

Assignment 8

Tensions and synergies between net zero-emissions and circularity for aviation

Problem statement

Till now, sustainability in aviation mainly referred to reducing polluting emissions from operations; therefore, the focus has been on high efficiency gas engines, lightweight solutions, alternative fuels and (hybrid-) electric solutions. Though useful, this approach only covers part of the lifecycle of an aircraft, and only a limited amount of the overall energy consumption and pollution emissions related to aviation. Now, increasing environmental awareness is challenging the aviation sector to intensify its efforts towards a greener, cleaner and more sustainable aviation, by reducing its environmental impact in terms on consumption, waste and emissions connected to all aviation activities and operations. The principles of circularity, or circular economy, provide a framework to re-evaluate the complete, cradle-to-cradle, life cycle of each aspect of aviation, enabling the transition to circular aviation.

Research question(s)

- What new perspectives does focusing on circularity bring to the aviation sector?
- Where are the tensions between net zero-emissions and circularity?
- To what extent is circularity a solution towards net zero-emission aviation?

Suggested academic backgrounds

- Governance of Sustainability (Leiden)
- Aerospace engineering (TUD)
- Management of Innovation (EUR)
- Urban, Port and Transport Economics (EUR)
- Global Business & Sustainability (EUR)

- Industrial Design (TUD)
- Philosophy and Economics (EUR)

- Development Studies (EUR)
- Law (Leiden/EUR)
- Behavioural Economics (EUR)

- Industrial Ecology (TUD/Leiden)

- Engineering and Policy Analysis (TUD)

- Economic and Consumer Psychology (Leiden)

Expected type of work

Explorative study, legislative, design, economic, social, environmental, ethical implications can all be studied.