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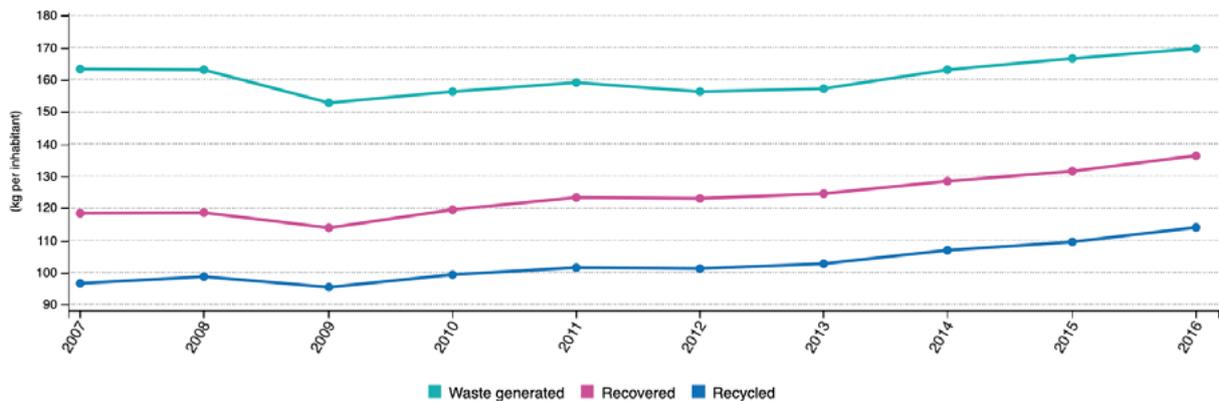


#ResourceEfficiency #EREK

SUSTAINABLE PACKAGING

Packaging is a central object of our everyday life, but there is a growing realisation of its environmental impact. For years now, reducing packaging waste has been the focus of European policies, including at national and local level. However, as packaging plays a key role in preserving products and ensuring consumer information, efforts must be done to further develop sustainable packaging: not only reducing in volume, but also making more recyclable, longer lasting, less environmentally damaging packaging.

Development of all packaging waste generated, recovered and recycled, EU, 2007-2016



Note: EU aggregates between 2007 and 2011 are estimates.
Source: Eurostat (online data code: env_waspac)

eurostat

SMEs are encouraged to change their practices, from the way they receive materials from their suppliers, to the way they present their final product to consumers. However, it raises many challenges: while a complex packaging might reduce product loss, it is often harder to recycle; return schemes only work if customers do bring back the container; how to find suppliers that will accept to take back pallets, crates or barrel; and what about the cost of changing, and what if it outweighs benefits? SMEs would usually need support to perform the needed life-cycle analysis of their packaging, and find the right materials and process.



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Packaging manufacturers are also on the frontline of packaging ecodesign. Extended producer responsibility schemes (EPRS) are expanding, currently present in 25 EU countries for different products, ranging from textiles to plastics. Some of them oblige packaging manufacturers to pay for the collection, recycling and cleaning of products, which adds pressure on the sector to innovate and provide sustainable alternatives.

In this edition of EREK Quarterly, read our interview with Arkadiusz Primus of Investeko (page 2-3), practical examples from companies (page 4), information on public-funded support programmes (page 5), and a host of other relevant tips and information (page 6).

Waste recycling, ‘the pursuit of minimalism and perfection’

Based in the Polish city of Katowice, the Institute for Ecology of Industrial Areas (IETU) is a specialist R&D centre acting under the Ministry of Environment with a focus on waste management and resource efficiency in the context of the circular economy.

IETU experts help companies to develop their waste-management strategy and advise on the best solutions, including feasibility studies for new waste facilities, analysis of resource recovery options, and more. Other consulting services cover guidance on environmental certification, training, sharing best practices, benchmarking innovative environmental technologies, and supporting companies, especially SMEs, as they embrace modern waste-management methods.

EREK News spoke with one of IETU’s experts, **Arkadiusz Primus** of Investeko S.A., about his work and how the notion of ‘waste-as-a-resource’ is spreading in Poland as more industries witness first-hand the benefits of the circular economy. His mission is to expand the use of innovative ‘green’ technologies in Poland and grow his organisation’s expertise in this field internationally.

