

**Project Title:** 'The development and socio-economic analysis of low-carbon pathways for aviation in the North West region.'  
**Principle Investigator:** Dr K Anderson (University of Manchester)  
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The aviation industry is one of the fastest growing sectors of the UK economy and the most problematic in terms of its impact on the climate. Currently aviation accounts for over 6% of UK carbon dioxide (CO<sub>2</sub>) emissions and, according to Government figures, growth in emissions for the year 2003-4 were in excess of 11%. It is expected that this year emissions from aviation will be similar to those from car travel in the UK. By 2020 it will be the sector with the second highest emissions and by 2030 it is likely to dominate UK CO<sub>2</sub> emissions. Whilst for many sectors, technology offers substantial short to medium-term opportunities to significantly reduce emissions, within the aviation sector only incremental refinements to an already technically-mature industry are credible before 2030. Consequently, improvements in aircraft and engine design combined with operational practices, offer only a 1% per annum reduction in fuel-burn per passenger per km. Exacerbating this absence of a significant increase in fuel efficiency is the long design-life of aircraft, effectively locking society into the current technology for at least the next 30-50 years. Recent research has clearly demonstrated that unless aviation growth is tackled as a matter of urgency, this single industry will absorb the complete carbon dioxide budget of the UK if the Government's commitment to the 2°C threshold is to be met.



There is some uncertainty surrounding the contribution aviation makes to regional and national productivity and economic growth although various reports provide empirical evidence of the positive contribution of aviation to the economy. These conclusions however, have been challenged with suggestions that there is an absence of robust empirical evidence, the assessments are not rigorous and the methodology employed is in some cases flawed. Also previous research conducted does not reveal the major hidden costs such as tax breaks and environmental clean up of aviation. With the publication of the 2003 Energy White Paper, there is increasing evidence that ultimately it will be the responsibility of the regions to achieve the requisite emission reductions. The North West (NW) has, in many respects, demonstrated leadership on the climate change issue, with the North West Development Agency's (NWDA) imminent launch of their climate change strategy representing the latest contribution. However, in the absence of a thorough understanding of the regions aviation emissions arising from its three principal airports, any strategy will be at best partial, and at worse misleading.

This project will provide a detailed understanding of aviation's contribution to the regional economy how and why NW aviation emissions are rising and, more particularly, it will inform the ongoing development of the NW climate change strategy.