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DON'T HOLD YOUR BREATH FOR A CLIMATE AGREEMENT... YET

Business groups can be forgiven for getting frustrated at the slow pace of progress in the global climate negotiations being steered by the United Nations Framework Convention on Climate Change (UNFCCC). Particularly when, like the aviation sector, they have been trying to play a constructive role in the process. But the wrangling over aviation, both in the UNFCCC and under the International Civil Aviation Organization (ICAO), is symptomatic of a much larger divide between developed and developing nations on how to move forward in the negotiations.

A bloc of developed, or 'Annex 1', countries including the United States, Japan and Canada have explicitly stated that they will not sign up to any extended commitments under the Kyoto Protocol,

while even the usually progressive EU has made further commitments conditional upon the adoption of a global agreement that includes, in some form, large developing ('Non-Annex 1') countries such as China, India and Brazil. The Russian Federation is also adamant that it will not sign any extension to the Kyoto Protocol. The way forward looks difficult and it is not surprising when faced with these major differences to understand why there has been little progress since the much-hyped Copenhagen Climate talks in 2009.

It is perhaps unfair to characterise those talks as a failure. There has been progress in certain specialised areas such as dealing with deforestation and building a mechanism for transferring technologies to developing nations. It was with this in mind that the aviation industry hoped for progress in the discussions during the last round of major UNFCCC Conference of the Parties (COP) climate talks held in December last year in Cancún, Mexico. The industry partially got its wish - not at the UNFCCC, but at the 37th ICAO Assembly, six weeks before Cancún. The ICAO negotiations produced the first sectoral agreement for reducing emissions, but with aspirational goals to reduce emissions, rather than firm targets. Still, it's a sign of progress in an otherwise fraught landscape, and the ICAO agreement is significant in laying the ground for further progress over the next two years until the next Assembly in 2013.

Heading into the next round of UNFCCC climate change negotiations in Durban this December (COP17), the UNFCCC process

is hitting the same roadblocks that have been slowing progress for the last three years. In the discussions on aviation and shipping emissions - the so-called bunker fuels debate - the draft text produced at the intersessional meeting in Panama this month was in many ways a copy of the text seen the same time a year ago (and the year before that). Despite calls from the EU recently for more progress on aviation and shipping, it seems that little will happen in these areas before the full climate negotiations make substantial progress.

Indeed, it is the Europeans themselves who may be causing an unintended block in progress, with their emissions trading scheme (ETS) now set to include aviation and seen as an affront to developing nations whose economies and trade could be hurt substantially by the tax on air travel. "Neo-colonialism" is being uttered in the corridors of negotiations and developing countries are quick to point out that the (unintended) consequences of one party's climate policies - also known as 'response measures' - having a negative impact on another will hit them the hardest. The fact that the European Commission has failed to ensure that its member states hypothecate ETS revenues for climate and energy projects (despite assurances to the contrary) is causing further disquiet, not to mention the somewhat high-handed tone of the Commission. They are not winning friends in the process, that is certain. It can surely only be a matter of time before European leaders will have to step in to calm the international diplomatic tensions.

gb

Links, graphics, tasks and charts available through: www.atag.org/globalbriefing

ATAG Global Briefing is published by the Air Transport Action Group, a Geneva-based association that brings together key aviation stakeholders collectively working to provide a sustainable future for air transport. Each edition of the Global Briefing is available to partners across the aviation industry. All data are available for use in industry publications.

ATAG analysis: With close to 20,000 diplomats and NGOs heading to Durban in December (and South Korea next year?), the talks at least provide income for the airlines, if not an outcome. But where does this leave aviation in the negotiations? In roughly the same place we were a year ago and, barring a major shift in the positions of States, without any real hope of progress for quite a while, at least under the UNFCCC. The industry will continue to push to move forward at the ICAO level, using the platform of last year's Assembly outcome. And we will continue to provide policymakers in the UN and in other fora with examples of the ways we are making aviation more efficient everyday, with or without their support.

GREEN CLIMATE FUND - \$100 BILLION A YEAR, BUT FROM WHERE?

One of the outcomes of the 2010 Cancún Climate Talks was an agreement that a Green Climate Fund (GCF) will be established to support projects, programmes, policies and other activities in developing countries to help them adapt to and mitigate the impacts of climate change on their people and economies.

The GCF is part of a plan to raise \$100 billion per year by 2020, from a 'wide variety of sources: public and private; bilateral and multilateral; including alternative and 'innovative' sources. This refers to potential income from shipping, aviation and a global financial transaction tax or levy.

The Green Climate Fund is being designed by a Transitional Committee representing governments from both developed and developing countries. The Transitional Committee is developing the design of the GCF and making recommendations to the Conference of the Parties in Durban this December. At the latest meeting of the Transitional Committee, held in South Africa last week, members were unable to agree on a final design of the fund, mainly due to firm opposition from the US and Saudi Arabia¹. Despite that resistance, it was agreed to send the draft report for

consideration to COP17 in Durban^{2,3}.

If the draft report were to be approved and the GCF operationalised in Durban, the Fund would be governed by a Board, comprising 24 members, as well as alternate members, with equal developing and developed country representation. UNFCCC Executive Secretary Christiana Figueres said in a statement to Reuters that: "Once approved in Durban, [the recommendations] would allow the fund to grow quite quickly, especially as the financial environment improves, and the way would be open for a fairly rapid set-up of the fund in 2012 and full initial operations in 2013⁴."

The terms of reference of the Transitional Committee are open-ended but do not explicitly mandate it to discuss sources of finance. Negotiations on sources of finance for climate change are continuing under existing negotiating processes under the UNFCCC, as well as other fora outside the UNFCCC negotiations, such as the G20.

There have been a range of assumptions made as to the amount aviation may be targeted to contribute, but the figure identified by the UN Secretary General's High Level Group of advisors⁵ is up to \$6 billion per annum. In recent media reports, a leaked World Bank report prepared for the G20 estimates that aviation could pay up to \$13 billion per annum through a levy on aviation activities of \$25 per tonne of CO₂⁶. The report says that this would reduce emissions from aviation and shipping by 5 to 10%, but that it would have measurable impact on trade and tourism in developing nations.

The question is whether such a measure would replace the other 'green' taxes already in place, such as the UK's Air Passenger Duty, or simply add to them, causing airlines to pay many times over for the same carbon. There has also been no official discussion as to the mechanism for collecting such revenue, with options ranging from a global tax or levy to income from emissions trading.

A number of NGOs support such a tax, but all would admit that the impact could be hard on the trade and tourism of developing nations and particularly small island developing states and least developed countries that are supposed to

MEMBERS OF THE GREEN CLIMATE FUND TRANSITIONAL COMMITTEE⁹

Argentina	Mexico
Australia	Morocco
Bangladesh	Nicaragua
Barbados	Norway
Belize	Pakistan
Brazil	Peru
Burkina Faso	Philippines
Canada	Poland
PR China	Russian Fed.
DR Congo	Saudi Arabia
Denmark	Samoa
Egypt	Singapore
El Salvador	South Africa
Ethiopia	South Korea
France	Spain
Gabon	Sweden
Germany	Switzerland
India	United Kingdom
Italy	USA
Japan	Zambia

benefit from this financing. There are a number of proposals for ensuring 'no net incidence' on those fragile economies: either through not implementing the levy or tax on certain routes, or having a rebate mechanism to refund the monies collected from those nations. But these retain significant difficulties: to only apply a levy on some routes would bring the market distortions feared from implementing regional or national economic regulations in a global industry; and the rebate mechanism could be seen as a new form of development aid, as the taxes would need to be collected by national governments and could be distributed based on political priorities or (as we have witnessed recently) could be held back to plug holes in national debts.

Michael Liebreich, chief executive officer of Bloomberg New Energy Finance said in a report released in September⁷ that "There is simply no point in advocating global taxes on shipping, aviation and financial transactions, and/or a global carbon price, where there is zero chance of these being adopted in the current political cycle - possibly ever"⁸. The final sticking point for such a levy is that

1. Reuters: <http://tinyurl.com/66ua6sp>

2. Malaysia Star: <http://tinyurl.com/5w7wlrj>

3. A draft version of these recommendations (used for the South Africa meeting) can be found here: <http://tinyurl.com/682z5dr>

4. Reuters report <http://tinyurl.com/66ua6sp> and UNFCCC press release: <http://tinyurl.com/69nccnq>

5. Final report of the UN Secretary General's High Level Group on Climate Finance: <http://tinyurl.com/2wpqxou>

6. Leaked World Bank Paper appeared in *The Guardian* on 22 September <http://tinyurl.com/6ddvlu9> and by the *Associated Press* <http://tinyurl.com/5r3pq4l>.

