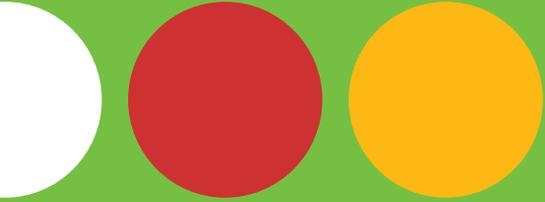


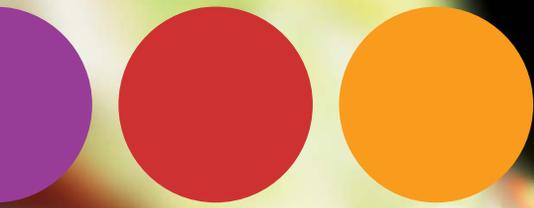
Plastic Packaging: Born to protect



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Plastic packaging: Nice to have or must have?

Plastic packaging represents almost 39% of the European plastics market and as such is now an important integral part of our daily lives. Therefore, it is critical that today's consumers understand that packaging is not only practical but is also an indispensable protection for products.



→ Plastic packaging is essential for processing, storing, transporting, protecting and preserving products.



→ Plastic packaging is not harmful to the environment if properly disposed of.



→ Plastic packaging means more with less: less waste, less energy, less resources used, reduced cost and lower GHG emissions across the full life-cycle of the product.



Keeping food fresher, for longer

In developing countries 40% of food losses occur at post-harvest and processing levels. This is partly due to the lack of appropriate packaging solutions.

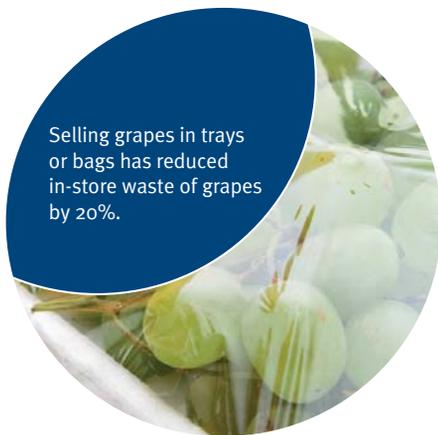
Source: FAO report "Global Food Losses and Food Waste"

→ Less food waste from production to shelf

In its 2011 report, the FAO stressed that one of the reasons behind food losses and waste in developing countries is the lack of appropriate packaging solutions. In Europe, only 3% of all products delivered to customers are spoilt between production and transport thanks to packaging, compared to 40% in developing countries.

→ Extended shelf life

From pre-baked bread rolls packed under nitrogen, to meat protected by oxygen-barrier plastic films, food is kept fresher for longer thanks to plastic packaging. The more plastic packaging is used to extend shelf-life, the more food is saved.



→ Solid protection inspired by nature

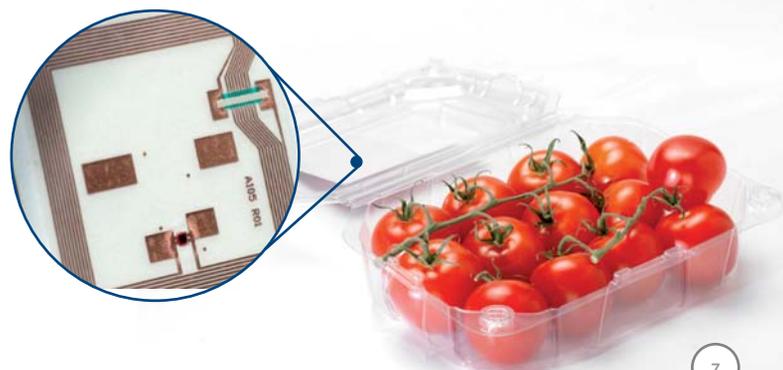
Just like a nut is protected by a shell, plastic packaging provides unequalled physical protection for many foods. For instance, egg breakage is reduced by 80% when using plastic egg packs instead of alternative materials ¹.



→ A glimpse of the future

Plastic packaging can already triple shelf life thanks to its unique properties that allow for resealable portioned films and packs, anti-microbial agents, humidity control systems and modified atmosphere packaging solutions.

