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BI-MONTHLY INTERNATIONAL MAGAZINE FOR GLASS MANUFACTURING



YEAR 36 • ISSUE NO. 5/2023

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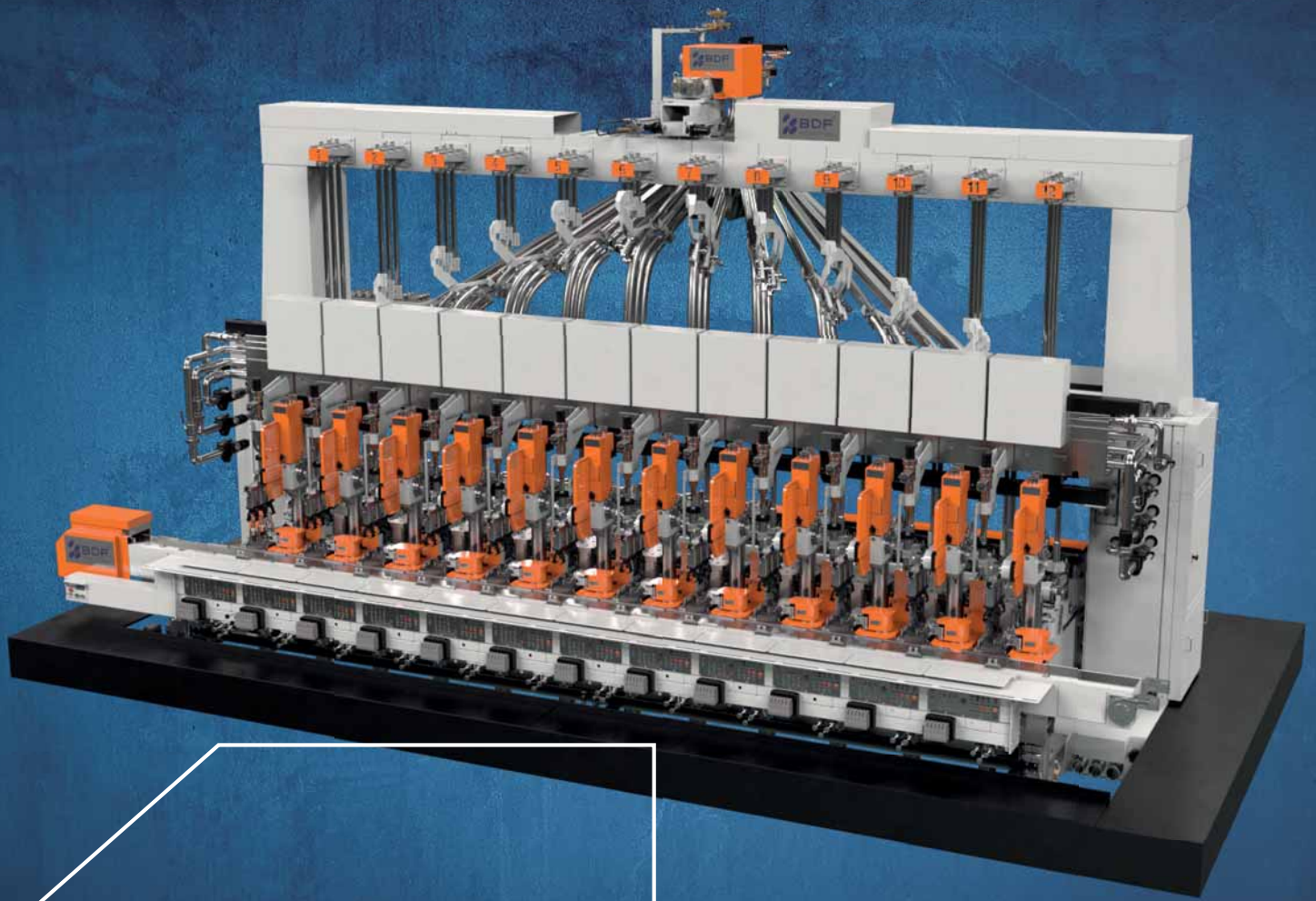
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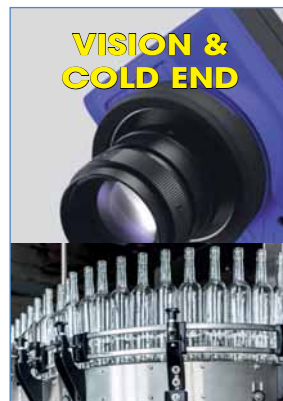


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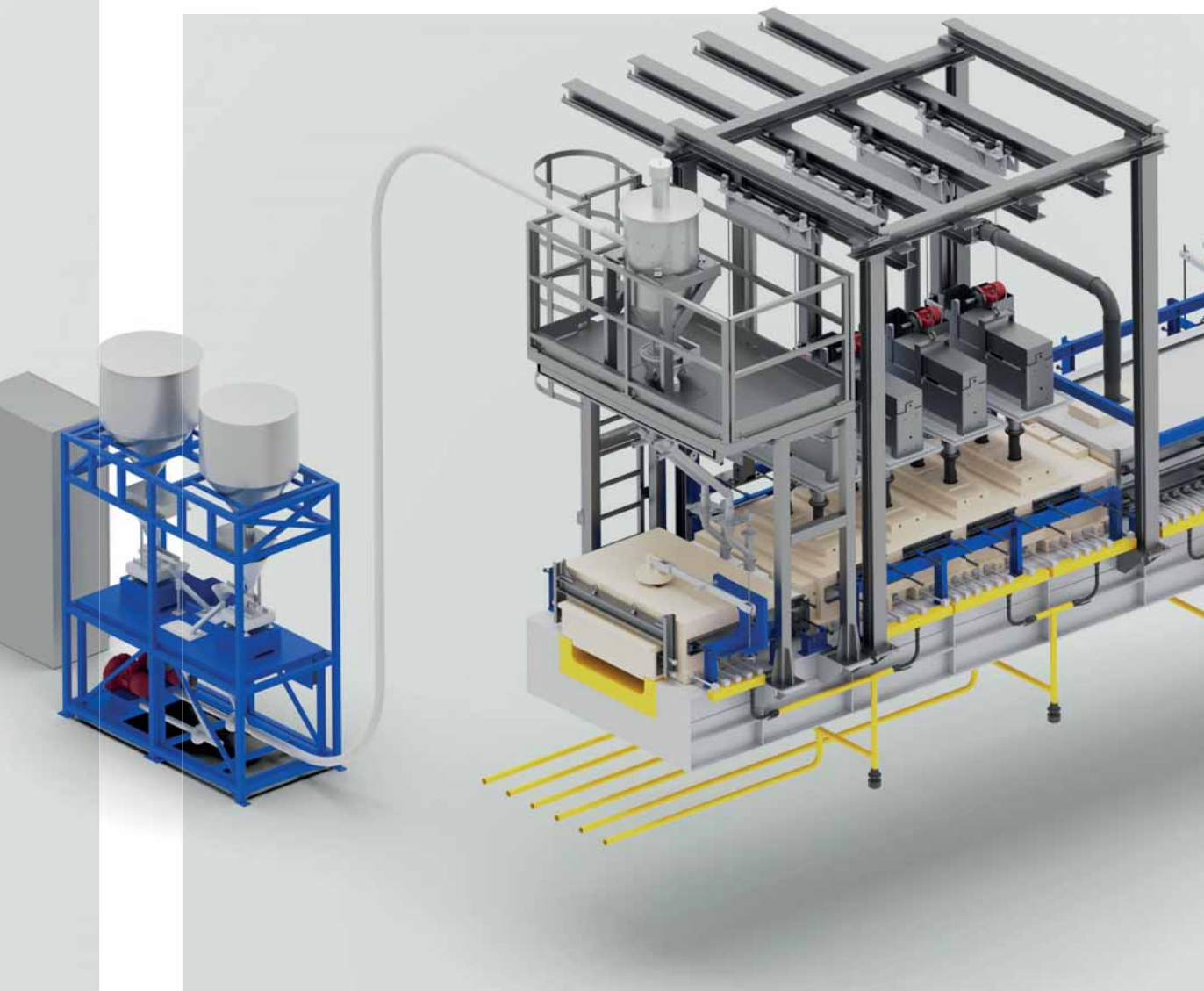
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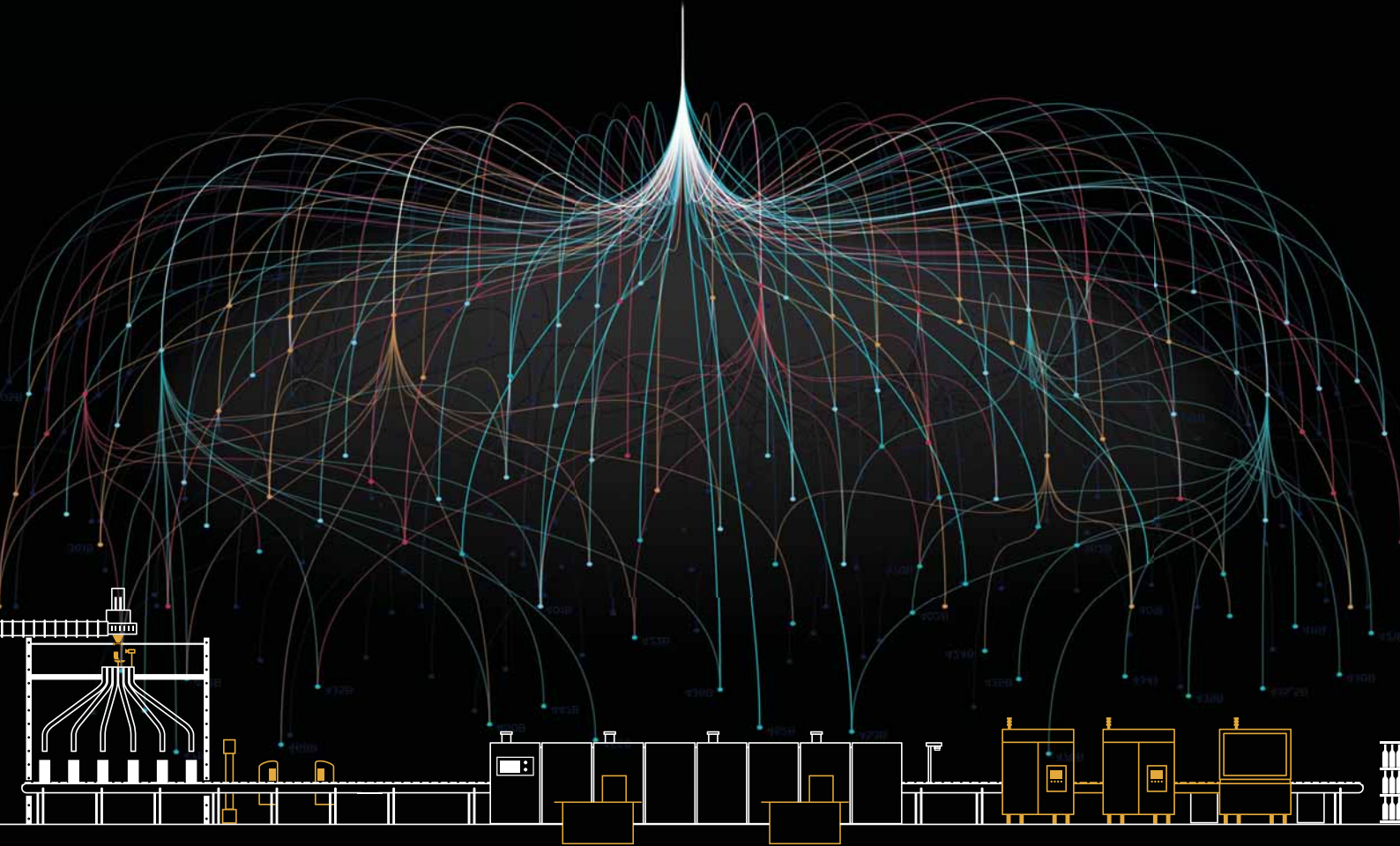
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2023 1	GLASSMAN EUROPE	8-9 February	ISTANBUL Turkey	Editorial files: 13-01-2023
	COSMOPACK	16-18 March	BOLOGNA Italy	Deadline Adv files: 17-01-2023
2023 2	GLASSPRINT	25-26 April	DÜSSELDORF Germany	Editorial files: 20-03-2022 Deadline Adv files: 30-03-2023
	INTERPACK	4-10 May	DÜSSELDORF Germany	
	CHINA GLASS	6-9 May	SHANGHAI China	
2023 3	GLASSMAN USA	6-7 June	CLEVELAND (OH) USA	Editorial files: 26-04-2023 Deadline Adv files: 05-05-2023
	FURNACE SOLUTIONS CONFERENCE	7-8 June	ST HELENS UK	
	16TH SEMINAR ON FURNACE DESIGN	21-22 June	VELKE KARLOVICE Czech Republic	
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2023	Glass Industry Directory			Editorial files: 05-06-2023 Deadline Adv files: 19-06-2023
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2023 5	LUXPACK	3-5 October	MONACO	Editorial files: 04-09-2023 Deadline Adv files: 11-09-2023
	CONFERENCE ON GLASS PROBLEMS	30 October 2 November	COLUMBUS (OH) USA	
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	GULF GLASS	4-7 December	DUBAI UAE	

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SORG GROUP

Exclusive cooperation agreement signed with P+ International



The Sorng Group (EME, Nikolaus Sorng and SKS), recently strengthened its “Power of 3” offering by signing an exclusive cooperation agreement with P+ International to expand their turnkey offering.

With over 150 years of know-how and over 500 employees, the **SORG GROUP** combines leading technologies and offers complete batch house and furnace solutions to the global glass industry. P+ International is a group of companies (Capex, BSM Baker, Washtec and ACE Engineering) with 30 years of glass industry-specific experience

and over 100 employees that will enhance Sorng Group services in the areas of architectural design, civil and structural engineering, mechanical and electrical utility planning and construction site services. The Group already provides complete turnkey solutions for all types of projects, be it a rebuild, upgrade, modernization, or greenfield. The exclusive cooperation with P+ International will complement this offering by integrating all surrounding technologies, structures, and utilities into a single solution. Additionally, site services such as structural and other inspections, utilities and facilities audits, and construction management will be available to Group customers.

The Sorng Group strengthens its value proposition through this exclusive cooperation with P+ International.

WWW.SORGGROUP.COM

VETROMECCANICA

Acquisition of new production area



Vetromeccanica has announced the acquisition of a new 13,000 square metre production area that will be operational from October 2023.

The new manufacturing site, acquired in addition to the existing one, is located in Italy, between Parma and Reggio Emilia, next to the highway - thereby facilitating logistics operations. The area will permit to **VETROMECCANICA** to assemble and test more machines at the same time.

This new space will not only allow the company to increase its production capacity, but will also help to better manage customer orders.