7. <http://tinyurl.com/3lxcd8m>

8. <http://tinyurl.com/43rg3o2>

9. Names and titles of the members of the Transitional Committee can be found at <http://tinyurl.com/3by7r9l>

most developing nations want climate finance commitments to be realised through national budgets of developed countries, rather than from sources that could impact their own economies.

ATAG analysis: We will hear a lot about potential sources of funding, including

aviation, from environmental and development NGOs in the coming months. Formally, the governmental discussions on sources will not begin until after the Durban COP17 climate talks and while aviation is seen as an ‘easy’ source of revenue by some, the chances of reaching agreement on this subject will reflect the challenges with all aviation-related

discussions in the global climate context. It is very unlikely that such a tax on aviation can be adopted at the global level but it may still be attractive to some states to try to “go it alone”, heightening concerns of competitive distortion and carbon leakage. A much more appropriate way forward is the industry-suggested global framework sectoral approach under ICAO. **gb**

BIOFUELS HAVE LIFT-OFF. NOW COMES THE HARD PART.

Only a few years ago, biofuels for aviation were seen as a pipe-dream: an interesting concept that would probably not be workable. Now, following a lot of ground testing, laboratory work and seven flight tests, biofuels have been approved for use on regular commercial flights. The two processes which have so far received approval - ‘Biomass-to-Liquid’ (BtL) and ‘Hydrotreated Renewable Jet’ (HRJ) - are already being used for biofuels in passenger flights on a limited basis (see the table on page 4 for details of those flights announced so far), but the attention of the industry must now shift towards commercialising the fuels and making their day-to-day use commonplace.

According to Brian Pearce, IATA’s Chief Economist, “Today it is not economical for airlines to use biofuels in significant quantities. Current estimates for the cost of producing biofuels suitable for air transport, suggest that airlines - and their passengers - would have to pay at least twice as much as they currently spend on jet kerosene.”

“However, the economics of aviation biofuels and jet kerosene is likely to change. There are three ways in which change will happen: first, government-imposed climate policies will add costs to users of fossil fuels; second, the economics (and politics) of oil looks set to increase the price of jet kerosene; and third, the cost of producing and distributing aviation biofuel should fall.”

“The speed and extent to which these three influences develop will determine how quickly biofuels become economic and how quickly they play a major role in reducing CO₂ emissions from air transport.”

At the Global Green Growth Forum (3GF)¹⁰ in Copenhagen co-organised by the governments of Denmark, South Korea and Mexico earlier this month,



the Air Transport Action Group made the case to politicians that aviation biofuels represent a potential ‘quick win’ for them to show progress in at least partially decarbonising a sector:

- aviation is a globally harmonised sector used to dealing with global standards and has an advanced quality assurance structure in place for existing fuels;
- aviation only uses around 10% of liquid transport fuels;
- there are much more concentrated distribution points (1,700 airports represent 95% of air traffic, as opposed to 161,000 petrol stations in the USA alone);
- the technical hurdles have been overcome, the certification is in-place and all players are ready to start using sustainable fuels;
- there are a range of high-quality feedstock opportunities including non-food crops and industrial, municipal and agricultural residues.

Delegates at 3GF discussed how

progressing developments in several areas is key: harmonising regulatory environments to ensure that aviation is not disadvantaged over other consumers of biofuel (currently, most regulation and policy incentives favour biodiesel over aviation biofuel); harmonising sustainability criteria across jurisdictions to ensure that sustainably-produced biofuel uplifted in one country is recognised as such at the destination; unlocking

ATAG HAS THREE DOWNLOADS AVAILABLE THROUGH THE GLOBAL BRIEFING PAGE ON WWW.ATAG.ORG/GLOBALBRIEFING:

- *Beginner’s Guide to Aviation Biofuels*, second edition, September 2011
- *Powering the Future of Flight*, April 2011
- The ATAG biofuels PowerPoint presentation is available for your own use

10. Global Green Growth Forum, 11 - 12 October 2011: www.globalgreengrowthforum.com. Final press release outlining key action items, including sustainable aviation biofuels: www.globalgreengrowthforum.com/news

access to capital for plant and production facilities (there is currently some \$28 trillion in pension funds worldwide, a new asset class for all green technology investments may be a wise way to utilise this pot of cash); and invest in further research and development in finding new feedstocks, increasing feedstock yield and production processes.

As shown in the selection of case studies in the ATAG publication *Powering the Future of Flight* (available at www.flyonbiofuels.org), the industry has been forging ahead with pilot projects in a number of countries worldwide. But airlines and the rest of the industry cannot do it alone - political support and financial investment will have to come from a number of stakeholders. In *Powering the Future of Flight*, ATAG outlines six suggested steps that policymakers can consider in helping their air transport system grow with less carbon-intensive fuel, whilst in many cases also investing in green growth jobs and a new sustainable industry. These steps are presented in no particular order:

1. Foster research into new feedstock sources and refining processes
2. De-risk public and private investments in aviation biofuels
3. Provide incentives for airlines to use biofuels from an early stage
4. Encourage stakeholders to commit to robust international sustainability criteria
5. Understand local green growth opportunities

6. Establish coalitions encompassing all parts of the supply chain

In the coming years, many significant commercial, policy and sustainability outcomes will result from such comprehensive regional stakeholder processes. These processes serve to enable commercial parties to plan investment, while also giving confidence to governments and civil society organisations that sustainable aviation fuels efforts are following a contemplated path.

Unlike other transport modes, aviation has no clean energy alternative to liquid fuel available in the foreseeable future. Therefore, aviation should be prioritised for biofuel use. So far, we have achieved much of the progress ourselves. There is confidence that biofuels can be a very significant part of every airline's future. From policymakers, the industry is looking for encouragement and the right set of legal, fiscal and policy responses to ensure this exciting new energy stream can bear fruit as quickly as possible.

ATAG Analysis: There seems to be a concern that we are not moving fast enough to secure our share of the biofuels pie, but only three and a half months after receiving approval to fly on HRJ biofuels there has been a significant amount of progress. While we must act quickly to solidify political and investment support for this fledgling industry, we can be happy with the progress being made.

With innovative technology companies

such as Solena¹¹ and LanzaTech¹² gaining airline support - not to mention carriers like KLM diversifying into the fuel business with SkyNRG - there is also significant capital being diverted to kick-start this sector.

Despite high-level investments in advanced biofuels from a few of the oil majors (BP with Butamax, Chevron and Solazyme, Total with Gevo and Amyris), we would like to see more activity in this area and we would like assurances that this investment is for the long-term. History is littered with the corpses of clean energy companies bought up by the oil majors and discarded a few months or years later. Recently, a few oil companies have been making public statements about the 'unsuitability of biofuel for aviation'¹³. They apparently are seeking to sow the seeds of doubt about biofuels¹⁴. Given the dramatic acceleration of development and commercialisation on aviation biofuels, ATAG's view is that the oil majors should 'put up or shut up'.

Above all, key to maintaining a viable flow of biofuels for the future will be the sustainability question. The industry must place this at the heart of any biofuels strategy and we are encouraged with the work being undertaken by the Sustainable Aviation Fuels User Group¹⁵ in this area. We have a very real opportunity to de-carbonise our industry and diversify our energy supply. The onus is on all players to ensure that they do it in a responsible way and not damage the opportunity for the rest of the industry. **gb**

COMMERCIAL PASSENGER FLIGHTS ON BIOFUELS (AS OF OCTOBER 2011)

AIRLINE	AIRCRAFT	ROUTE	DATE	FUEL SUPPLIER	FEEDSTOCK	NOTES
KLM	Boeing 737	Amsterdam - Paris	22 Jun 2011	SkyNRG	Used cooking oil	200 city pair flights to take place from September 2011
Lufthansa	Airbus 321w	Hamburg - Frankfurt	15 Jul 2011	Neste Oil	Mix of feedstocks	1,200 flights over a six-month period
Finnair	Airbus 321	Amsterdam - Helsinki	18 Jul 2011	SkyNRG	Used cooking oil	Several further flights planned in 2011/12
Interjet	Airbus 320	Mexico City - Gutierrez	21 Jul 2011	ASA	Jatropha	
AeroMexico	Boeing 777	Mexico City - Madrid	1 Aug 2011	ASA	Jatropha	Will continue with weekly flights to Costa Rica over the period of one year
Iberia	Airbus A320	Madrid - Barcelona	3 Oct 2011	ASA	Camelina	
Thomson Airways	Boeing 757	Birmingham - Arricife	6 Oct 2011	SkyNRG	Used cooking oil	Daily flights to commence in early 2012 for six weeks
Air France	Airbus A321	Toulouse - Paris	13 Oct 2011	SkyNRG	Used cooking oil	Flight also took advantage of many operational procedures to reduce emissions to half the most efficient normal flight

