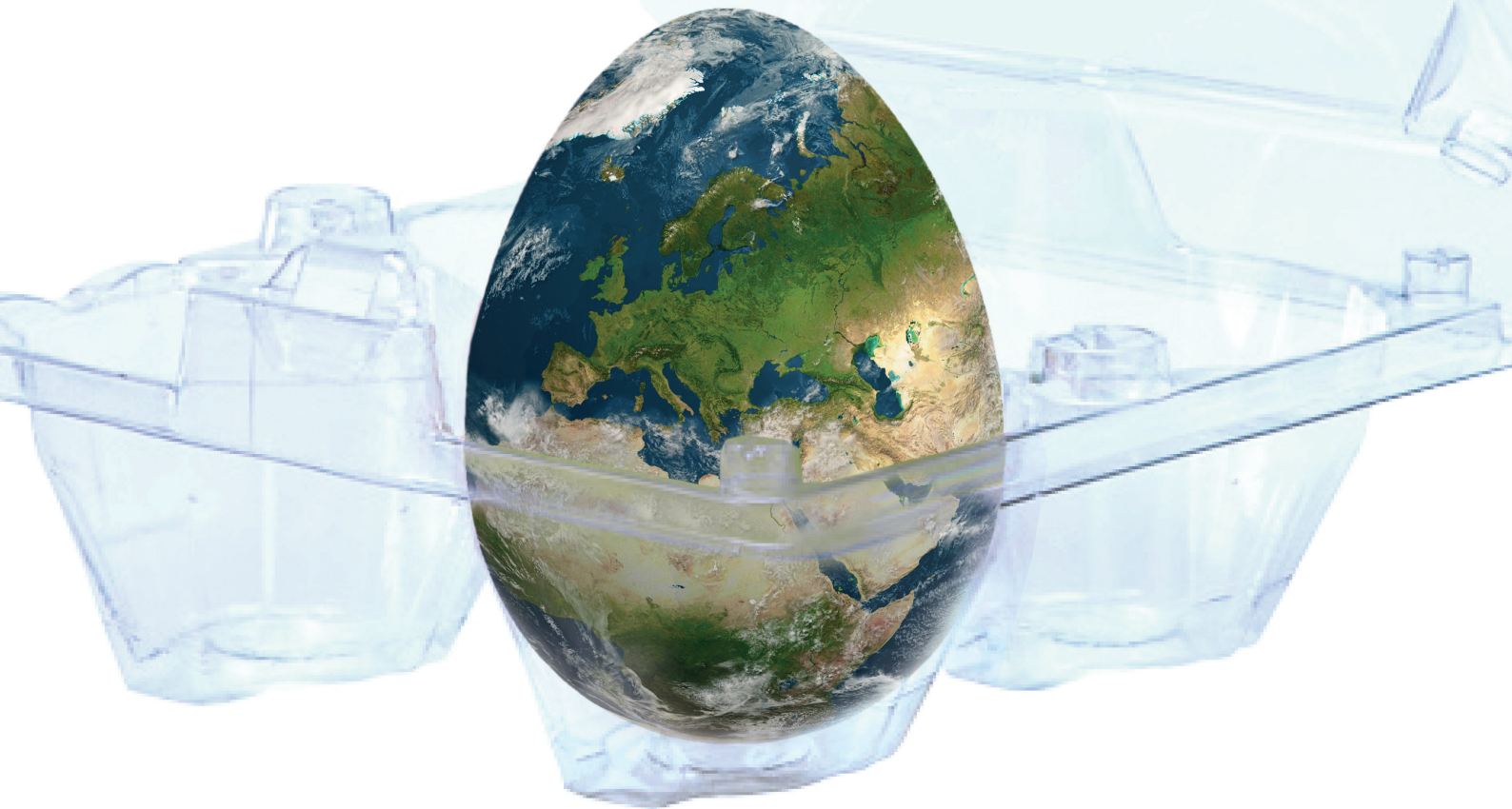


PERFECTLY

PROTECTED EGGS

& GOOD FOR

THE ENVIRONMENT



THE ONLY EGG PACKS THAT CAN DO BOTH

EGG PACKS THAT MEET RETAILER'S DEMANDS:

**PROTECTIVE, LIGHTWEIGHT,
RECYCLED – AND RECYCLABLE**

Strategies of several European retailers present a number of criteria for sustainable packaging solutions. **Ovotherm egg packs fulfil all of these.**

IMPRESSUM

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If no other source is mentioned, facts on environmental impacts of packaging were provided by denkstatt GmbH, a leading sustainability consultancy in CEE.