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ARDAGH GROUP

Coulson role transition from Chairman to Director

Ardagh Group recently announced a decision by Paul Coulson to step down as Chairman of **ARDAGH GROUP** and of its 76 percent-owned subsidiary Ardagh Metal Packaging S.A. on November 15, 2023. Mr Coulson will be succeeded by Herman Troskie who currently serves as a director of Ardagh Group, Ardagh Metal Packaging and ARD Holdings S.A., the ultimate parent of Ardagh Group. This transition is the culmination of a succession process that, in recent years, has seen the appointments of Oliver Graham as CEO of Ardagh Metal Packaging, and Michael Dick as CEO of Ardagh Glass Packaging. Mr Coulson (71) has been Chairman of Ardagh Group since 1998, leading its development from a single-plant glass operation in Dublin with annual revenue of approximately USD 50M, to a global player in sustainable glass and metal packaging, operating across Europe, the Americas and Africa, with annualized revenues of more than USD 9 billion. Mr Coulson will remain a Director of Ardagh Group, Ardagh Metal Packaging and ARD Holdings, and will remain the controlling shareholder of ARD Holdings.



Herman Troskie (53), a director of Ardagh Group, Ardagh Metal Packaging and ARD Holdings, will succeed Paul Coulson as Chairman of all three companies and will join Ardagh on a full-time basis in November. Based in Luxembourg, Mr Troskie will step down from his current role as CEO of Corporate, Legal and Tax Advisory at Stonehage Fleming, an international family office. He has been a director of Ardagh Group since 2009 and has been closely involved with the growth and development of the Group since then.

WWW.ARDAGHGROUP.COM

STOELZLE GLASS GROUP

Publication of third sustainability report

Stoelzle Glass Group, a leading packaging glass manufacturer, has announced the publication of its third Sustainability Report. The report highlights the company's commitment to continuous improvement in sustainability practices that focus on energy, resource efficiency and employees.

- **STOELZLE GLASS GROUP's** decarbonisation targets have been officially accepted by SBTi;
- Minus 50 percent absolute scope 1 and scope 2 GHG emissions by 2030; minus 15 percent absolute scope 3 GHG emissions by 2030;
- Decarbonisation strategy focuses on energy efficiency, new technologies and renewable energy.

The following milestones have been achieved so far: →



Stoelzle Glass Group: Batch Preheater – © Die Abbilderei



- **Process and Energy Data Management System:** The implementation of the Process and Energy Data Management System at all Stoelzle sites has already led to significant energy savings between three and five percent, by improving the energy efficiency at the sites. The system tracks and assesses changes in energy consumption, optimizing cooling curve settings in the lehrs, detecting leaks and defective machines, and monitoring water consumption.
- **Batch Preheater:** The Company's commitment to energy efficiency is demonstrated by the implementation of a batch preheater at its Austrian production site. This technology utilizes waste heat from the exhaust to pre-heat and dry the raw material mixture, reducing furnace energy consumption by over 8 percent and resulting in annual energy savings of 4,000 MWh. The remaining waste heat is fed into the local district heating network, providing heat to approximately 1,800 households.

Stoelzle Glass Group: Batch Preheater

- **Organic Rankine Cycle:** By the end of 2023, Stoelzle will produce approximately seven percent of the Stoelzle Czeszochowa plant's total electricity consumption from waste heat. The waste heat is used for steam production, which is then transformed into electricity by using a turbine and generator (in a so-called Organic Rankine Cycle).
- **Electric Furnace and Feeder:** Stoelzle is actively investing in research to replace gas with electricity in its production processes. It is part of the international research consortium International Partners in Glass Research (IPGR) focused on developing a "glass furnace of the future" that utilizes green hydrogen and electricity for maximum energy efficiency. By 2024, Stoelzle plans to have a fully electric feeder in operation at its Austrian amber glass furnace, setting an example for the European glass industry.

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ŞİŞECAM

Furnaces in PaneraTech's DFM programme to be enrolled

Part of Şişecam's working methodology is to "team up with business partners for innovative solutions". This is what the company did recently by partnering with PaneraTech to implement Digital Furnace Monitoring (DFM) globally on all its furnaces.

ŞİŞECAM first began to engage with PaneraTech in 2013, while the company was developing and validating its SmartMelter® technology, portable radar-based sensors that measure refractory thickness. PaneraTech performed its first demo of the technology for Şişecam in 2016, and SmartMelter® inspections became a regular practice for many of Siseecam's furnaces over the next several years.

Over this time, PaneraTech has also evolved and expanded, now offering a full solution that digitally transforms furnaces for data-driven decision making. Digital Furnace Monitoring is a holistic programme for furnace health monitoring and management that helps manufacturers make more glass with their furnace, even with a less-experienced workforce. This programme has attracted great interest at a time when many seasoned furnace managers are retiring and are being replaced by a younger generation.

Şişecam is enrolling all its furnaces in the DFM program over a period of three years. Each furnace will be transformed digitally and viewable through XSight™ software. All furnace activities will be recorded and analyzed on the platform, including data collected through radar technology and a regular schedule of audits.

A PaneraTech Asset Manager will be assigned to help each plant team interpret data and make decisions based on industry best practices. The Asset Managers will be incentivized to help the plant teams meet their goals. This combination of technology, data, and expertise is what PaneraTech calls "threefold support" for each plant. Every Şişecam furnace will have Polaris™ IoT sensors installed for continuous refractory monitoring of critical areas. This will help the company understand early in the furnace campaign how operations are impacting refractory life. Early detection of issues will help Şişecam make decisions that will lead to an optimized furnace campaign and ultimately more glass produced from each furnace.

WWW.SISECAM.COM.TR



BORMIOLI LUIGI

Merger with Bormioli Rocco concluded



Bormioli Luigi recently completed its merger with glass manufacturer Bormioli Rocco. The latter was originally acquired by the global glass and packaging manufacturer in 2017. In a statement, **BORMIOLI LUIGI** said, “The merger will offer the opportunity to enhance the effectiveness of our strategic research, using advanced IT systems.”

“The transformation will concern not only production and marketing but also human resources, finances and various supplies.”

Bormioli Luigi manufactures high quality containers for perfume and alcoholic beverages as well as tableware in superior crystal glass. Bormioli Rocco is an Italian leading glass manufacturer of tableware.

In April 2023, Bormioli Luigi opened a new unit dedicated to making bottles for fragrance and cosmetics in Azuqueca, Spain. The site has been used for the Italian group’s tableware business since its acquisition in 2017.

The facility is equipped with four new IS machines for hollow glass manufacturing, as well as a decoration workshop. The company also maintains four production plants in Italy.

WWW.BORMIOLILUIGI.COM

VIDROMECHANICA

GLASSMECHANICS



ORORA

Acquisition of Saverglass

Orora has announced that it has entered into arrangements relating to the acquisition of **Saverglass**, a global leader in the design, manufacturing, customisation and decoration of high-end bottles for the premium and ultra-premium spirit and wine markets, a few days after having confirmed its discussions about a potential acquisition. The enterprise value of EUR 1,290 M (AUD 2,156 M) represents an implied multiple of 7.7x Adjusted EBITDA of Saverglass for the last



12 months (LTM) to 30 June 2023 (Jun-23) of EUR 168M (excluding any proforma synergies).

From a commercial, product and geographic perspective the combination of Saverglass and **ORORA** is expected to unlock significant value creation opportunities for the Combined Group. In addition, near-term synergies of AUD 15 M are expected from network optimisation, cost rationalization and operational efficiencies. The Acquisition will provide attractive value creation for existing shareholders of Orora and is expected to be mid-single digit EPS accretive 4 (including full run-rate synergies) in the first full financial year of ownership. On a pro forma basis, the Acquisition represents a circa 69 percent uplift in Orora's Underlying FY23 EBITDA to circa AUD 749M (excluding any pro forma synergies), providing a 320bps increase in Underlying EBITDA margin. Orora and the vendors of Olympe SAS have entered into a Put Option Agreement which provides the vendors the option to sell the shares in Olympe SAS to Orora. Exercise of the put option by the vendors under the Put Option Agreement and entry into a binding Share Purchase Agreement in order to implement the Acquisition is subject to the completion of certain mandatory French works council consultation processes in order to comply with French labour laws. Following exercise of the put option and upon execution of a binding Share Purchase Agreement, the Acquisition will be subject to various conditions precedent customary for a transaction of this nature, including obtaining all necessary regulatory approvals. Subject to the satisfaction of all conditions precedent, completion of the Acquisition is expected to occur in the last quarter of CY2023.

WWW.ORORABEVERAGE.COM

HEAT APPLICATIONS INDIA

Partnership with Hotwork International

The owners of both **HEAT APPLICATIONS INDIA** and **Hotwork International** recently agreed that the latter would take a significant amount of shares in the former. Heat Applications India will be jointly managed by Daniel Kirkham and Neelima Kirkham, who will continue to support their



large client base.

This milestone will allow both companies to unify their efforts and technology. Furthermore, Hotwork International will extend its product portfolio to Heat Applications India in the growing Indian market, thereby addressing the need for environmentally-friendly combustion and melting technology, offering low NOx combustion technology, electric boosting, hydrogen burner and more to various industries. →

← Hotwork International Group CEO Benjamin Köster recently handed a welcome gift to the HAL team during a ceremony on 30 August 2023: the Swiss “Treichel” or Cow Bell. Containing ornaments, it symbolizes the tradition and rich heritage of Switzerland and serves to demonstrate how the company is doing its part as a global group to protect the environment and work towards full sustainability - all to ensure that future generations can enjoy the beauty of the planet.

The Management chose the day of Raksha Bandhan, a Hindu festival that celebrates the relationship between brothers and sisters and families, on the full moon of the Hindu month of Shra-
vana, for the celebration, thereby underscor-
ing the relationship of the newly acquired sister
companies.

The goal of this transformation and coopera-
tion is not only for unity but to continuously and
strongly support clients with services needed at

any time of the day in the year. Reach and availability of the Group stretches from the Americas to Europe, the Middle East, Africa, India, Asia Pacific - also extending to Australia and Oceania. Here, indeed, Hotwork International Group strives to continue to deliver and improve the services and products to its valued clients at a global reach.

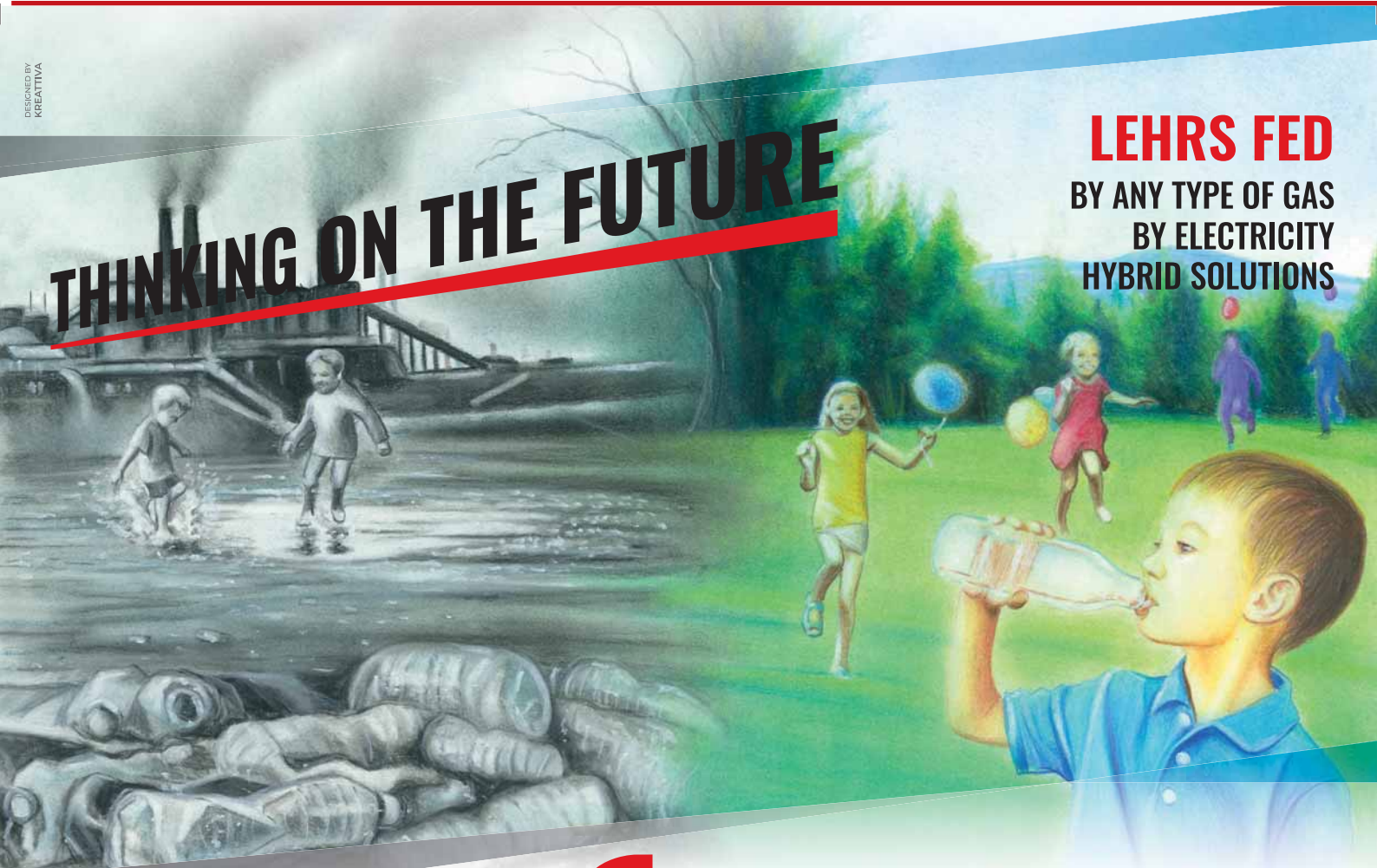
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AMETEK LAND

Enhanced SPOT+ pyrometer range launched

A METEK LAND, a leading global manufacturer of monitors and analysers for industrial non-contact temperature measurement, recently relaunched its market-leading SPOT pyrometer range with enhanced features and benefits for a wide range of industrial applications.

The new SPOT+ family offers temperature measurements from 50 to 3500 degrees Celsius (122 to 6332 degrees Fahrenheit) and a choice of different wavelengths for applications - including metals, glass, cement and lime kilns and foundries. This range includes monochromatic and ratio pyrometers, fibre optic heads and sophisticated algorithm pyrometers for such complex materials as aluminium and galvanized steel.

A wide range of new communications interfaces makes the SPOT+ ideal for Industrial Internet of Things (IIoT) factory automation applications in addition to traditional 4-20 mA signals. Ethernet/IP, REST API and Modbus TCP/IP are standard on SPOT+, and an integrated web server provides easy access for control and setup using a standard browser. Upgraded cybersecurity functions reduce the likelihood of unauthorized access to the instrument functions.

An integrated video camera provides a visible light process view alongside infrared temperature measurement, which allows sighting to be carried out safely and easily. As the video images are available via the web server and AMETEK Land's IMAGEPro software, alignment can be checked remotely and images logged for quality purposes.

The SPOT+ can be used in the harshest of environmental conditions, and in hazardous area zones 1, 2, 21 and 22 when mounted in LAND's high-specification EXSH enclosure. With response times down to 1ms, SPOT+ pyrometers are also suitable for fast-moving processes.

AMETEK Land's SPOT pyrometers are built on extensive research and development and have always been at the leading edge of measurement technology. The new SPOT+ enhancements offer improved connectivity for easy integration with control systems and the confidence that data transmission is secure. Upgraded electronic and electromechanical components ensure highly reliable and accurate operations, all backed by a 36-month warranty and supported by a range of extensive accessories for installations in the most demanding applications.