In the near future, innovations will become available such as printable RFID tags (Radio-frequency identification) that provide warnings of changes in temperature and humidity levels that might affect the integrity of the product. Absorbers and emitters of natural occurring gaseous substances that prolong shelf life are already entering the market. In the future, biosensors that detect bacteria and viruses will pave the way to safeguard the quality and safety of food for consumers whilst further reducing food waste.



¹ Source: denkstatt study on the impact of plastic packaging on energy consumption and GHG emissions



Saving resources and energy

Plastic packaging is responsible for only 0.6% of the European consumers' average carbon footprint.

Source: denskstatt study on the impact of plastic packaging on energy consumption and GHG emissions

→ Reduction of food waste by better packaging

A UK retailer replaced their modified atmosphere beef packaging with skin packs. This resulted in a reduction of in-store waste from 16% down to 4%. This not only saves money and embedded CO₂, but also saves up to 15000 litres of water required in producing each kilo of beef!

According to the UK's Advisory Committee on Packaging:

- An unwrapped cucumber loses moisture and becomes dull and unsaleable within 3 days. Just 1.5 grams of plastic wrapping keeps it fresh for 14 days.
- Selling grapes in trays or bags has reduced in store waste of grapes by 20%.
- In-store wastage of new potatoes reduced from 3% when sold loose to less than 1% after specially designed bags were introduced.



Energy use and emissions for cheese



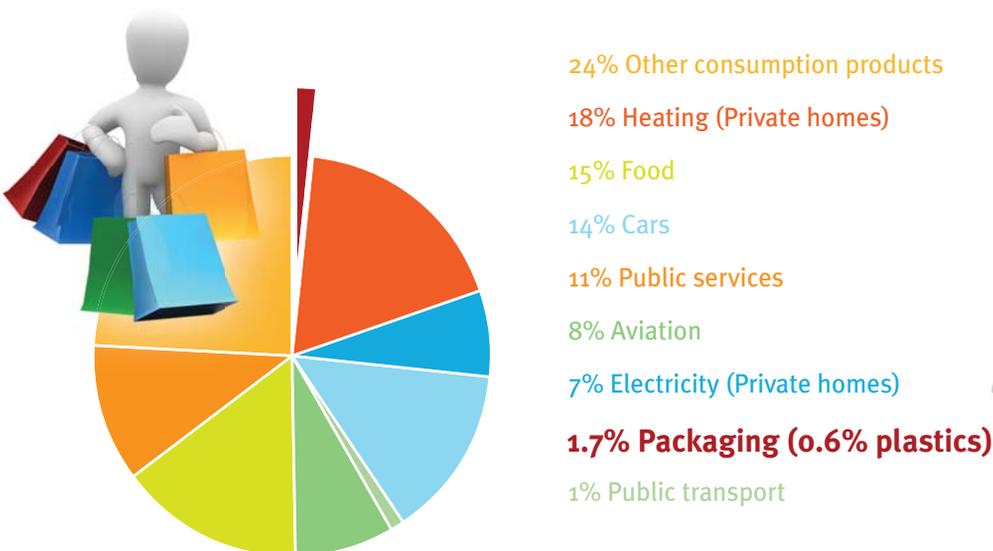
Source: Incpen ACP 2008

Sources: denskstatt study on the impact of plastic packaging on energy consumption and GHG emissions

→ The smallest environmental footprint

Only 1.5% of all oil and gas consumed in Europe is used as a raw material to produce plastic packaging whereas 90% of it is used for heating, transportation and energy generation. If food was packed using other materials than plastics, the related energy consumption would double and greenhouse gas emissions would nearly triple. This would also be accompanied by a 360% increase in the weight of the packaging!

