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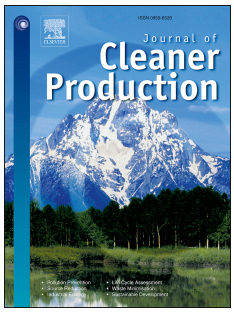

Incorporating lean thinking and life cycle assessment to reduce environmental impacts of plastic injection moulded products

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Incorporating lean thinking and life cycle assessment to reduce environmental impacts of plastic injection moulded products

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Abstract

In the last decades, environmental footprint of the product manufacture has emerged as an important public concern, causing manufacturers to re-assess their product's environmental impacts. Responding to global outcry on global warming, world leaders have agreed to limit global temperature rise to less than 2℃ above the temperature in pre-industrial times. As a result, governments and industrial leaders around the world have proposed a roadmap for 80% emissions reduction by 2050. The aim of this work develops a novel approach of linking Life Cycle Assessment (LCA) and Lean manufacturing to reduce the negative environmental impacts of a plastic injection moulded product. Products that use plastic as their primary source of raw materials are mainly produced by plastic injection processes. Although plastic injection moulding has many benefits such as 'high production rates', there is a lack of through investigation on the effects of this process has on the environment such as climate change, ozone depletion etc. This paper proposes a novel cross-functional mapping approach of linking lean-thinking and LCA. The implementation case study has been presented with the view to re-assess carbon footprint of an existing plastic

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