

**→ WATER SECTOR**

AQUA GEO LTD  
Misaktsieli, Georgia

**→ KOBİ CARBONATED WATER PLANT**

- PET line including ECOBLOC 6-48-8 LG VMAG, LSK 40F ERGON shrink packer, conveyors, labeller and various sub-supplies
- Glass line including ENOBERG ELC18-18-6 BA monobloc, LSK 30T ERGON shrink wrapper, conveyors and various sub-supplies

**→ SNO NATURAL WATER PLANT**

- End of line secondary and tertiary packing of bottles in PET comprising CSK 50F ERGON shrink wrapper, conveyors, APS 1550P ERGON palettiser and sub-supplies
- End of line tertiary packaging of bottles in PET comprising conveyors, APS 1550P ERGON palettiser and sub-supplies



GEO LOCATION

# AQUA GEO

# THE COUNTRY OF THE FIVE TOASTS. AT LEAST!

**IN GEORGIA, IN THE HEART OF THE CAUCASUS, YOU TOAST WITH "KOBI" AND "SNO" WATERS, PRODUCED BY THE AQUA GEO COMPANY IN MODERN, FULLY AUTOMATED, BOTTLING AND PACKAGING SYSTEMS FOR GLASS AND PET BOTTLES SUPPLIED BY SMI THROUGH COLLABORATION THAT BEGAN IN 2011.**

**I**n the heart of the Caucasus region, Georgia is one of the richest nations in mineral and thermal waters, even if its large-scale marketing is a fairly recent activity, entrusted to leading companies such as Aqua Geo. In this state of the former USSR, on the border between Europe and Asia, squeezed between the



mountains of the Caucasus and the Black Sea, one is struck by the richness of the waterways and the fertility of the land, which is almost entirely cultivated, with the exception of the highest peaks in the Svaneti region, which reach up to 5,000 meters above sea level. Not surprisingly, the name "Georgia" derives from the Greek term "georg", used to indicate agriculture. Georgia has an ancient history for the cultivation of vines and the production of wine, as evidenced by the archaeological finds of the oldest winery in the world with some traces dating up to 8000 years ago. In the last decade, however, the Georgian economy has come on in leaps and bounds, moving from an almost exclusive dependence on wine production to a diversification into new sectors, such as the production of beverages and carbonated waters. Thanks to considerable investments made by the "food & beverage" companies, Georgia today boasts excellent production of lemonade and beer, while the mineral water sector is constantly expanding. This phenomenon requires the

use of increasingly advanced bottling and packaging technologies, such as those used by the company Aqua Geo Ltd in its carbonated water production plants under the "Kobi" brand and natural water under the "SNO" brand. To automate the bottling and packaging process, the Georgian company turned to SMI for the supply of numerous turnkey plants, which include a line for PET bottles and one for glass bottles in the Kobi plant and two end-of-lines for the secondary and tertiary packaging of SNO natural water at the Misaktsieli plant, near the village of Natakhvari, a few kilometers from the capital Tbilisi.



# KOBI AND SNO, THE TWO LEADING BRANDS IN THE SECTOR

The two brands of mineral water marketed by Aqua Geo, SNO and Kobi, owe their name to the geographical position of the two springs from which the product flows. The carbonated water Kobi, originates in the vicinity of the village with the same name, while SNO water has a more particular history: since the foundation of the Aqua Geo company took place under the auspices of the Georgian Orthodox Church, it was decided to call the natural water produced from it, with the name of the village, SNO in fact, is where the Patriarch of this religious confession, one of the oldest in Christianity, was born. While the production of SNO has been in operation for a decade or so, the Kobi plant is a recent project, officially launched in 2018. The journey between the springs of Kobi and SNO, winds through the inexhaustible beauty of the Caucasian valleys, with astounding views, gigantic mountains, deep gorges, rushing rivers, cities carved into the rock and hidden medieval villages, now a UNESCO World Heritage Site. The surroundings of the village of Kobi are picturesque places; as well as the beauty of nature, one is fascinated by the presence of a large number of historical and cultural testimonies, mostly dating back to the period in which Georgia was part of the Russian Empire. To get to the Kobi plant, take the Georgian military road (\*), which is near the famous ski resort of Gudauri.