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SORG

Management changes



Michael Sorg recently joined the management of Nikolaus Sorg GmbH as an equal partner alongside his father Karl-Heinz Sorg and his cousin Alexander Sorg. Effective immediately, he will also be responsible for the business of EME GmbH together with Managing Director Jens Rosenthal. With these decisions, the shareholders of both **SORG** families have laid the foundation for a successful future to the next generation. With regard to the stable order situation at Sorg and the need for skilled workers, Alexander Sorg emphasized, “The realignment is an important step in order to jointly continue controlling and advancing ongoing growth and positive developments of the Sorg group.”

Michael Sorg was born in Frankfurt am Main in 1986. After successfully completing a bachelor’s degree at the Bocconi University of Economics in Milan, he completed a master’s degree at the University of St Andrews in Scotland. Following his studies, he completed his professional training as a state-examined glass technician at the Glasfachschule Zwiesel.

Michael Sorg acquired professional experience and expertise while working for various international companies in the glass industry. In 2018, he joined the Sorg company. Fluent in German, Spanish, Italian, French and English, Michael Sorg was mainly responsible in the past for sales activities in DACH countries at Sorg. He has already acted as Managing Director of Sorg Holding alongside Alexander Sorg since 2019.

WWW.SORG.DE

VIDRALA

Photovoltaic plant started up at Barcelona installations

Leading glass container manufacturer **VIDRALA** has started the commissioning of its Castellar Vidrio photovoltaic plant with the energization of new installations at the factory located in Castellar del Vallés, Barcelona, Spain. In this way, Vidrala completes the construction project of its photovoltaic self-consumption plant that began in March. The new photovoltaic plant at Castellar Vidrio has the capacity to produce approximately 8,000 MWh of energy per year. This will mean the reduction of more than 2,000 tonnes of CO₂ emissions into the atmosphere per year. The new plant has more than 1,900 photovoltaic modules with a power of up to 6 MWp.

Part of the decarbonization and energy efficiency plan implemented by the Vidrala Group, the project aims to reduce dependence on fossil energy while promoting self-consumption and improving energy efficiency at a global level

through the study and installation of renewable alternatives. The new installation represents Vidrala’s commitment to society and the communities where it operates, as an essential part of its business strategy, as well as its sustainability strategy “Glass Made Good” which focuses on the “4 Ps,” referring to people, planet, populations and prosperity as a whole. This self-consumption project that Vidrala is promoting with Norvento Enerxía, adds to the one implemented by the company in 2022 at the Crisnova plant, located in Caudete, Albacete, Spain. The 12 MW installation has already allowed the company to reduce annual emission of around 12,000 tonnes of CO₂ into the atmosphere.

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GERRESHEIMER

Small batch production success story

GERRESHEIMER recently took the next strategic step in its future by expanding its Technical Competence Center and SBP facilities at the Wackersdorf, Germany, location for the third time in just five years. The new 700 square metre Small Batch Production Sampling Area is where pre-series parts -samples used to set up manufacturing systems- can be produced at series quality. An area that previously housed a high-bay warehouse has been converted and equipped to meet the latest production standards.

Automatic tool handling

Unlike development projects, industrialization projects require automatic tool handling for high-volume manufacturing. The new area reflects these new parameters - featuring ten injection-moulding machines with a clamping force of 175 to 420 metric tonnes.

A decade of small-batch production

Small-batch production at Wackersdorf started up exactly ten years ago. Wackersdorf now has 2,170 square metres of class seven and eight clean room production spaces, a 220 square-metre controlled area and a 360 square-metre clean room for pharmaceutical glass products that meet GMP class C and D requirements.

Qualified staff wanted - over 40 new jobs created in Wackersdorf

Gerresheimer is continuing on its growth trajectory, and the Wackersdorf location is no exception. Indeed the highly motivated, dynamic team is looking for new faces in the shape of experienced experts, young talents and trainees - all keen to use state-of-the-art approaches, systems and methods to contribute to the success of both the projects and the company as a whole. Gerresheimer intends to create over 40 new jobs in Wackersdorf over the coming months.

With a team of around 520 in Wackersdorf and a further 650 employees just 30 km away in Pfreimd, Gerresheimer is one of the larger employers in the region. Overall, the MDAX-listed company employs around 11,000 people worldwide.

WWW.GERRESHEIMER.COM

STOELZLE GLASS GROUP

Hosting of Styria governor at Köflach plant

Recently, Stoelzle Glass Group had the honour of hosting Christopher Drexler, Governor of Styria, Austria, at Stoelzle Oberglas in Köflach upon the invitation of the Group's owner, Dr Cornelius Grupp. Accompanied by Mayor Helmut Linhart, the Governor personally gained insights into the operations of a glass manufacturing company directly from the company owner and management team. Since 1871, **STOELZLE GLASS GROUP** has been producing quality glass in Köflach, Styria, with over 500 dedicated employees. The company is proud to represent Styria's industrial heritage and contribute to the region's growth.

Stoelzle's commitment to sustainability is reflected in the PV-covered roof and the Gold Sustainability Rating from EcoVadis received in 2022. Sustainability remains a core part of the Group philosophy as it continues to invest in research and development to protect the planet.

WWW.STOELZLE.COM



SORG GROUP

Completion of furnace B repairs at Steklarna Hrastnik

Steklarna Hrastnik recently appointed SORG GROUP to complete the reconstruction of its furnace B, also built by Sorg in 2014, as a melting furnace for the production of high-quality flint glass.

Nikolaus Sorg provided a comprehensive engineering package for the refractory material and steel construction necessary for repairing the melting tank, distribution channel and four forehearth. Additionally, the company delivered heating and cooling systems, Scada and other necessary components for the furnace and glass conditioning system. EME conducted an audit and conceptual engineering. Based on this, it then proceeded to upgrade the dosing units in the



batch plants and modernize the cullet return system, installing a new single fork linked scraper. EME also delivered and installed a system for charging external PCR (post-consumer recycled) cullet.

SKS was responsible for the draining and demolition of the old furnace as well as the installation of the new refractory material and modification of the existing steel structure. The most challenging part was the lifting of the furnace and forehearth steel structure by 400 millimetres.

The new furnace B represents the expansion and modernization of the Slovenian plant, particularly in terms of environmental and energy aspects. To further reduce the CO2 footprint, the system is intended to be converted to operation with hydrogen in the future. The project is a testament to the Power of Three.

WWW.SORG.DE

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ARDAGH GLASS PACKAGING

NextGen Furnace construction nears completion

The breakthrough NextGen Furnace, currently under construction at the **ARDAGH GLASS PACKAGING** (AGP) facility in Obernkirchen, Germany, is nearing completion. The furnace build, including all refractory brickwork, is complete, and the installation of electrical and other ancillary services are now in the final stages.

The hybrid NextGen Furnace technology is designed to use 80 percent renewable electricity and 20 percent gas, leading to a significant reduction in CO2 emissions- by as much as 60 percent in the furnace- thereby dramatically reducing the carbon footprint of glass packaging.

Jens Schaefer, Operations Director, Ardagh Glass Packaging-Germany, commented, "We are delighted to see this ground-breaking furnace nearing completion. We are firmly on track to delivering commercial bottles produced in the NextGen Furnace this year; the next step will be the furnace heat-up, followed by full glass production in Q4. I would like to thank all the AGP team, our suppliers and sub-contractors who have worked with such dedication and focus to deliver this exciting project."

This pioneering, large-scale hybrid electric furnace will use high levels of recycled glass cullet to produce up to 350 tonnes of glass bottles per day, initially in amber glass, with the capability of making other colours.

WWW.ARDAGHGROUP.COM

O-I GLASS

"Cento Per Cento Sicilia" bottles presented

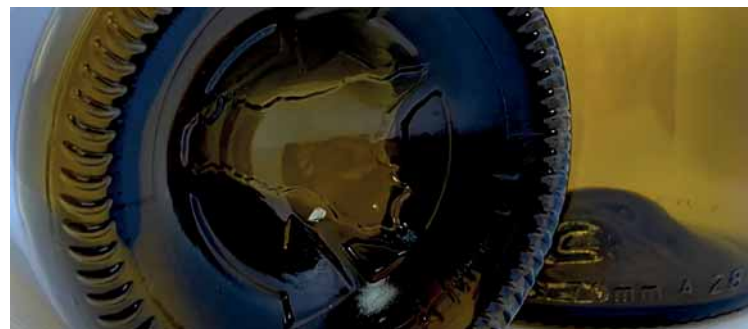
O-I Glass has officially announced the launch of its "Cento per Cento Sicilia" bottles on the market: an initiative that will lead a portion of the production of the glass bottles in Marsala's O-I facilities to follow a low-waste circular economy path, in a historical wine production area. The project, the intentions of which had already been announced by O-I GLASS in 2021, was designed with the aim of proposing a strategy to enhance the Sicilian wine market, providing glass containers -specifically bottles- which are the result of a virtuous, sustainable and locally-sourced production process. The wine production industry is constantly expanding and evolving: more than 7,000 winemakers and 500 bottlers operate each year within a supply chain that in 2022 has produced -exclusively in Sicily- more than 86.5 million bottles.

The bottles, characterized by a customized bottom logo depicting the concept of circular economy, are made entirely within O-I's plant in Marsala, Sicily, Italy. These bottles are made of 90 percent recycled glass (at least) sourced unique-

ly from Sicily and are also extremely light, weighing in at just 410g, which ensures energy savings in terms of production. A significant part of the project relies on citizens, who play an important role in the sorting of waste and glass, thanks to the support of SARCO, which thoroughly sorts and cleans the glass to make it available to the O-I Marsala plant -the only glasswork on the Island- which transforms it into the "Cento per Cento Sicilia" bottles. Indeed, the project also aims to make citizens and cities more aware of virtuous glass recycling - encouraging them to become more critical in their consumption of glass.

Thanks to the support and partnership with Fondazione SOSTain Sicilia, once the bottles are made, they are delivered to wine producers in the region, minimizing the impact on the territory and reducing the carbon footprint to the bare minimum.

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A half-century of success: HEYE and SIVESA mark golden anniversary

Still jointly celebrating consistent growth, HEYE International and SIVESA recently marked 50 years of collaboration. After an agreement back in 1973 would see the Sivesa plant modernised, Heye's 'narrow neck press and blow' technology then went on to improve both efficiency and reduced bottle weight - all punctuated by a subsequent expansion of the Mexican glassmaker's beer exports.

Heye International recently celebrated the fiftieth anniversary of its Technical Assistance Agreement with Mexican glassmaker Sivesa (Sílices de Veracruz SA de CV). Over that half century, Heye has been Sivesa's trusted technology partner as the glassmaker grew to become part of the Crown Holding, Inc. going on to add a second glass plant (Vichisa S.A de C.V.) in the north of Mexico.

Says a jubilant Arturo Romo, Director of Operations of Crown Glass: "Heye's collaboration with Sivesa has generated very positive





results in joint operations spanning over 50 years - all thanks to the service and communication that's been provided to improve the performance of glass bottle manufacturing processes throughout this time period."

MODERNISATION FROM THE WORD 'GO'

The two companies signed their first Technical Assistance Agreement on 27 March 1973. An engineering and supply contract followed a year later. This included a new furnace with three IS-machines that became operative in 1975. It marked the first step towards modernising the Sivesa plant in Veracruz, southeast of Mexico City in a contract that included mould design as well as a general overhaul.

The original agreement was made between the customer and Glastechnik Winckler & Co., which promoted Heye technology. Over the 20 years that followed, Heye developed its own global presence, which included the acquisition of Glastechnik Winckler & Co. back in 1991.

The Technical Assistance Agreement has been periodically renewed - continuing now into the second half of this decade. The TAA encompasses every stage of

a project, from strategic concept to commissioning and operation. Here a key component is the training of local staff and the passing on of know-how by Heye specialists.

NNPB TECHNOLOGY

Introduction to the plant of Heye's narrow neck press and blow technology (NNPB) in 1979 resulted in a significant boost for Sivesa in Central and South America. Over two years, five of the plant's seven lines were converted to the new technology - invented by Heye International. Indeed NNPB capability distinguished Sivesa from its competitors and enhanced the firm's exports.

Says Heye International CEO Hans-Peter Müller: "For Sivesa, the original benefits of NNPB were efficiencies; the new technology saved energy and raw materials while providing even better stability for bottles. Its impact has been staggering. By 2010, we had reduced the weight of a 355ml Long Neck beer bottle from 310g to 180g." In the following years further weight reductions have been achieved, for example for the 355ml Premium ½ Expo 12oz beer bottle from originally 245g to 150g.

Since then, NNPB's efficiencies have been matched by its sustainability. Every glassmaker has woken up to the challenge

of climate change and the role lightweight recyclable and reusable glass packaging plays to combat the crisis.

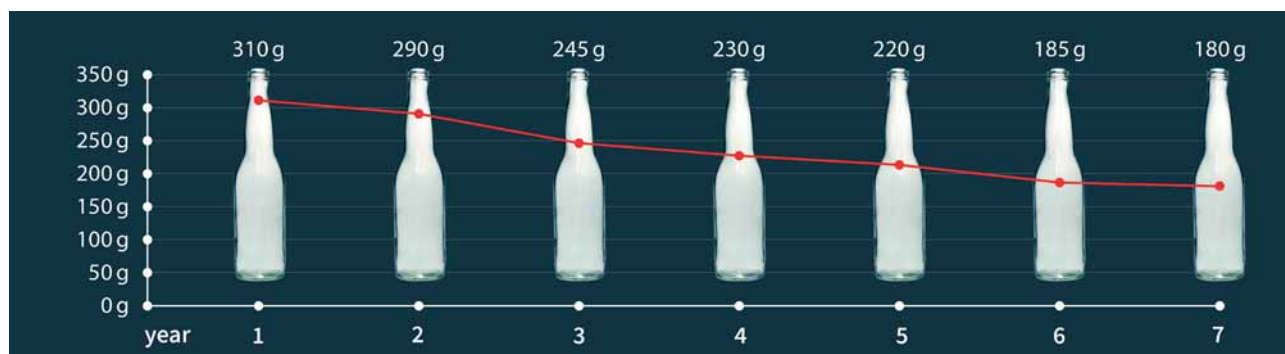
MEETING A GROWING MARKET FOR BEER AND SOFT DRINKS

In subsequent decades, Sivesa expanded and modernised, adding new furnaces and increasing capacity to supply the packaging required by the beer and soft drinks market. Heye supplied a new batch house and melter as well as regular upgrades to the forming lines.

A further major conquest was made when Sivesa signed a supply contract with Coca-Cola in the early 1990s. Heye proved a reliable partner in this expansion after installing hot-end and cold-end equipment - going on to support Sivesa both with its training and with upgrading its expertise. Continuous weight reductions have been achieved through the years for beer and soft drink bottles. In 1996 Heye developed the Generica Coca-Cola bottle for Sivesa - a lightweight of 200g with a volume of 500ml.

Then 2013 saw more significant investment by Sivesa as global exports of Mexican beer took off. Heye provided furnace repairs along with new and modernised cold- and hot-end equipment.