11. Solena's process uses municipal waste to convert to jet fuel through a biomass-to-liquid (BTL) process. The US company has signed agreements with British Airways, Qantas, Alitalia, SAS and 10 carriers in the USA (American Airlines, United Airlines, Alaska Airlines, Lufthansa, Air Canada, Southwest, Jet Blue, US Airways, Frontier and FedEx) to build plants in London, Sydney, Rome, Scandinavia and Northern California that will convert 500,000 tonnes of organic waste into 16 million gallons of biojet fuel each. The first plant is due to be on line in London in 2014. www.solena.com
12. LanzaTech's process takes waste carbon monoxide gas emissions from industrial processes such as steel mills, runs it through an enzyme which emits ethanol and then converts that into jet fuel through an alcohol-to-jet (AtJ) process. LanzaTech has had a pilot plant operating in New Zealand and is currently building a scale production plant into under-construction steel mills in Shanghai and New Delhi. It has signed an agreement with Virgin Atlantic to take the fuel from these plants, expected to be operational by 2014. www.lanzatech.com
13. BP: <http://tinyurl.com/3kmlkbe>
14. Shell Aviation speaking at the ICAO Sustainable Aviation Fuels Workshop, October 2011: <http://tinyurl.com/4ywc5m3>
15. Sustainable Aviation Fuel Users Group (SAFUG) website: www.safug.org

Steve Csonka is Director of Environmental Strategy and ecomagination at GE Aviation and a member of the ATAG Board. In this first Perspectives column in the ATAG Global Briefing, he outlines some broad views that he believes set the foundation for why the aviation industry is actively engaged in sustainable development activities. Steve is a 26-year veteran of the industry, having worked on both the airline and aircraft supplier sides of the business. He has a passion for aviation and is a firm believer that the use of technology and creativity can enable a responsible, growing, and vibrant future aviation system.

AN ESSENTIAL CONNECTOR OF SOCIETY, COMMITTED TO REDUCING ITS FOOTPRINT

The aviation industry provides an essential service to the world: quick, safe, affordable, reliable, and convenient transport of people and goods. The growth of aviation, historically and projected, is a clear indicator that society recognises the aviation value propositions. We're completely interwoven into the fabric of our world-wide society of 7 billion (and growing) citizens. And, we're working to continuously improve the aviation value proposition, making the future bright with promise.

It may be possible in some cases (e.g. short range travel) to replicate the value proposition with other transport modes or technologies, but in other cases (longer range or overwater) it is simply not possible with today's technology. In many cases such as island nations, we provide the socio-economic lifeline responsible for large fractions of some countries' total economic activity.

The industry clearly understands that it needs to continue to improve its environmental footprint - it produces emissions that impact local air quality, it produces noise, and it emits greenhouse gasses. It is not a green-washer, pretending it has no impact. In all cases, the industry has demonstrated progress in reducing these unwanted impacts of aviation, and in all cases, new aircraft in development will continue that trend. Further, there are a very broad range of technologies being investigated for subsequent generations of aircraft that demonstrate the potential for more dramatic improvements.

The industry is responsible for a phenomenal level of direct and indirect economic activities and jobs, estimated by some to be upward of 33 million jobs and \$1.5 trillion in GDP, if tourism is included. Our customers and supply chains stretch to six continents. Our pursuit of the use of advanced technology drives activities at universities and research centers world-wide. When we compare aviation's societal benefits to its environmental impacts,

we don't find cause for vilification of the industry. We find the encouragement to increase these pursuits. This is particularly true when you consider the noise, emissions and passenger fuel mileage improvements demonstrated by the three most recent additions to the commercial fleet (Airbus A380, Boeing 787-8 and 747-8).

The issue the industry really faces is that the demand for aviation portends a robust future of growth, and the present growth rate overtakes its ability to incorporate product improvements needed to cap total emissions. The industry has publicly acknowledged this and has outlined long-term goals to first cap its net emissions and then shrink them over time.

Use of second and third generation bio-kerosene for net carbon reductions will be a big part of our strategy. For at least a couple more decades, commercial aviation will rely on kerosene - nothing provides a near-term replacement option - not hydrogen, not nuclear, not hybrids, fuel cells or batteries. Over the last three years, the industry has come a very long way in developing different methods and materials from which synthetic kerosene can be made. Two pathways have been approved for commercial usage at up to 50% blends. I am personally aware of at least six additional pathways that are under development. All of these have the potential to reduce the amount of petroleum-based fuel needed, and in some cases the reduction could be very dramatic. Some methods will simply recycle or recover wastes. Others will establish agri-energy production chains, where carbon will be continuously recycled. And yes, we understand the implications of indirect land use, and such knowledge is guiding the industry's involvement. Stay tuned to hear about agricultural crops that will have no appreciable indirect impacts.

So, what does the industry need? It needs people and governments to stand with us to work progressively on the challenges, particularly infrastructure.

It needs less vitriolic debate, and more informed discussion and cooperation. The aviation industry will continue to make progress - focusing on the positive, and working on the negative. We strongly encourage other forward thinkers and optimists to join in our endeavours that are outlined in this *Global Briefing*. Together, we can make a better future that will still include the value-proposition provided by aviation: quick, safe, affordable, reliable, convenient, and sustainable transport of people and goods. [gb](#)

AVIATION &
ENVIRONMENT
SUMMIT

2012 

Geneva, 21 and 22 March, 2012
www.enviro.aero/summit

Aviation has come together like no other industry sector to work on common programmes for reducing its environmental impact and the **Aviation & Environment Summit** is the place where we discuss and review our progress. It is a meeting place of aviation environment leaders and provides a platform for our industry to explore the ways in which we can continue to provide jobs, power economic growth and serve the flying public, whilst minimising our environmental footprint.

In 2008, the Summit provided the forum for the signing of an historic declaration on climate action by leaders from across the aviation industry. This was followed a year later by an ambitious set of targets for reducing aviation's emissions. The 6th Aviation & Environment Summit will bring together 350 industry and key stakeholder representatives in another pivotal moment for the aviation sector as it reaffirms its commitment to sustainable growth and catalysing the green economy.

Key agenda items:

- Aviation and sustainable development
- Biofuels
- Infrastructure
- Global political agenda

Join us in Geneva. The Aviation & Environment Summit 2012 is an invitation-only event for those working in aviation, government, environmental groups, suppliers to the industry and the media. Spaces are limited for this international meeting, so please request an invitation and register early.

Contact: patienta@atag.org

SOURCED

A list of useful articles, studies, speeches and reports on aviation and sustainable development. The links can be found at www.atag.org/globalbriefing

RAILROAD TO NOWHERE¹⁶

The Economist, 3 September 2011 edition

An article exploring the difficulties in developing high-speed rail in the United Kingdom, arguing that often high-speed rail projects benefit major cities and not regional growth. “The £32 billion at its disposal might well yield a higher return if it were spent on less glitzy schemes, such as road improvements and intra-city transport initiatives. If the aim is to regenerate “the north”, the current plan might prove a high-speed route in the wrong direction.”

CHANGES IN THE AIR¹⁷

The Economist, 3 September 2011 edition

An Economist Technology Quarterly article exploring the new technologies being developed by aviation to reduce emissions. “Emerging technologies are ushering in more fuel-efficient, comfortable and exotic aircraft. Get ready for the future of flight”.

UK RISKS BEING CUT OFF FROM GROWTH BY POOR TRADE LINKS, SAYS NEW STUDY¹⁸

BAA Heathrow, 22 September 2011

New economic research claims that London is losing out to European competitors in the battle for flights to emerging markets. The report by Frontier Economics says that a lack of direct flights to emerging markets may already be costing the UK £1.2bn a year as trade goes to better-connected competitors. This figure could rise to £1.6bn by 2021 - equivalent to one-third of the UK's current balance of trade deficit. The report establishes a direct relationship between frequent direct air connections and improved volumes of trade and investment. It finds that UK businesses trade 20 times as much with emerging market countries that have a direct daily flight to the UK

as they do with those countries that do not. The report can be downloaded from <http://hub.heathrowairport.com/>

QUICK WIN: AVIATION BIOFUELS OFFERS BREAKOUT FOR CLEAN ENERGY¹⁹

Biofuels Digest, 13 October 2011

Article looks at the discussion about the challenges of commercialising aviation biofuels at the Green Growth Forum (3GF) meeting in Copenhagen: “Road transport is the big prize - there's no doubt, but is it as well shaped up for a quick win? By contrast, converting 20% of aviation to biofuels would transform modern aviation, be a major signal that clean energy can work at scale, and offers a model for developing R&D, certification and supply chain consortia. It would take around 12 billion gallons of biofuels, and perhaps 120 million tons of biomass, distributed to 1700 or so airports around the world.”

