



BrightCon



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Moderated Session:

Life Cycle Inventories for Aviation: Addressing Data Shortcomings and Improvements

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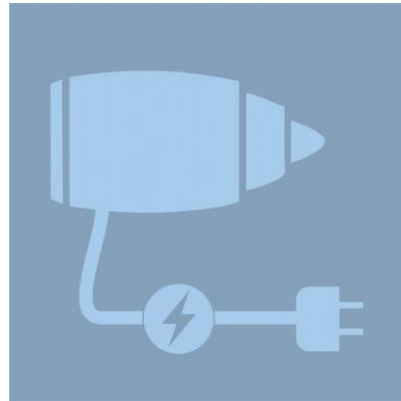
Institute of Maintenance, Repair and Overhaul

Motivation

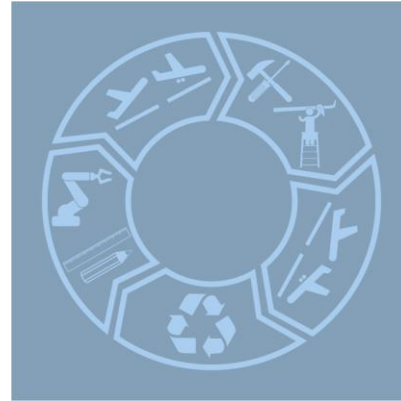
Why Life Cycle Assessment (LCA) in Aviation?



Aviation is **responsible for 3.6 %** of the human-induced GHG¹ emissions



Air transport is **expected to grow** at a faster pace than technology improvement

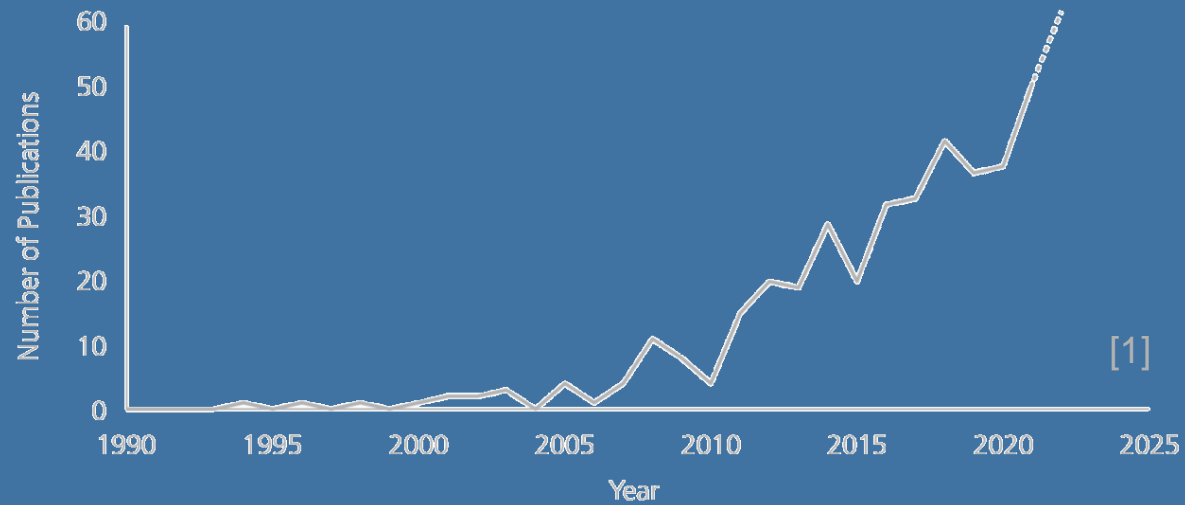


LCAs assess the **environmental impact** of an aircraft over **its whole lifetime**

[1] greenhouse gases

Motivation

Why Life Cycle Assessment (LCA) in Aviation?



CORSA

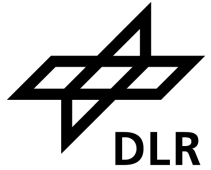
**Carbon Offsetting and Reduction Scheme
for International Aviation**



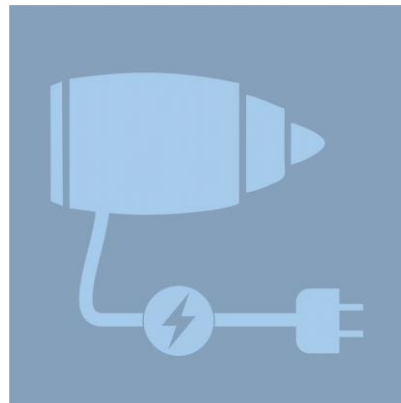
Federal Ministry for Economic Affairs and Climate Action