PARTNERSHIPS



2015 was the year that marked new ownership for Sivesa as Crown Holdings bought the Empaque packaging operation from Heineken.

The popularity of Mexican beer has gained still greater traction over the past decade. 2014 yielded USD 2.35 billion, which grew to USD 5.01 billion in 2021. To cater for the rise in demand, in 2017 Crown decided to develop a second glassworks at Vichisa - near Chihuahua in northern Mexico. This drew on Sivesa's experience and the partnership with Heye, which supplied three 16-Section SpeedLines to the greenfield project, fully-equipped with swabbing robot. The USD 120M plant started production in January 2018, employing 200 people. The facility has a capacity of 450 tons of glass per day, which is equivalent to 660 million bottles per year supplied to the Heineken brewery.

As the two companies celebrate the fiftieth anniversary of their initial team-up, fresh projects are under development at both plants.

A VISION FOR FUTURE COLLABORATION

As the partnership goes from strength to strength, Sivesa strives for greater standardisation as it addresses every aspect of sustainability.

This is shown by its strong interest in energy-efficient furnace design, in predictive maintenance to reduce spare part stock requirements and in further lightweighting. Here Heye is researching and testing to see how light a glass beer bottle can be while retaining its safety under pressure.

There is also a drive towards standardisation by increasing modularity of the glass manufacturing equipment as well as by further digitisation.

This is no surprise. A frequent request by Heye customers is that of learning how to make production more sustainable and replicable while preventing critical defects and machine downtime. Here, within the decade since Heye last celebrated an anniversary with Sivesa, the company has been leading a massive leap in digitisation. Indeed modern Heye equipment features a host of automated sensors to reduce line errors and increase repeatability. Together these boost pack-to-melt numbers.

Heye's technical solutions are tested at in-house facilities in Germany along with dedicated pilot customers - also using the company's own staff whenever possible. Customers are focused on their environmental footprint, so Heye's technical experts have two research priorities: firstly, that of ensuring that furnace and machine design can reduce energy use and secondly, that of assisting customers to increase the number of bottles made from each ton of glass they melt.

WHAT MAKES THE SIVESA-HEYE PARTNERSHIP SPECIAL?

At the heart of the long-standing collaboration lies mutual respect for each company's advanced expertise and ambitious core values.

Heye's involvement has helped Sivesa and Vichisa achieve con-

sistently high quality standards and excellent production yields. Crown's Mexican glassmakers also benefit from sophisticated training programmes: Sivesa established its own training centre on site and has also trained its staff in Germany.

As Heye International CEO Hans-Peter Müller concludes: "Our continued relationship has seen the formation of many personal friendships between Sivesa and Heye staff. I congratulate Sivesa on its continued success and look forward to Heye providing the next generation of equipment and skills as we embark on our next 50 years together." ■

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- + Higher output, revenue, margin

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Pharma glass sees heads turning with CORNING's new standard

Recent glass innovations offer solutions to the drawbacks of conventional glass used in pharmaceutical packaging. Here, with improved chemical durability and reduced friction, CORNING's Valor Glass minimizes breakage, delamination and glass particulates. It also addresses FDA concerns while enhancing manufacturing efficiency - which benefits both patients and manufacturers.

Everyday objects like glass jars, bottles or even household windows are typically made of an easy-to-melt glass composition which is fairly inexpensive to manufacture. The result here can be a glass of poor chemical durability - an 'everyday' glass that won't suffice for pharmaceutical use. Here, impurities from the primary packaging can cause such problems for pharmaceutical products as contamination, degradation of the APIs or even pH shifts. Instead glass for pharmaceutical use must have excellent chemical durability to keep the drug product stable for as long as possible - a durability that can be ably achieved by either increasing the aluminum oxide in the glass or by keeping the silica content of the glass high.





Corning® Valor® Glass

Corning® Velocity® Vials

Corning® Viridian™ Vials

TROUBLESHOOTING THE HAZARDS OF DOWNTIME

Pharmaceutical filling lines process hundreds of vials per minute, creating glass-to-glass frictional contact that leads to scratches and breakage. That can also lead to small glass particles and cause downtime. The underlying cause of these challenges lies with conventional borosilicate glass vials. These have a high coefficient of friction surface, which increases their predisposition to jam. Consequently, operators may have to intervene - increasing the potential for contamination.

Not uncommonly, pharma manufacturers remain unaware that such problems can be either reduced or avoided. Background glass particles, for example, are considered the ‘norm’ - being created as vials rub against one another on the filling line. When one pharma company switched from borosilicate glass to Corning’s Valor® Glass during a line trial it assumed its particle monitoring equipment was broken after the particle counts in the filling environment dropped to such low levels. What they hadn’t realized is that it was possible to reduce particle counts to such low

levels by simply changing the glass!

Many glass suppliers highlight the processes used to make the glass - including how, for instance, they reduce the potential for defects. In many cases the solutions address a singular problem - one solution tackles delamination, another reduces extractables and leachables and a third might focus upon machinability. In contrast, Corning’s Valor Glass was developed as a holistic glass solution to simultaneously minimize as many problems as possible.

According to Corning’s R&D team the creation of Valor Glass followed a Quality by Design approach. Here the team identified the root causes of problems like delamination and breakage and used materials science to optimize the glass composition. For example, the root cause of delamination was traced to the evaporation and condensation of boron from borosilicate glass during the tube-to-vial converting process. The resulting boron-free composition of Valor Glass specifically eliminates delamination and gives the glass low extractable concentrations. The low friction external surface keeps it inherently strong and damage resistant, moves smoothly through manufacturing lines and can reduce peak particle counts by up to 96 percent.

QUALITY ADVOCATES

The FDA has continued to raise concerns

with the quality of conventional glass packaging through both advisory and other communications. Moreover, FDA has supported -through its Emerging Technology Program- advancement of new glass packaging technologies, like Valor Glass, with the potential to improve drug product quality. Traditionally, glass manufacturers have been seen as ‘just suppliers’ to pharma manufacturers, with prices based on the cost of materials and manufacturing process. But there have been some negative consequences related to glass quality issues, such as drug recalls resulting from delamination or from glass particles in the drug container. Poor filling line efficiency due to jamming vials or breakages can also add to manufacturing costs. These issues can be reduced with the right glass containers. As a drop-in solution, Valor Glass will improve manufacturing by reducing the problems that could lead to delays, drug shortages or potential recalls - a win for both patients and manufacturers alike. ■

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SCHOTT PHARMA strengthens its leading position

Schott Pharma is celebrating its first anniversary as a legally-attested, stand-alone company in the field of pharma drug containment solutions and delivery systems. The former pharma division of the Schott Group has continued its profitable growth trajectory by supplying high-value solutions that enable pharma manufacturers to safely store and deliver life-saving drugs. In its first year as a carved-out entity, Schott Pharma has further enhanced its line of products, offering the broadest portfolio in the market while catering to the most important trends in the industry: “From new drug categories that require deep-cold storage and more efficient production set-ups to a shift from hospital to homecare treatments, Pharma companies around the world continue to trust Schott Pharma to provide the ideal solution,” said Andreas Reisse, CEO of Schott Pharma. On average, more than 25,000 injections per minute are provided to patients worldwide through a Schott Pharma product.

Here the company builds upon a global entrepreneurial success story rooted in both innovation and a hundred years of manufacturing expertise. With a strong global R&D team coupled with close collaboration with an exclusive network of customers and partners, Schott Pharma is setting new industry standards through



With its high-value solutions, SCHOTT PHARMA celebrates one year as a standalone company that offers a broad portfolio catering to various industry trends. A global market leader, it operates 16 production sites and supplies over 1,800 customers worldwide – a noteworthy footprint which has already yielded a 13.2 percent YoY growth, with sales reaching EUR 449 million in H1 2023.

innovation. “We continue to stay ahead by following a holistic, systemic approach that’s based on science and puts patients’ needs first,” explains Reisse.

ORIENTED TO THE FUTURE

This forward-looking mindset has led to recent developments, which include:

- The latest Schott TOPPAC® freeze innovation, which allows pharma companies to market their deep-cold medications directly in prefilled polymer syringes for the first time.
- The development of ready-to-use solutions, where Schott Pharma delivers pre-washed and sterilized products to reduce the supply chain complexities for pharma companies.

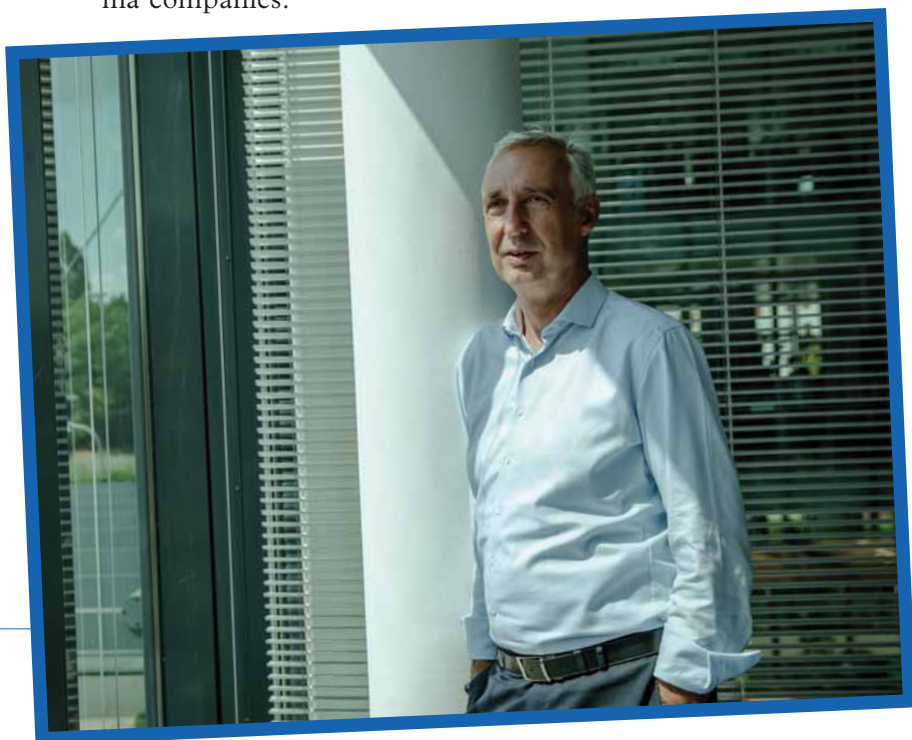
- Allowing patients to administer drugs in the comfort of their home by providing fully integrated homecare systems together with device manufacturers - which helps reduce healthcare costs.

HIGH-VALUE SOLUTIONS - A KEY DRIVER OF PROFITABILITY

As recently reported, the company’s strategy of delivering high-value solutions that cater to long-term trends in the pharma industry continues to be a key driver of profitability. Over the first half of the fiscal year 2023 the company generated sales of EUR 449 million, marking a strong 13.2 percent year-on-year growth. EBITDA increased by

16.6 percent to EUR 132 million, resulting in an EBITDA margin of 29.4 percent which was one full percentage point higher than the same period in 2022. “Our strategy of focusing on high-value solutions is paying off as the share of sales from high-margin, high-value solutions increased significantly to 45 percent,” said Almuth Steinkühler, CFO of Schott Pharma.

As a global market leader with a pure-play focus on injectables, Schott Pharma is represented in all major pharma hubs with 16 state-of-the-art production sites in Europe, North and Latin America, as well as Asia. The company produces around 13 billion prefilled glass and polymer syringes, cartridges, vials and ampoules each year. By supplying over 1,800 customers, Schott Pharma is helping to make breakthrough therapies available to patients around the world. ■



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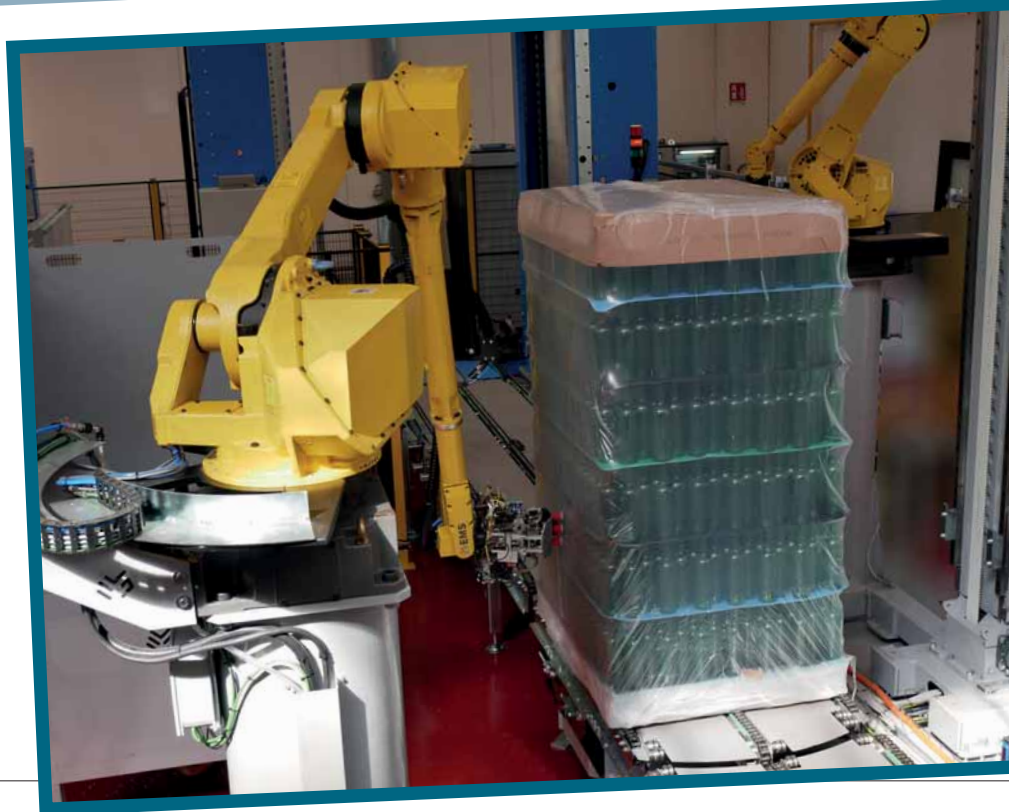
EASYROCK: EMS automates pallet packaging removal

As acclaimed global industrial automation supplier, EMS is known for its engineering expertise and technological prowess. The group's latest innovation, EASYROCK, now automates the removal of shrink film from glass loading units while enhancing safety, efficiency and customization - all in a significant breakthrough that reduces risk, conserves energy and maintains high production rates.

Recognized worldwide as a leading industrial automation supplier, EMS' engineering expertise has impacted a wide variety of industries - all thanks to the fusion of technological know-how. One of the group's latest innovations, EASYROCK, is the result of that same solid background, which is combined with the goal of providing customers with increasingly high-performance and sustainable solutions.

TROUBLESHOOTING SAFETY HAZARDS

EASYROCK is EMS' robotic unwrapping system for the automatic removal of shrink film from loading units of hollow glass intended for subsequent depal-



letizing. Manual film removal involves risks that originate from use by plant personnel of both cutting tools and ladders, passage on handling conveyors and the potential for items falling from the load unit. As such, installing EASYROCK at the infeed of depalletizing lines will greatly increase the overall safety of the working environment, as well as boosting line efficiency and providing maximum application flexibility.