ECO-EFFICIENT INNOVATION LEADING THE FUTURE OF AVIATION²⁰

Speech by Airbus CEO Tom Enders, 18 October 2011

Enders gave a speech at the opening of the SAE Aerospace conference in Toulouse on the slow pace of change in aviation technology, “What about stopping the traditional approach of launching a series of completely new aircraft one after the other? What about switching to an upgradable platform approach, an approach where we could rapidly and significantly evolve our products as new technology matures and comes on line? This is already starting to happen, with certain military products. The IT industry is moving to Cloud technology where computers can be swapped out of networks, while they are still running, and then replaced with newer, better models without a glitch...”

1. We need to shorten development and certification cycles and optimise industrialisation.

2. We need to stay ahead of the rapidly accelerating pace of global innovation.
3. And to do all of those things, we need the best and the brightest working with us. Wherever they are.

...Somewhere in the last 40 years we learned to save fuel and forgot how to take risks and manage them properly. We forgot how to turn our ideas into reality before they were out of date.”

AIR AND RAIL: SETTING THE RECORD STRAIGHT²¹

European Regions Airlines Association report, 29 September 2011

A study released by ERA raises doubts about the rationale for the clear political bias towards rail and high speed rail (HSR) and reveals massive rail subsidies 125 times higher than State aid granted to air transport. It finds no evidence that rail is always ‘greener’ or economically beneficial as a mode of transport for Europe and sheds serious doubt on the evidence used to justify policies which attempt to shift passengers from air to rail. Findings of the study include:

- the average investment cost of a new runway builds just 30km of HSR track;
- the turnover of the air transport market in the 27 EU States is almost twice that of railways;
- EU airports and airlines offer 150,000 city pairs (routes) versus 100 from HSR;
- expanding the HSR network to link all major city pairs currently connected by at least 10 flights/day would require a 600% increase in the HSR network and result in less than 5% drop in flights demand by 2030;
- rail and air can complement each other provided complementarity is based on fair competition and freedom of consumer choice; and
- investment would be better made in improving intermodality between the two modes. **gb**

16. The Economist, 3 September 2011: <http://tinyurl.com/3sspee3>

17. The Economist, 3 September 2011: <http://tinyurl.com/3kkbykg>

18. BAA Heathrow press release: <http://tinyurl.com/4xegy26>

19. Biofuels Digest, 13 October 2011: <http://tinyurl.com/4xfmxex>

20. Tom Enders, Airbus CEO speech: <http://tinyurl.com/6dz7abe>

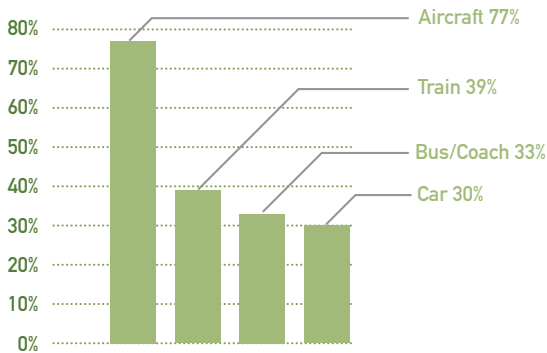
21. European Regions Airline Association study Air and rail: setting the record straight is available from ERA free of charge to members of ERA. For further details of the study, contact ERA: <http://www.eraa.org/library/studies>.

All graphics in this section are available as individual PDFs and PowerPoint-ready images on the Global Briefing pages of the ATAG website: www.atag.org/globalbriefing. The stakeholder map of the aviation industry, on page 11, is available in full size on the ATAG website.

3.3 billion tonnes²²
 The amount of CO₂ saved by the aviation industry from 1990 - 2010 through business-as-usual advances in technology, operations and infrastructure.

80%
 Around 80% of aviation CO₂ emissions are emitted from flights of over 1,500 kilometres, for which there is no practical alternative mode of transport.

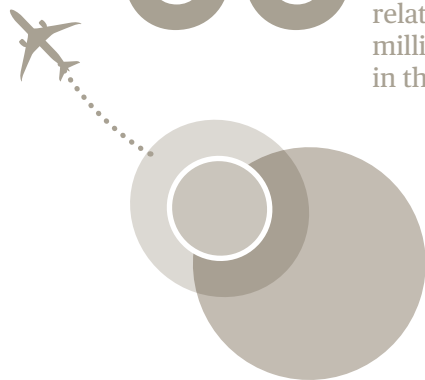
GLOBALLY, THE AVERAGE OCCUPANCY OF AIRCRAFT IS AROUND 77%, GREATER THAN OTHER FORMS OF TRANSPORT^{23,24}



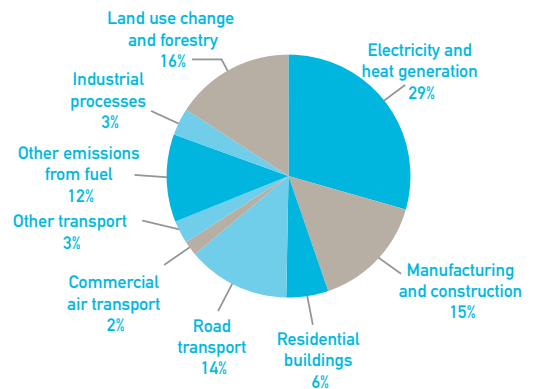
The figures for aviation are international, the figures for other transport modes are from Europe.

2.6 billion
 In 2010, over 2.6 billion passengers were carried by the world's airlines²⁵.

33 million
 Over 33 million people are employed worldwide in aviation activities and related tourism. Of this, 5.5 million people work directly in the aviation industry.²⁶



GLOBAL SHARE OF CARBON DIOXIDE EMISSIONS BY SECTOR²⁷
 (CO₂ equivalent by sector, 2005)



22. IATA Economics analysis

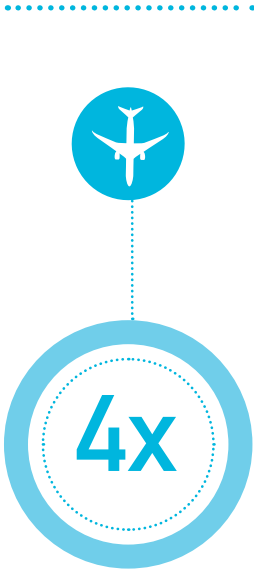
23. IATA Economics

24. European Environment Agency 2009: <http://tinyurl.com/43n8cef>. The average occupancy of a car in the UK is 1.56 people in a 4-seat car. 60% of trips are made with only one person in the vehicle: <http://tinyurl.com/3o4tout>.

25. IATA Economics

26. Oxford Economics, *Aviation: the Real World Wide Web report, 2009*: <http://tinyurl.com/5tubvpc>

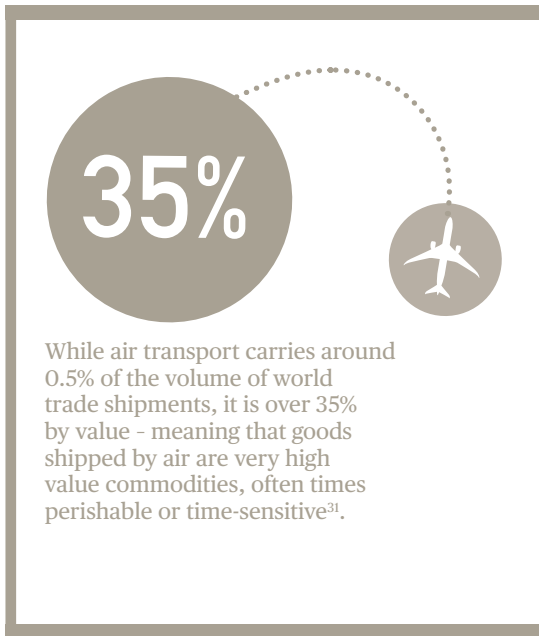
27. World Resources Institute: <http://tinyurl.com/n3qreg>, CAIT database, IEA (2007) 'CO₂ emissions from fossil fuel combustion', IATA



Worldwide, the amount contributed to the global economy by aviation jobs is roughly four times higher than that contributed by other jobs³⁰.

