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Energy efficiency as success factor: ProSweets Cologne demonstrates how sweets and snacks can be produced more sustainably

Energy efficiency at the top of the agenda in mechanical engineering +++ Exhibitors at the Cologne fair grounds are presenting digital technologies as innovation drivers +++ Retrofitting as a strategy for existing machinery

Energy efficiency, decarbonisation, circular economy and digitalisation: Sweets and snacks manufacturers are faced with complex challenges today. Rising energy prices, increased regulatory requirements and climate targets are increasing the need for action across the entire industry. Resource-saving processes are becoming a decisive competitive factor. From 1 to 4 February 2026, the exhibitors at ProSweets Cologne will showcase comprehensive solutions for users seeking for ways to optimise their operating procedures while at the same time reducing their energy consumption.

Whether sweet or savoury: Sweets and snacks are popular. The spectrum ranges from sweets, confectionery, chocolate and chewing gum to nut and fruit bars. Because there are many individual wishes, the production has to be flexible and efficient - a topic of great concern for both visitors and exhibitors at ProSweets Cologne 2026. "On the one hand, the technology providers have to manufacture their machines and plants efficiently due to the rising energy costs. At the same time, the customers, the food manufacturers, are demanding solutions that enable them to produce energy-efficiently," said Guido Hentschke. The high rises in electricity prices are a further challenge. "Well-designed machines with energy-efficient components can significantly reduce the energy consumption and CO2 footprint without compromising productivity - and also address the consumers' increased demand for the greenest possible footprint," the Director of ProSweets Cologne and ISM Ingredients explained.

Modern plants ensure greater savings

Hence, energy efficiency is at the top of the agenda in mechanical engineering. This commitment will be reflected at the Cologne fair grounds in the form of applications that are individually tailored to the needs of the sweets and snacks producers. Modular machine concepts and the consistent implementation of robot systems are increasing the degree of automation and enable space-saving, energy-efficient compact plants with high performance density and short format change-over times. The control cabinets containing the electric and pneumatic components are increasingly integrated into the base of the machine. The lower space requirement makes a great deal possible: The number and length of the cables and tubes is reduced making it easier to position the assemblies where they are really needed.



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From delicate chocolates to robust crackers, the solutions displayed at ProSweets Cologne process all imaginable sweets and snacks with minimal product losses. The principle here is: The more efficient the processes, the more sustainable the production and packing can be. Innovative technologies such as optimised drive systems and intelligent control systems enable plants to use less energy whilst at the same time increasing their performance. "In addition to lower operating costs, companies also benefit from an improved carbon footprint - a clear step towards climate neutral production," is how Hentscke describes the latest developments in mechanical and plant engineering.

Efficiency increases begin with a retrofit

The exhibitors at the Cologne fair grounds offer tailor-made and multistage modernisation solutions to raise the overall efficiency of existing plants in the sweets and snacks industry up to a new level. Both individual key components as well as completely electric drive systems can be renewed in the scope of a retrofitting. Furthermore, the control system is frequently replaced and a modern operating device (HMI) installed. Of course, it is also possible to fall back on modern digitalisation tools to set up remote maintenance or a diagnosis tool for monitoring the energy consumption - in this way the machine's "efficiency boost" also leads to increased performance.

Even targeted interventions can lead to significant improvements. Because the efficiency classes of the integrated motors are frequently IE3 or IE2. Replacing an old motor with a modern synchronous reluctance motor with IE5 efficiency is a large lever for reducing the electricity consumption. Inserted into an agitator bead mill, such as those used to produce chocolate fillings, energy savings of up to seven percent can be achieved compared to an IE3 asynchronous motor. The implementation of innovative technologies also offers opportunities in the pneumatics section, for example in reducing the energy consumption of packaging machines and thus the costs. Energy-efficient modules monitor and regulate the compressed air supply in new and existing plants fully automatically. Similar to the automatic start-stop system in cars, they detect a stand-by mode and shut off the compressed air supply so that the compressed air consumption falls down to zero during plant down-times. They also enable leakages to be detected by reporting an excessively rapid pressure drop to the system operators.