- ✓ **Lightweight** (Pulp is 40% heavier)
- ✓ **Optimal protection of packed goods**
- ✓ **Recyclable**
- ✓ **Made of recycled material**
- ✓ **Mono-material solution**
- ✓ **No colours and additives disturbing recycling**
- ✓ **No negative impacts on packed food**
- ✓ **Competitive pricing**

WELL PROTECTED EGGS HELP TO REDUCE FOOD WASTE.

The environmental footprint of the eggs packed is many many times higher than the footprint of the packaging.

Ovotherm egg packs have been steadily improved over the last 50 years in order to enable an **optimal protection** of the fragile product egg. Food waste has become a **major issue** also in the discussion about the environmental impact of our daily life. **Clear egg packs** allow consumers to **see – without opening** the packs – if there are any broken eggs. Should there be a **broken egg** in a rPET egg pack this **cannot leak through** the pack and affect the packs next to it. Plastic packaging makes a valuable contribution to **reduce food waste**. 40-50 times of the resources are needed to produce 10 eggs compared to the production of their packaging. If only 2 out of 100 eggs break, then the environmental impact is already as high as the impact of total packaging for 100 eggs. **Therefore Minimizing food waste is key!**

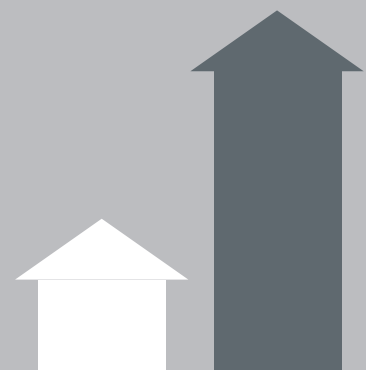
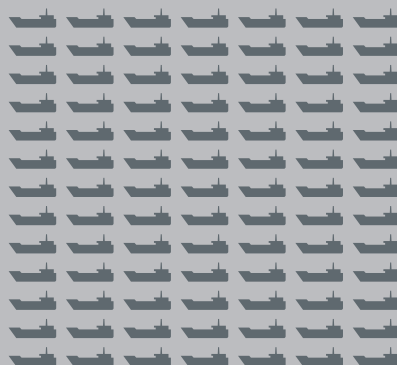
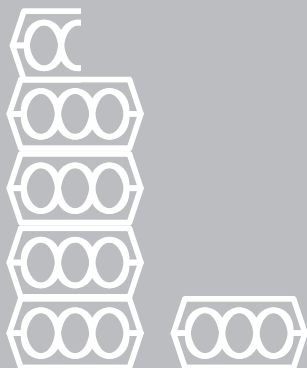
TRASHING ONE EGG WASTES ABOUT
200 LITERS OF WATER



Sources: savethefood.com

Plastic is a powerful material to protect food – lightweight but strong.

Replacing all plastic packaging with non-plastic alternatives would:



Require 4,5 times as much packaging material by weight and by this **increase the amount of packaging** used only in the U.S. **by nearly 55 million tons per year.**

Increase energy use by 80 % - equivalent to the energy from 91 oil supertankers

Result in **130 % more global warming** potential – equivalent to adding **15,7 million cars more** to our roads.

Source: Franklin for ACC, 2014

DID YOU KNOW?

Ovotherm's rPET egg packs are made of 100 % recycled beverage bottles and can be recycled into new egg packs.

In addition they are fully recyclable. These characteristics make them a prime example of the new circular plastics economy.

Egg packs from PET/rPET are fully recyclable. Egg packs can be made from used egg packs after the collection and recycling process over and over again.

Should an egg pack to egg pack PET recycling not be implemented yet, many sorting plants for plastic packaging also produce a non-beverage PET fraction, where waste is typically recycled into PET fibre products. Also in this recycling route the same amount of primary PET is replaced by the recyclates, which is the main aspect of high

quality recycling. Furthermore these recycled fibre products often have a considerably longer lifetime than packaging applications.

Mixed paper and cardboard from household packaging collection is usually processed into cardboard not into pulp egg packs. Cardboard made from 100 % recycled material is approx. 30-50 % thicker than equivalent products made from 100 % primary material. This means that the amount of substituted primary fibre is considerably lower than in the PET recycling routes.

Rigid PET material is increasingly collected, sorted and recycled



Recycling of beverage bottles into high quality food packaging

RPET egg packs prevent food waste by reducing egg breakage



Detailed peer reviewed LCA study confirms lowest carbon footprint, water & energy consumption



Ovotherm received the Green Packaging Award in 2015, and the WPO World Star Sustainability Award in Gold in 2016.