\$140 billion

The global aviation industry spent \$140 billion on fuel in 2010. It is expected that the cost in 2011 could be up to \$176 billion - around 30% of airline operating costs²⁸.



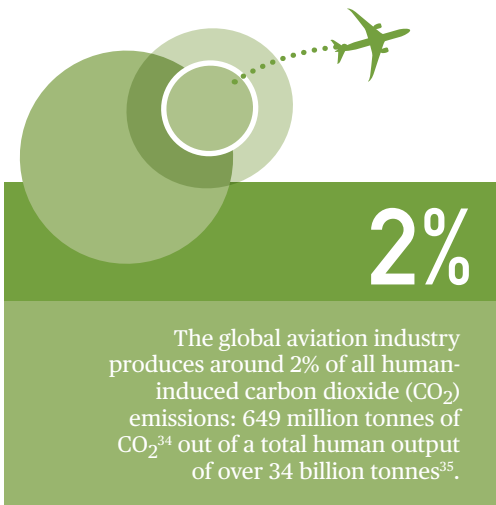
While air transport carries around 0.5% of the volume of world trade shipments, it is over 35% by value - meaning that goods shipped by air are very high value commodities, often times perishable or time-sensitive³¹.

Accessible to more people

The cost of air travel has fallen substantially. In 1945, it took 130 weeks for a person earning the average Australian wage to earn enough for the lowest Sydney to London return airfare. In 2009, it took just 1.7 weeks²⁹.



Jet aircraft in service today are over 70% more fuel efficient per seat kilometre than the first jets in the 1960s³².



The global aviation industry produces around 2% of all human-induced carbon dioxide (CO₂) emissions: 649 million tonnes of CO₂³⁴ out of a total human output of over 34 billion tonnes³⁵.

10 LARGEST AIRPORTS BY TOTAL PASSENGERS³³

	AIRPORT	TOTAL PASSENGERS	GROWTH	RUNWAYS
1	Atlanta Hartsfield-Jackson	89 331 622	1.5%	5
2	Beijing Capital	73 948 113	13.1%	3
3	Chicago O'Hare	66 774 738	4.1%	7
4	London Heathrow	65 884 143	-0.2%	2
5	Tokyo Haneda	64 211 074	3.7%	4
6	Los Angeles	59 070 127	4.5%	4
7	Paris Charles de Gaulle	58 167 062	0.4%	4
8	Dallas / Fort Worth	56 906 610	1.6%	7
9	Frankfurt	53 009 221	4.1%	4
10	Denver	52 209 377	4.1%	6

28. IATA Economics analysis

29. Qantas Fact Files: <http://tinyurl.com/6js7x7>

30. Oxford Economics, *Aviation: the Real World Wide Web report, 2009*: <http://tinyurl.com/5tubvpc>

31. Oxford Economics, *Aviation: the Real World Wide Web report, 2009*: <http://tinyurl.com/5tubvpc>, IATA Economics

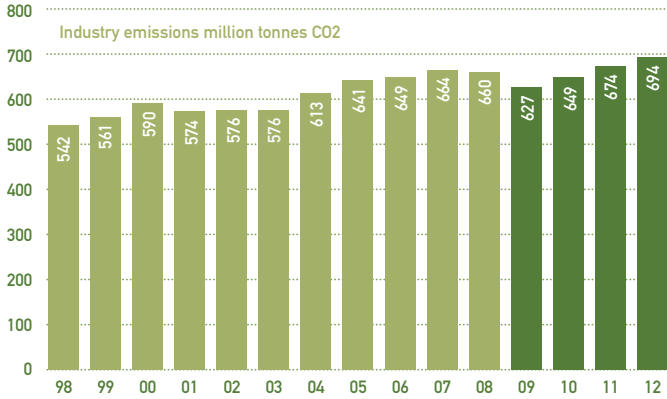
32. Intergovernmental Panel on Climate Change, 1999 report *Aviation and the Global Atmosphere*: <http://tinyurl.com/3eu67h2>

33. Airports Council International *World Airport Traffic Report 2010*: <http://tinyurl.com/3auzaqe>

34. IATA Economics

35. International Energy Agency

AVIATION EMISSIONS 1990 TO 2011³⁶



“Out of the top 25 fastest-growing airports, 5 are in Brazil, 4 in Turkey, 3 in Russia and 2 in China”



25 FASTEST GROWING AIRPORTS IN 2010³⁷

	AIRPORT	COUNTRY	PASSENGERS	GROWTH	WORLD RANK
1	Istanbul Sabiha Gökçen	Turkey	11 598 026	74.7%	121
2	Campinas Viracopos	Brazil	5 591 163	57.8%	212
3	Rio de Janeiro Santos Dumont	Brazil	7 833 588	53.5%	175
4	Brussels South Charleroi	Brussels	5 182 168	31.7%	229
5	Moscow Sheremetyevo	Russia	19 329 185	30.9%	68
6	Belo Horizonte Tancredo Neves	Brazil	7 599 323	29.5%	178
7	Bogota	Colombia	18 762 502	26.8%	72
8	Phuket	Thailand	7 313 783	26.5%	185
9	Shanghai Pudong	China	40 578 621	26.4%	20
10	Muscat	Oman	5 751 516	26.2%	209
11	Ankara	Turkey	7 788 214	25.9%	176
12	St Petersburg Pulkovo	Russia	8 443 753	24.9%	160
13	Medan Polonia	Indonesia	6 189 575	24.9%	202
14	Shanghai Hongqiao	China	31 298 812	24.8%	41
15	Milwaukee	United States	9 848 377	24.1%	133
16	Colombo Bandaranaike	Sri Lanka	5 259 648	24.0%	226
17	São Paulo Guarulhos	Brazil	27 432 346	22.8%	47
18	Mashhad	Iran	5 920 416	22.5%	206
19	Moscow Vnukovo	Russia	9 460 292	22.4%	138
20	Hanoi Noi Bai	Vietnam	9 519 839	21.5%	135
21	Fortaleza Pinto Martins	Brazil	5 441 732	20.6%	220
22	Izmir	Turkey	7 518 333	20.2%	182
23	Antalya	Turkey	22 078 962	20.0%	60
24	Hurghada	Egypt	8 059 849	19.8%	170
25	Doha	Qatar	15 863 053	19.5%	92

36. IATA Economics

37. Airports Council International World Airport Traffic Report 2010: <http://tinyurl.com/3auzaq>

10 LARGEST AIRPORTS BY INTERNATIONAL PASSENGERS³⁸

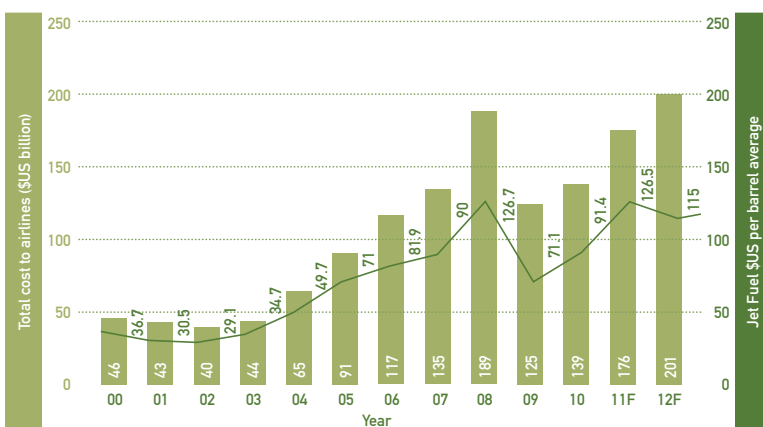
	AIRPORT	INTERNATIONAL PASSENGERS	GROWTH	RUNWAYS
1	London Heathrow	60 903 278	0.4%	2
2	Paris Charles de Gaulle	53 150 330	0.2%	4
3	Hong Kong	49 774 874	10.6%	2
4	Dubai	46 313 680	15.5%	2
5	Frankfurt	46 306 814	4.0%	4
6	Amsterdam Schiphol	45 136 967	3.7%	6
7	Singapore Changi	40 923 716	13.4%	1
8	Seoul Incheon	32 949 518	17.3%	3
9	Tokyo Narita	32 163 522	4.1%	2
10	Bangkok Suvarnabhumi	31 417 712	9.0%	2

21st

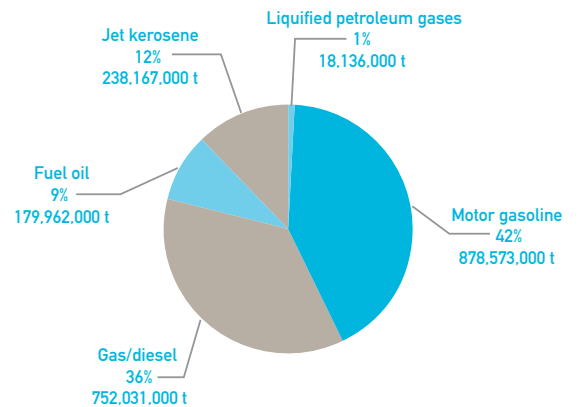
If aviation were a country, it would rank 21st in the world in terms of gross domestic product (GDP), generating \$425 billion of GDP per year, considerably larger than some members of the G20 (and around the same size as Switzerland). By 2026, it is forecast that aviation will contribute \$1 trillion to world GDP. If you extend that figure to the additional industries that depend on aviation, as well as aviation-related tourism, the current global economic impact of air transport is \$1.5 trillion³⁹.

