NEW GREEN MATERIALS FOR A SUSTAINABLE PACKAGING

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SMART PACKAGING HUB
your food & beverage partners

index

summary

To be considered sustainable, packaging must be made in a way that reduces its environmental impact though not sacrificing its fundamental features, such as content protection, information, and last but not least, the ability to entice purchase. Packaging companies have long been engaged in both using materials and machinery that comply with particularly stringent European standards on recycling, and in meeting the demand of more and more careful and aware consumers.

Hence, innovation moves in different directions: not only recycle and reuse, but reduction of packaging layers, less waste and control of energy consumption and emissions in the production process.

This white paper, in particular, shows how Baumer, a company operating on the international market in secondary packaging since over forty years, is addressing these challenges by proposing innovative solutions that strongly combine customisation, uniqueness and green choices.

targets

EXPLAINING
WHAT IS MEANT BY SUSTAINABLE PACKAGING AND WHY IT IS NOW A COMPULSORY CHOICE FOR COMPANIES

HIGHLIGHTING
THE MAIN FEATURES AND MATERIALS USED

INTRODUCING
THE CONTRIBUTION FROM BAUMER SRL IN TERMS OF SUSTAINABLE SECONDARY PACKAGING

ILLUSTRATING
SOME CONCRETE SOLUTIONS FROM A GREEN PERSPECTIVE

Environmentally Compatible Packaging and New Production Processes: the Reasons of a Green Choice

The European Union aims at a 100% sustainable packaging by 2030, whereas a research of the Harward Business Review reports that 65% of young people prefer to buy products from brands that promote environmental sustainability, a sign that the market rewards corporate social responsibility.

For companies, using environmentally friendly packaging means complying with the standards in force and, at the same time, creating values in terms of reputation and consumer loyalty while increasing their sales.

In fact, a survey of Research and Markets shows that the demand of sustainable packaging will reach approximately 440 billion dollars by 2025, with an annual growth of approximately 7.7%.

In particular, corrugated board is widely used today, because it allows a package to be easily opened, is customisable, versatile in shape, recyclable and biodegradable as well as very robust. Moreover, market research shows that consumers consider cardboard as the most environmentally friendly material.

Reduce, Reuse, Recycle: Features of a Sustainable Packaging

Reduce, reuse, recycle is the "3R" tag line that today influences social consumption patterns; as regards packaging it means an environmentally friendly packaging, designed and made to reduce environmental impact.

Expected targets concern firstly less use of raw material, in any case renewable and possibly compostable, its recyclability, and the simplification of the packaging system and its reuse.