FEATURES THAT STAND OUT

Indeed EASYROCK is equipped with a system that performs a preliminary analysis of the load unit (LU), thus enabling:

- The automatic detection of the workability of the loading unit upon pallets.
- The acquisition of key data concerning the LU for the proper management of all subsequent operations.
- The handling of different LU formats without the need for operator intervention.

EASYROCK makes use of a motorized rotating blade cutting system that ensures the integrity of the product and layer pads while focusing upon sustainability by reducing the use of heating elements or hot air blowers to cut the film - which significantly decreases energy consumption.

The patent pending, multifunction head is the system's core as it can manage film pick, cut and removal in a single station.

MODULAR DESIGN FOR CUSTOM CONFIGURATIONS

Here the modular design of the EASYROCK system allows customers to tailor configuration according to their production needs.

Two different devices are available for automatic waste film handling, namely:



- The film shredding and suction system.

- The film compacting system.

EASYROCK can be configured with auxiliary modules that can be implemented according to the type of LU being handled. These modules are:

- Top press plate.
- Straps removal system for cases where plastic strapping is present in addition to plastic film.

The use of a robot keeps maintenance costs low while enabling production rates of 15 to 60 load units-per-hour with an option to increase output even higher to achieve 90 load units-per-hour. By so doing, EASYROCK rep-

resents a breakthrough in automation innovation that optimizes the production process while increasing factory safety. ■



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An assessment by **VERTECH'** on the place of AI within the glass industry

What role does artificial intelligence play within the glass industry? Presently, that question invokes a multitude of variables. Already some experts are making dire forecasts, positing that AI could precipitate the global elimination of millions of jobs. Others take it a step further: suggesting it might gain dominion over humanity. Conversely, some view AI as a great opportunity that's capa-

ble of catalyzing economic growth through technological innovation across various sectors. What's certain is that AI stands at the vanguard of technology - akin to other innovations that have thrived throughout history.

AI AND GLASS

Glass manufacturers are currently facing a gamut of economic, technical and ecological challenges.

All strive to devise solutions that can satisfy ecological imperatives while optimizing production processes. A shared objective is that of cost reduction as well as the elevation of both product quality and longevity. Much like their counterparts in other industries, companies specialized in Manufacturing Execution Systems (MES) are exploring the feasibility of integrat-



As glass manufacturers navigate data quality hurdles whilst embracing AI, practical implementation continues to remain uncertain. Clearly the success of such technologies demands precise information that can be fully blended with human expertise. Here, in emphasizing the importance of refining and integrating AI with our human potential, VERTECH' evaluates how AI might best benefit the industry.

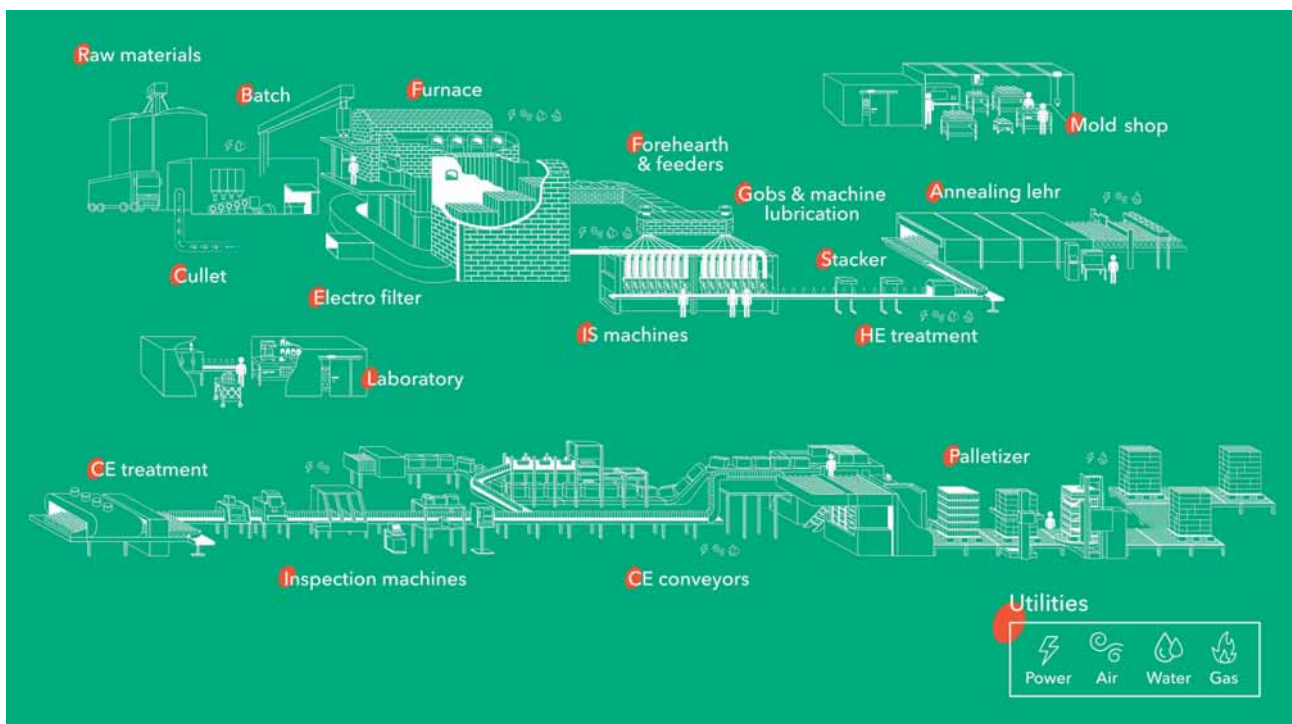
ing AI into their product designs - all to offer more powerful tools to streamline production processes. In parallel, experts within the glass sector increasingly scrutinize the benefits and hazards associated with AI adoption. All said, this revolutionary tool remains somewhat under-utilized within the sector at this juncture. Incontrovertible too is that this fledgeling technology not only possesses the potential to replicate human cognitive functions. It can also outperform them. Indeed the potential of AI within the glass industry could transcend those of

conventional data analysis systems - which, for example, can already work out equipment maintenance requirements. The incorporation of AI into the glass sector necessitates the assimilation of colossal volumes of data which must be of a quality that's comprehensive but also impeccable. Any inaccuracy of foundational data could compromise the integrity of both analyses and predictions - potentially culminating in catastrophic consequences owing to erroneous decision-making. As such, the constructive employment of AI hinges upon what it's initially 'fed' by

way of precise and pertinent data - all coupled with continuous vigilance and stringent verification. Of course, this cutting-edge technology holds the potential to optimize manufacturing processes under such conditions.

THAT INDISPENSABLE HUMAN OPERATOR

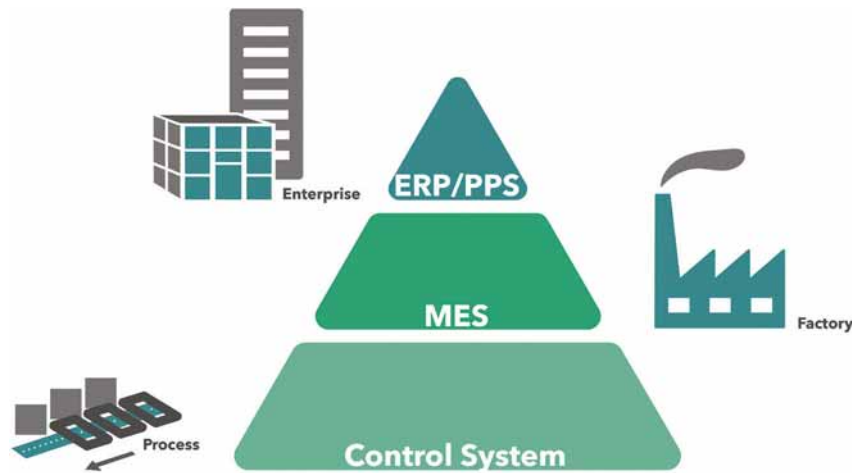
Till now no technology exists that's capable of crafting the perfect formula for glass bottle production. Here there are a myriad of factors to consider, some of which are variable and even unpredictable, such as external temperature



and atmospheric pressure. Glass container production is a labour-intensive and intricate endeavour that necessitates examination of an extensive array of data comprising composition and temperature among other variables. Compared to other industries, that of glass retains a somewhat artisanal quality, with the expertise of seasoned operators who serve as coveted linchpins for preserving the precision and excellence of the glass production process. Needless to say, prior to contemplating the involvement of AI in the quest for some flawless formula, a more advanced digitization of the factory -replete with highly precise and controlled data-becomes a necessary prerequisite. On the other hand, the utilization of this new technology should not have free reign in entirely supplanting the human factor. Operators should not become excessively reliant upon AI, as this could erode their capacity for swift decision-making and responsiveness. Instead, a harmonious blend of human expertise and AI would offer a useful solution for optimizing production processes. Also, leveraging the proficiency of qualified operators in conjunction with the capabilities of revolutionary AI systems would predictably yield superior results.

LEVERAGING AI RESPONSIBLY

All things considered, AI could substantially assist in the development of intricate data schemas - essentially bolstering preventive maintenance efforts while enhancing production processes. It oughtn't be perceived solely as a repository for triggering alerts but rather as a cognitive resource that's capable of swiftly identifying vulnerabilities and proposing improvements. Here, the potential of AI warrants consideration not only in terms of predictability but also in terms of fostering creativity and innovation. The application of artificial intelligence (AI) within the glass industry



holds immense promise - potentially heralding substantial benefits for glass manufacturers. However, it is essential to recognize that practical AI implications for improving glass production remain shrouded in uncertainty, which is why the integration of AI into the glass industry presents both challenges and opportunities that require meticulous consideration.

VERTECH'S TAKE ON AI

Vertech' acknowledges the ever-evolving landscape of AI technology. On that score the company is proactively assessing how its expertise coupled with the extensive repository of glass-related data it has amassed all align with current outcomes of AI integration. Here the company's commitment to being a vanguard of technological advancement remains unwavering. It nonetheless acknowledges at this juncture that realizing any tangible AI impact within the glass industry appears to be somewhat distant still. Indeed while AI has made significant strides in various domains, effectively adapting it to the intricacies of glass manufacturing would necessitate a more mature, refined approach which is not simply a matter of adopting AI solutions but rather ensuring their seamless integration with existing systems and processes - particularly within the realm of glass Manufacturing Execution Systems (MES). In order to harness the true potential of AI in

glass production, Vertech' considers it important to prioritize further refinement of these technologies, which necessarily involves enhancing AI algorithms, augmenting data analytics capabilities and crafting specialized applications that are tailored to the unique challenges of the glass industry. Moreover, achieving a synchronized and integrated approach to AI and MES systems remains no less imperative. This synergy will not only enhance the efficiency and quality of glass production. It will also unlock innovative possibilities for both product development and process optimization. In essence, while the promise of AI in the glass industry remains undeniable, the path to realizing its full potential remains a journey that nonetheless requires patience. Here Vertech' remains steadfast along this journey - continuously exploring how AI can transform the glass manufacturing landscape. As such the company remains confident that, with perseverance and innovation, the glass industry will eventually reap the substantial benefits that AI has to offer. ■



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The NIROX answer to securing primary packaging quality



NIROX is an Italian company that both designs and produces optical measurement sensors and systems. Its optical technologies range from point reflective sensors for measuring geometric features to advanced systems for cosmetic inspections based upon machine-vision. Here the company's no-touch, no-contact system design forms a fundamental feature towards facilitating seamless integration into production lines.

The primary target market for NIROX solutions has always been that of glass packaging. Consequently, its measuring solutions are trusted today by industry leaders in both pharmaceutical tubing manufacturing and tube converting. The company serves other sectors too, including Electronics, Scientific and Automotive Glass - all of which have stringent requirements where measurement and inspection are equally vital. Indeed, NIROX's portfolio of solutions is continually expanding as the company confronts new challenges from its customers.

PHARMACEUTICAL TUBE SEGMENT

Dimensional and finishing inspections are crucial to meeting stringent pharmaceutical standards within the industry's packaging industry, where specialised glass is used to create ampoules, vials, cartridges and syringes. Here NIROX's NCSline family of systems measures wall thickness, concentricity,

With its diverse range of solutions, Italian optical measurement systems leader NIROX excels at glass packaging with its no-touch, easy-to-integrate designs. Meeting strict inspection demands, the company's advanced measurement and control systems all raise the bar in taking pharmaceutical packaging to the next level.



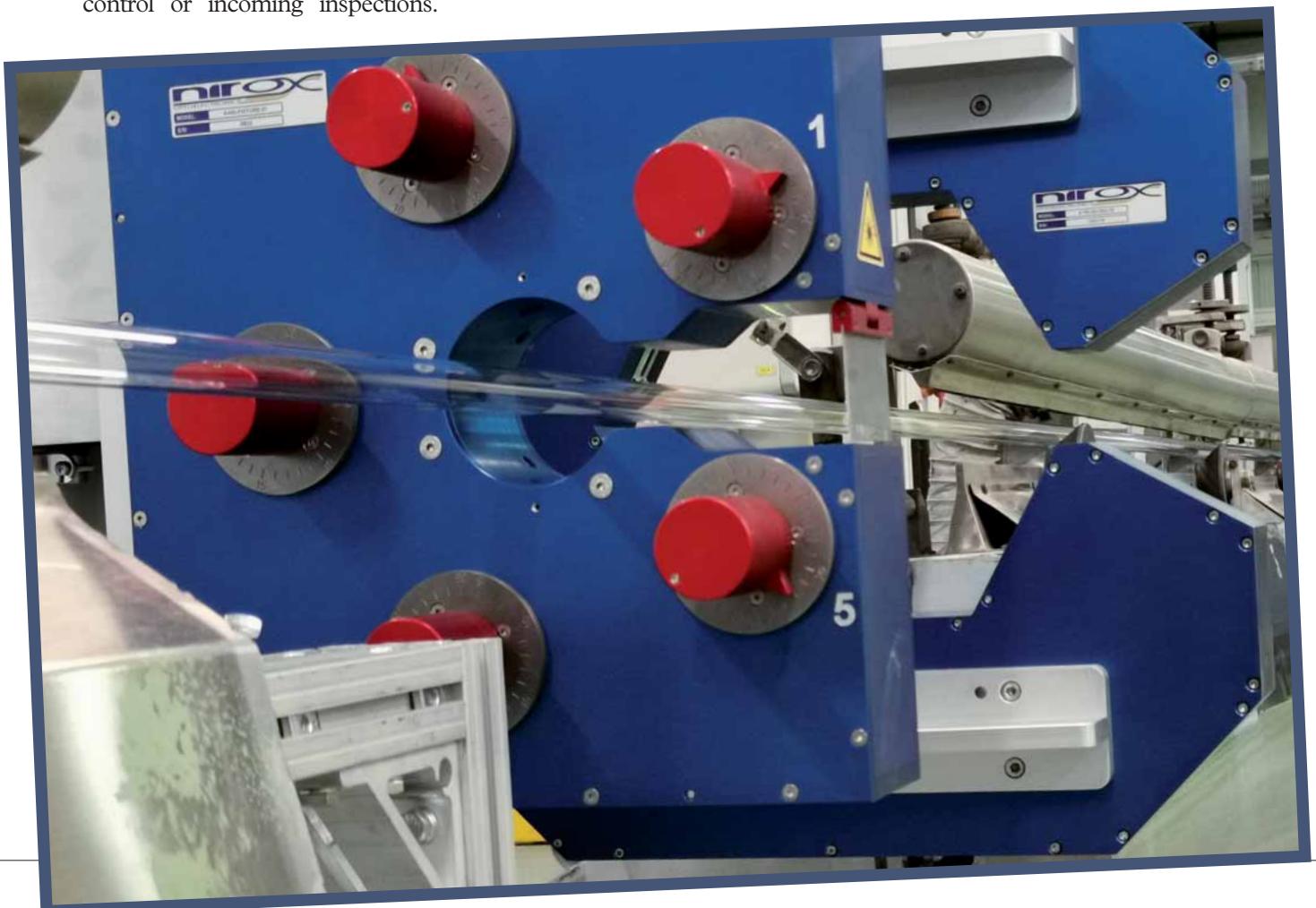
outer and inner diameters, and ovality. It also offers tube sorting and data logging for comprehensive control and performance analysis of the production line.

