

Innovative Sustainable
 Recyclable EPS
 Insulating Shock absorbent
 Light Weight

Comparative LCA of fish box packaging solutions – EPS as a safe material, isothermal, recyclable, sustainable

The European Manufacturers of Expanded Polystyrene (EUMEPS) Association – Packaging section commissioned PwC Ecobilan to conduct a comparative Life Cycle Assessment (LCA) of packaging for fresh fish.

The study aims to obtain robust comparative LCA



results on a European level for several fish box packaging solutions. In that scope the study is based on three specific fish

markets: France, Spain and Scandinavia, using three different packaging solutions made of expanded Polystyrene (EPS) on the one hand, and Corrugated Polypropylene and water-resistant Cardboard on the other hand.

Methodology

The LCA is an environmental analysis focusing on the entire life cycle of a product, from raw material acquisition, to processing, transportation and final disposal. It quantifies energy requirements, solid waste, atmospheric emissions, and waterborne waste generated by the production and disposal of products.

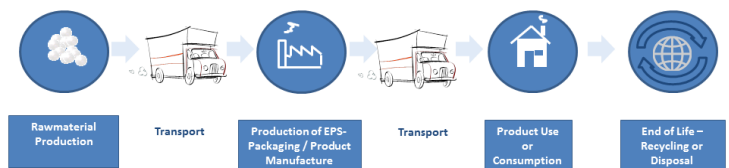


Table 1: Considered life cycle steps, according to LCA Study (EUMEPS/ PWC, 2011)

In the study, three different functional units were considered:

- Packaging solution for 4 kg of fresh fish fillets from a local harbour in France to a local professional fish market
- Packaging solution for 6 kg of fresh fish from a local harbour in Spain to local professional fish market
- Packaging solution for 20 kg of fresh salmon from Danish fisheries to professional international fish markets

The study has been conducted according to the requirements of International Standards (ISO 14040 and ISO 14044). An external critical review was carried out by an independent LCA expert, the TÜV Rheinland.

Results

The comparison of the defined market solutions shows that the advantages of EPS boxes lie in the low residual waste, low water consumption as well as in low water and air emissions.



Sustainable

Innovative EPS

Recyclable Shock absorbent
Insulating Light Weight

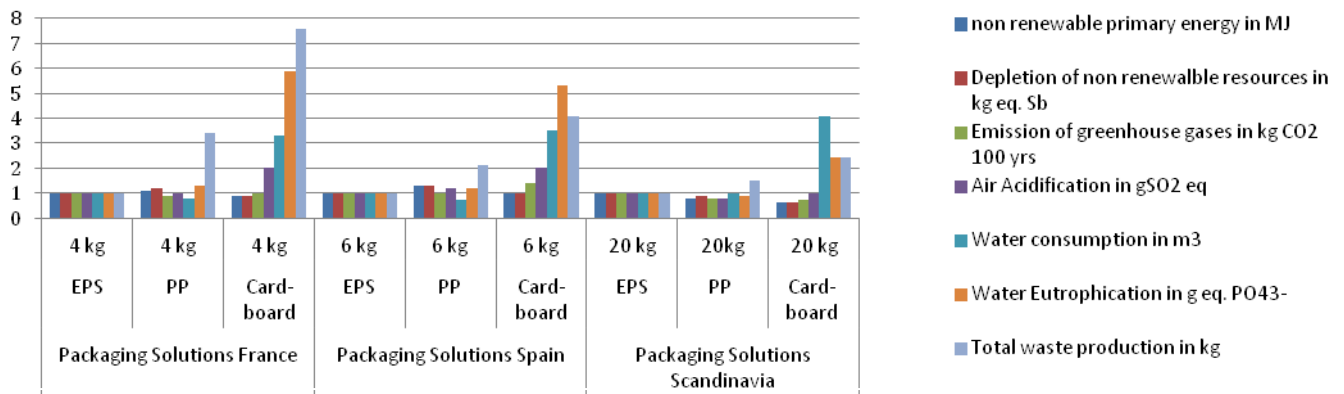


Table 2: Comparative Results of the three packaging solutions on the three considered markets

The balance of polystyrene packaging shows that the most energy is consumed during the production of the raw material and the processing into packaging. Therefore, European EPS manufacturers are constantly working on the improvement of EPS packaging procedures and products. By optimizing the converting processes reducing of EPS's materials weight, positive impacts on environmental performance have been achieved.

Competitive Edge: Excellent product protection

Considering their outstanding storage and insulating properties, the use of EPS boxes ensures an exceptional product protection. As a matter of principle, the optimum protection saves much more energy by avoiding transport damage than the energy used for the entire life of a packaging. This also applies to the safe transport of fresh fish: A fish box made from polystyrene for 20 kg of wild cod only uses 1/20th of the energy used for providing 20kg of wild cod. Consequently, EPS saves resources and money.

About Expanded Polystyrene

EPS consists of 98 % air. The remaining 2 % are polystyrene. Thanks to the good performance of this combination, EPS is a lightweight material with outstanding insulation and shock absorbent properties. Whether used as protective packaging for fragile items during shipment, as insulation in building applications, or even as a bicycle helmet, EPS is playing an important role in our everyday lives.

Material Declaration

Polystyrene is produced by the polymerization of styrene, a substance which also occurs naturally in foods such as strawberries, beef, coffee beans and cinnamon. Potential effects on the environment and human health have been examined by the EU Commission. It has been concluded that there is no need for any restrictions in the application and use of styrene based materials.

About EUMEPS

Find more information on EUMEPS Packaging and on EPS packaging material on the website.

©2012, EUMEPS Packaging, Picture: Storopack GmbH, Germany.