Consumer carbon footprint in Europe



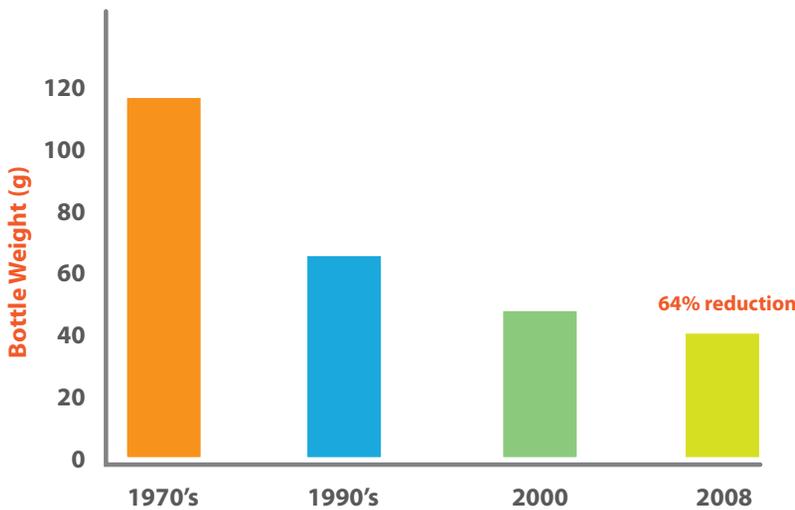
Source: denskstatt study on the impact of plastic packaging on energy consumption and GHG emissions



→ Light as a feather

The plastics industry is committed to constantly reducing the amount of plastics used in its products without compromising performance and durability. Ten years ago, the average plastic packaging weight was 28 % higher than today and even more for some applications.

Reduction in weight of a 1 litre detergent bottle over the last 40 years



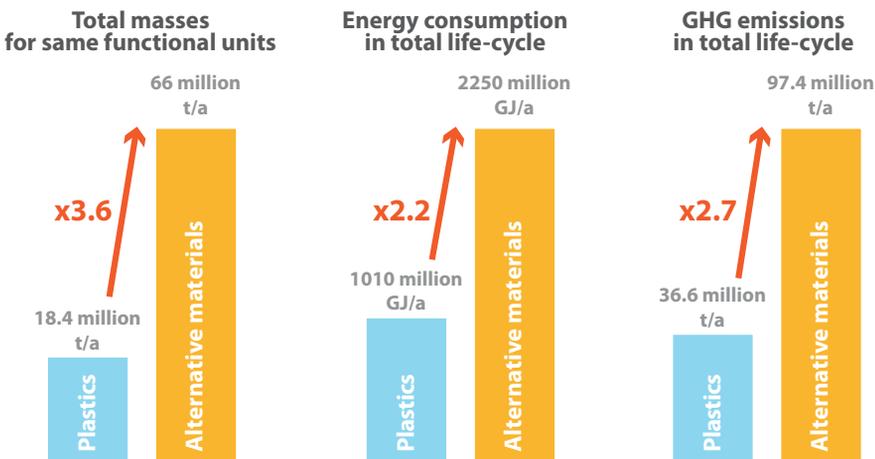
Source: Incpen



→ Controlled growth

Whilst overall consumption levels rose by 20% between 1999 and 2004, the total weight of plastic packaging consumed rose by 4%. This means that plastics help reduce the impact of a rapidly growing consumption.

What if plastics packaging was replaced by alternative materials?



Source: denskstatt study on the impact of plastic packaging on energy consumption and GHG emissions





Convenience at your fingertips

Plastics' success story in the packaging market isn't just a lucky break. Not only do they provide consumers with the best value for money, but they are lighter, more resistant, more flexible, safer, more hygienic, and more innovative than any other material.

→ Versatility

Plastics are highly versatile. They can be used in a broad range of applications including food, electronics, cosmetics and healthcare. They can be customised to accommodate specific characteristics and product requirements even after being recycled. Did you know that fleece jackets can be made of recycled plastic bottles?



→ Transparency

When buying a product, consumers like to see its appearance and to be sure it matches their expectations. Plastic packaging provides this transparency and helps reduce bruising and other potential damage caused when handling products such as strawberries.



→ Hygiene and safety

Consumers expect packaging to protect products from damage and to preserve its integrity. This is what plastics do best: they protect against contamination of food and medicine and provides a barrier against microbes, physical damage, humidity and UV radiation. They also prolong shelf life and guarantee the sterility of medicines and medical devices.



→ Ease of use

Plastic packaging guarantees ease of use for everyone from children to the elderly and plays a crucial role in daily life. It provides consumers with clear identification and labelling. It is easy to open, use and seal. A plastic bottle, for instance, is unbreakable, which makes it safe and handy for the outdoors, children's packed lunches, etc.





