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Independent Thinking

Hydrogen stages quiet coup at Paris air show

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- Defence received far more media coverage than sustainability at the 2025 Paris Air Show and hundreds of new kerosene aircraft were ordered versus no new orders for hydrogen-powered aircraft, appearing at first glance to confirm the risk that Fathom warned of in its latest report — that Europe's aviation industry and regulators are heading down the wrong path
- Our report, Europe's flightpath to economic competitiveness, highlighted the risk of focusing too much on waste-based sustainable aviation fuels (SAFs) instead of investing in e-kerosene and hydrogen-powered zero emission flight (ZEF)[1]
- Fathom's analysis shows that ZEF beats all types of SAF on cost in most scenarios when more than 30% of European flights are powered using this method — even before the wider economic spillover benefits associated with ZEF R&D are considered
- Yet beyond the Paris headlines, ZEF may have just staged a quiet coup, securing billions of euros in funding, with a series of announcements suggesting that European policymakers are cognisant of the issues Fathom raised in our report about the consequences of ignoring ZEF, and are taking steps to support it. This has the potential to lower the cost of decarbonising aviation and support Europe's wider goals around competitiveness:
    - The EU unveiled the new Aviation Research and Innovation Strategy (ARIS), which aims to attract more than €60 billion of investment into European aerospace research and innovation, with a focus on next-generation aircraft technologies; €22.5 billion of this total would be committed by the EU[2]
    - The UK government took several measures to support ZEF too: commitments to invest £500 million and £250 million respectively in green hydrogen infrastructure[3] and green air technologies,[4] and renewed long-term support for the UK Aerospace Technology Institute, which supports various green aviation technologies including ZEF[5]
- Meanwhile, memoranda of understanding between Logan Air and Zero Avia,[6] and Airbus and MTU Aero Engines,[7] demonstrate that although ZEF is not yet a fully mature technology, it is already creating important commercial opportunities. The economic realities of the best way to decarbonise may not yet be fully grasped by the aviation sector, but these announcements show that concrete steps are being taken by both policymakers and businesses to commercialise its future
- Our modelling shows the strong potential for ZEF to become the cheapest net-zero way to fly, with large wider economic benefits to Europe. When the industry wakes up to this potential, the shift could be profound with serious investment implications — and winners and losers — across a range of asset classes, which we will explore in a future note

1. Waste-based SAFs are currently cheaper, but set to get more expensive, while the opposite is true for e-kerosene and ZEF. A full definition of these technologies, along with their pros and cons, can be found in the report.
2. https://aviation-strategy.eu/aris-full-report
3. https://www.gov.uk/government/news/500m-boost-for-hydrogen-to-create-thousands-of-british-jobs
4. https://www.gov.uk/government/news/250m-for-green-aerospace-projects-ahead-of-industrial-strategy
5. https://www.ati.org.uk/news/governments-modern-industrial-strategy-provides-ten-year-funding-commitment-for-the-ati/
6. https://www.loganair.co.uk/news/zeroavia-and-loganair-sign-agreement-on-zero-emission-flights/
7. https://www.airbus.com/en/newsroom/press-release/2025-06-airbus-and-mtu-aero-engines-advance-on-hydrogen-fuel-cell-technology

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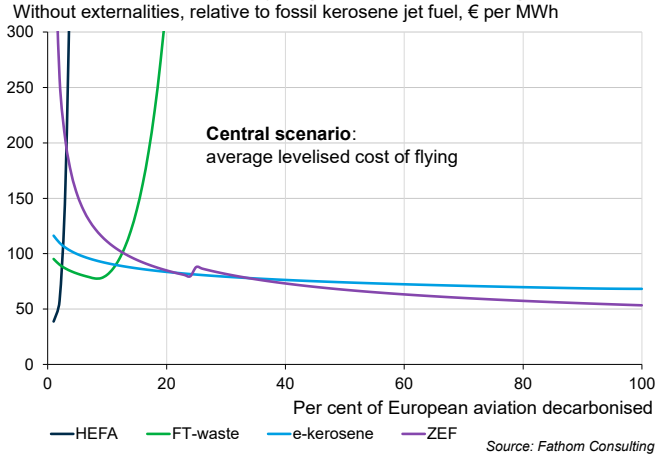
Levelised cost of flying in 2050, average

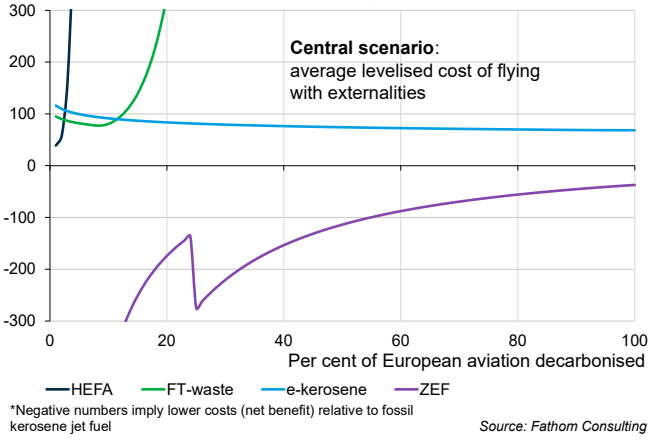
Without externalities, relative to fossil kerosene jet fuel, € per MWh



Source: Fathom Consulting

Levelised cost of flying in 2050, average

With externalities, relative to fossil kerosene jet fuel*, € per MWh



*Negative numbers imply lower costs (net benefit) relative to fossil kerosene jet fuel

Source: Fathom Consulting

- To support our research we built Fathom's Aviation Decarbonisation Model, FADM, which shows the how the levelised costs of different decarbonisation technologies vary relative to fossil kerosene under different scenarios, at different points in time and at different levels of decarbonisation; it can also be used to assess the costs and benefits from the perspective of both the aviation sector and the wider economy through considering externalities

Read full report

The conclusions reached in this research note draw on recent work we were asked to do by the European Climate Foundation, which can be accessed via the link below. The views expressed in this note reflect those of Fathom alone. To learn more about our work, the model underpinning it and how we can help your organisation, book a free 20-minute FADM demo.

Further reading

Negative energy prices in Europe

Chinese statecraft through new energy FDI

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