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## INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

“CLEANER PRODUCTION TOWARDS A SUSTAINABLE TRANSITION”

### **Sustainable Management of the Steel Industry from the Premises of Industrial Ecology**

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#### **Abstract**

Industrial Ecology (IE) proposes that the industrial system be studied in an aligned way with the environment in order to improve industries environmental, social and economic performance. Industrial Symbiosis (IS), one of IE tools, refers to the interaction between nearby industries, looking for possible waste, energy, water synergies. In Brazil, the National Solid Waste Policy was enacted in 2010 through Federal Law 12.305. This Law brings a new model for waste management. The steel industry production process is a major waste generator. Therefore, this study aims to analyze the steel industry production process in accordance with the industrial ecology principles. In this scenario, this study first presents the IE and IS concepts. Following, the steel industry in Brazil is presented in order to understand its alignment with the Law 12.305/2010. In addition, the knowledge of the steel production process is presented in order to identify waste generated and possible destinations. As a result, it is understood that the integration of industries from different segments with the steel industry and a greater articulation between the actors involved may result in environmental, social and economic benefits, which are presented in this study. Finally, it is suggested that both the public and the private sector should, similar to what already happens in the academia, should encourage and invest in the practice of Industrial Symbiosis in Brazil.

**Keywords:** *Industrial Ecology, Industrial Symbiosis, Waste, Steel.*

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