How would you describe the recycling sector in Poland?

Waste recycling is a constant pursuit of minimalism and perfection. Fifteen years ago in Poland, very few people segregated waste or even knew what recycling was. But it is gaining popularity, and today it’s not only people from the waste sector talking about it. Society’s maturing interest in recycling is best described by the numbers. The EU’s recycling target set for 2020 is 50% of packaging waste and, according to the Central Statistical Office, Poland had reached only 27% by 2017. Overall, despite many positive changes, achieving this ambitious target is unlikely in my country.

In your opinion, what are the most important factors in sustainable packaging today?

The supply of packaging has begun to outgrow demand, and almost all of us see it in one form or another in everyday life. Producer’s traditionally focused on eye-catching packaging design, ignoring or omitting to address the environmental aspects. Packaging with lots of components may be attractive to consumers, but the additional layers or elements make them more difficult to recycle. For instance, contemporary plastic in addition to pure raw material may contain fixatives and other substances that improve its properties but are a nightmare for recycling. Some products like toothpaste only need the tube for the paste, not additional cardboard packaging. When designing packaging, it should be guided by the thought of ‘how to dispose of it in a sustainable way’ and then ‘how to design it aesthetically’, not the other way around.

“The supply of packaging has begun to outgrow demand, and almost all of us see it in one form or another in everyday life.”

What innovations are you seeing that could be game-changers regarding packaging recycling?

The greatest burden of recycling is on the side that has the least impact on it. There are three main parties in play: the producer, the consumer, and the recycler. The consumer has a problem with waste segregation, and the recycler has no technical means to recycle multi-component waste. In my opinion, there are two real solutions. Ban the mixing of various components in the production of the packaging while promoting greater producer responsibility, or thermally treat the end-of-life materials. It’s about time to give equal weighting to cost-effective recycling and high-temperature treatment, especially if the heat can be used to generate electricity too.



Arkadiusz PRIMUS graduated in Environment Protection and Management at Silesian University of Technology. He founded and runs Investeko's design, engineering and consulting services specialising in waste management, environmental protection and waste2energy. He is author of numerous expert opinions on technical-legal conditions and the impact of investment on the environment, and has spoken at major conferences on the subject.

How are smaller firms and traditional industries dealing with changes in consumer expectations and stricter regulations?

Finding the balance between consumer expectations and economics while complying with the regulations determines the attractiveness of the company. Transparency towards society is the most important. If not for openness to social fears and sincere conversations with local activists, Investeko S.A., the company I represent, would not have been able to set up its own research installation for gasification of non-recyclable waste.

What one piece of advice would you give to companies in Poland or elsewhere embarking on a resource efficiency drive?

There is growing public awareness when it comes to environmental pollution and its impact on our well-being. I would encourage all entrepreneurs, manufacturers and retailers to take into consideration the sustainability of their operations. It is their responsibility to raise awareness within their organisations, and to have an environmentally-friendly approach by developing and enhancing their business models to guarantee efficient resource management.

Anything else you want to share with EREK readers?

We convinced the local community of the benefits of high-temperature gasification units for residual waste that can't be recycled due to contamination with biodegradable material. They have good combustible properties and work well for smaller-scale waste solutions (e.g. ~20,000 tonnes per year). The environmental gains are disproportionately high compared to the costs incurred, because these are problematic types of waste, which can no longer be sent to landfill.



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More info:

Investeko S.A.

IETU

Sustainable Packaging in practice

Making small-sized custom-packaging viable



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Digital technology has made it not only possible for custom-packaging companies to save on material and energy costs, but also to broaden their client base. Wetropa GmbH, for instance, is a company which devises foam packaging for the automobile, electronics, medical and measurement industries, and has branched out into more trades thanks to new technology. Wetropa has developed an app (FoamCreator) which directly converts simple information provided by the client – a photograph and measurement of the objects to be packaged – into the exact corresponding shape and layout of foam inserts. Benefits of this ‘dematerialised’ process include the compression of what used to represent week-long back-and-forth revisions between client and manufacturer into a few minutes. The material and energy costs of intermediate prototype production have also been radically reduced. By compiling data from different clients, small-sized orders can be merged into a single production process. Ultimately, a more efficient use of space on foam blocks makes it economical for the company to produce a single foam insert. This has allowed Wetropa to reach out to a whole new range of customers with individual requests.