Motivation

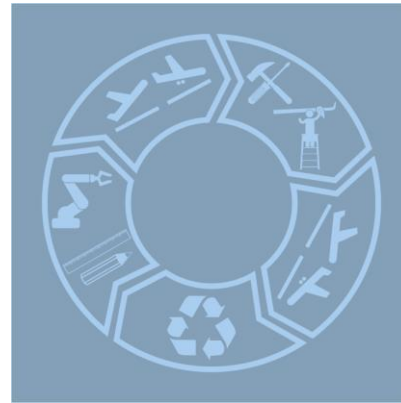
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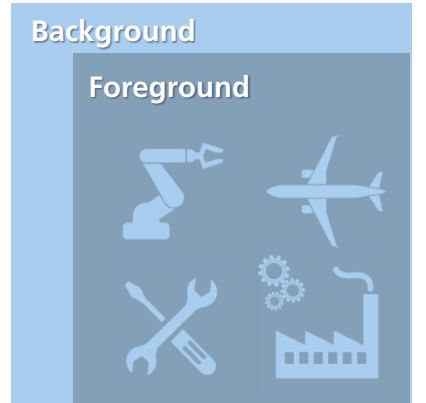
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Life Cycle Inventories (LCIs) are the backbone of LCAs; however, **data availability** is a major challenge



Sector-specific **LCI data are often lacking**, thus hindering LCA conduction

[1] greenhouse gases

Life Cycle Inventories in Aviation

Shortcomings and challenges

“The inventory data for carbon fiber manufacturing [for aircraft] are not well defined in any LCI database.” (Calado et al., 2019)

“Existing life cycle inventory (LCI) databases [...] do not cover aircraft maintenance.” (Rupcic et al., 2023)



Developing environmental awareness

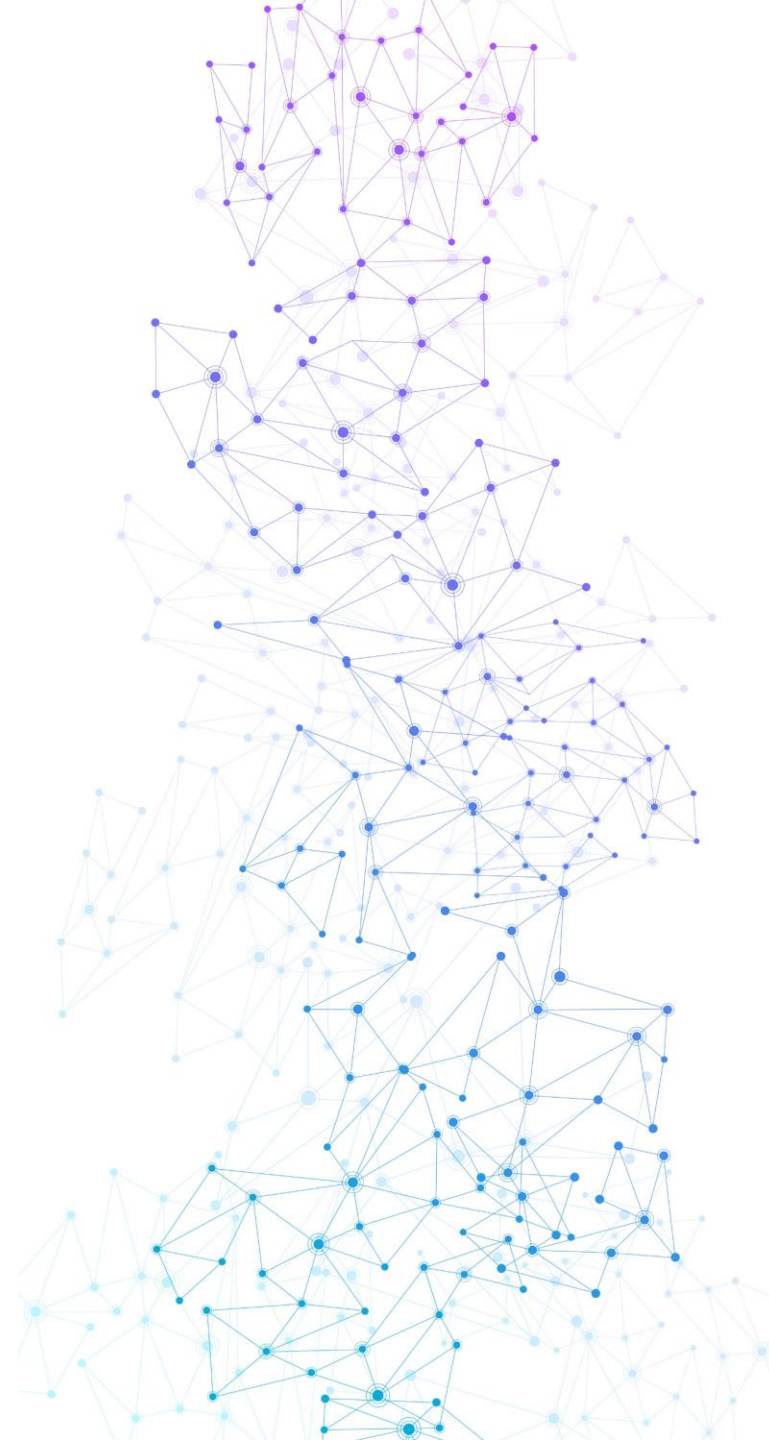
- Design for Environment (DfE) or ecodesign
- Policy making – incipient stage

