OVERVIEW FUTURE FLIGHT CHALLENGE PUBLIC ENGAGEMENT AND SOCIAL INSIGHT REPORTS

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Background:

The UK Research and Innovation Future Flight Challenge is a £300 million programme, co-funded by government and industry, that is supporting the creation of the aviation ecosystem needed to accelerate the introduction of advanced air mobility (AAM), drones, and electric sub-regional aircraft in the UK.

Delivered by Innovate UK and the Economic and Social Research Council (ESRC), the programme works with industry, academia, government, and regulators to transform how we connect people, transport goods, and deliver services in a sustainable way that provides socio-economic benefits using new types of air vehicles with novel technologies. As part of a wider programme of social science research funded by the Future Flight Challenge, two studies of publics' views on Future Flight in the UK were commissioned:

- A deliberative dialogue, with 43 participants (reflective of the diversity of the UK) taking part in a series of 7 workshops between January – April 2024. The dialogue was supported by UKRI's Sciencewise programme[1] and delivered by Thinks Insight & Strategy.
- A UK-wide survey conducted by YouGov between 28th March – 11th April 2024, among a nationally representative sample of 3,279 adults aged 18+ living in the UK. To ensure representativeness, quotas were set during fieldwork on age, gender, social grade, urban/rural status and region. A small boost was applied in Northern Ireland.

Both the dialogue and the survey were led by the UKRI Future Flight Challenge Social Science Research Director Prof Fern Elsdon-Baker and team based at the University of Birmingham[2].

Key points:

- The deliberative public dialogue outlines a citizen-developed Framework for the rollout of Future Flight technologies, systems and services. This framework is based around 14 top-level principles and recommendations.
- The survey was in part co-designed with deliberative dialogue participants and highlights where the concerns, expectations and principles outlined by the dialogue participants map onto national level views across the UK.
- Together, these two research reports give us the clearest picture of UK-wide citizens' views on the roll out of Future Flight technologies, systems and services in the UK.

[1] https://sciencewise.org.uk. Sciencewise is a UK Research and Innovation (UKRI) programme which enables policy makers to develop socially informed research and policy with a particular emphasis on science and technology.

[2] https://futureflightsocial.ac.uk

The deliberative dialogue and survey both aimed to understand the publics' hopes and fears around the future operation of Future Flight technologies, systems and services within the UK as well as their expectations for regulation, decision-making and governance.

The three Future Flight technologies were:

- Non-passenger-carrying drones
- Electric Vertical Take-Off and Landing vehicles (eVTOLs)
- Electric/hydrogen Regional Air Mobility (RAM).

Both full reports can be found here:

- YouGov UK-wide Survey
- Deliberative Public Dialogue

Top-Level Findings from both studies:

Overall, there is an indication from UK publics that the benefits of Future Flight technologies could be perceived as outweighing the drawbacks. This is especially notable where Future Flight could:

- **Provide benefits to public services delivery** in terms of reducing cost and increasing efficiency. Overall, there was stronger support for socially beneficial use cases including: supporting emergency services response, such as search and rescue, fire services and motorway accidents; supporting disaster relief, delivery of medical supplies or inspection and maintenance of infrastructure in hard to reach or high-risk environments.
- **Increase connectivity across the UK**, not only to rural, remote or isolated communities, but to larger population centres (e.g. transport between towns and cities) which are currently poorly served by public transport, road or rail connections.
- **Increase overall sustainability of UK-wide transportation systems** and the reduction of fossil fuel usage within aviation and overall, as part of a wider multi-modal integrated green transport approach. When it comes to flight specifically, innovation is seen as particularly important in reducing the climate impacts of aviation.
- **Increase economic opportunities for the UK** as part of a wider green economy and the creation of a range of new skilled jobs across the UK (e.g. manufacturing, engineering, drone or eVTOL pilots, airspace management etc).

This is underpinned by strong support for greater levels of government involvement in the technology and transport sectors, as well as on climate change. However, there are some important caveats to this support:

- **Socio-economic inclusion is a priority concern.** There is an appetite for better sustainable connectivity across the UK, but only if it delivers benefits to all UK citizens not just an elite few or wealthy groups. These benefits are conceived as relating not

only to the delivery of Future Flight services themselves but also to wider economic benefits to the UK and the creation of more jobs. There is an understanding that at first these technologies may only be available to some communities but there is an expectation that this will need to lead to wider social accessibility to, and affordability of, all Future Flight systems and services in the longer term (e.g. ten years +).