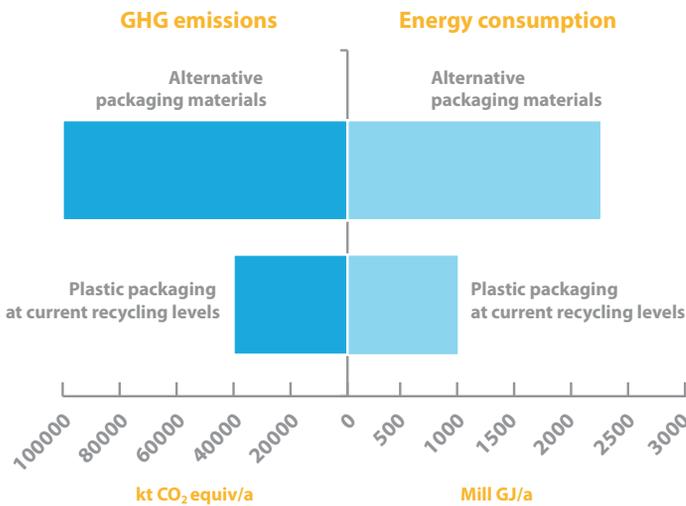
Reuse to reduce

Plastic packaging retains its value even beyond its end-of-life. It can be recycled into new products or recovered as energy to reduce the consumption of virgin fossil fuels and protect the environment.

→ The sustainable choice

The net benefits of recycling and recovering plastic packaging are often higher than that of alternative materials. Even in the case of rigid packaging such as cups and bottles, which may lead to substantial GHG emissions and energy consumption during production, this is more than compensated by its suitability for recycling.

Environmental performance of Plastic packaging VS alternative materials



Source: denskstatt study on the impact of plastic packaging on energy consumption and GHG emissions

→ A tremendous success

As innovations improve the economics of sorting and cleaning processes, the quality of plastic packaging recyclates is continuously evolving. This leads to a growing confidence among brand owners that recyclates are a versatile and valuable raw material option for many of their products.

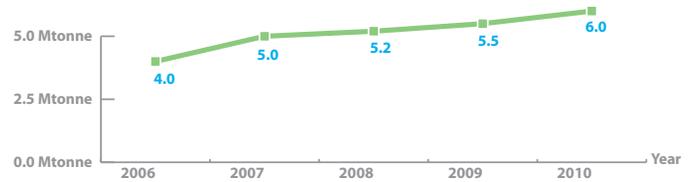
In the UK, plastic milk bottles currently contain up to 10% of recycled materials, and this share is expected to increase to one third in the near future.



→ Outstanding performance

In 2010 European recycling levels for plastic packaging reached almost 33% thereby reducing plastic packaging life-cycle energy demand by 24% and GHG emissions by 27%. This is just a glimpse of what can be achieved, as recycling rates are growing by an average 2% each year.