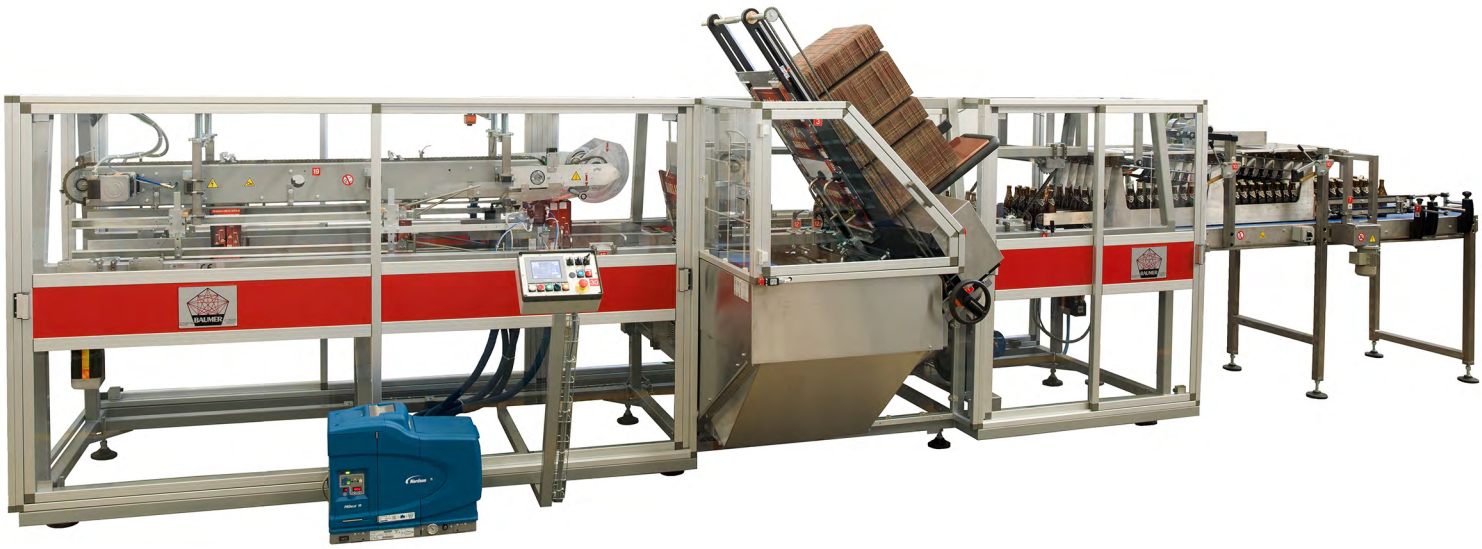
An environmentally sustainable design is configured as "circular" (the from cradle to cradle pattern) where packaging, instead of becoming waste, is converted in an environmentally useful resource.

In particular, materials must be biodegradable, reusable, recyclable, non-toxic, if possible reduced to the bare essentials, while being also light in weight, flexible and suitable for disposal.

As mentioned earlier, paper and cardboard, which by their nature have all these characteristics, are increasingly used in the packaging industry; actually, in the last decade, this industry increased by 600 thousand tons cellulose based packaging brought to market, reaching almost five billion tons (Source: Comieco-Conai).

Also growing is the use of compostable bioplastics, while more innovative materials such as thermoplastic polymers, nonwovens, bioplastics or organic packaging are increasingly being researched.

Implementing a Sustainable Innovation in Secondary Packaging: the Contribution of Baumer



As mentioned earlier, Baumer operates all over the world in the secondary packaging, mainly in the food industry, with units in Italy and Mexico.

Its strength lies in the customisation of packaging machines, for example in combined machines, that can package, through a single device, different product formats, thus ensuring a full optimization of investments that allow even smaller enterprises to make a green choice.

Besides combined units, which cover almost 30% of the production, Baumer delivers also wrappers with shrink-wrap films (e.g. conceived to make plastic film wrappers that hold cans together) and wrap around cartonners (e.g to make cartons to hold wine bottles), that can prepare up to 80 cartons per minute, also rectangular or oval shaped.

Finally, Baumer can offer its customers a 7/24 support through a remote support service (remote diagnostics and monitoring) as well as a service of planned maintenance and training on machinery, while also offering a wide range of available spare parts.

Baumer supports its customers in the design of their production line, making it possible to speak of genuine cooperation in the conception and implementation of the most suitable and efficient solution.

Case Studies

SAVING OVER 30% ON PACKAGING OF PREMIUM PRODUCTS WITH THE SYSTEM OF INSERTION OF NON-PREFORMED HIVES FROM BELOW

For premium products, like e.g. champagne, Baumer conceived a system of insertion of non-preformed hives from below. These are gate-shaped separating cartons that are inserted without the use of robotic arms that usually intervene from above when the bottles are ready. On the contrary, the Baumer system places the hive within the production line, thus saving approximately 30% cardboard. Further, insertion from below prevents damage to the labels.