➤ www.resourceefficient.eu/en/good-practice/making-small-sized-custom-packaging-viable

Reusable materials tackle waste in food production



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Marie is a French agribusiness specialising in manufacturing and distributing fresh and frozen prepared meals. The company took a close look at its production process and realised that the way the food is contained and delivered had a significant impact on waste volumes. It was discovered that ingredients supplied in relatively small 15 kg containers generated around 4 tonnes of waste per year, i.e. more than 9 000 unrecovered buckets, as well as important handling costs. The company consulted with its supplier to find a more environmentally friendly solution. The ingredients concerned are now delivered

in large-volume containers of 1000 litres. These containers are reusable, further reducing waste. This upstream measure not only saved Marie € 1 000 a year in waste-management costs, it also significantly reduced the volume of packaging, which is a positive development for the environment and for the company’s ‘green’ image. Workers quickly adapted to using the larger containers (no observed increase in spillage), including rinsing buckets for return. This approach can be replicated in all companies currently purchasing ingredients/materials in smaller-volume containers.

➤ www.resourceefficient.eu/en/good-practice/reusable-materials-tackle-waste-food-production

Smart packaging in paint industry

Choosing to minimise the amount of packaging and the material used made a big difference for Eskaro, a central European supplier of paint and related products. Eskaro joined the European EDECON project to study ways to improve its packaging, assisted by a consultancy firm and the local chamber of commerce.



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Together, they looked at how to minimise the amount of packaging needed, choose a material that is environmentally friendly without affecting the quality or lifespan of the product, package goods in the right quantities to eliminate products going to waste, and to explore if they could make packaging re-usable. This so-called life cycle analysis (LCA) is a good first step to identify environmental impacts of product packaging. It analyses the relationship between the materials used, the packaging itself, and its effectiveness in the eyes of the consumer, and the amount of waste it results in. Together with the consultants, the company created a life cycle map for one of the products, which allowed all employees to review the environmental impact, beginning with the choice of raw materials, production, packaging, painting and ending with waste.

Following this exercise, Eskaro planned to create similar maps for other groups of products and apply the principles of eco-design to them. Moreover, a detailed audit took place during the programme, which resulted in the decision to make a change in shipping and distribution of products. Reducing the package weight helped to lower truck loading and costs of transportation. The lower the transport costs, the lower the energy consumption, air pollution and CO2 emissions. Packaging costs were also notably reduced.

➤ www.resourceefficient.eu/en/good-practice/smart-packaging-paint-industry

Check out our EREK database for other good practices, measures and technologies that allow SMEs to cut resources and energy through digital solutions.

Want to change your packaging but not sure where to start?

Below you can find some examples of European and national programmes offering support (funding, contacts, expertise, information) to SMEs interested in introducing sustainable packaging for better environmental performance.

EREK network members can also advise customers/local companies looking for experts in packaging solution and relevant support measures.

Fost Plus - PreventPack

PreventPack is a Belgian initiative that provides a range of tools, services, and advice on green packaging, recyclability, ecodesign and more. Online, you can find a catalogue of best practices and advice, an ecodesign tool, a newsletter on packaging prevention and various publications on the topic. They organize roadshow exhibitions, and provide on-site packaging check-up and advices. The programme also delivers CO2 certificates and the Greener Packaging award.

➤ www.resourceefficient.eu/en/support-programme/fost-plus-preventpack

Pack4Ecodesign

Packaging consumes around 5 % of the energy needed during a product's life cycle. Pack4Ecodesign is a free online toolbox to help professionals design better, more eco-friendly packaging. In particular, the tool calculates the environmental impact of specific packaging materials used in terms of greenhouse gas contributions, water and energy consumption, and provides tips to address these concerns.

On the basis of information provided, the tool calculates the current packaging footprint: CO2 emissions, water consumption and energy consumption at different life-cycle stages (raw materials, packaging, manufacturing, filling, distribution, end of life).

The tool then informs eco-design measures to implement in each part of the packaging life cycle, in order to reduce the environmental impact, and shows the benefits or 'balance' after each new measure is introduced.

