



# Academic

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ADVANCES IN CLEANER PRODUCTION

“CLEANER PRODUCTION TOWARDS A SUSTAINABLE TRANSITION”

## Recyclability in Wind Power Area and the Consequent Economic and Environmental Impact

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### Abstract

Wind power plays an important role as sustainable energy source, but some technical issues of wind power area can be a severe drawback on the development of wind farms in the short term. One important question is repairing of wind turbines, huge and high technological equipment which recycling poses crucial environmental and economic problems. Thus, this work aims for a better understanding of material balance and specification regarding recyclability and usability of wind turbines that suffer corrective maintenance. The applied methodology was the case study. The case study site chosen has a specific area only to deal with repairing and recycling. Process audit shows several steps that, if correctly managed, could save for recycling a large amount of metallic material. Considering the high cost of the discharged material, this can be an excellent opportunity for medium and small enterprises.

**Keywords:** *wind power, waste minimization, flow analysis, industrial symbiosis*