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“CLEANER PRODUCTION INITIATIVES AND CHALLENGES FOR A SUSTAINABLE WORLD”

## Cleaner Production, Process Innovation and Environmental Benefits: A Case from the Metal-Mechanic Industry in Serra Gaúcha, Brazil

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### Abstract

The Cleaner Production methodology (CP) provides organizations with viable alternatives to minimize and prevent solid waste production, liquid effluents and atmospheric emissions, efficient use of raw materials, especially water and energy, reducing environmental risks to human beings and bringing economic benefits to companies. Process innovation occurs through the adoption of new forms and methods of production. These methods allow improvements in productivity, reduce costs and waste; increasing the productive life of equipment and processes, among others. The aim of this study is to analyze the environmental and economic benefits for a company, through the use of the CP methodology and the process of innovation that were implemented in a company of the metal-mechanic Pole of the region of Serra Gaúcha, Brazil. The research method is exploratory and applied to a case study. The company is active on the Brazilian market since 1954, producing a number of products for the construction, furniture, automotive and housewares industries. The CP methodology of CP was implemented in 2007 and the teams are currently undertaking improvement, articulating the innovations in the search of waste reduction from the source, the incorporation of new technologies; bringing benefits to the work environment. The implementation of these process innovations has generated a 65% reduction of the production of oil and water wastes. These innovations resulted in a 67.9% savings on treatment and final disposal of these wastes. Through the CP methodology, the innovations developed caused economic and environmental benefits, which contribute to the sustainability of the company.

**Keywords:** *Cleaner production, process innovation, metal-mechanic industry, Serra Gaúcha.*

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