Learn more about Ovotherm's process of recycling PET bottles into rPET egg packs on:

earthfriendlypackaging.net

There are neither BPA nor Phthalates in PET bottles – so there are NO plasticiser, bisphenol A or other critical chemical agents in Ovotherm egg packs!



Compared to pulp egg packs packaging costs for rPET egg packs are considerably lower.

More precisely:
Often rPET egg packs are less expensive than pulp packs. In addition stacked empty rPET packs need 50 % less space in warehouse and truck. This results in less handling and administration costs.



Compared to pulp egg packs handling for packers is more efficient – and less dusty.

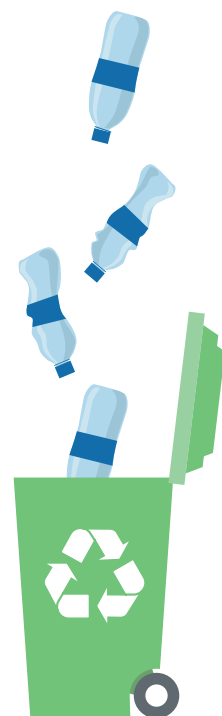
EGG PACKS THAT MEET FUTURE NEEDS: WITH THE LOWEST CARBON FOOTPRINT OF ALL

**DID
YOU
KNOW?**

The EU has set ambitious targets to encourage the use of recyclable plastic and the use of recyclates in plastic packaging production.

We all see the pictures of mountains of waste on land and in the sea. All around the world people agree that littering must be stopped. Countries invest in collection and waste management systems and consumers have to be aware of their responsibility in the collection and separation of waste.

Within the Action plan for a **"Circular Economy"** and the "Plastic Strategy" the EU recycling targets for plastic packaging were increased to 50 % by 2025 and 55 % by 2030. This will also increase separate collection and recycling of rPET egg packs.

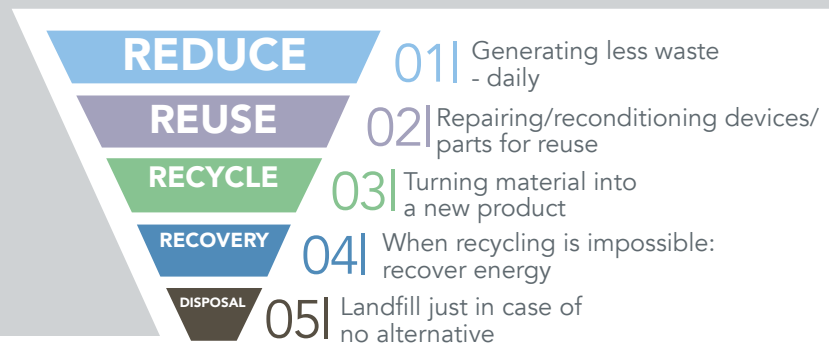


Increasing demand of rPET recyclate makes used PET bottles a valuable material, which is an incentive for separate collection – especially in regions which are the main sources of marine littering today.

**DID
YOU
KNOW?**

**DID
YOU
KNOW?**

RESPONSIBLE WASTE MANAGEMENT



A detailed peer reviewed LCA (Life cycle assessment) study confirms that egg packs made of 100 % recycled PET (rPET) **show the lowest carbon footprint** and **highest resource efficiency** of all relevant egg packs currently used on the market. This is possible because rPET egg packs combine two important aspects: **100 % recycled raw material AND low energy demand in processing** (no water evaporation needed like for pulp egg packs).

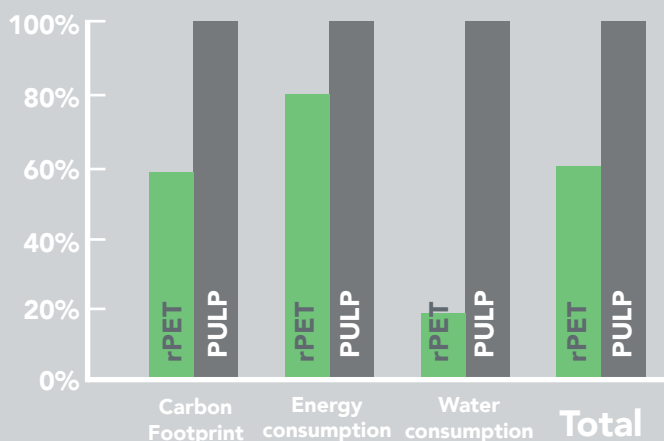
Despite all efforts to increase the share of recycling it can happen that egg packs are collected in the normal residual waste. In countries or areas with incineration plants PET egg packs and other plastic material are a valuable energy resource: The energy in the product can be recovered, which reduces oil & gas consumption – the same fossil resources, which are saved when plastic packaging is recycled. In countries with landfills egg packs might be

disposed of in such systems. We know that plastic material will not be degraded for a long time, but pulp egg packs generate methane emissions – with a 28 times higher global warming intensity than CO₂. When we are talking about biodegradable products in general, biodegradability is not a beneficial aspect of packaging as it never causes relevant benefits in a well organised waste management system.