SAVINGS OBTAINABLE WITH BAUMER NON-PREFORMED HIVES

6x0,75L in cardboard packaging with non-preformed hives inserted from below
Speed in line: 7,200 bph
Machine speed: 20 ppm
Line efficiency: 90%
Operations: 1 shift/day – 2,000 h/year
Output: 2,400,000 packages/year

PREFORMED PARTITIONS	PREFORMED PARTITIONS
Unit cost: **0.09 € each**	Unit cost: **0.06 € each**
Cost per year: **(2,400,000 x 0.09): 194.400 €/year**	Cost per year: **(2,400,000 x 0.06): 129.600 €/year**

ANNUAL SAVING WITH NON-PREFORMED HIVES: 64,800 €

Combined machine (Source: Baumer)

SEVERAL FORMATS, ONE MACHINE WITH BM-BELT SYSTEM

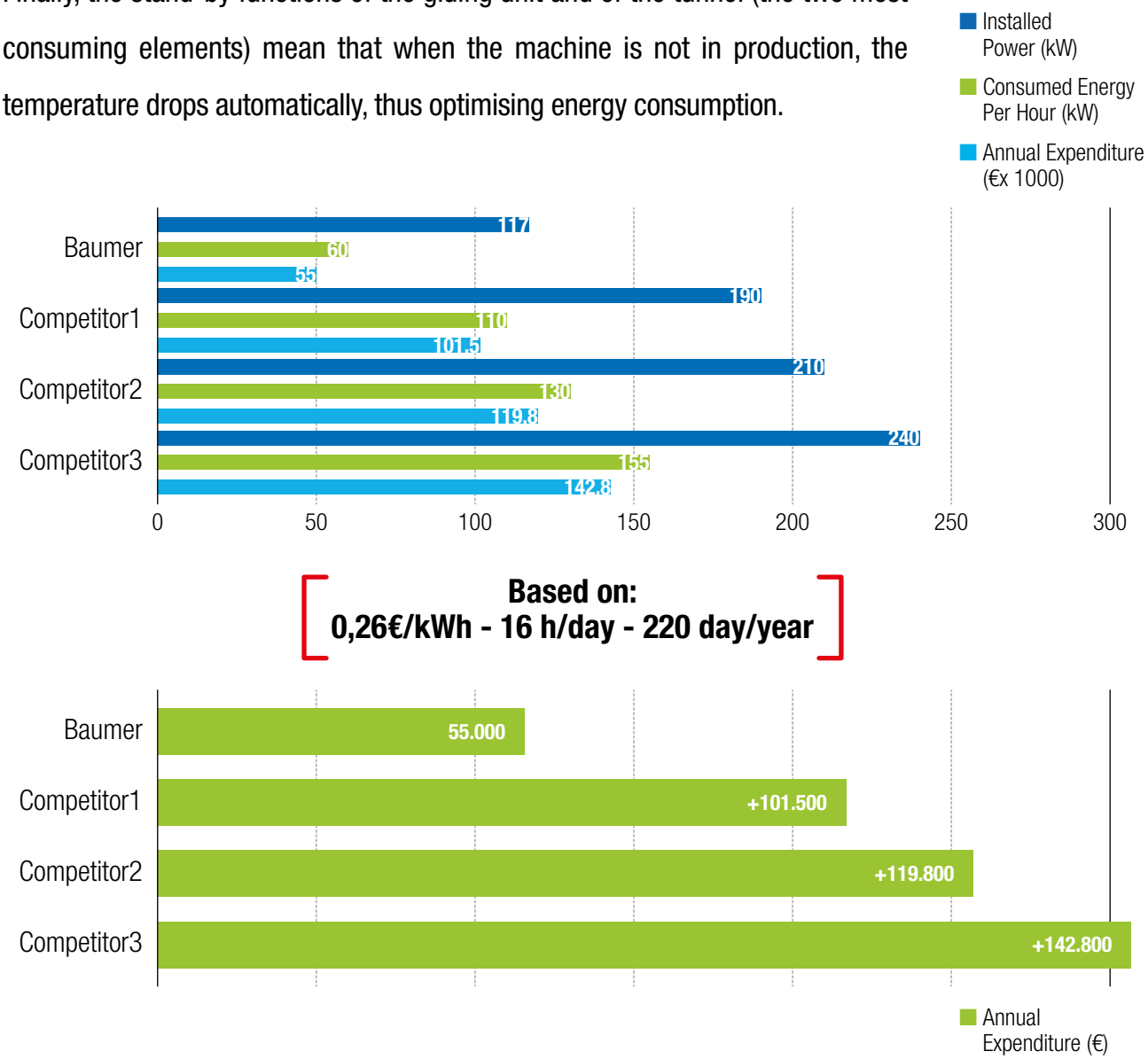
The BM-Belt System, also patented by Baumer, allows obtaining different formats on the same machine. It is also possible to use both a film and every kind of carton: corrugated, pressed and even recycled.