## ➔ (\*) GEORGIAN MILITARY ROAD

The Georgian Military Road is one of the communication routes that has lit the imagination and curiosity of numerous writers and travelers. This "road" through the Caucasus Mountains existed before the birth of Christ, but was elevated to the rank of a military road - and therefore equipped to allow the passage of horse-drawn chariots - only in 1783, when King Heraclius II signed the agreement that made Georgia a Russian protectorate. The construction of the road officially ended in 1817, however, in reality, the work continued until 1863. 200 kilometers long, it follows an enchanting and winding path through the Caucasus mountains and connects the Georgian capital Tbilisi to the Russian city of Vladikavkaz, located in the north not far from the border between the two countries.

## ➔ WHILE THE PRODUCTION OF SNO HAS BEEN IN OPERATION FOR A DECADE OR SO, THE KOBI PLANT IS A RECENT PROJECT, OFFICIALLY LAUNCHED IN 2018



# PURITY AND QUALITY PRESERVED BY TECHNOLOGY

The Kobi spring is located at 2000 meters above sea level in the Caucasus mountains, in the Kazbegi district. In Georgia there are hundreds of natural sources, but Kobi water is characterized by its unique taste and minerals and by a healthy, quality, microbiological composition; this water also has a low level of sodium and contains a large amount of calcium. The carbonation process to which the natural product is subjected, makes this water even more pleasant, making it take on a taste similar to that of the most famous European sparkling waters. The source of Kobi, located at the foot of the mountain, on the right bank of the Terek River, is immediately striking for the lack of pipelines above the surface. The state of Georgia has, in fact, very strict environmental regulations, which do not allow the ecosystem to be ruined; for these reasons the Aqua Geo Ltd. Company, had to create a highly technological system that did not damage the natural course of the spring water, while fully respecting the surrounding environment and the quality of the product.

The Kobi mineral water plant, for the bottling and packaging of glass and PET bottles, is equipped with modern fully automated lines, supplied by the best European producers, which use state-of-the-art technologies to guarantee absolute protection of the quality of the natural product. The water is drawn from wells located near the production area and isolated from the ground surface by 4 impermeable layers, which naturally protect the quality of the water from any type of contamination; from here the water is immediately transferred to the bottling plant through stainless steel pipes, without being stored in tanks.



This process allows the quality and purity of the product to be preserved intact, as certified by the main local and European analysis laboratories.



## → ABOUT AQUA GEO

Aqua Geo defines itself as a 100% Georgian company, also from the point of view of the workforce it employs. The company was founded in 2009 with the aim of marketing, locally and abroad, the high-quality mineral water that flows from Georgian springs, thus also contributing to spreading around the world, the knowledge of this extraordinary country and enhancing the progress of its economy. In the design and construction phases of the production plants, Aqua Geo collaborated with both local companies and European partners specialized in the latest generation of bottling and packaging technologies. Today, millions of bottles of mineral water come out of the new plants located in the town of Misaktsieli, marketed through the two main brands of the company: SNO natural mineral water, whose production began in 2012, and Kobi carbonated mineral water, produced and bottled starting from 2018.



