

Minimising the impact of aviation emissions: what way forward?
An expert meeting aiming to lift off sustainable academic travelling
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Title presentation, name

Academics and the aviation footprint: causes, impacts and solutions

Biography:

Paul Peeters is a Professor at the Centre for Sustainability, Tourism and Transport (CSTT) of Breda University of Applied Sciences, the Netherlands. Paul was educated as an aircraft engineer (BSc) and started his professional career as a conceptual aircraft designer for the former Fokker aircraft factory in the Netherlands. He then worked as a wind-energy researcher at the Dutch Energy Research Institute (ECN). After that two year job he became a sustainable transport researcher, first at the NGO Friends of the Earth, then at the consultancy Werkgroep '2duizend and finally as a self-employed consultant and researcher. His professorship at BUas started in 2002. Since 2013 he is a member of the ICAO CAEP Working Group 3, and involved in the development of the new fuel efficiency standard for aircraft. In his current position, Paul is involved in research on the impacts of travel on the environment and specifically on climate change. His over 40 scientific and more than 150 professional publications cover a range of topics like tourism and climate scenario's, system dynamic approaches to tourism research and modelling, serious gaming, air transport, tourism transport mode choice, tourism climate mitigation and adaptation policies, and transport technological developments.

Abstract:

Global travel is responsible for 5-8% of global warming. By the year 2100, global fossil fuel related CO₂ emissions need to be reduced to zero. In a business as usual scenario aviation's emissions will exceed the globally CO₂ emissions according to the Paris agreement in 2080. Though many solutions are proposed, only a few are both realistic and effective in a sense that these measures can indeed reduce emissions to zero assuming existing or theoretically viable technologies. Unrealistic measures are improved jet-aircraft efficiency improvements, battery-electric flight, and biofuels. Ineffective measures range from more efficient operations to enhanced fuel efficiency of the next generation of conventional airliners and offsetting programs. From a long-term scenario study, it appears that synthetic e-fuels, produced through a power-to-liquids process from sustainable energy, water and CO₂ in then short-term, and, in the longer-term, electric aircraft powered by fuel cells and hydrogen or e-fuels, would create zero-emissions flight by the end of this century at a reasonable accumulated carbon footprint. In such scenarios, air transport will still be able to grow, though at lower rates and depending on the total carbon budget global society is willing to reserve for aviation.

Academics travel more than average employees, even though many academics are very aware of the evolving climate crisis. Large European research funds like ERASMUS and COST much stimulate academic travel, without considering the impacts on climate change. Worldwide, only a couple of thousands of academics, out of millions, unite to take their responsibility and reduce their air travel. Are these academics doing so at the cost of their scientific careers? Probably not. Several studies show negative health impacts of frequent business travel. So the question is how to shape the balance between academic career opportunities and personal health and between scientific development and global climate change. Is the cooperation between a Dutch and an Australian university objectively the most fruitful one or would there be universities more close-by with equal opportunities to collaborate? Is the furthest away conference the most fruitful one to visit or would one at 'railway-distance' be even better? Will flying be justified if it changes climate and travel policies?

And what should be the role of academics in the political climate debate? In theory, academics are the independent and objective providers of knowledge on which policymakers ideally should base their decisions. Unfortunately, academia depends increasingly on project-based external funding and behave more often like consultancies. This situation means the funder gets a stake into what is researched and what is ignored, causing less critical assessments. The presentation concludes with some practical suggestions to reduce flying in academia without compromising the quality of the academic processes and output.