“In 2003, fuel was 14% of the operating cost of airlines, on average. In 2011, it is expected to be 30%”

JET FUEL COSTS, 2000 TO 2010⁴⁰



GLOBAL TRANSPORT FUEL USE IN 2008⁴¹ (in tonnes)



Jet kerosene is used for commercial and military purposes. Commercial flights in 2008 used 214.9 million tonnes of jet kerosene, or around 10.4% of the total transport fuel use worldwide. This chart does not include non-liquid energy sources such as electricity used to power trains.

38 IATA Economics

39. Oxford Economics, *Aviation: the Real World Wide Web report*, 2009: <http://tinyurl.com/5tubvpc>

40. IATA Economics: <http://tinyurl.com/3j4po4w>, Platts

41. International Energy Agency: <http://tinyurl.com/3qunnw6>

NEWSWIRE

This section provides a précis of news releases issued by partners across the aviation industry from July to October, 2011. The full articles can be found on <http://newswire.enviro.aero>, which is also the location of all up-to-date news from across the world of aviation and the environment.

✈ Airline ⚙ Manufacturers 🚚 Suppliers ✨ Air Navigation Service Providers 🛫 Airport 🛢 Biofuels

01.07.2011 SKYNRG TO ANNOUNCE SECOND SUSTAINABLE JET FUEL CUSTOMER: THOMSON AIRWAYS



SkyNRG are to supply Thomson Airways with sustainable jet fuel for a trail of one flight per week for a year on biofuel made from used cooking oil.

06.07.2011 AIRBUS AND GERMAN AEROSPACE CENTRE (DLR) PERFORM RESEARCH TESTS FOR FUEL CELL POWERED AUTONOMOUS TAXIING



Airbus and DLR have begun further tests of fuel cell technology which will enable autonomous taxiing by providing propulsion to the wheels in the landing gear of the plane, ending the use of jet engines to taxi the terminal, cutting emissions.

06.07.2011 VIRGIN AUSTRALIA PARTNERS TO DEVELOP UNIQUE AUSTRALIAN BIOFUEL



Virgin Australia partnered with Renewable Oil Corporation, Dynamotive Energy Systems Corporation and Future Farm Industries Co-operative Research Centre to develop a sustainable aviation biofuel from mallees, a eucalypt tree native to Australia.

06.07.2011 BIOJET SUPPORTS AVIATION BIOFUEL APPROVAL WITH ONE BILLION GALLON AVAILABILITY



BioJet is releasing one billion gallons of renewable jet fuel to long-term contracts on special pricing and terms, in order to kick start the market. BioJet will supply the fuel either at a fixed price of US\$2.97 per gallon, or indexed with conventional jet fuel prices with a \$3.50 cap and \$2.50 floor.

07.07.2011 LUFTHANSA AIRBUS A340-300 OBSERVING THE EARTH'S ATMOSPHERE



A joint project between Lufthansa and Jülich Research Centre has begun whereby specially developed measurement devices will be taken on board scheduled Lufthansa services to provide much more accurate observations of the upper atmosphere and add to a database for climate research. [ALINE]

11.07.2011 LUFTHANSA REDUCES EMISSIONS THROUGH LIGHTWEIGHT CONTAINERS



Lufthansa subsidiary Jettainer is to begin replacing 5,000 cargo and luggage containers with a new model made of a light plastic material. The ULDs are 15% lighter than the ones they replace, reducing kerosene consumption by 2,180 tonnes per year across the fleet and CO2 emissions by 6,867 tonnes.

14.07.2011 FINNAIR IN THE FOREFRONT OF FLYING ON BIOFUEL



Finnair announced its first biofuel flight from Amsterdam to Helsinki, to be followed by two other flights in a trial using fuel provided by SkyNRG.

15.07.2011 AUCKLAND AIRPORT'S TRAVEL PLAN LIFTS THE BAR



Auckland Airport's travel plan 'Lift', encouraging its employees to use car-pooling, has celebrated its fourth anniversary and given out its 1,000th priority permit. "The programme has always been popular with the airport community and results in 180 to 200 cars off the road every day. In 2009 we calculated that equated to over 50 tonnes of carbon per annum."

19.07.2011 THE PRODUCT END OF LIFE DESIGN PROCESS DISCUSSED AT THE AFRA ANNUAL MEETING



Dr Andy Clifton, Sustainable Development Manager at Rolls-Royce, addressed the Aircraft Fleet Recycling Association's (AFRA) annual meeting to share the methodologies and technologies Rolls-Royce has been investigating to sustainably dispose of their products whilst retaining the maximum amount of material with the least environmental impacts associated with product end of life.

19.07.2011 BOEING EMPHASISES LINKS WITH AFRA IN AIRPLANE LIFE CYCLE MANAGEMENT



Boeing VP for Environment, Health and Safety, Mary Armstrong, addressed the AFRA annual meeting to commend the association for its ability to deliver innovative environmental solutions at the end of a product's life, especially with consideration towards the 13,000 Boeing planes due to retire in the next 20 years.

19.07.2011 MALDIVES AIRPORTS COMPANY SUPPORTS GREEN AIR TRAFFIC MANAGEMENT INITIATIVE



The first flight under green air traffic management via Maldives airspace was operated. The ANSP is taking part in the Indian Ocean Strategic Partnership to Reduce Emissions (INSPIRE) project which helps oceanic flights use the most efficient and optimum gate-to-gate routes. South African Airway's first flight on the Perth-Johannesburg route saved 400kg of fuel compared to a normal flight and reduced 1200kg of carbon emissions.

20.07.2011 EMBRAER JOINS THE AIRCRAFT FLEET RECYCLING ASSOCIATION



Embraer has become the newest member of AFRA, the third leading aircraft manufacturer to link with the association. AFRA's membership has now reached 55 companies and organisations.

26.07.2011 AIRBUS TO ACQUIRE METRON AVIATION



Airbus has entered a definitive agreement with Metron Aviation, a provider of advanced Air Traffic Management products and services for the aviation industry. This is part of Airbus' strategy to improve global air transportation capacity, especially with regards to Europe's Single European Sky Air Traffic Management which aims to increase efficiency, lower fuel burn and cut emissions.

26.07.2011 BOEING, EMBRAER AND IDB TO FUND SUSTAINABILITY ANALYSIS OF PRODUCING RENEWABLE JET FUELS FROM SUGARCANE



Boeing, Embraer and the Inter-American Development Bank will jointly fund a sustainability analysis of producing renewable jet fuel sourced from Brazilian sugarcane through the Amyris process.

08.08.2011 EMIRATES FLEET 26% MORE EFFICIENT THAN IATA INDUSTRY AVERAGE



Emirates released its first comprehensive environmental report, which revealed the airline's carbon dioxide emissions efficiency was 26% better than the global airline average.

16.08.2011 ATA COMMENDS US GOVERNMENT INITIATIVE TO ENHANCE COMMERCIAL VIABILITY OF ADVANCED BIOFUELS



The Air Transport Association commended the announcement of the US departments of Agriculture and Energy, and the Navy to invest up to \$510 million over three years in a public-private partnership to produce advanced biofuels.

23.08.2011 UNITED AIRLINES LAUNCHES PAPERLESS FLIGHT DECK WITH IPAD



United Continental will convert to paperless flight decks deploying 11,000 iPads thus saving 16 million sheets of paper and 326,000 gallons of jet fuel a year. Each iPad, which weighs less than 1.5 pounds, will replace approximately 38 pounds of paper operating manuals, navigation charts, reference handbooks, flight checklists, logbooks and weather information in a pilot's flight bag.

