

Recycling and Waste Management

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Circularity of Resources: Minimising unintended consequences with LCA and Life Cycle Benefit Analysis (LCBA) Metrics

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Masuring the impacts and benefits of cyclic resource use is critical to ensure that the re-use of resources doesn't generate unintended consequences beyond the obvious benefits. All too often cyclic economy outcomes are seen as 'so obvious they don't need quantifying'. Except as any experienced Life Cycle Analysis (LCA) researcher will tell you, generally recycled streams appear to have higher overall impacts than virgin streams and this is often used to prefer virgin resources.

The reason is LCA conventionally focusses on only negative impacts and there are no positive impact metrics to offset the additional negatives. Hence the development of Life Cycle Benefit Analysis by Global GreenTag's LCA partner, the Evah Institute and the publication by Global GreenTag's Environmental Product Declarations (EPDs) that present

conventional LCA impacts and LBCA benefits side by side. LCBA provides the ability to measure the positives that enable the assessment of 'Net Zero' and 'Net Positive' products beyond carbon and climate braking, taking into account issues such as CO₂e re-absorption, resource re-creation (resource consumption avoided), environmental services and biodiversity restoration, pollution reduction, oxygen generation, improved health conditions etc.

This paper presents the concept of LCBA and provides examples of how current EPDs already in the marketplace show the full benefits of products that contain post-consumer recycled content in a way that can ensure there is no net worse impacts generated in the striving towards the true circular economy.

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