

ECONOMY:

A recent report by the New Economics Foundation, peer reviewed by economist John Siraut, casts doubt on many of the aviation industry's key claims that have not been reviewed by the Government since 2012. The boom in air travel since 2015 has failed to increase UK productivity or GDP growth, while business use of air travel – a key argument for expansion – has declined by 50% since 2013. Similarly, air travellers spend £32 billion more abroad than foreign travellers spend when visiting the UK. This compounds regional inequality and damages the domestic tourism sector.

Job creation could compensate for some of these impacts, but even before the pandemic, at a time of record passenger numbers, jobs in the air transport sector had declined since 2007. In fact, the sector is one of the poorest job creators per pound of revenue, with wages lower than they were in 2006.

NOISE:

The applicant is relying on next-gen aircraft to reduce noise per plane to justify increasing the number of flights. However, as has been demonstrated at LLA in recent years, most of the noise-reduction benefits are during departure, whereas new-gen arrivals have been shown to be imperceptibly quieter, or even noisier. What this means is that the impact on the noise contours will be distorted, the likely scenario being that the contours to the west of the airport will expand to capture more residences, regardless of any shrinkage or stability to the east. This is not a net improvement but at best (or least worst), robbing Peter to pay Paul.

Regardless, the slight decrease in noise per plane will not compensate communities for the significant increase in the number of noise events.

The increase in flights over the Chilterns AONB will impact tourism and therefore the local economy.

CLIMATE CHANGE: Reliance on Sustainable Aviation Fuels (SAF) is an ineffective strategy towards reducing Greenhouse Gas Emissions

- At least as much CO₂ is emitted when biogenics are burned as from kerosene, so any life-cycle emissions savings come from either/or:
 - o The assumption that CO₂ has been eliminated during the production process owing to reliance on green energy, or 'offset'. Both assumptions are unsound owing to there being insufficient green energy to meet all demands, and trees etc planted for offset schemes require up to 40 years to mature (if they survive) to meet the schemes' objectives.
 - o The Royal Society concludes that "Life Cycle Analysis tools can be very flexible in how they are applied, which would significantly produce different results depending on how the boundaries are set." In other words, LCA claims of significant carbon reductions are unreliable.
- Aviation's demand for a sufficient supply of SAF will require a hugely disproportionate and impractical share of renewable electricity and biomass:
 - o Biomass competes for land with food, offsetting / Biodiversity Net Gain projects, renewable energy, carbon capture, etc. For example, The Royal Society estimates that to replace all UK aviation fuel with biomass, over half of UK agricultural land would be required.
 - o Waste cooking oil: The Royal Society reports that about 250million tonnes of used cooking oil is produced each year in the UK. Much is currently used in livestock feed and to manufacture soap, detergents, clothes and makeup. If 100-200m tonnes were diverted to aviation, it would produce only 0.3 – 0.6% of the total amount of jet fuel needed for the UK.
- Synthetic e-kerosene

Two conditions are essential for e-kerosene to have zero greenhouse gas emissions: a) hydrogen needs to be produced using additional renewable electricity (so-called 'green hydrogen'); 2) carbon dioxide needs to be captured from the atmosphere. e-kerosene is a more scalable source of renewable energy than biogenics, and is likely to reduce the formation of contrails, a significant climate warmer, but this requires further study. There is sufficient renewable electricity potential within the European Union to produce enough e-kerosene to decarbonise aviation by 2050. However, the significant land and sea area required and water demand for production of e-fuel (which is an inefficient use of electricity compared with direct electrifications) means that policymakers need to reserve green hydrogen and e-fuels for aviation, at the expense of other sectors.

- Hydrogen as aviation fuel

The use of green hydrogen to replace kerosene for jet fuel alone requires about three times the total current renewable electricity in the UK.