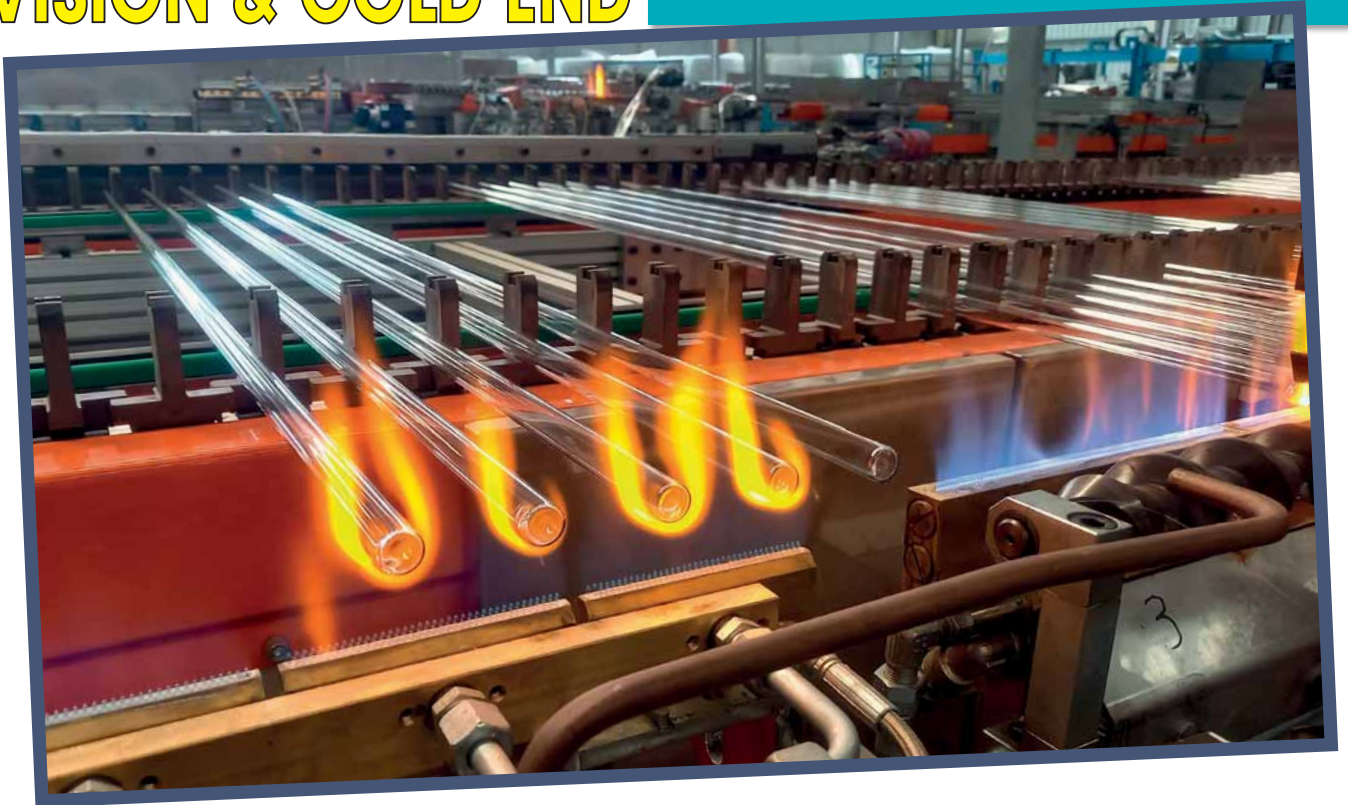
An automatic offline measuring system, NCSlab, quickly provides tube measurements for production control or incoming inspections.

It also offers complete dimensional mapping of the tube and can include defect inspection by way of an added camera module.

Another family of systems, EVline, inspects glass tubes after end-forming. As a stand-alone solution, it's easily mounted and

its modularity allows for the integration of multiple controls within a single inspection station. Here, camera modules employ high-quality optics for optimal performance. Depending upon layout, classified features include geometric and cosmetic inspection of tube.





PHARMACEUTICAL TUBE CONVERTING SEGMENT

Glass pharmaceutical primary packaging must meet extreme tolerances, with dimensions requiring 100 percent inspection to ensure packaging functionality. Here NIROX has been a pioneer in applying optical technologies that will measure previously challenging bottom features, such as bottom thickness distribution and concavity.

The company's expanded portfolio covers all requirements, from dimensional to cosmetic inspection:

VISline.B measures the

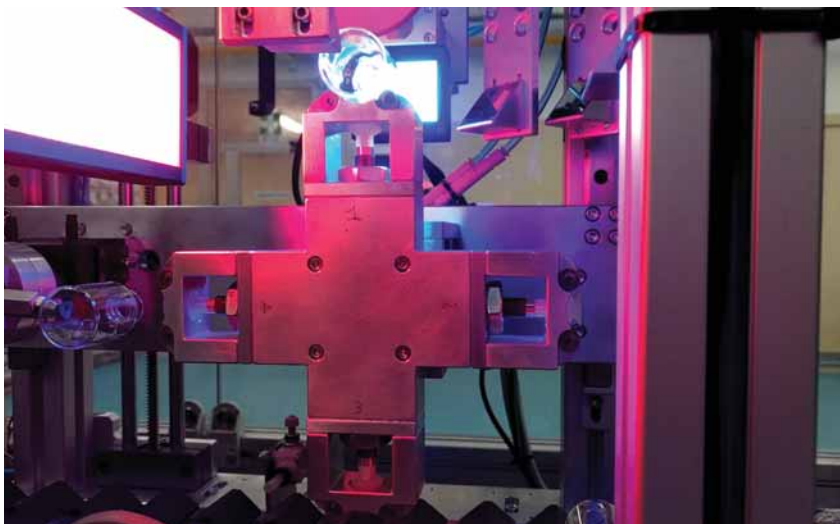
bottom features of vials or ampoules, including bottom thickness, concavity and footprint. It offers various layouts that are adaptable to different after-forming transport line designs, thereby ensuring high-precision inspections.

VISline.D will also perform dimensional inspection while the container is still mounted in a chuck on the forming machine. Subsequent inspection before the annealing oven on the after-forming line will then measure inner diameter and length.

After the annealing oven,

VISline.C conducts cosmetic inspections as the final step prior to packaging.

These systems all feature various viewing angles and are equipped with multiple cameras - both to ensure comprehensive inspections and to guarantee container quality. In each case objects are typically presented in front of the cameras, using either push-up or rotating mechanisms for optimal repeatability. NIROX team offers its skills and experience in optoelectronics to propose solutions to specific measuring and control issues. We can design and manufacture turn-key solutions according to your requirements. ■



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Cutting edge IRIS solution drives super-performing, sustainable machine learning

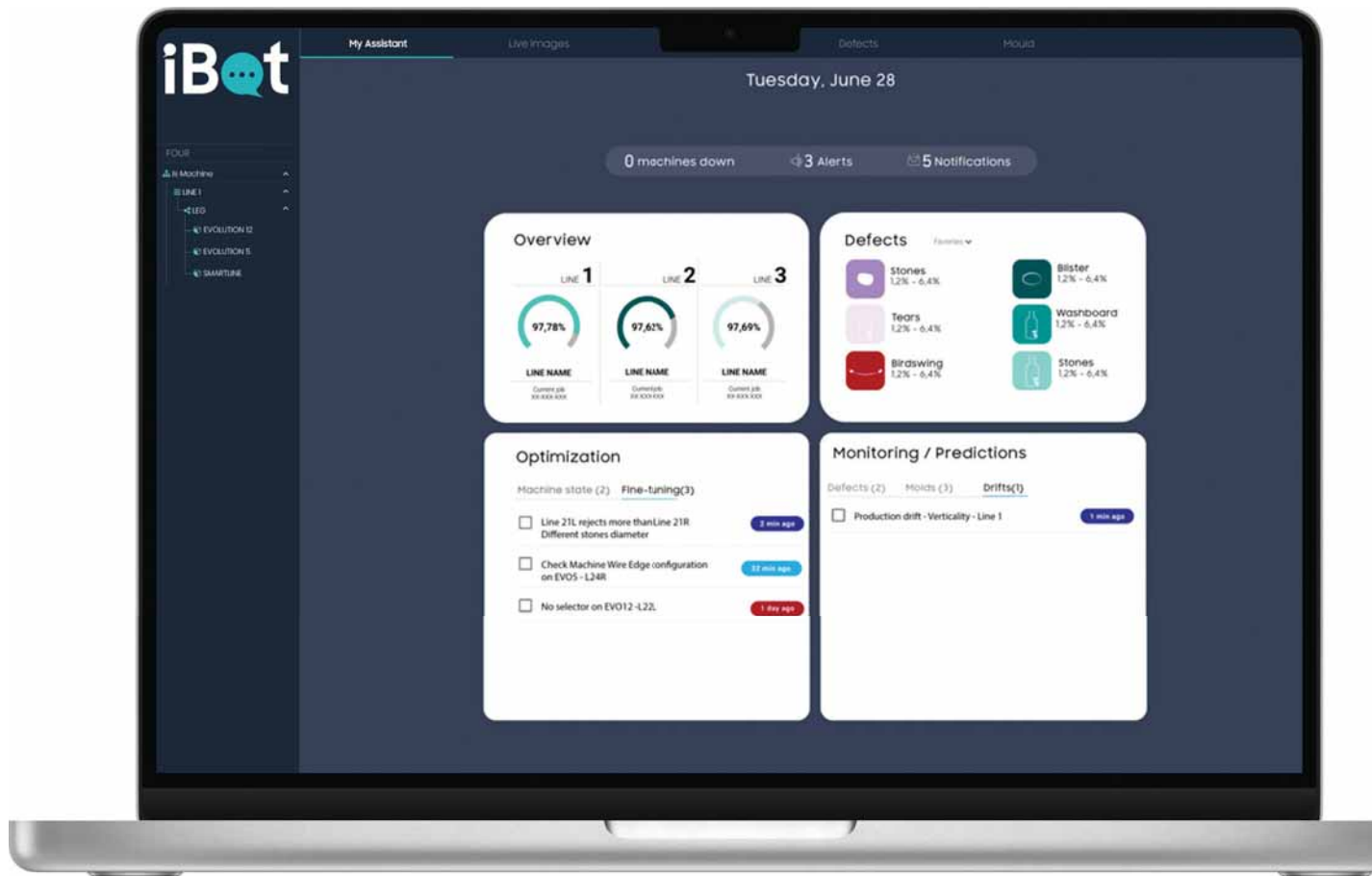
iBot uses AI to enhance defect analysis and accelerate process improvement, writes Majd Rahmani, technical director at IRIS Inspection Machines. With today's customers seeking packaging that can help them to better deliver on their zero carbon ambitions, glass packaging is facing unprecedented challenges from other materials. Here's why glass is adapting every aspect of manufacturing to the improvement of its environmental performance. For an energy-intensive business, that includes maximizing pack-to-melt ratios - all while minimizing unnecessary rejects.

SHOWCASING EXCELLENCE

As leading designer, developer and manufacturer of smart inspection solutions, IRIS recently demonstrated its latest AI-inspired innovation to manufacturers at Glassman Asia in Seoul, as well as at the AFGM Conference in Vietnam. iBot is the new super

As glass container inspection tool, IRIS' eco-friendly iBot improves product quality, reduces costs and boosts performance. In inspection machines it offers real-time insights, corrective intervention and seamless integration - all while reinforcing the company's commitment to advancing glass manufacturing with AI technology.





With iBot, we provide the right information at the right time and to the right person - on the machine itself or remotely - to help monitor performance and initiate potential changes. In summary, iBot offers a global vision as well as an incomparable in-depth analysis to our glass customers. Majd Rahmani, Technical Director at IRIS Inspection Machines

assistant from IRIS. Drawing deeply from the machine-learning capacity of industry 4.0, iBot goes far beyond monitoring and integrating the prediction of process defects into an intuitive tool.



INTUITIVE PROCESS IMPROVEMENT

All this brings substantial benefits to operators and managers alike. That's because, fundamentally, iBot improves delivered product quality by

eliminating critical defects. The technology also drives cost-savings in both operations and process improvement. Operationally, more accurate parameters, predictions and monitoring will collectively

lead to fewer false rejections by improving the recognition of genuine defects. Here iBot also identifies defects that are aligned to process elements as it simultaneously analyzes the trend to accelerate process improvement. While any classic MES will inform users with a large variety of statistics, iBot serves instead to complement that feature - giving real time information on measured values, as well as for any given section. But that's not all. iBot understands priorities to be implemented on different lines, essentially spotlighting any major defects - which are constantly evolving. By identifying drifts from



the specification and making comparisons that traverse collected data during manufacture it can trigger the process of corrective actions without delay. Indeed, that's exactly iBot's great strength.

AVAILABLE TO LICENSE

IRIS offers iBot on an annual subscription via a licensing system. Getting started is easy and installation requires neither internet nor cloud access. Not only. iBot is fully com-

patible with the company's Evolution range, which means it can connect with the customer's existing information system. With iBot, IRIS provides the right information at the right time to the right person -whether on the machine itself or remotely- thereby monitoring performance and initiating changes. The result is reliability and replicability on the production line - all delivered by AI to give glass-makers better environmental and cost performance across the business. ■

ABOUT IRIS INSPECTION MACHINES

A subsidiary of Wisetec Group and founded in 2002, IRIS is a leading designer, developer and manufacturer of intelligent inspection solutions for glass containers. IRIS masters the entire production of machines - from ideas and concepts to the production of CPU boards and on-site installation. The company offers precise and innovative inspection machines that have reduced dependence upon the human factor to increase glass plant productivity, quality and efficiency. Achieving 95 percent of sales outside of France, IRIS comprises an international team of engineers, developers, draftsmen and technicians - all of whom speak a total of 17 languages. Thanks to a network of international agents and technical support service centres, IRIS supports customers in more than 50 countries throughout Asia, Europe, the Americas, Africa and Australia. The company's inspection solutions are non-contact and equipped with the latest generation cameras, lenses and light sources. Each is artificial intelligence-based and features both self-adjusting and self-learning characteristics - including automatic recognition of glass defects. IRIS state-of-the-art inspection solutions incorporate advanced software and optics that comply with the smart factory.