Primary, granular data collection

- LCA is a new discipline in aviation
- Not clear for suppliers what data is necessary

Digital Product Passport (DPP)

- Data traceability and availability in highly complex supply chains

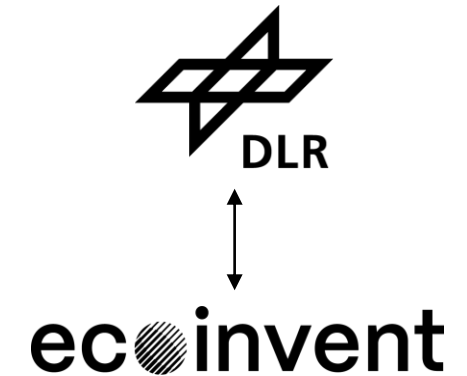
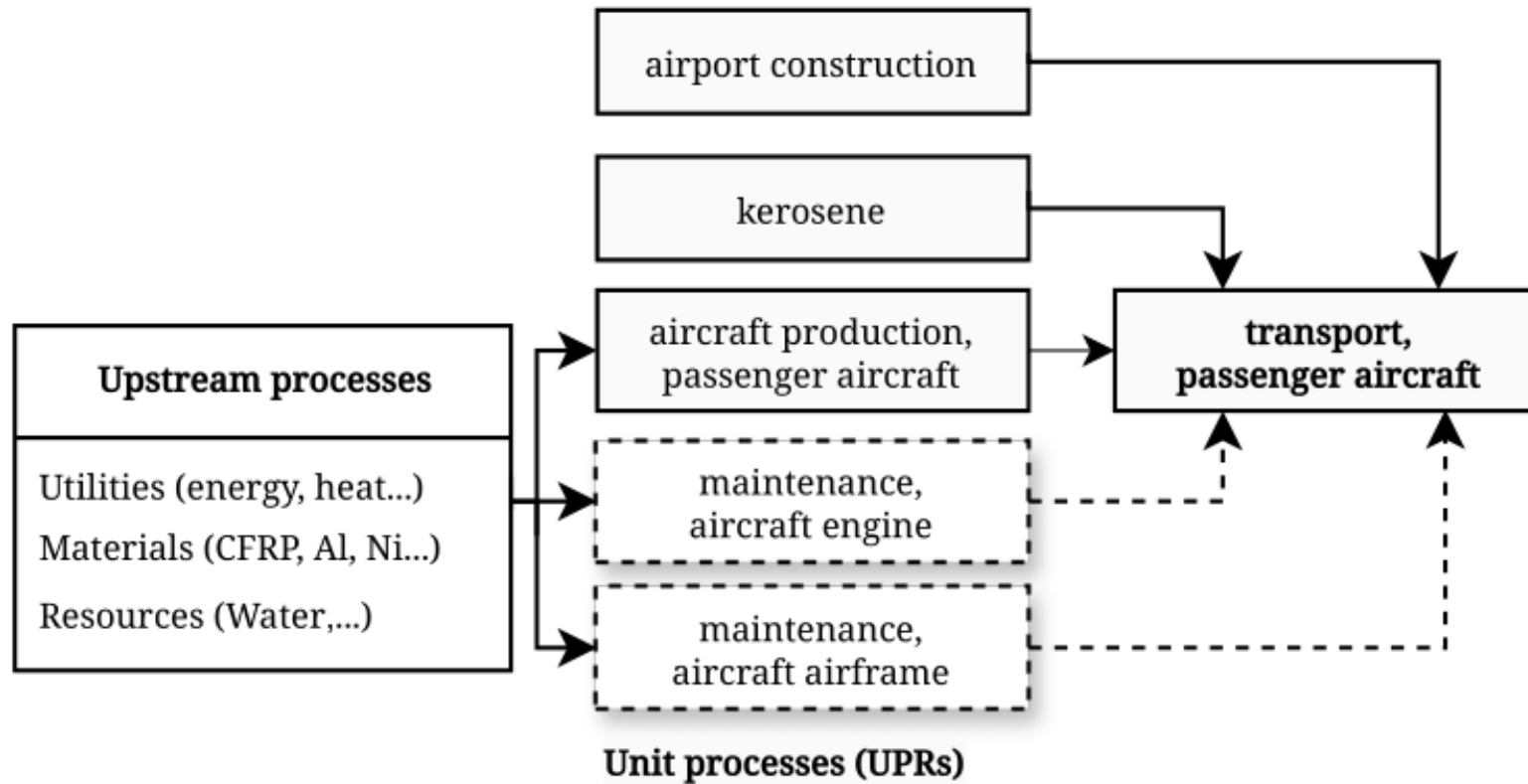


Life Cycle Inventories in Aviation

Dataset for aircraft maintenance – ecoinvent



Next release – aircraft maintenance dataset available



MEANINGFUL LCI DATA:



**HOW TO FACE
CONFIDENTIALITY
AND ENSURE
REPRESENTATIVE DATA?**

?



**HOW TO RAISE
AWARENESS WITHIN
NEW AND EMERGING
SECTORS IN LCA?**

Thank you for your attention!

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