



**3<sup>rd</sup>**  
INTERNATIONAL WORKSHOP  
ADVANCES IN CLEANER PRODUCTION

---

“CLEANER PRODUCTION INITIATIVES AND CHALLENGES FOR A SUSTAINABLE WORLD”

## **Reverse Logistics in Practice: Economic Study of Returnable Packing on the Transport of Machined Engine Heads**

G. W. S. Renó <sup>a</sup>, O. M. S. Truzzi <sup>b</sup>, G. Sevegnani <sup>c</sup>, D. A. L. Silva <sup>d</sup>

*a. UFSCar - Universidade Federal de São Carlos, São Carlos - SP, gece.reno@uol.com.br*

*b. UFSCar - Universidade Federal de São Carlos, São Carlos - SP, truzzi@power.ufscar.br*

*c. SOCIESC – Sociedade Educacional de Santa Catarina, Joinville - SC, gustavos@tupy.com.br*

*d. USP - Universidade de São Paulo, São Carlos - SP, diogo.sc@usp.br*

---

### **Abstract**

The environmental subject is increasing on customers discussions for the last years, due to a huge increase on ecologic mindset on societies. New legal rules covering environmental are being developed as new technologies and new materials that are making reverse logistics an important subject on actual days. The proposal of this paper is to explain the reverse logistics applied on machined engine heads being transported from a company in Joinville, Santa Catarina state in Brazil to Peterborough in United Kingdom, using disposable packing materials. This situation has generated many problems when disposing the wastes generated by the packing on the final customer and it's involved environment. The target of this paper is to present results from an economic study based on a new reverse logistic system developed with the usage of returnable and reusable packing system. The technical procedure adopted was the case study and data collection to complete the necessities previewed on the economical study. As results of the study made in Brazil the researchers could identify that the practice of reverse logistics and reusable materials brought a significant result on the concept of more resistant packing systems. It also allowed a reduction on the generation of disposables materials on the final customer, allowing a lower environmental impact and costs reduction.

**Keywords:** returnable packing; enviromental impact; reverse logistics.

---

---

“CLEANER PRODUCTION INITIATIVES AND CHALLENGES FOR A SUSTAINABLE WORLD”

São Paulo – Brazil – May 18<sup>th</sup>-20<sup>th</sup> - 2011