

# Greener by Design Conference

Aviation and the Environment: Where are we Going?

Tuesday 7 October 2008

No.4 Hamilton Place, London W1J 7BQ, UK



## Synopsis

Greener by Design has since its inception wrestled with the environmental challenges facing aviation, seeking to offer technical and policy solutions through its reports and strategic work – and holding conferences that ask the key questions and explore the key areas of science, technology or policy. This year we ask some key questions. Come and find out the answers.

Climate change has become the world's biggest challenge and aviation is in the spotlight. The industry is seeking to manage strong growth in aviation demand with a need to reduce UK emissions by 80%, and limit its other environmental impacts.

The climate change challenge will be set by Lord Turner, newly appointed Chair of the Committee on Climate Change, charged with advising Government on the nation's carbon budgets and by Roger Wiltshire, setting out the Sustainable Aviation perspective.

### This conference will include two mini fora:

- **Non-CO<sub>2</sub> Impacts.** More understanding of the science has been necessary before addressing the non-CO<sub>2</sub> impacts – but there are solutions. The session will explore the timing issues relating to the science: when will the science be sufficiently robust to provide an acceptable basis for regulation, and when will the industry (primarily air traffic control and engine manufacturers) be able to accommodate regulatory action?
- **Biokerosene.** At the 2006 GBD conference, Dennis Bushnell, Chief Scientist from NASA Langley proposed biofuel as the quickest route to sustainable aviation – and advocated the use of salt tolerant plants as feedstock. This year the question of bio-kerosene will be explored in greater depth, from a variety of different stakeholder positions, as part of a second mini-forum. Whilst the general view is when, rather than if, the judgments as to timing vary considerably. The aim will be to understand the relevant factors and reach an informed assessment as to when biofuels will be used by aviation in serious quantities.

Several other key issues will be explored. The next major aircraft to be launched are likely to be the replacements for the Airbus and Boeing single aisle families. One key technology that could help to significantly reduce fuel consumption is the contra-rotating propeller. But is this technology likely to be mature in time? What other technologies might be available on such an aircraft? Similarly within operations, are there significant steps that could be taken to reduce noise around airports, such as steeper descent? Could air-to-air refueling offer a safe means of reducing fuel consumption for long distance flights? Could it offer noise benefits as well? How could such an approach be introduced across the industry?

Finally we will explore some of the incentives that Government is considering to help make all these changes happen, and happen quickly. What will be the impact on aviation of entry into the EU-ETS? How might aviation be handled within the post 2012 climate change negotiations? Will such decisions be made by ICAO or is there a more effective approach?

Supported by:



### Royal Aeronautical Society

No.4 Hamilton Place  
London W1J 7BQ, UK

Tel: +44 (0)20 7670 4345

Fax: +44 (0)20 7670 4349

Email: [conference@raes.org.uk](mailto:conference@raes.org.uk)

[www.aerosociety.com/conference](http://www.aerosociety.com/conference)

### Proceedings

Proceedings from this event are free to delegates. If you are unable to attend and would like to purchase a copy, then additional copies can be purchased from the Royal Aeronautical Society or by completing the registration form below. Information on past conferences can be found at [www.aerosociety.com/proceedings](http://www.aerosociety.com/proceedings).

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Please contact the Conference & Events Department for details on exhibiting, sponsorship and insertion of information into delegate packs.

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The Royal Aeronautical Society is fully compliant with the above. Ramps are available to help delegates gain access to the building and the lecture theatre. A wheelchair access toilet is available on the ground floor.

### Cancellations

Substitutions may be made up to the day of the conference - please notify the Conference & Events Department in writing of name changes as soon as possible. If no substitute can be found for the delegate unable to attend, cancellations must be notified in writing to the Conference & Events Department. The following fees will then apply:

- More than 14 days notice: 25% of registration fee (i.e. 75% refund)
- 14 days or less notice: 50% of registration fee (i.e. 50% refund)
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# 1 Day Programme



## Greener by Design Conference

Aviation and the Environment: Where are we Going?