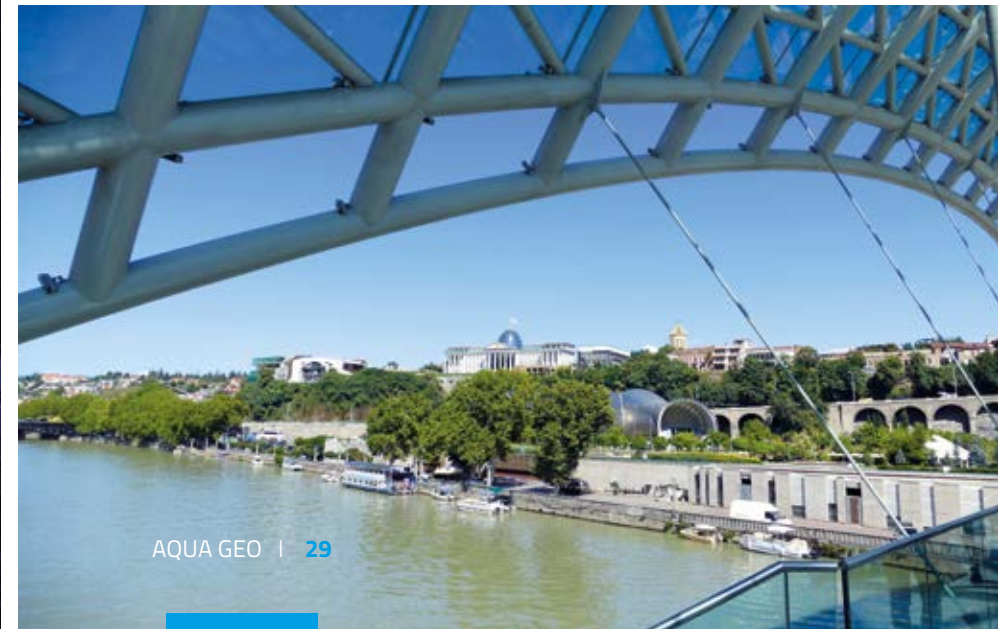
## → SNO MINERAL WATER FOR BEAUTY

Water is essential for the well-being of every human being, both for the skin and for the body, because it transports nutrients to every cell of the body, eliminates toxins, improves blood circulation and lubricates the joints. SNO water is a fresh, tasty product, which originates in the mountains, on the southern slope of the central part of the Caucasus, at 1700 meters above sea level, and then descends to the valley forming an underground reservoir, from which it is extracted at a depth of 150 meters to be bottled and distributed by the Aqua Geo company. It is curious to discover that the SNO factory in Misaktsieli is located near the inhabited center called "Natakhtari", whose name is used to market the "Natakhtari" lemonade which is widespread in various Russian and Eastern European supermarkets. This town, practically a suburb of Tbilisi (capital of Georgia), is in fact an important industrial area where the production plants of companies belonging to different product sectors are located.



# A SMALL EDEN A STONE'S THROW FROM EUROPE

**T**ucked away in a corner overlooking the Black Sea and the Caucasus Mountains, Georgia's landscape stretches for 500 kilometers along a green, sparsely populated plateau with a pleasant breeze. Georgia is a little Eden; it is a nation surrounded on either side by two seas - the Black to the west and the Caspian to the east - and by two important mountain ranges: the 5,600-meter peaks of the Greater Caucasus, on the northern border with Russia, and those of the Little Caucasus, which mark the southern border with Turkey, Armenia and Azerbaijan. The capital Tbilisi, founded in the 5th century AD. by Vakhtang I of Iberia, has been over the centuries, the capital of various Georgian kingdoms and republics. Between 1801 and 1917, when it was part of the Russian Empire, the city was the seat of the imperial viceroyalty, which governed both the southern and northern Caucasus. Today Tbilisi is an important industrial, commercial and socio-cultural center with 1.5 million inhabitants, strategically located at the crossroads between Europe and Asia along the historic "Silk Road". The historic center of the city offers a set of winding alleys and hidden courtyards embellished with typical wooden balconies; rich in Orthodox and Armenian churches, synagogues, mosques, temples and scenic houses overlooking the Mtkvari (Kura) river, Tbilisi represents the gem stone of Georgia, a country known for the myth that portrays it as the cradle of global wines.



