WasteFootprint

a flexible tool for analysing supply-chain waste flows in LCA

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Why?

To promote 'circularity' we must understand waste, but supply-chain waste in LCA is not well understood as most focus is on downstream waste.

What?

We've written an extension to the brightway2 LCA framework that calculates the waste footprint of a product or service. It finds upstream waste flows in a supply chain, categorises waste flows into 14 types and finds hotspots in waste generation.

How?

It explodes the database, identifies upstream waste exchanges, edits them and writes custom WasteFootprint methods. The waste flows then become pseudo-biosphere flows and the waste footprint can be calculated as an LCIA method.

Challenges?

Data completeness: ca. 95% of waste has no EoL.
Waste is not all the same: Sometimes 'inert-waste' is just moving some rocks around.
LCA system models: both attributional and consequential models make a mess of this.

What next?

The method will be refined and also extended with case studies and ex-ante exploration.
The WasteFootprint tool can be easily applied to calculate the 'footprints' of other supply-chain flows such as water, gas, and critical raw materials.

O waste! o waste, wherefore art thou?

With code our guide,
we seek to find,
hidden hotspots,
where waste entwined.

We created the WasteFootprint tool to track supply-chain waste in LCA

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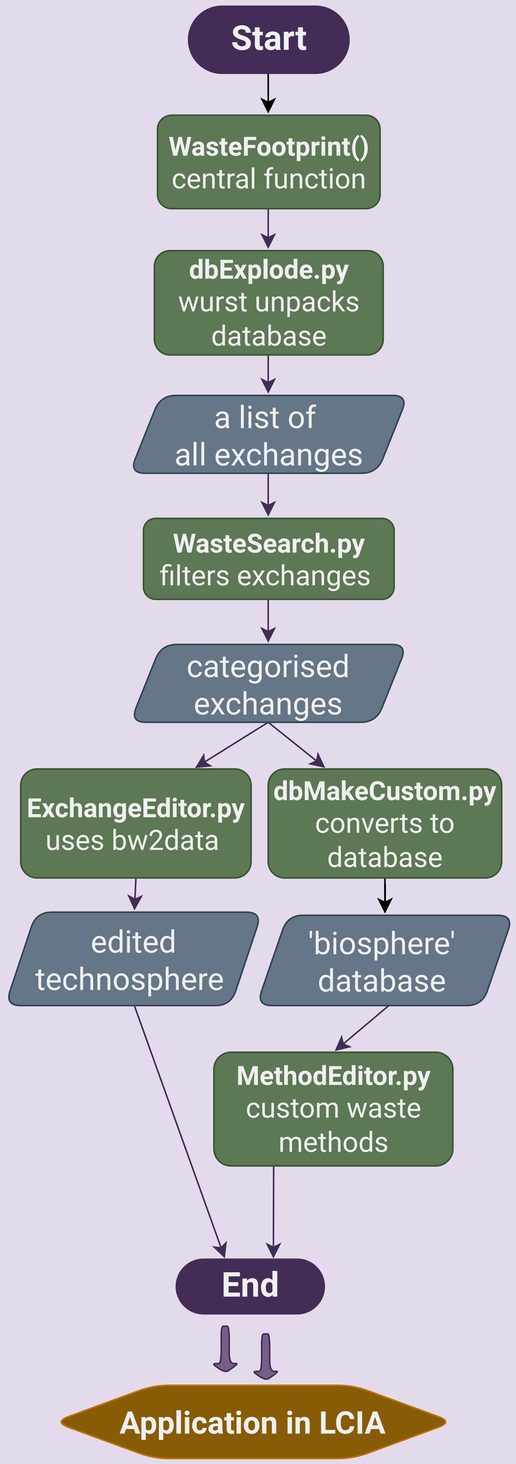
python™

Brightway

Step by step through the code



View the WasteFootprint code in our GitHub repository

github.com/Stew-McD/WasteFootprint