24.08.2011 OPTIMISING CARBON REDUCTION AT MANCHESTER AIRPORT



Manchester Airport has been officially certified by the Airport Carbon Accreditation, the European carbon standard for airports, to the Optimisation level for its strong environmental performance. In 2006, the airport recognised the importance further by committing to make ground operations carbon neutral by 2015.

26.08.2011 FAA APPROVES PRODUCTION OF BOEING 787 DREAMLINER



The Federal Aviation Administration announced approval of the production of the Boeing 787 Dreamliner. The plane is first major airliner to be constructed using composite materials which constitute 50% of its weight; consequently the plane will use 20% less fuel and produce less noise.

30.08.2011 BOEING LAUNCHES NEW 737 FAMILY WITH COMMITMENTS FOR 496 AIRPLANES FROM FIVE AIRLINES



Boeing's board of directors has approved the launch of a new 737 based on order commitments for 496 airplanes from five airlines. When compared to a fleet of 100 of today's most fuel-efficient airplanes, this new model will emit 277,000 fewer tons of CO2 and save nearly 175 million pounds of fuel per year, which translates into \$85 million in cost savings.

30.08.2011 BOEING INTRODUCES 737 MAX WITH LAUNCH OF NEW AIRCRAFT FAMILY



The new family of aircraft - 737 MAX 7, 737 MAX 8 and 737 MAX 9 - builds on the strengths of the Next-Generation 737. Airlines will benefit from a 7% advantage in operating costs over future competing airplanes as a result of optimised CFM International LEAP-1B engines, more efficient structural design and lower maintenance requirements.

02.09.2011 EMBRAER AND GE SUCCESSFULLY CONCLUDE BIOFUEL JET TESTS



Embraer and GE held a series of test flights whereby one of the two GE engines was powered with a maximum ASTM mix of 50% HEFA. The success of the test flights has been a big step in the development of a broader range of sustainable biofuels for aviation.

06.09.2011 AMSTERDAM AIRPORT SCHIPOL AND KLM TAKE ANOTHER STEP ON THE WAY TO SUSTAINABLE MOBILITY



Around 40 ground transport vehicles in the Amsterdam Airport Schiphol and KLM fleet are powered by 100% biodiesel. Both parties are investing efforts in introducing more sustainable transport vehicles at the airport, where a number of electrically-powered vehicles are also already in use.

06.09.2011 SINGAPORE AIRLINES JOINS SUSTAINABLE AVIATION FUEL USERS GROUP



Singapore Airlines has joined the Sustainable Aviation Fuel Users Group in order to attain its objective of accelerating the development and commercialisation of lower-carbon renewable aviation fuels to increase the efficiency of its operations.

06.09.2011 AEROSPACE COMPANIES ESTABLISH ENVIRONMENTAL GROUP TO PROMOTE WORLDWIDE STANDARDISATION FOR THE SUPPLY CHAIN



Airbus, EADS, Boeing, Bombardier Aerospace, Dassault Aviation, Embraer, GE Aviation, Northrop Grumman, Rolls-Royce, SAFRAN, United Technologies Corporation, and Zodiac Aerospace have joined forces to found the International Environmental Aerospace Group to address environmental concerns, such as chemical material declarations and reporting requirements; and to create a forum for dialog on industry optional approaches for implementation of environmental requirements.

08.09.2011 THE FIRST BRITISH AIRWAYS ELECTRIC BUS LANDS AT HEATHROW



British Airways is leading the way by becoming the first airline at Heathrow Airport to introduce an all-electric bus service for staff between Terminal 5 and the company's headquarters at Waterside. The bus is 8.1m long with a seating capacity for 24 passengers plus standing room, and has a special "green" themed British Airways livery. It will operate between T5 and Waterside covering 17,710 miles a year, cutting around 20 tonnes of CO2 emissions in comparison to the current fossil fuelled buses.

14.09.2011 BOEING RECOGNISED AS A LEADER IN CLIMATE CHANGE DISCLOSURE



For the third consecutive year, the Carbon Disclosure Project recognised Boeing as one of the world's leading companies in reporting climate-change risks and taking actions to improve environmental performance.

14.09.2011 AIR FRANCE-KLM, RESPONSIBLE LEADER IN THE SUPERSECTOR "TRAVEL & LEISURE" FOR 2011



Air France-KLM has been recognised as an air transport leader for 2011 in the field of corporate social responsibility for the seventh time in a row and confirmed in the two Dow Jones Sustainability Indexes - DJSI World and DJSI Europe.

14.09.2011 IATA ANNOUNCES SUCCESSFUL COMPLETION OF THE FIRST IFLEX TRIAL BETWEEN JOHANNESBURG AND ATLANTA



The iFlex concept provides for a greater and more flexible choice of routes on long-haul operations which cross multiple flight information regions to deliver shorter flight times, improved, fuel efficiency and reduced CO2 emissions while maintaining safety.

16.09.2011 AIRBUS IN ILLESCAS DELIVERS FIRST A350 XWB WING LOWER COVER TO AIRBUS IN BUGHTON



The first A350 XWB wing lower cover (WLC) has been transported from Airbus' composites manufacturing site in Illescas, Spain, to Airbus' wing assembly site in Broughton, United Kingdom, where it will be installed on to the wing of the first A350 XWB to fly, MSN001. The wing lower cover was recently produced at Airbus' Centre of Excellence for composite materials in Illescas, Spain; the part measures approximately 32 metres long by six metres wide, making it the biggest carbon fibre part ever produced in civil aviation.

20.09.2011 SUCCESSFUL LAUNCH OF AIREG WITH 25 MEMBERS

At its Constituent General Assembly on 19 September 2011 in Berlin, the Aviation Initiative for Renewable Energy in Germany - aireg - welcomed a total of 25 companies and organisations from the areas of science and research as founding members.

24.09.2011 BOEING CLEARS THE WAY FOR PLANT TWO SITE RESTORATION

Boeing today took down the last remaining steel structures that supported Plant 2 for more than 75 years, making room for site restoration, including development of five acres of wildlife habitat. Most of the old empty buildings formerly known as US Air Force 17 - but later called Plant 2 because it was Boeing's second assembly site - were demolished this year in conjunction with Boeing's commitment to environmental improvements that are vital to the Duwamish Waterway.

24.09.2011 REDUCING AVIATION WASTE AT EMIRATES

Global air travel generates thousands of tonnes of paper, plastic and food waste every day. Although most of the waste generated by air travellers is recyclable, it is estimated that airports and airlines only collect 20% for recycling, according to the US-based Natural Resources Defense Council. Aircraft parts are also recyclable. The Aircraft Fleet Recycling Association (AFRA) has set a target of salvaging 90% of the materials from aircraft by 2016. Emirates Engineering recovered 53.1 tonnes of recyclable materials from its general workshop waste stream and Emirates Catering diverted a total quantity of 1,274 tonnes of recyclable materials from landfill, recovering costs of nearly US\$270,000.

27.09.2011 AIRBUS EMPLOYEES EMBARK ON THIRD BIODIVERSITY PROJECT TO INDIA

Bio-gas units to reduce CO₂ and restore local forests and fauna: A third group of sixteen Airbus volunteers has left for a three week expedition to India as part of the biodiversity programme launched by the Airbus Corporate Foundation in 2010. The programme runs in partnership with Raleigh International, the Indian government, the UN's Development Programme and several Indian non-governmental organisations.

28.09.2011 8 MWP PHOTOVOLTAIC PARK AT ATHENS INTERNATIONAL AIRPORT

Athens International Airport's photovoltaic park, the largest unified PV installation at an airport worldwide, has officially launched its operation. The solar array is projected to produce 11 million kWh annually, almost 20% of the company's electricity needs and will reduce CO₂ emissions by at least 10,000 tonnes a year, for a period of 25 years. It would take 1,500,000 trees in order to absorb the same amount of CO₂ on an annual basis.

30.09.2011 AIRBERLIN IS AWARDED THE ÖKOGLOBE 2011

airberlin is the first airline to have been awarded the ÖkoGlobe 2011. The environmental award for pioneering innovations promoting sustainable mobility was conferred on airberlin for its corporate programme for "Eco-efficient Flying". The award was presented in Karlsruhe by the insurance group DEVK and the ÖkoGlobe Institute. [ALINE]

03.10.2011 BOEING, SELEX SISTEMI INTEGRATI PARTNER ON FUTURE GLOBAL AIR TRAFFIC MANAGEMENT SYSTEMS

Boeing and SELEX Sistemi Integrati of Italy today announced the signing of a Memorandum of Collaboration to work toward compatibility of global air traffic management systems. The companies will seek to cooperate on the Single European Sky ATM Research (SESAR) programme and the US Next Generation Air Transportation (NextGen) programme.

