Air traffic growth, energy, and the environment 2040: drivers, challenges, and opportunities for aviation

Abstract:
Although many forecasts predict a stable development of commercial aviation within the upcoming decade, its further development remains uncertain. Aviation stakeholders usually develop strategies on a short-term basis, while public institutions have set ambitious long-term goals for the industry. This paper shows how scenario planning can aid in handling uncertainty in long-term strategy development. Three decisive factors are explored: the increasing scarcity of resources, the change of global climate, and the growing demand for mobility. The paper exposes the results of a recent foresight project led by the authors. Three future scenarios are examined featuring top-level statements that address the global political and economic situation, and in-detail views on the aviation sector in 2040. The intentional difference between the three scenarios eventually enables the development of robust strategies for aviation stakeholders.

Stichworte:
air traffic growth; resource scarcity; global climate change; mobility demand; commercial aviation; scenario planning; strategy development; future uncertainty; future challenges; future scenarios; foresight project; aviation management; long-term goals; future air