IRIS Inspection machines

IRIS INSPECTION MACHINES

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'money4glass' initiative boosts Ardagh Glass Packaging's recycling

Using BanQu technology to improve its recycled glass supply chain, ARDAGH GLASS PACKAGING-South Africa recently launched 'money4glass', a platform that tracks and monitors cullet trades - benefiting both the company and recyclers. Compliant with Extended Producer Responsibility legislation, it also enables targeted incentives - driving sustainability while making glass recycling financially viable.



Using the BanQu platform, Ardagh Glass Packaging recently launched an initiative that uses BanQu's web-based technology to improve effectiveness within the company's supply chain for recycled glass in South Africa. 'money4glass' will not only help the company to track and monitor all cullet trades which ultimately bring cullet to its own production facilities. It will also help to put money in the



pockets of the recyclers in a faster, safer, transparent and more efficient way.

“This technology will enable us to identify traders, better understand the footprint of cullet recycling activity in the country and monitor the volumes of cullet traded in the different regions,” explains Thomas Shaw, Supply Chain Executive of Ardagh Glass Packaging-Africa. “Importantly, it will also allow us to make glass recycling financially viable across the width and breadth of the country through the application of targeted incentives and to ensure that payments and incentives can quickly and efficiently reach all recyclers, but particularly the informal recyclers who are at the start of the recycling process.”

This supply chain includes three levels of recyclers:

- Level 1 are glass recyclers who sell directly to AGP-South Africa in quantities of no less than ten tons per month and are registered on the company’s

database.

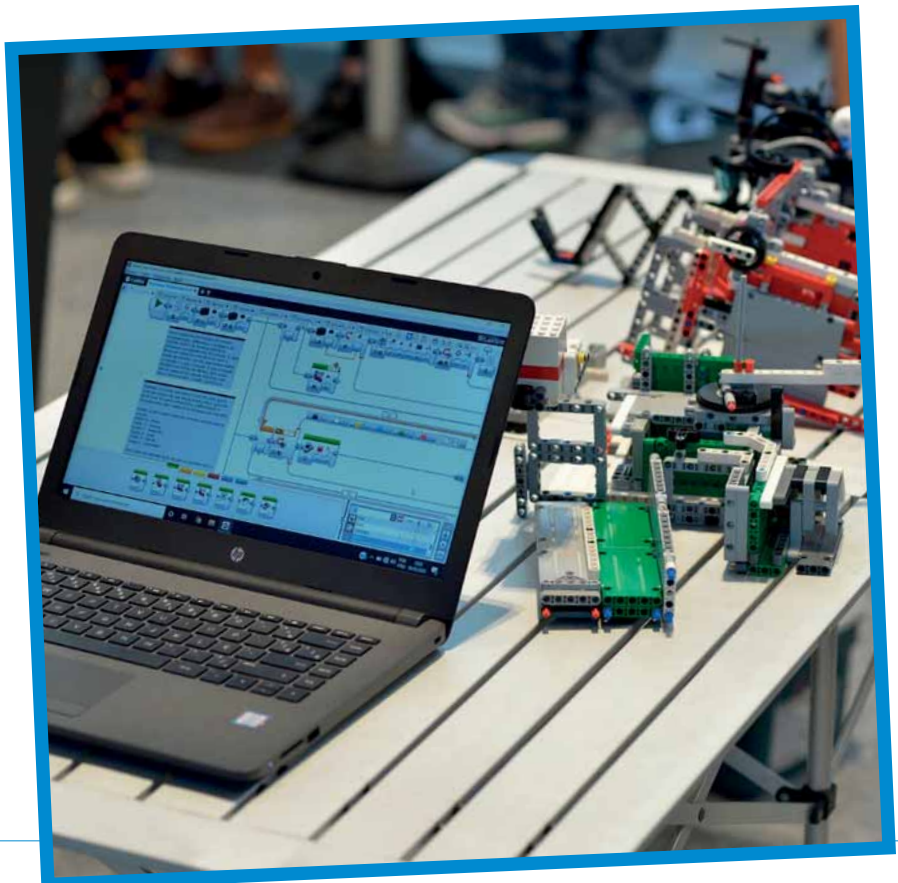
- Level 2 glass recyclers typically sell to Level 1 buyers in smaller loads, and

- Level 3 recyclers are the informal traders (mostly waste pickers) who collect glass in bags or trolleys and sell to Level 1 or 2 buyers.

RISING CONSUMER AWARENESS

There are several incentives and subsidies that can be paid to certain qualifying recyclers to help drive growth in glass recycling in South Africa. Consumers are increasingly becoming more mindful of our impact on the planet, starting with the products we buy and how they are packaged. In parallel, governments are implementing various mechanisms to ensure we reduce our environmental footprint and to create a circular economy.

In 2021, the South African government enacted the Extended Producer Responsibility (EPR) legislation. EPR is a producer-focused mechanism that aims to reduce waste by ensuring that producers of products take responsibility for the entire



RECYCLING

lifecycle of their products and packaging. The intention is to increase recycling, thus decreasing dependency on new raw materials and to ensure the effective and efficient management of end-of-life products.

BRINGING ADDED VALUE

Here BanQu technology will assist AGP-South Africa to collate data that can be used for EPR Plan audits as well as B-BBEE audits while at the same time reducing the ever-present risk of fraud, driving both recycling and transformation in the glass recycling industry. The easy-to-use platform is accessible on any internet-enabled device and records transparent transactions between registered buyers and sellers at all levels. Besides creating a formalised and transparent trading platform, the technology has several benefits for traders, for the business and for the government’s economic empowerment ambitions. For traders, the technology allows transactions anywhere, anytime; enables electronic records and bookkeeping to replace paper or manual systems; offers instant cashless transactions to reduce the risk around cash and payments, which improves trust; and enables applicable subsidies and incentives to be paid quickly and easily.

ARDAGH LEADERSHIP

Ardagh and other industry players will benefit from a growing network of connected recycling enterprises, real-time reporting and tracking across multiple buying or processing sites, easily managed supply chain data in compliance with POPIA and enhanced BEE procurement scores. Importantly, the platform will empower downstream recycling value chain players through visibility and increased bankability, will enable enterprise develop-



ment and visibility to the base of the pyramid and will strengthen waste collection network efficiencies - informal collectors included. All this is geared towards driving economic empowerment and small business development. Says Ardagh Glass Packaging-Africa CEO Paul Curnow: “Sustainability is a core focus for Ardagh. We’re acutely aware how important it is to drive increased recycling. We are confident that this initiative is going to take glass recycling to a new level in South Africa.” ■

ArdaghGlassPackaging 

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EGYPT'S booming beverages container glass industry

With a population that currently exceeds 110 million people, EGYPT stands as the Middle East's most densely-inhabited nation. That demographic dynamism has played no small role in fostering the prosperity of its container glass industry. Here's why this issue of Glass Machinery Plants & Accessories provides a comprehensive overview of the country's thriving container glass industry for the beverages sector.

Rajeev Jetley

EGYPT'S BEVERAGES LANDSCAPE

Egypt's beverage sector ranks among the region's swiftest advancing markets. Carbonated beverage sales, particularly within the younger demographic, have thrived. Indeed discerning consumers, increasingly attuned to brand identity and responsive to novel product launches targeting health-conscious trends, are reshaping the landscape. Notably, global giants like The Coca-Cola





Company and PepsiCo exert dominance through extensive marketing campaigns. Furthermore, Gulf-based enterprises are progressively engaging with Egypt's vibrant market. Noteworthy local contributors include Faragello and Juhayna Food Industries. Over recent years, fruit and vegetable juice consumption has witnessed robust growth. These premium beverages, although pricier than conventional carbonates and bottled water, are predicted to experience substantial per capita consumption growth. Such expansion, both in volume and value, stems from growing disposable incomes, essential for broader adoption of higher-priced beverages. The bottled water sector is also favourably positioned for growth. Rising incomes and heightened demand for potable water are augmenting production capacity and competition within the segment. The influx of investments from Gulf-based producers will likely further diversify the already fragmented potable water industry. Despite Egypt's predominantly Muslim population, nearly ten percent of its

inhabitants are non-Muslim. This significant minority, in conjunction with tourism sector recovery, anticipates robust growth in alcohol sales, albeit from a modest base. Conversely, the non-alcoholic beverage segment, especially that of soft drinks, is projected to outpace the growth of alcohol categories. Egypt's majority Muslim population will confine alcohol consumption growth. An ongoing resurgence in tourist arrivals may provide some uplift to alcohol spending, although inflation and conservative religious beliefs will

continue to restrict demand from the domestic population, with any growth originating from a minimal base.

Recent years have witnessed substantial investments in Egypt's beverage sector. For instance, France-based dairy producer Lactalis, which already maintains a subsidiary in Egypt, acquired the Greenland Group entirely, even if the transaction sum remains undisclosed. Founded in 1995, Greenland operates eight factories in Egypt, producing cheese, ghee, milk, juices and other fresh dairy products, with exports to 50 countries worldwide. PepsiCo Egypt declared investments exceeding USD 515M over the next four years while additionally earmarking over USD 16M for beverage sector production line enhancements to bolster operations in Egypt.

NAVIGATING ECONOMIC CHALLENGES

Egypt has grappled with a slew of economic hurdles in recent years. These encompass lower-than-anticipated GDP growth, currency devaluation and soaring inflation - rendering times especially challenging for the nation's economy.

In its June 2023 Global Economic Prospects Report, the World Bank adjusted Egypt's projected real gross





domestic product (GDP) for the current and forthcoming fiscal years. The figure was revised downward from 4.8 percent to four percent. Previously, the bank had estimated real GDP growth at 4.5 percent for FY 2022/2023 and 4.8 percent for FY 2023/2024. The revised outlook can be attributed to Egypt's sustained economic tribulations.

Rising costs, impediments in securing imported inputs and a deceleration in global demand have contributed to diminished eco-

nomonic activity - all marked by a 6.0 percent contraction in industrial production (excluding oil) in the previous year. Responding to escalating inflation, dwindling reserves and diminishing net foreign assets, the central bank has more than doubled policy rates since the onset of 2022. The report further foresees persistent challenges stemming from elevated interest rates, currency devaluation, inflation, restricted foreign currency access and burgeoning production expenses.

A FLOURISHING CONTAINER GLASS INDUSTRY

The container glass industry in Egypt, led by four major producers, currently stands as one of the largest in the Middle East region. Despite the formidable economic challenges facing the nation, this industry boasts several compelling advantages. Egypt enjoys a competitive edge in terms of production costs, boasts a burgeoning and expanding labour force and benefits from a growing domestic market. Its strategic geographical location, nestled as a close neighbour to Europe, the Gulf and Africa, positions it as a pivotal export hub. The devalued exchange rate further enhances its competitive standing, a sentiment echoed by Nestlé's market director, who recently remarked on the unprecedented growth potential once Egypt emerges from its current crisis.

MIDDLE EAST GLASS MANUFACTURING COMPANY

Popularly known by its acronym MEG, Middle East Glass Manufacturing Company takes the lead as Egypt's preeminent container glass producer. Operating six furnaces and 17 production lines across three locations, namely Cairo, Sadat City and Mostorod, MEG boasts an impressive total daily capacity of 1,050 tons of container glass. Established in 1979 as the country's first privately owned glass manufacturer, with the primary goal of meeting local demand for carbonated soft drinks, MEG embarked on production in 1983, initially yielding 160 tons per day (TPD). A significant milestone was achieved in 2009 when the company doubled its installed capacity.

In 2014, MEG strategically acquired rival container glass producer Wadi Glass, fortifying its presence in the food and juice



segments and elevating its overall installed capacity to 670 tons per day. In 2016, MEG's acquisition of Misr Glass Manufacturing (MGM) further solidified its local market position, capturing a dominant share exceeding 60 percent. This acquisition not only expanded its influence but also marked an entrance into the pharmaceutical segment. With flexible production capabilities and the ability to serve local and select export markets, MEG became a prominent player in the MENA region's glass container landscape, with an overall installed capacity of 940 tons per day. In a significant expansion effort in 2018, MEG introduced a new furnace at its Sadat City-based container glass plant. This furnace, boasting an installed capacity of 110 tons per day, elevated the company's overall installed capacity to 1,050 tons per day.

KANDIL GLASS

Founded in 2005 as Kama Glass, Kandil Glass has rapidly gained prominence in the Egyptian glass industry. Commencing operations with a capacity of 60 tons per day, equivalent to producing 100 million glass containers annually, the company later introduced a second furnace. This addition increased its installed capacity to 360 tons per day.

Currently, Kandil Glass caters to the container glass requirements of leading multinationals such as Heinz, Schweppes and Americana, in addition to serving as a key supplier to local industry leaders like Faragalla, Best and El Masreein. The company has secured its position as the second-largest container glass producer in Egypt, boasting an installed capacity of 420 tons per day.

ARAB PHARMACEUTICAL GLASS

Arab Pharmaceutical Glass is currently emerging as one of Egypt's two major pharmaceutical container glass producers, serving

the needs of prominent pharmaceutical companies such as GSK, Novartis, Aventis Pharma, Arab Company for Pharmaceuticals and Medicinal Plants, EIPCO and numerous others. With the Egyptian Ministry of Health as a significant stakeholder, the company specializes in producing an extensive range of standard and customized container glass products, spanning categories like ovals, verals, vials and drops.

Situated in Suez, Arab Pharmaceutical Glass operates with three furnaces and six production lines, which affords it an installed capacity of 300 tons per day of container glass. The majority of the company's production comprises Type 3 glass in an amber hue. Arab Pharmaceutical Glass proudly showcases its commitment to state-of-the-art technology, exemplified by its electronically controlled batch house, glass melting furnaces, six automated production lines, electronically controlled state-of-the-art forming machines and precision inspec-

tion equipment. With an installed capacity enabling the production of 1.25 million glass containers daily, Arab Pharmaceutical Glass significantly contributes to meeting the domestic pharmaceutical industry's container glass demand.

NATIONAL COMPANY FOR GLASS & CRYSTAL

The National Company for Glass & Crystal S.A.E. specializes in the manufacturing and supply of diverse glass containers for the food and beverage industries. Moreover, the company extends its services to encompass designing, drawing documentation and packaging solutions for its customers. Established in 1984, its manufacturing facility is located at tenth of Ramadan city and operates as a subsidiary of Abu Dhabi Islamic Bank.