Forming carton blanks without adhesive

There is also increased demand for environmentally-friendly packaging, which necessitates new technological approaches. Modern packaging machines are so flexible that they can constantly be adapted to match new requirements, for example to process both recyclable composite films as well as paper-based sustainable films using the same plant. New forming stations that are also available as a retrofit kit for a wide range of machines, round off the initiatives in the field of sustainable packaging. The key advantage: The process that involves carton blanks being slotted together instead of glued, allows the precise forming of boxes or trays without the use of hot melt adhesive. This allows sweets and snacks manufacturers to replace conventional plastic trays for biscuits or bars with eco-friendly alternatives.

Dispensing with adhesive not only improves the recyclability of the packaging, it also saves materials and costs. Since unlike traditional gluing methods, no glueing devices are used, which consume the most electricity of all components in the cartoning machine. These leave behind residues and thin threads of glue that accumulate on the machine and have to be removed regularly - a maintenance cost that is eliminated.

Keeping an eye on energy consumption

Beyond this, the electricity consumption and CO₂ emissions can be further reduced using digital solutions. Data analysis and networked systems enable the energy consumption and emissions to be monitored and reduced, while at the same time simplifying the maintenance and minimising down-times. Modern condition monitoring makes a decisive contribution towards better machine utilisation and optimised energy efficiency. The prerequisite here is knowing the electricity consumption of the various components such as the drives, cooling, pneumatics, etc. The transparent display of the actually measured energy flows and consumption reveals potential savings that would otherwise not come to light.

"Many companies are still struggling with this challenge because they lack the data transparency to identify potential energy savings," stated Guido Hentschke. At ProSweets Cologne the plant operators can find the necessary tools and services for the digitalisation of all sections of the production of sweets and snacks. A further advantage of the data analysis: Not only findings about the machine can be accessed, the impact of the upstream and downstream filling, portioning or cutting processes can also be identified. Slight fluctuations in the cooling or heating temperature can for instance lead to weight deviations of individual products. Checkweighers can react directly to such fluctuations and regulate the filling processes accordingly for example.

Steps towards a climate neutral future

From 1 to 4 February 2026, ProSweets Cologne will be placing the focus on energy-efficient solutions for the snacks and sweets industry. Visitors to ProSweets Cologne will learn how to make their processes and plants fit for the future and which levers to pull to achieve climate neutrality on both the Talks & Tasting Stage in Hall 10.1 as well as on the Expert Stage on the Central Boulevard. The entire programme is supported by the DLG (German Agricultural Society), which in its role as industry sponsor is contributing valuable expertise through its Agriculture & Food Competence Centre.

For example, the lecture entitled "Shared Packaging - Why AI Belongs to Us" explores the potential of using artificial intelligence to make packaging processes more intelligent, more resource-efficient and more consistent. The lecture "Bake Resilience into Your Value Chain", demonstrates how manufacturers can make supply chains more resilient - a decisive factor for stable, energy-optimised production processes. Furthermore, the keynote "Future-Ready Packaging for Confectionery" will provide the participants with inspiration for future-proof packaging solutions that combine functionality, sustainability and brand impact. And "Advancing the Circular Economy - AI-Optimised Material Development" focuses on AI-supported

material innovations that pave the way towards a true circular economy.

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Koelnmesse - industry trade fairs for the food technology sector: Koelnmesse is an international leader in organising trade fairs in the field of food and beverage processing. Anuga FoodTec and ProSweets Cologne are established, world-leading trade fairs, hosted in Cologne/Germany. In addition to the events at its Cologne headquarters, Koelnmesse also stages further food technology trade fairs with different sector-specific areas of focus and content in key markets across the world, including India, Italy and Colombia. These global activities enable Koelnmesse to offer its customers bespoke events and leading regional trade fairs in a variety of markets, thus creating the foundation for sustainable international business. Koelnmesse is also ideally positioned in the field of food and beverages with its leading international trade fairs Anuga and ISM and its global network of satellite events.

Further information: <https://www.prosweets.com/fair/industry-sectors>

The next events:

ISM and ISM Ingredients - The world's largest trade fair for confectionery, snacks, and their ingredients., Cologne 01.02. - 04.02.2026

ProSweets Cologne - The international supplier fair for the sweets and snacks industry, Cologne 01.02. - 04.02.2026

THAIFEX - HOREC Asia - Southeast Asia's leading Hospitality & Food Service Trade Show, Bangkok 11.03. - 13.03.2026

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