

## Sustainable Aviation?

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Yesterday a coalition of British airlines, airports and

manufacturers called "Sustainable Aviation" announced they would go "net" zero by you guessed it - 2050. Why is it 2050? Probably because its so far off it will be someone else's problem. The means they by which they go carbon neutral? Well its all the usual suspects, lets examine them in a bit more detail. **More efficient aircraft** Aircraft are steadily growing more fuel efficient, better engines and lighter materials etc. This is good and its definitely true. As a kid I lived under a flight path. When the aircraft went over you couldn't hear yourself think. My mum still has the odd aircraft come over. They are still loud but far quieter than they were. A quiet engine is an efficient engine. However there are limits how far this will get you and at the moment all efficiency gains are being undone by the increase in flights.

**Biofuels/Fischer-Tropsch** We went through this in our [book](#). To completely substitute worldwide would take an agricultural area the size of Belgium. The spokesman on the TV news clearly wasn't talking about complete substitution. He was also talking about using 2nd generation biofuels, so there would be no food/fuel competition. I was very surprised to see him mention Fischer-Tropsch. We describe this in the book. This reaction takes Hydrogen and carbon monoxide, using a transition metal catalyst, a lot of heat and pressure combines them to make alkanes of any chain length. The chain length is determined by the pressure used (largely). The question is where does the feedstock come from (can you make carbon monoxide from dioxide -not sure?), hydrogen could be split from water but do we really want to put a load of renewables in just so we can fly. So the practicabilities of this are questionable as is the energy return on energy invested for both. See our book. **Electric aircraft/hydrogen** These are under development and are almost certainly feasible for short haul, but not for long haul. Long haul requires some kind of new battery technology, if its possible at all. Regular readers of this blog know I regard hydrogen as a complete waste of space (again see our book). But even if it did work hydrogen aircraft would require a complete redesign (people talk about a 'flying wing'). This would have to pretty much start now and isn't. To be fair the spokesmen I heard didn't mention it. Nor did they see much contribution from electric aircraft by 2050. **Offsetting** What they are relying on is offsetting. Largely planting trees or putting in renewables. The problem with this it seems like you're doing something, but are you? Solar panels can be removed or broken. A lot of this is aimed at the developing world. Trees die. We've just had an example of this from Turkey. They planted millions of trees a year or so ago - its thought the great majority are dead already. What the aviation industry are not relying on, is less people flying or a halt to airport expansion. This is all a wheeze to make you think they are doing something when they're not. In a post carbon world, we won't by and large be able to fly -get used to it. Neil

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