03.10.2011 IBERIA AND REPSOL STAGE SPAIN'S FIRST COMMERCIAL FLIGHT USING BIOFUEL

Iberia and Repsol today staged Spain's first commercial flight powered by biofuel. An Iberia Airbus A320 flying from Madrid to Barcelona burned some 2,600kg of a mixture of conventional A-1 jet fuel and biofuel derived from the camelina sativa plant. The use of the mixture resulted in a reduction of nearly 1,500kg of CO₂ emissions.

04.10.2011 BOEING AWARDED 'GREENER SKIES' CONTRACT BY FEDERAL AVIATION ADMINISTRATION

Boeing today announced a research task order award from the US Federal Aviation Administration to maximise performance-based navigation capabilities across the United States. The FAA initiated a \$3.1 million task order for "Greener Skies Initiative 2."

04.10.2011 AUCKLAND AIRPORT A FIVE TIMES FINALIST IN SUSTAINABILITY AWARDS

Auckland Airport a finalist across all five categories of the 2011 Sustainable 60 Awards. The Sustainable 60 Awards, organised by Fairfax Media and Price Waterhouse Coopers, recognise and reward businesses that are leading the way in sustainable business practice in New Zealand.

05.10.2011 BOEING AND LION AIR PIONEER PRECISION SATELLITE NAVIGATION TECHNOLOGY

Boeing and Lion Air, an all-Boeing Next-Generation 737 operator, are pioneering the use of precision navigation technology in South Asia with the introduction of Required Navigation Performance (RNP) flight operations. RNP enables airplanes, using global positioning systems, to fly precisely predefined flight paths without reliance on ground-based navigation stations.

05.10.2011 AIRBUS TO SUPPORT GREENER SKIES INITIATIVE WITH ATM EXPERTISE

The Federal Aviation Administration's Greener Skies initiative seeks to improve air traffic management efficiency and to minimise the environmental impact on the ground and in the air through the expanded use of performance-based navigation. As part of Boeing's FAA System Engineering 2020 team, Airbus will identify procedures which fully utilise aircraft precision navigation capabilities to reduce fuel burn, lower emissions and decrease noise.

06.10.2011 MALMÖ AVIATION FLIES MEAT FREE ON MONDAYS

On October 10, Malmö Aviation starts with "meat free Mondays" aboard its aircraft. The concept will be introduced on all Monday departures and is a new initiative in the environmental work carried out over a long period and the aim is to get passengers to open their eyes to environmental issues and show how we, with simple means, can reduce our environmental impact.

06.10.2011 THOMSON AIRWAYS TODAY MAKES AVIATION HISTORY WITH ITS FIRST FLIGHT FOR UK CUSTOMERS ON SUSTAINABLE BIOFUELS

Thomson Airways will today be the first UK airline to fly customers on sustainable biofuel when flight TOM 7446 takes off from Birmingham Airport to Arrecife. Carrying 232 passengers on a Boeing 757-200 it is scheduled to depart on 6 October at 14:25 for the four hour flight. [ALINE] [BIO]

11.10.2011 WORLD-FIRST LOW CARBON FUEL TO BE DEVELOPED FOR VIRGIN ATLANTIC



Virgin Atlantic announced the development of a world-first low carbon aviation fuel with just half the carbon footprint of the standard fossil fuel alternative. The partnership with LanzaTech will see waste gases from industrial steel production being captured, fermented and chemically converted using Swedish Biofuels technology for use as a jet fuel.

11.10.2011 EUROPEAN AIRSPACE ON TRACK TO DELIVER SIGNIFICANT COST SAVINGS



CANSO, the Civil Air Navigation Services Organisation, together with its airline and airport partners both in Europe and beyond, recognise that a safe, efficient and cost-effective air traffic management system is crucial to the continued growth of air transport.

12.10.2011 JAPAN AIRLINES ROLLS OUT SPECIAL LIVERIED AIRCRAFT



Japan Airlines has rolled out a newly-painted Boeing 777-200 aircraft named JAL Eco Jet "Nature" that is decorated with logo marks of various environmental projects to which the JAL Group is lending support.

13.10.2011 AIR FRANCE AND AIRBUS UNDERTAKE GREEN COMMERCIAL FLIGHT



Air France and Airbus have completed the world's greenest commercial flight by combining the latest fuel and air traffic management technologies. The flight from Toulouse-Blagnac to Paris-Orly using an Airbus A321 has been able to demonstrate the cutting in half of CO₂ emitted compared to a regular flight.

18.10.2011 GKN AEROSPACE ENTERS NEXT PHASE AND GROWS INVOLVEMENT WITH 'CLEAN SKY'



A fully NLF wing is considered to be one of the key developments to reduce drag in the next generation of aircraft and has the potential to provide 3-4% fuel savings. However an NLF wing is very different from a conventional wing and requires changes to wing architecture, aerofoil definition and detailed design and manufacturing concepts.

18.10.2011 A350 XWB'S TRENT ENGINE ROLLS-OUT FOR INITIAL FLIGHT TESTS



Airbus has completed installation of the first Rolls-Royce Trent XWB flight-test engine on the A380 "flying test-bed" aircraft for the flight-test campaign commencing in the coming weeks. The engine is the largest Rolls-Royce turbofan with a 118-inch diameter fan and has been specially designed to power all members of the new Airbus A350 XWB Family with maximum efficiency.

18.10.2011 ACI ASIA-PACIFIC GREEN AIRPORTS AWARD OPENS FOR APPLICATION



Asia-Pacific airports are invited to participate in the "Green Airports Award" to promote environmental best practices to minimise aviation's impact on the environment and to recognise ACI airport members who have outstanding accomplishments in their environmental projects. [ARPT]

20.10.2011 FEDEX EXPRESS HOSTS LARGEST 'GREEN ROOF' AT ANY US AIRPORT



FedEx recently opened the new package sorting centre at Chicago O'Hare airport, which conducts operations under a vegetated roof the size of three football fields. These roofs benefit the environment by: reducing air pollution, reducing storm water runoff, extending the average life of a roof from 15-20 years to 40-50 years, lowering energy costs by 35% a year and reducing airport noise.

24.10.2011 FINNAIR MAKES STRIDES IN CARBON DISCLOSURE AND EMISSIONS REDUCTION



The Carbon Disclosure Project has commended Finnair for its efforts to reduce greenhouse gas emissions, improve reporting capabilities and recognise the strategic risks associated with climate change. In the CDP's Nordic Report 2011, Finnair earned a score of 76/100. A score greater than 70 puts a company in the "high" category of climate change-aware firms.

26.10.2011 BOEING, EMBRAER AND SAO PAULO RESEARCH FOUNDATION TO LEAD AVIATION BIOFUELS PROGRAMME IN BRAZIL



Boeing and the Sao Paulo State Research Foundation (FAPESP) today announced plans to collaborate on long-term aviation biofuels-related research and development, a move that represents another major step toward the creation of a sustainable aviation biofuels industry in Brazil. Azul, GOL, TAM and Trip airlines will be strategic advisors in the programme.

27.10.2011 CONSTELLIUM PARTNERS WITH DASSAULT AVIATION TO DEVELOP THE "ECO-EFFICIENT ALUMINUM FOR AIRCRAFT" PROJECT



The European programme Clean Sky has officially launched the "Eco-Efficient Aluminum for Aircraft" (ECEFA) project which will develop an advanced aluminum product primarily for civil aircraft fuselage skin applications. With a starting point of 10% density reduction compared to current solutions, this new product is expected to offer further weight savings through design re-optimisation. It also offers both physical and mechanical performances allowing for significantly reduced fuselage wall thickness, durability of the aerostructure and use of eco-friendly surface treatments.

28.10.2011 AIR CHINA LAUNCHES CHINA'S FIRST DEMONSTRATION FLIGHT ON BIOFUEL



Air China, Boeing, and Chinese and US aviation energy partners today conducted China's first sustainable biofuel flight. The two-hour mainland flight from Beijing Capital International Airport was witnessed by officials from both countries and highlights the viability of using sustainable aviation biofuel sourced in China.

28.11.2011 KLM AND WWF NETHERLANDS UNITE FOR SUSTAINABLE AVIATION



KLM Royal Dutch Airlines and the World Wide Fund for Nature in the Netherlands (Wereld Natuur Fonds - WWF Netherlands) will continue to cooperate towards creating a more sustainable airline industry. They have expressed the ambition to develop an international market for sustainable biokerosene within a four-year period. KLM is providing an extra impulse by striving to operate its entire fleet using an average of 1% sustainable biofuel by the year 2015.