With an installed capacity of 150 tons per day of container glass, the National Company for Glass & Crystal adeptly meets the packaging needs of several food and beverage companies within Egypt. ■



INDUSTRY ANALYSIS

Hot off the press: **TECHNAVIO** brings glass tableware into fresh focus

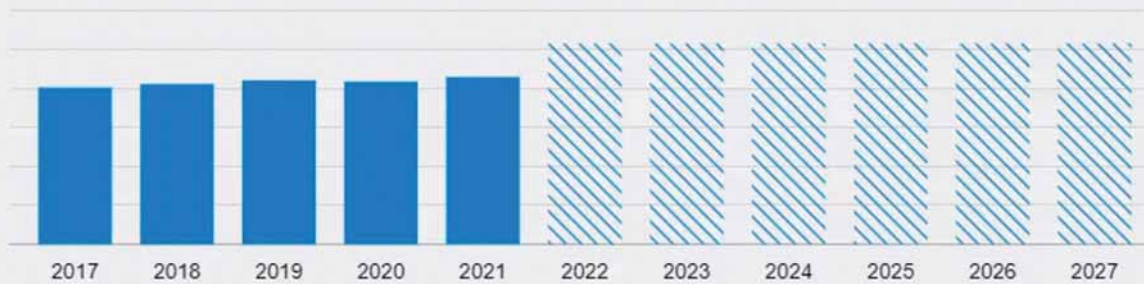
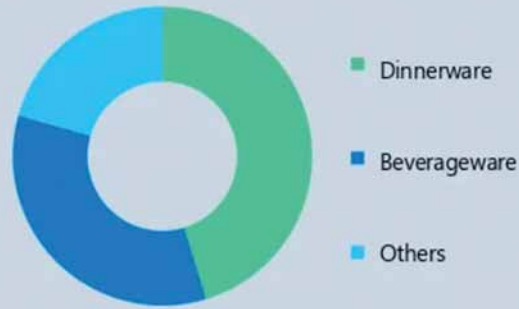


Even a cursory glance at global food services will already show an industry that's propelled by a multitude of factors. These include a surge in food consumption through frequent dining out, a surge in curiosity and experimentation with different cuisines among younger generations and a heightened sense of brand awareness among consumers. As urbanisation and disposable income continue to rise, the demand for dining out has increased. Additionally, globalisation has fueled a desire for diverse culinary experiences, contributing to the expansion of the hospitality sector worldwide, which has a positive

Delving into the trends, challenges and key players shaping glass tableware, a comprehensive industry forecast by TECHNAVIO now explores the current market by product, distribution channel and geography - all indicating great dynamism and a growth projection of USD 1,493.77M that's projected to carry a CAGR of 3.32 percent over the period from 2022 to 2027.

Glass Tableware Market

Share by Product (USD million)



Dinnerware Segment

| 2017 : USD 4,021.06 million

impact on the industry's growth. Furthermore, investments by international hotel brands in emerging economies like China and India have further stimulated growth in the food services industry in these regions. These factors are driving the overall global glass tableware market growth. Today's latest glass tableware market research report extensively covers market segmentation by Product (dinnerware, beverageware, and others), Distribution Channel (offline and online), and Geography (APAC, Europe, North America, Middle East and Africa, and South America). It also includes an in-depth analysis of drivers, trends and challenges.

MARKET REPORT ANALYSIS

Report researchers analysed the data with 2022 as the base year and the key drivers, trends and challenges. Here a holistic analysis of drivers will help companies refine their market-

ing strategies to gain a competitive advantage.

KEY GLASS TABLEWARE MARKET DRIVERS

The proliferation of hypermarkets, supermarkets and spe-

cialty stores like Walmart and Tesco worldwide has contributed significantly to the growth of organised retailing. Among the primary distribution channels for glass tableware items, supermarkets hold a prominent position as



INDUSTRY ANALYSIS

they offer a wide range of glass dishes and glass beverageware along with attractive discounts and better customer experiences via advanced technologies such as indoor location-based services. Moreover, some prominent glass tableware vendors have established their own exclusive stores, like the Sisecam Group's Pasabahce Stores, with over 40 outlets in Turkey, Qatar and Italy. Such strategies have contributed to the increase in sales of glass tableware products through retail stores such as supermarkets and hypermarkets - ultimately driving the growth of the global glass tableware market in the projected period.

SIGNIFICANT GLASS TABLEWARE MARKET TRENDS

The global sales of glass tableware have experienced rapid growth through online channels due to the widespread availability of smartphones and the Internet. Manufacturers are expanding their global presence

by selling their products through online platforms. Libbey Inc., for example, has a well-established online retail distribution network with e-retailers such as Amazon and Wayfair. The convenience of online shopping, coupled with attractive discounts and better payment and return policies, has encouraged several consumers to purchase glass tableware online. In the US, the e-commerce industry has gained significant momentum, with the Census Bureau of the Department of Commerce reporting USD 209.5 billion in retail e-commerce sales in Q3 2020. Major countries such as China, India, Germany and the UK are also witnessing a rapid expansion of their online retail channels. In particular, China, Germany and the UK have well-established e-commerce markets with robust infrastructures, while India's market is undergoing rapid development. As such, the e-commerce channel is poised to become a significant avenue for glass tableware sales worldwide.

MAJOR GLASS TABLEWARE MARKET CHALLENGES

Counterfeiting is a global issue that is spreading due to various factors such as weak supply chains and insufficient laws to prevent it. Counterfeit products often lack the same quality as the original ones, which poses problems for consumers in terms of performance and safety. This can also harm the intellectual property rights of companies, leading to negative impacts on market vendors. Counterfeiting not only results in revenue losses for vendors but also damages their brand reputation due to the sale of low-quality products, which can erode consumer trust. As an example, Borosil Ltd. mentioned counterfeit products as one of its significant concerns in its annual report. The growing prevalence of counterfeit glass tableware produced by leading vendors is expected to hinder the market's growth during the forecast period.





GLASS TABLEWARE MARKET SEGMENTATION

Product Analysis

Based on product, the market is segmented into dinnerware, beverage ware and others. The market share growth by the dinnerware segment will be significant during the forecast period. The dinnerware segment primarily includes plates as well as other serving dishes. The demand for these products is mainly fueled due to the rapid economic growth in developing countries and the shift in the lifestyle of the consumer.

A glance at the market contribution of various segments

Increasing disposable income among consumers backed by rapid urbanisation and westernisation is another major factor complementing the growth of this segment. Driven by

the benefits of glass products, coupled with premiumization, modern households and families increasingly opt for contemporary tableware sets, driving the segment during the forecast period.

Distribution Channel Analysis

In 2022, offline distribution channels such as brick-and-mortar stores accounted for the majority of glass tableware sales worldwide. This trend is expected to continue due to customers' preference for physical shopping experiences, product reliability, and the ability to touch and feel products. Specialty stores remain the key offline distribution channel, but sales may decline slightly due to customers' growing frugality. Customers prefer to buy glass tableware from departmental stores, hypermarkets, and supermarkets that offer a wide

range of products and expert customer service. Although the COVID-19 pandemic negatively impacted offline distribution channels, the availability of vaccines and an expected recovery in construction activities and income levels are expected to contribute to significant growth in the offline glass tableware segment during the forecast period.

Geographical Analysis

APAC is estimated to contribute 54 percent to the growth of the global market during the forecast period. Technavio's analysts have elaborately explained the regional trends and drivers that shape the market during the forecast period. During the forecast period, the glass tableware market in the Asia-Pacific (APAC) region is expected to grow due to increasing economic activities in the region, such as foreign direct investments, which have contrib-

INDUSTRY ANALYSIS

uted to urbanisation and rising purchasing power. This has led to a significant increase in per capita income and transformed lower-middle class populations into upper-middle class consumers. As a result, demand for premium consumer goods, including glass tableware, has increased, and many consumers are switching from conventional tableware products to glass tableware.

Covid Recovery Analysis

The outbreak of COVID-19 led to the imposition of lockdowns by several countries in 2020, which severely impacted the logistics and supply chain operations in the market in the region. However, the market recovered by the end of 2021, owing to large-scale vaccination drives and the resumption of operations in the manufacturing units of soft furnishing and textile, hardware, and lighting products. Furthermore, an increase in disposable income during the forecast period would encour-

age people to spend more on glass tableware and propel the sales of the market in focus. This is expected to drive the growth of the regional market during the forecast period.

Major Glass Tableware Market Players

Vendors are implementing various strategies, such as strategic alliances, partnerships, mergers and acquisitions, geographical expansion and product/service launches to enhance their presence in the Glass Tableware Market. One of the major vendor in the market include:

Ikea - The company offers tableware glasses which are designed to be used for setting a table, serving food, dining, and decoration.

The report also includes detailed analyses of the competitive landscape of the market and information about 15 market vendors. Here qualitative and quantitative analysis of vendors has been conducted to help clients understand the

wider business environment as well as the strengths and weaknesses of key market players. Data is qualitatively analysed to categorise vendors as pure play, category-focused, industry-focused and diversified. Furthermore, it is also quantitatively analysed to categorise vendors -as the case may be- as dominant, leading, strong, tentative and weak.

Glass Tableware Market by Product, Distribution Channel, and Geography - Forecast and Analysis 2023-2027 can be purchased directly online at www.technavio.com. ■

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Today's trends in drinks: VERALLIA offers its key insights

As European glass packaging leader, VERALLIA annually examines market trends – especially in the wine and spirits sector. Identifying environmental impact, local sourcing, authentic storytelling and the ready-to-drink market as key drivers, the company report was developed jointly this year with Carlin Creative.

Verallia UK - New Ascot bottle, for spirits



Noting how light, entertaining products signifying ‘pure pleasure’ have become all the rage nowadays, Verallia’s Selective Line Marketing Director Elena Andia recently pinpointed a growing demand for lower alcohol content, coupled with continued concern for nature conservation. Says Andia: “The first thing we looked at was the impact upon demand that’s traceable to inflation. Growth is slowing. However, we’re also seeing an increase in demand for premium and ultra premium goods. That said, what’s clear is that both artificial intelligence and the climate crisis are pushing brands to innovate in quite a disruptive manner.”

MARKET RESEARCH

FIRST KEY DRIVER: A RETURN TO THE ROOTS

Respecting nature and the local ecosystem is now vital. Consumers want brands that work on their impact, that prioritize local ties and resources, and that adopt a new outlook on the transmission of traditions.

POSITIVE IMPACT

Individuals expect brands to work on having a positive impact, either through regenerative agriculture, through initiatives that cut carbon, encourage bees, or through upcycled ingredient use.

Verallia and Carlin Creative jointly created the delightful bee design to promote this cause to consumers.



Verallia UK - Silkscreen print design on the Titus bottle

LOCAL RESOURCES

Local production has become a key advantage for consumers who see it as both a sign of quality and a way to support the local ecosystem. Here producers are adapting their recipes to use as many local ingredients as possible.

Verallia and Carlin Creative jointly developed a design inspired by local codes like a

handwritten note that appears straight on the bottle.



Verallia and Saga Décor - Silkscreen print design on the Treviso by Selective Line bottle

TRANSMISSION

Authenticity is no longer a watchword. Now it's all about traditional stories passed down through generations and adapted to our time - by switching ingredients and adapting the way drinks are served.

Verallia and Carlin Creative designed Elba: a bottle with a slender, minimalist figure which modernizes codes for both traditional methods and sparkling wines.



Verallia - New Elba bottle, for sparkling wines

SECOND KEY DRIVER: INSTANT PLEASURE

Today's consumers begin to expect a light touch and pleasure, with an affinity for sophisticated products that are ready to drink, creative aesthetics, and a promise of entertainment.



READY-TO-DRINK

The ready-to-drink (RTD) market is growing thanks to a product range that's bold, tasty and of premium quality. Each strives to offer pleasure that's light touch with alcohol contents that can suit new tastes.

CREATIVITY

With the arrival of generative artificial intelligence, creative aesthetics is changing and consumers are used to seeing highly creative content posted on social media.

Verallia and Carlin Creative designed a fresh and colourful bottle to meet these expectations.



Verallia Polska - Silkscreen print design on the Paris by Selective Line bottle

Paris by Selective Line bottle
Verallia and Carlin Creative also created Valparaíso: shaped on the elegant codes of a wine bottle with a slender neck, the bottle provides a touch of freshness with its rounded base.



Verallia – New Valparaíso bottle, for still wines

ENTERTAINMENT

Brands and distributors are working on products that combine experience and taste, targeting fans of entertainment through video games and art.

THIRD KEY DRIVER: BEST OF THE BEST

Consumers want the best. Expectations are turning to alcohol-free alternatives, quality ingredients, and exclusive ranges, in both the premium and ultra premium sectors.

HEALTH

Individuals, particularly Gen Z, are seeking moderation to preserve their health. This is bringing about a democratization of alcohol-free products and functional drinks with nootropic or adaptogenic ingredients.

TRANSPARENCY

More and more consumers are demanding transparency with regards to ingredients and production processes. Drawing on the codes used by the cosmetics



MARKET RESEARCH

sector, wine brands are starting to provide detailed and clear information about each ingredient and its function.

Verallia and Carlin Creative came up with a design where each strip represents a grape variety and its proportion.



Verallia Polska - Silkscreen print design on the Burdigala by Selective Line bottle

ABOUT VERALLIA

Re-imagining glass for a sustainable future is considered key to Verallia's purpose. As such the company seeks to redefine how glass is produced, reused and recycled with the aim of making it the world's most sustainable packaging material. Here Verallia works in common cause with its customers, suppliers and other partners across the value chain - all with a view to developing new healthy and sustainable solutions for all.

With around 10,000 employees and 34 glass production facilities in 12 countries, the company is a leading European producer of glass containers for food and beverages and the third largest globally - providing innovative, customized and environmentally-friendly solutions to more than 10,000 businesses around the world.

In 2022 Verallia produced more than 17 billion bottles and jars and achieved revenues of €3.4 billion. It is listed on compartment A of the Euronext Paris stock exchange (Ticker: VRLA – ISIN: FR0013447729) and belongs to the CAC SBT 1.5°, STOXX600, SBF 120, CAC Mid 60, CAC Mid & Small et CAC All-Tradable indexes

THAT TWIST OF SPLENDOUR

Exclusivity and a twist of splendour are ever present as twin expectations: tiny batches, luxury perfume codes and NFTs are all used for these booming ultra premium ranges. Verallia UK and Carlin Creative have jointly designed Ascot: a rounded bottle with a flat surface evoking codes that bear associations with elixirs.

FOURTH KEY DRIVER: DISRUPTION

The climate crisis and the development of artificial intelligence are forcing the market to diversify and explore new options.

TECH-ORIENTED

AI hardly plays a role in aesthetics alone. It can be used in production too, creating new



recipes and even sorting them by order of probability to ensure they're appealing.

EXPLORATION

Climate change is shifting the boundaries: from Scandinavia to space, new winegrowing regions are now being explored. Laboratories are also being asked to convert carbon into vodka or to produce wine and spirits directly from molecules.

THE CARBON FOOTPRINT OF PACKAGING

Brands and glass packaging manufacturers are working together to adopt strategies that can reduce both weight and volume while introducing reuse systems.

ABOUT CARLIN CREATIVE TREND BUREAU

Since 1947, Carlin has used its expertise to forecast international consumer trends and translate them into creative solutions. Brands that place their trust in Carlin include L'Oréal, Oenobiol, and Weleda in the beauty sector; Samsung, LG, and Mitsubishi in High Tech. Verallia added its name to these big names in 2016.

Conducted by the glass packaging manufacturer and trend agency, this study assists Verallia employees in advising customers according to current market realities in real time - which is why it's also been presented to customers at various webinars. ■



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CARPOULE FORMING MACHINES LINES

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MSK Coverttech
Olimerk
OMS
Ramsey Products
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Tecnoferrari
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Ramsey Products
WBT
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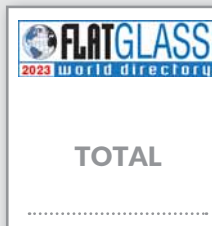
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