Sustainability Analysis: Benefits of D-STANDART, LCA: Process Modelling and Inventory

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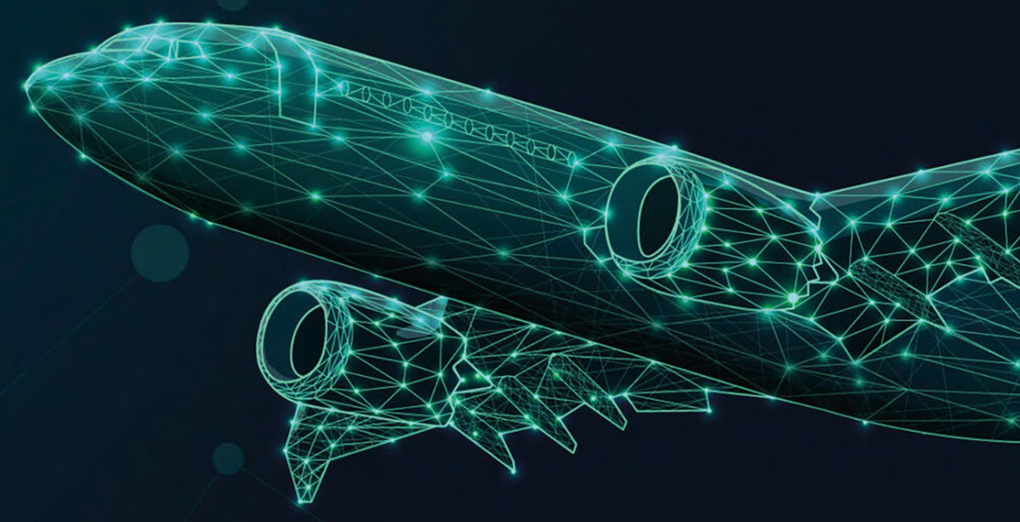
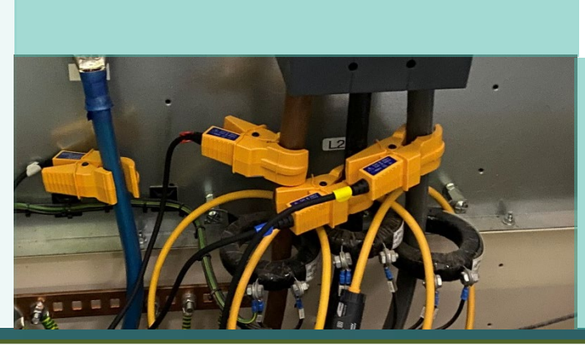


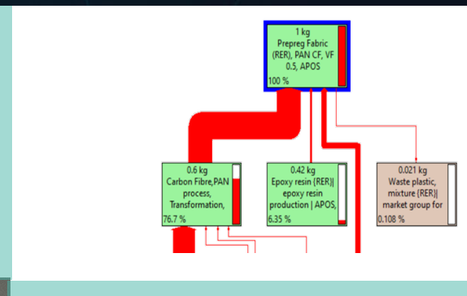
Life Cycle Approach

Goal: Verify the sustainability benefits of improved fatigue prediction by life cycle modelling of D-STANDART demonstrator parts.

The full 'cradle-to-gate' lifecycle will be considered, ensuring holistic understanding of through life impacts, and looking at the three pillars of sustainability: Environmental, Financial, and Social

