE.), which ensures high levels of hygiene, ease of cleaning and maintenance of the various sections of the machine, thereby limiting the possibilities of contaminating the containers.