Tuesday 7th October 2008

- 08:30 Registration/Tea and Coffee
- 09:00 **Welcome and Opening Remarks**  
Chairman: John Green, Chief Scientist, Aircraft Research Association Limited
- 09:05 **Keynote Address**  
Lord Turner of Echinswell, Chairman, Committee on Climate Change
- 09:30 **1 Setting the Scene: Sustainable Aviation**  
Roger Wiltshire, Secretary General, British Air Transport Association

### Session 1: Non-CO<sub>2</sub>

- 09:55 **2 When can we expect the science to be sufficiently robust to provide an acceptable basis for regulation? – contrail / cirrus**  
Dr Herman Mannstein, Scientist, German Aerospace Centre (DLR)
- 10:15 **3 Climate Effects of NOx Emissions: How robust is our understanding?**  
Prof Keith Shine, Department of Meteorology, The University of Reading
- 10:35 **4 When can we expect to have the technology in place to enable the industry to accommodate regulatory action? – contrail / cirrus**  
Andrew Watt, Environment Domain Manager, Eurocontrol
- 10:55 **5 The Journey Towards Lower NOx Emissions**  
John Moran, Corporate Specialist – Combustion, Rolls Royce
- 11:05 **Discussion**
- 11:20 **Coffee and Networking Break**

### Session 2: Technologies for the Next Major Aircraft

Chairman: Prof Jeff Jupp, Aerospace Consultant, Member Greener by Design Executive

- 11:50 **6 NACRE DREAM Programme**  
Dr Mark Taylor, Senior Project Engineer, Rolls Royce
- 12:10 **7 NACRE Pro-active Green Aircraft**  
Joao Frota, NACRE Project Leader, Airbus (inv)
- 12:30 **Questions**

### Session 3: Some Radical Operation Steps

Chairman: Prof Jeff Jupp, Aerospace Consultant, Member Greener by Design Executive

- 12:35 **8 Aviation Noise: Can we make it Insignificant?**  
Geoff Maynard, Director, Vector Management
- 12:50 **9 Air to Air Refuelling**  
Dr Raj Nangia, Consultant, Nangia Aero Research Associates
- 13:10 **Networking Lunch**

### Session 4: Biofuels: When Will They be Used in Serious Quantities in Aviation?

Chairman: Robert Whitfield, Greener by Design Committee, Envirostrat

- 14:15 **10 Seawater Agriculture: A Source of Sustainable Biofuels**  
Carl Hodges, Chairman, Global Seawater Inc
- 14:35 **11 An Airline View**  
Sian Foster, Corporate Sustainability & Responsibility Manager, Virgin Atlantic
- 14:55 **12 Process Technology for Biojet Production**  
Graham Ellis, Business Manager, Biorenewable Energy & Fuels, UOP
- 15:15 **13 Engine Manufacturer's View**  
Chris Lewis, Company Specialist Fuels, Lubricants, Associated Technologies, Rolls Royce
- 15:35 **Discussion and Questions**
- 15:50 **Tea and Networking Break**

### Session 5: Market Based Options

Chairman: Hugh Somerville, Visiting Professor, Surrey University

- 16:20 **14 Aviation and the EU Emissions Trading System**  
Alexandre Marty, European Head of Climate Change Services, ICF International
- 16:40 **15 Market Based Options – Evidence of what works in the Markets**  
Charles Miller, Greener by Design Committee, Policy Analysis Group
- 17:00 **Questions**
- 17:05 **16 Aviation and Climate Change – Is enough being done?**  
John Vidal, Environment Editor, The Guardian
- 17:25 **Chairman's Closing Remarks**
- 17:30 **Conference Closes**



Programme may be subject to change, see [www.aerosociety.com/conference](http://www.aerosociety.com/conference) for the latest details

## Complete and return the form below to:

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### METHODS OF PAYMENTS

Payment must accompany registration and all payments should be made in Sterling (UK£).

**Online:** Registration and secure payment can be made on-line at [www.aerosociety.com/conference](http://www.aerosociety.com/conference)

**Cheque:** Cheques should be made payable to the RAeS and enclosed with this registration form. Please add £15 if your cheque is not drawn on a UK bank to cover bank charges / currency exchange rates.

**Bank Transfer:** Payments can be made by bank transfer into Account No. 0615 2538, Sort Code 60 02 20, National Westminster Bank plc, Berkeley Square & Mayfair Branch, PO Box 2153, 1-4 Berkeley Sq, London W1A 1SN, UK. Please indicate on your registration form if you have paid your fees direct.

Signature

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