

ABSTRACT

Life Cycle Analysis of Metal: Copper's Assessment on the Circular Economy in Industries from the Perspective of the European Green Deal

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The European Green deal is an initiative created by the European Union, with the objective of turning the economy more sustainable, by becoming the first continent to achieve carbon neutrality by 2050. Under this framework, the following research analyzes the lifecycle of copper and its effect on ecosystems – primarily the emission of greenhouse gasses, biodiversity loss and material depletion, all which contribute to a less sustainable environment. However, using recycled copper is a more sustainable option, due to the reduced environmental impact generated in its extraction – it consumes 85% less energy, as compared to primary copper.

Taking into consideration the European Green deal, the concept of circular economy, and a life cycle analysis of copper, it was possible to prove the importance of using recycled copper as opposed to primary copper. After being processed, recycled copper does not lose any of its physical or chemical qualities, which keeps its life cycle active. This process is already in use throughout Europe, in projects such as Solar PV and Onshore and Offshore Wind.

Considering this, utilizing recycled copper is fundamental to reach the goals underlined by the European Green deal and to transition to a more sustainable economy. By using recycled materials, the industries also reduce the depletion of natural resources and reduce greenhouse gas

emissions, also collaborates with the circular economy, using resource efficiency and reducing waste. In addition to helping Europe lead the sustainable development using recycled copper in high energy and technology industries, becoming an example for other continents to follow.