The Scope of the LCA study is the **total life-cycle**. Allocation of recycling credits is based on the **new EU product environmental footprint standard**. The scientific review was performed by three independent reviewers in Sweden, France and the UK. The LCA study is regularly updated, considering changes in production, country specific waste management conditions and environmental impact factors.

Source: denkstatt / LCA-Project

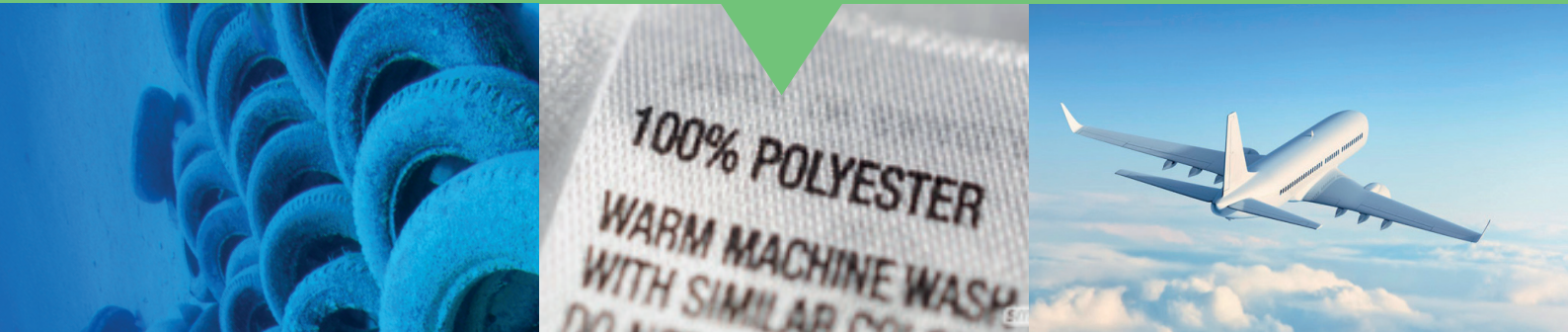
Environmental impacts of egg packaging options for average EU conditions:



- The rPET footprint (aggregated result) is 40 % lower than the pulp footprint
- If 100 million eggs are packed in R-PET instead of Pulp, then CO₂ emission can be reduced by 410 tons – this is equivalent to 2.6 million kilometers driven by cars.

Aggregated environmental impacts are calculated with Swiss Ecoscarcity Method

„FOOD FOR THOUGHT“



#MARINE LITTERING

The actual contribution of plastic packaging from European countries with well-developed waste management systems to marine litter is very small. In an overall global assessment, only 4 % of the total impact of plastic consumer goods was associated with marine litter. The main sources of marine litter are countries in Asia, Africa, and South America. In those countries waste management systems are not well established yet.

#MICROPLASTICS

The main source of microplastics in the environment are tyre wear particles. The second highest contribution (but already 10 times smaller) from consumer goods to microplastics in water are synthetic fibers from washing clothes, and abrasion from shoe soles.

Sources: Bertling et al. 2018 (Fraunhofer-UMSICHT); Sundt et al 2014 (mepex / Norwegian Environment Agency)

#AIR TRAVEL

The carbon footprint of one person travelling by plane is as high as the carbon footprint of total packaging consumption of one person for several years!

Two examples:

- Berlin – Paris – Berlin (aprox. 1.760 km) comes up to 5 years of packaging usage
- Berlin – Singapore – Berlin (approx. 19.800 km)
- comes up to 30 years of packaging usage

Sources: HYPERLINK „<http://www.luftlinie.org>“ www.luftlinie.org (voyage distances), Austrian Environmental Agency (greenhouse gas emission factors); denkstatt GmbH (carbon footprint of packaging)

#CONSUMERS CARBON FOOTPRINT

Packaging only contributes with 1,5-2,0 % to the total footprint of an average European consumer.

- Carbon footprint of an average European consumer (2012): approx. 15 tons CO₂-equivalents per person and year
- Therefrom approx. **230-300 kilos CO₂ per person and year** are allotted to consumption of packaging ...
- ... which is **1,5 to 2,0 % of total carbon footprint.**
- Consumption of plastic bags per person and year in the EU causes CO₂ emissions equivalent to 25 km driven by car.