- **Accountability and transparency are vital in building public trust** in Future Flight technologies, systems and services, with developers and operators being held to account by independent bodies that act as a bridge between government, industry and the UK public. Overall, independent bodies were seen to be necessary to oversight: the use of drones for surveillance (inc. police usage); protection of data and privacy; maximising socio-economic inclusion and accessibility; ensuring accessibility for those living with disabilities or health conditions; minimising the impacts on wildlife; minimising the potential for visual congestion (e.g. congested skies); regulation of noise; maximising the potential for benefits to the UK economy and jobs market; and ensuring overall environmental sustainability.
- **The dialogue highlighted concerns over the potential lack of overall, or joined-up, oversight of the roll-out of Future Flight technologies, systems and services.** This ties into concerns over 'commercialising the sky' and that the roll out could be incoherent, with little leadership, regulation, national policy or strategy to guide its deployment leading to only wealthy elites benefitting. There was also a concern that lack of investment could be detrimental to safety, airspace management, regulation and the creation of new jobs/skills. This tallies with the survey findings that suggest strong support for government oversight of new technologies, including new green transport systems, to ensure they directly benefit everyone and are sustainable.
- **The potential for negative impacts on biodiversity and wildlife was a priority concern for both survey respondents and dialogue participants.** The potential effects on wildlife, especially bird populations and agricultural animals, in relation to the roll out of drones and eVTOls needs to be better understood and mitigated against.
- **Top-level concerns overall relate to** cyber-security, impacts on wildlife, safety, sky congestion, socio-economic exclusion, privacy, accessibility and noise. Though it should be noted that whilst a focus within the Future Flight sector has been on public views or concerns surrounding noise, this was not reflected in our data collection. Noise was not in the top five concerns in the survey and was not one of the more pressing concerns raised in the dialogue – this may however change once services start to be rolled out.

Overall, these studies suggest that UK publics think that Future Flight systems could provide tangible benefits to the UK and UK citizens, but that services or systems should only be invested in/supported if it can be evidenced that they offer something better than existing

services or systems and can provide benefits to the UK public as whole. This is particularly important when it came to evidencing future sustainability, accessibility and affordability.

Framework for Future Flight in the UK:

The dialogue participants created a detailed Framework for the roll-out of Future Flight technologies, systems, and services, based around 14 top-level principles and recommendations - seven overarching and seven specific to topics that were most important to them:

Overarching principles:

- Future Flight technologies must be used for public good.
- Research and testing must ensure policy/regulation is set up before roll-out and updated regularly.
- Development of technology and services must involve both specialists and public.
- Developers and operators must be held to account by independent bodies.
- Technology and development must be transparent.
- Roll-out and operation of technologies must be properly resourced to ensure human accountability – particularly in relation to safety, piloting and managing airspace.
- The UK as a whole must benefit from leading in these technologies and behave ethically (e.g. in ensuring international supply chains were ethical and sustainable).

Topic Specific principles:

- Technologies must be managed safely to appropriate safety standards.
- Flight paths must limit negative impact from noise pollution and visual congestion.
- Vehicles and operations must be designed with accessibility in mind.
- Services must be affordable to the public.
- Negative impacts on wildlife must be avoided.
- Job opportunities must be available in a fair and accessible way.
- Using surveillance drones must match the level of threat, with clear guidelines and oversight for use.

As part of the wider package of social science research funded by the Future Flight Challenge, further social insight research is ongoing, with additional qualitative and quantitative data collection being undertaken by a team of social science researchers at the University of Birmingham. Further reports and depth analysis, that will expand on these findings, are due to be released between September 2024 - March 2025. Up-to-date details of the Future Flight Social Science Research and future research outputs will be shared here:

https://futureflightsocial.ac.uk

This overview provides a synthesis of the two separate reports produced by YouGov and Thinks Insight & Strategy, undertaken by Prof. Fern Elsdon-Baker, UKRI Future Flight

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