Thee compact and flexible machines can output up to 80 packages per minute.

SAVING ENERGY WITH SHRINKWRAPPING IN THE GREENTECH TUNNEL

The shrinkwrapping tunnel by Baumer saves approximately 20% energy, to which one can also add a saving offered by the possible use of recycled film. In addition, the system offers airflow and temperature control devices that reach the production temperature in just 20 minutes, reducing heat dispersion (thanks to insulation) and turbulence, no rippling.

Finally, the stand-by functions of the gluing unit and of the tunnel (the two most consuming elements) mean that when the machine is not in production, the temperature drops automatically, thus optimising energy consumption.



Based on:
0,26€/kWh - 16 h/day - 220 day/year

Example of savings obtainable with Baumer GreenTech Tunnel

THE FUTURE OF SUSTAINABLE PACKAGING WITH ROUGE

Early 2022, Baumer launched the Rouge solution to get rid of plastics in the packaging of bottles. In fact, it is an entirely plastic free solution, implemented with standard or recycled cardboard.

Compared to standard wrap-around solutions, Rouge uses less cardboard surface area, thus saving costs.

Besides being very interesting for companies that already apply the wrap-around system, it is interesting also for all those suppliers who want to shift from a plastic film to cardboard and who, until today, had to bear extremely high costs: with Rouge the cost difference between film packaging and wrap-around is smaller.

The packaging includes an ergonomic handle and space enough for marketing information. The packaging protects the bar code area, just as plastic packaging does.

Rouge
(Source: Baumer)

Hence, Rouge is the most convenient solution to obtain all the advantages of a green production process with, on top, a new eye-catching envelope.

Final Keypoints

- Today, using environmentally friendly packaging is a must dictated by the standards in force and the marketo
- Innovation demands sustainable materials and processes, in terms of both recycling and energy saving
- Baumer srl, with in excess of 1,700 packaging machines installed all over the world, is the ideal partner for a truly green packaging

Conclusion

In the last few years, the Food Sustainability Observatory of Politecnico di Milano noted an increasing attention paid to sustainable packaging, considered as such "when it promotes virtuous consumer behaviour due to its ease of use, resealability, portioning, etc.; when it helps to overcome critical logistics tasks such as stackability, standardisation or handling efficiency; when it is "speaking", that is when it applies innovative technologies to share information in real time in order to optimise conservation and preserve the quality of food; when it improves trackability and uses high performance materials".

In particular, packaging is sustainable when it is "natural" as far as materials are concerned (recyclable, compostable and bio-degradable), when it "respects" the environment, is conceived to minimise consumption and emissions, is "functional" and limited to the minimum needed to ensure protection, safety and hygiene, is "educational", that is able to inform consumers about its origin, its features, its durability and disposal, when it is "forward-looking", that is designed for a second life.

As we noticed, this trend meets the demand of consumers; due to number of reasons, not last the economic one, it is convenient to the manufacturer too. Hence, selecting the right partner for packaging is fundamental; the partner has to ensure the right mix of innovation, customisation and support all along the life cycle of a product, to actually support a company in its environmentally sustainable route.

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