Data capture from manufacturing processes

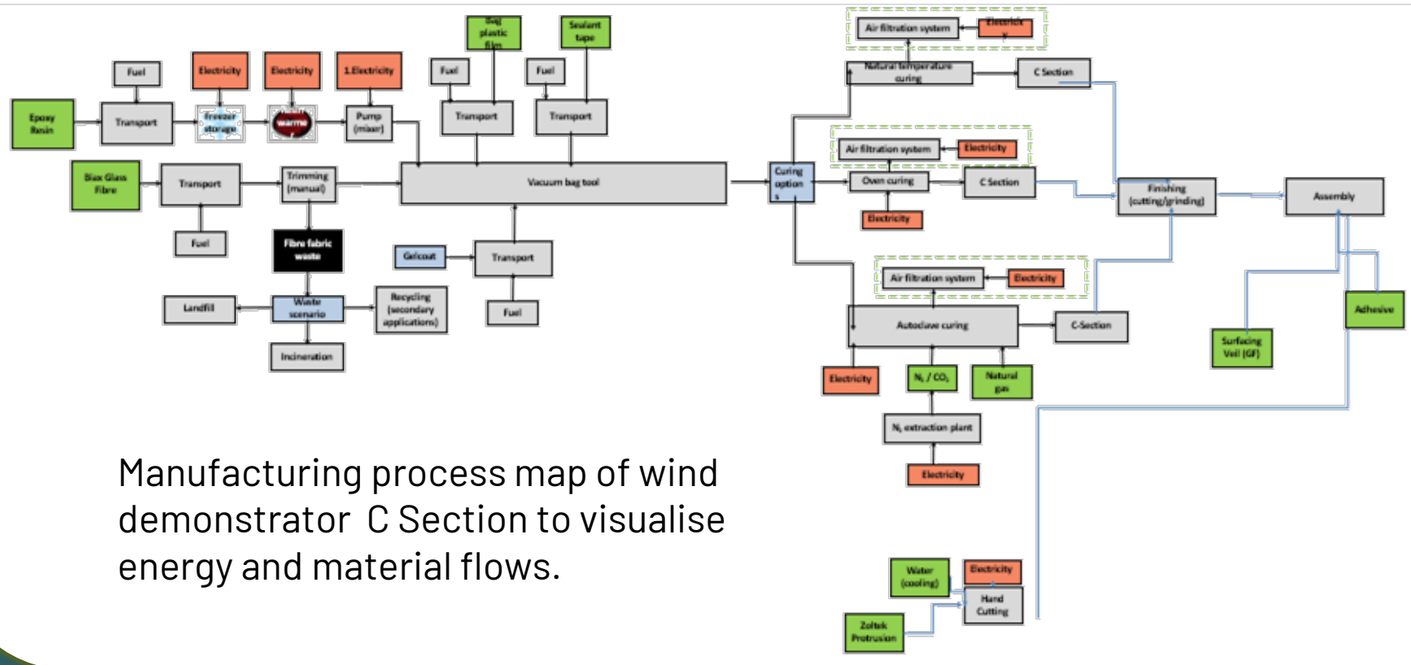




Creating sustainability datasets and tools

Demonstrating environmental benefits and considerations

Step 1: Process Mapping



Manufacturing process map of wind demonstrator C Section to visualise energy and material flows.

D-STANDART Approach

The D-STANDART approach is to integrate key data and methodologies for life-cycle assessments into the same workflows as durability, to enable parallel optimization.

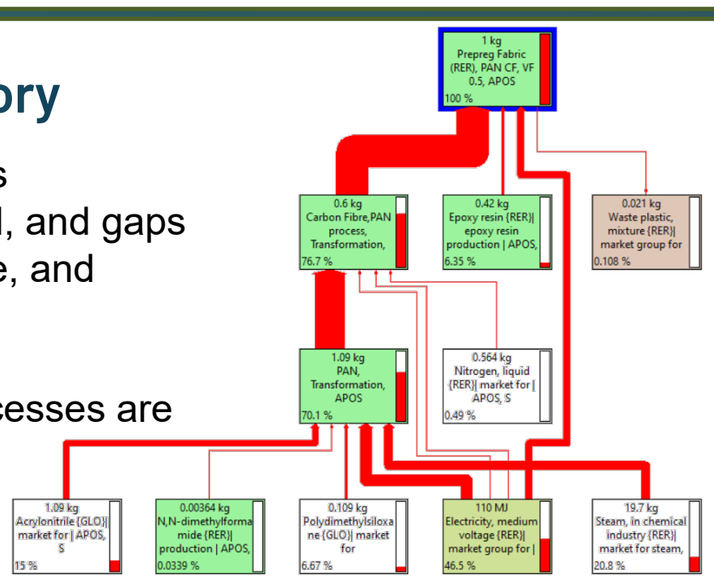
Step 3: Preliminary LCI

A preliminary LCI is underway, allowing for initial hotspots to be identified, leading to strategic data collection.

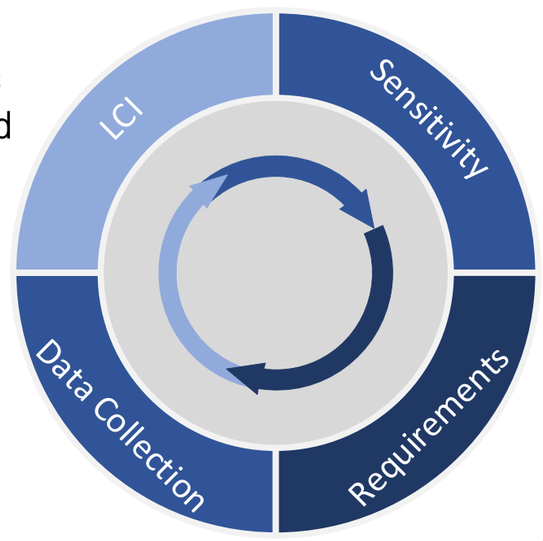
Step 2: Life Cycle Inventory

An input-output model of the system is constructed, with known data included, and gaps based on expert assumption, literature, and database value.

Composite specific materials and processes are collected



Data quality needs to be assessed and energy and material flows monitored as primary data is required for a robust LCI.



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