# SMI SOLUTIONS FOR KOBI



The Kobi water bottling plant is a demonstration of the large investments being made in the beverage and natural mineral water industry in Georgia; a great challenge, in a country where history and culture are deeply linked to wine production. Since its foundation, the Aqua Geo company has always had the main aim of equipping itself with the most modern technologies in the sector, to create a high quality product capable of equaling the mineral waters present on the main European markets. This is an objective that the Georgian company is able to achieve everyday thanks to severe laboratory tests on the water from the source and the finished product, modern and sophisticated control systems for the entire production process and continuous monitoring of the packaging and distribution process. SMI, which has been collaborating with Aqua Geo since 2011, has been involved in the important development project of the Kobi brand and has designed, built and installed two bottling lines side by side: one for 0.33 L and 0.5 L glass bottles and the other for 0.5L, 1L and 1.5L PET bottles. The logistic configuration of the two lines side by side allows space and costs to be optimised, due to the fact that both use the same area for raw materials and the same unloading and storage area for the finished pallets ready for distribution.



## PRODUCTION LINE FOR PET BOTTLES

➤ **ECOBLOC® ERGON INTEGRATED SYSTEM FOR CARBONATED PRODUCTS – production up to 10,800 BPH**

**Containers worked:** 0.5 L, 1 L and 1.5 L bottles in PET for carbonated water

➤ **LSK 40F ERGON SHRINK WRAPPER – production up to 40 packs/minute**

**Packs created:** bundles in film only in 3x2 (1 L and 1.5 L bottles) and 4x3 (0.5 L bottles) formats

### Main advantages

- Bottling line equipped with an integrated and compact system of the ECOBLOC® ERGON series for blowing, filling and capping of PET bottles
- The integration of these functions in a single machine allows to significantly reduce the space occupied and production costs
- This solution does not require the presence of the rinsing machine and conveyor belts between the blow molding machine and the filler
- Reduction of the risk of contamination between the “dry” section of the stretch-blow molding machine and the “wet” section of the filler
- High efficiency rotary stretch-blow molding system equipped with motorized stretch rods, whose electronically controlled operation, does not require mechanical cams
- Precise management of the stroke of the stretch rod, accurate control of its position, significant energy savings
- Blow molds that reproduce the graphic “concept” of the bottle requested by the customer, characterized by special ribs on the bottom of the same
- LSK ERGON series packaging machine equipped with integrated handle applicator (very compact solution)
- Excellent quality / price ratio, thanks to the use of highly reliable components and cutting-edge technical solutions
- Quick and smooth handling systems of empty PET bottles and packs at shrink wrapper outfeed.
- Use of frequency converters (inverters), which optimize the operation speed of all systems.

## PRODUCTION LINE FOR GLASS BOTTLES

➤ **ELC MONOBLOC FOR RINSING, FILLING AND CAPPING- production up to 6.000 BPH**

**Containers worked:** 0.33 L and 0.5 L glass bottles

➤ **LSK 30T ERGON SHRINK WRAPPER – production up to 30 packs/minute**

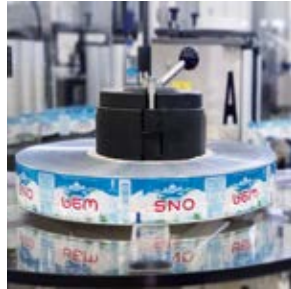
**Packs created:** bundles in tray+film in 4x3 (both bottles) formats

### Main advantages

- Extremely compact line solution, with bespoke infeed designed to reduce machine footprints
- Empty bottle labelling: this solution guarantees high quality product and avoids condensation, typical when labelling on full bottles
- Empty bottle labelling does not require a drying tunnel, present on the PET bottle production line, where the full bottles are labelled at the outfeed of the ECOBLOC® ERGON
- Rinsing, filling and capping carried out on the Monobloc of the ELS series, versatile and easy to maintain
- Electro-pneumatic filling system (pneumatic valves operated by solenoid valves) for level gravity filling, which facilitates the automation of all filling functions
- The motors of the LSK 30T shrink wrapper are directly connected to the transmission axes, with the consequent advantage of reducing maintenance, energy dissipation and noise.
- POSYC® control panel, with extremely intuitive graphic interface, which allows easy and efficient use of the packaging machine



# SMI SOLUTIONS FOR SNO



The growing demand for SNO natural water has required new investments, for the expansion and modernization of two end-of-lines at the Misaktsieli plant. Working in close collaboration with the Aqua Geo team, SMI engineers designed an automatic solution for secondary and tertiary packaging optimized for the production needs of the Georgian company's plant; the primary objective of the new intervention was to increase the production efficiency of the lines for the bottling and packaging of 0.5 L and 1.5 L PET bottles of SNO water.