Plastics Waste Recycling in EU27



Source: Plastics the facts 2011

→ Making the most of raw materials

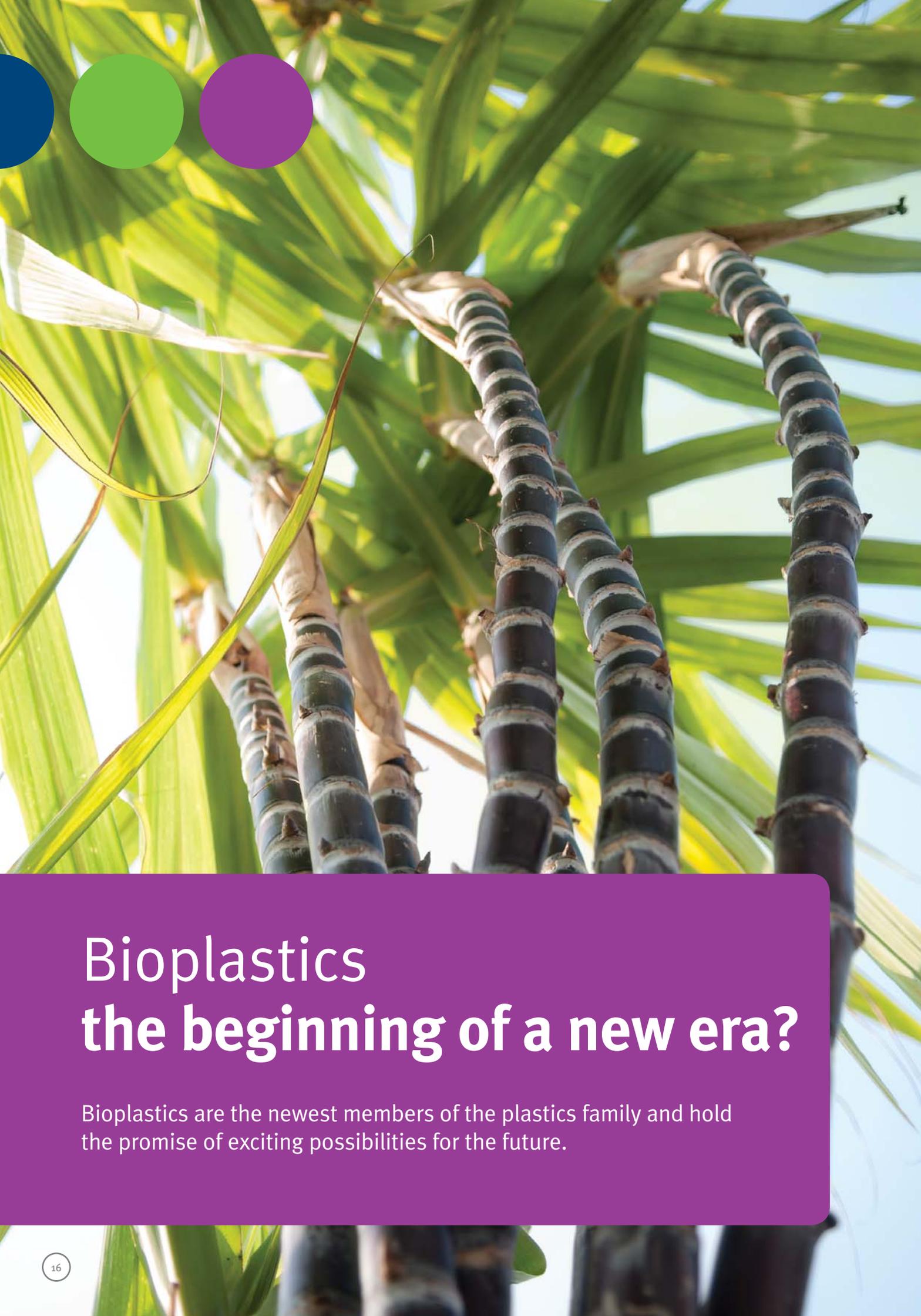
Although all plastics are recyclable, this process needs to ultimately result in saving energy and/or raw materials. Multilayer packaging films, for instance, preserve food for longer but are not economically and environmentally viable to recycle. In such a scenario, recovering plastics' embedded energy to create heat, electricity or even road fuel, thereby replacing virgin fossil fuels, is currently the best option for our planet. Thanks to current research, this non-recyclable plastic could however be depolymerized and converted back into virgin polymer in the very near future.



According to the German federal environmental agency, new plastic carrier bags often contain up to 80% recycled material.



Used plastics are also a very cost-effective and efficient way of providing heat and power in cities around Europe.



Bioplastics the beginning of a new era?

Bioplastics are the newest members of the plastics family and hold the promise of exciting possibilities for the future.

→ Biodegradable plastics:

Made of fossil or biofuel, biodegradable/compostable plastics can be degraded by biological processes at the end of their life within industrial composting facilities where they ultimately breakdown into carbon dioxide and water.

→ Bio-based plastics: a raw material alternative

Corn, sugar cane or starch can be used to produce packaging with the same characteristics as fossil fuel-based plastics. They account for nearly 1% of the market, allow for further diversification in raw materials and are already used in healthcare and hygiene products, food and beverage packaging, cutlery, toys, bags, pipes, automotive applications and even consumer electronics.

Future Innovations

Current research is focusing on the potential to capture CO₂ emissions for the production of plastics and breaking down non-recyclable polymers into synthetic crude oil for the production of new virgin polymers.