➤ www.resourceefficient.eu/en/support-programme/pack4ecodesign

Eco-Innovation LT

This Lithuanian programme is a financial support engine for projects intended to improve the environmental impact of products throughout their life-cycle (raw material selection and use, manufacturing, packaging, transportation, use), systematically integrating environmental aspects at the

earliest stage of product design. The programme encourages micro-, small- and medium-sized enterprises to introduce non-technology eco-innovative approaches, such as environmental management systems, production and environmental audits, and eco-design principles.

➤ www.resourceefficient.eu/en/support-programme/eco-innovation-lt

Sectorial Ecodesign Guidelines

These ecodesign guidelines help companies to introduce environmental improvements in their product design processes. They include technical specifications based on general life cycle assessments and previous research and data.

There is specific guidebook for eight different product categories: automotive components, electric and electronic equipment, machine tools, packaging, construction material, furniture, urban furniture, and textiles. Practical examples of the ecodesign methodology for each product category are provided.

Guidelines are available in Spanish.

➤ www.resourceefficient.eu/en/support-programme/sectorial-ecodesign-guidelines

Further reading & resources

If you want to learn more about sustainable packing, please check the following links and resources.

REPORTS, STUDIES:

- **CONSEIL NATIONAL DE L'EMBALLAGE (2019)**. Recycled materials and packaging: state of play, advantages, obstacles, issues and prospects.
[see here](#)
- **CONSEIL NATIONAL DE L'EMBALLAGE (2017)**. Packaging: the development of consumption patterns and distribution channels.
[see here](#)
- **CONSEIL NATIONAL DE L'EMBALLAGE (2016)**. Packaging and deposit systems: overview of reuse systems.
[see here](#)
- **GENDELL, A. , PIERCE, L. (2018)**. 2018 Sustainable Packaging Study. Packaging Digest.
[see here](#)
- **INSTITUTE FOR EUROPEAN ENVIRONMENTAL POLICY (2018)**. Plastic Packaging and Food Waste – new perspectives on a dual sustainability crisis.
[see here](#)
- **KHALIL, H. A. ET AL. (2016)**. A review on nanocellulosic fibres as new material for sustainable packaging: Process and applications. Renewable and Sustainable Energy Reviews, 64, 823-836.
[see here](#)

NEWSPAPERS AND BLOGS:

- **JOEL MAKOWER**. Loop's launch brings reusable packaging to the world's biggest brands. GreenBiz, 24 January 2019.
[see here](#)
- **DAVID ROBERGE**. Why it pays to use sustainable packaging materials. Industrial Packaging, 24 May 2018.
[see here](#)
- **RICK LEBLANC**. What Is Reusable Packaging? The Balance Small Business, 16 February 2019.
[see here](#)

GUIDES

- **SUSTAINABLE PACKAGING COALITION (2019)**. Design for recycled content guide.
[see here](#)
- **INCPEN AND FOOD AND DRINK FEDERATION (2017)**.

Packaging for People, Planet and Profit – a sustainability checklist.

[see here](#)

- **EUROWISE AND INCPEN (2018)** PackGuide – A guide to packaging eco-design.
[see here](#)
- **EUROPEAN COMMISSION**. Information on packaging waste legislation.
[see here](#)

PROJECT:

- **GO 4 SUSTAINABLE PACKAGING**
[see here](#)

VIDEOS:

- **METSÄ GROUP (2018)** Why Should Brands Choose Sustainable Packaging
[see here](#)
- **2 DEGREES (2014)** Webinar: increasing profitability with sustainable packaging
[see here](#)
- **AL JAZEERA AMERICA (2015)** Eco-friendly Packaging – TechKnow
[see here](#)



EREK - YOUR REFERENCE POINT ON BUSINESS COMPETITIVENESS THROUGH RESOURCE EFFICIENCY



The European Resource Efficiency Knowledge Centre (EREK) is here to help European companies, especially SMEs, save energy, material and water costs. We provide tools, information and business opportunities that show you new and better ways to be resource efficient and benefit from circular economy business models which turn waste into an asset.

EREK also supports national, regional and local organisations across Europe that work with SMEs to improve their environmental performance, helping them to become more resource efficient.

www.ResourceEfficient.eu



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