## COMPLETE END OF LINE - PET 24,000 BPH

➤ **CSK 50F ERGON SHRINK WRAPPER - production up to 50 packs/minute**

**Products worked:** 0.5L and 1.5L bottles in PET

**Packs created:** bundles in film only in 6x4 and 4x3 (0.5l bottles) and 3x2 (1.5L bottles) formats

➤ **CONVEYORS**

**Function:** to carry the loose product from the out feed of the filler monobloc, accumulation conveyors before and after the labeller and conveyors to carry the packs between the packer and the palletiser

➤ **HANDLE APPLICATOR HA 60**

➤ **APS 1550 ERGON PALLETISER with rotating arm wrapper**

**Packs worked:** bundles arriving from the CSK 50F ERGON packer

**Pallets created:** europallet 800x1200 and 1000x1200

### Main advantages

- CSK ERGON packer equipped with a motorized system of oscillating guides at the entrance to the machine, which facilitates the correct channeling of loose containers on a conveyor belt equipped with chains in thermoplastic material with a low coefficient of friction
- Grouping of loose containers in the desired format carried out continuously
- Compact design film cutting unit with brushless motor run blade, which makes the cutting operation more precise
- ICOS motors equipped with integrated digital servo-drive (driver), able to simplify the wiring of the machine and ensure greater energy efficiency, less noise and reduced wear of components
- Easy maintenance
- Optimal management of product flow, through an accurate study of the accumulation, distribution and handling dynamics
- Format changeover times reduced to a minimum for the rapid transition from one production to another
- High operational reliability, thanks to the structure and components made of AISI 304 stainless steel
- Some of the lowest noise and friction levels in the industry
- Cleaning and maintenance interventions limited to a few points
- APS 1550 palletiser single-column with two cartesian axes with SCARA technology, extremely flexible to the logistical requirements of the end of line area.
- Compact structure with central column that integrates the functions of feeding the empty pallets, inserting the interlayers between one layer and another and the palletizing operations
- Reduced maintenance costs and low running costs, thanks to the machine's simple mechanics and the use of components of robotic derivation
- Extremely simple automation and management control, thanks to the intuitive and easy-to-use man-machine interface

**END OF LINE FOR TERTIARY PACKAGING**

SMI has also supplied a new automatic palletising system that works bundles arriving from the LSK 35T installed in 2011; this integration to the existing line comprises:

➔ **APS 1550 ERGON PALLETISER with rotating arm wrapper**

**Containers packed:** bundles arriving from the LSK 35T packer in 4x3 and 6x4 (0.33L and 0.5L bottles in PET) formats and in 3x2 (1L and 1.5L bottles in PET) formats

**Pallets created:** europallet 800x1200 and 1000x1200

➔ **CONVEYORS**

**Function:** carry the packed product from the outfeed of the packer

**Main advantages**

- Fluid pack movement from the outfees of the existing LSK packer
- Simple, intuitive interface man-machine
- Simplified maintenance
- Reduced changeover times from one production to another



**IS GEORGIA TRUELY THE CRADLE OF GLOBAL WINES?**

For a long time, Georgia has been a very welcome, strategic crossroads, to thirsty traveler. Wine has always been an integral part of the country's culture and is closely linked to its people, who usually grow grapes and produce wine. It is no coincidence that viticulture and winemaking are the most important sectors of local agriculture; here you can find the typical, traditional winemaking technique in "kvevri", that is large underground containers used to exploit the thermal insulation naturally offered by the soil. Over 450 types of local wines are registered in Georgia, making the country one of the oldest places for producing high quality wines in the world. Although we usually associate wine with a Mediterranean lifestyle, historians and archaeologists from all over the world agree, that in these parts, people were toasting with fermented grape juice as early as 8 thousand years ago, as demonstrated by substances attributable to the wine discovered on clay findings dating back to 6 thousand years before Christ.

